US Department
of Transportation
**Federal Aviation
Administration**

Advisory Circular

Subject: SELF-LOCKING NUTS ON BOLTS SUBJECT TO ROTATION

Date: August 24, 1984
Initiated by: ACE-100

AC No: 23.607-1
Change:

1. PURPOSE. This advisory circular provides information and guidance concerning acceptable means, but not the only means, of compliance with Part 3 of the Civil Air Regulations (CAR) and with Part 23 of the Federal Aviation Regulations (FAR) applicable to self-locking nuts used on bolts subject to rotation in operation.

2. RELATED FAR AND CAR SECTION. Section 23.607 and Section 3.294.

3. BACKGROUND. CAR Section 3.294 and FAR Section 23.607 require that no self-locking nut may be used on any bolt subject to rotation in operation unless a non-friction locking device is used in addition to the self-locking device. No specific systems in the airplane are named where the double-lock feature is required. In the past, this section was not uniformly applied. For some projects, bolts which were installed through a bushing, bearing or uniball were required to have only a self-locking nut for retention since there was no relative motion between the bolt and the surface against which it was bearing. On other projects for a similar installation, a nonfriction locking device, in addition to the self-locking nut, was required because it was deemed possible for the bushing, bearing or uniball to seize, thus transmitting the relative motion to the bolt.

4. APPLICATION. This guidance material is applicable for new, amended and supplemental type certificates and alterations using self-locking nuts on bolts subject to rotation.

5. ACCEPTABLE MEANS OF COMPLIANCE. For the systems and areas noted below, one means for showing compliance with the requirements of CAR Section 3.294 and FAR Section 23.607 is as follows:

a. Self-locking nuts alone should not be used in any system when movement of the joint may result in motion of the nut or bolt head relative to the surface against which it is bearing. Joint seizure (bearing, uniball, or bushing seizure) does not have to be considered by this regulation when determining the relative motion of the parts in question, although it is advisable to do so. Suitable protection and material properties of the joint are required by Sections 23.609 and 23.613.

b. Self-locking castellated nuts with cotter pins or lockwire may be used in any system.

c. Self-locking nuts should not be used with bolts or screws on turbine engine airplanes in locations where the loose nut, bolt, washer or screw could fall or be drawn into the engine air intake scoop.

d. Self-locking nuts should not be used with bolts, screws or studs to attach access panels or doors or to assemble any parts that are routinely disassembled prior to or after each flight.

(Note: Information and guidance concerning dual locking devices on removable fasteners for rotorcraft and transport category airplanes are covered by AC 20-71).

MURRAY E. SMITH
Director, Central Region

U.S. Department
of Transportation

**Federal Aviation
Administration**

800 Independence Ave. S.W.
Washington, D.C. 20591

Official Business
Penalty for Private Use $300

BULK MAIL
POSTAGE & FEES PAID
FEDERAL AVIATION ADMINISTRATION
PERMIT NO. G-44

RETURN POSTAGE GUARANTEED