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ADVISORY CIRCULAR

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

SUBJECT: INSPECTION SCHEDULE - FOR BEECH MODEL B-99

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1. PURPOSE. This circular provides information for use by persons planning to develop an inspection schedule for Beech Model B-99.

2. NOTE. The frequency and detail of inspections C-1, C-2, C-3, and C-4 meet the requirements of FAR 91.171(a)(2)(ii) and (b) if at least one cycle is completed within each 12 calendar months.

3. BACKGROUND. The introduction of new models of aircraft designed for high utilization has caused an increasing number of operators to use progressive inspection techniques to meet their operational needs. Accordingly, representatives of the manufacturer and various users convened recently to consider progressive inspection programs for the Beech Model B-99. It was concluded that a practical program could be developed that is responsive to the usual operational environment of the aircraft and to the progressive inspection provisions of Federal Aviation Regulations 91.171. The working group developed a typical schedule of inspections to assist operators of Beech 99 aircraft who desire to implement a progressive inspection program. Operators are advised that other inspection schedules may be developed and utilized in the progressive inspection.

4. EXPLANATION. The inspection frequency and detail for the Beech 99 aircraft contained in the enclosed inspection schedule was developed by the working group. To assist operators of this equipment the manufacturers recommended times for performing certain maintenance functions are included under the column entitled "Special Inspection Period."

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Initiated by: FS-340

INSPECTION SCHEDULE - TYPICAL

1. Inspection Frequency.

   (a) A = Check not to exceed 30 hours time in service.

   This inspection will occur within each 30 hours (identified as A), and consist of a "walk around" with only minimal opening of the aircraft to determine general condition. Average time for accomplishment should be within 25 hours.

   (b) C = 220 hours time in service.

   Inspections and checks which recycle at 220 hours (identified as C-1, C-2, C-3, and C-4). The aircraft is divided into four basic groups with a group inspected consecutively at intervals of 55 hours time in service. After initial accomplishment, each "C" inspection will recur at 220 hours. Credit for early accomplishment will be given to align checks C-1, C-2, and C-3. Check C-4 will occur within 220 hours as planned. Basic groupings will be comparable to the four groupings outlined in the Beech 99 Airliner Progressive Inspection Procedures Manual. Check Cs are intended to provide detail security and general evaluation of the systems/components airworthiness and shall include all work items specified in check "A".

   (c) D = 2000 hours time in service.

   Inspection/checks occuring at frequencies of 2000 hours (identified as D) are detailed to the extent that overall condition will be determined and shall include, all work items specified in check "A" and applicable check "C".

Revision of the times specified for "A", "C", and "D" may be initiated following substantiation of satisfactory service experience; however, checks C-1 through C-4 must be completed within 12 calendar months to satisfy the requirement of FAR 91.171.

2. Program.

   (a) Items and appliances listed for "On Condition" have been restricted to components on which a determination of continued airworthiness may be made by visual inspection, measurement, test, or other means without a teardown inspection or overhaul. These "On Condition" checks are to be performed within the time limitations prescribed for the inspection or check. Performance tolerances and wear or deterioration limits contained in the manufacturer's Maintenance Manual apply.

(b) Actual flight hours for each individual aircraft are applied in determining when the inspection or check intervals are required.

(c) When this program or a program of this type is used, credit may be taken for early accomplishment of scheduled inspections and/or overhaul provided such early accomplishment does not detract from the evidence required to substantiate time or inspection period extensions. Credit will be applied for experience with similar or comparable systems and/or components in other aircraft.

(d) Inspection techniques such as "X-ray", "fluorescent penetrant", "sonic", "eddy current", "dye penetrant", etc., may be used as a valuable adjunct to the prescribed visual inspection specified in this inspection program. Any substitution, however, of the inspection techniques mentioned above in lieu of visual inspection is not authorized.

(e) The structural items described herein collectively describe the entire structure of the Beech B-99 and, therefore, results in comprehensive structural inspection program. Basic inspection intervals for each structural group are listed under "Inspections and Check Period;" i.e., A, C, D. The grouping should be inspected at these periods with the degree of inspection intensified at the higher inspection intervals. A "walk around" type for Check A, a closer scrutiny at Check C, and conprehensive inspection at Check D. Check C and D should be made with the aid of stands, etc., to assure close scrutiny of the areas to be inspected. Specific detailed inspections are noted for the individual items.

Sample inspections are noted as 5000 - ½ and 4000 - ¼. The first number is the interval in flight hours until the first inspection. The fraction following is the fraction of an operator's fleet to be inspected at that time. Thereafter, the fraction of the same size is to be inspected at each multiple of the first interval. For example, 4000 - ¼ means inspect one-fourth of the fleet at 4,000 hours, one-fourth at 8000 hours, one-fourth at 16,000 hours. Each one-fourth then would be inspected at 16,000 hours. Random sampling is provided for enclosed areas such as the cabin above the floor area (i.e., side panels, head liner window trim, etc.) Entry into this area for repairs, etc., will provide access for inspection of the area. The results of the inspection should be recorded in detail.

(f) Component/unit removal for inspection will be performed within the time limitations established in this program. Parts and sub-components not listed herein will be checked and/or inspected at the same time specified for the component or assembly to which such components are related.

(g) The intervals used in this program are considered to be the maximum time permissible between recurring thorough inspections. Inspection is required not only for the items so listed, but also for the entire surrounding area in which the particular item is located.

(h) The following identifications are used in this document:

E. C. = Engine Change

R. S. = Random Sample

O. C. = On Condition

C. C. = Consistent with component to which it's attached.

Cycle = Flight regime takeoff-through-landing.

Airframe cycles shall be computed by multiplying flight time by the reciprocal of the average flight stage expressed in hours. (i.e. 1,000 flight hours ÷ 2 hour stage length = 500 cycles)

Powerplant cycles shall be actual count or computed in accordance with procedures approved by Pratt & Whitney.

NOTE: Instructions for exceeding an inspection interval by not more than 10 hours and for changing an inspection interval to be developed by the operator.

INSPECTION SCHEDULE

ITEMS	SPECIAL INSP. PERIOD	DETAILED AND ROUTINE INSP. PERIODS		OTHER
		VISUAL	FUNCTIONAL	
HEATING & VENTILATION	O. C.	A, C, D		
Heater, Cabin	3000 hours of aircraft time or 1500 hours of heater time.	C-2	C-2	Pressure test every 500 hrs. of heater operation or 1000 hours of aircraft operation.
Air Conditioning System	O. C.	C-1	C-2	
Heater Ignition	Replace every 2000 hours.	C-1	C-2	Switch points every 1000 hrs.
Ventilation Blower (fwd)	O. C.	C-2	C-2	
Ventilation Blower (aft)	O. C.	C-3	C-1,C-2	
Combustion Blower	O. C.	C-4	C-2	
Heater Fuel Pump	3000 hours of aircraft time or 1500 hours of heater operation.	C-1	C-2	
ELECTRICAL SYSTEM	O. C.	A, C, D		
Battery	O. C.	C-1	C-2* or C-4*	*Depending upon installation.
Battery Relay	O. C.	C-1* or C-4*	C-2	*Depending upon installation.
Volt-Loadmeter	O. C.	C-4	C-2	
Voltage Regulator	O. C.	C-3	C-2	
Inverters, Static	O. C.	C-1	C-2	
Reverse Current Relay	O. C.	C-3	C-2	
EQUIPMENT & FURNISHINGS	O. C.	A, C, D		
Seat and Seat Belts	O. C.	C-3		
Life Vests	O. C.			Annual, Leak Check
Flares	O. C.			Annual

INSPECTION SCHEDULE

ITEMS	SPECIAL INSP. PERIOD	DETAILED AND ROUTINE INSP PERIODS		OTHER
		VISUAL	FUNCTIONAL	
FIRE PROTECTION	O. C.	A, C, D		
Fire Detector Amplifier	O. C.	C-1	C-1	
Smoke Detector Amplifier	O. C.	C-1	C-1	
Fire Bottle Squib	Replace every 3 years.	C-1, A		Inspect circuit every 6 months.
Fire Extinguisher Cylinder	O. C.	C-1, A		Inspect pressure every 6 months.
FLIGHT CONTROLS	O. C.	A, A, C, D		
Aileron Trim Tab	O. C.	C-1		Check for screw and play of .000 to .005 at Check D.
Rudder Trim Tab Actuator	O. C.	C-1		Check for screw and play of .000 to .003 at Check D.
Flap Actuators	4000 Cycles	C-1	C-2	
Flap Position Indicator	O. C.	C-3, A	C-3	
Flap Motor and Gearbox	4000 Cycles	C-3	C-3	
Horizontal Stabilizer Actuator	2000 aircraft hours.	C-1		Check for end play of not more than .008 at 1000 a/c hours.
Horizontal Stabilizer Position Indicator	O. C.	C-3, A		
FUEL SYSTEM	O. C.	A, C, D		
Primary Boost Pump	O. C.	C-2	C-2	
Standby Boost Pump	O. C.	C-2	C-2	
Fuel Gages	O. C.	C-3, A	C-2	
Fuel Flow Transmitter	O. C.	C-2	C-2	
Engine Fuel Supply Pressure Switch	O. C.	C-3	C-2	
Firewall Shutoff Valve	O. C.	C-2	C-2	
Transfer Float Switch	O. C.	C-2	C-2	

INSPECTION SCHEDULE

ITEMS	SPECIAL INSP. PERIOD	DETAILED AND ROUTINE INSP. PERIOD		OTHER
		VISUAL	FUNCTIONAL	
FUEL SYSTEM (Con't)				
Fuel Pressure Indicator	O. C.	C-2, A	C-2	
Fuel Flow Meter	O. C.	C-2, A	C-2	
ICE AND RAIN PROTECTION	O. C.	A, C, D		
Propeller Deicer Timer Module	O. C.	C-4	C-2	
Propeller Deicer Brush Block	O. C,	C-4	C-2	
Propeller Deicer Slip Gage	O. C.	C-2	C-2	Inspection at E. C.
Lip Heater Safety Switches	O. C.	C-2	C-2	
INSTRUMENTS	O. C.	A, C, D		
Airspeed Indicator	5000 hours	C-3, A		
Clock	O. C.	C-3, A		
Altimeter	O. C.	A		Every 24 months per FAR Part 91.170.
Directional Gyro	2000 hours	C-3, A	C-2	
Gyro Horizon	2000 hours	C-3, A	C-2	
Engine Temperature Gage	O. C.	C-2, A	C-2	
Free Air Temperature Gage	O. C.	C-3, A	C-2	
Magnetic Compass	O. C.	C-3, A	C-2	
Turn & Bank Indicator	2000 hours	C-3, A		
LANDING GEAR	O. C.	A, C, D		
Wheels	O. C.	C-1, A		
Brake Master Cylinder	O. C.	C-3	C-3	
Parking Brake Valve	O. C.	C-3	C-3	
Main Landing Gear Strut	5000 Landings	C-4, A		
Nose Landing Gear Strut	5000 Landings	C-4, A		

ITEMS	SPECIAL INSP. PERIOD	INSPECTION SCHEDULE: DETAILED AND ROUTINE INSP. PERIODS — VISUAL	DETAILED AND ROUTINE INSP. PERIODS — FUNCTIONAL	OTHER
LANDING GEAR (Con't)				
Landing Gear Motor and Gearbox	5000 Landings	C-3	C-4	
Landing Gear Actuators	5000 Landings	C-3	C-4	Check for screw and play at 2500 landings. If the end play is .009 or less continue to 5000 landings.
Main Landing Gear Drag Brace	5000 Landings	C-4, A		
Nose Landing Gear Drag Brace	5000 Landings	C-4, A		
Landing Gear Safety Switch	O. C.	C-4, A	C-4	
LIGHTS	O. C.		A, C, D	
Upper and Lower Beacon	O. C.	A	C-2	
NAVIGATION AND COMM. SYSTEM	O. C.		A, C, D	
Other than listed below, the inspection program for this item is to be established by each individual operator.				
Pitot and Static System	O. C.			Check every 24 months per FAR 91.170.
Pitot Masts	O. C.	C-4, A		
OXYGEN SYSTEM	O. C.		A, C, D	
Oxygen Regulator	O. C.	C-3		
Oxygen Cylinder	Replace every 9 years (ICC Reg.)			Hydrostatically test every three years (ICC Reg.).

ITEMS	SPECIAL INSP. PERIOD	INSPECTION SCHEDULE: DETAILED AND ROUTINE INSP. PERIODS — VISUAL	FUNCTIONAL	OTHER
PNEUMATIC SYSTEM	O. C.	A, C, D		
Regulator/Relief Valves	2000 hours	C-1	C-2	
Instrument Regulator	2000 hours	C-2	C-2	
POWERPLANT	O. C.	A, C, D		
PT6-20	1700 hours			Perform hot section inspection at 800 hours.
ENGINE FUEL AND CONTROL	O. C.	A, C, D		
Engine Driven Fuel Pump	C. C.	C-2	C-2	
Fuel Heater	C. C.	C-1	C-2	
Fuel Control Unit	C. C.	C-2	C-2	
IGNITION	O. C.	A, C, D		
Ignitor Glow Plugs	C. C.	C-2	C-2	
Ignition Excitor Unit	C. C.	C-2	C-2	
ENGINE INDICATING	O. C.	A, C, D		
Turbine Interstage Temperature	O. C.	C-2	C-2	Check at hot section inspection.
Torque Meter	O. C.	C-2, A	C-2	
Turbine Tachometer	O. C.	C-2, A	C-2	
OIL	O. C.	A, C, D		
Oil Pressure Gage	O. C.	C-2, A	C-2	
Oil Temperature Gage	O. C.	C-2, A	C-2	
Oil Cooler & Temperature Regulator	C. C.	C-2	C-2	

ITEMS	SPECIAL INSP. PERIOD	INSPECTION SCHEDULE: DETAILED AND ROUTINE INSP. PERIODS		OTHER
		VISUAL	FUNCTIONAL	
STARTING	O. C.	A, C, D		
Engine Starter Generator	O. C.	C-2, C-1		Special inspection at 400 hours brush and bearing check.
PROPELLER	O. C.	A, C, D		
Propeller	1700 hours	C-2, A	C-2	
Propeller Primary Governor	1500 hours	C-2	C-2	
Propeller Overspeed Governor	1500 hours	C-2	C-2	
Propeller Synchronizer	O. C.	C-2	C-2	

INSPECTION SCHEDULE

ITEM	STRUCTURE	DETAILED AND ROUTINE INSP. PERIODS	OTHER
FUSELAGE	O. C.	A, C, D	
External; inspect all external skin panels and circumferential and logitudinal skin joints for condition.		A, C, D	
Check Avionics compartment door, forward and rear baggage compartment door and air stair door for general condition and attachment. (More detailed inspection procedures concerning the vital areas of the doors are outlined under DOORS).		A, C, D	
Internal; internal skins, stringers, and frames above the floor are to be inspected and sampled whenever any of the side panels and insulation in the cockpit or cabin are removed to replace any component(s), wiring, etc., or whenever the above the-floor upholstery is to be replaced in the cockpit or the cabin area.		RS	
All internal stringers and frames as well as skin condition in the empennage area aft of the aft baggage compartment bulkhead, access to this area is gained through the removable upholstered access door in the bulkhead. Inspection of this area should be made whenever any work is to be done in this area.		C-1, RS	
Inspect condition skins, stringers, and floorbeams under cabin area and cockpit area beneath the floor whenever the access plates are to be removed in order to replace or adjust any items under the floor in any particular area.		C-3, RS	
WINGS	O. C.	A, C, D	
Inspect all external skin panels and joints on both the inboard and outboard wing areas for condition.		A, C-2	
Inspect condition of wing skin around miscellaneous cutouts, access panels, and wheel wells.		A, C-1	
Inspect the condition of internal skin, ribs, and sections of the spars through all accessible inspection openings. Inspect the condition of internal skin, ribs, sections of the spars and reinforcement sections and general condition of fuel cell bays whenever any of the fuel cells must be removed for either repair or replacement.		5000 - ½ C-1	

INSPECTION SCHEDULE

ITEMS	STRUCTURE	DETAILED AND ROUTINE INSP. PERIODS	OTHER
WINGS (Cont'd)			
Outboard wing attach bolts.		C-1 5000 - ½	
Check general skin condition, hinges, and attach points of the ailerons and aileron tabs.		A, C-1, D	
Check general skin condition, attach points, and track rollers of the inboard and outboard flaps.		A, C-1, D	
NACELLES	O. C.	A, C, D	
Check general condition of the internal structure.		E. C.	
Check condition of external skin around joints and access plates.		A, C, D	
STABILIZERS	O. C.	A, C, D	
Check condition of all external skin panels including leading edge and rudder hinge points of the vertical stabilizer.		A, C, D	
Check condition of all external skin panels including leading edge and elevator hinge points of the horizontal stabilizer.		A, C, D	
Check horizontal stabilizer hinge point castings and Di-check or X-ray for condition.		2D	
RUDDER	O. C.	A, C, D	
All external skin panels including leading edge, hinge attach points, and trim tab.		A, C-1	Check for tab looseness at D Check.
ELEVATOR	O. C.	A, C, D	
All external skin panels including leading edge and hinge attach points.		A, C-1	
DOORS	O. C.	A, C, D	
Check condition and attachment and ease of operation of the cargo door, check door facings and hinges for condition and attachment.		½ D	

INSPECTION SCHEDULE

ITEMS	STRUCTURE	DETAILED AND ROUTINE INSP. PERIODS	OTHER
DOORS (Cont'd)			
Check condition and attachment, operation of the mechanism, and hinge points of the emergency exit doors.		400 hrs.	
Check the internal structure of the airstair door for general condition and ease of operation.		½ D	
Check the condition and attachment, operation of the mechanism, and hinges of the pilot's hatch.		400 hrs.	

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