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GENERAL MAINTENANCE

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SECTION IV

GENERAL MAINTENANCE

FUEL REQUIREMENTS

Aviation grade 80/87 octane gasoline should be used at all times in the PA-25-235 while the PA-25-260 should always use 100/130 octane gasoline.

OIL REQUIREMENTS

The oil capacity of both the O-540 engines is 12 quarts. It is recommended that the engine oil be changed every 100 flying hours or sooner under adverse conditions. It is recommended the oil filter be changed every 50 hours. The minimum safe quantity of oil required is 3 quarts. The following grades are recommended for the specified temperatures.

Recommended oil for the O-540 engines:

Temperature above 60° F	S. A. E. 50
Temperature 30° F to 90° F	S. A. E. 40
Temperature 0° F to 70° F	S. A. E. 30
Temperature below 10° F	S. A. E. 20

BATTERY SERVICE

A 12 volt 25 ampere hour battery is installed with the

standard electrical equipment. The battery should be checked frequently for proper fluid level. Do not fill the battery above the baffle plates. At least every 30 days terminals, connections and battery area should be checked for corrosion. Corrosion effects may be neutralized by applying a solution of baking soda and water.

CAUTION

Do not allow soda solution to enter battery.

Repeat application until bubbling action has ceased. Wash with clean water and dry. Remove cup from bottom of battery box drain tube. Wash and flush battery box with clean water and replace cup.

If the battery is not up to charge, recharge, starting with a maximum charge rate of four amps and finishing with two amps. The master switch should be off while charging.

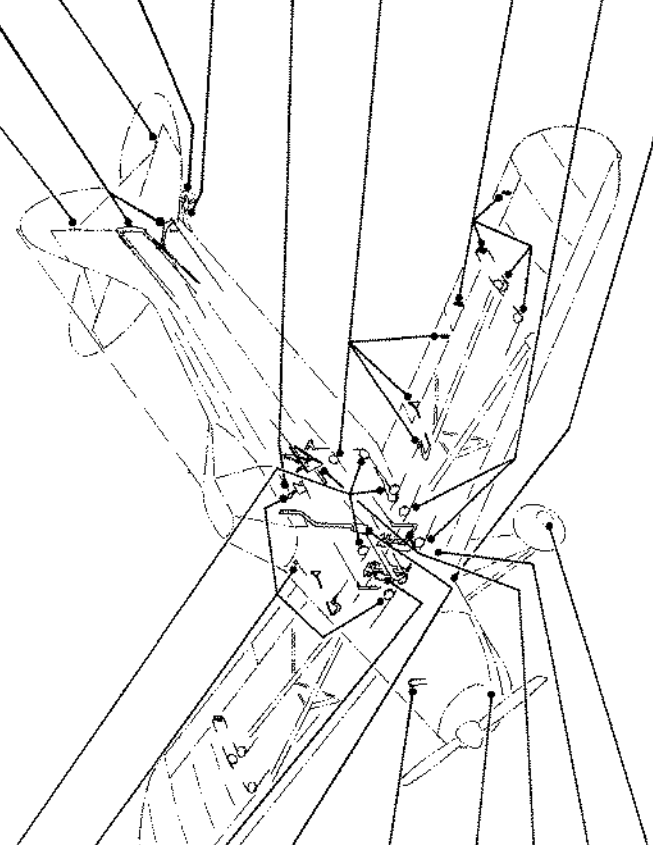
CARE OF WINDSHIELD AND WINDOWS

The windshield and windows are made of Plexiglas and a certain amount of care is required to keep them clear and clean. The following procedure is recommended:

1. Flush with clean water and dislodge excess dirt, mud, etc. with your hand.
2. Wash with mild soap and warm water. Use a soft cloth or sponge. Do not rub.
3. Remove oil, grease, or dust and spray residue with a cloth soaked in kerosene. Do not use gasoline, alcohol, benzene, carbon tetrachloride, lacquer thinner or window cleaning sprays.
4. After cleaning apply a thin coat of hard polishing wax. Rub lightly with a soft dry cloth.
5. A severe scratch or mar can be removed by using jeweler's rouge to rub out scratch. Smooth area and apply wax.

LUBRICATION CHART

HOURS	LUBRICANT	LUBRICANT	HOURS
250	✓	✓	100 RUDDER HINGES
CARBURETOR & CABIN HEAT GUIDE	□	✓	300 RUDDER - ELEVATOR HORNS
ELEVATOR PULLEY	∨	✓	100 ELEVATOR HINGES LEFT & RIGHT
THRUSTLE LEVERS	∨	✓	100 TAIL WHEEL BEARING
BRAKE MASTER CYLINDERS	○	□	100 TAIL WHEEL SWIVEL
CONTROL STICK BEARINGS	∨	∨	100 DOOR HINGE PINS (SEE NOTE 5)
TORQUE TUBE BEARING	∨	∨	100 ELEVATOR PULLEYS
ENGINE OIL SYSTEM CHECK DAILY DRAIN & REFILL	∨	∨	100 FLAP HINGE BEARINGS
CARBURETOR AIR FILTER (SEE NOTE 1)	∨	∨	100 FLAP BELLCRANK & PUSH ROD BEARINGS
RUDDER PEDAL BEARINGS	∨	∨	100 AILERON HINGE BEARINGS
BRAKE PEDAL BEARINGS	∨	∨	100 AILERON HORNS
FLAP HANDLE BEARING	∨	∨	100 AILERON PULLEYS LEFT & RIGHT
FLAP HANDLE RATCHET	∨	∨	100 AILERON PULLEYS - LEFT & RIGHT
SHOCK STRUT PIVOTS	∨	∨	100 LANDING GEAR HINGES LEFT & RIGHT
AIR-OIL SHOCK STRUTS	∨	∨	
LANDING GEAR WHEEL BEARINGS	∨	∨	



LEGEND

- MIL-L-7870 OIL - GENERAL PURPOSE LOW TEMP.
- MIL-G-3545 GREASE - LUBRICATION HIGH TEMP.
- MIL-G-2302 GREASE - GENERAL PURPOSE
- MIL-H-5606 HYDRAULIC FLUID (RED)
- SAE 50 ABOVE 60° F AIR TEMP.
- SAE 40 30-F TO 90° F AIR TEMP.
- SAE 30 0-F TO 70° F AIR TEMP.
- SAE 20 BELOW 10° F AIR TEMP.

NOTES

1. CARBURETOR AIR FILTER - CHECK EVERY 8 HOURS AND IF NECESSARY REMOVE CARTRIDGE AND CLEAN BY TAPPING AGAINST A HARD SURFACE TO REMOVE GRIT, SAND AND DIRT. DO NOT BLOW OUT WITH AN AIR HOSE.
2. PILOT AND PASSENGER SEATS - LUBRICATE TRACK ROLLERS AND STOP PINS AS REQUIRED WITH MIL-L-7870 LUBRICANT.
3. WHEEL BEARINGS REQUIRE CLEANING AND REPACKING AFTER EXPOSURE TO AN ABNORMAL QUANTITY OF WATER.
4. AIR-OIL SHOCK STRUTS - SERVICE SHOCK STRUTS WITH AIR AND OIL AS REQUIRED PER INSTRUCTIONS IN OWNERS HANDBOOK.
5. CABIN DOOR EMERGENCY RELEASE PINS - CHECK CONDITION, CLEAN AND LUBRI. CATE.
6. MISCELLANEOUS - DURING ROUTINE MAINTENANCE CHECKS, LUBRICATE COWL HINGES AND MISCELLANEOUS LINKAGES.

CAUTIONS

1. DO NOT USE A HYDRAULIC FLUID WITH A CASTER OIL OR ESTER BASE.
2. DO NOT APPLY LUBRICANT TO RUBBER PARTS.
3. TRIM CABLES - UNDER NO CIRCUMSTANCES SHOULD THE TRIM CABLES FROM THE COCKPIT TO THE REAR OF THE FUSELAGE BE LUBRICATED (TO PREVENT SLIPPAGE).
4. CONTROL CABLES - WIPE CLEAN AT REGULAR INTERVALS BUT DO NOT LUBRICATE UNDER SALT WATER CONDITIONS OCCASIONAL LUBRICATION WITH MIL-L-7870 IS RECOMMENDED.
5. SEE LYCOMING SERVICE INSTRUCTIONS NO. 1014 FOR USE OF DETERGENT OIL.

BRAKE AND TIRE SERVICE

The brake system is filled with a Petroleum Base hydraulic brake fluid. This should be checked at every 100 hour inspection, and replenished if necessary. Do not refill with vegetable base fluid. When it is necessary to refill the system, or when the brakes seem spongy, probably due to the air in the lines, the following procedures will apply:

Cleveland Brake #30-41

To fill the brake system with this type brake assembly installed, proceed as follows:

1. Remove the rubber cap from the bleeder assembly and slide the hose from the pressure cap over the bleeder screw. Loosen the bleeder screw and fill the system until the master cylinder is full. Repeat this procedure for the left brake. If a pressure can is not available an open can with a hose attached may be used, provided the can is held higher than the master cylinder.

2. Air in the brake lines causes faulty operation which can be corrected by bleeding the individual brake systems as follows:

- a. Check the entire system for breaks or leaks.
- b. Remove rubber cap from bleeder assembly, and slide a hose over the bleeder screw.
- c. Remove filler screw from master cylinder of the particular brake which is being bled.
- d. Fill the master cylinder with Univis No. 40 MIL-H-5606 hydraulic fluid and keep the cylinder full during the bleeding process.
- e. Loosen the bleeder screw and work the brake pedal rapidly to force fluid through the bleeder hose into the receptacle. Tighten bleeder screw during return of pedal to the off position. Continue this process until no air bubbles are observed coming through the bleeder hose. The system is then properly bled.
- f. Tighten the bleeder screw, remove hose, and replace the rubber cap. Insure the master cylinders are full of

fluid and that the brakes operate properly.

No adjustment of the brake clearances is necessary on the Pawnee. If after extended service the brakes become less effective, new segments may be installed by taking off the dust covers and axle nuts, and removing four bolts from the brake assembly after which the wheel, the brake body, and the inner segments may be disassembled. The outer segments may be removed from the brake body by removing an 8-32 steel lock nut which is located centrally on the face of the brake body. Also the pistons, "O" rings and cylinders may be inspected after the outer segments are removed.

For maximum service, keep the tires inflated to the proper pressure. 25 lbs. is the minimum for satisfactory service. When carrying heavier loads, increased pressure may be desired. This may be gauged visually to meet the existing load conditions. The main gear tires may be rotated to produce even wear if necessary.

The tires may be demounted from the wheels by deflating the tubes, then removing the wheel through-bolts, allowing the wheel halves to be separated.

CARBURETOR AIR FILTER

1. Visual Inspection:

A visual inspection of the paper cartridge should be made at intervals not exceeding eight (8) hours of operation or at any time after the filter has been subjected to severe dust conditions. This inspection should be made to determine if there has been a rupture of the paper cartridge, damage to the outer screen or end seals, or blockage of the air flow due to leaves, paper, etc.

2. Cleaning:

Remove cartridge and clean by tapping against a hard surface to remove grit, sand and dirt. Do not blow out with an air hose or wash.

3. Replacement:

If the present cartridge is found to be in good condition and is not obstructed after being properly cleaned (see paragraphs 1 and 2), the following check should be made:

- a. Operate engine to static RPM at full throttle and note RPM.
- b. Remove filter cartridge and repeat operation in paragraph 3a.

If an increase of 50 RPM or greater is noted, a new cartridge should be installed.

LANDING GEAR SERVICE

To service the air charge only:

1. Remove right front side panel.
2. Remove inspection covers in lower fuselage bulkhead.
3. Remove valve cap and attach air line to air valve.
4. Loosen air lock nut and inflate strut to 575 ± 15 psi using either a strut pump or a portable charging bottle.
5. Tighten air lock nut and remove air line.
6. Replace valve cap, inspection covers and side panel.
7. Check for oil leaks.

To service both air and oil charges:

1. Remove right front side panel.
2. Remove lower left fuselage bulkhead and release air charge.
3. Remove the bleeder plug in the side of the shock strut body and fill to overflowing with MIL-H-5606 hydraulic fluid when strut is fully retracted. If fluid is added under pressure, filler hose connection should be hand tightened only.
4. Install the plug with bleeder hole exposed.
5. Charge with air as outlined above. Any excess oil will be discharged from the bleeder vent at this time.
6. Torque the AN814-2 plug to 175 ± 25 inch pounds.
7. Replace lower fuselage bulkhead and side panel.

A portable charging bottle is available through our Service Department.

INSPECTIONS

ENGINE SECTION

1. Operation:

- a. Run engine to minimum 120° oil temperature - check full throttle static RPM both magnetos.
- b. Check magnetos 125 RPM drop at 1800.
- c. Check carburetor heat. 150 RPM drop at 1800.
- d. Check ignition switch for operation.
- e. Check idle RPM 550-600 carburetor heat off.
- f. Oil pressure - Minimum idle 25 lbs. Normal 60-90 lbs.
- g. Master switch on, check alternator and voltage regulator for operation.
- h. Battery fully charged will show very slight indication on ammeter at full throttle.
- i. Check idle cut-off at 800 RPM; engine should cut off clean.
- j. Static RPM PA-25-235, 2250-2350. PA-25-260 fixed pitch prop, 2325-2425; constant speed prop, 2700.

2. Engine Mount:

- a. Check engine mount for damage and cracks at gaskets or in corners.
- b. Inspect protective finish on mount, sand and touch up bare areas.
- c. Inspect rubber shock mounts for deterioration and tension.
- d. Check mount bolts for safety.

3. Cowling:

- a. Clean and inspect engine cowling for dents and cracks at hinges and reinforcement.

- b. Check for tension adjustment on cowl doors at latch.
- c. Tension prevents vibration and cowl cracking.
- d. Check baffles for cracks and felt installation to prevent chafing.

4. Magnetos:

- a. Check magnetos for secure attachment.
- b. Check breaker point housing for excessive oil.
- c. Check points for gap and pitting. Gap setting .015 to .018.
- d. Check plug wiring connections at magneto and wire insulation for deterioration and chafing.
- e. Check grommets at baffles.

5. Oil Drain:

- a. Drain oil and check for metal particles.
- b. Remove, clean and check oil screen drain plug and inlet oil temperature housing for metal particles.
- c. Reinstall and safety oil drain plug.
- d. Check oil cover for leaks and flexible lines for deterioration.

6. Spark Plugs:

- a. Remove plugs, bomb blast and clean.
- b. Plugs with badly burned electrodes should be replaced.
- c. Reset gap to .018 to .022".
- d. Reinstall using thread lubricant to prevent seizing and torque to 300 to 360 inch pounds or 30 foot pounds.

7. Starter:

- a. Check starter motor for mounting security.
- b. Check commutator for excessive wear and bridging.
- c. Inspect wiring insulation for deterioration and

connections.

- d. Check ring gear for damaged teeth and nose cowl clearance.
- e. Check starter shaft bushings for play.
- f. Check brush retention and tension springs.

8. Alternator:

- a. Check alternator mounting for security.
- b. Check alternator drive belt for 3/4" band deflection.
- c. The amount of current shown on the ammeter is the load in amperes demanded by the electrical system from the alternator. To check, take for example a condition where the battery is demanding 10 amperes charging current. Switch on the rotating beacon. Note the value in amperes placarded for the beacon fuse (15 amps) and multiply by 80 percent. You get an actual current of 12 amperes. There will then be an increase of current from 10 to 22 amperes displayed on the ammeter. As each unit of electrical equipment is switched on, the currents will add up and the total, including the battery, will appear on the ammeter. Maximum continuous load is 37 to 40 amperes.

9. Carburetor and Heater:

- a. Check carburetor for mounting security.
- b. Inspect carburetor bowl for cracks, particularly at inlet.
- c. Drain carburetor float chamber and check inlet finger screen. Resafety.
- d. Operate throttle in cockpit to be sure that throttle arm hits stops in open and closed positions without binding or sticking.
- e. Check operation of mixture control for binding or sticking and full rich position.
- f. Inspect carburetor air box for security and cracks and heater valve for full travel.
- g. Check rubber intake hose connections for deterioration and clamp security.
- h. Check intake system for leaks and cracks.
- i. Clean air filter by tapping against a hard surface to remove grit and dirt. Do not blow out with air hose or wash.

10. Fuel Lines:

- a. Check fuel lines for leaks and hose deterioration.
- b. Check hose supports for security and
- c. Drain and clean fuel strainer and resafety.
- d. Check for stains around fuel system indicating leaks.
- e. Check all connections for tightness.
- f. Check fuel valve travel at the valve.

11. Exhaust Stacks:

- a. Check stack flanges for security, cracks and leaks.
- b. Remove all heater and muffler shrouds and inspect for corrosion, cracks and leaks that might transfer gas to the cockpit, particularly through the cabin heater system.
- c. Check tailpipe, muffler and stacks for security at all clamps and slip joints.
- d. Check cabin heater box and control valve for operation.
- e. Check cabin and carburetor heat flexible tubing for security and general condition.

12. Firewall:

- a. Check firewall for open holes and gas leaks from engine compartment.
- b. Check all controls for grommets and sealing.

PROPELLER SECTION

1. Alignment:

- a. Remove spinner and check for cracks or dents in spinner and back plate. Propeller blades are to track within 1/16".
- b. Metal propeller hubbolts are torqued 55-65 ft. lbs.
- c. Check for oil leaks on controllable pitch prop hub.

COCKPIT

1. Seats:
 - a. Check seat cushions for wear or deterioration.
 - b. Check seat fore and aft adjustment and lubricate track.
 - c. Check condition of safety harness and operation of buckle.

2. Windshield:
 - a. Check weatherstripping for security in channels and for weather leaks.
 - b. Visually check for cracks, crazing, distortion and discoloration.

3. Power Instruments:
 - a. Check power plant instruments for mounting security.
 - b. Check connections and plugs.
 - c. Check placards and limitation markings.

Tachometer	PA-25-235	PA-25-260
Red Line . . .	2575 RPM	2700 RPM
Green Arc. . .	500-2575 RPM	500-2700 RPM

Oil Pressure	min	max	min	max
Red Line . . .	60 lbs	90 lbs	60 lbs	90 lbs
Yellow Arc . . .	25 lbs	60 lbs	25 lbs	60 lbs
Green Arc. . .	60 lbs	90 lbs	60 lbs	90 lbs

Oil Temperature		
Red Line	245°	245°
Yellow Arc . . .	40° - 120°	40° - 120°
Green Arc. . . .	120° - 245°	120° - 245°

4. Flight Instruments:

- a. Check flight instruments for mounting security.
- b. Check connections and plugs.
- c. Check placards and limitation markings.

Airspeed

Red Line	156 M. P. H.
Yellow Arc	124 - 156 M. P. H.
Green Arc	61 - 124 M. P. H.
White Arc (Flap Operation)	60 - 109 M. P. H.

5. Switches, Lights, Fuses:

- a. Check battery cable connections for security.
- b. Check circuit breaker wire connector for security and insulating sleeves.
- c. Check position and landing light switches for placards and operation.

6. Door Latch and Hinges:

- a. Check door hinges for looseness.
- b. Check door latches for security.
- c. Check doors for proper fit to prevent air leaks to cockpit.

7. Engine Controls:

- a. Check mixture control for quadrant placard and smoothness of operation.
- b. Check carburetor heat for quadrant placard and smoothness of operation.
- c. Check throttle for quadrant placard and smoothness of operation.
- d. Check propeller for panel placard and smoothness of operation.
- e. Check primer for operation and leaks.
- f. Check cabin heat for panel placard and full travel of heater butterfly valve.

g. Check ignition switches for panel and terminal security, and placard for "OFF", "LEFT", "RIGHT".

8. Controls:

- a. Check aileron and elevator control torque tube for excessive play.
- b. Check pulleys and cable attachments.
- c. Check aileron arm attachment on torque tube.
- d. Check control stick bolts.

9. Rudder Pedals and Linkage:

- a. Check rudder pedal assembly for play and travel.
- b. Lubricate hinges and torque tube bearings and check for safety.
- c. Check rudder pedal return springs for attachment.

10. Flap Controls:

- a. Check flap handle for placard and condition of ratchet for flap positions.
- b. Check flap torque tube for excessive play.
- c. Check flap cable attachments.
- d. Check flap pulleys at bottom of fuselage.
- e. Remove inspection covers and check cable fairleads within wingwalk.
- f. Through wing inspection openings check the attachment of flap return springs.

11. Cables and Pulleys:

- a. Check all cables for broken strands.
- b. Check aileron pulleys and fairleads.

12. Flight Control Operation:

- a. Check aileron, rudder and elevator controls from

cockpit for smooth operation.

b. Check stick for neutral position with control surfaces streamlined.

13. Trim Controls:

a. Check elevator trim control for smooth operation.
b. Check indicator against elevator for proper position.

14. Fuel Valves:

a. Check fuel valve for smooth operation.
b. Check placard for "ON" and "OFF" positions.
c. Check fuel valve for full travel at valve.

LANDING GEAR

1. Shock Struts:

a. Check shock absorbers for proper extension.
b. Check shock struts and hinge bolts for wear and lubrication.

2. Wheels and Axles:

a. Remove wheels, wash, check and relubricate.
b. Check brake disc and segments for wear and scoring.
c. Check brake system for leaks.
d. Install wheel and axle nut only tight enough to remove end play.
e. Check torque on wheel thru bolts.

3. Tires:

a. Check tires for 25 pounds of air pressure.
b. Tail wheel tire pressure is 50 lbs.
c. Replace tires as necessary.

4. Brakes:

- a. Check brake reservoirs for fluid and assembly for leaks.
- b. Check operation and holding ability of brake and parking brake.

5. Landing Gear Vees:

- a. Hoist aircraft and check gear bushings; vee bushings are replaceable if worn.
- b. Check for skin wrinkles which may indicate interior damage.

6. Tail Wheel:

- a. Check tail wheel and spring assembly for looseness.
- b. Check condition of tail spring pad.
- c. Remove wheel, wash and repack bearing.

FUSELAGE

1. Fabric:

- a. Check condition of fabric particularly on top surfaces. (Use strip test method.)
- b. Check the finish for cracks or checks. Sand out and repaint all checks or cracks to preserve the fabric.

2. Wing Fittings:

- a. With fuselage bottom panel removed, inspect wing fittings with a flashlight and magnifying glass for minute cracks in the ears. Check bolts to be sure that there are no threads in bearing and that bolts are properly safetied.
- b. Check wing fitting holes for elongation by having

someone pull up and down on the wing tips.

3. Landing Gear Fittings:

a. Inspect all fittings with flashlight and magnifying glass for signs of cracks or hole elongation.

4. Fuselage Structure:

a. Through inspection openings and through cockpit, check the condition of all tubing behind seat for rust, damage and protective coating.

b. Check all stringers for damage and security.

5. Debris-In Fuselage:

a. Check the bottom of the fuselage and under floorboards for bolts, nuts and other objects that might jam controls or pulleys.

b. If considerable dirt or oil exist on the fuselage bottom, wash out with a non-caustic soap.

6. Control Cables:

a. Check for broken control cable strands by sliding a cloth over the cable in vicinity of fairleads and pulleys.

b. Check upper and lower elevator turnbuckles for safety and maximum of three threads showing outside of barrel.

c. Check bungee spring attachment at upper and lower elevator horn, and check trim cable for wear at fairleads.

d. Check rudder cable fairleads and cables for wear.

7. Fairings:

a. Check tail assembly fairings for cracks and missing metal screws.

WINGS,AILERONS AND FLAPS

1. Wing Fabric:

a. Check left and right wing fabric for holes, cracks or checks in the finish and open drain grommets at each rib bay trailing edge. (Fabric usually deteriorates first on the upper surface of the wing and along the trailing edge.)

b. Install inspection grommets at drag wire fittings to inspect drag wires for tension and wing ribs and compression members for damage.

2. Struts:

a. Check right and left wing strut fittings for elongation by lifting up and down on the wing.

b. Check bolts for fitting attachment to the spar.

c. Check struts for dents or cracks. Sight down strut trailing edge to ascertain that struts are straight.

d. Check strut ends and lock nut.

3. Bolts:

a. Check strut attachment bolts to be sure that there are no threads in bearing and bolts are properly safetied.

4. Ailerons:

a. Check both ailerons for wrinkles which are possible signs of structural damage.

b. Check each rib bay for an open drain grommet.

c. Check condition of fabric and finish, refinishing any dope cracks, checks or ringworm.

5. Aileron Hinges:

a. Check aileron hinge legs for security at rear spar and false spar.

b. Check clevis bolts for wear and safety. Worn or loose bolts must be replaced.

6. Aileron Control:

a. Remove inspection covers and check the cables in each wing for interference and chafing.

b. Check the pulleys in each wing for condition, wear and safety and lubricate pulley bearings.

c. Check wear and safety of the fairleads in each wing.

d. Aileron travel - 23° up 23° down $\pm 2^{\circ}$.

e. Stop at aileron should engage first to allow for full travel of ailerons.

f. Check the four aileron horn bolts for wear, threads in bearing and safety.

g. Check the turnbuckle to see that it is safetied and not more than three threads are showing outside the barrel.

h. To locate broken strands at fairleads or pulleys slide a cloth over the cable, all cables with broken strands to be replaced.

7. Flap Covering:

a. Check fabric condition of both flaps for deterioration.

b. Check condition of finish for cracks, checks, or ringworm and refinish any that exist.

c. Any internal structural damage will cause wrinkles on the fabric surface.

8. Flap Attachments:

a. Each flap has two hinges and two hinge legs that are riveted to the wing false spar and attached with a single bolt to the wing rear spar. Lowering the flaps at excessive speed can cause possible damage to these hinge legs so a careful inspection is recommended.

b. Check stop in up position for streamline of flap.

c. Check the clevis bolts for wear and installation of washers and safety.

9. Flap Mechanism:

a. Check rod-end bearings and push-pull tube for clearance through hole drilled in the bearing. Check minimum distance the push-pull tube is screwed into the rod. Be sure lock nut is tight.

b. Ascertain through inspection that both flap return springs are secure and in good condition. Operate flaps and check springs to be sure they do not chafe, bind or interfere with other controls or adjacent structure.

c. Check travel: Full Flap: $57^{\circ} \pm 2^{\circ}$.

d. Check bellcrank casting for cracks, particularly at the ears and for safety and security of the bracket.

10. Wing Root Fairings:

a. Check all screws for security and the fairing for cracks.

EMPENNAGE

1. Stabilizer:

a. Check stabilizer fabric condition and drain grommet for restrictions.

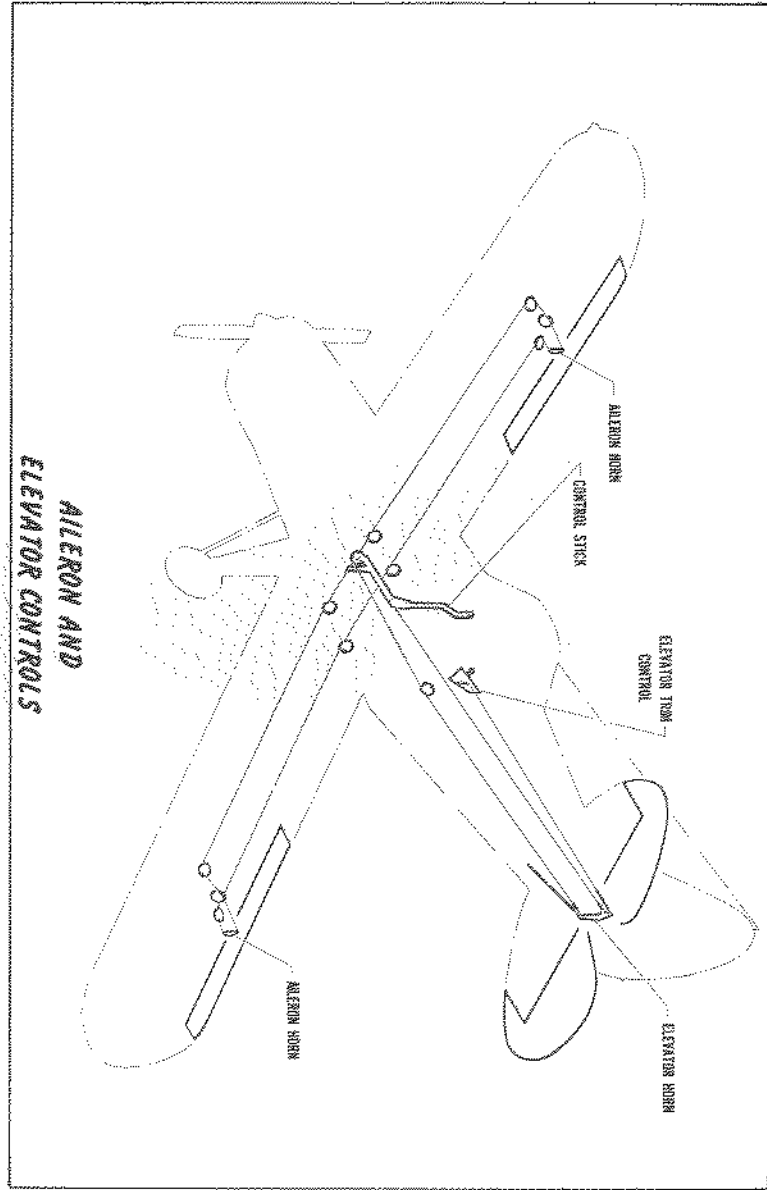
b. Check stabilizer front and rear hanger tube.

c. Lift up and down on the stabilizer, checking for excessive play.

2. Fin:

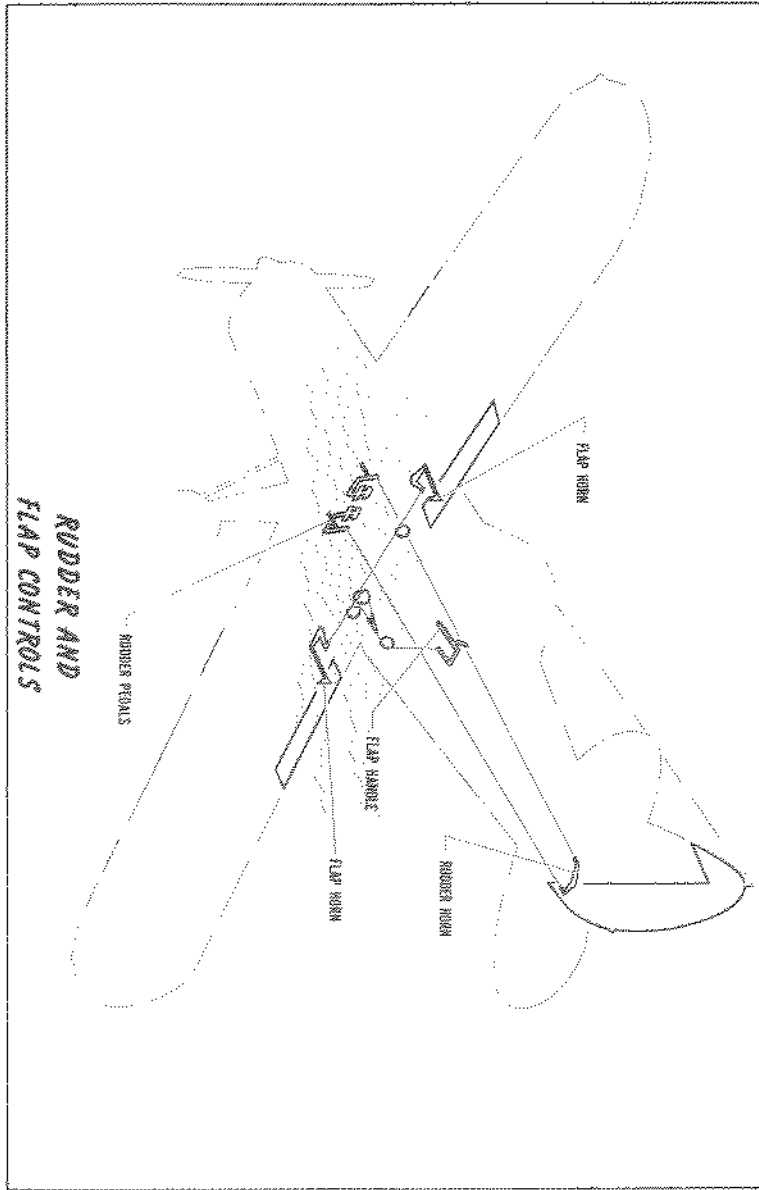
a. Inspect vertical fin for fabric condition and finish.

b. Check for wrinkles, dents and signs of internal



SECTION IV

PAWNEE "C"



RUDDER AND FLAP CONTROLS

SECTION IV

PAWNER "C"

damage.

3. Rudder:

- a. Inspect fabric cover on the rudder for fabric and dope condition.
- b. Check bottom of rudder for an open drain grommet.
- c. Check rudder for alignment and possible internal damage usually indicated by a wrinkle in the fabric.
- d. Inspect rudder hinge bolts for wear and safety.
- e. Check hinge bushings for play; these bushings are pressed in and should be replaced when worn.
- f. Check rudder stops to ascertain full travel:
25° Right and 25° Left, $\pm 2^\circ$.

4. Elevators:

- a. Check fabric condition and finish on the elevators.
- b. Check for open drain grommets along the elevator trailing edge.
- c. Sight check elevators for alignment.
- d. Check hinge bolts and bushings for wear and replace any worn pins or bushings.
- e. Check elevator cable horns for safety, worn bolts and clearance in travel.
- f. Check elevator stops to ascertain full travel:
28° up and 15° down, $\pm 2^\circ$.

5. Tail Brace Wires:

- a. Check empennage brace wires for corrosion and cracks or nicks that might result in failure.
- b. Check fittings for alignment with the wire and bolts for safety.
- c. Brace wires should be taut with little hand deflection.
- d. Check each wire to be sure there are no loose fork lock nuts.

6. Empennage Controls:

- a. Check rudder and elevator horns for worn bolts and safety with no threads in bearing.
- b. Check horns for alignment with the cable and freedom of travel.
- c. Check top and bottom cable turnbuckles for safety and a maximum of three threads showing outside of the barrel.
- d. Check cables through the fuselage for interference and chafing.

7. Electrical System:

- a. Check wiring for chafing and clamping.
- b. Check that all terminals are tight.
- c. Check bonding straps for security.
- d. Check mounting and operation of landing lights.
- e. Battery installation and terminals should be secure. Check that battery is charged and that there is no acid spillage.
- f. Check circuit breakers for security.

AGRICULTURAL EQUIPMENT

1. Spray Equipment

- a. Check spray lines for leaks and hose deterioration.
- b. Check line supports and clamps for security and corrosion.
- c. Drain and clean spray strainer.
- d. Check pump, fan, and brake assemblies, for security and proper operation.
- e. Check pump lubrication.
- f. Check on-off control and valve for security and correct operation.
- g. Check pressure control valve for security and correct operation.
- h. Inspect booms and boom supports for security and

corrosion.

- i. Inspect nozzle diaphragms for deterioration.
- j. Check hopper outlets and seals for leaks.
- k. Check fan blades for cracks.

2. Duster Equipment:

- a. Check gear box oil level.
- b. Check fan, gear box, drive shaft, agitator, and couplings for security and proper operation.
- c. Check fan for cracks and nicks.
- d. Check security of drive shaft hole doubler in lower right wingwalk.
- e. Check agitator shaft seal at hopper for security and leaks.
- f. Check distributor for cracks, loose rivets, and security.
- g. Check all seals for tightness.
- h. Check canvas bottom seal for deterioration.

LEVELING AND RIGGING

The airplane may be leveled as follows:

Support the tail on an adjustable jack or stand so that the airplane is in approximately level flight position. Place a level on either top longeron in the cockpit area and raise or lower the tail until the bubble is centered; next place the level across the cockpit from longeron to longeron and level the airplane laterally by letting air out of the tire on the high side.

Rigging of the aircraft is done as follows:

1. Dihedral angle: This is fixed and cannot be adjusted without structural alteration.
2. Washout: Place a 1/4" spacer block on top of a 30 inch level at one end. With the aircraft level, hold the level fore and aft against the bottom of the rib outboard of aileron, with

the spacer block at front spar. The correct washout will exist when the bubble is centered. Adjust the rear struts until this condition exists.

3. Tail assembly: With the airplane in level position, the stabilizer should be leveled at their rear spars by adjusting the rear set of tail brace wires while leaving the front set loose. The elevator hinge line should be straight and level from tip to tip. The fin should be vertical at the rudder post. After the rear set of wires are rigged, tighten up on the front set, being careful not to twist the fin or stabilizer.

SERIAL NUMBER PLATE

The Serial Number Plate is located on the after deck behind the pilot's seat. The serial number of the plane should be used in referring to service or warranty matters.