

Name

Group

No.

FLYING FORTRESS SCHOOL
BOEING AIRCRAFT COMPANY
B-17F

INSPECTIONS

This outline is to be used as a study outline, notebook, and inspection guide, and will remain the property of the student after completion of the work. A complete set of notes will minimize the need for references to the Technical Orders after the student is in the field. Blank pages have been inserted in this book for the convenience of the student in making notes.

Students are required to read and make notes of the Technical Orders cited. A complete file of the Technical Orders is filed in Room 215 and may be consulted there but may not be removed from this room under any circumstances.

Wherever an inspection requires tools and facilities not adaptable to the flight apron, arrangements have been made to include these inspections in the regular work in the classroom, laboratory, or hangar. The inspection must be initialed by the instructor under whom the work is done and who will see that the student has completed the necessary work in a satisfactory manner. The place where these inspections are to be carried out is indicated by asterisks:

- ** Inspection to be made in the hangar
- *** Inspection to be made in the laboratory
- **** Inspection to be made in the classroom

Inspections not so marked will be performed on the flight apron under the supervision of the inspection department.

Some inspections have been omitted from this outline because they are not applicable to existing airplane models or because these cover inspections not made at the school apron.

INSPECTIONS

<u>Inspection Type</u>	<u>Due Time</u>	<u>Maximum Intervals Between Inspections</u>	<u>Purpose</u>
1. "PRE-FLIGHT" (Ready for flight)	Prior to the first flight each day	Six to seven days if airplane is not being flown.	Check of airplane to determine that the following are functioning properly: Instruments, controls, auxiliary power plant. Check cowling and see that fuel and oil caps are secured. Starting and warming up of engine. Plane ready for flight, and turning airplane over to the Pilot.
2. "DAILY" (General Condition)	Either after the day's flying is over, or before the start of flying the following day.	No airplane will go longer than six days without a "DAILY".	To determine the general condition of the airplane and engine. To detect aggravated conditions, maladjustments, breaks, etc. Also includes "PRE-FLIGHT"
3. 25 Hour (Detection of Slight Wear)	Between the 20th and the 30th hour after completion of the last previous 50 hour inspection. (Time permitted to complete inspection is ten flying hours).	No airplane will go longer than one month without a 25 hour inspection irrespective of flying time.	Designed to be sufficiently thorough and searching. To allow the detection of slight wear and other early stages of deterioration. Also includes a daily inspection.
4. 50 hour	Between the 40th and 60th flying hours after completion of the last previous 50 hour inspection. (Time permitted to complete inspection is 20 flying hours)	No airplane will go longer than three months without a 50 hour inspection.	Designed to be complete, thorough, and searching, as far as it is within the scope of the visual inspection system.

Note - 100-200-300 Hours, etc. will be covered in inspection sheets as major items.

SYMBOLS

The following symbols are used in the above maintenance and inspection records: 41B for Flight Report, 1 and 1A as mentioned.

- RED CROSS (x)** Indicates "Dangerous Condition".
This symbol grounds the airplane and is not subject to "Exceptional Release".
- RED DIAGONAL (/)** Indicates "Maintenance Work Necessary".
This symbol will not be used to indicate performance of routine greasing, oiling, and cleaning required by Technical Instructions, but will be used to indicate omission of such work.
- RED DASH (—)** Indicates "Required Inspection Not Made".
If a partial inspection or unfinished work leaves an assembly incomplete (where such condition is not readily apparent, as an unsaftied drain plug) the Red Cross (x) will be used to insure against flight in the absence of the assigned mechanic.
- BLACK LAST NAME INITIAL OF MECHANIC** Indicates "Thoroughly Inspected -- condition Satisfactory".
The initial placed over a red cross or red diagonal means that the trouble has been corrected. A red symbol will never be placed over the initial.

If, after the initial has been entered, a condition requiring a red symbol is discovered, the initial will be erased.
- BLACK CIRCLE (O)** Around Mechanic's Initial Indicates "Routine Maintenance Performed". This refers to greasing, oiling, and adding water in battery according to Technical instructions. This symbol will not be used following defects or repairs found necessary, as such conditions are indicated by a red diagonal.
- BLACK DASH (—)** Indicates "Inspection Today not required".
Draw this symbol through one or more columns, when instructions do not require inspections.
- BLACK LINE (|)** Drawn vertically down a column indicates "Not Applicable".
This means that the Technical Instructions do not apply to this airplane because of the absence of the subject part or assembly. For instance, an airplane without night flying equipment would require this symbol in Column 42.

Note - When a Red Diagonal (/) or a Red Dash (—) remains without an initial, an Air Corps Officer may authorize a specific flight by signing the "Exceptional Release" Column 49. Such authorization indicates that the officer has investigated the nature and extent of the defect and assumes full responsibility for mechanical safety on that flight.

Insert Serial No.
After Applicable Model

PREFLIGHT AND DAILY INSPECTIONS

B-17 B-17D

B-17B B-17E

B-17C B-17F

Organization and Home Station

(Date)

Column No. Form No. 41	<p align="center">INSPECTIONS REQUIRED</p> <p align="center">This form to be retained with the airplane as continuing instructions See T. O. 00-20A and 00 20A-2</p>	Enter Symbols Denoting Condition	Remarks Pertaining to Defects, Replacements or Adjustments																					
1	2	3	4																					
	<p>NOTE: An explanation of the Visual Inspection System and instructions as to the scope and periods for accomplishment of the various periodic inspections are contained in Technical Order No. 00-20A. For more complete service and maintenance instructions refer to:</p> <table border="0"> <tr> <td>Model</td> <td>Airplane T. O.—</td> <td>Engine T. O.</td> </tr> <tr> <td>B-17</td> <td>01-20EA Series</td> <td>02-35GA-2 (R-1820-39)</td> </tr> <tr> <td>B-17B</td> <td>01-20EB-2</td> <td>02-35GA-2 (R-1820-51)</td> </tr> <tr> <td>B-17C</td> <td>01-20EC-2</td> <td>02-35GC-2 (R-1820-65)</td> </tr> <tr> <td>B-17D</td> <td>01-20ED-2</td> <td>02-35GC-2 (R-1820-65)</td> </tr> <tr> <td>B-17E</td> <td>01-20EE-2</td> <td>02-35GC-2 (R-1820-65)</td> </tr> <tr> <td>B-17F</td> <td>To be issued</td> <td>02-35GC-2 (R-1820-65)</td> </tr> </table> <p align="center">PREFLIGHT INSPECTION (To be performed prior to the first flight of the day)</p> <p>BEFORE STARTING ENGINES.</p> <p>10 Examine Airplane Flight Report, Form No. 1A. Enter all information necessary to make it complete. If routine inspections are due, but cannot be made, insert the proper symbols to indicate the omission of the inspections.</p> <p>10 Check the quantities of fuel and oil in the tanks and enter on Form No. 1A. Note: This check and entry MUST be made prior to the first flight of the day.</p> <p>10 Drain main fuel strainers and fuel tank sumps. Be sure all drain cocks and plugs are properly resafetied.</p> <p>10 Inspect landing gear for damage and obvious defects. Check for proper tire and shock strut inflation.</p> <p>10 Make sure ignition switches are "OFF" and then inspect propeller blades for nicks, scratches, looseness, etc.</p> <p>10 Remove the airspeed tube protection cover. Check tube openings for freedom from obstructions. Test heating unit.</p> <p>Inspect de-icer shoes for punctures, loose patches or other obvious defects and for freedom from oil.</p> <p>See that wheel chocks are in proper position.</p> <p>Inspect wings, ailerons, fuselage, stabilizers, elevators and rudder for damage or obvious defects.</p> <p>10 See that cowlings, inspection doors and covers are properly secured.</p> <p>10 Inspect flares for evidence of deterioration and for proper anchorage of the hangwire swivel loop. Check carrying hooks for proper engagement with the carrying mechanism.</p> <p>10 Check oxygen equipment for condition, completeness, sufficient pressure, and proper functioning. For detailed service and maintenance inspections refer to T. O. 03-50-1.</p> <p>10 Inspect CO₂ extinguishers for security of mounting and proper safetying of actuating valve. NOTE: Once release handle is tripped complete emptying cannot be prevented.</p> <p>10 Check for proper level of fluid in heating system. Fill if necessary.</p> <p>NOTE: Do not add water to B-17B heating system without first "Blowing it down", see T. O. 01-20EB-2, section 4.</p>	Model	Airplane T. O.—	Engine T. O.	B-17	01-20EA Series	02-35GA-2 (R-1820-39)	B-17B	01-20EB-2	02-35GA-2 (R-1820-51)	B-17C	01-20EC-2	02-35GC-2 (R-1820-65)	B-17D	01-20ED-2	02-35GC-2 (R-1820-65)	B-17E	01-20EE-2	02-35GC-2 (R-1820-65)	B-17F	To be issued	02-35GC-2 (R-1820-65)		
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PREFLIGHT AND DAILY INSPECTIONS

1	2	3	4
10	Check fluid level in Hydraulic fluid reservoir and Propeller Anti-icer reservoir. Fill, if necessary, with fluid specified in the Airplane Handbook.		
10	Clean all cabins and compartments (including windows). All articles which could foul or jam controls will be properly attached, stowed or removed.		
10	Check for proper stowage of nacelle platforms.		
10	Set Altimeter to station altitude, or as directed by pilot.		
10	Set Rate of Climb Indicator to ZERO, tap instrument to insure that hand is properly set.		
10	Airspeed Indicator—See that pointer indicates zero, or value of wind velocity component, in direction of aircraft heading.		
10	Check instrument panels for proper movement.		
10	Check ALL INSTRUMENTS for proper pointer position and loose or broken lenses. Clean lenses with a soft cloth being careful to not disturb setting of "Limit-marked" lenses.		
10	Check the lighting of all instrument, cabin, trouble, landing, passing, running, and position lamps. Replace defective lamps or fuses found.		
	Check operation of warning signals. Check operation of bomber's pilot call.		
10			
10			
10	Check flight controls for freedom and range of operation.		
10	Fill water bottles and check for an adequate supply of paper cups.		
10	If an over-water flight is contemplated see that life raft is in place.		
	Check for presence of hand starter crank.		
	DURING ENGINE WARM-UP.		
	Note: Before starting the engines pull propellers through several revolutions by hand to clear the combustion chambers.		
	CAUTION! (T. O. 02-1-32)—Warm-up test periods should be as brief as possible to prevent excessive wear on moving parts. Read T. O. 02-1-29, "Ground Operation of Aircraft Engines".		
	Caution! Do not operate landing gear valves or mechanical handles!		
	To prevent possible backfires causing damage to air intake system the carburetor air intake valve will be in full cold position when starting engines.		
	Check hydraulic system gage to see that at least 200 lbs. of pressure exists in system before starting engines.		
10	Check engine instruments for functioning and proper readings—consistent with the stage of engine warm-up.		
10	Test ignition system as follows: With the engine not excessively hot and operating at approximately 1/3 open throttle, turn the ignition switches momentarily to the "OFF" position. If the engine does not cease firing entirely, stop the engine by turning off the fuel supply. Check for defective "ground" connections.		
	WARNING! DO NOT TOUCH THE PROPELLER UNTIL THE ENGINE HAS BECOME COOL AND THE DEFECT LOCATED AND CORRECTED, AS THE ENGINE MAY "KICK OVER" OR START.		
10	Test functioning of engines on each fuel tank, obtaining the required fuel pressure on each tank. Check that fuel quantity gages register correct amount of fuel in tanks. See T. O. 03-10-15.		

PREFLIGHT AND DAILY INSPECTIONS

1	2	3	4
10	Check functioning of manifold pressure gages. Needle should move freely to left. With engine at idling speed, drain gages. T. O. 05-70-1.		
10	Check vacuum (4"). Check operation of vacuum pumps with selector.		
10	Check operation of supercharger regulators individually. Determine that turbine wheels are rotating and check operation of waste gates.		
10	Check that De-icing equipment and Anti-icing system function properly. Note: The Anti-icer system should be operated daily to prevent congealing of fluid and clogging of system.		
10			
10			
10	Check operation of intercooler control		
10	Check engine primers for leakage in the "OFF" position.		
10	Check operation of heating system in accordance with Airplane Handbook. Check all steam fittings, particularly at boilers, for leaks. Tighten, if necessary, at conclusion of engine run, while engine is still hot.		
24	SPECIAL—10 Hours. Cuno Oil Filters—		
	Check the turning mechanism of automatically operated oil filters for proper operation by installing the manual turning nut, marking its position and noting that it has moved after idling the engine for approximately 5 minutes. Non-movement of the nut denotes defective unit and it should be replaced. T. O. 02-1-24.		
	Do not feather or unfeather more than one propeller at a time.		
	AUXILIARY EQUIPMENT		
	(The following inspections are to be accomplished when missions are scheduled).		
11	BOMBING—		
	Bomb Racks—Inspect for dirt and oil. Racks must be kept clean and all contact surfaces polished and free from burrs. Inspect for security, safeties, and general condition.		
	Check for presence of forked rod for emergency bomb release.		
	WARNING: The airplane will not be flown with bomb racks removed as they form part of the primary airplane structure.		
	Check bomb bay door indicator.		
	CAUTION: When airplane is on the ground, make certain all personnel and obstructions are clear of the bomb bay doors before door control is operated. T. O. 01-1-36.		
12	GUNNERY—		
	Machine guns: Check for—		
	Headspace		
	Mounts—security of attachment & free movement.		
	Feed boxes & ejection chutes—proper alignment.		
13	TOW TARGET—When a windlass is employed, visual and physical check will be made to determine proper lubrication of windlass and functioning of brake, clutch and winding mechanism. (T. O. 11-40-4). Determine that instructions to windlass operators reference correct procedure in cases of malfunctioning are properly posted.		
15	COMMUNICATION—Make visual inspection of all installed radio equipment for general condition. (Tests of		

PREFLIGHT AND DAILY INSPECTIONS

1	2	3	4
	<p>radio compasses will be conducted at a distance from hangars.) Inspect fixed antenna system for condition and see that wires are taut. Clean dirt and carbon from insulators. Check trailing antenna reel for proper operation. T. O. 08-5-2. Check column 15, Form 41 with the Form 1A to see that they check. Check for presence of "Radio Data", T. O. 08-15-2. NOTE: Installed radio transmitters will not be operated (dynamotor running), if any point of the antenna system is closer than one foot to any object other than the airplane itself (T. O. 08-5-2). Do not use pliers on any part of antenna wires.</p>		
16	<p>PHOTOGRAPHIC— NOTE: The preflight inspection is a check of the camera mount supports, camera ports, etc., prior to the first flight of the day, and is designed to ascertain that the camera and its accessories can be readily mounted and satisfactorily used in the airplane. The inspections listed will be considered to be the minimum required. Clean the floor and the inside and outside surfaces of windows below camera position. Inspect camera mount supports for ease of adjustment, cleanliness and that locking pins engage properly. See that the camera door and viewfinder opening will open and close properly. Clean the holes and slots in the viewfinder mounting ring. Check the camera signal and power circuits. Check the interphone station at camera position. Check oxygen supply for cameraman.</p> <p style="text-align: center;">AFTER FLIGHT</p>		
30	<p>At completion of flights involving the use of oxygen, mouth pieces (if used) will be sterilized. Valves on oxygen cylinders will be turned off immediately. Check contents of cylinders as indicated by pressure. (T. O.'s 03-50-1 and 03-50A-1). After every flight the static electricity in the de-icing boots should be discharged by wiping the entire surface of the boots with a grounded wire brush or a similar suitable conductor. The airplane will not be refueled prior to this operation.</p>		
19	<p>All fuel and oil tanks will be serviced to the normal supply and quantities entered on Form No. 1A, at completion of day's flying. Make visual inspection of airplane while servicing.</p>		
19	<p>At end of day's flying clean propellers, inspect, and coat with clean lubricating oil. (T. O. 03-20CC-2).</p>		
19	<p>See that airspeed head protection cover is installed.</p>		
19	<p>Sufficient cowling will be removed in order to check for fuel and oil leaks within the engine nacelles, and for failures of wires, lines, connections, attachments of exhaust pipes and collectors, etc.</p>		
30	<p>Heating systems using water will be drained if airplane is to remain idle and subjected to freezing weather.</p>		
30	<p>Check racks for released flares.</p>		
11			
11			
12			

PREFLIGHT AND DAILY INSPECTIONS

1	2	3	4
12			
13			
	DAILY		
	(To be performed at any time during the day)		
	NOTE: The inspections listed are grouped in sections for the convenience of the personnel concerned.		
	SECTION 1—ENGINES AND PROPELLERS		
19	Propellers and accessories—Check governors for oil leaks around bases and heads and controls for lost motion. Inspect propellers for bent or damaged blades, nicks, cracks, oil leakage, or other defects. (T. O. 03-20CC-2)		
	WARNING: The ignition is grounded through a plug on forward face of each firewall. Removal of this plug leaves ignition on, propeller will not be pulled through when ignition plug is out.		
	REMOVE ENGINE COWLING. EXCEPT RING COWLING.		
19	Inspect engine ring cowling for security of attachment. Cowling must not be excessively tight when engine is cold.		
19	Inspect exposed portions of engine mount and mounting brackets for general condition and security of attachment.		
19	See that cowling is not rubbing cooling fins. Check for broken or damaged baffles.		
19	Check exhaust manifolds for general condition and security of attachment, missing bolts or nuts, broken lugs, etc.		
19	Check intake pipes for security of attachment and leaking gaskets.		
19	Inspect for evidence of engines throwing oil.		
19	Inspect engine control assemblies for proper functioning, operating range, tightness, safetying, and general condition:		
	Oil cooler shutter control.		
	Throttle and mixture controls.		
	Propeller controls.		
	Emergency hand pump control.		
	Supercharger controls.		
	Intercooler temperature control.		
19	TURBO SUPERCHARGERS—Check entire installation for security of mounting and evidence of failure, turbine buckets for cracks and bucket wheel for looseness. Inspect Supercharger oil supply system for leaks.		
19	Inspect oil, fuel and battery vent and overflow lines for security of anchorage, clogging, breaks or kinks and to see that lines extend below cowling.		
	NOTES: Not more than two men should stand on engine servicing platform at one time.		
	Care must be exercised not to wash off rust preventive coating from control cables.		
	SECTION 2—FUEL AND OIL SYSTEMS		
19	Drain main fuel strainers and fuel tank sumps and resafety.		
19	With fuel "On" and pressure built up, inspect carburetor and fuel line connections for leakage, particularly at drain plugs, passage plugs and parting surface of body castings.		
19	Check security of mounting of carburetor heater and scoops. Check carburetor for security of mounting and proper safetying.		
19	Inspect carburetor air cleaner for contamination. If there is evidence of dirt collecting, remove the unit and wash in gasoline. Allow it to dry thoroughly and immerse in oil, Spec. AN-VV-0-446, grade 1120. Allow the unit to drain for 2 hours, if possible, before reinstalling. T. O. 01-1-23.		

PREFLIGHT AND DAILY INSPECTIONS

1	2	3	4
19	Self Sealing Fuel Tanks: Visually inspect the structure surrounding the cells, and all fittings attached to the cells which are visible through quick opening access doors, for evidence of leaks.		
19	If bomb bay tanks are installed, check safety wires.		
19	Check all oil system drain plugs and drain cocks for leakage and proper safetying.		
19	Inspect oil coolers for security of mounting and evidence of clogging. Inspect for proper blanketing according to weather conditions and existing orders. (T. O. 06-10-1).		
	SPECIAL—12 Hours.		
23	Check fuel systems which HAVE NOT been treated for use of Aromatic fuels for deterioration and defective parts. T. O. 01-1-118.		
	SPECIAL—EVERY 30 DAYS.		
23	1. Check fuel systems which HAVE been treated for use of Aromatic fuels for correct and discernible identification marking. T. O. 01-1-118.		
	2. Replace diaphragms and seals in fuel pumps and injection carburetors of fuel systems which HAVE NOT been treated for use of Aromatic fuels. T. O. 01-1-118.		
	SECTION 3—IGNITION AND ELECTRICAL		
19	Inspect generators, starters, switches, coils, solenoids and magnetos for cracked housing or flanges, security of mounting, tightness of housing bolts, safetying, etc.		
19	Inspect parting surfaces of starters for evidence of oil in starter gear cases or around fly wheel.		
19	Check booster coils for operation.		
19	Replace engine section cowling and check for security of attachment.		
46	SPECIAL—WEEKLY. Take hydrometer readings on batteries, if any cell is too high or too low, turn battery in for check. Add distilled water as necessary, never add electrolyte or acid. Inspect battery leads, and check to see that vents are open. T. O. 03-5B-1.		
	SECTION 4—LANDING GEAR AND HYDRAULIC SYSTEM		
30	<p>Make visual inspection of landing gear for:</p> <ul style="list-style-type: none"> General condition of struts, braces and fittings. Shock struts for proper inflation and evidence of leakage. Wheels for bent or distorted rims, security of retaining bolts and nuts. Tires for proper inflation, general condition, cuts, pulling away from rims and evidence of interference or chafing against other parts. Condition of tail wheel shear bolt. Proper safetying of all units. 		
30	Check for evidence of fluid leaks in Hydraulic system.		
	SECTION 5—INSTRUMENTS		
30	Check instrument panels for proper movement.		
30	Check the lighting of all instrument, cabin, trouble, landing, passing, running, and position lamps, and replace any defective lamps found. Check operation of warning bell at all locations. Check operation of bomber's pilot call.		
30	Check compasses for bubbles and discoloration of liquid.		
39	SPECIAL—10 Hours.		
	Turn the handle of Cuno hydraulic filter one complete revolution in each direction. (Turn, also, at least once during the first hour of operation after hydraulic system overhaul or fluid change). T. O. 03-30-2.		

PREFLIGHT AND DAILY INSPECTIONS

1	2	3	4
	SECTION 6—MISCELLANEOUS		
30	Inspect wings, fuselage, vertical and horizontal stabilizers for general condition; distortion, pulled rivets or other evidences of failure; security of attachment, etc.		
30	Inspect flight control surfaces (flaps, ailerons, rudder and elevators) for general condition.		
30	Inspect De-icer shoes for bruises, punctures, loose patches, etc.		
30	Check condition of static ground, T. O. 01-1-5.		
30	Fire-extinguishers, hand, Type A-2, check for contents, security of mounting bracket, nozzle opening unobstructed, tag intact, secure in bracket yet easily removed. Replace if defective (T. O. 03-45-1).		
30	Check CO ₂ bottles of pneumatic life raft and engine fire extinguisher to see that safety discs have not been ruptured. T. O. 16-20-2. The CO ₂ release cable must be disconnected from the life raft door latch before pulling the release handle.		
30	Clean all cabins and compartments (including windows). All articles which could foul or jam controls will be properly attached, stowed or removed.		
30	Check flight control mechanism for freedom of operation. Check that control cables are protected with rust preventive compound.		
30	See that "Pilot's Check List" is accessible to pilot.		
30	Lubricate foot pedal and brake rod controls with oil.		
30	Clean toilet. Fill receptacle with one quart of disinfectant solution.		
30	Check fluid level in anti-icer reservoirs. Fill, if necessary, with fluid, Spec. 3585.		
30	Heating and Ventilating System—Inspect entire system for leaks and general condition of units, lines and fittings.		
30	SAFETY BELTS: Inspect fabric and leather parts for cuts or fraying, latching devices for condition and operation; fittings and attachment parts for condition and security of fastening. Check for date of last weight test. T. O. 03-1-2.		
19			

insert Serial No.
After Applicable Model

25-HOUR INSPECTIONS

(Perform preflight and daily inspections as usual in addition to this inspection)

B-17 B-17D

B-17B B-17E

B-17C B-17F

.....
Organization and Home Station

.....
(Date)

Column No.
Form No. 41

INSPECTIONS REQUIRED

Accomplish one copy of this form at each 25-hour inspection.
Turn in completed forms to Organization Engineering Officer.
See T. O. 00-20A and 00-20A-2

Enter
Symbols
Denoting
Condition

Remarks Pertaining
to Defects,
Replacements or
Adjustments

1

2

3

4

SECTION 1—ENGINES AND PROPELLERS.

29 **POWER PLANT—GENERAL:** With engine ring cowls left on, make a rigid inspection of each entire engine and mountings. Check engine ring cowl supports and engine mounting lugs for tightness of bolts and condition of rubber bushings.

25 **COOLING SYSTEM:** Inspect engine cowl flaps and magneto cooling tubes for cracks or other damage, proper alignment and security of mounting. Check cylinders for damaged or broken fins. Lubricate cowl flap and the flap control system with oil.

20 **ENGINE CONTROLS—**

1. Inspect entire control installation from levers in pilot's compartment through all rods and cables, linkage, support brackets and pulleys. Inspect for full and free movement, lost motion, bent rods, frayed cables, loose, broken or misaligned pulleys, loose or missing bolts, nuts, screws, cotter pins, etc. See that linkage is properly adjusted. Controls should operate with uniform tension throughout their full range. See that all adjustment or position locking devices function properly and that all levers are adjusted to prevent creeping. See that throttle stops are adjusted to prevent creeping. Clean and lubricate all moving connections and bellcranks.

The above applies to throttle, mixture, carburetor heater, emergency hand pump, supercharger, intercooler temperature, propeller and oil cooler controls.

NOTE: On newly installed engines perform 25 hour after engine change inspection, if due.

I hereby certify that I have performed—supervised—the above inspections.

.....
(Name, Grade and Duty)

.....
(Organization and Station)

SECTION 2—FUEL AND OIL SYSTEMS.

23 **FUEL SYSTEM—**

1. Fuel Pumps. Clear vent opening in relief valve cover plug by inserting a drill or a wire. Check pumps for security of mounting, leaks, and proper operation. **Check balance line.**

2. **CARBURETOR:** Lubricate throttle shaft bushings using oil, machine gun, Spec. 2-27. (T. O. 03-10BA-2). Inspect parting surfaces between body castings, test screws with screwdriver for tightness. Remove carburetor air maze—wash in gasoline and allow it to dry thoroughly. Immerse in lubricating oil and allow it to drain for 2 hours before reinstalling. T. O. 01-1-29.

3. **FUEL STRAINERS:** Remove and clean fuel strainer screens; inspect for breaks and tears. Clean strainer bodies. Replace strainer screens, plugs and drain valves and resafety.

4. **BOOST PUMPS: Inspect for leaks and operation.**

5. **FUEL LINES:** With fuel booster pumps on, inspect all fuel lines for leaks (particularly at connections and at sharp bends), cracks, security of line anchorage, and wear due to loose clamp, vibration or chafing. Inspect condition of hose connections and tightness of hose clamps.

35 **FUEL TANKS:** Check tanks for evidence of leaks; check safetying of latches of releases for bomb bay tanks.

24 **OIL SYSTEM—**

1. Remove and clean Cuno filter cartridge. Check cartridge rotation. Check that all cleaner blades are straight and flat. Check that all discs are flat, evenly spaced, and free from burrs or nicks. T. O. 02-1-24.

**

25-HOUR INSPECTIONS

1		3	4
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2. **OIL LINES:** Inspect for leaks (particularly at connections and passage through firewall or other structure), security of attachment, dents, cracks, chafing, etc. Hose connections and hose clamps for general condition and for proper location of clamps.

3. **OIL SCREENS:** Remove and clean whenever oil is changed.

I hereby certify that I have performed—supervised—the above inspections.

.....
(Name, Grade and Duty)

.....
(Organization and Station)

SECTION 3—IGNITION AND ELECTRICAL

SPARK PLUGS:

22 1. Check and reset gap to .012" (+.002"; -.001"). If gap setting equipment is not available, replace with new or reconditioned plugs. T. O. 01-20E-82.

Check elbow terminals and shielding nuts of shielded spark plugs installations for security. When tightening the elbow assembly of shielded plugs, the barrel must not be loosened. Care must be exercised to see that the barrel is not rotated with respect to the shell since this will change the gap setting. (T. O. 03-5E-1).

2. Inspect landing gear limit switches for security of connections and for proper operation through access doors.

3. Remove cover from switch panel and inspect for security of connections, freedom of operation, and general condition. Remove all accumulated dust and foreign material with air blast.

4. Inspect all other electrical switches in airplane for security of connections, correct operation and for general condition. Where practicable, inspect the condition of switch contacts.

46 **BATTERY:** Inspect the felt pad in the battery vent sump for proper condition. Saturate, if necessary, with solution of sodium bicarbonate and water. (T. O. 01-1-20) T. O. 03-5B-1.

I hereby certify that I have performed—supervised—the above inspections.

.....
(Name, Grade and Duty)

.....
(Organization and Station)

SECTION 4—LANDING GEAR AND HYDRAULIC SYSTEM.

36-37 **LANDING GEAR AND TAIL GEAR—**

1. Inspect struts, braces, drag links, retracting mechanism, and fittings, for cracks, bends, security and condition of attachment fittings, elongated bolt holes. Check for loose, missing or unsafetied bolts, nuts or cotter pins.

Inspect Landing Gear Drag Strut on B-17C, D & E airplanes in accordance with Technical Radiogram 01-20E-80 pending compliance with T. O. 01-20E-86.

2. Lubricate landing gear.

3. Check shock strut for fluid level—refill, if necessary. See the airplane handbook and T. O. 03-25E-1.

4. Check for proper operation of swivel mechanism, and tail gear centering lock. Locking plunger should "BOTTOM" in slot when tail gear is in trailing position.

38 **WHEELS AND BRAKES:** With parking brake set inspect entire hookup from reservoir to wheel cylinders for leaks, condition of attaching clips and flexible connections. Inspect brakes for entrapped air (soft spongy feel to brake action) and for leakage at brake cylinder sleeve. Check clearance between brake lining and brake drum. Brakes should hold airplane at full throttle.

39 **HYDRAULIC SYSTEM—**

1. **HYDRAULIC LINES:** Inspect all lines and connections for leaks, dents, kinks, or cracks, security of anchorage, wear due to chafing or vibration, etc. Inspect for deterioration of flexible connections.

2. **VALVES:** Inspect all valves for general condition, proper operation, and evidence of leakage.

3. **PUMPS:** Check motor driven and hand operated hydraulic pump for condition and functioning. Check pressure regulator for leakage.

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25-HOUR INSPECTIONS

1	2	3	4
	<p>4. ACCUMULATOR: Inspect for indications of leakage. Check that accumulator will operate hydraulic system. To service accumulator see airplane handbook.</p> <p>5. FLUID RESERVOIR: Check fluid level. Fill with oil, Spec. 3580 to proper level. (T. O. 06-1-2). Bleeding of air is accomplished by several slow applications and complete releases of pressure to the brakes. This procedure bleeds entire system.</p> <p>I hereby certify that I have performed—supervised—the above inspections.</p> <p>..... (Name, Grade and Duty)</p> <p>..... (Organization and Station)</p>		
21			
34	<p>SECTION 6—MISCELLANEOUS.</p> <p>FIXED SURFACES: Make inspection of wings, horizontal and vertical stabilizers and fairings for cracks, loose rivets, loose screws and general condition, corrosion, etc. Check landing lamp reflectors for polish.</p>		
40	<p>FUSELAGE: Inspect for general condition, corrosion, pulled rivets, rupture or distortion indicating failure, damage at cabin entrance, etc.</p>		
33	<p>MOVABLE SURFACES: Inspect ailerons, elevators, rudder, flaps and tabs for free and full movement, warping, broken ribs, or ribs loose on spars, condition of covering, condition of hinges and security of attachment. Inspect horns and hinges for bends and breaks, security of attachment, worn or loose hinge pins, and for proper safetying.</p>		
32	<p>FLIGHT CONTROL MECHANISM—</p> <p>1. At first 25 (and subsequent 100-hour inspections) check tension of control cables. If adjustments are necessary see airplane handbook and T. O. 01-1-9 for details.</p> <p>2. Lubricate flight and flap control mechanism in accordance with airplane handbook.</p> <p>3. Make inspection of flight control mechanisms as follows:</p> <ol style="list-style-type: none"> a. Inspect cables for frayed wires. (Not more than 6 broken wires per inch). b. Inspect for broken, loose or misaligned pulleys. c. Inspect rods for freedom of movement and for condition of bearings and sliding surfaces. d. Inspect guides for general condition, proper alignment and security of mounting. e. Inspect brackets for security of attachment, cracks or other defects. f. Inspect rudder pedal assembly for proper functioning of the parts; lost motion or binding. Check for proper setting of the rudder pedals and the rudder when in neutral position and check that rudder doesn't interfere with the elevators when in extreme positions. g. Inspect wheel control for condition and proper functioning of the parts. Check for lost motion or binding in the wheel assembly. h. Check tab mechanism for proper functioning. i. Inspect flaps for proper condition and check that the cockpit indicator shows correct position of the flaps. <p>Refer to Airplane Handbook for adjustment instructions.</p>	**	
32			
43	<p>AIRCRAFT GENERAL—</p> <p>1. DE-ICING EQUIPMENT: Check de-icing shoe attaching screws for tightness. Check feed lines in both wing and tail for security and general condition. (T. O. 03-35B-1.)</p> <p>2. ANTI-ICING EQUIPMENT: Inspect for security of attachment of lines leading from tank to propeller hubs. Check for condition of connections.</p>		

25-HOUR INSPECTIONS

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42

3. **HEATING AND VENTILATING SYSTEM:** Inspect for leaks and condition of units' lines and fittings, condition and operation of ventilators. Inspect defroster tubes for leaks and for proper operation.

4. Inspect first-aid kits to determine items required for replacement. Required items will be obtained by requisition from the local Medical Department, T. O. 01-1-117.

NIGHT FLYING EQUIPMENT: Remove flares and inspect for dents, wear of carrying hooks, corrosion, date of expiration (date of removal from fibre container should be on flare); damage to body carrying illuminant; condition of operating and attaching mechanism. T. O. 11-15-1).

31

COCKPITS AND CABINS—

1. **SEATS:** Inspect for security of attachment (including supports and brackets), condition and functioning of adjusting mechanism, breaks or cracks in the seats, which could foul parachute or clothing. Oil seat adjustments.

2. **WINDSHIELDS, WINDOWS, TURRETS AND DOORS:** Inspect for condition of frame and security of attachment. Breaks or cracks in glass or transparent sheet. Condition and operation of mechanism on sliding windows and doors. Inspect for cleanliness of all windshields and windows.

3. **VENTILATORS:** Check for condition and proper operation.

4. **EMERGENCY EXITS:** Check cabin door and emergency exits for condition and proper operation.

5. **SAFETY BELTS:** Inspect fabric and leather parts for cuts or fraying, latching devices for condition and operation; fittings and attachment parts for condition and security of fastening. Check for date of last weight test. All belts to be tested semi-annually except type B-11, which are to be tested annually (T. O. 03-1-2).

I hereby certify that I have performed—supervised—the above inspections.

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(Name, Grade and Duty)

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(Organization and Station)

11

SECTION 8—AUXILIARY EQUIPMENT.

BOMBING—

1. Grease bomb door operating units, bomb release slide and bomb control levers in accordance with Airplane Handbook.

2. **BOMB RACKS:** Make detailed inspection of structure, installation fittings, releasing and arming mechanisms, and electric circuits for evidence of wear or failure.

3. Clean racks with kerosene, Spec. VV-K-211.

4. **BOMB RACK CONTROLS:** Inspect all connecting members, mechanical and electrical, between control units and rack assemblies; check control positions for proper relation throughout the system. Determine correct operation with respect to both functioning and proper sequence of operation.

5. Thoroughly clean entire control system.

12

13

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(Organization and Station)

50-HOUR INSPECTIONS

Insert Serial No.
After Applicable Model

(25-hour inspections included and marked *—Perform preflight and daily inspections as usual in addition to this inspection)

B-17 B-17D

B-17B B-17E

Organization and Home Station

B-17C B-17F

(Date)

Column No.
Form No. 41

INSPECTIONS REQUIRED

Accomplish one copy of this form at each 50-hour inspection. Turn in completed forms to Organization Engineering Officer.

See T. O. 00-20A and 00-20A-2

Enter
Symbols
Denoting
Condition

Remarks Pertaining
to Defects,
Replacements or
Adjustments

1

2

3

4

REMOVE ALL ENGINE SECTION COWLING, INCLUDING ENGINE RING COWL, AND OPEN ALL INSPECTION DOORS AND COVERS

SECTION 1—ENGINE AND PROPELLER

28

PROPELLERS AND ACCESSORIES—

1. Using magnifying glass, carefully examine exterior of all parts of propellers for cracks, nicks, bends, and similar defects. Check for deterioration of markings and for proper safetying. (T. O. 03-20CC-2).
2. Propeller Governors—Check governors for oil leakage and for security of mounting; check control system for security of attachment, freedom of movement, proper safetying, loose or worn bearings. Check governor assembly for free movement of drive. (T. O. 03-20CA-2).
3. Check condition and operation of cockpit propeller controls.
4. Check propeller anti-icing pump and motor for security of mounting and for leakage in system.

29

POWER PLANT GENERAL—

1. Inspect CYLINDERS for cracks broken or damaged fins; BAFFLES for cracks, loose rivets and security of mounting.
2. Check all clamps, bondings, taping and safetying of all lines, and all rods within the engine section of nacelle.
3. Inspect engine MOUNTS for cracks (particularly at welds), tightness of mounting, security of engine to mount, mount to nacelle.
4. Lubricate starter handcrank extension-support bearings with oil.

27

MANIFOLDS AND SUPERCHARGERS: Inspect intake and exhaust system for damaged manifolds, loose stacks and retaining lugs, broken or loose studs and bolts, blown gaskets. Lightly tap exhaust stacks to loosen any scale formation or brush out with wire brush.

1. Turbo superchargers—Inspect lines for condition and tightness. Test lines for leaks (Section 5, T. O. 03-10DA-2). Remove any accumulation of carbon from system. Check exhaust manifold and nozzle box for cracks. Draw off small amount of oil from supply tank, if oil contains abrasive particles, drain, flush and refill with fresh oil.
2. Supercharger regulators—Check for security of mounting, proper attachment of lines and excessive leakage. Leakage of over one drop per minute at 50 lbs. pressure and normal temperature will be considered excessive and unit will be removed for repairs or gasket replacement as necessary. T. O. 03-10D-2.

25

*COOLING SYSTEM: Inspect engine cowl flaps and magneto cooling tubes for cracks or other damage, proper alignment and security of mounting. Check cylinders for damaged or broken fins. Lubricate cowl flap, and the flap and scoop control system.

20

ENGINE CONTROLS—

- *1. Inspect entire control installation from levers in pilot's compartment through all rods and cables, linkage, support brackets and pulleys. Inspect for full and free movement, lost motion, bent rods, frayed cables, loose, broken or misaligned pulleys, loose or missing bolts, nuts, screws, cotter pins, etc. See that linkage is properly adjusted. Controls should operate with uniform tension throughout their full range. See that all adjustment or position locking devices are adjusted to prevent creeping. See that throttle stops are adjusted properly to prevent creeping. Clean and lubricate all moving connections and bellcranks.

The above applies to throttle, mixture, carburetor heater, emergency hand pump, supercharger, intercooler temperature, propeller, and oil cooler controls.

50-HOUR INSPECTIONS

1	2	3	4
	<p>2. All control cables will be cleaned where they pass over pulleys or through fairleads and covered with compound, rust preventive, heavy, Spec. 2-82.</p> <p>I hereby certify that I have performed—supervised—the above inspections.</p> <p>..... (Name, Grade and Duty)</p> <p>..... (Organization and Station)</p>		
	<p>SECTION 2—FUEL AND OIL SYSTEMS.</p>		
23	<p>FUEL SYSTEM—</p> <p>*1. FUEL PUMPS: Clear vent opening in relief valve cover plug by inserting a drill or a wire. Check pumps for security of mounting, leaks, and proper operation.</p> <p>2. CARBURETOR: Lubricate throttle shaft bushings using oil, machine gun, Spec. 2-27. (T. O. 03-10BA-2). Inspect parting surfaces between body castings, test screws with screwdriver for tightness. Remove carburetor air maze—wash in gasoline and allow it to dry thoroughly. Immerse in lubricating oil and allow it to drain for 2 hours before reinstalling. T. O. 01-1-29, Drain regulator unit, air chamber, fuel chambers and fuel control unit through plugs in bottom.</p> <p>*3. FUEL STRAINERS. Remove and clean all fuel strainer screens. Inspect for breaks and tears. Clean strainer bodies. Replace screens, plugs and drain valves and resafety.</p> <p>*4. BOOST PUMPS: Inspect for leaks and operation.</p> <p>*5. FUEL LINES: With fuel "On" and pressure built up, inspect all fuel lines for leaks (particularly at connections and sharp bends), cracks, security of line anchorage; wear due to loose clamps, vibration or chafing. Inspect hose connections for condition, hose connections and hose clamps for tightness.</p>		
	<p>7. Inspect all fuel overflow and drain lines for security of mounting, kinks, breaks or stoppages.</p> <p>8. Inspect by-pass valves for leaks and proper operation.</p>		
35	<p>Check capacity of self-sealing fuel tanks in accordance with T. O. 03-1-15.</p>		
35	<p>FUEL TANKS: Inspect for security of mounting, indications of leakage, condition and position of padding, proper tension of supporting straps and proper anchorage of fuel lines leading from tanks. Check condition and proper safetying of bomb bay tank release mechanism. The fuel tank access doors are primary structural members and care must be taken that they are re-installed properly. Support outboard nacelle on jack before removing doors. The bomb bay tanks are releasable by either normal or emergency bomb controls.</p>		
24	<p>OIL SYSTEM—</p> <p>*1. Remove and clean Cuno filter cartridge. Check cartridge rotation. Check that all cleaner blades are straight and flat. Check that all discs are flat, evenly spaced, and free from burrs or nicks.</p> <p>*2. OIL LINES: Inspect for leaks (particularly at connections and passage through firewall or other structure), security of attachment, dents, cracks, chafing, etc. Hose connections and hose clamps for general condition and for proper location of clamps.</p> <p>3. Inspect oil system vent lines for clogging, kinks, and for security of anchorage.</p> <p>4. OIL SCREENS: Remove and clean all removable oil screens and strainers. Inspect strainers for breaks or tears.</p>	**	

50-HOUR INSPECTIONS

1	2	3	4
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5. OIL COOLERS: Inspect for security of mounting, general condition and for evidence of clogging.

6. OIL TANKS: Inspect for security of mounting, signs of leakage, condition and location of padding, proper tension of supporting straps and for proper anchorage of lines leading from tanks.

8. See T. O. 02-1-22 for pre-oiling of engines (before starting engines after oil change).

9. Inspect the oil dilution control linkage to insure that the linkage does not bind at any point and that it is adjusted so that the dilution valve will close completely. Disconnect the dilution lines from the oil line, maintain fuel pressure with hand pump, operate dilution switches. When switches are open, there should be no leakage through solenoid valves. T. O. 03-15-3.

I hereby certify that I have performed—supervised—the above inspections.

.....
(Name, Grade and Duty)

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(Organization and Station)

SECTION 3—IGNITION AND ELECTRICAL

SPARK PLUGS:

1. Check and reset gap to .012" (+.002"; -.001"). If gap setting equipment is not available, replace with new or reconditioned plugs. T. O. 01-20E-82.

Check elbow terminals and shielding nuts of shielded spark plugs installations for security. When tightening the elbow assembly of shielded plugs, the barrel must not be loosened. Care must be exercised to see that the barrel is not rotated with respect to the shell since this will change the gap setting. (T. O. 03-5E-1).

2. BOOSTER COIL: Inspect for security of mounting. T. O. 03-5-9.

3. GENERATORS: Remove generator brush bands and check brushes for wearing, sticking, and for loose connections. Check Commutators for cleanliness and pitting. Check for presence of engine oil in generators.

4. GENERATOR CONTROL PANEL: Inspect for security of mounting, excessive arcing, cleanliness, condition of contact points, proper safetying, etc. Inspect terminals, cables and connections for condition and security of attachment. Check condition of vibration absorption mounts. Check voltage regulator element for proper volt setting with no load, T. O. 03-5AB-2.

5. IGNITION SHIELDING: Inspect for proper anchorage and security of union nuts.

6. MAGNETOS: Type SF-9L-1, read instructions for inspection and maintenance in Section 5, of Technical Order 03-5DA-2.

7. SOLENOID SWITCHES: Check for security of mounting, and of all electrical connections. T. O. 03-5C-2.

8. STARTERS AND STARTER MOTORS: Type C-21, the window strap on the motor will be removed and the motor inspected for loose connections and worn or binding brushes, the brush springs for tension, and the commutator for dirt and pitting. T. O. 03-5CA-1.

9. MOTOR DRIVEN HYDRAULIC PUMPS: Remove window strap on motor and check connections. Check for loose, binding or worn brushes.

10. DE-ICER PUMPS: Remove brush and spring assemblies from motor pump unit, and check length and condition of brushes. (This check may be delayed, when de-icer is used infrequently). (T. O. 03-35A-1).

11. ELECTRICAL CONNECTIONS: Inspect all electrical connections and leads for security of ground connections, anchorage of lines, tightness of connections, condition of insulation, safetying and security of Cannon type plugs.

12. Retracting motors—Check setting of clutches on retracting motors as follows:

Bomb doors	1200 inch lbs.
Wing flaps	575 inch lbs.
Tail wheel	250 inch lbs.
Landing gear	800 inch lbs.

22

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50-HOUR INSPECTIONS

1	2	3	4
	<p>Check motors for cleanliness and for security of mounting, worn or binding brushes, loose or dirty connections and proper safetying. Maximum permissible wear of brushes is to 3/16" from a new length of 9/32" replace before maximum wear limit is reached). (See T. O. 03-5CC-1 for replacement instructions. Check condition of commutator (smooth and polish with #000 sandpaper if rough). For badly scored commutator see T. O. 03-5CC-1. Remove and check brush spring assemblies for required tension, replace if tension is less than 38 ounces with spring compressed to 9/16" as measured from top of metal spring retainer.</p>	<p>***</p>	
<p>46</p>	<p>BATTERY: Inspect the felt pad in the battery vent sump for proper condition. Saturate, if necessary, with solution of sodium bicarbonate and water. (T. O. 01-1-20) T. O. 03-5B-1.</p> <p>I hereby certify that I have performed—supervised—the above inspections.</p> <p>..... (Name, Grade and Duty) (Organization and Station)</p>		
<p>36-37</p>	<p>SECTION 4—LANDING GEAR AND HYDRAULIC SYSTEM.</p> <p>LANDING GEAR AND TAIL GEAR—</p> <p>*1. Inspect struts, braces and fittings for cracks, bends, security and condition of attachment fittings, and welds, and for elongated bolt holes. Check for loose, missing or unsafetied bolts, nuts or cotter pins.</p> <p>*2. Lubricate landing gear in accordance with Airplane Handbook.</p> <p>3. Test functioning of landing gear retracting and lowering mechanism. See T. O. 19-1-18 for instructions on the use of airplane jacks before raising the airplane. Check control and functioning of retracting mechanism; condition of torque tubes, flexible connections and couplings. Check operation and condition of latches, limit switches, warning signals and position indicators.</p> <p>4. Inspect oleo cylinders for possible interference with bolts which attach lower collar to main strut. (Should be clearance of at least .011"). Replace collar if interference exists.</p> <p>5. Inspect neoprene bumpers on stops for condition. Replace if necessary.</p> <p>6. Check fluid level of shock absorber struts as follows (T. O. 03-25E-1): Back off filler plug slightly and allow air to escape slowly until all "fizzing" ceases. Remove filler plugs. Fluid level should be flush with filler plug hole when strut fully collapsed and the airplane in normal taxiing position. Fill if necessary with Fluid, hydraulic, Spec. 3580. Check by extending and collapsing strut several times.</p>	<p>**</p> <p>**</p> <p>***</p> <p>**</p> <p>***</p>	
<p>38</p>	<p>WHEELS AND BRAKES—</p> <p>*1. BRAKES: With parking brake set inspect entire hookup from reservoir to wheel cylinders for leaks, condition of attaching clips and flexible connections. Inspect brakes for entrapped air (soft spongy feel to brake action), and for leakage at brake cylinder. Check clearance between brake lining and brake drum (should be .010 inch). (T. O. 03-25B-2. B-17B and B-17C. Refer to T. O. 03-25B-2 if brakes need adjustment). Brakes should hold airplane at full throttle.</p> <p>2. WHEELS: Inspect for evidence of corrosion of the visible portion of the wheel rim and for evidence of damage to wheel rim edges.</p> <p>3. TIRES: Inspect for tread wear exposing fabric carcass of casing—replace if this defect is found. Inspect for external cuts, breaks, blisters or other visible damage—repair if practicable.</p>		
<p>39</p>	<p>HYDRAULIC SYSTEM—</p> <p>*1. HYDRAULIC LINES: Inspect all lines and connections for leaks, kinks, dents or cracks, security of anchorage, wear due to chafing or vibration, etc.</p> <p>*2. VALVES: Inspect all valves for general condition and for evidence of leakage.</p> <p>*3. PUMPS: Check hand operated hydraulic pump for condition and functioning.</p> <p>*4. ACCUMULATOR: Inspect for indications of leakage. Check that accumulator will operate hydraulic system. To service accumulator, see Section 3, T. O. 01-20EB-2 (B-17B) or T. O. 01-20EC-2 (B-17C).</p>		

50-HOUR INSPECTIONS

1	2	3	4
	<p>*5. FLUID RESERVOIR: Check for fluid level. Fill with oil, Spec. 3580 to proper level, capacity of tank 1.94 gals. (T. O. 06-1-2). Bleeding of air is accomplished by several slow applications and complete releases of pressure to the brakes. This procedure bleeds entire system.</p> <p>6. PUMPS, HYDRAULIC: Check tightness of attaching nuts and inlet and discharge fittings, if leaks are indicated, test as directed in T. O. 03-30CA-1. See T. O. 03-30CC-3.</p> <p>7. Inspect power brake control valve, adjust if necessary.</p> <p>I hereby certify that I have performed—supervised—the above inspections.</p> <p>..... (Name, Grade and Duty)</p> <p>..... (Organization and Station)</p>		
	<p>SECTION 5—INSTRUMENTS</p> <p>GENERAL—Inspect all instruments for chipped or discolored luminous markings, correct and discernible operations markings, security of mounting and tightness of connections. Check electrical instruments for tightness of connections and condition of insulation. Check pressure gage connections for leaks.</p>		
21	<p>ENGINE INSTRUMENTS—</p> <p>2. Check instrument zero of Carburetor Mixture and Oil Temperature Thermometers, adjust if necessary (T. O. 05-40-12).</p> <p>3. Thermocouple Thermometer—Check indicator as to zero position, adjust if necessary (T. O. 05-40-3).</p> <p>4. Manifold Pressure Gage—Check reading of instrument with Station Barometer. If it differs more than 0.4 inches of mercury, replace and turn in defective instrument for bench check. (T. O. 05-70-1).</p> <p>5. Check markings of Thermometers (T. O. 05-1-16).</p> <p>6. Check marking of Engine instruments (T. O. 05-1-17).</p>	### ###	
44	<p>NAVIGATION INSTRUMENTS—</p> <p>1. Magnetic Compass—Note if compass is to be swung. Inspect for discoloration of liquid, unbalanced card or other defects which might affect operation. (T. O. 05-15-2).</p> <p>2. Altimeters—Set pointers at zero. Check reading of setting markers against Station Barometer. If a difference exists, adjust. (T. O. 05-30-10).</p> <p>3. Flight Indicators—Clean screens.</p> <p>4. Bank and Turn Indicators—Clean screens.</p> <p>5. Rate of Climb Indicator—Check installation for loose attachment of indicator and tank, and tubing connections in static line and from indicator to tank for tightness. (T. O. 05-20-26).</p> <p>6. Airspeed Lines—Inspect for security of mounting and tightness of connections. Drain airspeed lines. Check airspeed head for security of mounting and for general condition. Clean holes in airspeed head with soft copper wire. Check electrical heating element. (T. O. 05-10-2).</p> <p>7. Check instrument boards for defective shock mounting; bonding on boards, lines and instruments.</p> <p>I hereby certify that I have performed—supervised—the above inspections.</p> <p>..... (Name, Grade and Duty)</p> <p>..... (Organization and Station)</p>		
34	<p>SECTION 6—MISCELLANEOUS.</p> <p>FIXED SURFACES—</p> <p>*1. Make inspection of wings, horizontal and vertical stabilizers and fairings for cracks, loose rivets, loose screws and general condition, corrosion, etc. Check landing lamp reflectors for polish.</p>		

50-HOUR INSPECTIONS

1	2	3	4
	<p>2. Inspect flaps for condition of hinges, absence of binding and sufficient lubrication.</p> <p>3. Inspect wing and empennage attachment taper pins, tighten if necessary.</p>		
40	FUSELAGE: Inspect interior and exterior of fuselage for general condition of skin, inspection doors, escape hatches, and windows.		
33	*MOVABLE SURFACES: Inspect ailerons, elevators, rudder, flaps and tabs for free and full movement, warping, condition of covering, condition of hinges and security of attachment.		
32	<p>FLIGHT CONTROL MECHANISM—</p> <p>1. All cables will be cleaned where they pass over pulleys or through fair-leads and covered with compound, heavy, rust preventive, Spec. 2-82.</p> <p>*2. Lubricate flight and flap control mechanisms in accordance with Airplane Handbook.</p> <p>*3. Make inspection of flight control mechanisms as follows:</p> <ol style="list-style-type: none"> Inspect cables for frayed wires. (Not more than 6 broken wires per inch). Inspect for broken, loose or misaligned pulleys. Inspect rods for freedom of movement and for condition of bearings and sliding surfaces. Inspect guides for general condition, proper alignment and security of mounting. Inspect brackets for security of attachment, cracks or other defects. Inspect rudder pedal assembly for proper functioning of the parts; loose motion or binding. Check for proper setting of the rudder pedals and the rudder when in neutral position and check that rudder doesn't interfere with the elevators when in extreme positions. Inspect wheel control for condition and proper functioning of the parts. Check for lost motion or binding in the wheel assembly. Check tab mechanism for proper functioning. Inspect flaps for proper condition and check that the cockpit indicator shows correct position of the flaps. <p>Refer to Airplane Handbook for adjustment instructions.</p>	**	
	4. Lubricate rudder and elevator locks in accordance with Airplane Handbook.		
43	<p>AIRCRAFT GENERAL—</p> <p>1. DE-ICING EQUIPMENT: Check de-icing boot attaching screws for tightness. Check feed lines in both wings and tail for security and general condition. (T. O. 03-35B-1). Lubricate windshield defroster quadrant with fibre grease, grade 285, Spec. 3560 (B-17B).</p> <p>Inspect air distributor valve as follows:</p> <p>Unscrew the slotted bakelite caps on each side of the motor and remove the brush and spring assemblies. Replace brushes if worn to a length of 13/32 inches. Brushes should be a free fit without excessive side play. (T. O. 03-35B-4).</p> <p>Drain de-icer sumps.</p> <p>2. LIFE RAFTS: Remove raft from carrying case or compartment. Inspect CO₂ cylinder for proper installation, ruptured safety indicator disc and for removal of safetying from handle. Check top-off valves in each compartment for tightness. See that all accessories are installed. Check accessories and raft for general condition. (T. O. 03-55A-1).</p> <p>3. Lubricate starter control brackets and handles in accordance with Airplane Handbook.</p> <p>4. Remove old grease from the bomb bay door worm and nut mechanism by washing with kerosene. Re-lubricate (sparingly) with grease, Spec. 3588. T. O. 01-20E-78.</p>	**	
42	*NIGHT FLYING EQUIPMENT: Remove flares and inspect for dents, wear of carrying hooks, corrosion, date of expiration (date of removal from fibre container should be on flare); damage to body carrying illuminant; condition of operating and attaching mechanism. (T. O. 11-15-1).		
31	<p>COCKPITS AND CABINS—</p> <p>*1. SEATS: Inspect for security of attachment (including supports and bracket), condition and functioning of adjusting mechanism, breaks or cracks in the seats which could foul parachute or clothing. Oil seat adjustments.</p>		

50-HOUR INSPECTIONS

1	2	3	4
	<p>*2. WINDSHIELDS & SLIDING ENCLOSURES: Inspect for condition of frame and security of attachment. Breaks or cracks in glass or transparent sheet. Condition and operation of mechanism on sliding parts.</p> <p>*3. VENTILATORS: Check for condition and proper operation.</p> <p>*4. EMERGENCY EXITS: Check cabin door and emergency exits for condition and proper operation.</p> <p>*5. SAFETY BELTS: Inspect fabric and leather parts for cuts or fraying, latching devices for condition and operation, fittings and attachment parts for condition and security of fastening. Check for date of last weight test. All belts to be tested semi-annually except type B-11, which are to be tested annually. (T. O. 03-1-2).</p> <p>6. Fire Extinguishers, CO₂, remove tube plug at end of piping and remove dirt. Replace cap. Inspect distributing piping for damage and to see that perforations are not clogged. Check all discharge lines and fittings for damage and security. Coat control cables with grease, graphite, medium, Spec. VV-G-671. (T. O. 03-45C-1).</p> <p>7. At first 50-hour inspection after installation, cylinders of CO₂ Fire Extinguishers will be removed and weighed to check for full charge. (T. O. 16-20-2).</p> <p>8. Lubricate cabin door locks and hinges.</p> <p>9. Check contents of aircraft data case for completeness. T. O. 00-25-3.</p> <p>I hereby certify that I have performed—supervised—the above inspections,</p> <p>..... (Name, Grade and Duty)</p> <p>..... (Organization and Station)</p>		
11	<p>SECTION 8—AUXILIARY EQUIPMENT.</p> <p>BOMBING—</p> <p>1. Grease bomb door operating units, bomb release slide, bomb control levers, emergency release mechanism and bomb hoist pulley brackets as shown on Fig. 3, T. O. 01-20EB-2 (B-17B) and Fig. 4, T. O. 01-20EC-2 (B-17C), see that doors operate freely.</p> <p>*2. BOMB RACKS: Make detailed inspection of structure, installation fittings, releasing and arming mechanisms, and electric circuits for evidence of wear or failure.</p> <p>*3. Clean racks with kerosene, Spec. VV-K-211.</p> <p>*4. BOMB RACK CONTROLS: Inspect all connecting members, mechanical and electrical, between control units and rack assemblies; check control positions for proper relations throughout the system. Determine correct operation with respect to both functioning and proper sequence of operation.</p> <p>*5. Thoroughly clean entire control system.</p>		
12			
13			

Insert Serial No.
After Applicable Model

100-HOUR AND SUBSEQUENT INSPECTIONS

(Perform in addition to inspections of lesser periods)

B-17 B-17D

B-17B B-17E

B-17C B-17F

Organization and Home Station

(Date)

Column No. Form No. 41	<p align="center">INSPECTIONS REQUIRED</p> <p align="center">Accomplish one copy of the applicable portion of this form at each 100-hour inspection. Turn in completed forms to Organization Engineering Officer. See T. O. 00-20A and 00-20A-2</p>	Enter Symbols Denoting Condition	Remarks Pertaining to Defects, Replacements or Adjustments
1	2	3	4
	<p>SECTION 1—ENGINES AND PROPELLERS.</p>		
27	<p>MANIFOLDS AND SUPERCHARGERS.</p>		
	<p>Replace springs in Ball and Socket Tail Pipe Joints if the free length is less than 4 5/8". T. O. 01-20E-84.</p>	**	
29	<p>POWER PLANT GENERAL—</p>		
	<p>Check tightness of rocker box cover stud nuts. Avoid excessive tightness.</p>		
	<p>I hereby certify that I have performed—supervised—the above inspections.</p>		
	<p align="center">..... (Name, Grade and Duty)</p>		
	<p align="center">..... (Organization and Station)</p>		
	<p>SECTION 2—FUEL AND OIL SYSTEMS.</p>		
	<p>FUEL SYSTEM—</p>		
	<p>1. Fill the seal chamber of the pump approximately half-full of grease, lubricating, cup, medium. Spec. VV-G-681. Apply through Alemite or zerk fitting in one of the 1/8" pipe tapped connections next to the engine pad. (T. O. 03-10EA-1).</p>	**	
35	<p>FUEL TANKS: Check tanks for evidence of leakage.</p>		
	<p>I hereby certify that I have performed—supervised—the above inspections.</p>		
	<p align="center">..... (Name, Grade and Duty)</p>		
	<p align="center">..... (Organization and Station)</p>		
	<p>SECTION 3—IGNITION AND ELECTRICAL.</p>		
22	<p>SPARK PLUGS: Remove all spark plugs and replace with new, or newly reconditioned plugs of same type. (T. O. 03-5E-1).</p>		
	<p>I hereby certify that I have performed—supervised—the above inspections.</p>		
	<p align="center">..... (Name, Grade and Duty)</p>		
	<p align="center">..... (Organization and Station)</p>		
	<p>SECTION 4—LANDING GEAR AND HYDRAULIC SYSTEM.</p>		
37	<p>TAIL GEAR—Grease retracting screw with thread lubricant, Spec. 3571.</p>	***	
38	<p>WHEELS AND BRAKES: Raise airplane on jacks, and remove wheels</p>		
	<p>Check brake drums for scoring, undue wear, freedom from grease and oil, loose screws; shoes and backing plates for distortion; return springs for proper tension and security. Check for cracked or loose bearing cups, scored or cracked brake drum liners and felt grease retainer for inboard bearing for condition. Check for corrosion. Remove wheel bearings, thoroughly clean and inspect for damaged rollers, races, or other defects. Replace any defective parts and repack with the grease specified in T. O. 06-10-4. Carefully inspect wheels for cracks, corrosion, damaged protective coating, etc. Inspect casings for any signs of weakness, T. O. 04-10-2. Adjust brakes on reassembly. Check wheels after installation for end play, free running.</p>	**	

100-HOUR AND SUBSEQUENT INSPECTIONS

1	2	3	4
39	<p>CUNO HYDRAULIC FILTER: Remove filter from airplane and disassemble sump from head and cartridge. Check cartridge rotation. Check that all cleaner blades are straight and flat. Check that all discs are flat, evenly spaced, and free from burrs or nicks. T. O. 03-30-2.</p>	<p>****</p>	
39	<p>Engine driven gear type oil pumps (Pesco). See that all pipe connections are drawn up tight and pump installation properly secured and safetied. (T. O. 03-30CC-3).</p>		
	<p>I hereby certify that I have performed—supervised—the above inspections.</p> <p>..... (Name, Grade and Duty)</p> <p>..... (Organization and Station)</p>		
44	<p>SECTION 5—INSTRUMENTS. NAVIGATION INSTRUMENTS—</p>		
	<p>1. Check airspeed tube installation for leaks and voltage drop. Remove drain plug in Airspeed tube installation and drain any accumulation of water, T. O. 05-50-1.</p>		
	<p>2. Compensate compasses, T. O. 05-15-1, 05-15-2. (To be accomplished at intervals of not to exceed three months).</p>	<p>***</p>	
	<p>3. Bank and Turn Indicators. Remove instrument. Remove plug under word "Oil" on the right side of the case. With a fine wire (.015) to guide the oil, lubricate with—If above freezing 8 drops of oil gyro instrument, Spec. 3563—If below freezing 8 drops of a mixture of 1/3 compass liquid, and 2/3 oil, gyro instrument. Remove drain plug at bottom of instrument near front, to drain accumulations of oil and water. Clean screens. Reinstall instrument and test suction—should be 1.80" to 2.05" Hg. (T. O. 05-20-2).</p>	<p>***</p>	
	<p>4. The vacuum supply to vacuum operated instruments will be checked at each instrument to insure their correct functioning.</p>		
	<p>I hereby certify that I have performed—supervised—the above inspections.</p> <p>..... (Name, Grade and Duty)</p> <p>..... (Organization and Station)</p>		
43	<p>SECTION 6—MISCELLANEOUS AIRPLANE GENERAL—</p>		
	<p>1. VACUUM PUMP: Check pump for security of mounting. Examine relief valve screen, if dirty remove the valve and loosen the screen assembly with a wrench. Clean and replace.</p>		
	<p>2. Safety valve in line between Exhaust side of pump and oil separator of de-icing system, remove the valve guide and wash in a suitable cleaning fluid. If the valve disc is worn, dress it with a flat oil stone. Test spring tension (when compressed to 1½ inches, must be 3.7 lbs.).</p>	<p>****</p>	
	<p>3. Clean oil separator (if removable screen) by removing oil outlet fitting, removing screen and cleaning in a suitable cleaning solution. If without removable screen, remove entire separator, thoroughly clean, using a suitable solvent, dry with compressed air and reinstall. If equipped with vent plug (plug marked PRESS) remove and clean passage. (T. O. 03-30AA-1).</p>		
	<p>4. HEATING AND VENTILATING SYSTEM: B-17C—Remove and clean cuno filter. B-17 and B-17B—Drain system and flush as specified in section 4, T. O. 01-20EB-2 for preparation of system for use.</p>		
	<p>5. Check microphones, connector cords, flexible oxygen tubes, etc. for proper anchorage in accordance with T. O. 01-1-109.</p>		
32	<p>FLIGHT CONTROL MECHANISM: Grease wing flap control unit screw and flap motor screw in accordance with Airplane Handbook.</p>	<p>**</p>	
32			

100-HOUR AND SUBSEQUENT INSPECTIONS

1	2	3	4
36	<p>Check tension of control cables—if necessary to adjust see the Airplane Handbook and T. O. 01-1-9.</p> <p>I hereby certify that I have performed—supervised—the above inspections.</p> <p>..... (Name, Grade and Duty)</p> <p>..... (Organization and Station)</p>		
11	<p>SECTION 8—AUXILIARY EQUIPMENT.</p> <p>BOMBING: Grease bomb door retracting screw.</p> <p>I hereby certify that I have performed—supervised—the above inspections.</p> <p>..... (Name, Grade and Duty)</p> <p>..... (Organization and Station)</p>		
16	<p>PHOTOGRAPHIC: Lubricate tandem cradle rotating points with graphite grease, Spec. 3592.</p> <p>I hereby certify that I have performed—supervised—the above inspections.</p> <p>..... (Name, Grade and Duty)</p> <p>..... (Organization and Station)</p>		
43	<p style="text-align: center;">150-HOUR INSPECTIONS</p> <p>SECTION 6—MISCELLANEOUS</p> <p>AIRPLANE GENERAL: Flush out heating system (B-17C) ref. Fig. 38A, T. O. 01-20EC-2 and fill with fresh fluid.</p> <p>I hereby certify that I have performed—supervised—the above inspections.</p> <p>..... (Name, Grade and Duty)</p> <p>..... (Organization and Station)</p>		
28 29	<p style="text-align: center;">200-HOUR INSPECTIONS</p> <p>SECTION 1—ENGINES AND PROPELLERS</p> <p>Tighten propeller retaining nut (if necessary).</p> <p>I hereby certify that I have performed—supervised—the above inspections.</p> <p>..... (Name, Grade and Duty)</p> <p>..... (Organization and Station)</p>	**	

100-HOUR AND SUBSEQUENT INSPECTIONS

1	2	3	4
22	<p>SECTION 2—IGNITION AND ELECTRICAL SYSTEMS</p> <p>RETRACTING MECHANISM MOTOR: Remove and check clutch for slippage. The clutch for the landing gear retracting and flap operating mechanism shall be set as prescribed in T. O. 03-5CC-1.</p> <p>I hereby certify that I have performed—supervised—the above inspections.</p> <p>..... (Name, Grade and Duty)</p> <p>..... (Organization and Station)</p>	**	
22	<p>SECTION 3—IGNITION AND ELECTRICAL SYSTEM</p> <p>FLUORESCENT LIGHTING: Check inverters for outputs and satisfactory operation and starting of the lamp assemblies. Check auxiliary boxes for output and satisfactory starting and operation of the lamp assemblies for satisfactory operation (if ends of the lamps are dark, replace).</p> <p>I hereby certify that I have performed—supervised—the above inspections.</p> <p>..... (Name, Grade and Duty)</p> <p>..... (Organization and Station)</p>		
32	<p>SECTION 6—MISCELLANEOUS</p> <p>FLIGHT CONTROL MECHANISM: Grease aileron, rudder and elevator trim tab controls in accordance with Airplane Handbook.</p> <p>I hereby certify that I have performed—supervised—the above inspections.</p> <p>..... (Name, Grade and Duty)</p> <p>..... (Organization and Station)</p>		
15			

100-HOUR AND SUBSEQUENT INSPECTIONS

1	2	3	4
	300-HOUR INSPECTIONS		
	SECTION 1—ENGINE AND PROPELLER		
26	VALVES. 1. Check valve clearances. They should be .010". 2. Check for broken valve springs, washers, or other failures. 3. See that rocker box cover gaskets are in good condition before closing rocker boxes. For valve adjustment instructions refer to Engine Handbook. I hereby certify that I have performed—supervised—the above inspections. (Name, Grade and Duty) (Organization and Station)	** ** **	
	SECTION 6—MISCELLANEOUS		
43	AIRPLANE GENERAL: 1. Anti-Icer and De-Icer Equipment, disassemble Eclipse air filter and wash in gasoline. Lubricate all ball bearings in distributing valve with Tule Grease, Grade VH (pack races only with the grease—do not pack grease in the bearing cap). Lubricate all distributing valve gears and plain bearings with engine oil. 2. Clean heating system boilers (B-17C). Unscrew nut on boiler core and remove boiler core. Clean core with steam or hot water, dry thoroughly and replace.	**** ** ****	
32			
	400-HOUR INSPECTIONS		
	SECTION 4—LANDING GEAR AND HYDRAULIC SYSTEM		
39	HYDRAULIC SYSTEM— 1. Clean screen in bottom of oil supply reservoir. 2. Replace valve core in pressure tank. I hereby certify that I have performed—supervised—the above inspections. (Name, Grade and Duty) (Organization and Station)		

