damage could occur. An LOV must be established that corresponds to the period of time, stated as a number of total accumulated flight cycles or flight hours or both, during which it is demonstrated that widespread fatigue damage will not occur in the airplane structure. This demonstration must be by full-scale fatigue test evidence. The type certificate may be issued prior to completion of full-scale fatigue testing, provided the Administrator has approved a plan for completing the required tests. In that case, the Airworthiness Limitations section of the Instructions for Continued Airworthiness required by §25.1529 must specify that no airplane may be operated beyond a number of cycles equal to 1⁄2 the number of cycles accumulated on the fatigue test article, until such testing is completed. The extent of damage for residual strength evaluation at any time within the operational life of the airplane must be consistent with the initial detectability and subsequent growth under repeated loads. The residual strength evaluation must show that the remaining structure is able to withstand loads (considered as static ultimate loads) corresponding to the following conditions:

LIGHTNING PROTECTION

§ 25.581 Lightning protection.

(a) The airplane must be protected against catastrophic effects from lightning;

(b) For metallic components, compliance with paragraph (a) of this section may be shown by—

1. Bonding the components properly to the airframe; or

2. Designing the components so that a strike will not endanger the airplane.

(c) For nonmetallic components, compliance with paragraph (a) of this section may be shown by—

1. Designing the components to minimize the effect of a strike; or

2. Incorporating acceptable means of diverting the resulting electrical current so as not to endanger the airplane.