

# Federal Aviation Regulation

## ▼ Sec. 33.94

Part 33 AIRWORTHINESS STANDARDS: AIRCRAFT ENGINES	
Subpart F--Block Tests; Turbine Aircraft Engines	

### Sec. 33.94

[Blade containment and rotor unbalance tests.]

[(a) Except as provided in paragraph (b) of this section, it must be demonstrated by engine tests that the engine is capable of containing damage without catching fire and without failure of its mounting attachments when operated for at least 15 seconds, unless the resulting engine damage induces a self shutdown, after each of the following events:

(1) Failure of the most critical compressor or fan blade while operating at maximum permissible r.p.m. The blade failure must occur at the outermost retention groove or, for integrally-bladed rotor discs, at least 80 percent of the blade must fail.

(2) Failure of the most critical turbine blade while operating at maximum permissible r.p.m. The blade failure must occur at the outermost retention groove or, for integrally-bladed rotor discs, at least 80 percent of the blade must fail. The most critical turbine blade must be determined by considering turbine blade weight and the strength of the adjacent turbine case at case temperatures and pressures associated with operation at maximum permissible r.p.m.

(b) Analysis based on rig testing, component testing, or service experience may be substituted for one of the engine tests prescribed in paragraphs (a)(1) and (a)(2) of this section if--

(1) That test, of the two prescribed, produces the least rotor unbalance; and

(2) The analysis is shown to be equivalent to the test.]

Amdt. 33-10, Eff. 3/26/84

## ▶ Comments

## ▼ Document History

### Notice of Proposed Rulemaking Actions:

Notice of Proposed Rulemaking. Notice No. 77-6; Issued on 06/03/77.

Notice of Proposed Rulemaking. Notice No. 80-21; Issued on 11/10/80.

### Final Rule Actions:

Final Rule. Docket No. 16919; Issued on 12/16/83.