U. S. DEPARTMENT OF COMMERCE
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CIVIL AIR REGULATIONS

52.—AIRCRAFT REPAIR STATION RATING



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CIVIL AIR REGULATIONS

52.—AIRCRAFT REPAIR STATION RATING

52.0—PROVISION FOR RATING.—Pursuant to the provisions of the Air Commerce Act requiring the Secretary of Commerce to provide for the re-rating of aircraft as to their airworthiness, aircraft repair stations will be rated as to their competence in various classifications of repair activity in accordance with the following provisions.

52.1—REPAIR STATION CERTIFICATE.

52.10—Application.—Application for a certificate of competency for an aircraft repair station shall be made to the Secretary on Form AC 52–1 supplied for the purpose.

52.11—Minimum Requirements.—A repair station, in order to be eligible for certification, shall show the following:

52.110—*(a)* Facilities and equipment as specified in CAR 52.4 for the classification, or classifications, in which certification is desired.

52.111—*(b)* Certificated personnel as specified in CAR 18.4.

52.12—Issuance.—Upon approval of an application duly made and proofs submitted, an aircraft repair station certificate will be issued by the Secretary. The classification, or classifications, of activity in which the repair station is deemed competent will be set forth in a letter of transmittal which accompanies and is a part of the certificate.

52.120—Aircraft repair stations holding valid approved repair station certificates may operate pursuant to such authority for 6 months after these regulations go into effect. Thereafter aircraft repair station certificates will be issued, upon application, pursuant to these regulations.

52.13—Display.—An aircraft repair station certificate, together with its letter of transmittal as provided for in CAR 52.12, shall be displayed in a prominent place in the repair station.

52.14—Duration.—An aircraft repair station certificate will remain effective for a period of one year from date of issuance or until

52.140—*(a)* it is sooner canceled upon the written request of the owner, or

52.141—*(b)* it is sooner suspended or revoked, or

52.142—*(c)* ownership of the repair station is sooner transferred.

52.15—Renewal.—The term of an aircraft repair station certificate may be renewed for additional periods of one year on application of the holder to the Secretary, provided proof is made satisfactorily to show that the station is in active operation and provided also, that an inspection satisfactorily shows that such station is maintaining the standards required for obtaining such certificate.

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52.16—Non-Transferability.—An aircraft repair station certificate is not transferable.

52.17—Suspension or Revocation.—An aircraft repair station certificate may be suspended or revoked by reason of any of the following on the part of the holder of such certificate or on the part of any employee of such holder:

52.170—*(a)* Violation of the Air Commerce Act or any rule or regulation duly issued thereunder.

52.171—*(b)* Any false statement in an application for a certificate or in any report required to be furnished.

52.172—*(c)* Any demonstration of incompetency, carelessness or negligence, or the use of inferior or improper material.

52.173—*(d)* Failure to maintain the facilities, equipment or personnel required by CAR 52.11.

52.174—*(e)* Use or display of the certificate for fraudulent or improper purpose.

52.175—*(f)* Refusal to submit to inspection upon proper demand by a representative of the Secretary.

52.176—*(g)* Any false, misleading or incomplete statements in advertising pertaining to the certificated repair station.

52.177—*(h)* Performance of any act which is deemed by the Secretary to be contrary to the public safety or interest, or detrimental to the morale of airmen, owners or operators.

52.178—*(i)* Concealment of or withholding of information as to structural defects, damage or faulty workmanship, from the aircraft owner, or from an authorized representative of the Secretary, or from any State or municipal official charged with the duty of enforcing local laws or regulations involving Federal compliance.

52.18—Surrender.—Upon notice from the Secretary of the suspension or revocation of an aircraft repair station certificate, the holder thereof to whom same has been issued shall immediately return such certificate to the Secretary.

52.19—Re-Application.—An applicant for an aircraft repair station certificate which has been denied may apply again at the expiration of 90 days from the date of denial.

52.2—INSPECTION.—The applicant for, or holder of, an aircraft repair station certificate shall offer full cooperation in respect of any inspection which may be made of such repair station as to facilities, equipment, personnel, techniques, practices or workmanship, upon proper demand by a representative of the Secretary prior or subsequent to the issuance of any such certificate.

52.3—ADVERTISING.—A certificated aircraft repair station shall be privileged to advertise its standing as such only with respect to the classification, or classifications, of activity in which it is rated as competent in the letter of transmittal of its certificate. The advertisement shall not fail to incorporate mention of such classification, or classifications.

52.4—CLASSIFICATION REQUIREMENTS.

52.400—General.—Every certificated aircraft repair station shall show the following facilities and equipment:

52.4000—(*a*) A stock room properly set up to insure the proper segregation of materials.

52.4001—(*b*) A proper system of keeping records of all work.

52.4002—(*c*) Facilities and equipment for making small drawings.

52.4003—(*d*) Suitable housing facilities adequately heated and lighted.

52.4004—(*e*) Adequate certificated personnel qualified to perform or supervise the type of work involved.

52.401—Minimum.—The minimum requirements as to facilities and equipment for the various classifications of activity are as set forth hereinafter. An aircraft repair station which does not meet the specific item requirements set forth for a particular class of work may be eligible for certification if it shows adequate and suitable substitutes for such items.

52.402—Class 1—Welded Steel Tube Structure.—A repair station certificated for repair work on welded steel tube structure shall show the following facilities, equipment and supplies in addition to those specified in CAR 52.400. These requirements do not include facilities suitable for the repair of fittings, which shall be in accordance with CAR 52.406.

52.4020—(*a*) Acetylene welding equipment with proper assortment of torch tips and supplies.

52.4021—(*b*) Portable buffer.

52.4022—(*c*) Bench and vise.

52.4023—(*d*) Power-driven emery wheel.

52.4024—(*e*) Hand tools, including hack saws, clamps, micrometers suitable for both tubing and flat stock, level and a full set of reamers.

52.4025—(*f*) Adequate supply of all standard sizes of SAE–1025 and SAE–4130 tubing and sheet available.

52.4026—(*g*) Supplies and equipment for painting and applying protective coatings to the inside as well as to the outside of tubing.

52.4027—(*h*) Portable drill.

52.4028—(*i*) Magnifying glass of at least 4–6 power.

52.4029—(*j*) Long and short trammel rods with adjustable points suitable for aligning fuselage bays.

52.403—Class 2—Wooden Structure, Excluding Box and Laminated Spars, and Wood Covered Fuselages, Wings and Control Surfaces.—A repair station certificated for repair work on wooden structure, excluding box and laminated spars, and wood covered fuselages, wings and control surfaces, shall show the following facilities, equipment and supplies in addition to those specified in CAR 52.400:

52.4030—(*a*) Band and rip saws.

52.4031—(*b*) Planer or joiner, unless factory spars used or satisfactory local mill available.

52.4032—(*c*) Hand tools, including clamps.

52.4033—(*d*) Bench, sawhorses and vise.

52.4034—(*e*) Supply of wood, including aircraft spruce, mahogany plywood and birch plywood, or satisfactory available source.

52.4035—(*f*) Supply of casein or highest quality animal glue, including proper facilities for mixing.

52.4036—(*g*) Supplies and equipment for varnishing and for applying other protective coatings.

52.4037—(*h*) Soldering equipment and other facilities for fabricating drag wires and drag wire lugs.

52.4038—(*i*) Supply of necessary small standard parts.

52.4039—(*j*) Sanding machine.

52.404—Class 3—Fabric Covering.—Repair stations which are certificated for work on fabric covering shall show the following equipment, facilities and supplies in addition to those specified in CAR 52.400:

52.4040—(*a*) Suitable sewing machine.

52.4041—(*b*) Suitable separate space for doping, including proper ventilation, temperature and humidity control.

52.4042—(*c*) Hand tools.

52.4043—(*d*) Supply of fabric and tape suitably stored, or satisfactory available source.

52.4044—(*e*) Doping brushes.

52.4045—(*f*) Supply of dope and thinner properly stored.

52.4046—(*g*) Suitable equipment for spray painting, including compressor and spray gun.

52.405—Class 4—Wood Covered Fuselages, Wings and Control Surfaces, and Box and Laminated Spars.—A repair station which is certificated for work on wood covered fuselages, wings and control surfaces, and box and laminated spars, shall show the following equipment, facilities and supplies in addition to those specified in CAR 52.400:

52.4050—(*a*) An adequate press or a sufficient number of clamps.

52.4051—(*b*) All the items specified in CAR 52.403 except item (*h*).

52.406—Class 5—Steel Fittings.—A repair station which is certificated for work on steel fittings shall show the following equipment, facilities and supplies in addition to those specified in CAR 52.400:

52.4060—(*a*) Acetylene welding equipment with proper assortment of torch tips and supplies.

52.4061—(*b*) Drill press.

52.4062—(*c*) Portable drilling machine with full set of drills.

52.4063—(*d*) Work bench and vise.

52.4064—(*e*) Hand tools, including micrometers, full set of reamers, and tools for laying out fittings.

52.4065—(*f*) Cutting and forming tools.

52.4066—(*g*) An adequate supply of SAE–1025 and SAE–4130 sheet steel available.

52.4067—(*h*) Supplies and equipment for painting and applying protective coatings.

52.4068—(*i*) A supply of necessary small standard parts.

52.4069—(*j*) Magnifying glass of at least 4–6 power.

52.407—Class 6—Aluminum Alloy Structure, Excluding Fittings.—A repair station which is certificated for work on aluminum alloy aircraft structure, excluding fittings, shall show the following equipment, facilities and supplies in addition to those specified in CAR 52.400:

52.40700—(*a*) Complete heat-treating equipment for rivets and structural parts, and forming machinery, or satisfactory available source.

52.40701—(*b*) Rivet dies and air hammer, or the equivalent.

52.40702—(*c*) Hand tools and clamps.

52.40703—(*d*) Work bench and vise.

52.40704—(*e*) Shear for cutting and brake for bending sheet metal.

52.40705—(*f*) Drill press.

52.40706—(*g*) Portable drill machine with full set of drills.

52.40707—(*h*) A suitable supply of aluminum alloy sheets and rivets, or satisfactory available source.

52.40708—(*i*) A supply of necessary small standard parts.

52.40709—(*j*) Pressure indicator and control for air rivet hammer.

52.40710—(*k*) Magnifying glass of at least 4–6 power.

52.408—Class 7—Aluminum Alloy Fittings.—A repair station which is certificated for work on aluminum alloy fittings shall show the following equipment, facilities and supplies in addition to those specified in CAR 52.400:

52.4080—(*a*) Drill press.

52.4081—(*b*) Portable drilling machine with full set of drills.

52.4082—(*c*) Work bench and vise.

52.4083—(*d*) Hand tools including micrometers, full set of reamers, and tools for laying out fittings.

52.4084—(*e*) Cutting and forming tools.

52.4085—(*f*) An adequate supply of aluminum alloy sheet and bar stock, or satisfactory available source.

52.4086—(*g*) Supplies and equipment for painting and for applying protective coatings.

52.4087—(*h*) Heat-treating equipment, or satisfactory available source.

52.4088—(*i*) A supply of necessary small standard parts.

52.4089—(*j*) Magnifying glass of at least 4–6 power.

52.409—Class 8—Assembly.—Assembly operations shall be understood to include such operations as the installation of fuel or oil tanks and piping; the installation of control system parts; the installation of seats, instruments or other such equipment; and the joining together of two or more major components of the airplane. Repair stations which are certificated for this type of work shall show the following facilities, equipment and supplies in addition to those specified in CAR 52.400:

52.40900—(*a*) Soldering equipment and supplies.

52.40901—(*b*) Cable splicing equipment.

52.40902—(*c*) A supply of aircraft bolts, nuts, clevis pins, cotter pins, cable, cable shackles, thimbles and turnbuckles of all the usual sizes, on hand or satisfactory available source.

52.40903—(*d*) Level and protractor for rigging.

52.40904—(*e*) A supply of such hand tools and small parts as are necessary for the purpose intended.

52.40905—(*f*) Step ladders of sufficient height and a satisfactory tail stand.

52.40906—(*g*) Suitable equipment for annealing and bending fuel and oil lines.

52.40907—(*h*) Work bench and vise.

52.40908—(*i*) Long and short trammel rods.

52.40909—(*j*) Plumb bob.

52.40910—(*k*) Tape at least 50 feet long.

52.410—Class 9—Aluminum Alloy Propeller Blades and/or Steel Hubs.—A repair station which is certificated for work on aluminum alloy propeller blades and/or steel hubs, shall show the following equipment, facilities and supplies in addition to those specified in CAR 52.400:

52.41000—(*a*) Balancing stand with knife edge and arbor with suitable mandrels.

52.41001—(*b*) Propeller surface table and mandrels.

52.41002—(*c*) Supply crocus cloth.

52.41003—(*d*) Riffle files.

52.41004—(*e*) Drilling machine with full set of drills.

52.41005—(*f*) A supply of lead wool, and tools suitable for removing and repacking lead wool.

52.41006—(*g*) A supply of caustic soda and nitric acid.

52.41007—(*h*) Precision calipers.

52.41008—(*i*) Protractor for measuring angle of bend, as illustrated in Figure 18 of ACM 18.

52.41009—(*j*) Suitable tanks in which to etch propeller blades.

52.41010—(*k*) Suitable press for straightening propeller blades cold.

52.41011—(*l*) Suitable twisting bars.

52.41012—(*m*) Magnifying glass of at least 4–6 power.

52.41013—(*n*) Portable power grinder and buffer with grinding wheel.

52.41014—(*o*) Manufacturer's dimensioned drawings.

52.41015—(*p*) Means of placing manufacturer's identification numbers and date of repair on blades so that disassembly is unnecessary at the time of inspection.

52.41016—(*q*) Metal face plate and protractor for measuring pitch angles.

52.41017—(*r*) No-go gauge.

52.41018—(*s*) Spline adapter and stand.

52.41019—(*t*) Cadmium plating equipment installed or readily available.

52.411—Class 10—Wooden Propellers.—A repair station which is certificated for work on wooden propellers shall show the following equipment, facilities and supplies in addition to those specified in CAR 52.400:

52.41100—(*a*) Balancing stand with knife edge and arbor with suitable mandrels.

52.41101—(*b*) Propeller bench with vise or arbor for holding propeller while being repaired.

52.41102—(*c*) Wood files.

52.41103—(*d*) Complete soldering equipment.

52.41104—(*e*) Tin snips or metal shears, and shim stock.

52.41105—(*f*) A supply of high grade animal and casein glue, and facilities for mixing.

52.41106—(*g*) A supply of high grade quick drying varnish.

52.41107—(*h*) A supply of tipping material and wood screws, or satisfactory available source.

52.41108—(*i*) Adequate glue press.

52.41109—(*j*) Scrapers.

52.41110—(*k*) Means of placing manufacturer's identification numbers and date of repair on the blades.

52.412—Class 11—Engines.—A repair station which is certificated for work in connection with engine repairs or overhaul shall show the following equipment, facilities and supplies in addition to those specified in CAR 52.400:

52.41200—(*a*) Micrometers, inside and outside.

52.41201—(*b*) Engine disassembly stand.

52.41202—(*c*) Complete set of precision measurement tools, including reamers, taps, and valve grinding tools.

52.41203—(*d*) Propeller hub puller.

52.41204—(*e*) Wash tank and air pressure cleaning equipment located in a space separated from the final assembly space so that fog from cleaning may not settle on parts ready for assembly.

52.41205—(*f*) Turning lathe.

52.41206—(*g*) Sand blast equipment, or readily available source.

52.41207—(*h*) Block and tackle equipment.

52.41208—(*i*) A supply of engine service manuals.

52.41209—(*j*) A supply of standard parts such as nuts, bolts, cotters and gaskets, or satisfactory available source.

52.41210—(*k*) Heating torch.

52.41211—(*l*) Level plate.

52.41212—(*m*) Set of "V" blocks and shim material.

52.41213—(*n*) Height gauge.

52.41214—(*o*) Suitable test stand for running-in engines, or available.

52.41215—(*p*) Supply of engine enamel.

52.41216—(*q*) Welding torch.

52.41217—(*r*) Brass and copper lock wire.

52.41218—(*s*) Record system for showing total hours, hours since last overhaul, tear-down, inspection, parts disposal, parts replacement and log of test run.

52.41219—(*t*) Assembly stand.

52.41220—(*u*) Magnifying glass of at least 4–6 power.

52.41221—(*v*) Equipment suitable for checking alignment of master link, connecting rods and crankshaft.

52.41222—(*w*) High-pressure spark plug testing machine.

52.41223—(*x*) Carburetor test stand.

52.41224—(*y*) Equipment available for testing electrical accessories such as starters and generators.

52.41225—(*z*) Equipment for testing complete ignition systems, or available.

52.41226—(a^1) Portable electric drill press and set of drills.

52.41227—(b^1) Power-driven emery wheel and buffer.

52.413—Class 12—Instruments.—A repair station which is certificated for work in connection with aircraft instrument repair or overhaul shall show the following equipment, facilities and supplies in addition to those specified in CAR 52.400:

52.4130—(*a*) Airspeed indicator test apparatus as follows:
Manometer (inch in tenths scale with a light liquid such as water or kerosene).
Pressure pump (sensitive bulb type).
Vibrator.
Four-way stop-cock with suitable length hose for connections.
Stand for supporting indicator.

52.4131—(*b*) Altimeter test apparatus as follows:
Manometer (mercury) mm scale.
Vacuum pump.
Bell jar.
Vacuum pump plate.
Ascent and descent rate indicator.
Mounting panel.
Vibrator with momentary switch.
Four-way stop-cock with suitable metering valves and suitable length hose for connections.
Pressure altitude chart (millimeters and feet).
Vacuum wax.
Barometer.

52.4132—(*c*) Climb indicator test apparatus as follows:
Manometer (mercury) mm scale.
Vacuum pump.
Bell jar.
Vacuum pump plate.
Ascent and descent rate indicator.
Mounting panel.
Vibrator with momentary switch.
Four-way stop-cock with suitable metering valves and suitable length hose for connections.
Pressure altitude chart (millimeters and feet).
Vacuum wax.
Barometer.
Stop watch.

52.4133—(*d*) Magnetic compass compensating equipment as follows:
Compass compensation equipment (for testing either magnetic or induction compasses) should include either (1), or in lieu thereof, (2), (3), (4) and (5) of the following:

52.41330—(1) Magnetic compass equipped with removable compensating magnets.
Note.—Any serviceable magnetic compass equipped with removable compensating magnets may be used as a master compass, provided the compensating magnets are removed before being used. In no case will a compass, having compensating magnets permanently installed, be used as a master compass.

52.41224—(*y*) Equipment available for testing electrical accessories such as starters and generators.

52.41225—(*z*) Equipment for testing complete ignition systems, or available.

52.41226—(a^1) Portable electric drill press and set of drills.

52.41227—(b^1) Power-driven emery wheel and buffer.

52.413—Class 12—Instruments.—A repair station which is certificated for work in connection with aircraft instrument repair or overhaul shall show the following equipment, facilities and supplies in addition to those specified in CAR 52.400:

52.4130—(*a*) Airspeed indicator test apparatus as follows:
Manometer (inch in tenths scale with a light liquid such as water or kerosene).
Pressure pump (sensitive bulb type).
Vibrator.
Four-way stop-cock with suitable length hose for connections.
Stand for supporting indicator.

52.4131—(*b*) Altimeter test apparatus as follows:
Manometer (mercury) mm scale.
Vacuum pump.
Bell jar.
Vacuum pump plate.
Ascent and descent rate indicator.
Mounting panel.
Vibrator with momentary switch.
Four-way stop-cock with suitable metering valves and suitable length hose for connections.
Pressure altitude chart (millimeters and feet).
Vacuum wax.
Barometer.

52.4132—(*c*) Climb indicator test apparatus as follows:
Manometer (mercury) mm scale.
Vacuum pump.
Bell jar.
Vacuum pump plate.
Ascent and descent rate indicator.
Mounting panel.
Vibrator with momentary switch.
Four-way stop-cock with suitable metering valves and suitable length hose for connections.
Pressure altitude chart (millimeters and feet).
Vacuum wax.
Barometer.
Stop watch.

52.4133—(*d*) Magnetic compass compensating equipment as follows:
Compass compensation equipment (for testing either magnetic or induction compasses) should include either (1), or in lieu thereof, (2), (3), (4) and (5) of the following:

52.41330—(1) Magnetic compass equipped with removable compensating magnets.
Note.—Any serviceable magnetic compass equipped with removable compensating magnets may be used as a master compass, provided the compensating magnets are removed before being used. In no case will a compass, having compensating magnets permanently installed, be used as a master compass.

52.41331—(2) A circular swinging base having a radius at least equal to the length of the largest airplane to be swung.

Note.—The platform should be situated not less than 75 yards from any aircraft and at least 100 yards from any steel structures such as hangars or railroads. Starting with the magnetic north, radii should be laid out every 30°.

52.41332—(3) Special dolly for elevating the tail to approximately flight position.

Note.—The dolly must be rigid and strong enough to hold the airplane while the engine is running at half throttle.

52.41333—(4) Pair of single-wheel blocks.

52.41334—(5) Several 50-pound sand bags.

Note.—For putting across the rear of the fuselage of nose-heavy airplanes.

52.4134—(e) Tachometer test stands as follows:

Veedor liquid tachometer.
Gear box for driving tachometer being tested.
Balance wheel to prevent sudden changes in speed.
Variable speed electric motor.

Any and all rules or regulations made, established, and issued by the Secretary of Commerce pursuant to law as are inconsistent with the provisions of the above specified civil air regulations are hereby repealed.

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