

# STORAGE OF AIRCRAFT L-17 SERIES

This technical order replaces T.O. 1L-17A-17, dated 25 June 1954.

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## 1. PURPOSE.

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The purpose of this technical order is to provide additional instruction on preservation and storage of L-17 series aircraft.

## 2. GENERAL.

Instructions are contained in general aircraft publication, "Storage of Aircraft." Specific instructions contained herein, will pertain to L-17 series aircraft, for storage and preservation, and apply to those L-17 series aircraft awaiting disposition instructions following an incident or accident.

## 3. PROCEDURE.

### a. Parking and Mooring.

- (1) Place nose wheel in the fore and aft position.
- (2) Aircraft will be blocked up to relieve the weight from the tires; however, where facilities are not available, the main landing gear and nose wheel gear will be chocked. (Nose wheel blocks will be locally manufactured using AF Drawing No. 46R7408 as a guide). When chocks are used, they will be placed fore and aft of each wheel, with each pair of chocks tied together with rope, wood cleats, or any other means which will prevent slipping of the chocks away from the tires. Sand bags will be used in lieu of chocks for aircraft moored on surface where chocks will not hold.

- (3) Parking brakes will not be set.

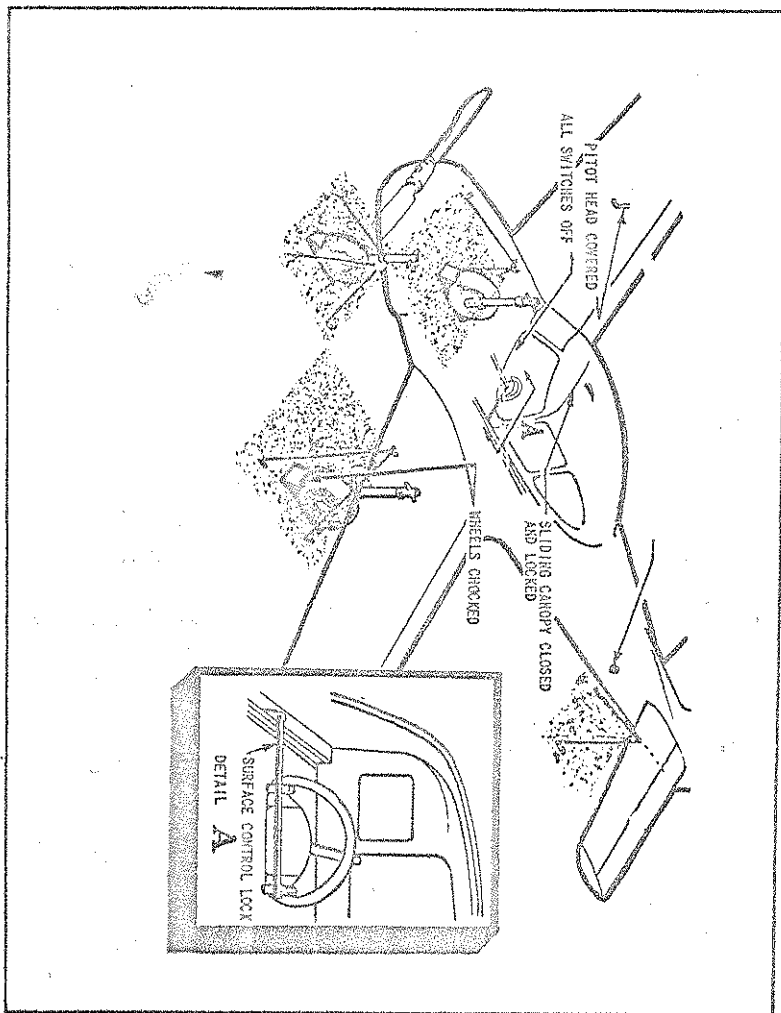


Figure 1

(4) If an aircraft has engine removed, spoilers will be installed and a tail stand of suitable strength will be placed under the tail. Spoilers should extend approximately 75 per cent of the wing span, starting at wing butt, and should be located approximately 10 to 15 per cent of the average chord aft and parallel to the leading edge of the wing.

(a) Tail stand will be locally manufactured and have felt pads.

(b) Spoilers will be of the fabric bag type, AF Drawing No. 43D22262. If not available, wood type spoilers, approximately 2 x 4 inches, with the two inch dimension lying flat against the wing surface, may be used. Spoilers will be tied in place with flat twill tape.

(5) Install control locks, located on floor by pilot's seat. External (neutral) control locks will also be used if available.

(6) All mooring ropes, except those to the landing gear, should approximate the angle to the ground in accordance with Figure 1, with sufficient slack provided to prevent structural failure due to rope tightening. Landing gear ropes will be taut and as vertical as possible. Slip knots will NOT be used in tying mooring ropes. All mooring ropes will be 3/8 inch manila or larger. Three-fourths inch or one inch rope will be used whenever available.

(7) When mooring aircraft on other than a solid concrete or hard top surface use the following instructions:

(a) Mooring equipment will consist of kits, part No. AN8015-2, which supersede the M series kit. The number of AN kits required per aircraft will be determined by the number of mooring points on the aircraft.

(b) Anchor rod, part No. 36A4468, is screwed into the arrow, part No. 36A4467, and the driving rod, part No. 36A4466, placed over the anchor rod and into the socket of the arrow. The cam on the driving rod must be turned so that the prong of the arrow will not be spread by driving. If the ground is hard, the hard surface will be broken first by using the ground breaking pin, part No. 38B3323. Care must be taken to align the rod with the point of attachment on the aircraft. The arrow will be driven into the ground until the anchor rod mooring ring is within approximately 3 inches of the ground. The driving rod handle should then be rotated 90 degrees and the driving rod given a sharp blow to spread the prongs of the arrow. The driving rod is then returned to the "driving" position and withdrawn from the ground. The squared socket of the eye assembly, part No. 36A4469, will then be aligned with the squared end of the anchor rod, fitted into place, and the knurled nut screwed down until a minimum length of 1/8 inch of the squared end of the anchor rod is protruding into the inside diameter of the eye assembly. The mooring ropes will then be secured as prescribed in Figure 1, Mooring Diagram.

### NOTE

To withdraw the anchor rods, detach mooring ropes, free the anchor rods from the arrow by turning the ring of the eye assemblies counterclockwise and remove the rods from the ground.

(8) The use of permanent mooring facilities are encouraged wherever available. Use of "dead man" type anchors is authorized providing a pull of 3000 pounds, minimum, may be sustained without failure to any one anchor.

#### b. Initial Preparation for Storage.

(1) Placing of aircraft in storage: Refer to General Publications, "Storage of Aircraft."

(2) Technical Order Compliance: Only those technical orders directly affecting safety of flight will be entered on Forms 00-829-1 and 61 for each L-17 aircraft in storage. No technical order, unless it pertains to the keeping of aircraft, engines and accessory equipment in a satisfactory state of preservation will be complied with during storage period.

(3) Preservation: Aircraft in storage will be kept as dry and as well protected as possible.

c. Inventory, Removal and Retention of Equipment.

(1) Refer to General Publication, "Storage of Aircraft."

(2) The removal of one rivet from any fuselage station or between stations is permissible on L-17 aircraft in which water is found trapped in the lower portion of the fuselage. The location of rivets removed from the underside of the fuselage will be marked by a circle 2 inches in diameter and approximately 1/4 inch wide with insignia red enamel, Spec MIL-E-7729. An entry will be made on the DD 781-2 indicating the location from which the rivets were removed. Paint all exposed portions of the metal from which the rivets have been removed with zinc chromate primer, Spec MIL-P-6889.

(3) All DD 780 equipment listed for the particular aircraft to be stored will be transferred with aircraft to storage.

(a) Storage activity will replace shortages in accordance with T.O. 1L-17A-21.

(b) DD 780 equipment should be stored in a building adjacent to the storage area. If no building is available in this location, DD 780 equipment that cannot be stored in the aircraft, will be stored under the wings or adjacent to the aircraft.

(c) Delicate items will be packaged in accordance with applicable directives using dehydration method.

(d) Any exposed steel parts (plated or unplated) will be coated with rust preventive compound, Spec MIL-C-16173, Type 1, stock No. 7500-054300.

(e) All equipment stored under and/or adjacent to the aircraft, will be placed on wooden pallets, and covered with waterproof tarpaulins.

(f) All support equipment and support equipment spares (peculiar to L-17 Aircraft) in excess of the requirement to support the active aircraft inventory of the using organization will be preserved in accordance with applicable instructions and stored adjacent to the aircraft.

d. Preservation.

(1) Treatment of Engines: Engines will be prepared for storage in accordance with applicable engine directives, as soon as possible, but not later than 3 days after receipt of aircraft for storage. The type of storage will depend on the instructions furnished to the length of time the aircraft will be retained in storage. If such instructions are not furnished, it will be assumed that the aircraft will be stored for a period of 30 days or longer, in which case the engine will be prepared for extended storage in accordance with applicable engine directives.

(a) Inactive beyond 60 days: When it is definitely known that aircraft will be inactive for a period of 60 days or longer, the engine will be treated for preservation in accordance with applicable technical orders.

(b) Seal and cover all lines disconnected by removal of an engine.

(2) Airframe.

(a) Corrosion Control: All corrosion will be removed and the affected area treated in accordance with applicable directives.

(b) Structural protection.

1. Openings located in positions that will allow the entrance of water or other foreign matter which may have a corrosive or other deterrent effect on either structural parts or items installed or stored within the structure, will be

covered with standard covers and dust excluders, if available, or with oilcloth or a suitable substitute, secured in place with tape conforming to Spec JAN-P-127, Type I, and coated with protective plastic stripping compound, Spec MIL-S-8141, stock No. 7300-753011.

2. External surfaces of canopies, blisters, turrets, etc., fabricated from transparent plastic sheet will be given a minimum spray or brush coat of .008 inch dry film thickness of protective coating, Spec MIL-C-6799, stock No. 7300-046789, after thorough cleaning of the panels with soap and water. Surfaces must be dry before application of this white pigmented coating. The coating should extend at least 2 inches beyond the plastic onto the metal or painted surfaces of the aircraft, if possible. No further covering of the treated plastic sheet surfaces is required. Plastic surfaces previously coated with unpigmented protective coating, Spec AN-C-155, will not require removal of the previously applied coat. A brush or spray coat of pigmented coating may be applied directly to the first coat, provided the surface of the coat is cleared of oil or other substances which would not permit good adhesion between coats.

3. Engine covers will be installed.

(3) Landing Gear and Shock Struts.

(a) Landing gear and shock struts will be treated by removing approximately one half of the fluid from the strut which normally use hydraulic oil, Spec MIL-O-5606, and refilled with special preservative oil, Spec MIL-O-6083.

1. Deflate the strut.
2. Remove the high pressure air valve, AN812, from the strut.
3. Insert through this hole a length of 1/4 inch annealed copper tubing until it bottoms in the cylinder.
4. Install syphon pump on tubing and remove approximately one-half of the fluid from the main and nose wheel strut.
5. Place wing jacks under the aircraft and raise aircraft until struts are extended approximately 3 inches above normal strut extension. Refill the struts with preservative oil, Spec MIL-O-6083, stock No. 7500-806100, and replace filler plug.
6. Lower wing jacks until all weight is resting on the tires. The struts will not be serviced with air during a storage period.
7. If the strut does not completely deflate when the weight is on the tires, crack the filler plug and allow fluid to escape until strut is deflated.
8. Deflate the tires to 75 percent of normal inflation prior to towing aircraft. Towing speeds will NOT exceed 5 mph and towing will be made over the smoothest terrain possible.

(4) Accessories.

(a) Propellers: Wood propellers will be removed, tagged and turned in to Air Force Supply.

(5) Fuel System.

(a) All fuel tanks will be drained of all fuel, after which they will be completely filled with light engine oil, SAE20 or SAE30.

(b) The aircraft fuel system will be treated in the following manner:

1. Open all drain cocks in the tanks and fuel strainers and drain any accumulated water.

2. Close and resafety all drains after it has been ascertained that all water has been removed.
3. Disconnect the fuel line at each engine driven pump inlet.
4. Suitably plug the fuel pump inlet ports.
5. Actuate selector valve at least one complete cycle to insure adequate preservation.
6. Tank to engine fuel line should remain open until such a time as oil begins to flow from the open end of the fuel line at the engine pump.

### NOTE

Do not operate booster fuel pumps.

7. Plug the open end of the fuel line previously disconnected from the engine pump.
8. The oil will then be drained, or pumped out using de-oiling equipment, leaving only the film adhering to the inner liner or walls as protection against drying out of the tanks and damage resulting therefrom. Removed excess oil will be reused for continued treatment of other tanks.
9. The fuel systems of aircraft, prepared for storage in accordance with the preceding instructions, will be thoroughly flushed with fuel of a type designated for the system to remove all oil, when such aircraft are removed from storage and prior to connecting the fuel line to the engine pump.

(6) Lubrication System.

(a) The lubrication system will be prepared in accordance with applicable directives for storage of engines.

(7) Hydraulic System.

The entire L-17 aircraft hydraulic system and brake system will be checked at the lowest point in the system and if the oil is found to be clean and free of sludge and dirt, the reservoir will be capped with clean oil, Spec MIL-O-5606. If the hydraulic oil in the brake systems is found to be dirty or contaminated, it will be drained off until clean oil is encountered. The system will then be refilled to the proper fluid level with clean new hydraulic oil, Spec MIL-O-5606. If system normally using oil, Spec MIL-O-5606, was originally serviced with oil, Spec MIL-O-6083, Stock No. 7500-806000, it will not be necessary to drain and refill with oil, Spec MIL-O-5606. Hydraulic oil, Spec MIL-O-6083 will be satisfactory for retention in the system when aircraft is prepared for one-time flight. All exposed finished surfaces at actuating rods, hydraulic cylinder, locks, valves, and other hydraulic equipment will be cleaned and coated with rust preventive compound, Spec MIL-C-16173, Type 1, Stock No. 7500-54300.

(8) Electrical Equipment.

(a) Storage batteries will be maintained in accordance with current directives.

(b) Dry cell batteries will be removed from flashlights, radio frequency meters and other equipment as applicable.

(c) Unless otherwise directed, all other electrical equipment will remain in aircraft.

(9) Communication Equipment.

(a) All unclassified communication equipment will remain installed.

(b) All classified communications equipment will be removed and protected as prescribed in current directives.

(c) If during periodic inspection more than mild deterioration is evident in communication sets:

1. Major components, except radio transmitter and receiving antennae will be removed, repaired, packaged (dehydration method), in accordance with current directives, and stored in aircraft from which removed.

2. Exposed mast antennas and mechanical items used with communication equipment, such as mechanical linkage and connectors, etc., will be coated with rust preventive compound, Spec MIL-C-16173, Type I, stock No. 7500-054300. Where necessary, mechanical items which are rusted will be removed from the equipment, rust cleaned off, and the items either replaced on the equipment or treated, packaged and stored with antenna equipment.

(10) Wheels and Tires.

Tires will be left installed on the wheels and maintained in accordance with current directives.

(a) Expander tube type brake will be temporarily removed and the braking surface of the wheel drums sprayed or painted with a light coat of zinc chromate or iron oxide compound, and the wheels reinstalled. No preservation is required for disc type brakes. The rim section of the wheels containing the lock ring will be sprayed or brushed with protective plastic stripping compound, Spec MIL-S-8141, sufficiently to seal against moisture entering between the lock and ring wheel casting. This may be done either before or after reinstalling the wheels. Prior to the first flight of these aircraft after their removal from storage, the main gear wheels will be removed, the brakes checked for corrosion, wheels reinstalled, and brakes checked for proper operation. Primer need not be removed.

(b) Tires will be protected from dripping oil with tire covers manufactured locally of water proof fabric, stock No. 7100-148200-427, until the oil ceases to drip. The covers then may be removed for similar use on other tires.

(c) Remove dirt, mud, etc., with a standard wire brush. If it is necessary to remove oil or grease, use solvent, Spec P-S-661. Allow tire to dry thoroughly.

(d) All L-17 aircraft parked outside which are not blocked up to relieve the weight of the aircraft from the tires, and which are moored on other than solid paved surfaces, will have planks or other material affording solid footing placed under each tire.

(e) Tires on aircraft which are not mounted on blocks will be rotated a sufficient distance to change the supporting point at least once in each 30 day period of storage, except nylon which will be similarly rotated to a new supporting position every 3 days. Nylon tires installed on aircraft undergoing modification in the hanger will be rotated every 15 days.

(f) When aircraft is installed on blocks, tire pressure may be maintained between 50 and 80 percent of the normal required pressure. On aircraft which are not blocked up, air pressure in the tires will be maintained in accordance with current directives.

(11) Fire Extinguishers.

All portable liquid fire extinguishers will be removed, condition tagged, and turned in to local supply. Fixed fire extinguishing system and portable hand-type CO<sub>2</sub> extinguishers will remain in the aircraft as received.

(12) Life Rafts, Parachutes and similar Articles: Such articles subject to mildew and deterioration will be removed, condition tagged and turned in to local supply. This includes SCR-578 and AN/CRT-3 radio sets which contain parachutes.

(13) Instruments will NOT be removed from the aircraft. The pitot tube cover will be installed.

## (14) Miscellaneous.

All combustion type heaters will be removed from the aircraft, preserved, and turned in to Air Force Supply as reparable. Drain the fuel lines and blow them out with air until dry. Seal all ducts and lines with a suitable cloth adhesive tape.

e. Depreservation.

## (1) Inventory Replacement of Equipment.

(a) Reinstall removed equipment. Refer to general "Storage of Aircraft Publication" and aircraft DD Form 780.

(2) Replace rivets removed to accomplish water drainage. Make notation in aircraft Form 1A indicating rivets have been replaced.

(3) Remove rust preventive compound from all exposed steel parts (unpainted or unplated).

(4) Treatment of Engines: Engines will be prepared for operation in accordance with directions contained in the applicable engine handbook. If engines were removed for storage, remove seals and covers from all lines prior to installation of the engine.

## (5) Airframe:

(a) Check airframe for corrosion and treat as necessary in accordance with applicable instructions.

(b) Remove compound from airframe openings that were sealed with plastic stripping compound Spec MIL-S-8141 in accordance with applicable instructions.

(c) Remove protective coating Spec MIL-C-6799 from canopy in accordance with applicable instructions.

## (6) Landing Gear and Shock Struts:

(a) Deflate strut.

(b) Remove high pressure air valve, part No. AN 812 from the strut.

(c) Insert through this hole a length of 1/4 inch annealed copper tubing until it bottoms in the cylinder.

(d) Install syphon pump on tubing and remove preservative fluid.

(e) Service struts in accordance with applicable instructions.

(f) Inflate tires to normal operating pressure.

## (7) Fuel System.

(a) Drain preservative oil from and flush with fuel all fuel tanks.

(b) Open all drain cocks in fuel strainers and drain accumulated water. Close and resafety all drains after water has been drained.

(c) Connect engine driven fuel pump inlet port.

(d) Rotate all selector valves at least one complete revolution.

(e) Open all cross feed valves.

(f) Connect all fuel lines.



- (8) Lubrication System.
- (a) Service lubrication system in accordance with applicable engine handbook.
- (9) Hydraulic System.
- (a) Check entire aircraft for leaks.
- (b) Drain and flush hydraulic system, clean all filters.
- (c) Remove hydraulic oil from accumulators and service with air.
- (d) Service hydraulic system in accordance with the applicable handbook.
- (10) Electrical Equipment.
- (a) Check batteries in accordance with applicable directives. Replace if required.
- (b) Perform ground operational test on all electrical equipment.
- (11) Communication and Radar Equipment.
- (a) Install all electronic equipment.
- (b) Remove rust preventive compound from flush type or mast type antennas and mechanical linkage.
- (c) Perform ground operational test. Replace or repair sets as required.
- (12) Wheels and Tires.
- (a) Remove mud, oil and grease from tires.
- (b) Remove wheels and remove zinc chromate primer from brakes and install. Adjust according to applicable directives.
- (13) Fire Extinguishers.
- (a) Inspect fire extinguishers for serviceability. Recharge as required.
- (14) Instruments.
- (a) Ground check instruments and repair or replace as necessary.

END

