

MODEL R182 & TR182 SERIES SERVICE MANUAL

2-61. SCHEDULED MAINTENANCE CHECKS. (MODEL R182 & TR182 AIRPLANES)

2-62. PROGRESSIVE CARE PROGRAM. (MODEL R182 & TR182 AIRPLANES)

A. Progressive Inspection Program.

- (1) Purpose and Use.
 - (a) As detailed in Federal Aviation Regulation Part 91.409, paragraph (d), airplanes that desire to use a Progressive Inspection Program must be inspected in accordance with an authorized progressive inspection program. This chapter presents the current progressive inspection program for the Cessna Model R182 and TR182, recommended by the Cessna Aircraft Company.

B. Introduction.

- (1) Following is the recommended Progressive Care Program for Model R182 and TR182 airplanes.
- (2) This program is divided into four separate operations which are to be accomplished initially after 50 hours of operation and each 50 hours of operation thereafter. Additional special requirements indicated as Special Inspection, which are required at other intervals are specified separately.
- (3) Recommended progressive care inspection may be accomplished by one of the following.

NOTE

Some 100 HOUR items are covered in Operation 1 and 3, also some 200 HOUR items are covered in Operation 1, 2, 3 and 4. These items are placed here for convenience and expediency of the total inspection. After the first completion of all four Operations, these items will be at the proper intervals.

- (a) NEW DELIVERED AIRCRAFT - A new delivered aircraft must have less than 50 hours total time in service and enough calendar time remaining since the issuance date of the original Airworthiness Certificate to allow the owner/operator to complete a cycle of all four Operations before the first annual inspection becomes due. Operation 1 will be due at 50 hours time in service. Operation 2 will be due at 100 hours. Operation 3 will be due at 150 hours and Operation 4 will be due at 200 hours. There are additional inspection requirements for new aircraft at the FIRST 50 HOUR inspection point. In addition to performing Operation 1, the FIRST 50 HOUR ITEMS listed in the inspection Time Limits Charts in 2-59 must also be performed. After these FIRST 50 HOUR items have been accomplished, they have permanent inspection time limits which are covered in the Operations Schedules.
 - (b) ALL OTHER AIRCRAFT - To qualify other aircraft which have more than 50 hours time in service for the Progressive Inspection Program, conduct a COMPLETE AIRPLANE INSPECTION. Operation 1 will become due 50 hours from the time the COMPLETE AIRPLANE INSPECTION was accomplished.
- (4) Performance of the inspections as listed herein at the specified points will assure compliance with the Inspection Time Limits detailed in 2-59. Special inspections shall be complied with at prescribed intervals and/or intervals coinciding with operations 1 through 4 as outlined in 2-62.
 - (5) An operator may elect to perform the recommended inspections on a schedule other than that specified. Any inspection schedule requiring the various inspection items detailed in this chapter to be performed at a frequency equal to that specified herein or more frequently is acceptable. Any inspection item performed at a time period in excess of that specified herein must be approved by the appropriate regulating agency.
 - (6) As defined in Federal Aviation Regulations Part 91.409,(d) the frequency and detail of the Progressive Inspection Program shall provide for the complete inspection of the airplane within each 12-calendar months. If the airplane is approaching the end of a 12-calendar month period, but the complete cycle of 4 operations has not been accomplished, it will be necessary to complete the remaining operations, regardless of airplane hours before the end of the 12-calendar month period. If the Progressive Inspection Program is to be discontinued, an annual inspection becomes due at the time when any item reaches a maximum of 12 calendar months from the last time it was inspected under the Progressive Inspection Program. Refer to Federal Aviation Regulation Part 91.409(d) for detailed information.

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C. Inspection Time Limitations.

- (1) Each inspection interval may be exceeded by 10 hours or can be performed early at any time prior to the regular interval as provided below:
 - (a) In the event of late compliance of any operation scheduled, the next operation in sequence retains a due point from the time the late operation was originally scheduled.
 - (b) In the event of early compliance of any operation scheduled, that occurs 10 hours or less ahead of schedule, the next phase due point may remain where originally set.
 - (c) In the event of early compliance of any operation scheduled, that occurs more than 10 hours ahead of schedule, the next phase due point must be rescheduled to establish a new due point from the time of early accomplishment.

D. Procedures.

- (1) The following instructions are provided to aid in implementation of the Model R182 & TR182 Series Progressive Care Program Schedule.
 - (a) Use the Progressive Care Program Inspection Chart, provided herein, for each airplane. The chart is to be placed in the airplane flight log book for use as a quick reference for pilots and maintenance personnel in determining when inspections are due and that they are performed within prescribed flight time intervals.
 - (b) Use the Progressive Care Program Component Overhaul and Replacement Log, provided herein, for each airplane. This log is to be kept with the airplane maintenance records and serves as a periodic reminder to maintenance personnel when various components are due for overhaul or replacement.
 - (c) To start the Progressive Care Program, begin conducting the inspections defined herein and refer to Federal Aviation Regulations Part 91.409(d) for procedures to notify the Federal Aviation Administration of the intent to begin a progressive inspection program.
 - (d) Accomplish each inspection and maintenance item per the checklists on the operation sheets of the Progressive Care and Maintenance Schedule. Spaces have been provided for the mechanic's and inspector's signatures as required, as well as any remarks. These are to become part of the maintenance records for each airplane. Each inspection is to be logged in the airplane and/or engine log books. Refer to Federal Aviation Regulation Part 43 for the recommended entry statement.

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PROGRESSIVE CARE PROGRAM (MODEL R182 & TR 182 AIRPLANES) COMPONENT OVERHAUL AND REPLACEMENT RECORD

COMPONENT	DATE	REASON FOR REPLACEMENT	REPLACEMENT PART NUMBER SERIAL NUMBER	NEXT OVERHAUL AIRPLANE HOURS DATE
	X			
	X			
	X			
	X			
	X			
	X			
	X			
	X			
	X			
	X			

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PROGRESSIVE CARE PROGRAM INSPECTION CHART

AIRPLANE MODEL: R182/TR182

REGISTRATION NUMBER:

INSPECTION POINTS	TIME		TIME	
	INSPECTION DUE	INSPECTION ACCOMPLISHED	INSPECTION DUE	INSPECTION ACCOMPLISHED
OPERATION 1				
OPERATION 2				
OPERATION 3				
OPERATION 4				

EXAMPLE:

The airplane in this example was placed on the Progressive Care Program after flying a total of 110 hours. At that point, a complete initial inspection of the airplane was performed. The following steps indicate what will have taken place up through an hourmeter reading of 261 hours.

1. After the initial inspection at 110 hours, the first Inspection Due Column was filled out to show the total flying time at which each of the four (4) operation inspections would be due.
2. As each inspection was performed, the total flying time was recorded in the Inspection Accomplished column. The next Inspection Due space for that particular operation is also filled in at this time. These times will always be 200 hours from the last due point providing the operation was actually accomplished within the ten (10) hours limit.
3. The sample airplane now has a total flying time of 261 hours and the inspection chart shows that a Phase 4 will be due at 310 hours.

INSPECTION POINTS	TIME		TIME	
	INSPECTION DUE	INSPECTION ACCOMPLISHED	INSPECTION DUE	INSPECTION ACCOMPLISHED
OPERATION 1	160	162	360	
OPERATION 2	210	209	409	
OPERATION 3	260	261	460	
OPERATION 4	310			

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OPERATION NO. 1

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- B 15 Seat Tracks and Stops - Inspect seat tracks for condition and security of installation. Check seat track stops for damage and correct location. Ensure inspection of seat rails for cracks EACH 50 HOURS. Refer to Section 3.
-
- C 1 Wing Surfaces and Tips - Inspect for skin damage, loose rivets and condition of paint.
-
- C 2 Wing Struts and Strut Fairings - Check for dents, cracks, loose screws and rivets and condition of paint.
-
- C 7 Vertical and Horizontal Stabilizers, Tips and Tailcone - Inspect externally for skin damage and condition of paint.
-
- C 8 Vertical and Horizontal Stabilizers and Tailcone structure - Inspect bulkheads, spars, ribs and skins for cracks, wrinkles, loose rivets, corrosion or other damage. Inspect vertical and horizontal stabilizer attach bolts for looseness. Retorque as necessary. Check security of inspection covers, fairings and tips.
-
- E 1 Ailerons and Hinges - Check condition, security and operation.
-
- E 2 Aileron Structure, Control Rods, Hinges, Balance Weights, Bellcranks, Linkage, Bolts, Pulleys and Pulley Brackets - Check condition, operation and security of attachment.
-
- E 5 Aileron Controls - Check freedom of movement and proper operation through full travel with and without flaps extended
-
- F 1 Flaps - Check tracks, rollers and control rods for security of attachment. Check operation.
-
- F 2 Flap Actuator Threads - Clean and lubricate. Refer to paragraph 2-52 for detailed instructions.
-
- G 1 Elevator Control - Check freedom of movement and proper operation through full travel with and without flaps extended.
-
- G 2 Elevator, Hinges and Cable Attachment - Check condition, security and operation.
-
- G 4 Elevator/Rudder Downspring - Check structure, bolts, linkage, bellcrank and push-pull tube for condition, operation and security. Check cables for tension, routing, fraying, corrosion and turnbuckle safety. Check travels if cables require tension adjustment or if stops are damaged.
-
- H 1 Elevator Trim Tab and Hinges - Check condition, security and operation.
-
- H 2 Elevator Trim System - Check cables, push-pull rods, bellcranks, pulleys, turnbuckles, fairleads, rub strips, etc. for proper routing, condition and security.
-
- I 1 Rudder - Inspect the rudder skins for cracks and loose rivets, rudder hinges for condition, cracks and security; hinge bolts, hinge bearings, hinge attach fittings and bonding jumper for evidence of damage and wear, failed fasteners and security. Inspect the rudder hinge bolts for proper safetying of nuts with cotter pins. Inspect balance weight for looseness and the supporting structure for damage.
-
- I 3 Rudder, Tips, Hinges and Cable Attachment - Check condition, security and operation.

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CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 1

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

- | | | |
|---|----|--|
| I | 4 | Rudder - Check internal surfaces for corrosion, condition of fasteners and balance weight attachment. |
| J | 1 | Cowling and Cowl Flaps - Inspect for cracks, dents and other damage, security of cowl fasteners and cowl mounted landing lights for attachment. Check cowl flaps for condition, security and operation. |
| J | 2 | Engine - Inspect for evidence of oil and fuel leaks. Wash engine and check for security of accessories. |
| J | 3 | Cowl Flap Controls - Check freedom of movement through full travel. |
| J | 4 | Engine, Propeller Controls and Linkage - Check general condition, freedom of movement through full range. Check for proper travel, security of attachment and for evidence of wear. Check friction locks for proper operation. |
| J | 5 | Ignition Switch and Electrical Harness - Inspect for damage, condition and security. |
| J | 6 | Firewall Structure - Inspect for wrinkles, damage, cracks, sheared rivets, etc. Check cowl shock mounts for condition and security. |
| J | 7 | Engine Shock Mounts, Engine Mount Structure and Ground Straps - Check condition, security and alignment. |
| J | 8 | Induction System - Check security of clamps, tubes and ducting. Inspect for evidence of leakage. |
| J | 9 | Induction Airbox, Valves, Doors and Controls - Remove air filter and inspect hinges, doors, seals and attaching parts for wear and security. Check operation. |
| J | 10 | Induction Air Filter - Remove and clean. Inspect for damage and service per paragraph 2-25. |
| J | 11 | Alternate Induction Air System - Check for obstructions, operation and security. |
| J | 12 | Alternator and Electrical Connections - Check condition and security. Check alternator belts for condition and proper adjustment. |
| J | 14 | Starter, Starter Solenoid and Electrical Connections - Check for condition of starter brushes, brush leads and commutator. |
| J | 15 | Oil Cooler - Check for obstructions, leaks and security of attachment. |
| J | 16 | Exhaust System - Inspect for cracks and security. Air leak check exhaust system. Refer to Sections 11 and 11A, Paragraphs 11-98 and 11-75A, for inspection procedures. |
| J | 17 | Exhaust System (turbocharged engine) - Inspect couplings, seals, clamps and expansion joints for cracks and security. Air leak check exhaust system. Refer to Sections 11 and 11A, Paragraphs 11-98 and 11-75A, for inspection procedures. |
| J | 18 | Auxiliary (Electric) Fuel Pump - Check pump and fittings for condition, operation, security. Remove and clean filter (as applicable). |
| J | 19 | Engine-Driven Fuel Pump - Check for evidence of leakage, security of attachment and general condition. |

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OPERATION NO. 1

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- J 20 Magnetos - Check external condition, security and electrical leads for condition. Check timing to engine and internal timing if engine timing requires adjustment. Compliance with Bendix Service Bulletin 599D is required.
-
- J 22 Ignition Harness and Insulators - Check for proper routing, deterioration and condition of terminals.
-
- J 23 Spark Plugs - Remove, clean analyze, test, gap and rotate top plugs-to-bottom and bottom plugs-to-top.
-
- J 24 Cylinder Compression - Perform differential compression test.
-
- J 25 Carburetor - Drain and flush carburetor bowl, clean inlet strainer and drain plug. Check general condition and security.
-
- J 26 Engine Primer - Check for leakage, operation and security.
-
- J 27 Hoses, Metal Lines and Fittings - Inspect for signs of oil and fuel leaks. Check for abrasions, chafing, security, proper routing and support and for evidence of deterioration.
-
- J 28 Cold and Hot Air Hoses - Check condition, routing and security.
-
- J 29 Engine Cylinders, Rocker Box Covers and Pushrod Housings - Check for fin damage, cracks, oil leakage, security of attachment and general condition.
-
- J 30 Engine Baffles and Seals - Check condition and security of attachment.
-
- J 31 Crankcase, Oil Sump and Accessory Section - Inspect for cracks and evidence of oil leakage. Check bolts and nuts for looseness and retorquing as necessary. Check crankcase breather lines for obstructions, security and general condition.
-
- J 32 Turbocharger (if applicable) -
a. Inspect turbocharger mounting brackets, ducting, linkage and attaching parts for general condition, leakage or damage and security of attachment.
b. Check waste gate, actuator, controller, oil and vent lines, overboost relief valve and compressor housing for leakage, apparent damage, security of attachment and evidence of wear. Check waste gate return spring for condition and security.
-
- J 33 Turbocharger (if applicable) -
a. Remove heat shields and inspect for burned areas, bulges or cracks. Remove tailpipe and ducting - inspect turbine for coking, carbonization, oil deposits and turbine impellers for damage.
-
- J 34 Engine Oil With Oil Filter - Replace filter. Add recommended grade aviation oil to replace oil lost in existing filter.
-
- J 35 Engine Oil Without Oil Filter - Drain oil sump and oil cooler, clean and inspect screens and refill with recommended grade aviation oil.
-
- K 1 Integral Fuel Tanks - Check for evidence of leakage and condition of fuel caps, adapters and placards.
-
- K 3 Fuel Bladders - Check for leaks and security, condition of fuel caps, adapters and placards.

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OPERATION NO. 1

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- | | | |
|-------|----|---|
| K | 5 | Fuel System - Inspect plumbing and components for mounting and security. |
| <hr/> | | |
| K | 6 | Fuel Tank or Bladder Drains - Drain water and sediment. |
| <hr/> | | |
| K | 7 | Fuel Tank Vent Lines and Vent Valves - Check vents for obstruction and proper positioning. Check valves for operation. |
| <hr/> | | |
| K | 9 | Fuel Strainer, Drain Valve and Controls - Check freedom of movement, security and proper operation. Disassemble, flush and clean screen and bowl. |
| <hr/> | | |
| L | 1 | Propeller Governor and Control - Inspect for oil and grease leaks. If leakage is evident, refer to McCauley Service Manual. |
| <hr/> | | |
| L | 2 | Propeller Mounting - Check for security of installation. |
| <hr/> | | |
| L | 3 | Propeller Blades - Inspect for cracks, dents, nicks, scratches, erosion, corrosion or other damage. |
| <hr/> | | |
| L | 4 | Spinner - Check general condition and attachment. |
| <hr/> | | |
| L | 5 | Spinner and Spinner Bulkhead - Remove spinner, wash and inspect for cracks and fractures. |
| <hr/> | | |
| L | 6 | Propeller Mounting Bolts - Inspect mounting bolts and safety-wire for signs of looseness. Retorque mounting bolts as required. |
| <hr/> | | |
| L | 7 | Propeller Hub - Check general condition. |
| <hr/> | | |
| L | 8 | Propeller Governor and Control - Check for security and operation of controls. |
| <hr/> | | |
| M | 2 | Heater Components, Inlets and Outlets - Inspect all lines, connections, ducts, clamps, seals and gaskets for condition, restriction and security. |
| <hr/> | | |
| M | 4 | Pitot Tube and Stall Warning Vane - Check for condition and obstructions. |
| <hr/> | | |
| M | 5 | Pitot Tube Heater Element - Perform operational check. |
| <hr/> | | |
| M | 6 | Propeller Anti-ice Slip Rings, Brushes and Boots - Inspect for condition and security. Perform operational check. |
| <hr/> | | |
| N | 3 | Vacuum Pump - Check for condition and security. Check vacuum system breather line for obstructions, condition and security. |
| <hr/> | | |
| O | 4 | Battery - Check general condition and security. Check level of electrolyte. |
| <hr/> | | |
| O | 5 | Battery Box and Cables - Clean and remove any corrosion. Check cables for routing, support and security of connections. |
| <hr/> | | |
| O | 7 | Alternator Control Unit - Inspect wiring, mounting, condition and wire routing. |
| <hr/> | | |
| O | 10 | External Power Receptacle and Power Cables - Inspect for condition and security. |

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CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 1

SPECIAL INSPECTION AND YEARLY ITEMS

HOURS YEARS

INSPECTION
COMPLETED BY

Please review each of these items for required compliance

		HOURS	YEARS	INSPECTION COMPLETED BY
B	11 Upholstery, Headliner, Trim and Carpeting - Check condition and clean as required.	EACH 400	EACH 1	
D	3 Brake Lines, Wheel Cylinders, Hoses, Clamps and Fittings - Check for leaks, condition and security of hoses for bulges and deterioration. Check brake lines and hoses for proper routing and support.	EACH 400	EACH 1	
D	10 Wheel Bearings - Clean, inspect and lube.	A		
D	20 Powerpack - Hydraulic fluid contamination check.	B		
D	21 Powerpack - Check condition and wear of brushes in servo motor.	C		
D	23 Landing Gear System - Overhaul main gear downlock actuators, main and nose gear actuators, landing gear selector valve, emergency hand pump and pressure switch. Replace all rubber goods.		D	
D	24 Brake System - Overhaul brake discs, parking brake system, wheel cylinders and master cylinders. Replace brake pads and all rubber goods.		D	
E	4 Autopilot Rigging - Check per Avionics Installation Manual.	E	EACH 1	
H	5 Elevator Trim Tab Actuator - Clean, lubricate and check free-play.	F		
J	4 Engine, Propeller Controls and Linkage - Check general condition, freedom of movement through full range. Check for proper travel, security of attachment and for evidence of wear. Check friction locks for proper operation.		G	
J	10 Induction Air Filter - Remove and clean. Inspect for damage and service per paragraph 2-25.	H		
J	13 Alternator - Check brushes, leads, commutator or slip ring for wear.		I	
J	14 Starter, Starter Solenoid and Electrical Connections - Check for condition of starter brushes, brush leads and commutator.		J	
J	21 Magnetos - Timing Procedures and intervals, lubrication and overhaul procedures.	K		
J	27 Hoses, Metal Lines and Fittings - Inspect for signs of oil and fuel leaks. Check for abrasions, chafing, security, proper routing and support and for evidence of deterioration.		L	
J	34 Engine Oil With Oil Filter - Replace filter. Add recommended grade aviation oil to replace oil lost in existing lilter.	M		
J	35 Engine Oil Without Oil Filter - Drain oil sump and oil cooler, clean and inspect screens and refill with recommended grade aviation oil.	M		
J	36 Engine Oil With Oil Filter - Drain oil sump and refill with recommended grade aviation oil.	M		
K	2 Integral Fuel Tanks - Drain fuel and check tank interior and outlet screens.	N		
K	4 Fuel Bladders - Drain fuel and check for wrinkles that would retain contaminants or liquid, security of attachment and condition of outlet screens.	N		
K	10 Fuel Quantity Indicators - Check for damage, security of installation and perform accuracy test.		EACH 1	
L	9 Propeller Assembly - Overhaul (See McCauley Service Manual; refer to list of publication).	O		

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OPERATION NO. 1

SPECIAL INSPECTION AND YEARLY ITEMS

HOURS YEARS

INSPECTION
COMPLETED BY

Please review each of these items for required compliance

M	1	Ventilation System - Inspect clamps, hoses and valves for condition and security.	400	EACH 1	
M	9	Oxygen Cylinder - Inspect for condition, check hydrostatic test date and perform hydrostatic test, if due.		EACH 5	
N	4	Vacuum System Air Filter - Inspect for damage, deterioration and contamination. Clean or replace, if required. NOTE: Smoking will cause premature filter clogging.	P		
N	5	Vacuum System relief Valve - Inspect for condition and security.	Q		
N	10	Airspeed Indicator, Vertical Speed Indicator and Magnetic Compass - Calibrate.		EACH 2	
N	11	Altimeter and Static System - Inspect in accordance with FAR Part 91.411.		EACH 2	
O	4	Battery - Check general condition and security. Check level of electrolyte.	R		

Special Inspections Legends:

- A. First 100 hours and each 500 hours thereafter. More often if operated under prevailing wet or dusty conditions.
- B. At first 50 hours, first 100 hours, and each 500 hours thereafter, or one year, whichever comes first.
- C. Each 500 hours, and whenever improper operation is suspected. Replace brushes when worn down to 0.25 inch or less.
- D. Serial R18200001 thru R18200583 and FR18200001 thru FR18200025: Each 5 years. Serial R18200584 and On and FR18200026 thru FR18200070: Overhaul components and replace rubber goods On-Condition basis.
- E. Each 600 hours or 1 year, whichever comes first.
- F. Lubrication of the actuator is required each 1000 hours or 3 years, whichever comes first. See figure 2-5 for grease specification.
- G. Lubricate each 100 hours (except in extreme dusty conditions). These controls are not repairable and should be replaced every 1500 hours or sooner if required.
- H. Clean filter per paragraph 2-25. Replace paper filters at least each 500 hours.
- I. Inspect each 500 hours.
- J. For Prestolite starters only, inspect the commutator and brushes every 1500 hours.
- K. At the first 25 hours, first 50 hours, first 100 hours and thereafter at each 100 hours, the contact breaker point compartment and magneto-to-engine timing is correct within plus zero degrees to minus two degrees, internal timing need not be checked. If timing is out of tolerance, remove magneto and set internal timing, then install and time to the engine. Refer to Section 11 or 11A and the magneto manufacturers service instructions for magneto timing procedures.
- L. Replace engine compartment rubber hoses (Cessna installed only) every five years or at engine overhaul, whichever occurs first. This does not include drain hoses. Hoses which are beyond these limits and are in a serviceable condition, must be placed on order immediately and then be replaced within 120 days after receiving the new hose(s) from Cessna. Replace drain hoses on condition. Engine flexible hoses (Lycoming installed) (Refer to Lycoming Maintenance Manual and Lycoming Engine Service Bulletins).
- M. First 25 hours: Refill with straight grade mineral oil and use until a total of 50 hours have accumulated, or oil consumption has stabilized. Change oil, replace filter, and refill sump with recommended grade of ashless dispersant oil. Change oil and replace filter at least every six months, regardless of accumulated hours.
- N. Each 1000 hours.
- O. See McCauley Service Manual; refer to list of publication.
- P. Replace every 500 hours.
- Q. Replace filter each 100 hours.
- R. Check electrolyte level and clean battery box each 100 hours or 90 days.

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OPERATION NO. 2

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- B 1 Fuselage Surface - Inspect for skin damage, loose rivets, condition of paint and check pitot-static ports and drain holes for obstruction. Inspect covers and fairings for security.
-
- B 6 Emergency Locator Transmitter - Inspect for security of attachment and check operation by verifying transmitter output. Check cumulative time and useful life of batteries in accordance with FAR Part 91.207. Refer to Section 16 Emergency Locator Transmitter - Checkout Interval.
-
- B 8 Pilot's and Copilot's Inertia Reels - Inspect for security of installation, proper operation and evidence of damage.
-
- B 9 Seats, Seat Belts, and Shoulder Harnesses - Check general condition and security. Check operation of seat stops and adjustment mechanism. Inspect belts for condition and security of fasteners.
-
- B 10 Windows, Windshield, Doors and Seals - Inspect general condition. Check latches, hinges and seals for condition, operation and security of attachment.
-
- B 12 Flight Controls - Check freedom of movement and proper operation through full travel with and without flaps extended. Check electric trim controls for operation (as applicable.)
-
- B 13 Aileron, Elevator and Rudder Stops - Check for damage and security. Compliance with Cessna Service Letter SE80-65 is required.
-
- B 14 Portable Hand Fire Extinguisher - Inspect for proper operating pressure, condition, security of installation and servicing date.
-
- B 15 Seat Tracks and Stops - Inspect seat tracks for condition and security of installation. Check seat track stops for damage and correct location. Ensure inspection of seat rails for cracks EACH 50 HOURS. Refer to Section 3.
-
- B 17 Fuel Line and Selector Valve Drain(s) - Remove plug and drain.
-
- D 1 Brakes, Master Cylinders and Parking Brake - Check master cylinders and parking brake mechanism for condition and security. Check fluid level and test operation of toe and parking brake.
-
- D 2 Main Gear Tubular Struts - Inspect for cracks, dents, corrosion, condition of paint or other damage. Check axles for condition and security.
-
- D 4 Wheels, Brake Discs and Linings - Inspect for wear, cracks, warps, dents or other damage. Check wheel through-bolts and nuts for looseness.
-
- D 5 Tires - Check tread wear and general condition. Check for proper inflation.
-
- D 6 Main Landing Gear Strut-to-Pivot Attachment - Check for damage, cracks, loose rivets, bolts and nuts and security of attachment.
-
- D 7 Nose Gear Steering Mechanism - Check for wear, security and proper rigging.

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OPERATION NO. 2

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- D 8 Nose Gear - Inspect torque links, steering rods and boots for condition and security of attachment. Check strut for evidence of leakage and proper extension. Check strut barrel for corrosion, pitting, and cleanliness. Check shimmy damper and/or bungees for operation, leakage and attach points for wear and security.
-
- D 9 Nose Gear Fork - Inspect for cracks, general condition and security of attachment.
-
- D 11 Nose Gear Attachment Structure - Inspect for cracks, corrosion or other damage and security of attachment.
-
- D 12 Landing Gear - Perform five fault-free cycles.
-
- D 13 Main Landing Gear - Check downlock engagement.
-
- D 14 Landing Gear System - Check adjustment of main and nose gear up and down switches and operation of gear position indicator.
-
- D 15 Throttle-Operated Gear Warning System - Check condition of wiring and security of components. Perform rigging check (refer to Section 5).
-
- D 16 Nose Gear Doors and Linkage - Check for .25 inch minimum clearance throughout up and down cycles, and proper fit when closed. Check linkage for wear, damaged bearings, distortion and superficial damage.
-
- D 17 Hydraulic System - Check all components for leaks and external damage to components or mounting structure.
-
- D 19 Powerpack - Clean self-relieving check valve filter.
-
- D 22 Powerpack - Perform hydraulic pressure checks of primary relief valve, thermal relief valve and pressure switch.
-
- J 1 Cowling and Cowl Flaps - Inspect for cracks, dents and other damage, security of cowl fasteners and cowl mounted landing lights for attachment. Check cowl flaps for condition, security and operation.
-
- J 2 Engine - Inspect for evidence of oil and fuel leaks. Wash engine and check for security of accessories.
-
- J 3 Cowl Flap Controls - Check freedom of movement through full travel.
-
- J 4 Engine, Propeller Controls and Linkage - Check general condition, freedom of movement through full range. Check for proper travel, security of attachment and for evidence of wear. Check friction locks for proper operation.
-
- J 8 Induction System - Check security of clamps, tubes and ducting. Inspect for evidence of leakage.
-
- J 11 Alternate Induction Air System - Check for obstructions, operation and security.
-
- J 12 Alternator and Electrical Connections - Check condition and security. Check alternator belts for condition and proper adjustment.
-
- J 15 Oil Cooler - Check for obstructions, leaks and security of attachment.
-
- J 16 Exhaust System - Inspect for cracks and security. Air leak check exhaust system. Refer to Sections 11 and 11A, Paragraphs 11-98 and 11-75A, for inspection procedures.

MODEL R182 & TR182 SERIES SERVICE MANUAL

CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 2

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- J 17 Exhaust System (turbocharged engine) - Inspect couplings, seals, clamps and expansion joints for cracks and security. Air leak check exhaust system. Refer to Sections 11 and 11A, Paragraphs 11-98 and 11-75A, for inspection procedures.
-
- J 27 Hoses, Metal Lines and Fittings - Inspect for signs of oil and fuel leaks. Check for abrasions, chafing, security, proper routing and support and for evidence of deterioration.
-
- J 30 Engine Baffles and Seals - Check condition and security of attachment.
-
- J 32 Turbocharger (if applicable) -
a. Inspect turbocharger mounting brackets, ducting, linkage and attaching parts for general condition, leakage or damage and security of attachment.
b. Check waste gate, actuator, controller, oil and vent lines, overboost relief valve and compressor housing for leakage, apparent damage, security of attachment and evidence of wear. Check waste gate return spring for condition and security.
-
- J 34 Engine Oil With Oil Filter - Replace filter. Add recommended grade aviation oil to replace oil lost in existing filter.
-
- J 35 Engine Oil Without Oil Filter - Drain oil sump and oil cooler, clean and inspect screens and refill with recommended grade aviation oil.
-
- J 36 Engine Oil With Oil Filter - Drain oil sump and refill with recommended grade aviation oil.
-
- K 6 Fuel Tank or Bladder Drains - Drain water and sediment.
-
- K 8 Fuel Selector Valve - Check controls for detent in each position, security of attachment and for proper placarding.
-
- L 1 Propeller Governor and Control - Inspect for oil and grease leaks. If leakage is evident, refer to McCauley Service Manual.
-
- L 2 Propeller Mounting - Check for security of installation.
-
- L 3 Propeller Blades - Inspect for cracks, dents, nicks, scratches, erosion, corrosion or other damage.
-
- L 4 Spinner - Check general condition and attachment.
-
- M 4 Pitot Tube and Stall Warning Vane - Check for condition and obstructions.
-
- M 5 Pitot Tube Heater Element - Perform operational check.
-
- M 6 Propeller Anti-ice Slip Rings, Brushes and Boots - Inspect for condition and security. Perform operational check.
-
- N 1 Vacuum System - Inspect for condition and security.
-
- N 2 Vacuum System Hoses - Inspect for hardness, deterioration, looseness or collapsed hoses.
-
- N 4 Vacuum System Air Filter - Inspect for damage, deterioration and contamination. Clean or replace, if required.
NOTE: Smoking will cause premature filter clogging.
-
- N 5 Vacuum System relief Valve - Inspect for condition and security.

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CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 2

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- N 6 Instruments - Check general condition and markings for legibility.
-
- O 2 Instrument, Cabin, Navigation, Beacon, Strobe, and Landing Lights - Check operation, condition of lens and security of attachment.
-
- O 3 Circuit Breakers and Fuses - Check operation and condition. Check for required number of spare fuses.
-
- Q Perform the Following Operational Check:
-
- Q 1 Brakes - Test toe brakes and parking brake for proper operation.

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CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 2

SPECIAL INSPECTION AND YEARLY ITEMS

HOURS YEARS

INSPECTION
COMPLETED BY

Please review each of these items for required compliance

		HOURS	YEARS	INSPECTION COMPLETED BY
B	11 Upholstery, Headliner, Trim and Carpeting - Check condition and clean as required.	EACH 400	EACH 1	
D	3 Brake Lines, Wheel Cylinders, Hoses, Clamps and Fittings - Check for leaks, condition and security of hoses for bulges and deterioration. Check brake lines and hoses for proper routing and support.	EACH 400	EACH 1	
D	10 Wheel Bearings - Clean, inspect and lube.	A		
D	20 Powerpack - Hydraulic fluid contamination check.	B		
D	21 Powerpack - Check condition and wear of brushes in servo motor.	C		
D	23 Landing Gear System - Overhaul main gear downlock actuators, main and nose gear actuators, landing gear selector valve, emergency hand pump and pressure switch. Replace all rubber goods.		D	
D	24 Brake System - Overhaul brake discs, parking brake system, wheel cylinders and master cylinders. Replace brake pads and all rubber goods.		D	
E	4 Autopilot Rigging - Check per Avionics Installation Manual.	E	EACH 1	
H	5 Elevator Trim Tab Actuator - Clean, lubricate and check free-play.	F		
J	4 Engine, Propeller Controls and Linkage - Check general condition, freedom of movement through full range. Check for proper travel, security of attachment and for evidence of wear. Check friction locks for proper operation.		G	
J	10 Induction Air Filter - Remove and clean. Inspect for damage and service per paragraph 2-25.	H		
J	13 Alternator - Check brushes, leads, commutator or slip ring for wear.		I	
J	14 Starter, Starter Solenoid and Electrical Connections - Check for condition of starter brushes, brush leads and commutator.		J	
J	21 Magnetos - Timing Procedures and intervals, lubrication and overhaul procedures.	K		
J	27 Hoses, Metal Lines and Fittings - Inspect for signs of oil and fuel leaks. Check for abrasions, chafing, security, proper routing and support and for evidence of deterioration.		L	
J	34 Engine Oil With Oil Filter - Replace filter. Add recommended grade aviation oil to replace oil lost in existing filter.	M		
J	35 Engine Oil Without Oil Filter - Drain oil sump and oil cooler, clean and inspect screens and refill with recommended grade aviation oil.	M		
J	36 Engine Oil With Oil Filter - Drain oil sump and refill with recommended grade aviation oil.	M		
K	2 Integral Fuel Tanks - Drain fuel and check tank interior and outlet screens.	N		
K	4 Fuel Bladders - Drain fuel and check for wrinkles that would retain contaminants or liquid, security of attachment and condition of outlet screens.	N		
K	10 Fuel Quantity Indicators - Check for damage, security of installation and perform accuracy test.		EACH 1	
L	9 Propeller Assembly - Overhaul (See McCauley Service Manual; refer to list of publication).	O		

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OPERATION NO. 2

SPECIAL INSPECTION AND YEARLY ITEMS HOURS YEARS INSPECTION COMPLETED BY
Please review each of these items for required compliance

M	1	Ventilation System - Inspect clamps, hoses and valves for condition and security.	400	EACH 1	
M	9	Oxygen Cylinder - Inspect for condition, check hydrostatic test date and perform hydrostatic test, if due.		EACH 5	
N	4	Vacuum System Air Filter - Inspect for damage, deterioration and contamination. Clean or replace, if required. NOTE: Smoking will cause premature filter clogging.	P		
N	5	Vacuum System relief Valve - Inspect for condition and security.	Q		
N	10	Airspeed Indicator, Vertical Speed Indicator and Magnetic Compass - Calibrate.		EACH 2	
N	11	Altimeter and Static System - Inspect in accordance with FAR Part 91.411.		EACH 2	
O	4	Battery - Check general condition and security. Check level of electrolyte.	R		

Special Inspections Legends:

- A. First 100 hours and each 500 hours thereafter. More often if operated under prevailing wet or dusty conditions.
- B. At first 50 hours, first 100 hours, and each 500 hours thereafter, or one year, whichever comes first.
- C. Each 500 hours, and whenever improper operation is suspected. Replace brushes when worn down to 0.25 inch or less.
- D. Serial R18200001 thru R18200583 and FR18200001 thru FR18200025: Each 5 years. Serial R18200584 and On and FR18200026 thru FR18200070: Overhaul components and replace rubber goods On-Condition basis.
- E. Each 600 hours or 1 year, whichever comes first.
- F. Lubrication of the actuator is required each 1000 hours or 3 years, whichever comes first. See figure 2-5 for grease specification.
- G. Lubricate each 100 hours (except in extreme dusty conditions). These controls are not repairable and should be replaced every 1500 hours or sooner if required.
- H. Clean filter per paragraph 2-25. Replace paper filters at least each 500 hours.
- I. Inspect each 500 hours.
- J. For Prestolite starters only, inspect the commutator and brushes every 1500 hours.
- K. At the first 25 hours, first 50 hours, first 100 hours and thereafter at each 100 hours, the contact breaker point compartment and magneto-to-engine timing is correct within plus zero degrees to minus two degrees, internal timing need not be checked. If timing is out of tolerance, remove magneto and set internal timing, then install and time to the engine. Refer to Section 11 or 11A and the magneto manufacturers service instructions for magneto timing procedures.
- L. Replace engine compartment rubber hoses (Cessna installed only) every five years or at engine overhaul, whichever occurs first. This does not include drain hoses. Hoses which are beyond these limits and are in a serviceable condition, must be placed on order immediately and then be replaced within 120 days after receiving the new hose(s) from Cessna. Replace drain hoses on condition. Engine flexible hoses (Lycoming installed) (Refer to Lycoming Maintenance Manual and Lycoming Engine Service Bulletins).
- M. First 25 hours: Refill with straight grade mineral oil and use until a total of 50 hours have accumulated, or oil consumption has stabilized. Change oil, replace filter, and refill sump with recommended grade of ashless dispersant oil. Change oil and replace filter at least every six months, regardless of accumulated hours.
- N. Each 1000 hours.
- O. See McCauley Service Manual; refer to list of publication.
- P. Replace every 500 hours.
- Q. Replace filter each 100 hours.
- R. Check electrolyte level and clean battery box each 100 hours or 90 days.

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CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 3

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- B 15 Seat Tracks and Stops - Inspect seat tracks for condition and security of installation. Check seat track stops for damage and correct location. Ensure inspection of seat rails for cracks EACH 50 HOURS. Refer to Section 3.
-
- C 1 Wing Surfaces and Tips - Inspect for skin damage, loose rivets and condition of paint.
-
- C 2 Wing Struts and Strut Fairings - Check for dents, cracks, loose screws and rivets and condition of paint.
-
- C 3 Wing Spar and Wing Strut Fittings - Check for evidence of wear. Check attach bolts for indications of looseness and retorque as required.
-
- C 4 Wing Structure - Inspect spars, ribs, skins and stringers for cracks, wrinkles, loose rivets, corrosion or other damage.
-
- C 5 Metal Lines, Hoses, Clamps and Fittings - Check for leaks, condition and security. Check for proper routing and support.
-
- C 6 Wing Access Plates - Check for damage and security of installation.
-
- C 7 Vertical and Horizontal Stabilizers, Tips and Tailcone - Inspect externally for skin damage and condition of paint.
-
- C 8 Vertical and Horizontal Stabilizers and Tailcone structure - Inspect bulkheads, spars, ribs and skins for cracks, wrinkles, loose rivets, corrosion or other damage. Inspect vertical and horizontal stabilizer attach bolts for looseness. Retorque as necessary. Check security of inspection covers, fairings and tips.
-
- E 1 Ailerons and Hinges - Check condition, security and operation.
-
- E 2 Aileron Structure, Control Rods, Hinges, Balance Weights, Bellcranks, Linkage, Bolts, Pulleys and Pulley Brackets - Check condition, operation and security of attachment.
-
- E 3 Ailerons and Cables - Check operation and security of stops. Check cables for tension, routing, fraying, corrosion and turnbuckle safety. Check travel if cable tension requires adjustment or if stops are damaged. Check fairleads and rub strips for condition.
-
- E 5 Aileron Controls - Check freedom of movement and proper operation through full travel with and without flaps extended.
-
- F 1 Flaps - Check tracks, rollers and control rods for security of attachment. Check operation.
-
- F 2 Flap Actuator Threads - Clean and lubricate. Refer to paragraph 2-52 for detailed instructions.
-
- F 3 Flap Structure, Linkage, Bellcranks, Pulleys and Pulley Brackets - Check for condition, operation and security.
-
- F 4 Wing Flap Control - Check operation through full travel and observe Flap Position indicator for proper indication.
-
- F 5 Throttle-Operated Flap Warning System - Check condition of wiring and security of components. Perform rigging check (refer to Section 5).
-
- F 6 Flaps and Cables - Check cables for proper tension, routing, fraying, corrosion and turnbuckle safety. Check travel if cable tension requires adjustment.

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OPERATION NO. 3

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- F 7 Flap Motor, Actuator and Limit Switches (electric flaps) -
Check wiring and terminals for condition and security.
Check actuator for condition and security.
-
- G 1 Elevator Control - Check freedom of movement and proper
operation through full travel with and without flaps
extended.
-
- G 2 Elevator, Hinges and Cable Attachment - Check condition,
security and operation.
-
- G 4 Elevator/Rudder Downspring - Check structure, bolts,
linkage, bellcrank and push-pull tube for condition,
operation and security. Check cables for tension, routing,
fraying, corrosion and turnbuckle safety. Check travels if
cables require tension adjustment or if stops are damaged.
-
- H 1 Elevator Trim Tab and Hinges - Check condition, security
and operation.
-
- H 2 Elevator Trim System - Check cables, push-pull rods,
bellcranks, pulleys, turnbuckles, fairleads, rub strips, etc.
for proper routing, condition and security.
-
- H 4 Elevator Trim Tab Stop Blocks - Inspect for damage and
security.
-
- H 6 Elevator Trim Tab Actuator - Free-Play limits inspection.
Refer to Section 9 for cleaning, inspection and repair
procedures.
-
- I 1 Rudder - Inspect the rudder skins for cracks and loose
rivets, rudder hinges for condition, cracks and security;
hinge bolts, hinge bearings, hinge attach fittings and
bonding jumper for evidence of damage and wear, failed
fasteners and security. Inspect the rudder hinge bolts for
proper safetying of nuts with cotter pins. Inspect balance
weight for looseness and the supporting structure for
damage.
-
- I 3 Rudder, Tips, Hinges and Cable Attachment - Check
condition, security and operation.
-
- I 4 Rudder - Check internal surfaces for corrosion, condition of
fasteners and balance weight attachment.
-
- J 1 Cowling and Cowl Flaps - Inspect for cracks, dents and
other damage, security of cowl fasteners and cowl mounted
landing lights for attachment. Check cowl flaps for
condition, security and operation.
-
- J 2 Engine - Inspect for evidence of oil and fuel leaks. Wash
engine and check for security of accessories.
-
- J 3 Cowl Flap Controls - Check freedom of movement through
full travel.
-
- J 4 Engine, Propeller Controls and Linkage - Check general
condition, freedom of movement through full range. Check
for proper travel, security of attachment and for evidence of
wear. Check friction locks for proper operation.
-
- J 5 Ignition Switch and Electrical Harness - Inspect for damage,
condition and security.
-
- J 8 Induction System - Check security of clamps, tubes and
ducting. Inspect for evidence of leakage.
-
- J 9 Induction Airbox, Valves, Doors and Controls - Remove air
filter and inspect hinges, doors, seals and attaching parts
for wear and security. Check operation.

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CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 3

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

- | | | |
|---|----|--|
| J | 10 | Induction Air Filter - Remove and clean. Inspect for damage and service per paragraph 2-25. |
| J | 11 | Alternate Induction Air System - Check for obstructions, operation and security. |
| J | 12 | Alternator and Electrical Connections - Check condition and security. Check alternator belts for condition and proper adjustment. |
| J | 14 | Starter, Starter Solenoid and Electrical Connections - Check for condition of starter brushes, brush leads and commutator. |
| J | 15 | Oil Cooler - Check for obstructions, leaks and security of attachment. |
| J | 16 | Exhaust System - Inspect for cracks and security. Air leak check exhaust system. Refer to Sections 11 and 11A, Paragraphs 11-98 and 11-75A, for inspection procedures. |
| J | 17 | Exhaust System (turbocharged engine) - Inspect couplings, seals, clamps and expansion joints for cracks and security. Air leak check exhaust system. Refer to Sections 11 and 11A, Paragraphs 11-98 and 11-75A, for inspection procedures. |
| J | 18 | Auxiliary (Electric) Fuel Pump - Check pump and fittings for condition, operation, security. Remove and clean filter (as applicable). |
| J | 19 | Engine-Driven Fuel Pump - Check for evidence of leakage, security of attachment and general condition. |
| J | 20 | Magnetos - Check external condition, security and electrical leads for condition. Check timing to engine and internal timing if engine timing requires adjustment. Compliance with Bendix Service Bulletin 599D is required. |
| J | 22 | Ignition Harness and Insulators - Check for proper routing, deterioration and condition of terminals. |
| J | 23 | Spark Plugs - Remove, clean analyze, test, gap and rotate top plugs-to-bottom and bottom plugs-to-top. |
| J | 25 | Carburetor - Drain and flush carburetor bowl, clean inlet strainer and drain plug. Check general condition and security. |
| J | 26 | Engine Primer - Check for leakage, operation and security. |
| J | 27 | Hoses, Metal Lines and Fittings - Inspect for signs of oil and fuel leaks. Check for abrasions, chafing, security, proper routing and support and for evidence of deterioration. |
| J | 28 | Cold and Hot Air Hoses - Check condition, routing and security. |
| J | 29 | Engine Cylinders, Rocker Box Covers and Pushrod Housings - Check for fin damage, cracks, oil leakage, security of attachment and general condition. |
| J | 30 | Engine Baffles and Seals - Check condition and security of attachment. |
| J | 31 | Crankcase, Oil Sump and Accessory Section - Inspect for cracks and evidence of oil leakage. Check bolts and nuts for looseness and retorque as necessary. Check crankcase breather lines for obstructions, security and general condition. |

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OPERATION NO. 3

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- J 32 Turbocharger (if applicable) -
- a. Inspect turbocharger mounting brackets, ducting, linkage and attaching parts for general condition, leakage or damage and security of attachment.
 - b. Check waste gate, actuator, controller, oil and vent lines, overboost relief valve and compressor housing for leakage, apparent damage, security of attachment and evidence of wear. Check waste gate return spring for condition and security.
-
- J 34 Engine Oil With Oil Filter - Replace filter. Add recommended grade aviation oil to replace oil lost in existing filter.
-
- J 35 Engine Oil Without Oil Filter - Drain oil sump and oil cooler, clean and inspect screens and refill with recommended grade aviation oil.
-
- K 1 Integral Fuel Tanks - Check for evidence of leakage and condition of fuel caps, adapters and placards.
-
- K 3 Fuel Bladders - Check for leaks and security, condition of fuel caps, adapters and placards.
-
- K 5 Fuel System - Inspect plumbing and components for mounting and security.
-
- K 6 Fuel Tank or Bladder Drains - Drain water and sediment.
-
- K 7 Fuel Tank Vent Lines and Vent Valves - Check vents for obstruction and proper positioning. Check valves for operation.
-
- K 9 Fuel Strainer, Drain Valve and Controls - Check freedom of movement, security and proper operation. Disassemble, flush and clean screen and bowl.
-
- L 1 Propeller Governor and Control - Inspect for oil and grease leaks. If leakage is evident, refer to McCauley Service Manual.
-
- L 2 Propeller Mounting - Check for security of installation.
-
- L 3 Propeller Blades - Inspect for cracks, dents, nicks, scratches, erosion, corrosion or other damage.
-
- L 4 Spinner - Check general condition and attachment.
-
- L 5 Spinner and Spinner Bulkhead - Remove spinner, wash and inspect for cracks and fractures.
-
- M 2 Heater Components, Inlets and Outlets - Inspect all lines, connections, ducts, clamps, seals and gaskets for condition, restriction and security.
-
- M 4 Pitot Tube and Stall Warning Vane - Check for condition and obstructions.
-
- M 5 Pitot Tube Heater Element - Perform operational check.
-
- M 6 Propeller Anti-ice Slip Rings, Brushes and Boots - Inspect for condition and security. Perform operational check.
-
- N 3 Vacuum Pump - Check for condition and security. Check vacuum system breather line for obstructions, condition and security.
-
- O 4 Battery - Check general condition and security. Check level of electrolyte.
-
- O 5 Battery Box and Cables - Clean and remove any corrosion. Check cables for routing, support and security of connections.

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OPERATION NO. 3

SPECIAL INSPECTION AND YEARLY ITEMS

HOURS YEARS

INSPECTION
COMPLETED BY

Please review each of these items for required compliance

		HOURS	YEARS	INSPECTION COMPLETED BY
B	11 Upholstery, Headliner, Trim and Carpeting - Check condition and clean as required.	EACH 400	EACH 1	
D	3 Brake Lines, Wheel Cylinders, Hoses, Clamps and Fittings - Check for leaks, condition and security of hoses for bulges and deterioration. Check brake lines and hoses for proper routing and support.	EACH 400	EACH 1	
D	10 Wheel Bearings - Clean, inspect and lube.	A		
D	20 Powerpack - Hydraulic fluid contamination check.	B		
D	21 Powerpack - Check condition and wear of brushes in servo motor.	C		
D	23 Landing Gear System - Overhaul main gear downlock actuators, main and nose gear actuators, landing gear selector valve, emergency hand pump and pressure switch. Replace all rubber goods.		D	
D	24 Brake System - Overhaul brake discs, parking brake system, wheel cylinders and master cylinders. Replace brake pads and all rubber goods.		D	
E	4 Autopilot Rigging - Check per Avionics Installation Manual.	E	EACH 1	
H	5 Elevator Trim Tab Actuator - Clean, lubricate and check free-play.	F		
J	4 Engine, Propeller Controls and Linkage - Check general condition, freedom of movement through full range. Check for proper travel, security of attachment and for evidence of wear. Check friction locks for proper operation.		G	
J	10 Induction Air Filter - Remove and clean. Inspect for damage and service per paragraph 2-25.	H		
J	13 Alternator - Check brushes, leads, commutator or slip ring for wear.		I	
J	14 Starter, Starter Solenoid and Electrical Connections - Check for condition of starter brushes, brush leads and commutator.		J	
J	21 Magnetos - Timing Procedures and intervals, lubrication and overhaul procedures.	K		
J	27 Hoses, Metal Lines and Fittings - Inspect for signs of oil and fuel leaks. Check for abrasions, chafing, security, proper routing and support and for evidence of deterioration.		L	
J	34 Engine Oil With Oil Filter - Replace filter. Add recommended grade aviation oil to replace oil lost in existing filter.	M		
J	35 Engine Oil Without Oil Filter - Drain oil sump and oil cooler, clean and inspect screens and refill with recommended grade aviation oil.	M		
J	36 Engine Oil With Oil Filter - Drain oil sump and refill with recommended grade aviation oil.	M		
K	2 Integral Fuel Tanks - Drain fuel and check tank interior and outlet screens.	N		
K	4 Fuel Bladders - Drain fuel and check for wrinkles that would retain contaminants or liquid, security of attachment and condition of outlet screens.	N		
K	10 Fuel Quantity Indicators - Check for damage, security of installation and perform accuracy test.		EACH 1	
L	9 Propeller Assembly - Overhaul (See McCauley Service Manual; refer to list of publication).	O		

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OPERATION NO. 3

SPECIAL INSPECTION AND YEARLY ITEMS

HOURS YEARS

INSPECTION
COMPLETED BY

Please review each of these items for required compliance

M	1	Ventilation System - Inspect clamps, hoses and valves for condition and security.	400	EACH 1	
M	9	Oxygen Cylinder - Inspect for condition, check hydrostatic test date and perform hydrostatic test, if due.		EACH 5	
N	4	Vacuum System Air Filter - Inspect for damage, deterioration and contamination. Clean or replace, if required. NOTE: Smoking will cause premature filter clogging.	P		
N	5	Vacuum System relief Valve - Inspect for condition and security.	Q		
N	10	Airspeed Indicator, Vertical Speed Indicator and Magnetic Compass - Calibrate.		EACH 2	
N	11	Altimeter and Static System - Inspect in accordance with FAR Part 91.411.		EACH 2	
O	4	Battery - Check general condition and security. Check level of electrolyte.	R		

Special Inspections Legends:

- A. First 100 hours and each 500 hours thereafter. More often if operated under prevailing wet or dusty conditions.
- B. At first 50 hours, first 100 hours, and each 500 hours thereafter, or one year, whichever comes first.
- C. Each 500 hours, and whenever improper operation is suspected. Replace brushes when worn down to 0.25 inch or less.
- D. Serial R18200001 thru R18200583 and FR18200001 thru FR18200025: Each 5 years. Serial R18200584 and On and FR18200026 thru FR18200070: Overhaul components and replace rubber goods On-Condition basis.
- E. Each 600 hours or 1 year, whichever comes first.
- F. Lubrication of the actuator is required each 1000 hours or 3 years, whichever comes first. See figure 2-5 for grease specification.
- G. Lubricate each 100 hours (except in extreme dusty conditions). These controls are not repairable and should be replaced every 1500 hours or sooner if required.
- H. Clean filter per paragraph 2-25. Replace paper filters at least each 500 hours.
- I. Inspect each 500 hours.
- J. For Prestolite starters only, inspect the commutator and brushes every 1500 hours.
- K. At the first 25 hours, first 50 hours, first 100 hours and thereafter at each 100 hours, the contact breaker point compartment and magneto-to-engine timing is correct within plus zero degrees to minus two degrees, internal timing need not be checked. If timing is out of tolerance, remove magneto and set internal timing, then install and time to the engine. Refer to Section 11 or 11A and the magneto manufacturers service instructions for magneto timing procedures.
- L. Replace engine compartment rubber hoses (Cessna installed only) every five years or at engine overhaul, whichever occurs first. This does not include drain hoses. Hoses which are beyond these limits and are in a serviceable condition, must be placed on order immediately and then be replaced within 120 days after receiving the new hose(s) from Cessna. Replace drain hoses on condition. Engine flexible hoses (Lycoming installed) (Refer to Lycoming Maintenance Manual and Lycoming Engine Service Bulletins).
- M. First 25 hours: Refill with straight grade mineral oil and use until a total of 50 hours have accumulated, or oil consumption has stabilized. Change oil, replace filter, and refill sump with recommended grade of ashless dispersant oil. Change oil and replace filter at least every six months, regardless of accumulated hours.
- N. Each 1000 hours.
- O. See McCauley Service Manual; refer to list of publication.
- P. Replace every 500 hours.
- Q. Replace filter each 100 hours.
- R. Check electrolyte level and clean battery box each 100 hours or 90 days.

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CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 4

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- A 1 Placards and Decals - Inspect presence, legibility and security. Consult Pilot's Operating Handbook and FAA-Approved Airplane Flight Manual for required placards.
-
- B 1 Fuselage Surface - Inspect for skin damage, loose rivets, condition of paint and check pitot-static ports and drain holes for obstruction. Inspect covers and fairings for security.
-
- B 2 Internal Fuselage Structure - Inspect bulkheads, doorposts, stringers, doublers and skins for corrosion, cracks, buckles and loose rivets, bolts and nuts.
-
- B 3 Control Wheel Lock - Check general condition and operation.
-
- B 4 Fuselage Mounted Equipment - Check for general condition and security of attachment.
-
- B 5 Antennas and Cables - Inspect for security of attachment, connection and condition.
-
- B 6 Emergency Locator Transmitter - Inspect for security of attachment and check operation by verifying transmitter output. Check cumulative time and useful life of batteries in accordance with FAR Part 91.207. Refer to Section 16 - Emergency Locator Transmitter - Checkout Interval.
-
- B 7 Instrument Panel Shock Mounts, Ground Straps and Covers - Inspect for deterioration, cracks and security of attachment.
-
- B 8 Pilot's and Copilot's Inertia Reels - Inspect for security of installation, proper operation and evidence of damage.
-
- B 9 Seats, Seat Belts, and Shoulder Harnesses - Check general condition and security. Check operation of seat stops and adjustment mechanism. Inspect belts for condition and security of fasteners.
-
- B 10 Windows, Windshield, Doors and Seals - Inspect general condition. Check latches, hinges and seals for condition, operation and security of attachment.
-
- B 12 Flight Controls - Check freedom of movement and proper operation through full travel with and without flaps extended. Check electric trim controls for operation (as applicable.)
-
- B 13 Aileron, Elevator and Rudder Stops - Check for damage and security. Compliance with Cessna Service Letter SE80-65 is required.
-
- B 14 Portable Hand Fire Extinguisher - Inspect for proper operating pressure, condition, security of installation and servicing date.
-
- B 15 Seat Tracks and Stops - Inspect seat tracks for condition and security of installation. Check seat track stops for damage and correct location. Ensure inspection of seat rails for cracks EACH 50 HOURS. Refer to Section 3.
-
- B 16 Control Column - Inspect pulleys, cables, sprockets, bearings, chains, bungees and turnbuckles for condition and security.
-
- B 17 Fuel Line and Selector Valve Drain(s) - Remove plug and drain.

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CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 4

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- D 1 Brakes, Master Cylinders and Parking Brake - Check master cylinders and parking brake mechanism for condition and security. Check fluid level and test operation of toe and parking brake.
-
- D 2 Main Gear Tubular Struts - Inspect for cracks, dents, corrosion, condition of paint or other damage. Check axles for condition and security.
-
- D 4 Wheels, Brake Discs and Linings - Inspect for wear, cracks, warps, dents or other damage. Check wheel through-bolts and nuts for looseness.
-
- D 5 Tires - Check tread wear and general condition. Check for proper inflation.
-
- D 6 Main Landing Gear Strut-to-Pivot Attachment - Check for damage, cracks, loose rivets, bolts and nuts and security of attachment.
-
- D 8 Nose Gear - Inspect torque links, steering rods and boots for condition and security of attachment. Check strut for evidence of leakage and proper extension. Check strut barrel for corrosion, pitting, and cleanliness. Check shimmy damper and/or bungees for operation, leakage and attach points for wear and security.
-
- D 11 Nose Gear Attachment Structure - Inspect for cracks, corrosion or other damage and security of attachment.
-
- D 12 Landing Gear - Perform five fault-free cycles.
-
- D 13 Main Landing Gear - Check downlock engagement.
-
- D 14 Landing Gear System - Check adjustment of main and nose gear up and down switches and operation of gear position indicator.
-
- D 16 Nose Gear Doors and Linkage - Check for .25 inch minimum clearance throughout up and down cycles, and proper fit when closed. Check linkage for wear, damaged bearings, distortion and superficial damage.
-
- D 17 Hydraulic System - Check all components for leaks and external damage to components or mounting structure.
-
- D 18 Emergency Hand Pump - Check operation, check lines and components for damage and leaks.
-
- D 19 Powerpack - Clean self-relieving check valve filter.
-
- D 22 Powerpack - Perform hydraulic pressure checks of primary relief valve, thermal relief valve and pressure switch.
-
- G 3 Elevator Control System - Inspect pulleys, cables, sprockets, bearings, chains and turnbuckles for condition, security and operation.
-
- H 3 Trim Controls and Indicators - Check freedom of movement and proper operation through full travel. Check pulleys, cables, sprockets, bearings, chains, bungees and turnbuckles for condition and security. Check electric trim controls for operation as applicable.
-
- I 2 Rudder Pedals and Linkage - Check for general condition, proper rigging, and operation. Check for security of attachment.
-
- J 1 Cowling and Cowl Flaps - Inspect for cracks, dents and other damage, security of cowl fasteners and cowl mounted landing lights for attachment. Check cowl flaps for condition, security and operation.

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OPERATION NO. 4

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- J 2 Engine - Inspect for evidence of oil and fuel leaks. Wash engine and check for security of accessories.
-
- J 3 Cowl Flap Controls - Check freedom of movement through full travel.
-
- J 4 Engine, Propeller Controls and Linkage - Check general condition, freedom of movement through full range. Check for proper travel, security of attachment and for evidence of wear. Check friction locks for proper operation.
-
- J 8 Induction System - Check security of clamps, tubes and ducting. Inspect for evidence of leakage.
-
- J 11 Alternate Induction Air System - Check for obstructions, operation and security.
-
- J 12 Alternator and Electrical Connections - Check condition and security. Check alternator belts for condition and proper adjustment.
-
- J 15 Oil Cooler - Check for obstructions, leaks and security of attachment.
-
- J 16 Exhaust System - Inspect for cracks and security. Air leak check exhaust system. Refer to Sections 11 and 11A, Paragraphs 11-98 and 11-75A, for inspection procedures.
-
- J 17 Exhaust System (turbocharged engine) - Inspect couplings, seals, clamps and expansion joints for cracks and security. Air leak check exhaust system. Refer to Sections 11 and 11A, Paragraphs 11-98 and 11-75A, for inspection procedures.
-
- J 27 Hoses, Metal Lines and Fittings - Inspect for signs of oil and fuel leaks. Check for abrasions, chafing, security, proper routing and support and for evidence of deterioration.
-
- J 30 Engine Baffles and Seals - Check condition and security of attachment.
-
- J 32 Turbocharger (if applicable) -
a. Inspect turbocharger mounting brackets, ducting, linkage and attaching parts for general condition, leakage or damage and security of attachment.
b. Check waste gate, actuator, controller, oil and vent lines, overboost relief valve and compressor housing for leakage, apparent damage, security of attachment and evidence of wear. Check waste gate return spring for condition and security.
-
- J 34 Engine Oil With Oil Filter - Replace filter. Add recommended grade aviation oil to replace oil lost in existing filter.
-
- J 35 Engine Oil Without Oil Filter - Drain oil sump and oil cooler, clean and inspect screens and refill with recommended grade aviation oil.
-
- J 36 Engine Oil With Oil Filter - Drain oil sump and refill with recommended grade aviation oil.
-
- K 6 Fuel Tank or Bladder Drains - Drain water and sediment.
-
- K 8 Fuel Selector Valve - Check controls for detent in each position, security of attachment and for proper placarding.
-
- L 1 Propeller Governor and Control - Inspect for oil and grease leaks. If leakage is evident, refer to McCauley Service Manual.

MODEL R182 & TR182 SERIES SERVICE MANUAL

CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 4

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

- | | | |
|---|----|--|
| L | 2 | Propeller Mounting - Check for security of installation. |
| L | 3 | Propeller Blades - Inspect for cracks, dents, nicks, scratches, erosion, corrosion or other damage. |
| L | 4 | Spinner - Check general condition and attachment. |
| M | 3 | Cabin Heat and Ventilation Controls - Check freedom of movement through full travel. Check friction locks for proper operation. |
| M | 4 | Pitot Tube and Stall Warning Vane - Check for condition and obstructions. |
| M | 5 | Pitot Tube Heater Element - Perform operational check. |
| M | 6 | Propeller Anti-ice Slip Rings, Brushes and Boots - Inspect for condition and security. Perform operational check. |
| M | 7 | Heated Windshield Panel - Check operation, security of installation, electrical wiring and condition of storage bag. |
| M | 8 | Oxygen System - Inspect masks, hoses, lines and fittings for condition, routing and support. Test operation and check for leaks. |
| N | 1 | Vacuum System - Inspect for condition and security. |
| N | 2 | Vacuum System Hoses - Inspect for hardness, deterioration, looseness or collapsed hoses. |
| N | 4 | Vacuum System Air Filter - Inspect for damage, deterioration and contamination. Clean or replace, if required.
NOTE: Smoking will cause premature filter clogging. |
| N | 5 | Vacuum System relief Valve - Inspect for condition and security. |
| N | 6 | Instruments - Check general condition and markings for legibility. |
| N | 7 | Instrument Lines, Fittings, Ducting and Instrument Panel Wiring - Check for proper routing, support and security of attachment. |
| N | 8 | Static System - Inspect for security of installation, cleanliness and evidence of damage. |
| N | 9 | Navigation Indicators, Controls and Components - Inspect for condition and security. |
| N | 12 | Instrument Panel Mounted Avionics Units (Including Audio Panel, VHF Nav/Com(s), ADF, Transponder, DME and Compass System) - Inspect for deterioration, cracks and security of instrument panel mounts. Inspect for security of electrical connections, condition and security of wire routing. |
| N | 13 | Avionics Operating Controls - Inspect for security and proper operation of controls and switches and ensure that all digital segments will illuminate properly. |
| N | 14 | Remote Mounted Avionics - Inspect for security of units and electrical connectors, condition and security of wire routing. Also check for evidence of damage and cleanliness. |
| N | 15 | Microphones, Headsets and Jacks - Inspect for cleanliness, security and evidence of damage. |

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OPERATION NO. 4

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- O 1 General Airplane and System Wiring - Inspect for proper routing, chafing, broken or loose terminals, general condition, broken or inadequate clamps and sharp bends in wiring.
-
- O 2 Instrument, Cabin, Navigation, Beacon, Strobe, and Landing Lights - Check operation, condition of lens and security of attachment.
-
- O 3 Circuit Breakers and Fuses - Check operation and condition. Check for required number of spare fuses.
-
- O 6 Switch and Circuit Breaker Panel, Terminal Blocks and Junction Boxes - Inspect wiring and terminals for condition and security.
-
- O 8 Switches - Check operation, terminals, wiring and mounting for conditions, security and interference.
-
- O 9 Instrument Panel and Control Pedestal - Inspect wiring, mounting and terminals for condition and security. Check resistance between stationary panel and instrument panel for proper ground.

Q Perform the Following Operational Checks:

-
- Q 1 Brakes - Test toe brakes and parking brake for proper operation.

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CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 4

SPECIAL INSPECTION AND YEARLY ITEMS

HOURS YEARS

INSPECTION
COMPLETED BY

Please review each of these items for required compliance

B	11	Upholstery, Headliner, Trim and Carpeting - Check condition and clean as required.	EACH 400	EACH 1
D	3	Brake Lines, Wheel Cylinders, Hoses, Clamps and Fittings - Check for leaks, condition and security of hoses for bulges and deterioration. Check brake lines and hoses for proper routing and support.	EACH 400	EACH 1
D	10	Wheel Bearings - Clean, inspect and lube.	A	
D	20	Powerpack - Hydraulic fluid contamination check.	B	
D	21	Powerpack - Check condition and wear of brushes in servo motor.	C	
D	23	Landing Gear System - Overhaul main gear downlock actuators, main and nose gear actuators, landing gear selector valve, emergency hand pump and pressure switch. Replace all rubber goods.		D
D	24	Brake System - Overhaul brake discs, parking brake system, wheel cylinders and master cylinders. Replace brake pads and all rubber goods.		D
E	4	Autopilot Rigging - Check per Avionics Installation Manual.	E	EACH 1
H	5	Elevator Trim Tab Actuator - Clean, lubricate and check free-play.	F	
J	4	Engine, Propeller Controls and Linkage - Check general condition, freedom of movement through full range. Check for proper travel, security of attachment and for evidence of wear. Check friction locks for proper operation.		G
J	10	Induction Air Filter - Remove and clean. Inspect for damage and service per paragraph 2-25.	H	
J	13	Alternator - Check brushes, leads, commutator or slip ring for wear.		I
J	14	Starter, Starter Solenoid and Electrical Connections - Check for condition of starter brushes, brush leads and commutator.		J
J	21	Magnetos - Timing Procedures and intervals, lubrication and overhaul procedures.	K	
J	27	Hoses, Metal Lines and Fittings - Inspect for signs of oil and fuel leaks. Check for abrasions, chafing, security, proper routing and support and for evidence of deterioration.		L
J	34	Engine Oil With Oil Filter - Replace filter. Add recommended grade aviation oil to replace oil lost in existing filter.	M	
J	35	Engine Oil Without Oil Filter - Drain oil sump and oil cooler, clean and inspect screens and refill with recommended grade aviation oil.	M	
J	36	Engine Oil With Oil Filter - Drain oil sump and refill with recommended grade aviation oil.	M	
K	2	Integral Fuel Tanks - Drain fuel and check tank interior and outlet screens.	N	
K	4	Fuel Bladders - Drain fuel and check for wrinkles that would retain contaminants or liquid, security of attachment and condition of outlet screens.	N	
K	10	Fuel Quantity Indicators - Check for damage, security of installation and perform accuracy test.		EACH 1
L	9	Propeller Assembly - Overhaul (See McCauley Service Manual; refer to list of publication).	O	

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CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 4

SPECIAL INSPECTION AND YEARLY ITEMS		HOURS	YEARS	INSPECTION COMPLETED BY
Please review each of these items for required compliance				
M	1 Ventilation System - Inspect clamps, hoses and valves for condition and security.	400	EACH 1	
M	9 Oxygen Cylinder - Inspect for condition, check hydrostatic test date and perform hydrostatic test, if due.		EACH 5	
N	4 Vacuum System Air Filter - Inspect for damage, deterioration and contamination. Clean or replace, if required. NOTE: Smoking will cause premature filter clogging.	P		
N	5 Vacuum System relief Valve - Inspect for condition and security.	Q		
N	10 Airspeed Indicator, Vertical Speed Indicator and Magnetic Compass - Calibrate.		EACH 2	
N	11 Altimeter and Static System - Inspect in accordance with FAR Part 91.411.		EACH 2	
O	4 Battery - Check general condition and security. Check level of electrolyte.	R		

Special Inspections Legends:

- A. First 100 hours and each 500 hours thereafter. More often if operated under prevailing wet or dusty conditions.
- B. At first 50 hours, first 100 hours, and each 500 hours thereafter, or one year, whichever comes first.
- C. Each 500 hours, and whenever improper operation is suspected. Replace brushes when worn down to 0.25 inch or less.
- D. Serial R18200001 thru R18200583 and FR18200001 thru FR18200025: Each 5 years. Serial R18200584 and On and FR18200026 thru FR18200070: Overhaul components and replace rubber goods On-Condition basis.
- E. Each 600 hours or 1 year, whichever comes first.
- F. Lubrication of the actuator is required each 1000 hours or 3 years, whichever comes first. See figure 2-5 for grease specification.
- G. Lubricate each 100 hours (except in extreme dusty conditions). These controls are not repairable and should be replaced every 1500 hours or sooner if required.
- H. Clean filter per paragraph 2-25. Replace paper filters at least each 500 hours.
- I. Inspect each 500 hours.
- J. For Prestolite starters only, inspect the commutator and brushes every 1500 hours.
- K. At the first 25 hours, first 50 hours, first 100 hours and thereafter at each 100 hours, the contact breaker point compartment and magneto-to-engine timing is correct within plus zero degrees to minus two degrees, internal timing need not be checked. If timing is out of tolerance, remove magneto and set internal timing, then install and time to the engine. Refer to Section 11 or 11A and the magneto manufacturers service instructions for magneto timing procedures.
- L. Replace engine compartment rubber hoses (Cessna installed only) every five years or at engine overhaul, whichever occurs first. This does not include drain hoses. Hoses which are beyond these limits and are in a serviceable condition, must be placed on order immediately and then be replaced within 120 days after receiving the new hose(s) from Cessna. Replace drain hoses on condition. Engine flexible hoses (Lycoming installed) (Refer to Lycoming Maintenance Manual and Lycoming Engine Service Bulletins).
- M. First 25 hours: Refill with straight grade mineral oil and use until a total of 50 hours have accumulated, or oil consumption has stabilized. Change oil, replace filter, and refill sump with recommended grade of ashless dispersant oil. Change oil and replace filter at least every six months, regardless of accumulated hours.
- N. Each 1000 hours.
- O. See McCauley Service Manual; refer to list of publication.
- P. Replace every 500 hours.
- Q. Replace filter each 100 hours.
- R. Check electrolyte level and clean battery box each 100 hours or 90 days.