

Federal Wage System Job Grading Standard for Tractor Operating, 5705

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WORK COVERED

This standard is for use in grading nonsupervisory work involved in operating wheel-mounted tractors and towed or attached equipment. The work performed typically includes transporting materials and equipment, towing aircraft, digging, loading, planting, spraying, fertilizing, harvesting, clearing, or mowing. Examples of the towed and attached equipment include carts, sweepers, trailers, towbars, plows, brush hogs, planters, mowers, combines, spreaders, sprayers, backhoes, and front-end loading devices.

WORK NOT COVERED

The standard does not cover work that primarily involves:

- Operating riding lawn mowers that are specifically designed as single function grass cutting devices. (See [Job Grading Standard for Laboring, 3502.](#))
- Operating tractors, motor vehicles, forklifts, and engineering equipment where knowledge of a variety of trades is necessary to perform work involving maintenance and upkeep of cemeteries. (See [Job Grading Standard for Cemetery Caretaking, 4754.](#))
- Directing the movement of towed aircraft; securing, refueling, and servicing aircraft; operating aircraft ground support equipment; and moving aircraft on an as needed basis when such duties would not be grade controlling. (See [Job Grading Standard for Aircraft Attending, 8862.](#))
- Operating tractors where knowledge of gardening procedures and skill in growing and tending lawns, flowers, shrubs, and trees are necessary. (See [Job Grading Standard for Gardening, 5003.](#))
- Operating tractor trucks and semi-trailers. (See [Job Grading Standard for Motor Vehicle Operating, 5703.](#))
- Operating heavy tracked or wheel-mounted engineering equipment such as bulldozers, backhoes, road graders, front-end loaders and large industrial tractors with pan or scraper attachments used in **heavy construction and excavation projects**. (See [Job Grading Standard for Engineering Equipment Operating, 5716.](#))

TITLES

Jobs covered by this standard are titled *Tractor Operator*.

However, jobs which primarily involve towing aircraft are titled *Tractor Operator (Aircraft)*.

GRADE LEVELS

This standard describes five levels of nonsupervisory work at grades 5, 6, 7, 8, and 9. The standard does not describe all possible grades at which jobs may be established. If jobs differ substantially from the levels of skill, knowledge, or other work requirements described for the grade levels in this standard, they may be graded above or below the levels described based on sound job grading methods.

NOTE TO USERS

The operation of riding lawn mowers is not covered under this standard. Riding lawn mowers are typically designed as single function grass cutting devices. Operating riding lawn mowers does not require the depth of knowledge or level of skill found in operating the tractors and towed and attached equipment described in this standard. The operation of riding lawn mowers is similar to using heavy, walking-type power mowers as covered in the [Job Grading Standard for Laboring, 3502](#).

TRACTOR OPERATOR, GRADE 5

General: Tractor operators at this grade level operate warehouse-type tractors to move materials and equipment. They tow vehicles such as wheeled carts, trailers, and aircraft ground support equipment. Grade 5 operators connect the towed vehicles to the tractor with basic coupling devices. They perform limited operator maintenance on tractors. Tractor operators work on improved surfaces, transporting materials through warehouses and hangars and on taxiways, parking areas, and roads.

Skill and Knowledge: Grade 5 tractor operators have a working knowledge of tractor controls for starting, stopping, and maneuvering the tractor and towed vehicles in congested areas. For example, they maneuver the tractor and towed vehicles through crowded warehouses and hangars with narrow passageways, stacked materials, and sharp corners. They have knowledge of pick-up and delivery locations within the activity. Operators at this level also have knowledge of operating characteristics of the tractor and the carrying capacity of the towed vehicles. They are skilled in judging clearances, heights, and turning angles of the tractor and towed vehicles. They know the location of grease fittings and fluid reservoirs and are able to grease the vehicles and replenish oil, hydraulic, and other consumable fluids.

Responsibility: Grade 5 tractor operators receive oral and written assignments from a supervisor or higher grade worker. Operators perform duties according to instructions on work orders and shipping documents and follow established pick-up and delivery schedules. Tractor operators at this level are typically assisted further through color coding systems that identify desired delivery points. Operators make routine runs, such as moving aircraft tail assemblies, engines, wings, and rotor blades along designated routes. They insure proper connection of towed vehicles to the tractor and check the security of the load. Tractor operators are responsible for limited operator

maintenance such as checking and replenishing fluids to proper levels and lubricating the equipment. They are also responsible for the safe operation of the tractor, judging turn angles of the tractor and towed vehicles, speed, clearances, cargo weight, and route to be taken. The supervisor checks completed work for compliance with instructions and standard operating procedures.

Physical Effort: Grade 5 tractor operators exert light to moderate physical effort while performing duties such as operating tractors and uncoupling and making couplings between tractors and towed vehicles. The work requires frequent stooping, bending, reaching, and arm and leg movement to operate tractor controls. Operators frequently lift and carry parts and equipment weighing up to 23 kilograms (50 pounds). Occasionally, they move heavier items with assistance of other workers or mechanical lifting devices.

Working Conditions: Grade 5 tractor operators work inside and outside. Operators are subject to drafts, noise, and varying temperatures inside. They are exposed to weather and temperature extremes outside, as well as high noise levels, vibrations, and jolts from the tractor and towed equipment. Operators at this level are exposed to dust, dirt, grease, and fumes. They follow prescribed safety practices and use safety equipment to avoid injury and possible hazards in the work area.

TRACTOR OPERATOR, GRADE 6

General: Tractor operators at this level typically operate farm-type tractors and towed or attached equipment to maintain grounds and road medians and perform farming functions. They frequently operate towed or attached equipment from the seat of the tractor through hydraulic or mechanical controls. Examples of equipment operated at this level are mowers, aerators, plows, harrows, chippers, sprayers, disks, post hole diggers, front-end loading devices, movable dozer blades, and backhoes. The equipment may be powered by direct drive or a power takeoff. Grade 6 level tractor operators make multiple mechanical and hydraulic connections between the towed or attached equipment and the tractor and make numerous equipment adjustments. They perform operator maintenance on tractors and equipment. Tractor operators at this level work on level or rolling terrain in such areas as open fields, parks, orchards, lawns, and along roadways.

In some work situations, grade 6 level tractor operators tow fixed and rotary wing aircraft with required towbars. Operators attach towbars with basic coupling devices. They tow aircraft on taxiways and across runways to park and reposition aircraft in uncongested hangars and parking areas, performing straight in and out moves. Tractor operators work on level and improved surfaces. They move aircraft in hangars and parking areas where few obstacles are present, requiring limited assistance from spotters.

Skill and Knowledge: In comparison to work at the grade 5 level that primarily involves operating tractor controls, grade 6 level work typically requires tractor operators to manipulate both tractor and equipment controls at the same time. For example, tractor operators at the grade 6 level operate tractors while raising and lowering gang mowers or other attached equipment.

They also use skill in operating boom slope mowers to cut grass on slopes while operating the tractor on level ground or along roads. They use knowledge of equipment in making multiple connections from the equipment to the tractor, connecting mechanical drive shafts and hydraulic lines. Operators at this level have skill in operating tractors and equipment between shrubs and trees, along fences and curbs, in snowy or marshy areas, and in areas where tree limbs, bushes, and rocks are more likely to cause clogging or jamming of the equipment. They have skill in performing seeding operations that require straight, uniform rows. Some operators at this level have skill in operating backhoes and front-end loading devices to move trees, dig ditches, load and unload soil, and perform other tasks associated with grounds maintenance. They have skill in adjusting the equipment for various job requirements such as setting the height of mower blades, the depth of plow blades, and the rate of application for seeders and sprayer attachments. Grade 6 operators have knowledge of the operating characteristics of the tractor and towed or attached equipment, such as tractor gears and power ratios, as well as lifting, balancing, braking, and turning capacities. In addition, they use knowledge of equipment capabilities to determine power requirements for various soil conditions and to determine safe operating speeds.

Tractor operators (aircraft) have knowledge of tractor operating characteristics and are skilled in operating the tractor and tractor controls. They are knowledgeable of towed aircraft turning and braking capacities. Tractor operators are knowledgeable of ground traffic control regulations and airfield layout. They have skill in securing towed aircraft by installing wheel chocks, locking devices, blade tie-downs, engine covers, and attaching ground wires. Operators have skill and knowledge in attaching the towbar and in manipulating tractor controls to tow aircraft in open areas.

Responsibility: Grade 6 tractor operators receive written and oral work assignments from a supervisor or a higher grade worker. Operators perform duties according to established methods and receive special instructions such as the depth to plow a field or dig a ditch, spacing between furrows, and depth to plant a crop. They work from detailed instructions such as type of fertilizer to use or the kind of seed to dispense.

Grade 6 operators have greater responsibility than grade 5 operators for selecting appropriate gears, power settings, and speeds for equipment operations, based on various soil conditions. Tractor operators make judgments concerning equipment operations such as the lift capacity, weight, and balance of a backhoe and its load. They are responsible for operator maintenance on tractors and equipment such as checking and replenishing fluids to proper levels, examining and changing filters, changing and sharpening blades, lubricating equipment, and making necessary adjustments. They are responsible for safely operating the tractor and equipment on public roads and at the work site. The supervisor spot checks work after completion to insure compliance with instructions and standard operating procedures and may review work in progress.

Tractor operators involved in aircraft towing receive oral and written instructions from a supervisor or higher grade worker on where to move aircraft. They follow hand signals from other workers while positioning aircraft. Operators at this level are responsible for properly securing aircraft after moves. They are responsible for the safe operation of the tractor and equipment. The supervisor sets priorities and checks work for compliance with established practices or specific instructions.

Physical Effort: In addition to the physical effort described at the [grade 5 level](#), grade 6 tractor operators exert additional effort in operating equipment controls, making more frequent arm and leg movements. In aircraft moves, tractor operators exert light to moderate physical effort while operating tractors, attaching and disconnecting towbars, and securing aircraft in parked position. The work requires frequent stooping, bending, reaching, and climbing on and under aircraft.

Working Conditions: Working conditions at this level are similar to those described at the [grade 5 level](#). However, operators at this level primarily work outside and are exposed to all kinds of weather conditions. Some operators are exposed to chemical dust and sprays and may need to wear protective clothing and respirators.

TRACTOR OPERATOR, GRADE 7

General: Grade 7 level tractor operators typically operate farm-type tractors and towed or attached equipment on steep hills or in rough terrain where there is significant danger of overturning the tractor or equipment. The tractors and equipment operated are the same as those described at the grade 6 level, but operators at this level exercise greater skill and knowledge in the operation of tractors on rough and uneven terrain. Examples of work at this level include contour plowing, planting on steep hills, and building erosion control dams. Unlike grade 6 tractor operators who operate backhoes and front-end loading devices in performing grounds maintenance functions, operators at this level use this equipment in performing earthmoving projects to close tolerances.

In some work situations, grade 7 tractor operators tow and position fixed and rotary wing aircraft. They tow aircraft (with fixed or folded wings) in congested hangars and parking areas with obstacles such as workstands, ground support equipment, and other aircraft.

Skill and Knowledge: Grade 7 level tractor operators have skill and knowledge in the operation of the tractor and manipulation of equipment controls together while compensating for rough terrain features such as steep hills, ravines, holes, and ditches. For example, in contour plowing on steep hills, they watch the path and performance of the plow, make necessary adjustments, and use skill in steering the tractor to ensure the tractor and plow do not tip over. When operating slope mower tractors and attachments, they must use skill in steering the tractor to compensate for the degree of the slope and the stability of the ground. Some tractor operators at this level have skill in backhoe operation. They routinely manipulate backhoe controls for projects requiring close tolerances. Examples include finishing straight walls for graves and digging straight and narrow trenches. They are skilled in backfilling on steep slopes. Tractor operators are skilled in operating front-end loading devices on steep banks, using caution in undercutting high banks to avoid soil slides. Grade 7 operators are able to perform operator maintenance on the tractor and equipment. When operating in rougher terrain and remote work sites, they use these skills with greater frequency.

Tractor operators (aircraft) are skilled in towing and positioning fixed and rotary wing aircraft in crowded hangars. Operators at this level have a working knowledge of the towing characteristics

of aircraft, including landing gear, safety pins, wing locks, braking systems, and tying-down and grounding methods. They use skill and knowledge in attaching the towbar and manipulating the tractor steering to maneuver the aircraft around obstacles. Operators use skill in backing the towed aircraft into position along side of or in between other aircraft with the assistance of spotters. This assistance is limited due to the size of aircraft towed at this level. Most sections of the aircraft are within the sight of the operator.

Responsibility: Tractor operators at this level receive work assignments from a supervisor or a higher grade worker in the form of oral or written instructions. Assignments are typically made on a project basis, leaving most of the details to the discretion of the tractor operator. Because the work is performed on steep and rough terrain, they make more frequent and difficult judgments than required of grade 6 operators. For example, in planning a contour plowing project, grade 7 operators consider contour levels and terrain, in addition to judging soil conditions and plow depth as described at the grade 6 level. They assess terrain requirements and the stability of the tractor and equipment, and are responsible for choosing proper gears, speeds, and angles of turn required to accomplish the work and avoid overturning the tractor. They are responsible for performing operator maintenance on the tractor with increased frequency due to the nature and location of work in remote areas.

Tractor operators (aircraft) at this level receive written or oral instructions from a supervisor or higher grade worker on where to move and position aircraft. These moves require assistance of other workers to direct the tractor operator around obstacles and to aid in positioning the aircraft. Like tractor operators at the grade 6 level, they are responsible for safe towing and positioning of aircraft. However, grade 7 operators exercise greater care in moving aircraft in crowded hangars due to the close proximity of other aircraft and equipment. Supervisors review work in progress and upon completion. Work is checked for compliance with established practices or specific instructions.

Physical Effort: In addition to the physical effort described at the [grade 6 level](#), grade 7 level tractor operators exert additional effort in operating the tractor and manipulating equipment controls to compensate for difficult terrain. They also perform more exacting work such as digging with a backhoe to close tolerances, requiring considerable manipulation of controls. When towing aircraft, tractor operators at this level exert more effort in maneuvering aircraft in congested areas or over unimproved surfaces than operators at the grade 6 level exert in towing aircraft in open areas over improved surfaces.

Working Conditions: In addition to the working conditions described at the [grade 6 level](#), some grade 7 level tractor operators work on steep slopes and in rough terrain and may be subject to injury from falls or overturned tractors and equipment.

TRACTOR OPERATOR (AIRCRAFT), GRADE 8

General: Tractor operators at this grade level operate heavy-duty tow tractors to tow and position a variety of large fixed wing aircraft on taxiways and in crowded hangars. Operators typically use a specialized tow vehicle and towbar to perform precise aircraft positioning required at this level. Work operations require different steering modes which increase maneuverability in close quarters. Equipment operated at this level has one or more of the following steering modes: track mode where only the front wheels steer, coordinated mode where the rear wheels steer the opposite direction of the front wheels, or crab (oblique) mode where all four wheels steer in the same direction. Operators select the appropriate mode based on the angle of movement desired. In addition to other duties described at this level, tractor operators may function as nose walkers or other parts of the moving crew. They often guide the aircraft moving crew or operate the tow tractor through moves in heavily congested areas that require considerable maneuvering of the towed aircraft. Clearances between the towed aircraft and obstacles are out of the line of sight of the tractor operator and require greater reliance on spotters than found at the grade 7 level.

Skill and Knowledge: Tractor operators at this level have a thorough knowledge of complex hook-up, towing, and positioning of large aircraft, using extensive knowledge of tow tractor operating characteristics. They have knowledge of airfield procedures to move aircraft across active runways. Tractor operators are skilled in manipulating tractor controls while making difficult clearance judgments of distant wing and tail sections, while following instructions from the nose walker. Operators maneuver the aircraft around such obstacles as work-stands, ground support equipment, and other aircraft with minimal clearances that are often out of sight. Tractor operators also use skill and knowledge in attaching a variety of towbars to the tractor. At this level, tractor movements are greatly magnified in wing and tail sections of aircraft, requiring skill in exact manipulation of tractor controls. They are also skilled in towing aircraft with limited visibility.

Responsibility: Grade 8 tractor operators receive work assignments from a supervisor or higher grade worker in the form of written or oral instructions. They are responsible for attaching the proper towbar to the aircraft, checking the tractor and towbar for maintenance needs, and insuring that the aircraft is ready to be moved. When functioning as nose walkers, they are responsible for the entire aircraft move, obtaining clearance and directions from the control tower, determining the best path to take, and guiding the tractor operators through the move. Tractor operators make independent judgments and decisions within the framework of oral and written instructions on desired aircraft positioning. Operators are responsible for towing, positioning, chocking, and securing aircraft in parked position. They determine the correct tractor steering mode to use in maneuvering the aircraft. Tractor operators make critical judgments on appropriate towbars, clearances, heights, turning radiuses, reverse steering, speeds, and stopping distances. Work is reviewed in progress and upon completion for compliance with moving and positioning requirements, such as exact placement of the aircraft in a repair area.

Physical Effort: In addition to the physical effort described at the [grade 7 level](#), tractor operators exert more effort in manipulation of tractor controls and stand for long periods of time when functioning as nose walkers.

Working Conditions: Working conditions at this grade level are the same as those described at the [grade 6 level](#). However, grade 8 tractor operators are not exposed to chemical dusts and sprays.

TRACTOR OPERATOR (AIRCRAFT), GRADE 9

General: Tractor operators at this level perform the most difficult aircraft moves that require coordination of the movement of two or more specialized, heavy-duty aircraft tow tractors and towbars. These moves are typically found at depot level facilities in confined areas with multiple aircraft (such as found in rework hangars). Aircraft moved at this level are extremely large and heavy with expansive wing spans, e.g., large transports (C-5's) and strategic aircraft (B-52's). Tow tractors operated at this level have three modes of steering, as described at the grade 8 level. In dual tractor moves, an aircraft moving crew assists two tractor operators in coordinating the manipulation of the controls of the lead and rear tractors to move aircraft at an angle, turning both landing gear at the same time and enabling the aircraft to be maneuvered in a crab-like fashion. Moves at this level require exact maneuvering around such obstacles as tight overhead clearances and other building boundaries, tower light fixtures, workstands, ground support equipment, and other aircraft. Significantly greater skill is required to coordinate and steer tractors in unison for exacting maneuvers of towed aircraft.

Skill and Knowledge: Tractor operators at this level have thorough knowledge of tow tractor operating characteristics and complex coordinated steering requirements of the most difficult dual tractor moves. They have extensive knowledge of allowable angles for the tractor, towbar, and landing gear and are skilled in judging how manipulation of tractor controls will be magnified in the movement of the aircraft. Tractor operators perform dual moves requiring extensive coordination between operators. They have skill in towing with limited visibility. They have skill in positioning aircraft wheels between fixed tie-downs to avoid damaging aircraft tires. Operators are also skilled in compensating tractor steering when landing struts are deflated.

Responsibility: Grade 9 level tractor operators receive work assignments in the form of oral or written instructions from the supervisor. They make independent judgments and decisions on complex aircraft moves after receiving instructions from a supervisor. When tractor operators function as nose walkers, they make critical judgments as to clearances, turning radiuses, speeds, and stopping distances, and choose the best towing path through numerous obstacles. They coordinate the movement of the front and rear tractors and are responsible for the entire aircraft move. Tractor operators choose and attach the proper towbar for each aircraft move, ensuring that the tractor and equipment are not defective and that all safety requirements are met. The supervisor spot checks work in progress and upon completion for exact placement of aircraft.

Physical Effort: Physical effort at this grade level is the same as that described at the [grade 8 level](#).

Working Conditions: Working conditions at this grade level are the same as those described at the [grade 8 level](#).