

**Tie Down an Aircraft**

**CONDITIONS**

You are a new/old member on a mission, and are asked to be a Flight Line Marshaller.

**OBJECTIVES**

- 1. Know how to properly tie down an aircraft.

**TRAINING AND EVALUATION**

**Training Outline**

- 1. This will be accomplished according on type of aircraft. When ropes are used, they will be tied to designated mooring fittings on aircraft. Normally a bowline knot will be used to prevent slippage and to provide secure fastening. Just enough slack should be allowed to prevent excessive stress on the wings, fittings and rope due to tires and strut expansion or deflation and to prevent contraction of the tie-down ropes due to moisture or wetness. The mooring points on the ground should be as close as possible directly under the respective mooring points on the aircraft. This diagram shows a vertical anchor using straight link coil chain for connection between the wire rope and aircraft wing. One link on the free end is then passed through a link of the taut portion and a safety snap is used to keep the link from passing back through. Any load on the chain is borne by the chain itself instead of the snap.

- 2. The following will review procedures as outlined in CAPR 66-1 (1 February 2000).

**15. Storage and Tie-Down.** Region and wing commanders are responsible for assuring that all possible preventive measures are taken to safeguard corporate 6 CAPR 66-1 (E) aircraft from wind and weather damage. Aircraft should be kept in a hangar whenever possible. Aircraft parked in the open shall be tied down at the three approved tie-down points (wings and tail) and securely chocked to prevent wind damage. The control lock shall be installed. Aircraft in extended outside storage shall be tied at four points (nose, wings, and tail).

**a. Tie-Down Anchors.** There are many methods of anchoring tie-downs. Satisfactory tie-down anchors may be constructed as shown at Attachment 3. Variations may be necessary when local conditions dictate.

**b. Tie-Down Ropes.** Tie-down ropes with tensile strength of 3,000 pounds or greater shall be used. Nylon or dacron tie-down ropes are recommended. Refer to Attachment 3 for rope specifications.

**c. Tie-Down Chains.** Chains shall not be used directly from aircraft mooring points to an anchor point because of excessive impact loads on wing spars. When chain tie-downs are used, they shall be attached to wire rope anchors as depicted in Attachment 3. Wire rope anchors are constructed of two continuous lengths of parallel wire rope passed through the anchor points. The tie-down chains shall be attached to the wire rope with round pin galvanized anchor shackles. This allows the chains to float along the wire rope to reduce impact loads. Chain links used for tie-down must be at least 5/16-inch steel and a proof load of 2,720 pounds and breaking load of 5,440 pounds. All fittings must be equally as strong and chains should be secured without slack.

**d. Spoilers.** In high wind areas, the use of sandbags, or spoiler boards as described in FAA advisory circular 20-35C, are recommended.

**Additional Information**

More detailed information on this topic is available in the Flight Line Text and reference material.

**Evaluation Preparation**

**Setup:** Parked aircraft, tie down ropes, and anchors.

**Brief Student:** Demonstrate how to properly tie down the aircraft.

**Evaluation**

<u>Performance measures</u>	<u>Results</u>
1. Demonstrated how to properly tie down an aircraft.	P F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.