

Federal Wage System Job Grading Standard for Aircraft Mechanic, 8852

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WORK COVERED

This standard is used to grade all nonsupervisory jobs involved in the maintenance, troubleshooting, repair, overhaul, and modification of fixed and rotary wing aircraft systems, airframes, components and assemblies, where the work requires substantive knowledge of the airframe and aircraft mechanical, pneumatic, and/or electrical systems and their interrelationships. Some work situations within this series may require varying levels of electronics knowledge.

This standard cancels and supersedes the Job Grading Standard for Aircraft Mechanic, 8852, issued February 1969.

WORK NOT COVERED

This standard does not cover work that primarily involves:

- Maintenance, troubleshooting, repair, overhaul, and modification of aircraft engines. (See [Job Grading Standard for Aircraft Engine Mechanic, 8602.](#))
- Maintenance and repair of hydraulic, pneumatic, oxygen, or fuel systems. (See [Fluid Systems Maintenance Job Family, 8200.](#))
- Repair, maintenance, modification, test, and calibration of mechanical, electrical, and pneumatic instruments, flight and engine instruments, and instrument systems. (See [Job Grading Standard for Instrument Mechanic, 3359.](#))
- Refueling and servicing aircraft. (See Job Grading Standard for [Aircraft Attending, 8862.](#))
- Repair, maintenance, modification, or overhaul of aircraft mechanical parts, components, subassemblies, or assemblies removed from the aircraft, which does not require a substantive knowledge of aircraft systems and their interrelationships. (See [Aircraft Mechanical Parts Repairing, 8840.](#))
- Fabrication, modification, repair, assembly, and installation of aircraft sheet metal items. (See [Sheet Metal Mechanic, 3806.](#))
- Maintenance, troubleshooting, repair, overhaul, and modification of aircraft electrical systems or of aircraft electronic systems. (See Job Grading Standard for [Aircraft Electrician, 2892](#), or appropriate series in the [Electronic Equipment Installation and Maintenance Family, 2600.](#))
- Inspection of repairs done on aircraft mechanical, electronic, pneumatic, hydraulic, and other systems, components and devices related to aircraft. (See [Job Grading Standard for Inspectors.](#))

- Leading the work of three or more mechanics assigned on a regular basis. (See [Job Grading Standard for Leader WL/NL.](#))

TITLES

Jobs covered by this standard below grade 10, other than helper and intermediate jobs, are titled *Aircraft Worker*.

Jobs at grade 10 and above are titled *Aircraft Mechanic*.

GRADE LEVELS

This standard does not describe all possible levels at which jobs might be established. If jobs differ substantially from the level of skill, knowledge, and other work requirements described in this standard, they may be graded above or below these grades, based on the application of sound job grading principles.

HELPER AND INTERMEDIATE JOBS

Helper and intermediate jobs in this series are graded by the Office of Personnel Management [Job Grading Standard for Trades Helper](#) and [Intermediate](#) Jobs. Grade 10 is to be used as the "journey-level" grade in applying the Intermediate Job Grading Table. Grade 11 is not the "journey-level" grade for this occupation.

NOTES TO USERS

- ! The basic skills and knowledge of aircraft mechanics are concerned with mechanical, pneumatic and electrical work on flight controls, engine controls, landing gear, etc. Depending on the assignment, there may be additional skills and knowledge required such as sheet metal, electrical wiring, motors and controls, aircraft engines, and aircraft ground support equipment. At the depot level, the work and the knowledge of the overall aircraft and its systems are very specific and limited to the phase at which the aircraft is being worked. Typically, the broader skills mix may be found in flight line maintenance or similar operational/flight oriented assignments. The variety of skills employed does not necessarily have grade level significance.
- ! Typically, work assignments on the smaller, older, or less complex aircraft that are found in the federal inventory are characterized by factors such as: great range and depth of repair work; incomplete, out of date, or very general guidelines written for commercial aircraft; and fabrication of discontinued parts is required or the installation of newer technology on older systems. Conversely, assignments on the larger or more complex aircraft are characterized by more varied types of systems involved in flight, radar/GPS, or armament and have more detailed guidelines on when and how work is to be performed. These variations are within the scope of the grade levels described. As a result, the "type" of aircraft or "variety" of

aircraft worked on are not grade distinguishing characteristics in the application of this standard.

- ! As discussed in the [Introduction to the Federal Wage System](#), a requirement that employees be licensed or certified to perform work (e.g., FAA Certification), or that they certify with their signatures that standards of quality and safety have been met in performing work, does not in itself affect the grade level of a job.
- ! Situations in which the aircraft mechanic may work with no technical supervision are not grade controlling in themselves. There must be a commensurate increase in responsibility as well as skill and knowledge. Journey-level mechanics are expected to work with a certain amount of independence in all situations.
- ! Ongoing technological advancements in the field of electronics will continue to have an impact upon electrical components and devices commonly found in the newer, more complex aircraft covered by this standard. As a consequence, work within this occupation may require general knowledge of electronic theory and basic troubleshooting techniques. For example, when electromechanical controls have been replaced by electronic-based devices, they may be designed so that adjustment and repair can be done in accordance with detailed instructions for which little electronics knowledge is required. Typically, such work would be graded by the [Job Grading Standard for Electronics Mechanic, 2604](#), at or below grade 8. In other cases, the overall complexity of the unit may be greater due to integration of systems, but the electronic devices are generally part of a self-contained unit that would not exceed the complexity described at the grade 10 level in the 2604 standard. Only when electronics knowledge is paramount and/or the work involves installing, troubleshooting, maintaining and repairing electronics equipment and complete operational systems of the complexity described at grade 11 level in the 2604 or other appropriate electronics standards, should it be placed in an appropriate electronics series.

AIRCRAFT WORKER, GRADE 8

General: Grade 8 aircraft workers apply standardized and specific procedures to accomplish tasks of limited complexity. Typical work assignments at this level include the disassembly of aircraft or major components for overhaul or modification. Workers at this level remove major components of aircraft structure or systems such as control surfaces, fairings, access panels, doors, hatches, landing gear assemblies, engines, activator units, tubing, electrical wiring, and control cables. In some work situations, grade 8 workers may further disassemble major components for transfer to various specialty shops and assist in configuration changes, refuel/defuel, and towing. They report unusual wear or damage if observed. They perform repairs of limited complexity such as removing and replacing worn or damaged gaskets, pneudraulic lines and couplings, fuel cells, cables, and pulleys. They follow detailed procedures that specify task sequences, tolerances, etc. Grade 8 workers also install, align, and adjust less complex aircraft systems, subsystems, assemblies and components such as ejection seats, nuclear shielding, or similar self-contained systems that have few adjustments and little interaction with other systems. At this level, they may work as part of a team, under the direction of higher grade

employees, to accomplish larger and more complex operations such as jacking and leveling aircraft, installing and adjusting engines, landing gear assemblies, instrument panels, and flight control systems. Workers at this level may make entries, either manual or automated, in the aircraft records of work accomplished and deficiencies observed.

Skill and Knowledge: Grade 8 aircraft workers are able to recognize a wide variety of parts and components such as gaskets, couplings, control cables, gear boxes and flight control surfaces. They know where these parts and components are installed and the methods of removal and installation so that parts are not damaged or misaligned. They are able to determine when parts and components may be cleaned and reinstalled or must be replaced by examining for visual evidence of wear, damage, or improper repairs. Grade 8 workers are able to read and understand specific directions including disassembly, assembly, and adjustment directions for tasks such as replacing control cables and pulleys, lacing in fuel bladders, and reinstalling hydraulic lines, air ducts, and inspection plates. They have skill in the care and use of hand and power tools used in aircraft work. They select the appropriate tool for the job, e.g., determining whether to use pneumatic wrench, speed wrench, ratchet wrench, or end wrenches, and the pattern of tightening and amount of torque to apply to assure a solid connection without over stressing any parts. Grade 8 workers know the operations and functions of a number of less complex systems and perform functional checks after installation. Workers at this level have skill in locating and correcting such problems as improper travel, or excessive friction or play between parts. They also have skill in the use of measuring instruments such as torque wrenches, micrometers, go-no-go gauges, multimeters, feeler gauges and tensionmeters. Workers at this level have knowledge of the operational and maintenance records, both manual and automated, required for the aircraft and have knowledge of the terminology and format to report work they have performed.

Responsibility: Grade 8 aircraft workers receive detailed oral instructions and written work orders from the supervisor, lead mechanic, or a higher grade employee. On routine assignments, they determine work methods and the use of tools and equipment on their own. Judgments and decisions at this level are guided by clearly described procedures and instructions, and the work consists of recurring steps involved in the disassembly or reassembly of parts, subassemblies, and larger components.

The work is spot-checked during progress and the supervisor or a higher graded worker is available for assistance. Completed work is checked for compliance with instructions, specifications, and standardized shop practices and procedures. New assignments are performed under close review.

Physical Effort: Work assignments require moderate to strenuous effort. Workers must climb, bend, stoop, crawl, and stand for prolonged periods on concrete or metal surfaces. They frequently lift parts and equipment that weigh up to 9 kilograms (20 pounds). Occasionally, they may lift and carry items that weigh about 23 kilograms (50 pounds) with mechanical lifting devices or assistance from other workers, if required.

Working Conditions: Work is performed in hanger areas, outdoors, in parked aircraft, and sometimes in hazardous noise areas. Workers are exposed to extremes in heat, cold, and inclement weather. They often must work in confined spaces and in awkward positions. Dirt, dust, grease, and aircraft fluids are common in the work place. They are exposed to oil, hydraulic fluid, solvents, and hazardous fluids and gases, such as Hydrozine and Halon. Cuts, bruises, muscle strain, and injury from falls off scaffolds, ladders, and aircraft surfaces are possible. They are subject to injury from actuating flight control surfaces such as speed brakes, flaps, horizontal stabilizers, landing gear, tail hook releases and aircraft ordinance. In some work situations, they may be exposed to intake suction and hot exhaust blast.

AIRCRAFT MECHANIC, GRADE 10

General: Unlike grade 8 aircraft workers who accomplish tasks of limited complexity, using standardized and specific procedures, grade 10 aircraft mechanics, install, adjust, align, troubleshoot and perform final functional and operational tests on a variety of major aircraft systems, their assemblies, and components such as airframe, landing gear, power plant, gear boxes, pumps, and hydraulic, pressurization, utility, fuel, oil, pneumatic, and flight control systems. Typical work assignments at this level include installing, aligning, and functionally testing the various major and minor mechanical and pneudraulic systems on an aircraft during overhaul or modification. Work assignments may range from complete aircraft overhauls to routine maintenance and servicing aircraft. Grade 10 aircraft mechanics perform flight line maintenance of assigned and transient operational aircraft, including functional testing, troubleshooting, and repairing all airframe mechanical systems, or post assembly checkout, adjustment, and repair of overhauled and modified aircraft to prepare for and correct deficiencies found on functional check flights. Mechanics at this level check technical guides to assure they include up-to-date changes. They report errors and poorly presented or confusing information. In some work situations, they may be required to run up and taxi aircraft to conduct operational tests.

Skill and Knowledge: In addition to knowledge of a wide variety of parts, components, and less complex assemblies required by grade 8 aircraft workers, grade 10 aircraft mechanics have knowledge of the makeup, operation, installation, and adjustment of a variety of major interrelated and/or integrated aircraft systems, subsystems, and assemblies such as fuel and hydraulic systems, flight control systems, instrumentation systems, engine(s), landing gear assemblies, airframe, and control surfaces. Because of the complicated ways in which these major assemblies, systems, and surfaces are installed, fit, and work together, grade 10 mechanics must have more ability than the grade 8 workers to rig, function test, or troubleshoot the systems; determine when they are operating properly or whether portions of the system must be repaired or replaced; and the type and extent of adjustment and alignment needed. Mechanics at this level have skill in the use of standard and specialized tools and test equipment of the trade including fixtures, templates, scales, teststands and external power sources. They also have skill in reading and understanding data and settings from cockpit instruments and gauges. They know activity supply procedures to be able to initiate requisitions for needed parts and supplies and

have a thorough knowledge of the publication order system to obtain the most up-to-date technical manuals and to propose changes to publications when they find a discrepancy.

Responsibility: Compared to the limited repair and disassembly work performed according to specific instructions at the grade 8 level, aircraft mechanics at the grade 10 level independently determine the nature of trouble and extent of adjustment or repair required on a number of major aircraft systems. Grade 10 mechanics receive work assignments from a supervisor or higher grade mechanic (i.e., crew chief or plane captain) in the form of oral or written instructions or work orders. They may debrief pilots and aircrew, and check operation logs for reports of malfunctions to determine if repairs are needed. Mechanics at this level use judgment to determine the tools, methods, and techniques to complete work assignments. Grade 10 mechanics provide on-the-job training (OJT) to lower grade workers in this series and other individuals on aircraft maintenance practices, technical aspects of new/modified systems and components, and safety procedures.

The training may include giving instructions on tools, materials, devices and instruments used in the trade. They carry out work assignments with little or no review during the progress of the work. They document all work on the aircraft and ensure that the aircraft records are complete. In some work situations, mechanics at this level can be authorized to sign off on work performed by others, clear safety of flight conditions (i.e., Red-X=s) and release the aircraft to service. Technical data and guidelines covering equipment, methods and procedures are usually complete and specific. Final work is spot checked for compliance with directives, specifications, and accepted trade practices.

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

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

AIRCRAFT MECHANIC, GRADE 11

General: This grade level is appropriate when the aircraft mechanic is assigned as the dedicated crew chief or plane captain, and has the primary responsibility for performing, coordinating and/or overseeing the work and any periodic inspections to be done on an aircraft whether it is alone, or with the assistance of other mechanics and/or workers. The grade 11 also is responsible for coordinating the work of other journey-level workers in other trades to work simultaneously on the aircraft. As compared to grade 10 aircraft mechanics who install, adjust, align, and troubleshoot a variety of major aircraft systems, grade 11 aircraft mechanics serve as the technical authority to advise on, examine, and approve all airframe, mechanical, electrical, and pneudraulic repairs to their assigned aircraft. They determine when the nature and scope of repair involves other trades, e.g., engine mechanics, electricians, electronics mechanics, or integrated systems mechanics and coordinate the work of these individuals with the other trades. Grade 11 aircraft mechanics check/review the work of other trades to ensure completion. They

conduct functional tests of repairs/modifications to ensure proper operation. They report malfunctions to appropriate personnel and schedule follow-up work. They are responsible for grounding an aircraft when the severity of a malfunction warrants it and may be responsible for releasing the aircraft to service after repairs are completed and tested.

NOTE: Crew chief or plane captain work that involves aircraft that are non-fielded, prototype or pre-production, and/or extensively modified (*Type 2*) production aircraft that are dedicated to support research, development, test and evaluation, in-service testing of potential replacement items (form, fit, function), and for aircraft/stores compatibility testing should be evaluated at the next higher grade level.

Skill and Knowledge: As the technical authority on assigned aircraft, grade 11 aircraft mechanics must know the theory, operation and integration of all mechanical, pneumatic, electrical, electronic and other operating systems of the assigned aircraft in order to troubleshoot malfunctions from pilots and flight crew reports of discrepancies, as well as from observations during inspections and run-ups. They must know the startup, operation, shutdown, and emergency procedures for the systems and the aircraft; symptoms of normal and abnormal operation; the inter-relationships between operating systems; and activity safety procedures in order to prevent damage to equipment or injury to personnel. They must have sufficient knowledge of the work of associated trades such as sheet metal, painting, aircraft electrical, electronics, and aircraft engine work to determine when work should be assigned to specialized support shops, be able to calculate time and work space required in order to coordinate the work of other mechanics, and determine when the work is properly done and signed off so that the aircraft is airworthy. In some work situations, mechanics at this level may occasionally be required to perform limited replace/repair work on items that are typically associated with other trades while on temporary duty in a travel status. They check all functional and support systems, operate the engine(s), and may run up and taxi the aircraft; determine what systems are malfunctioning; search repair directives, technical orders, and manuals to determine repairs needed; and personally perform or guide other lower graded aircraft mechanics in the performance of repairs. They have skill in the use of all tools of the trade, test equipment, teststands, power sources, cockpit instruments, gauges, and controls so that they can assist lower grade employees as well as operate and repair all aircraft mechanical, electrical, and pneumatic systems.

Grade 11 mechanics have skill in interpreting and applying written guidelines. They are able to analyze changes to the guidelines, as well as maintenance modification orders, to determine material, equipment, and personnel needs and to perform technical reviews of the guidelines, to locate discrepancies or propose improvements to methods or specifications. They have in-depth knowledge of the historical maintenance requirements of assigned aircraft in order to participate in pre-inspection meetings and ensure that any deferred maintenance is included on the schedule. They have skill in the operation of diagnostic and on-board electronic equipment/ systems to identify proper, as well as improper operation and call in journey level personnel from backshops or work teams to complete repairs.

Responsibility: In comparison to the grade 10 aircraft mechanics, who receive general assignments to repair various aircraft systems, grade 11 aircraft mechanics are responsible for

the airworthiness of one or several assigned aircraft and work independently applying broad trade knowledge. This involves the coordination of work efforts of one or two subordinate mechanics and other journey-level mechanics assisting on the aircraft. They run up and test under power the engine(s) and systems, which may include taxiing of aircraft under power. The grade 11 mechanics are responsible for the total airworthiness of assigned aircraft on operational status or that are being prepared for flight test after overhaul or major repair. Mechanics at this level debrief pilots and aircrew, and check operations logs for reports of malfunctions to determine the needed course of action. They are responsible for scheduling maintenance to ensure completion of critical actions and optimum work flow and resource use. They are also responsible for the operational checks/examination and approval of work performed on their assigned aircraft, the interpretation of technical data and guidelines, the recommendation of changes or additions to guidelines and the safety and housekeeping of the aircraft and work area. Mechanics at this level are responsible for recognizing unsafe conditions, grounding the aircraft, clearing safety of flight conditions (e.g., Red-X=s), and determining and updating the aircraft=s status. They may be responsible for releasing the aircraft to service after major system or safety repairs are completed. The supervisor assigns custody of specific aircraft, and may furnish or establish specific work priorities. The supervisor spot checks completed work, and checks work documents for accuracy and compliance with required maintenance and modifications. Only the most difficult and unusual problems are referred to the supervisor.

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

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