CHAPTER 07
LIFTING AND JACKING
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Section 07-00 General

The airplane can be raised from the ground by lifting from above or by jacking from below. The preferred method is to jack the airplane. Lifting or jacking may be necessary for purposes of leveling and weighing the airplane (see Chapter 08 – Leveling and Weighting), servicing, or replacing the landing gear or components (see Chapter 32 – Landing Gear).

NOTE

While jacking or lifting, it may be necessary to support the nose landing gear area, with a padded block assembly, placed under the frame and aft of the attach point for the nose gear.

Section 00-01 Required Equipment

This section details the equipment required to either lift or jack the airplane.

The following is a list of required equipment needed for lifting the airplane

- A crane or overhead hoist, with the ability to lift and support 2,000 lbs
- Two nylon webbing straps, 2,000 lb capacity, and a minimum 10 - ft length; adjusting buckles are preferred
- Two tie off straps
- An assortment of felt or foam padding to avoid damage to airplane

The following is a list of required equipment needed for jacking the airplane

- Two or three hydraulic aircraft jacks with conical depression, capable of supporting 1,000 lbs each
- An aircraft tail support or padded sawhorse of the appropriate height with a weight capacity of a minimum of 300 lbs
Section 07-10 Lifting and Jacking

This section details the procedures for lifting and jacking the airplane.

Section 10-01 Lifting and Lower the Airplane

This section details the procedures for lifting and lowering the airplane.

CAUTION

When lifting by the fuselage, as described below, the airplane is not supported laterally, and can sway. Therefore, all lifting should be performed indoors only, (to stay out of the wind), and personnel should be available to steady the airplane at its wings and tail during the entire time it is lifted.

CAUTION

Check the nylon strap placed around the fuselage does not lay across either the OAT probe, belly antenna, or front landing gear assembly.

NOTE

Most landing gear components, can be replaced while the airplane is raised on jacks. Lifting the airplane should be used only when jacks are not available. If replacing a main landing gear, the gear to be replaced can be used to jack up the airplane, but the airframe must be blocked using padded blocks, and the jack removed from that side in order to remove that landing gear.
LIFTING THE AIRPLANE

Perform this procedure to lift the airplane

1. Remove the upper engine cowling (see Chapter 71 – Power Plant).

2. The forward nylon wide-webbing strap is best placed by looping it around the lower fuselage and securing it at the top, with the front edge of the strap at Station 40. The location of Station 40 is along the aft edge of the lower engine cowling. See Figure 07-2.

   When placing the strap, be sure to locate it slightly forward of where the nose landing gear attaches to the space frame assembly.

3. The aft strap is placed around the fuselage with the center of the strap across Station 129. This will align the strap across the bulkhead at the rear of the baggage compartment. See Figure 07-2.

   Check the nylon strap placed around the fuselage does not lay across either the OAT probe, belly antenna, or front landing gear assembly. Tie both sides of the bottom lifting strap to the main landing gear legs, as shown in Figure 07-2.

4. Tie off the bottom of the straps, securing them to both main landing gear legs. Then tie together the top of both straps, with the center of this tie off being the point for lifting the aircraft.

5. Secure the top tie off strap to the hook of the crane or hoist to be used. Adjust the length of the straps so that the fuselage remains level as the airplane is lifted.

6. Lift the airplane from the ground, employing additional personnel to steady the wings and tail.
LOWERING THE AIRPLANE

Perform this procedure to lower the airplane.

1. Check the area under the airplane that it is clear.
2. Be sure to station personnel to steady the wings and tail of the airplane.
3. Lower the airplane to the ground.
4. Complete disconnecting of all straps used to lift the aircraft.
Section 10-02   Jacking the Airplane:

For purposes of changing or servicing a single main landing gear wheel, the airplane may be jacked up on one side only, using a single jack at the applicable main gear jack point. For purposes of changing or servicing the nose landing gear wheel, the airplane may either be jacked up using a single jack at the nose gear chassis interface, or the tail may be held down and secured using a weighted tail stand attached to the tail tie-down ring. In either of the two latter cases, the main wheels remain on the ground.

The airplane should only be jacked up indoors, in an area free from major air currents.

If fewer than all three wheels are to be jacked up, all wheels remaining on the ground must be securely chocked.

The fuselage belly panel must be removed (see Chapter 53 - Fuselage) to gain access to the main and nose gear jack points.
JACKING THE AIRPLANE (ALL THREE WHEELS)

Perform this procedure to jack all three wheels of the airplane.

1. Remove the fuselage belly panel Refer to Chapter 53- Fuselage for the procedure to remove the belly panel.
2. Place a suitable jack under each main gear jack point.

3. Place a suitable jack under the nose gear jack point.

4. Operate all three jacks simultaneously to raise airplane from the ground.
JACKING THE AIRPLANE (MAIN GEAR ONLY)

Perform this procedure to jack the airplane’s main gear only.

1. Place a suitable jack under each main gear jack point.

2. Secure a weighted tail stand to the tail tie-down point.

3. Operate both main gear jacks simultaneously to raise airplane from the ground.

Figure 07-6 Main Gear Jacking Points
LOWERING THE AIRPLANE

Perform this procedure to lower the airplane.

1. Check the area below the airplane that it is clear.
2. Lower all jacks simultaneously until all wheels are on the ground.
3. Remove all jacks and/or tail stand.
4. Replace fuselage belly panel. See Chapter 53 – Fuselage.