

5 Time Limits/Maintenance Checks

BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL

CHAPTER 5
LIST OF PAGE EFFECTIVITY

CHAPTER SECTION SUBJECT	PAGE	DATE
5-EFFECTIVITY	1	Nov 20/87
5-CONTENTS	1	Nov 20/87
5-10-00	201	Nov 20/87
	202	Nov 20/87
	203	Nov 20/87
	204	Nov 20/87
	205	Nov 20/87
	206	Nov 20/87
	207	Nov 20/87
5-20-00	201	Nov 20/87
	202	Nov 20/87
	203	Nov 20/87
	204	Nov 20/87
	205	Nov 20/87
	206	Nov 20/87
	207	Nov 20/87
	208	Nov 20/87
	209	Nov 20/87
	210	Nov 20/87
	211	Nov 20/87
	212	Nov 20/87
	213	Nov 20/87
	214	Nov 20/87
	215	Nov 20/87
	216	Nov 20/87
	217	Nov 20/87
	218	Nov 20/87
	219	Nov 20/87
	220	Nov 20/87
	221	Nov 20/87
	222	Nov 20/87
	223	Nov 20/87
	224	Nov 20/87
	225	Nov 20/87
	226	Nov 20/87
	227	Nov 20/87
	228	Nov 20/87

"END"

BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL

CHAPTER 5 - TIME LIMITS/MAINTENANCE CHECKS

TABLE OF CONTENTS

SUBJECT	CHAPTER	PAGE
	5-10-00	
Overhaul and Replacement Schedule		201
Landing Gear		201
Power plant		202
Fuel system		203
Instruments		204
Electrical system		205
Utility system		205
Flaps and flight controls		206
Miscellaneous		207
	5-20-00	
Scheduled Maintenance Checks - Maintenance Practices		201
100-HOUR INSPECTION		202
Operational Inspection		202
Power Plant		206
Nacelles		210
Wings And Carry-Through Structure		211
Cabin and Baggage Compartment		214
Nose Section		217
Rear Fuselage and Empennage		218
Main Gear And Brakes		220
Nose Gear		220
Landing Gear Operation		222
General		224
Propeller Deicer System Inspection		227
Electric Propeller Deicer (50-Hour Guide)		227
Electric Propeller Deicer (100-Hour Guide)		227

"END"

Raytheon Aircraft

BEECH DUKE 60 SERIES MAINTENANCE MANUAL

THIS PAGE INTENTIONALLY LEFT BLANK

Raytheon Aircraft

BEECH DUKE 60 SERIES MAINTENANCE MANUAL

Manual Affected: BEECHCRAFT Duke Maintenance Manual (60-590001-25)
Instructions: Insert this page facing page 201 (dated Nov 20/87) of Chapter 5-10-00.
Reason: Revise text under OVERHAUL AND REPLACEMENT SCHEDULE

OVERHAUL AND REPLACEMENT SCHEDULE

ITEM

OVERHAUL OR REPLACE

NOTE

"On Condition" items are to be overhauled or replaced when inspection or performance of these items reveal potentially unsafe or unserviceable condition.

LANDING GEAR

Main Gear

On condition (Leaking or collapsed struts that cannot be corrected by seal replacement will constitute the "On condition" requirement. Any pitting, corrosion, cracking, distortion or visible wear noted during the seal replacement will also constitute the requirement for an overhaul.)

**BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL**

OVERHAUL AND REPLACEMENT SCHEDULE

The first overhaul or replacement must be performed not later than the recommended period. The condition of the item at the end of the first period can be used as a criterion for determining subsequent periods applicable to the individual airplane or fleet operation, provided the operator has an approved monitoring system.

The time periods for inspections noted in this manual are based on average usage and average environmental conditions.

NOTE

The recommended periods do not constitute a guarantee the item will reach the period without malfunction as the aforementioned factors cannot be controlled by the manufacturer.

SPECIAL CONDITIONS CAUTIONARY NOTICE

WARNING

Prior to performing maintenance on an engine or the Airframe, ALWAYS pull the starter control circuit breakers and the Landing Gear circuit breaker. This will kill power to the starter control

as well as the igniter power relay and Landing Gear Control relay.

Airplanes operated for Air Taxi, or other than normal operation, and airplanes operated in humid tropics, or cold and damp climates, etc., may need more frequent inspections for wear, corrosion and/or lack of lubrication. In these areas, periodic inspections should be performed until the operator can set his own inspection periods based on experience.

NOTE

The date noted on the "STANDARD AIRWORTHINESS CERTIFICATE", FAA Form No. 8100-2, which is issued with each new airplane, is to be used as the basis for all TBO or replacement components listed in the following schedule.

NOTE

An engine cycle is defined as the period of time from the initial start to shutdown of the engine. This encompasses start-up, increase to full or partial power (as required during a flight regime) and back to complete engine shutdown. Normal operation results in the number of landings being equivalent to engine cycles.

OVERHAUL AND REPLACEMENT SCHEDULE

ITEM

OVERHAUL OR REPLACE

NOTE

"On Condition" items are to be overhauled or replaced when inspection or performance of these items reveal potentially unsafe or unserviceable condition.

LANDING GEAR

Main gear

Every 2000 hours

BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL

OVERHAUL AND REPLACEMENT SCHEDULE (Cont'd)

ITEM	OVERHAUL OR REPLACE
LANDING GEAR (Cont'd)	
Nose Gear	Every 2000 hours
Actuator assembly	Every 4000 hours or on condition
Retract motor	Every 2000 hours
Retract motor brushes	Every 500 hours or on condition
Shimmy damper	Every 2000 hours or 3 years
Wheels and tires	On condition
Brake assembly	On condition
Brake lining	On condition
Master cylinder	On condition
Shuttle valve assembly	On condition
Parking brake valve	On condition
All hose	On condition
POWER PLANT	
Engine	Every 1600 hours for new engines with serial numbers L-804-59 and up and remanufactured engines shipped after March 1, 1976 and remanufactured and overhauled engines which incorporate improved cylinder assemblies (as described in the latest edition of Avco Lycoming Service Bulletin No. 334); every 1200 hours for all other engines
Engine controls	On condition
Engine vibration isolator mounts	On condition
Exhaust system	On Condition

Raytheon Aircraft

BEECH DUKE 60 SERIES MAINTENANCE MANUAL

Manual Affected: BEEHCRAFT Duke Maintenance Manual (60-590001-25A)
Instructions: Insert this page facing page 202 (dated Nov 20/87) of Chapter 5-10-00.
Reason: Revise text under OVERHAUL AND REPLACEMENT SCHEDULE (Cont'd)

OVERHAUL AND REPLACEMENT SCHEDULE (CONT'D)

ITEM	OVERHAUL OR REPLACE
<i>LANDING GEAR (Cont'd)</i>	
Nose Gear	On condition (Leaking or collapsed struts that cannot be corrected by seal replacement will constitute the "On condition" requirement. Any pitting, corrosion, cracking, distortion or visible wear noted during the seal replacement will also constitute the requirement for an overhaul.)
Actuator Assembly	Gray or green colored actuators every 2,000 hours. White colored actuators every 4,000 hours.

Raytheon Aircraft

BEECH DUKE 60 SERIES MAINTENANCE MANUAL

THIS PAGE INTENTIONALLY LEFT BLANK

BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL

OVERHAUL AND REPLACEMENT SCHEDULE (Cont'd)

ITEM	OVERHAUL OR REPLACE
POWER PLANT (Cont'd)	
Turbocharger and waste gate	On condition
Oil cooler	On condition (replace when contaminated)
Propeller (Hartzell)	Every 2000 hours or 5 calendar years, whichever occurs first
Propeller controls	On condition
Propeller governor	every 1600 hours
Dry air pressure pump	Every 600 hours or on condition
Propeller Accumulator	Every 1600 hours
Hoses carrying flammable liquids	When condition warrants, 5 years from date of delivery, or at engine overhaul, whichever occurs first
All other hoses	On condition
FUEL SYSTEM	
Fuel cells	On condition
Nacelle fuel quantity transmitter	On condition.
Wing fuel quantity transmitter	On condition.
Fuel cell drain valve	On condition
Fuel system check valves	On condition
Fuel selector valve	Every 1000 hours
Fuel boost pump	Every 800 hours
Float valve	On condition
Hoses carrying flammable liquids	When condition warrants, 5 years from date of delivery, or at engine overhaul, whichever occurs first
All other hoses	On condition

BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL

OVERHAUL AND REPLACEMENT SCHEDULE (Cont'd)

ITEM	OVERHAUL OR REPLACE
FUEL SYSTEM (Cont'd)	
Fuel pump, engine driven	Every 1200 hours
INSTRUMENTS	
Turn and bank indicator	On condition
Altimeter	Every 24 months per FAA directive
Directional gyro	On condition
Gyro horizon	On condition
Dry air pressure gage	On condition
Cabin altitude control	On condition
Cabin altitude controller filter - standard	On condition
Cabin altitude controller filter - motorized	Every 100 hours
Manifold pressure gage	On condition
Airspeed indicator	On condition
Cabin differential pressure gage	On condition
Cabin altitude and pressure differential indicator	On condition
Rate-of-climb indicator	On condition
Fuel pressure gage	On condition
Fuel flow gage	On condition
Tachometer	On condition
Flap position indicator	On condition
Free air temperature indicator	On condition
Gyro instrument filter	Every 500 hours
Air pump inlet filter	On condition
All hoses	On condition

BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL

OVERHAUL AND REPLACEMENT SCHEDULE (Cont'd)

ITEM	OVERHAUL OR REPLACE
INSTRUMENTS (Cont'd)	
Air pump inline filter	300 hours
ELECTRICAL SYSTEM	
Landing gear dynamic brake relay	On condition
Battery master relay	On condition
Paralleling relay	On condition
All other relays	On condition
Voltage regulators	On condition
Heater vibrators	Replace at heater overhaul
Starter	Inspect at engine overhaul and overhaul or replace on condition
Starter relay	On condition
Generator	On condition
Battery (Emergency Locator Transmitter)	At 50% of useful life (as stated on the battery) or any time transmitter is used more than one cumulative hour or after inadvertent activation of unknown duration
UTILITY SYSTEM	
Cabin heater	Every 1000 hours or whenever pressure decay test requirements cannot be met. See appropriate manufacturer's manual
Heater igniter and plug	On condition
Heater fuel pump	On condition
Heater fuel spray nozzle	Replace at heater overhaul,

BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL

OVERHAUL AND REPLACEMENT SCHEDULE (Cont'd)

ITEM	OVERHAUL OR REPLACE
UTILITY SYSTEM (Cont'd)	
Heater fuel shut-off valve	On condition
Combustion blower	On condition
Combustion blower brushes	Every 500 hours
Vent blower	On condition
Vent blower brushes	Every 500 hours
Condenser blower	On condition
Condenser blower brushes	On condition
Oxygen regulator	Every 2000 hours or 48 months
Oxygen cylinder (3HT)	Hydrostatically test every 3 years, replace every 24 years or 4,380 refills (ICC regulation)
Oxygen cylinder (3A or 3AA)	Hydrostatically test every 5 years: no replacement duration
Differential control valve (P-4 thru P-307)	Inspect every 100 hours, replace on condition
Outflow valve (308 and after)	Perform functional test every 500 hours
Safety valve (P-4 thru P-307)	Inspect every 100 hours, replace on condition
Safety valve (P-308 and after)	Perform functional test every 500 hours
FLAPS AND FLIGHT CONTROLS	
Flight controls	On condition
Aileron tab actuator	On condition
Elevator tab actuator	On condition
Rudder tab actuator	On condition
Rudder pedal arm	On condition or at 2000 hours

BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL

OVERHAUL AND REPLACEMENT SCHEDULE (Cont'd)

ITEM OVERHAUL OR REPLACE

FLAPS AND FLIGHT CONTROLS (Cont'd)

Flap motor and drives	Every 2000 hours
Flap gearbox	Every 2000 hours
Flap actuators	Every 2000 hours
Flap flexible shaft	Every 2000 hours

MISCELLANEOUS

Wing bolts	Replace 10 years after the initial inspection. or on condition. See Chapter 57-00-00
------------	--

"END"

**BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL**

**SCHEDULED MAINTENANCE CHECKS
MAINTENANCE PRACTICES**

NOTE

For a listing of alternative inspection programs available for use with this airplane, refer to the latest issue of the BEECHCRAFT Publications Price List (P/N 118556).

The time periods for the inspections noted in this schedule are based on normal usage under average environmental conditions. Airplanes operated in humid tropics, or in cold, damp climates, etc., may need more frequent inspections for wear, corrosion, lubrication, and/or lack of maintenance. Under these adverse conditions, perform periodic inspections in compliance with this guide at more frequent intervals until the owner or operator can set his own inspection periods based on the contingencies of field experience. Airplanes operated less than 100 hours a year must have a 100-Hour Inspection performed no later than 12 months following the date of the preceding 100-Hour Inspection. The 100-hour interval between performance of the procedures specified herein should NEVER be exceeded by more than 10 hours, which can be used only if the additional time is required to reach a place where the inspection can be satisfactorily accomplished. However, any extension of a 100-hour interval must be subtracted from the following 100-hour interval, with no time extension permitted. For example, if an inspection is done at 110 hours, the next inspection is due 90 hours later with no extension allowed.

NOTE

Ascertain that all placards are in place and legible whenever the airplane has been repainted or touched up after repairs. Replace any placards that have been inadvertently defaced or removed.

NOTE

Beech Aircraft's Recommended Inspection Program in accordance

with FAR Parts 43 and 91 consists of, but is not limited to, inspection items listed in this Inspection Guide, any applicable Airworthiness Directives issued against the airframe or any equipment installed therein, conformity to Type Certificate Data Sheet and Maintenance Manual Airworthiness Limitations Chapter (Chapter 4) as applicable.

The owner or operator is primarily responsible for maintaining the airplane in an airworthy condition, including compliance with all applicable Airworthiness Directives as specified in Part 39 of the Federal Aviation Regulations. It is further the responsibility of the owner or operator to ensure that the airplane is inspected in conformity with the requirements of Parts 43 and 91 of the Federal Aviation Regulations. Beech Aircraft Corporation has prepared this inspection guide to assist the owner or operator in meeting the foregoing responsibilities. This inspection guide is not intended to be all-inclusive, for no such guide can replace the good judgment of a certified airframe and power plant mechanic in the performance of his duties. As the one primarily responsible for the airworthiness of the airplane, the owner or operator should select only qualified personnel to maintain the airplane.

While this guide may be used as an outline, detailed information of the many systems and components in the airplane will be found in the various sections/chapters of the shop/maintenance manual and the pertinent vendor publications. It is also recommended that reference be made to the applicable Maintenance Handbooks, previously issued Service Instructions, Beechcraft Service Bulletins, applicable FAA Regulations and Publications, Vendors Bulletins and Specifications for torque values, clearances, settings, tolerances, and other requirements. It is the responsibility of the owner or operator to ensure that the airframe and power plant mechanic inspecting the airplane has access to the previously noted documents as well as to this inspection guide.

**BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL**

Beech Aircraft Corporation issues service information for the benefit of owners and operators in the form of two classes of Service Bulletins. MANDATORY (Red Border) Service Bulletins are changes, inspections or modifications that could affect safety. The factory considers compliance with these Service Bulletins mandatory. OPTIONAL (No Border) Service Bulletins cover changes, modifications, improvements or inspections which may benefit the owner. Due to the wide range of information covered by the OPTIONAL Service Bulletin, each owner or operator is responsible for conducting a thorough review of each Optional Service Bulletin to determine if compliance is required based on the applicability of the OPTIONAL

Service Bulletin to his particular set of operating conditions.

In the final analysis it is the responsibility of the owner or operator to ensure that all previously issued Class I and II Service Instructions and Beechcraft Service Bulletins which are pertinent to his particular operation are complied with.

NOTE

In addition to the inspections prescribed by this schedule, the altimeter instrument and static system and all ATC transponders MUST be tested and inspected at 24-month intervals in compliance with the requirements specified in FAR Part 91.

100-HOUR INSPECTION

A. OPERATIONAL INSPECTION	MECH		INSP
	L	R	
1. STARTERS - Check for proper operation, unusual noises and dragging. Check starter energized light (if installed) and/or loadmeter to ensure starter disengagement when the starter switch is released.			
2. CYLINDER HEAD TEMPERATURE - Check for proper operation, temperature and fluctuations.			
3. ALTERNATOR - Check the output.			
4. PROPELLER OPERATION - Cycle propeller and check for proper rpm drop and smoothness of operation.			
5. PROPELLER SYNCHRONIZER - Check for proper operation.			
6. PROPELLER DEICER - Check for proper operation and amperage drawn on ammeter.			

**BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL**

A. OPERATIONAL INSPECTION (Cont'd)	MECH		INSP
	L	R	
7. OIL PRESSURE AND TEMPERATURE - Check for proper pressure, temperature limits and unusual fluctuations.			
8. MAGNETOS - Check the performance of the magneto by performing the MAGNETO DROP-OFF CHECK specified in the applicable Pilot's Operating Handbook.			
9. POWER CHECK - Check as outlined in the applicable Pilot's Operating Handbook.			
10. ALL ENGINE CONTROLS - With the engine running, check for proper operational limits, engine response and rigging. Check friction locks for proper operation. Check for proper lubrication of the connection bolts and excessive free play.			
11. PROPELLER GOVERNORS - Check for proper governor operation and feathering.			
12. AIR CONDITIONER - Operate the air conditioner and verify that the air scoop moves to the ground position when turned on and returns to the retracted position when turned off. Check for proper operation and unusual noise.			
13. FLIGHT INSTRUMENTS - Check for condition and proper operation. Check gages for proper reading.			
14. GYRO INSTRUMENTS - Check for erratic or noisy operation.			
15. DEICER (Surface) - Check for proper operation and cycling.			

**BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL**

A. OPERATIONAL INSPECTION (Cont'd)	MECH		INSP
	L	R	
16. IDLE RPM AND MIXTURE SETTINGS - Check for both proper rpm and mixture settings. Check controls for freedom of operation.			
17. IGNITION SWITCH - Rotate the ignition switch through the OFF position to the extreme limit of switch travel; if the engine stops firing, the switch is normal. If the engine continues to run with the switch held in the past OFF position, it is an indication that one magneto is still "hot" or ungrounded. When the switch is released from the past OFF position, it should automatically return to normal OFF and the engine should stop running. However, any ignition switch exhibiting this abnormal condition should be replaced.			
18. HEATING AND VENTILATING SYSTEM - Check for proper operation, heat and airflow output. Check controls for freedom of operation.			
19. PRESSURIZATION SYSTEM - Check for proper operation.			
20. FUEL QUANTITY AND FUEL FLOW GAGES - Check for proper operation and unusual fluctuations.			
21. FUEL BOOST PUMPS - Check for proper operation.			
22. FUEL TANK SELECTOR - Check for proper operation and feel for positive detent and proper placarding.			
23. ALL LIGHTS - Check for condition, attachment, cracked or broken lenses. Check switches, knobs and circuit breakers for looseness and operation.			
24. STALL WARNING SYSTEM - Check for proper operation.			

**BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL**

A. OPERATIONAL INSPECTION (Cont'd)	MECH		INSP
	L	R	
25. RADIO OPERATION - Check for proper operation, security of switches and knobs.			
26. FLAPS - Check for noisy operation, full travel and proper indication.			
27. PITOT HEAT - Check for proper heating of the unit.			
28. BRAKES - Check for condition and wear, ease of operation and proper release of the parking brake. Check for unusual brake chatter.			
29. EMERGENCY LOCATOR TRANSMITTER - Check for proper operation. Tune radio to 121.5 MHz on VHF or 243 MHz on UHF, then turn ELT switch to ON and monitor for one signal. Turn ELT switch OFF, then place in ARM position.			
30. OXYGEN SYSTEM - Functionally check the oxygen system for proper operation. Check the oxygen bottle shutoff valve for proper operation.			
31. SWITCHES, CIRCUIT BREAKERS - Check for proper operation.			
32. FLIGHT CONTROLS, TRIM CONTROLS AND TRIM INDICATOR - Check freedom of movement and proper operation through full travel with and without flaps extended. Check electric trim controls for operation.			
33. IDLE CUT-OFF - Check for proper operation and freedom of movement.			

**BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL**

B. POWER PLANT	MECH		INSP
<p>NOTE</p> <p>After the first 25 hours of engine operating time, a new, remanufactured, or newly overhauled engine should be given a 100-hour inspection including draining and renewing of oil.</p>	L	R	
1. COWLING - Check for condition and security. Remove the upper and lower cowling and clean. Inspect for cracks.			
2. COWL FLAPS - Check for travel, deformation and security. Inspect for cracks.			
3. SPARK PLUGS - Clean, inspect, regap, test and replace as necessary. Tighten spark plugs to proper torque and check ignition harness condition and for proper attachment.			
4. COMPRESSION - Perform differential compression test.			
5. PLUMBING - Inspect plumbing and associated accessories for condition (such as cracks) and attachment. Check plumbing clearance and secure against possible chafing.			
6. ENGINE OIL SUMP - Check for cracks, leaks, deformation and security.			
7. OIL DIPSTICK - Check the dipstick for rust and general condition. Inspect the dipstick tabs for security and that the tabs are not bent.			
8. OIL SUMP DRAINS AND FILTERS - Check for metal particles on filters. Check for proper torque after installation. Check drain plugs for leaks.			

**BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL**

B. POWER PLANT (Cont'd)	MECH		INSP
<p>NOTE</p> <p>Change oil and oil filter per Lycoming T10-541 Series Operating Manual.</p>	L	R	
9. OIL COOLER - Check oil cooler, lines and fittings for condition, security, chafing and leaks.			
10. PROPELLER AND MOUNTING BOLTS - Check for condition and security. Check the tip of the blades for evidence of lightning strikes. If there is evidence of lightning strikes, consult the propeller manufacturer, the engine manufacturer and Beech Aircraft Corporation. Inspect the blades for cracks, dents, nicks, scratches, erosion, corrosion, security and movement in the hub.			
11. PROPELLER SPINNER - Check for deformation, security and cracks.			
12. PROPELLER HUB - Check for cracks, excessively leaking seals and condition. Check propeller dome pressure.			
13. PROPELLER ACCUMULATOR - Check for proper operation.			
14. STARTER - Check for condition, attachment and chafed or loose wires.			
15. MAGNETOS - Check contact points for proper clearance. Points with deep pits or excessively burned areas must be discarded. Inspect the cam follower felt pad for proper lubrication and clean the compartment with a clean, dry cloth. Check timing.			
16. IGNITION HARNESS - Inspect for fraying and attachment.			

**BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL**

B. POWER PLANT (Cont'd)	MECH		INSP
	L	R	
<p>17. CYLINDERS AND BAFFLES - Check cylinders and exhaust manifold for obvious leaks, security and cracks; check baffles for cracks and security. Check cylinders for broken cooling fins and loose or missing base nuts.</p> <p style="text-align: center;">NOTE</p> <p>Accomplish valve inspection every 400 hours of operation per Lycoming T10-541 Series Operating Manual.</p>			
<p>18. EXHAUST SYSTEM - Check for deformation, security, cracks, leaks, loose or missing nuts and clamps. Check for thin wall condition which may occur due to normal internal erosion on stacks which have long service time.</p>			
<p>19. FIREWALL - Check for wrinkles, damage or cracks. Check all electrical and control access holes for proper sealing.</p>			
<p>20. HOSE AND DUCTS - Check all fuel, oil and air hose or duct for leakage, cracks, deterioration and damage. Check fittings for security.</p>			
<p>21. ENGINE ACCESSORIES - Check for condition, security and leaks. Check wiring, hoses and tubes for chafing, security and leaks.</p>			
<p>22. GENERATOR - Check for condition, attachment and chafed or loose wires.</p>			
<p>23. ENGINE MOUNTS - Check for cracks, corrosion and security. Inspect rubber cushions, mount bolts and nuts, and grounding straps for condition and security.</p>			
<p>24. PROPELLER GOVERNOR - Check for leaks and control arm for security.</p>			

BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL

B. POWER PLANT (Cont'd)	MECH		INSP
	L	R	
25. ENGINE CONTROLS - Check controls and associated equipment for condition, attachment, alignment and rigging. Each 300 hours remove the throttle cable connection bolts and check for wear.			
26. ELECTRICAL WIRING AND EQUIPMENT - Inspect electrical wiring and associated equipment and accessories for fraying and attachment.			
27. AIR CONDITIONER COMPRESSOR - Check for security and attachment. Check refrigerant and oil levels. Check belt for tension and worn or frayed condition.			
28. INDUCTION AIR FILTER - Check for condition, cleanliness and security.			
29. INDUCTION SYSTEM AND ALTERNATE AIR - Check flexible air ducts for delamination of the inner lining. Check the alternate air valve for blockage, security, cracks, operation and wear.			
30. FUEL INJECTION CONTROL VALVE - Clean the screen and check for damage. Install screen and check for leaks.			
31. FUEL INJECTION SYSTEM - Inspect all fuel injection components, lines and fittings for evidence of fuel leaks, fraying and cracking.			
32. TURBOCHARGERS - Check the compressor wheel for nicks and cracks. Check linkages for security and proper operation.			
33. TURBINE INLET TEMPERATURE INDICATOR - Check the indicator for accuracy and calibrate as outlined under the heading TIT INDICATOR CALIBRATION in Chapter 77-00-00.			

BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL

B. POWER PLANT (Cont'd)	MECH		INSP
	L	R	
34. ELECTRIC PROPELLER DEICER - Check for service damage to the deicer heaters, brush rods, springs and brushes. Check the lead strap and all other clamps, connectors and wiring for electrical soundness. Check the slip rings for roughness, cracks, burned or discolored areas and for deposits of oil, grease or dirt. Check for security and attachment of all components. Check deicer boots for wrinkles, loose or torn areas.			
C. NACELLES	MECH		INSP
	L	R	
1. NACELLE SKIN - Check for deformation and obvious damage or cracks. Check for loose or missing rivets.			
2. NACELLE STRUCTURE - Check for cracks and deformation. Check for loose or missing rivets and concealed damage.			
3. PNEUMATIC PRESSURE REGULATORS - Check for condition, security and attachment.			
4. INLINE FILTERS - Clean or replace, as required, the filter in each nacelle as outlined under the heading SERVICING in Chapter 36-00-00.			
5. BATTERY - Inspect for clean, tight connections and correct fluid level. Add distilled water as required. Inspect the vent hose at the battery box for obstructions. The battery box should be washed out thoroughly and dried each time the battery is removed and cleaned.			
6. FUEL QUANTITY TRANSMITTER - Check for attachment and electrical connection.			

**BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL**

C. NACELLES (Cont'd)	MECH		INSP
	L	R	
7. FUEL CELLS AND VENTS - Inspect fuel cells for leakage and vent lines for security as outlined in Chapter 28-10-00.			
8. PLUMBING - Check for leakage, chafing, condition and security.			
9. ELECTRICAL WIRING AND EQUIPMENT - Inspect for chafing, damage, security and attachment.			
10. AIR CONDITIONING - Check for condition, security and attachment.			
D. WINGS AND CARRY-THROUGH STRUCTURE	MECH		INSP
	L	R	
1. SKIN - Check for deformation and obvious damage. Check for cracks, loose or missing rivets. If damage is found, check adjacent structure. Check for indications of hard landing or excessive flight loading.			
2. STRUCTURE - Check for cracks, deformation and concealed damage. Check for loose or missing rivets.			
3. ACCESS DOORS AND PANELS - Inspect for cracks, proper fit and attachment.			
4. CABLES, PULLEYS AND TURNBUCKLES - Check the wing flight control components, cables and pulleys. Replace control system components (push rods, turnbuckles, end fittings, castings, etc.) that have bulges, splits, bends, or cracks. Check control cables, pulleys, and associated equipment for condition, attachment, alignment, clearance, and proper operation. Replace cables that have broken strands or evidence of corrosion. Check cables for proper tension at the first inspection and every 100-hours thereafter.			

**BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL**

D. WINGS AND CARRY-THROUGH STRUCTURE (Cont'd)	MECH		INSP
	L	R	
5. AILERONS - Check for condition and security. Check for cracks, loose or missing rivets and freedom of movement. Check hinge bearings and brackets for condition, push-pull rods for security and rod ends for corrosion.			
6. AILERON TRIM TAB - Check for attachment and freedom of movement. Check free play as outlined under the heading CHECKING AILERON TAB FREE PLAY IN Chapter 27-00-00.			
7. FUEL CELLS AND VENTS - Inspect fuel cells for leakage and vent lines for security as outlined in Chapter 28-10-00.			
8. PLUMBING - Check for leakage, chafing, condition and security.			
9. ELECTRICAL WIRING AND EQUIPMENT - Inspect for chafing, damage, security and attachment.			
10. FLAP LIMIT SWITCHES - Check for condition, security and freedom of operation.			
11. FLAPS AND ACTUATORS - Check for condition, security, binding or chafing of actuator cables. Check flap skin and structure for cracks, loose or missing rivets. Check roller bearings and tracks for condition. Check stop area for condition and damage.			
12. FLAP POSITION TRANSMITTER - Check for security and operation.			
13. DRAIN HOLES - Check the drain holes in the left and right upper wing attach fittings to assure that they are open and free of obstruction.			

BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL

D. WINGS AND CARRY-THROUGH STRUCTURE (Cont'd)	MECH		INSP
	L	R	
14. WING SPAR CAP - Inspect the wing spar cap for corrosion as outlined in Chapter 57-00-00.			
15. WING BOLTS - Check wing bolts for proper torque at the first 100-hour inspection and at the first 100-hour inspection after each reinstallation of the wing attach bolts. Refer to Chapter 57-00-00 for wing bolt, nut and fitting inspection criterion and frequency.			
16. STALL WARNING VANE - Check for condition and obstructions.			
17. FUEL QUANTITY TRANSMITTER - Check for attachment and electrical connection.			
18. NAVIGATION LIGHTS - Check for cracked or broken lenses and replace bulbs as necessary.			
19. LANDING LIGHTS - Check for security and operation. Replace lens and bulbs as necessary.			
20. FUEL BOOST PUMPS AND FUEL LINES - Check for condition, security and leaks. Check lines for signs of chafing or cracks.			
21. FUEL SELECTOR VALVE - Check for security, operation and leakage.			
22. FUEL STRAINERS - Inspect and clean as outlined under the heading ENGINE FUEL FILTERS AND SCREENS in Chapter 12-10-00 of this Maintenance Manual.			

**BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL**

E. CABIN AND BAGGAGE COMPARTMENT	MECH	INSP
1. SKIN - Inspect skins for deformation, cracks and loose or missing rivets. If damage is found, check adjacent structure.		
2. STRUCTURE - Check for cracks and deformation. Check for loose or missing rivets and concealed damage.		
3. CABLES, PULLEYS AND PRESSURE SEALS - Check the flight control components, cables and pulleys. Replace control system components (push rods, turnbuckles, end fittings, castings, etc.) that have bulges, splits, bends, or cracks. Check control cables, pulleys, and associated equipment for condition, attachment, alignment, clearance and proper operation. Replace cables that have broken strands or evidence of corrosion. Check cables for proper tension at the first inspection and every 100-hours thereafter.		
4. PRESSURIZATION CONTROL VALVES - On airplane serials P-4 thru P-307, check the cabin pressurization safety valve and outflow valve differential adjustment every 300 hours of airplane operation or annually. On airplane serials P-308 and after, perform a functional test of the outflow and safety valves every 500 hours. On airplane serials P-308 and after, clean the cabin pressurization controller filter and orifice each 500 hours; clean the safety valve filter and orifice each 1000 hours. For checking, cleaning and testing procedures, refer to Chapter 21-30-00.		
5. FLAP MOTOR AND SHAFTS - Check for condition, security and wear at all points. Check cable housing for security and check jam nuts for tightness.		
6. BRAKE MASTER CYLINDER AND PARKING BRAKE VALVE - Check for condition, security and leaks. Check lines for signs of chafing or cracks.		

**BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL**

E. CABIN AND BAGGAGE COMPARTMENT (Cont'd)	MECH	INSP
<p>7. RUDDER PEDALS - Check for freedom of movement. Check cables, push/pull rods, bell cranks, pulleys, turnbuckles, fairleads, for proper routing, condition and security. Check rudder pedal fore and aft positions for wear. Check locks and pins to ensure positive lock.</p> <p style="text-align: center;">NOTE</p> <p>On airplane serials P-555 and after, and earlier airplanes with the noted replacement rudder pedal arms, the following inspection is accomplished at 300-hour intervals.</p>		
<p>8. RUDDER PEDAL ARMS - Check pedal arms for cracks and replace at 2000 hours or sooner if cracks are found. Replace P/N 50-524326-7 with P/N 50-524326-17 and P/N 50-524326-8 with P/N 50-524326-18.</p>		
<p>9. CONTROL COLUMN, TRIM CONTROL AND INDICATOR (Electric and Manual) - Check for freedom of movement. Inspect pulleys, sprockets, bearings, actuators, chairs and turnbuckles for condition, security and operation. Check trim indicator for proper indication.</p>		
<p>10. ELECTRICAL WIRING AND EQUIPMENT - Check for condition, security and signs of chafing.</p>		
<p>11. WINDSHIELD HEATER - Check the voltage as outlined under the heading ELECTRICALLY HEATED WINDSHIELD VOLTAGE CHECK in Chapter 30-40-00.</p>		
<p>12. PLUMBING - Check all plumbing and connections for security, leakage and general condition.</p>		
<p>13. WINDOWS AND DOORS - Inspect windows for scratches, crazing and general condition. Check doors for condition and attachment. Check latching mechanism for proper engagement and ease of operation. Check that the CABIN DOOR warning light in the annunciator panel remains illuminated until the door is closed, latched and locked.</p>		

BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL

E. CABIN AND BAGGAGE COMPARTMENT (Cont'd)	MECH	INSP
14. INSTRUMENTS AND INSTRUMENT PANEL - Inspect instrument panel, subpanels, placards and instruments for condition and attachment. Check all knobs for security. Inspect shock mounts, ground straps for cracks and security.		
15. SEATS, SEAT BELTS AND SHOULDER HARNESSSES - Inspect cabin seats, seat belts and shoulder harnesses for proper operation, condition and security of attachment. Inspect floorboards for condition and seat attachment. Check for operation of the seat stops.		
16. OXYGEN - Check the oxygen masks for cleanliness and stowage. Check the system for leakage. Replace any component that is leaking.		
17. VENTILATING SYSTEM - Check all fresh air and heat outlet vents for proper movement and operation.		
18. FUEL SELECTOR VALVE - Inspect for security, freedom of movement, proper detent feel and condition. Check for proper placarding.		
19. FILTERS - Replace individual instrument air filters.		
20. EMERGENCY EXIT HATCH - Check the emergency release handle and latch assembly for proper operation. Check that the hatch moves out freely. Check the complete hatch assembly for condition and all moving parts for proper operation. With the hatch installed, check for proper latching and seal.		
21. STATIC SYSTEM - Check and drain water from the static lines.		

BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL

F. NOSE SECTION	MECH	INSP
1. SKIN - Inspect skin for corrosion, condition, and loose or missing rivets. If damage is found, check adjacent structure.		
2. STRUCTURE - Check for corrosion, cracks, loose or missing rivets, and concealed damage.		
3. RADAR ANTENNA COVER - Check the fiberglass for security, attachment and cracks.		
4. BRAKE FLUID RESERVOIR - Check reservoir for security, attachment, open vent, proper fluid level and for leaks.		
5. ELECTRICAL WIRING AND EQUIPMENT - Inspect electrical wiring and associated equipment and accessories for condition, fraying, and attachment.		
6. HEATER FUEL SYSTEM - Check lines for connection and chafing.		
7. HEATER DUCTING AND WIRING - Check security and chafing.		
8. AIR CONDITIONER EVAPORATOR - Check for condition and attachment.		
9. OXYGEN (If applicable) - Inspect oxygen cylinder and valves for condition and security of attachment. Check the valves for proper condition.		
10. TAXI LIGHT - Check for security and operation. Replace if necessary.		
11. BAGGAGE DOOR - Check for condition and proper latching.		

**BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL**

F. NOSE SECTION (Cont'd)	MECH	INSP
12. PITOT MAST - Check for condition and obstruction. Check heating if applicable.		
G. REAR FUSELAGE AND EMPENNAGE	MECH	INSP
1. SKIN - Check for deformation, cracks and obvious damage. Check for loose or missing rivets. If damage is found, check adjacent structure.		
2. STRUCTURE - Inspect the two most aft bulkheads for cracks, distortion, loose rivets or other obvious damage.		
3. CABLES, PULLEYS AND TURNBUCKLES AND PRESSURE SEALS - Check the elevator and rudder flight control components, cables and pulleys. Replace control system components (push rods, turnbuckles, end fittings, castings, etc.) that have bulges, splits, bends, or cracks. Check control cables, pulleys, and associated equipment for condition, attachment, alignment, clearance, and proper operation. Replace cables that have broken strands or evidence of corrosion. Check cables for proper tension at the first inspection and every 100-hours thereafter.		
4. CONTROL SURFACES - Check for deformation, cracks and security. Check for loose or missing rivets. Check for freedom of movement and travel limits. Check for security of hinges and bond cable.		
5. STRUCTURE - Check for cracks, deformation and concealed damage.		
6. TRIM TABS AND ACTUATORS Check for security and wear. Check allowable free play as outlined in Chapter 27-20-00 and 27-30-00. Check hinges and trim tab actuator for security and wear. Check trim tabs for cracks and control rods for attachment. Lubricate the trim tab hinges as outlined in Chapter 12-20-00.		

BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL

G. REAR FUSELAGE AND EMPENNAGE (Cont'd)	MECH	INSP
7. RUDDER TORQUE TUBE (P-4 thru P-533 of S.I. 1115 has not been complied with) - Inspect the rudder torque tube for possible elongated taper pin holes and corrosion as outlined in BEECHCRAFT Service Instructions No. 1115.		
8. STATIC PORTS - Check for obstruction and clean as necessary.		
9. PLUMBING - Check for leakage, cracks, chafing, condition and security.		
10. ELECTRICAL WIRING AND EQUIPMENT - Inspect for chafing, damage, security and attachment.		
11. STATIC LINES - Check condition of static lines and drain.		
12. ASSIST STEP - Inspect for condition and attachment. The step may be adjusted as outlined under the heading STEP ADJUSTMENT (FOLDING POSITION) in Chapter 52-60-00.		
13. ANTENNAS - Check for condition and security.		
14. SCUPPER DRAINS - Check that the drain guards are open facing aft and drain holes are free from obstruction.		
15. OXYGEN (If applicable) - Inspect the oxygen cylinder and valves for condition and security of attachment. Check the valves for proper operation.		

**BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL**

H. MAIN GEAR AND BRAKES	MECH		INSP
	L	R	
1. BRAKES, LINES, LINING AND DISCS - Check for condition, wear and security. Check lines for chafing and signs of leakage or cracks. Check discs for wear or warping. Check brake discs for cracks.			
2. WHEELS AND TIRES - Check wheels for cracks and tires for wear, damage, condition and proper inflation. Check wheel bearings for condition and wear.			
3. LANDING GEAR STRUTS - Inspect the shock struts and components for cracks, attachment, corrosion, proper inflation and evidence of leakage.			
4. ACTUATING LINKAGE - Check for wear and cracks at attach points. Check for condition and security.			
5. GEAR DOORS AND LINKAGE - Check doors for damage and cracks to the structure and skins. Check linkage for wear and cracks at the attach points. Check for condition and security. Determine that all clevis retaining pins are in place and secured with cotter pins.			
6. STRUT FLUID LEVEL - Check and maintain the proper hydraulic fluid level in the struts as outlined in Chapter 12-20-00.			
7. STRUT AND A-FRAME HINGE BOLTS - Inspect for cracks and security of attachment.			
I. NOSE GEAR	MECH		INSP
1. WHEEL AND TIRE - Check wheel for cracks and tire for wear, damage, condition and proper inflation. Check wheel bearings for condition and wear.			

**BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL**

I. NOSE GEAR (Cont'd)	MECH	INSP
2. LANDING GEAR STRUT - Inspect the shock strut and components for cracks, attachment, proper inflation and evidence of leakage.		
3. ACTUATING LINKAGE - Check for wear at attach points. Check for cracks and security.		
4. GEAR DOORS AND LINKAGE - Check doors for damage and cracks to the structure and skins. Check linkage for wear and cracks at the attach points. Check for condition and security.		
5. NOSE GEAR STEERING LINKAGE - Inspect linkages for tightness, condition and security. Check linkage boots for condition.		
6. SHIMMY DAMPER - Check for condition and attachment. Check attach points for cracks. Check fluid level as outlined in Chapter 12-20-00.		
7. STRUT FLUID LEVEL - Check and maintain the proper hydraulic fluid level in the strut as outlined in Chapter 12-20-00.		
8. STRUT AND A-FRAME HINGE BOLTS - Inspect for cracks, corrosion and security of attachment.		
9. NOSE GEAR UPLOCK PIN - Remove and inspect for corrosion. Lubricate with MIL-G-81322 prior to reinstallation.		
10. NOSE GEAR ASSEMBLY (P-3 thru P-296) - After the first 1000 flight hours and each 1200 flight hours thereafter, inspect the nose gear assembly as noted in BEECHCRAFT Service Instructions No. 0669-206, Rev I (or subsequent).		

BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL

<p>J. LANDING GEAR OPERATION</p> <p style="text-align: center;">CAUTION</p> <p>Under no circumstances should the landing gear be operated electrically while the handcrank is engaged. In the event of such an operation, a teardown and magnetic inspection should be performed for damage to engagement slot in worm shaft.</p> <p style="text-align: center;">NOTE</p> <p>Since the battery voltage is not sufficient to properly cycle the landing gear for this inspection, use only an external power source capable of delivering and maintaining 28.25 ±.25 VDC, to the airplane's electrical system throughout the extension and retraction cycles when performing the landing gear retraction inspection. For more specific information which may be necessary to accomplish the following items, refer to Chapter 32-30-00.</p>	MECH	INSP
<p>1. LANDING GEAR ACTUATOR ASSEMBLY - With the airplane on jacks and the retraction cycle started enough to break the downlock tension, apply a sharp load by hand in an aft direction against the nose gear strut. If this causes the main gear wheels to move approximately 1/2 to 1 inch, it is a good indication that the gear actuator assembly needs overhaul and/or adjustment.</p>		
<p>2. LANDING GEAR GEARBOX AND ACTUATING LINKAGE - Check for leakage, wear, condition and attachment. Check for unusual noise. Check oil level by engaging and turning the emergency handcrank 1/2 turn to determine that oil is being picked up on the worm gear. The oil level should be maintained no more than necessary to cover 1/2 of the diameter of the worm gear. Check actuator gearbox, motor and switches for leakage, condition and security.</p>		
<p>3. DOORS - Check door operation, fit and fair. Check for unusual noise.</p>		

BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL

J. LANDING GEAR OPERATION (Cont'd)	MECH	INSP
4. GENERAL OPERATION - Cycle the landing gear while checking to ascertain that the position light switches operate in conjunction with the landing gear position. Check the condition and operation of the complete landing gear system as outlined in Chapter 32-30-00.		
5. POSITION LIGHTS - Check for security, adjustment, wiring for breaks, condition of insulation, loose connections and proper indication.		
6. EMERGENCY EXTENSION - Check system for freedom of operation and positive engagement of the downlocks. Check for unusual noise.		
7. LIMIT SWITCH RIGGING - Check for security and proper adjustment of the limit switches. Refer to Chapter 32-30-00 for correct landing gear gearbox internal clearance.		
8. DYNAMIC BRAKING ACTION - Verify proper operation of dynamic brake relay.		
9. WARNING HORN - Check for proper operation. NOTE Downlock tension should be checked at the first 100-hour inspection and every 200 hours thereafter.		
10. UPLOCK CABLE TENSION - Check uplock cable mechanism for condition and security. Check uplock cable for proper tension and for possible fraying.		
11. DOWNLOCK TENSION (MAIN GEAR) - Check for proper deflection force on the main gear knee joints.		

BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL

J. LANDING GEAR OPERATION (Cont'd)	MECH	INSP
12. DOWNLOCK TENSION (NOSE GEAR) - Check the downlock tension on the nose gear as outlined in Chapter 32-30-00.		
13. UPLOCK ROLLERS - Check condition and clearance of uplock rollers per Chapter 32-30-00 and lubricate as outlined in Chapter 12-20-00. Check for binding.		
14. SAFETY SWITCH - Check for security, proper rig and operation.		
15. NOSE GEAR UP TENSION - Check the up tension on the nose gear per Chapter 32-30-00.		
16. NOSE GEAR STEERING - Check for condition and security.		
K. GENERAL	MECH	INSP
1. Airplane cleaned and serviced.		
2. Airplane lubricated, after cleaning, as outlined in Chapter 12-20-00 and BEECHCRAFT Safety Communique No. 57 dated June 3, 1981.		
3. Inspect all placards to assure that they are easily readable and securely attached.		
4. Assure that all Airworthiness Directives, BEECHCRAFT Service Bulletins and previously issued Service Instructions are reviewed and complied with as required.		
For a complete or annual inspection of the airplane, all items on the airplane that are noted in this guide should be inspected.		

BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL

PILOT'S DISCREPANCIES	REMARKS

BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL

PILOT'S DISCREPANCIES	REMARKS

**BEECHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL**

**PROPELLER DEICER SYSTEM
INSPECTION**

The various components of the propeller deicer system should be inspected every 50 hours for the appearance of defects. The following inspection may provide a means of detecting and correcting such defects before they render the deicer system inoperative.

ELECTRIC PROPELLER DEICER (50-HOUR GUIDE)

a. Lock the brakes and operate the engines at near takeoff power. Turn the deicer system switch ON and observe the ammeter for at least 2 minutes. If the ammeter needle does not rest within the shaded band (except for a flicker that may occur when the step switch of the timer cycles) refer to the troubleshooting chart in Chapter 30-60-00 for the probable sources of trouble.

NOTE

Timers with electronic stepping circuits may not "flick" noticeably between cycles.

b. With the engine shut down, turn the deicer switch ON and feel the deicer boots on the propeller for the proper sequence of the heating elements. The presence of local hot spots indicates damage to the heating elements, which should be repaired before more serious damage develops.

CAUTION

When following the instructions of step "b", move the propeller back and forth to prevent arcing between the brushes and the slip ring.

WARNING

Before moving the propeller, make certain that the ignition switch is OFF and that the engine has cooled completely. There is always some danger of a cylinder firing when a propeller is moved.

c. Remove the spinner dome and open all access doors pertaining to the wiring and components of the deicer system. Turn the deicer switch ON and station an assistant in the pilot's compartment to observe the system ammeter. Flex all accessible wiring, particularly the lead straps, leads from the slip ring assembly, and the firewall electrical connectors and their wiring. Any movement of the ammeter, other than the cycling flicker that may occur when the step switch of the timer cycles, indicates a short or open circuit that must be located and corrected.

d. To extend the life of the lead strap between the hub clamp and clip, reposition the bend at least 1/2 inch from the existing location of the bend.

e. Check for damaged springs, and worn or damaged brushes.

**ELECTRIC PROPELLER DEICER
(100-HOUR GUIDE)**

a. Check for radio noise or compass interference by operating the engines at near takeoff power with the radio gear turned ON. If, under these conditions, noise or interference occurs when the deicer systems switch is turned ON and disappears when the switch is OFF, refer to the troubleshooting chart for the probable source of trouble.

b. Check all clamps, clips, mountings, electrical connections, and connectors for tightness and electrical soundness. Check also for loose, broken, or missing safety wire.

c. Closely check deicer boots for wrinkles, loose, or torn areas, particularly around the outboard end and at the point where the strap passes under the hub clamp. Look for abrasions or cuts along the leading edge of the flat or thrust face. If the heater element wires are exposed in the damaged areas or if the rubber is found to be tacky, swollen, or deteriorated (as from contact with oil or solvent fluids), replace the boot.

d. Check that the hub clamps are tight. Inspect for cracks or other damage. Check to see that the cushioning material is not missing or damaged in the area

**BEEHCRAFT
DUKE 60 SERIES
MAINTENANCE MANUAL**

under the hub clamp or on the edge of the spinner dome. Manually operate the propeller from low pitch to high pitch while checking that the deicer lead straps do not come under tension.

e. Check the slip rings for gouges, roughened surfaces, cracks, burned or discolored areas, and for deposits of oil, grease, or dirt. Clean greasy or contaminated slip rings with PD680 solvent (15, Chart 207, 91-00-00). After such cleaning, a run-in time of five hours of engine operation must be allowed before the deicer system is turned on.

f. If uneven wear or wobble is detected, check the alignment of the slip rings to the propeller shaft with a dial indicator. While turning the propeller to check the slip ring alignment, push in on the propeller to eliminate play in the propeller thrust bearing. If the runout over 360 degrees of rotation is over .005 inch, or if over any 4-inch arc it exceeds .002 inch, refer to step "h".

g. Examine the brush mounting brackets and housing for cracks, deformation, or other indications of damage. Check for tight connections and that the leads are not chafed or binding.

h. Check to see that each brush rides on its slip ring over 360 degrees of rotation. If the brush is not properly aligned, raise or lower the brush block to the proper position. If the brushes ride both high and low with respect to the slip rings in 360 degrees of rotation, the slip ring is eccentrically mounted and the shaft clamp or slip ring must be replaced.

i. Check for proper spacing between the brush block and slip rings. If this distance is not within the specified limits, loosen the mounting screws and reposition them in the elongated holes until the block is properly positioned. If necessary, shims can be added between the

thrust bearing plate and mounting bracket until the brush is properly located.

j. Estimate the contact angle of the brush block in relation to the slip rings. If this angle is not approximately 2 degrees, loosen the mounting bolts and reposition the brush block until the proper angle exists between the brush block and slip rings. It should be noted that the spacing established in step "i" must also be maintained after proper contact angle is obtained.

k. With the deicer system operating and a man in the pilot's compartment observing the ammeter, visually inspect and physically flex the wiring from the brush block to each component of the deicer system and to the airplane power supply. Jumps of the ammeter needle, other than the momentary flicker that may occur when the step switch of the timer cycles, indicate loose or broken wiring in the area under examination at the moment. In such instances, continue to flex the wiring in the area that first indicated trouble while checking the continuity through the individual wires of the affected harness until the source of trouble is located. Use the applicable Wiring Diagram Manual to trace the circuitry of the deicer system.

CAUTION

While following the instructions of step "k", move the propeller back and forth to prevent arcing between the brushes and the slip ring.

WARNING

Before moving the propeller, make certain that the ignition switch is OFF and that the engine has cooled completely. There is always some danger of a cylinder firing when the propeller is moved.

"END"