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GENERAL

The inspections listed in this section are general visual inspections unless otherwise specified. They include scheduled (periodic) inspections and unscheduled inspections, and are subject to certification that maintenance was performed in accordance with the applicable standards of airworthiness.

Daily (walk-around) inspections are performed by the pilot and are not scheduled inspections. These daily inspections do not require certification.

SCHEDULED INSPECTIONS

The figures in parenthesis indicate flying hours between inspections. A continuous periodic inspection procedure along with an annual inspection is recommended. The time between inspections should not exceed those indicated below. Annual inspection should include all items listed below, and the FAR 43 Appendix D items listed in the applicable engine and propeller maintenance manuals (Refer to Section 1, INSTRUCTIONS FOR CONTINUED AIRWORTHINESS).

The figures in parentheses indicate the hour-or-period intervals for inspections. The symbol (---) indicates a reference to additional INSTRUCTIONS FOR CONTINUED AIRWORTHINESS).

Propeller

6.

(1000)

1.	(50)	Check propeller overspeed-solenoid circuit as described in PROPELLER MAINTENANCE in Section 2.
2.	(100)	Examine all exterior parts of propeller blades for corrosion, nicks, bends, etc.
3.	(200)	Grease propeller.
4.	(200)	Inspect and clean beta-block and beta-ring.
5.	(3500)	Overhaul propeller.

Dynamic-balance propeller.

- 7. (Annual) Remove spinner and examine for oil leaks, loose screws, and cracks.
- 8. (---) Refer to propeller maintenance manual for other inspections.

Engine and Mount

- 1. (100) Remove side cowling and examine exhaust stack connections and check for cracks.
- 2. (100) Check security of fuel and oil lines and controls at all connections. Inspect for fretting and chafing of all lines and controls.
- 3. (100) Check controls on primary governor and controls on fuel control. Have someone in cockpit move start lever and then power lever through range of travel and look for loose connections, binding parts, etc.

CAUTION

Be sure not to move power lever into reverse range.

- 4. (100) Inspect all cowling parts for cracks, especially at screw connections and in the corners of cut-outs.
- 5. (100) Conduct all inspections called out in engine maintenance manual at the appropriate interval.
- 6. (100) Check chip detector with Ohm-meter.
- 7. (200) Wash exterior of engine.
- 8. (200) Remove and clean chip detector.
- 9. (200) Inspect T5 wires and connectors.

- 10. (500) Grease Air Conditioner drive pad spline.
- 11. (3000) Overhaul FCU. State on purchase order:. "Please position fittings in FCU at same angle as received."
- 12. (- -) Perform Hot-Section Inspection at Pratt and Whitney's recommended interval.
- 13. (Annual) Examine engine mount for cracks and check torque at firewall connections (1,700 inch-pounds at nut on top bolt, 1,100 inch pounds on lower bolt.)
- 14. (Annual) Inspect fuel and oil tubes at engine firewalls for chafing.
- 15. (2 Years) Calibrate ITT gauge. (Remove and send to instrument shop.)
- 16. (---) Refer to Pratt and Whitney Engine Maintenance Manual for other inspections.
- 17. (---) Clear flow and pattern check fuel nozzles.

Electrical System

- 1. (100) Check batteries for condition, charge, and electrolyte level.
- 2. (100) Inspect wires and under battery box and along engine mount tubes for chafing or loose connections.
- 3. (100) Inspect relays and other electrical components in vicinity of battery box and on firewall for loose connections, signs of shorts, corrosion, etc.
- 4. (100) Inspect starter-generator connections to engine, and wiring to terminals.
- 5. (100) Remove R/H side skin below hopper and check wire bundle for security and chafing at firewall.

6.	(100)	Inspect under instrument panel for loose wires or chafing or evidence of shorting. (It may be necessary to remove the control stick for comfort).
7.	(100)	Turn on master switch (Batt) and check all lights (position, strobe, instrument, and landing).
8.	(1000) (1000)	Overhaul starter-generator. (For Lucas Aerospace models) Overhaul starter-generator. (For Aircraft Parts Corp. models)
9.	(300)	Inspect starter-generator brushes. (Both Lucas and Aircraft Parts Corp. models)
Fuel System		
1.	(100)	Inspect the fuel-filter screen in the firewall mounted fuel filter and replace if necessary. (Air Tractor p/n 52351-1). If contamination is found, replace the filters (2) on the FCU pump. See Section 2-FUEL FILTER CLEANING. Also see Service Letter #229 in Service Letter Book.
2.	N/A	
3.	(100)	Check all drains for leaks.
4.	(100)	Check for fuel line chafing from tank to header tank. Check all other fuel lines for chafing.
5.	(100)	Check fuel tank for leaks.
6.	(300)	Replace high-pressure fuel-pump filter element. See Section 2 - FUEL FILTER CLEANING for removal and replacement procedures.
7.	(300)	Clean fuel nozzles. (See Section 2- FUEL NOZZLE CLEANING for instructions.)
8.	(2000)	Overhaul Fuel Control Unit (FCU).
9.	(Annual)	Drain fuel tanks and check E position of fuel receiver. (Reference Section 2, FUEL TANK RECEIVER.)

10. (Annual) Remove finger strainers (steel elbow) from fuel tank and	clean.
---	--------

11. (Annual) Fill fuel tanks and check F position on fuel receiver.

Oil System

- 1. (100) Check oil cooler mounting and check fittings for leaks.
- 2. (100) Check oil hoses for chafing or leaks.
- 3. (100) Check breather line on accessory gear box for leaks.
- 4. (200) Remove and clean oil screen.
- 5. (Annual) Change oil.
- 6. (---) Make all other oil system checks as called out in the Engine
 Maintenance Manual. (Refer to Section 1, INSTRUCTIONS FOR
 CONTINUED AIRWORTHINESS.)

Power and Propeller Speed Coordinating System

- 1. (50) In flight set power at 1600 ft-lbs torque and set Np (Prop RPM) at 1700 RPM. Then move Prop Overspeed switch to ON and record RPM. The RPM should drop 50 to 75 RPM. Turn switch back to OFF.
- 2. (Annual) Check engine rigging as called out in Engine Manuals. (Or more frequent intervals if required)
- 3. (---) See Section 1, INSTRUCTIONS FOR CONTINUED AIRWORTHINESS.

Induction System

- 1. (100) Remove side engine cowling and air scoop assembly and check condition of induction tubes, clamps, and filter attachments.
- 2. (100) Without removing filters (unless necessary) visually inspect for dirt accumulations, proper sealing at each end of filter, and filter

cleaning.

3.	(300)	(Or at more frequent intervals if conditions require): Remove filters
		and clean as described in Section 2 under heading "AIR FILTERS".

- 4. (300) Remove the large plenum cover (attached with worm drive bands) and check cleanliness of plenum. Check for leaks in the forward and aft firewalls and around tubes and hoses.
- 5. (Annual) Check operation of the pressure differential switch by attaching a vacuum gauge to the 1/4" aluminum tube inside the plenum. Apply decreasing pressure gradually (vacuum). The battery switch should be ON, and someone in the cockpit should tell when the air filter light goes on. This should occur at approximately 12 inches of water decreasing pressure.

Main Landing Gear and Brakes

- 1. (100) Inspect tires for cuts, wear, and inflation. [50 psi (unloaded) and 52 psi (loaded)].
- 2. (100) Inspect brakes for lining wear, condition of disc, brake fluid leaks, etc. Check torque plate for cracks. Inspect inside and outside edges of wheel for cracks. Inspect for security of brake line.
- 3. (100) Check master cylinders for leaks, test firmness of brakes and bleed (if necessary), check for ample fluid in brake reservoir. (See Section 2-BRAKE BLEEDING).
- 4. (100) Check main gear clamp block for straightness with straight edge. Check attach bolts visually. (Refer to Section 2, MAIN GEAR SPRING.)
- 5. (100) Check operation of parking brake and look for leaks.
- 6. (100) Check main gear leg visually for cracks, nicks, or corrosion.
- 7. (300) Check torque on main gear attach bolts. (See Section 2-MAIN GEAR SPRING for torque values.)

- 8. (Annual) Hoist aircraft and check for looseness in main gear attachments. This would be a good time to change any bolts that are nearing the recommended time limit.
- 9. (---) Change main gear bolts in accordance with schedule in Section 3-TIME LIMITED PARTS.

Tail Gear

- 1. (100) Inspect tire for wear and inflation (60 psi).
- 2. (100) Check lock pin operation and condition of centering springs.
- 3. (100) Jack tail wheel clear of ground and check for looseness of housing on spring. (See Section 2-TAIL WHEEL FORK HOUSING.)
- 4. (100) With tail wheel off ground, rotate wheel for signs of dry wheel bearings. Check for looseness on axle, check locking pin for free engagement to fork, check fork for looseness in housing, check for wear on brass wear plate. (See Section 2- TAIL WHEEL FORK.)
- 5. (100) Check tail gear spring visually for cracks or nicks.
- 6. (Annual) Remove tail wheel lock pin housing (mark housing location before removal), slide out locking pin, and check for straightness and wear. Lubricate, re-install and check alignment as called out in the maintenance section of this manual. (See Section 2-TAIL-WHEEL LOCK PIN AND HOUSING.)
- 7. (Annual) Jack under the stabilizer strut fitting and check for looseness of the tail spring to the fuselage frame. (See Section 2-TAIL GEAR SPRING.) Also change the forward spring attach bolt as shown in section 3-TIME LIMITED PARTS. Check condition of aluminum pad under spring.
- 8. (- -) Change tail gear bolts in accordance with schedule in Section 3-TIME LIMITED PARTS.

Fuselage Frame

1.	(100)	Check for cracks in upper and lower aft fuselage structure, especially
		upper aft L/H longeron per SL #195. Check for cracks around tail
		spring attach area. Check for cracks around main gear attach area.

- 2. (100) Inspect engine mount attach bushings and surrounding tubes for cracks. Inspect area around wing attach bushings for cracks.
- 3. (100) Inspect all other highly stressed areas for cracks such as rear spar fittings, skin attach brackets, spray boom attach tubes, flap control attachments, control stop brackets, etc.
- 4. (100) Check condition of paint and re-finish where necessary.

Fuselage Fixed Skins

- 1. (100) Inspect dispersal equipment boots at fuselage skin attachments for wear.
- 2. (100) Inspect for skins chafing on other parts, such as the vertical fin, or in the area around the tail spring.
- 3. (Annual) Tighten all screws attaching the fixed skins. Look for elongated holes in the angles if loose screws are found.
- 4. (Annual) Inspect for cracks or corrosion on all fixed skins. A corroded part should be replaced or else stripped and repainted as called per Section 2-STRIPPING AND REPAINTING ALUMINUM PARTS.

Control System (Reference Section 2-Control System).

- 1. (100) Check rudder cables for wear at pulley locations and at entrance to fuselage.
- 2. (100) Check tail wheel lock cable for wear at pulley and at entrance to fuselage. Check spring on end of lock cable for wear.
- 3. (100) Check for wear in the aluminum rudder pedal adjustment channel.

	4.	(100)	Check rudder pedal attach brackets and tube for cracks.
	5.	(100)	Check all aileron push-rods and bellcranks for bearing condition, clearance to other parts, loose check nuts, end-play in bellcranks.
	6.	(100)	Check all elevator push-rods and bellcranks for bearing condition, clearance to other parts, loose check nuts, end-play on bellcranks, wobble in idlers.
	7.	(100)	Check cockpit controls for end-play or slack.
	8.	(100)	Check for missing neoprene washers at aileron and elevator stops.
	9.	(100)	Cycle flaps and listen for unusual rubbing noises. Check that flaps do not exceed markings in down position.
	10.	(100)	Check rubber coupling in flap motor connection. Check for loose wires around flap actuator.
	11.	(100)	Check elevator tab free play (not to exceed .14" total travel).
	12.	(100)	Read Section 2 on Rudder Controls, Elevator Controls, Cockpit Controls, and Trim Tab Controls and perform inspections called out in those sections.
	13.	(100)	Read Section 2 on Gate Box Controls, Spray Lever Controls and perform inspections called out in those sections.
Wings	S		
	1.	(100)	Remove inspection covers and check for cracks in ribs or spar webs.
	2.	(100)	Inspect wing skins for cracks, loose rivets, and for corrosion. Keep clean.
	3.	(100)	Inspect wing attach angles for cracks in upper and lower corners.
	4.	(1,000)	Remove and inspect the rear spar bolt per instructions in Section 2-WING ATTACHMENT TO FUSELAGE.

5.	(2,000)	Remove hopper and check the wing center splice connection as described in Section 2-WING CENTER SPLICE CONNECTION.
Ailerons		
1.	(100)	Check condition of counterweight attachment.
2.	(100)	Check condition of aluminum hinges and attachment to spar; check steel hinges for corrosion or cracks.
3.	(100)	Check aileron push-rods for cracks in threads and bearing condition.
4.	(100)	Inspect all skins, spar, and ribs for cracks, loose rivets. Inspect around counterweight support structure for cracks.
5.	(100)	Check aileron travel: 19° up, 14° down, $\pm 1^{\circ}$.
Flaps		
1.	(100)	With flaps full up and full down, move ailerons through full travel to check clearance.
2.	(100)	Inspect all skins, spar, and ribs for cracks, loose rivets, or corrosion.
3.	(400)	Overhaul flap actuator.
4.	(Annual)	Check condition of steel hinges and attachments to spar per S/L #216.
5.	(Annual)	Inspect flap push-rods for bearing alignment, dragging on other parts, freedom of movement.
6.	(Annual)	Check flap travel and rigging. (See Section 2-AILERON AND FLAP RIGGING.)
7.	(Annual)	Check flap push-rod bolt for straightness. (See Section 2-FLAPS.)

Empennage		
1.	(100)	Check vertical fin front spar attach bolt torque at fuselage fittings (420 inch-pounds at nut). (See Section 2-VERTICAL FIN.)
2.	(100)	Inspect vertical fin rear spar for cracks near top longeron connection.
3.	(100)	Check torque on all bolts connecting rudder and elevators to fixed surfaces and at elevator horn connection to pedestal and push-rod. Torque should be 100 inch-pounds at the nut.
4.	(100)	Check stabilizers and vertical fin for skin cracks, loose rivets, cracks in spars, ribs, corrosion.
5.	(100)	Check trim tab attachments to elevators. Check horn.
6.	(100)	Inspect all elevator and rudder hinges for wear.
7.	(100)	Inspect bushings and bolts through rudder horn for wear.
8.	(100)	Check control surface travel: Elevators 29° up, 16° down. Rudder travel 19° R and 20° L. All travels \pm 1°.
9.	(100)	Check elevator trim tab travel: 11° up, 9° down, $\pm 1 \ 1/2^{\circ}$.
10.	(100)	Check Neoprene washer at elevator down stop. (See Section 2-ELEVATORS.)
11.	(100)	Inspect for corrosion on internal horizontal stabilizer braces per SL #98.
12.	(100)	Check stabilizer attaching pedestal for cracks per S/L #180A. When the replacement pedestal is installed, inspections may be performed on an annual basis.
13.	(Annual) Insp	pect stabilizer struts and fittings for corrosion and erosion as referenced in S/L #198. Check bolt torque (200 lb-in on nut for AN5 bolts, 300 lb-in on nut for AN6 bolts) and snug check nuts to 290 lb-in torque. (See Section 2-STABILIZER RIGGING.)
14.	(Annual)	Remove gap covers from stabilizers and check torque on bolts (200 lb-in on nuts) attaching stabilizers to fuselage. Check torque on strut attach bolts and stabilizer eyebolts. (See Section 2- HORIZONTAL STABILIZERS.)
15.	(1350)	Replace eyebolts in stabilizer at strut fittings per S/L #129

Cockpit		
1.	(100)	Check windshield and canopy door glass for missing screws, cracks, scratches, or crazing.
2.	(100)	Check door hinges and latches for snug fit. Inspect weatherstripping around door frame.
3.	(100)	Check condition of seat covers.
4.	(Annual)	Check condition of seat belt and shoulder harness. Replace seat belt and shoulder harness every 5 years.
5.	(Annual)	If AmSafe Airbag System is installed, perform inspection and functional test of system in accordance with AmSafe Document E510500.
6.	(Annual)	Check instrument lines for leaks, chafing, security.
7.	(Annual)	Check condition of markings on instruments and placard condition.
Dispersal E	quipment	
1.	(100)	Check gate box seal for leaks, check bottom load flange on gate box for leaks, check gate box attachment to hopper for leaks.
2.	(100)	Check condition of hopper lid gasket. Replace if required.
3.	(100)	Check spray pump strut over-center latches for tension and safety position.
4.	(100)	Check to see if plumbing on discharge side of pump is attached to safety strap to top of pump.
5.	(100)	Check bottom-loading plumbing connection to control valve as loose clamps will blow off plumbing here.
6.	(100)	Check boom attach arms for security. Check boom connections to boom Tee for leaks.
7.	(100)	Inspect all quick-couplers to see if coupler arms are safety wired together.
8.	(100)	Clean strainer screen and check O-ring seal.

9.	(100)	Check control valve for leaks or loose ball.
10.	(100)	Check all hoses for deterioration. Tighten all hose clamps.
11.	(100)	Check for loose hex nipples and loose nozzles in boom.
12.	(100)	Check condition of boom pressure gauge, tubing, and connection to gauge and boom.
13.	(100)	Check fan brake lever for proper adjustment. Rotate fan with brake off to check for drag. Check fan brake shoes and replace as necessary.
14.	(100)	Check bottom load valve for leaks. Remove shims if worn.
15.	(Annual)	Check to be sure the lower gate torque tube arm is positioned so as not

to chafe the boot or boot ring in the lower fuselage skin.

AIR CONDITIONING SYSTEM

1	(100)	C1 1	1 1 1	1	1'.' C1 1.
	(100)	Check compressor	drive helf	tencion and	condition of helf
1.	(100)	CHECK COMPTESSOI	ulive belt	wiision and	contamon or och

- 2. (300) Inspect drive pad quill strut and grease.
- 3. (800) Replace drive pad bearings.
- 4. (Annual) Inspect general condition of system and check freon charge

TRANSLAND 10" GATE BOX (If Installed)

1.	(100)	Check for continuity across the enable relays. Check with the airpla			
		master switch off. Use an Ohm meter across the power terminals of			
		the relays (88 and 88a) to check for continuity. The Ohm meter should			
		indicate an open circuit. If the meter indicates anything other than an			
		open circuit, change the relay. Do this for each enable relay.			

2. (100) Check hydraulic hoses and electric wires for security and general condition.

- 3. (100) Check operation of emergency dump system in accordance with the flight manual supplement. Lubricate emergency cylinder release with light oil.
- 4. (Annual) Change hydraulic oil.

HOT SECTION INSPECTIONS

Let's straighten out the misconception about hot section inspections. A hot section inspection is just what it says; an inspection. The inspection requires a gasket kit that costs approximately \$400, and the labor around \$1200. Unless there is a problem with your engine, you do not have to do anything else. The engine maintenance manual gives you a guide to what is SERVICEABLE and what is not. On many occasions we have repaired parts that the manual calls serviceable, but it is cheaper to repair parts than it is to run them till they are no longer any good, requiring replacement.

The inspection is accomplished by splitting the engine at the rear flange of the exhaust duct. This procedure is accomplished without removing the propeller. The power section is removed with the prop still attached using a sling designed for such work while the compressor section remains in the airframe mount. With the engine now in two separate sections, clearances around the compressor turbine disk may be gauged, the condition of the small and large exit ducts observed, the condition of both the power turbine section and the compressor turbine section may be evaluated. Small problems may be corrected before they become large and expensive, notes can be made as to the condition of all the parts, and plans can be made for major repairs needed in the future. This ability to plan ahead for a major expense can surely be helpful in running your business.

Although Pratt & Whitney recommends hot section inspections at intervals of 1200 hours, hot section inspections are as important to your engine as annual inspections are to your airframe. If you fly 500 hours or more a year, it will be in your best interest to look inside your engine each year. Call it progressive hot sections if you will, but a yearly inspection will greatly reduce your chances of one of those surprise, five figure maintenance bills. Refer to the applicable Pratt & Whitney Engine Maintenance Manual for the complete HOT SECTION INSPECTION instructions.

UNSCHEDULED INSPECTIONS

Unscheduled inspections are those that must be performed after the aircraft has been subjected to unusual operating conditions or has been affected by external impact while on the ground. If an obstruction is hit with the main gear, change the forward clamp bolt and check the clamp block

for straightness as per Section 2, MAIN GEAR SPRING.

For unscheduled inspections affecting the engine or propeller, refer to the applicable engine and/or propeller maintenance manuals listed in Section 1 of this manual.

TIME-LIMITED PARTS

Time-limited parts are those parts recommended for replacement at the times indicated below. Failure to replace these parts at the times shown may result in unexpected failure of these parts during aircraft operation.

Main-and Tail-Gear Attach Bolts

Hours shown are for normal operations in row-crop or rice operations. If your business combines both types of flying, use an average of the two figures. If your strips are rougher than normal, then cut the hours shown in half.

Bolt Location (On Fuselage)	Bolt Size	Bolt Time Limit Hours (RowCrop)	Bolt Time Limit Hours (Rice Opns)	Torque (Lb-In)
Fwd main gear-Clamp block	NAS154A122	3,000	1,500	4,000
Aft main gear-Clamp block	NAS152DH51	3,000	1,500	3,000
Inbd main gear-Large bolt bolt	NAS156A92	2,000	1,000	6,400
Axle Attach	NAS148-70	3,000	1,500	900
Tail Spring-Clamp Bolts	NAS148-68	3,000	1,500	900
Tail Spring-Forward Bolt	NAS1308-34	1,000	500	NONE
2 bolts aft end-Tail spring	NAS154DH-32	3,000	1,500	4,000

Tail Spring

Although service history for the AT-602 is relatively limited, it appears that the tail spring should be changed about every 1500 hours for worst conditions of rice operations from rough strips, and every 3,000 hours for the best conditions of row-crop work from smooth strips. Each

operator should determine at what point in between these extremes his operation fits and change the tail spring at the appropriate interval. See LIFE LIMITED AIRFRAME PARTS in Section 6, AIRWORTHINESS LIMITATIONS.

Main Gear Spring

Service history is still relatively limited but in the interest of safety and the high financial consequences of a broken main gear leg, it would be advisable to take a highly conservative approach and change the main gear springs well before the probable fatigue life. The main gear springs should be changed after 3,000 hours or 8,000 landings, whichever comes first. See LIFE LIMITED AIRFRAME PARTS in Section 6, AIRWORTHINESS LIMITATIONS.

AmSafe Airbag System (if installed)

If the AmSafe Airbag System is installed, the following are time-limited parts

The EMA (Electronics Module Assembly) is to be removed for disposal after:

- a maximum storage period of fourteen (14) years calculated from the month of manufacture, or;
- upon expiration of the service life defined as the total sum of storage life and installation life, which must not exceed fourteen (14) years calculated from the month of manufacture.

Upon expiration of the service life (total life), the EMA cannot be renewed.

The Inflator Assembly is to be removed and returned to AmSafe Aviation for disposal after:

- a maximum storage period of ten (10) years calculated from the month of manufacture as indicated in the expiration date stamped on the gas cylinder, or;
- upon expiration of the service life defined as the total sum of storage life and installation life, which must not exceed ten (10) years calculated from the month of manufacture as indicated in the expiration date stamped on the gas cylinder.

Upon expiration of the service life (total life), the Inflator Assembly cannot be renewed.

In addition, the EMA is to be removed and returned to AmSafe Aviation for refurbishment after:

• a period of seven (7) years calculated from the month of manufacture regardless of storage or service time or combination of both.

The EMA can only be renewed by AmSafe Aviation.