

SECTION IV

PERIODIC INSPECTION

The periodic inspection is a thorough and searching inspection of the entire aircraft. The inspection includes certain requirements that are also applicable to the preflight and postflight inspections. The thoroughness of the check and special tools or test equipment, if required, are indicated in the statement of the requirement.

This aircraft will be operated under the tailored inspection concept. The hourly intervals at which this inspection will be accomplished by each "class of operation" are indicated below. Calendar intervals for accomplishing this inspection are specified in applicable aircraft inspection system directives. The scope of the inspection depends on the "class of operation" in which the aircraft is utilized and is reflected in the columns to the right of the requirements. Items identified with an "X" will be accomplished at each periodic inspection. Items identified by numbers will be accomplished at the numbered periodic inspection indicated. Items identified by calendar periods will be accomplished at the periodic inspection nearest the due date for that item.

CLASS I: At the expiration of 100 flying hours after the preceding periodic inspection.

CLASS III: At the expiration of 100 flying hours after the preceding periodic inspection.

ELECTRICAL POWER OFF

PREPARATION

1. Wheels chocked.
2. Engine cowling, baffles and shrouds; fuselage, wing and empennage inspection doors, panels, plates, fairings and pitot cover opened or removed. Reinstalled after completion of inspection.
3. Fire extinguishers provided.
4. DD Form 781 for discrepancies.
5. Auxiliary ground wire installed.
6. Flight controls lock released. Switches OFF.

		ACCOMPLISH AT	
		CLASS	
		I	III
MAN-MINS			
1	Wheels chocked.	x	x
120	Engine cowling, baffles and shrouds; fuselage, wing and empennage inspection doors, panels, plates, fairings and pitot cover opened or removed. Reinstalled after completion of inspection.	x	x
1	Fire extinguishers provided.	x	x
3	DD Form 781 for discrepancies.	x	x
1	Auxiliary ground wire installed.	x	x
1	Flight controls lock released. Switches OFF.	x	x
5	Aircraft (cabin, fuselage, exterior, wings, and empennage) for cleanliness.	x	x

AIRFRAME (System No. 3)

1. Aircraft (cabin, fuselage, exterior, wings, and empennage) for cleanliness.

AIRFRAME (System No. 3)(Cont)

			ACCOMPLISH AT		
			CLASS	I	III
MAN-MINS					
	4	2. Emergency door controls and locking mechanism for positive release and engagement, hinge pins free of corrosion.	x		x
	15	3. Wings, fuselage and empennage for loose or missing rivets, screws, nuts, bolts, skin punctures, cracks, buckles, corrosion, abrasion and cracked or buckled structure; fillets for cracks, loose rivets and corrosion.	x		x
	1	4. Firewall for cracks and loose or pulled rivets.	x		x
	5	5. Windshield, windows and rear view mirror for cracks, crazing, loose retainer and attaching screws, and leaks, smears, streaks and dirt.	x		x
	20	6. Flight control surfaces (ailerons, elevators, rudder, trim tab and flaps) for the following:	x		x
		a. Loose or missing rivets, skin punctures, cracks, buckled or wrinkled skin, abrasions, cracked or buckled structure and corrosion.			
		b. Attachment fittings and brackets for looseness and cracks; bolt holes for elongation.			
		c. Bolts and pins for looseness.			
		d. Flaps for chafing trailing edge of wing.			
		e. Counterweights for looseness.			
		f. Hinges for cracks and looseness.			
		g. Controls for erratic range of travel.			
	2	7. Cabin door, windows, hinges and latching mechanism for binding and corrosion.	x		x
	60	8. Flight control mechanisms for the following:	x		x
		a. Rudder, elevator and flap bearings for excessive radial and axial play, and binding.			
		b. Elevator tab actuator for binding, and rod end bearing hole for elongation.			
		c. Control tube for loose or missing rivets, cracks, dents, gouges, and corrosion; brackets for cracks or breaks; bearings for binding, radial and axial play, loose in castings; broken dust seals.			
		d. Elevators, ailerons, flap and trim tab push-pull rods and/or tubes for cracks, corrosion, breaks and bolt holes for elongation; rod end bearings for binding, radial and axial play; broken dust seals.			
		e. Elevator trim tab position indicators for restricted movement and bent pointers.			

AIRFRAME (System No. 3)(Cont)

		ACCOMPLISH AT		
		CLASS	I	III
MAN-MINS				
	f. Cables for dirt, corrosion, and fraying beyond permissible limits, particularly at pulleys, fairleads and cable guides.			
	g. Pulleys and fairleads for cracks, binding and misalignment; pulley bearings for excessive radial and axial play.			
	h. Elevator trim tab cable stop blocks for slippage.			
	i. Turnbuckles for cracks, corrosion and loose safety wire.			
	j. Rudder, aileron, elevator and flap bellcrank assembly for cracks, leaks, and loose attaching bolts.			
	k. Flap flexible drive shafts for kinks, chafing, crushed casings, and attaching supports for cracks, loose grommets and clamps.			
	l. Screw jack mounting brackets for cracks, corrosion and loose rivets.			
	m. Wing flap motor for loose attaching screws; electric connections for loose wires.			
	n. Flap indicator sending unit for loose attaching screws, corrosion and electrical leads for looseness.			
9.	Wings, wing struts, horizontal and vertical stabilizer attaching bolts for looseness.	5	x	x
10.	Seats, lock linkage and tracks for breaks or cracks; seats for binding and erratic locking in all positions, torn or soiled fabric; rollers for binding or wear.	4	x	x
11.	Safety belts and shoulder harness for bent or corroded metal parts; soiled fabric and leather, cuts or fraying, latching parts for binding and insecure locking, date of last weight test; insecure attachment.	5	x	x
12.	Inertia reel manual and automatic locks for security and positive locking and releasing.	1	x	x
13.	First aid kit for availability, completeness of contents in side compartments, serviceable tag attached, date of seal and specified identification markings.	2	x	x
14.	Check lists and ash trays for availability.	1	x	x
15.	Upholstery and blind flight curtains for soiled and torn fabric.			
16.	Aircraft technical publications file current and complete.	5	x	x
17.	Stencils, decals and insignia for legibility.	8	x	x

	MAN-MINS	ACCOMPLISH AT		
		CLASS	I	III
<b>LANDING GEAR (System No. 4)</b>				
1. Tail gear spring assembly for cracked, broken, misaligned or bent leaves (Dy Chek or Magnetic Particle); broken or loose U bolt.	125		x	x
2. Tail wheel fork assembly for corrosion, cracks and broken coil springs; bearing cone, cup and rollers for pits, flakes, smears, cracks, breaks and overheating; bearing cups for looseness; bearing cage for bends and cracks; bushing for wear beyond maximum tolerance; fork assembly for excessive axial and radial play; steering mechanism for broken chains and bent arms.	32		x	x
3. Movement of rudder and tail wheel coincide in each direction.	1		x	x
4. Tires for uneven tread wear, cuts, blisters, grease or oil, misalignment of slippage marks, and inflation.	6		x	x
5. Wheels for corrosion, cracks and distortion; dust covers for cracks, corrosion, and looseness; overheating adjacent to brakes; bearing inclosure rings for bends and distortion; bearing cones, cups and rollers for, flakes, smears, cracks, breaks and overheating; bearing cups for looseness; bearing cage for bends and cracks; drive keys for looseness; wheels for misalignment; tail wheel felt grease retainers for deterioration.	80		x	x
6. Master brake cylinders for fluid level.	4		x	x
7. Brake pedals and mechanical linkage for cracks, breaks and bends; linkage bolt holes for elongation; loose bolts and pins.	10		x	x
8. Brakes for sponginess.	1		x	x
9. Brake assembly for cracks at mounting holes; loose bolts; linings for minimum thickness.	3		x	x
10. Axles for nicks, deep scratches, bends and corrosion, bearing surfaces for galls and pits; threaded portions for crazed or stripped threads.	3		x	x
11. Main landing gear struts and supporting structure for cracks, distortion buckling, loose bolts, shims and wedges.	15		x	x
<b>UTILITY (System No. 6)</b>				
1. Portable A-20 fire extinguisher low pressure, broken seals, dents, gouges, leakage, broken indicator glass, and loose fasteners: mounting brackets for cracks.	1		x	x

## UTILITY (System No. 6) (Cont)

2. Cabin heating and windshield defroster ducts for holes, tears, collapsed tubes, loose connections and chafing.
3. Cabin heater valves for cracks, warpage and loose attaching bolts; controls for loose wire and erratic range of travel.
4. Cabin ventilators for foreign matter, and binding; ducts for holes, tears and collapsed tubes; air inlets for obstruction.

## POWER PLANT (System No. 7)

1. Engine for cleanliness.
2. Cowling for cracks, defective, missing and loose fasteners.
3. Lord mounts for insecure attachment, loose or broken safetying, and deterioration of rubber core assemblies.
4. Engine mounts for cracks, corrosion and loose attaching bolts.
5. Air deflectors and baffles for cracks, loose attaching screws and bolts, and chafing against cylinder fins.
6. Crankcase breathers for obstructions.
7. Engine for fuel and oil leaks; loose, broken or missing nuts, bolts, studs, clamps and safetying.
8. Valve springs, retainers, keys and rocker arms for cracks, breaks and dryness.
9. Cylinders for broken fins; loose hold-down pal nuts.
10. Push rod housings for severe dents, cracks, leakage and loose safetying.
11. Carburetor seals, plugs and nipples for leakage; screens for breaks, tears and contamination.
12. Engine controls, bellcranks, rod end fittings, and links for wear, cracks, misalignment and loose or broken safetying; brackets for cracks, corrosion and loose attaching bolts; controls for binding and restricted travel.

MAN-MINS	ACCOMPLISH AT		
	CLASS	I	III
2		x	x
12		x	x
2		x	x
20		x	x
3		x	x
5		x	x
2		x	x
4		x	x
1		x	x
7		x	x
40		x	x
10		x	x
5		x	x
9		x	x
4		x	x

	CLASS	ACCOMPLISH AT	
		I	III
<b>POWER PLANT (System No. 7) (Cont)</b>			
13. Starter for cracked or broken mounting flange and loose attaching bolts; electrical connections for looseness.	4	x	x
14. Cylinders for specified compression values.	36	2	2
15. Starter brushes for wear beyond minimum length; commutators for presence of oil, and excessive arcing.	20	2	2
<b>FUEL (System No. 8)</b>			
1. Fuel tank filler cap gaskets for deterioration, breaks and tears.	10	x	x
2. Exterior of aircraft for fuel leakage.	10	x	x
3. Fuel tank vent lines for obstruction and chafing. Fuel lines for pitting, scratches and dents beyond permissible limits, chafing and loose attaching clamps; hoses for cuts, cracks and deterioration	10	x	x
4. Micronic filter element for breaks, tears and contamination; strainer housing for loose attaching bolts, cracks, corrosion and pits.	5	x	x
5. Fuel tank and fuel filter drain valves for erratic action and leakage.	2	x	x
6. Fuel selector valve for leaks, binding, erratic detent action, and loose attaching screws.	1	x	x
7. Fuel quantity gages for readings comparable with known contents in tanks; gages for leaks and loose attaching screws.	2	x	x
8. Auxiliary fuel pump drain for obstruction and seal for leakage	2	x	x
9. Auxiliary fuel pump for loose attaching bolts; connections for leakage; electrical connections including bonding jumpers for looseness.	2	x	x
10. Auxiliary fuel pump brushes for chips, cracks, and wear beyond minimum length; leads for fraying; binding in brush holders.	5	3	3
11. Fuel pressure warning light electrical connections for loose wires.	1	x	x
12. Primer and primer lines for leakage; loose attaching screws and clamps.	2	x	x
13. Fuel pump for loose mounting nuts, and corrosion; mounting flange for cracks or breaks; seal for seepage and drain for obstruction; pressure relief chamber vent plug for obstructions.	1	x	x

	MAN-MINS	ACCOMPLISH AT	
		CLASS	III
<b>OIL (System No. 9)</b>			
1. Oil sump serviced, filler cap secured.	10	x	x
2. Engine main oil screen for metallic particles on the screen or in the screen housing.	20	x	x
3. Oil system for leakage; lines for dents, cracks and chafing; flexible connections for deterioration; loose hose clamps; oil drain valve for leakage, cracks or breaks, loose cam handle and shaft; outlet tube dented or cracked, and weak spring.	10	x	x
4. Oil cooler for leaks, loose attaching bolts, foreign matter in the air passage, welded tubes, corrosion, dents, scratches and cracks.	2	x	x
<b>IGNITION (System No. 10)</b>			
1. Ignition harness assemblies for loose clamps; brackets for cracks; conduits for chafing or overheating.	2	x	x
2. Ignition harness for loose terminal connections.	3	x	x
3. Magnetos:	48	x	x
a. Breaker compartments for oil and dirt.			
b. Breaker points for pitting.			
c. Cam followers for adequate lubrication.			
d. Ventilator screens and plugs for contamination and loose attaching nuts.			
<b>AIR INDUCTION, EXHAUST (System No. 11)</b>			
1. Exhaust System:	15	x	x
a. Exhaust port studs for loose or missing nuts.			
b. Clamps for looseness, cracks, misalignment, and leakage.			

AIR INDUCTION, EXHAUST (System No. 11) (Cont)

	CLASS	ACCOMPLISH AT	
		I	III
MAN-MINS			
c. Exhaust muffler and cabin heat muffler for cracks, burning, distortion and loose attaching screws and bolts.			
d. Exhaust stacks for cracks, burns and loose clamps and bolts.			
e. Tail pipe for misalignment, cracks, and loose clamps and bolts.			
2. Carburetor air filter for obstructed air passage; and filter material for dryness, channels, breaks and tears; filter frame for cracks, breaks and bends.	3	x	x
3. Carburetor air intake box for broken valve spring, and loose screws and bolts.	12	x	x
4. Intake system:	15	x	x
a. Intake port studs for loose or missing nuts and leakage.			
b. Intake manifolds for cracks, leaks and loose clamps and attaching bolts.			
c. Intake pipe connecting hoses for deterioration.			
PROPELLER (System No. 12)			
1. Propeller for corrosion, cracks and nicks.	12	x	x
2. Propeller retaining nuts for torque and safety.	2	x	x
3. Propeller blades for track.	3	x	x
4. Propeller hub for oil leaks.	1	x	x
5. Propeller governor for loose attaching nuts, and oil leakage.	2	x	x
6. Propeller control bellcranks, rod end fittings and links for wear, cracks, misalignment and safetying. Brackets for cracks, corrosion, loose screws and broken safety wire.	3	x	
7. Propeller control for unrestricted movement and full range of travel.	1	x	



## ELECTRICAL (System No. 14)

	MAN-MINS	ACCOMPLISH AT		
		CLASS	I	III
1. Reverse current relays for loose attaching screws, grease, oil, or dirt; case for cracks, dents and breaks.	33		x	x
2. Flasher for loose attaching screws; cover for cracks, breaks and distortion.	1		x	x
3. Voltage regulators for loose attaching clips, grease, oil or dirt.	1		x	x
4. Navigation, position, landing and cabin lights for broken lenses and bulbs, and corrosion.	1		x	x
5. Battery for leakage, overflow of electrolyte, specific gravity and water level.	2		x	x
6. Electrical systems from the generating source to each electrical component (excluding radio, instrument and armament wiring from main power buses to operating units) for the following:	15		x	x
a. Wiring for deterioration, chafing, fraying, loose support clamps, and overheating.				
b. Generator plug exteriors for corrosion, cracks, overheating, loose wire connections.				
c. Wire shielding for fraying, crimping and corrosion.				
d. Junction boxes for cracks, and loose attaching screws; drain holes for obstructions.				
e. Plastic tubing for security and adequate drainage provisions.				
f. Terminal strips, connections, bonding jumpers and ground connections for corrosion, and loose attaching parts.				
7. Generator for loose attaching nuts, cracked or broken mounting flange and end housing; electrical connections for looseness.	2		x	x
8. Generator blast tube for loose connections and anchorage clamps.	1		x	x
9. Shock mounts for cracks, corrosion, loose bolts or rivets, vibration absorbers for deterioration of rubber parts, and loose or missing bonding.	2		x	x
10. Generator brushes for wear beyond specified minimum length, even wear, and binding in brush holders; insulation on brush leads for deterioration or chafing; commutators for arcing and presence of oil or metal particles; electrical connections for looseness.	26		x	x

ELECTRICAL (System No. 14) (Cont)

- 11. Rotating warning light lens for cracks and dirt; lens drain hole for obstructions; lens retaining ring screws for loose or broken safetying.

CLASS	ACCOMPLISH AT	
	I	III
MAN-MINS		
1	x	
INSTRUMENTS (System No. 15)		
1	x	x
4	x	x
1	x	x
1	x	x
3	x	x
5	x	x
1	x	x
1	x	x
10	x	x

INSTRUMENTS (System No. 15) (Cont)

		ACCOMPLISH AT		
		CLASS	I	III
MAN-MINS				
e.	Plastic tubing for security and adequate drainage provisions.			
f.	Terminal strips, connections, bonding jumpers and ground connections for fraying, corrosion, and loose attaching parts.			
10.	Pitot and static system for moisture, contamination, leaks and erratic calibration of airspeed indicators at all major graduations.	20	x	x
11.	Shock mounts for cracks, corrosion, loose attaching bolts or rivets; deterioration of rubber and loose or missing bonding.	6	x	x
12.	Altimeter for reading within tolerance; pointers for friction. Tester MB-1, 7CAD-807695.	30	x	x
13.	Tachometer generator for loose attaching bolts, and corrosion; mounting flanges for cracks or breaks; electrical connection for looseness, and loose or broken safetying.	2	x	x
14.	Vacuum pump for loose attaching nuts, and corrosion; mounting flange for cracks and breaks; relief valve for loose fittings, clamps, and safetying; screen for contamination; body for cracks and corrosion. Connections for looseness and leakage.	2	x	x
15.	Vacuum pump air filter for contamination; element for cracks and breaks; body for cracks, corrosion and loose attaching screws; connections for looseness.	5	x	x
16.	Vacuum pump oil separator for leaks; screen for obstructions; mounting lugs for cracks, loose attaching bolts and case for cracks, breaks and collapsing.	15	x	x
RADIO (System No. 16)				
1.	Mast type and loop antenna for loose mounting; fixed wire antenna for cracked insulators; broken tension units, loose connections and mounting; lead-ins for specified spacing from surrounding objects.	2	x	x
2.	Shock mounts for cracks, corrosion, loose attaching bolts or rivets, deterioration of rubber, and loose or missing bonding.	2	x	x

RADIO (System No. 16) (Cont)

		ACCOMPLISH AT	
		CLASS	
		I	III
MAN-MINS			
1	3. Headsets and microphone plugs for insertion into jack boxes and receptacles; cordage for stowage.	x	x
2	4. Flexible shafts for broken or crushed casings.	x	x
2	5. Communications equipment for dents, structural failure, and loose attaching parts.	x	x
15	6. Radio systems for the following (from each electrical component to, but not including, junction boxes containing main power buses):	x	x
	a. Wiring for deterioration, chafing, fraying, loose support clamps, and overheating.		
	b. Connector plug exteriors for corrosion, cracks, overheating, and loose wire connections.		
	c. Wire shielding for fraying, crimping and corrosion.		
	d. Junction boxes for cracks, and loose attaching screws; drain holes for obstructions.		
	e. Plastic tubing for security and adequate drainage provisions.		
	f. Terminal strips, connections, bonding jumpers and ground connections for fraying, corrosion, and loose attaching parts.		
4	7. ADF loop antenna dehydrator crystals for discoloration beyond serviceability.	x	
ARMAMENT (System No. 17)			
5	1. Bomb racks and bomb rack adapters for corrosion and loose attaching bolts; mechanism for distortion or binding.		x
15	2. Armament systems for the following (from each electrical component to, but not including, junction boxes containing main power buses):		x
	a. Wiring for deterioration, chafing, fraying, loose support clamps, and overheating.		
	b. Connector plug exteriors for corrosion, cracks, overheating, and loose wire connections.		

ARMAMENT (System No. 17)(Cont)

- c. Wire shielding for fraying, crimping and corrosion.
- d. Junction boxes for cracks, and loose attaching screws; drain holes for obstructions.
- e. Plastic tubing for security and adequate drainage provisions.
- f. Terminal strips, connections, bonding jumpers and ground connections for fraying, corrosion and loose attaching parts.

ACCOMPLISH AT		
CLASS	I	III
MAN-MINS		

ELECTRICAL POWER ON

PREPARATION

- 1. External power source provided.
- 2. Fire extinguisher provided.

ACCOMPLISH AT		
CLASS	I	III
MAN-MINS		
5	x	x
1	x	x
1	x	x
10	x	x
1	x	x

AIRFRAME (System No. 3)

- 1. Landing flaps for unrestricted range of travel; flap position indicator consistent with flap position.

FUEL (System No. 8)

- 1. All fuel system components, lines, hoses and connections for leakage, (fuel selector ON, auxiliary fuel pump ON).
- 2. Fuel pressure warning light for illumination and correct cut-in and cut-out pressures.

ELECTRICAL (System No. 14)

1. Instrument lights for illumination.
2. Cabin lights for illumination.
3. Position and navigation lights for illumination in flash and steady position.
4. Landing lights for illumination.
5. Rotating warning light for illumination.

INSTRUMENTS (System No. 15)

1. Pitot head heating element for temperature rise.

RADIO (System No. 16)

1. Radio receivers for sensitivity, adequate volume, clarity of tone and dial calibration on all channels.
2. Radio transmitters for frequency, power output and clarity of side tone.
3. Radio range receiver for dial calibration, clarity of tone, adequate volume, functioning on applicable antenna and ease of rotation of dial tuning control.
4. ADF receiver for dial calibration and antenna coordination.
5. Interphone system for clarity of tone on all positions.

ARMAMENT (System No. 17)

1. Bomb racks for electrical release and manual cocking.

		ACCOMPLISH AT	
		CLASS	
		I	III
MAN	MINS		
	1	x	x
	1	x	x
	2	x	x
	1	x	x
	1	x	
	1	x	x
	2	x	x
	2	x	x
	2	x	x
	2	x	x
	2	x	x
	2	x	x

ENGINE OPERATION

PREPARATION

1. Portable fire extinguisher provided.
2. Pull propeller through a minimum of two complete turns.

OPERATION

1. Accomplish engine operation in accordance with applicable directives.
  - a. Pre-engine start.
  - b. Engine start.
  - c. Engine warm-up.
  - d. Complete cockpit check.
  - e. Pre-shut-down.
  - f. Stopping engine.
  - g. After engine shut-down.
2. Perform the following operational checks during engine operation:
  - a. Engine for operation on all sources of air.
  - b. Engine instruments for correct response to engine power application and freedom from excessive fluctuation.
  - c. Availability of fuel from each fuel tank selector position.
  - d. Generator and voltage regulator for output; reverse current relays for cut-in and cut-out.
  - e. Voltage regulator for correct bus voltage; check with voltmeter for known accuracy.
  - f. Carburetor heat system for operation by observing engine operation variation when controls are actuated.
  - g. Propeller for correct response to actuation of propeller control.
3. Accomplish test flight.

		ACCOMPLISH AT	
		CLASS	
		I	III
MAN-MINS			
5	1. Portable fire extinguisher provided.	x	x
2	2. Pull propeller through a minimum of two complete turns.	x	x
	1. Accomplish engine operation in accordance with applicable directives.	x	x
	2. Perform the following operational checks during engine operation:		
	3. Accomplish test flight.	x	x
As Req.			

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