

SECTION 6. PINS

7-101. TAPER PINS. Plain (AN385) and threaded (AN386) taper pins are used in joints which carry shear loads and where the absence of play is essential. The plain taper pin is usually drilled and secured with wire. The threaded taper pin is used with a taper-pin washer (AN975) and shear nut (safetied with a cotter pin) or self-locking nut (if undrilled). Typical pin types are shown in table 7-15.

7-102. FLATHEAD PINS (AN392 THROUGH AN406). Commonly called a clevis pin, this pin is used in conjunction with tie-rod terminals and in secondary controls which are not subject to continuous operation. The pin is normally installed with the head up, or forward, to prevent loss should the cotter pin fail or work out.

7-103. COTTER PINS (AN380). Cotter pins are used for securing bolts, screws, nuts, and pins. Use AN381 or MS24665 cotter pins in locations where nonmagnetic material or resistance to corrosion is desired. Cotter pins should not be reused.

7-104. SPRING PINS. The spring pin is designed for use in double-shear applications. The pins are manufactured with the diameter greater than the holes in which they are to be used. Spring pins are stronger than mild carbon steel straight pins, taper pins, or grooved pins of the equivalent size. The spring pin is compressed as it is driven into the hole, and exerts continuous spring pressure against the sides of the hole to prevent loosening by vibration. Spring pins require no other means of securing, and can be used inside one another to increase shear strength.

a. Be careful when using these pins, since spring-pin performance depends entirely on the fit and the durability of the fit under

vibration or repeated load conditions (especially in soft materials, such as aluminum alloys and magnesium). They should not be used in an aircraft component or system where the loss or failure of the pin might endanger safe flight.

b. The joints where spring pins are used for fastening shall be designed like riveted and bolted joints. Spring pins should not be mixed with other structural fasteners in the same joint. These pins, for primary structural applications, should be used only where there will be no rotation or relative movement of the joint. Spring pins may be reused if a careful inspection reveals no deformation of the pin or hole.

c. Be careful to observe that the hole has not enlarged or deformed preventing proper functioning of the spring pin. Where hole misalignment results in the pin gap closing or necessitates excess inserting force, the spring pin will not be used. The spring pin should not be used as a substitute for a cotter pin. When a spring pin is used in a clevis joint, it is recommended that the pin be held by the outer members of the unit for maximum efficiency and reduced maintenance.

7-105. QUICK-RELEASE PINS. These pins are used in some applications where rapid removal and replacement of equipment is necessary. When equipment is secured with these pins, no binding of the spindle should be present. Spindle binding could cause the locking balls to remain in the open position which could result in the pin falling out under vibration.

7-106—7-121. [RESERVED.]

