



DEPARTMENT OF THE NAVY  
CHIEF OF NAVAL AIR TRAINING  
250 LEXINGTON BLVD SUITE 102  
CORPUS CHRISTI TX 78419-5041

Canc frp: Feb 15

CNATRANOTE 4790

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3 Feb 14

CNATRA NOTICE 4790

Subj: T-6 HYDRAULIC POWER PACK RESERVOIR ALTERNATE SERVICING  
MEASUREMENT

Encl: (1) Maintenance Procedures  
(2) Maintenance Control Procedures  
(3) Instructor Pilot Procedures

1. Purpose. To establish alternate servicing and pre-flight inspection methods for the T-6 Hydraulic Power Pack Reservoir.

2. Background. The T-6 has experienced numerous Hydraulic Power Pack Reservoir indicator failures. The self-contained, green plastic indicator cord has broken loose from its mooring and made the normal preflight inspection of fluid level in the reservoir impossible. The design of the indicator is such that the indicator cord is self-contained and cannot contaminate the hydraulic system. Hawker Beechcraft Defense Company (HBDC) has developed an alternate indication method of proper Hydraulic Power Pack Reservoir servicing by measuring the hydraulic piston rod length in the rear of the hydraulic reservoir power pack. This Notice provides the procedure to measure the hydraulic piston rod length so that proper hydraulic servicing can be visually determined by Instructor Pilots(IP) and maintenance personnel.

3. Action. These alternate procedures are restricted to T-6 aircraft that have been approved through the -107 process. Any additional T-6 aircraft that experience Power Pack Fluid Servicing Level Indicator failure will require submission of a -107 request via the normal request/approval process before the use of these alternate procedures are authorized for that aircraft. These alternate procedures are temporary for the affected T-6 aircraft until either replacement power packs become available, or a repair for the hydraulic power pack reservoir servicing level indicator cord is authorized. All other T-6 aircraft will continue to be inspected using the established Power Pack Reservoir servicing measurement procedures in the T-6A & B Maintenance Manual, NA A1-6AAA-2.

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4. Aircraft Assignment Limitations. Aircraft covered by this notice shall be assigned only as follows:

a. Instructor Pilots (IP). Every T-6 IP will be qualified by their respective Training Air Wing. There are no restrictions for the type of flights these aircraft may be assigned to.

b. Student on Solo Flights. A student on a solo flight must be accompanied by an IP prior to being assigned an aircraft covered by this notice. Although the Student on the solo flight will sign for the aircraft, the IP is responsible for signing for the flight packet (with the two Power Pack Piston Measurement Tools) and conducting the hydraulic power pack servicing during preflight. Students on solo flights assigned aircraft covered by this notice shall be restricted to home base and Detachment base flight operations only. These aircraft shall not be assigned to "Out and In" or cross country flights.

5. Qualification. IPs, maintenance personnel and plane captains are to be trained and qualified utilizing all three enclosures of this notice. CLS Contractor Quality Assurance (QA) will determine when qualification has been achieved by all CLS Contractor maintenance personnel and plane captains. QA will maintain a record of all qualified maintenance personnel and plane captains and will ensure the latest listing is posted in the Monthly Maintenance Plan (MMP) and elsewhere as necessary. Training Air Wings FOUR and FIVE are responsible for the qualification of all IPs. When requested by the Training Air Wings, CLS Contractor will demonstrate the alternate hydraulic servicing procedures for IPs on a not-to-interfere basis with flight operations and maintenance. However, determining when an IP is qualified to perform these procedures is the responsibility of the Training Air Wings.

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6. Cancellation Contingency. This notice shall remain in effect for one year unless cancelled by CNATRA or superseded by a CNATRA Notice on the same subject.

C. HOLLINGSWORTH  
Chief of Staff

Distribution:  
CNATRA SharePoint

**MAINTENANCE PROCEDURES**

Prior to Using These Procedures:

1. Confirm that no fluid is dripping from the sight tube. (A seep is acceptable).

**Note:** A minor leak in the system will allow hydraulic fluid to get into the sight glass. This failure of the hydraulic system is considered cause for removal of the reservoir.

2. The existing power pack fluid level indicator shall be covered with Pressure Sensitive Preservation and Sealing Tape, MIL-T-22085, of appropriate size to cover the entire indicator. Once installed, write the word "INOP" on the tape with a permanent marker. Check the tape for security on the turnaround inspection. If the tape adhesion starts to loosen, replace it with new tape.

3. Ensure both Power Pack Piston Measurement Tools (one Accumulator Discharged (AD), figure 2 and one Accumulator Charged (AC) figure 3 below) are locally manufactured and marked exactly as shown in figures 2 and 3 below. Ensure all Power Pack Piston Measurement Tools are locally serialized and logged by serial number, location and the last date each tool's measurement lengths were verified. Verification is accomplished locally at the Organizational (O) Level using a steel rule. Per NAVAIR 17-35MTL-1, NAVSEA OD 45845, dated 01 January 2011, Metrology, Section 2, Rules require no calibration. Entry of the Power Pack Piston Measurement Tools into the METCAL system is not required. One of each of the two Power Pack Piston Measurement Tools will be placed in every flight packet and the serial numbers for both tools listed on the packet inventory. All measurement tools not assigned to flight packets must be entered into and tracked in accordance with the contractor's tool control program.

4. Prior to use, ensure Power Pack Piston Measurement Tools are undamaged. Daily, ensure the tool's measurement lengths have been verified within the last 6 months.

5. **For Inspection PTP Work Cards and AFM Exterior Inspection**

a. If flaps are not already extended to the LANDING position, extend flaps to LANDING by motoring the engine to gain access to power pack piston.

b. Ensure speed brake is retracted.

c. Discharge hydraulic accumulator by pulling the dump handle in hydraulic service area.

d. Using the Power Pack Piston Measurement Tool, (Accumulator Discharged (AD), figure 2 below), measure the extended piston length on power pack (see figure 1 below). When properly serviced, the piston length is 7.9-9.2 inches.

6. **Servicing Hydraulic System with Service Cart:** Follow procedures in T-6 Aircraft Maintenance Instruction Manual (MIMs), Chapter 12-10-00, with the following modifications:

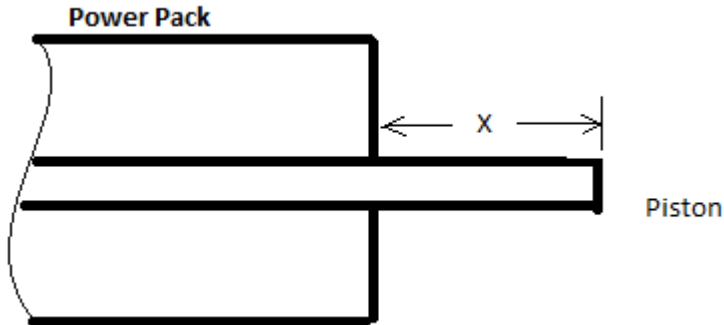
a. If flaps are not already extended to the LANDING position, extend the flaps to LANDING after applying 3000 psi from the external hydraulic power.

b. Ensure speed brake is retracted.

c. Where the T-6 MIMs procedure calls for inspecting the site tube for proper servicing, instead measure the length of the power pack piston (figure 1 below) using the appropriate Power Pack Piston Measurement Tool (figure 2 or 3 below).

(1) Accumulator Discharged (AD) Measurement Tool (figure 2 below): Full Piston Range: 7.9 - 9.2 inches (Mule disconnected and accumulator fully discharged (AD)).

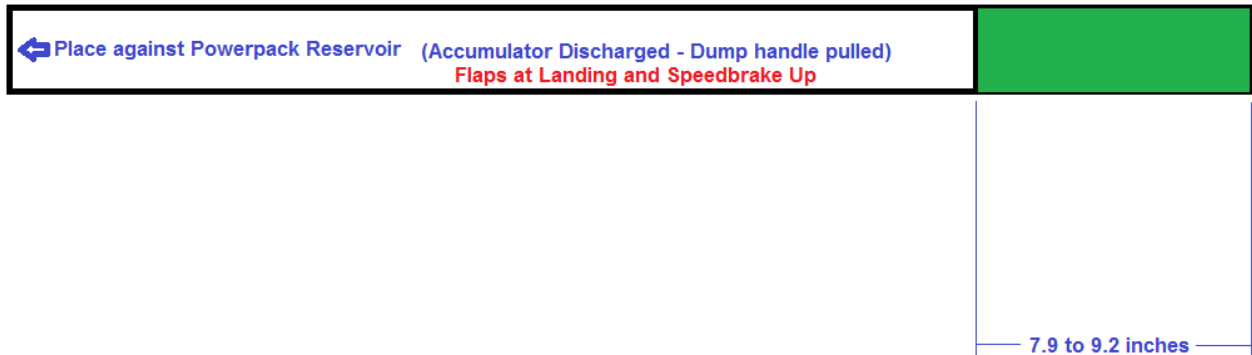
(2) Accumulator Charged (AC) Measurement Tool (figure 3 below): Full Piston Range: 5.7-6.3 inches (ensure accumulator is fully charged (AC)).



**Figure 1.**

**Note:** The Power Pack Piston rod length measurement specifications have been corrected to permit servicing with the flaps in the Landing Position and the numbers will not identically match the Power Pack fluid level indicator (Green String). Ensure measurements are taken with the Flaps at LANDING and speed brake in the UP position.

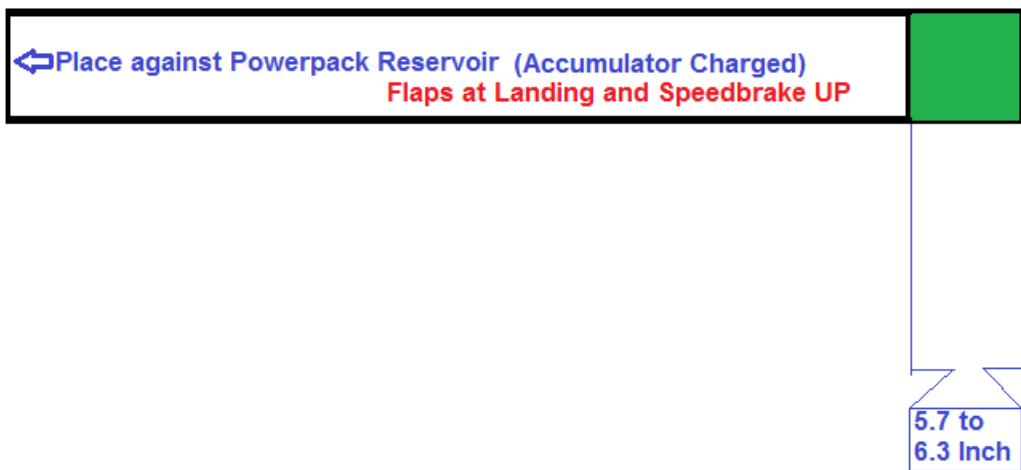
Power Pack Piston Measurement Tool - Accumulator Discharged (AD) (figure 2): With Flaps at LANDING and the speed brake UP, and the Power Pack Piston Measurement Tool against the power pack, the piston rod length must be in the measurement tool's green band with accumulator discharged. If not in the green band or beyond the green band, the Power Pack Reservoir shall be serviced and rechecked.



**Figure 2.** Power Pack Piston Measurement Tool - Accumulator Discharged (AD).

Enclosure (1)

Power Pack Piston Measurement Tool - Accumulator Charged (AC) (figure 3): With the Flaps at LANDING and the speed brake UP, and the Power Pack Piston Measurement Tool against the power pack, the piston rod length must be in the tool's green band with the accumulator charged. If not in the green band or beyond the green band, the Power Pack Reservoir shall be serviced and rechecked.



**Figure 3.** Power Pack Piston Measurement Tool - Accumulator Charged (AC)

**MAINTENANCE CONTROL PROCEDURES**

1. Ensure all requirements of enclosure 1, paragraph 3 of this notice are established, maintained and logged for all Hydraulic Power Pack Reservoir Alternate Servicing Measurement Tools.
2. All T-6 aircraft approved to use these alternate procedure shall have their Aircraft Discrepancy Books (ADB) conspicuously marked on the outside with the words, "Maintenance and Instructor Pilot (IP) Alternate Hydraulic Servicing Procedures Required for this Aircraft." This notice will be placed inside the ADB as the first page.
3. Only properly trained plane captains and maintenance personnel are authorized to perform these alternate hydraulic servicing procedures. Plane captain and maintenance personnel training shall be documented as OJT in the individual's training record. Quality Assurance (QA) will determine when maintenance personnel and plane captain qualification of these procedures has been achieved. When requested by the Training Wings, CLS Contractor will demonstrate the alternate hydraulic servicing procedures for IPs on a not-to-interfere basis with flight operations and maintenance. Only qualified maintenance personnel are authorized to demonstrate these procedures for IPs.
4. Training Wings FOUR and FIVE are responsible for the training and qualification of all IPs. When requested by the Training Wings, CLS Contractor will demonstrate the alternate hydraulic servicing procedures for IPs on a not-to-interfere basis with flight operations and maintenance. However, determining when an IP is qualified to perform these procedures is the responsibility of the Training Wings FOUR and FIVE.
5. Prior to the start of all maintenance, including Daily and Turnaround (DTA) inspections, Maintenance Control shall brief these alternate servicing requirements to all maintenance personnel.
6. Maintenance Control will issue a flight packet to IPs assigned T-6 aircraft covered by this notice. Both the Maintenance Control individual and the IP will ensure both Hydraulic Power Pack Reservoir Alternate Servicing Measurement Tools (one Accumulator Discharged (AD) tool and one Accumulator



Charged (AC) tool) are in the flight packet both when the aircraft is signed for by the IP and upon aircraft return. The qualified IP shall be responsible for the flight packet and both tools from aircraft sign out until the flight packet is signed back in to Maintenance Control.

7. To ensure safety of maintenance and aircrew personnel, to the maximum extent possible, these procedures should be performed with hydraulic system power off and the hydraulic reservoir pressure depleted to zero.

8. In order to properly check the hydraulic power pack piston length, the flaps must be extended to LANDING and the speed brake must be in the UP position.

9. Maintenance Control shall ensure the flaps are in the LANDING position and the speed brake UP prior to issuing aircraft covered by this notice to IPs. This is to facilitate IPs performing the Power Pack Reservoir Alternate Servicing Level measurement.

10. Upon return to base when the aircraft is in the chocks and prior to shutdown, Plane Captains shall signal Aircrew to extend the flaps to the LANDING position and ensure the speed brake is in the UP position. This is to facilitate the Power Pack Reservoir Alternate Hydraulic Servicing Level Measurement during turnaround and daily inspections.

**INSTRUCTOR PILOT PROCEDURES**

1. T-6 Aircraft Discrepancy Books (ADB) marked with the words, "Maintenance and Aircrew Alternate Hydraulic Servicing Procedures Required for this Aircraft" require special procedures on preflight and prior to engine shutdown.

2. IPs will ensure the Hydraulic Power Pack Reservoir Alternate Servicing Measurement Tools (one Accumulator Discharged (AD) tool and one Accumulator Charged (AC) tool) are in the flight packet both when the aircraft is signed out and upon return. The IP shall be responsible for the flight packet and the tools until the packet is turned back in to Maintenance Control.

3. IPs shall perform the hydraulic servicing measurement themselves and for Students on Solo flights when assigned aircraft covered by this notice.

4. On preflight of the aircraft, the flaps will be in the LANDING position with the flap selector in the UP position and the speed brake shall be UP. If the flaps are not in LANDING, a short starter engagement will provide hydraulic power to lower the flaps to LANDING and raise the speed brake. All aircrew and line personnel shall be aware that the flaps will move to the UP position upon starting the engine.

a. Execute the following procedures if flaps are UP on preflight:

(1) PCL - OFF

(2) Battery Switch - ON

(3) Flap Lever - LANDING

(4) Starter Switch - MANUAL and hold

(5) Once the Flap Indicator shows flaps Landing:  
Starter Switch - NORM

b. With Hydraulic pressure below 1,000 PSI:

**WARNING:** Turning the battery off or a loss of battery power prior to hydraulic pressure depletion below 1,000 PSI may result in flap retraction and injury to personnel. All personnel shall remain clear of the flaps until the Emergency Hydraulic Relief Valve is dumped.

- (1) Battery - OFF
- (2) Emergency Hydraulic Relief Valve - DUMP
- (3) Execute Alternate Hydraulic Fluid Level Check

5. Upon landing on an "Out and In" or Cross Country flight, IPs shall ensure flaps are in the LANDING position prior to shutdown. This is to facilitate the alternate hydraulic measurement on preflight before the next leg of the Cross Country or the return flight to base.

6. Upon return to base when the aircraft is in the chocks and prior to shutdown, Aircrew shall signal to the Plane Captain for extension of the flaps to the LANDING position and shall ensure the speed brake is in the UP position. This is to facilitate the Power Pack Reservoir Alternate Hydraulic Servicing Level Measurement during turnaround and daily.