

Errata for
Introduction to Structural
Dynamics and Aeroelasticity, Second Edition

Dewey H. Hodges and G. Alvin Pierce
Errors in Third Printing (to be corrected in Fourth Printing)

October 17, 2014

Page Description

- 220 Replace the last two sentences before Section 5.8 with the following: Specifications on U.S. military and commercial transport aircraft require that the margin be 15% over the limit equivalent airspeed. In other words, the minimum flutter speed at sea level should not be less than 1.15 times the airspeed for the maximum expected dynamic pressure as evaluated at sea level. For general aviation aircraft the margin is 20%. There may be other values in foreign military requirements. These values are for a normal configuration.
- 221 Add the following paragraph just before Section 5.8.1: Analysis is a key part of the requirements in the specifications and regulations. As an example, it establishes the critical configurations and areas of the envelope where flutter may be a concern. Testing is used to validate the analytical work. However, some specifications and regulations also directly require testing as a separate action, beyond the purpose of validating the analytical work. For instance, ground vibration testing to determine the natural frequencies and mode shapes, while a vital part of analytical validation, is also an independent requirement in some regulations. Similarly, flight flutter testing is a specific required demonstration that the aircraft is free from aeroelastic instabilities and meets the damping requirements. After the initial design is completed, there will be on-going modifications and configurations to address such as stores arrangements on military aircraft. Combinations of analysis and testing will, therefore, be a continual, integrated process to verify the design; see Fig. 5.18.
- 222 Add sentence to end of Ground Roll (Taxi) Measurements: These tests are not required directly by regulations but are an important part of technical development.
- 223 In the second paragraph, add this sentence after the one that ends with “repeat the regimen”: The testing pattern may follow many other routes based on critical flutter modes.
- 223 Item 1, change the phrase “5% for civil aircraft” to “3% for both civil and military aircraft worldwide.”
- 224 Delete Section 5.8.4.
- 242 Insert references 16 and 17:
- 16 Niedermeyer, Carl: Federal Aviation Administration, private communication, 2014.
- 17 Noles, G. Keith: Federal Aviation Administration, private communication, 2014.

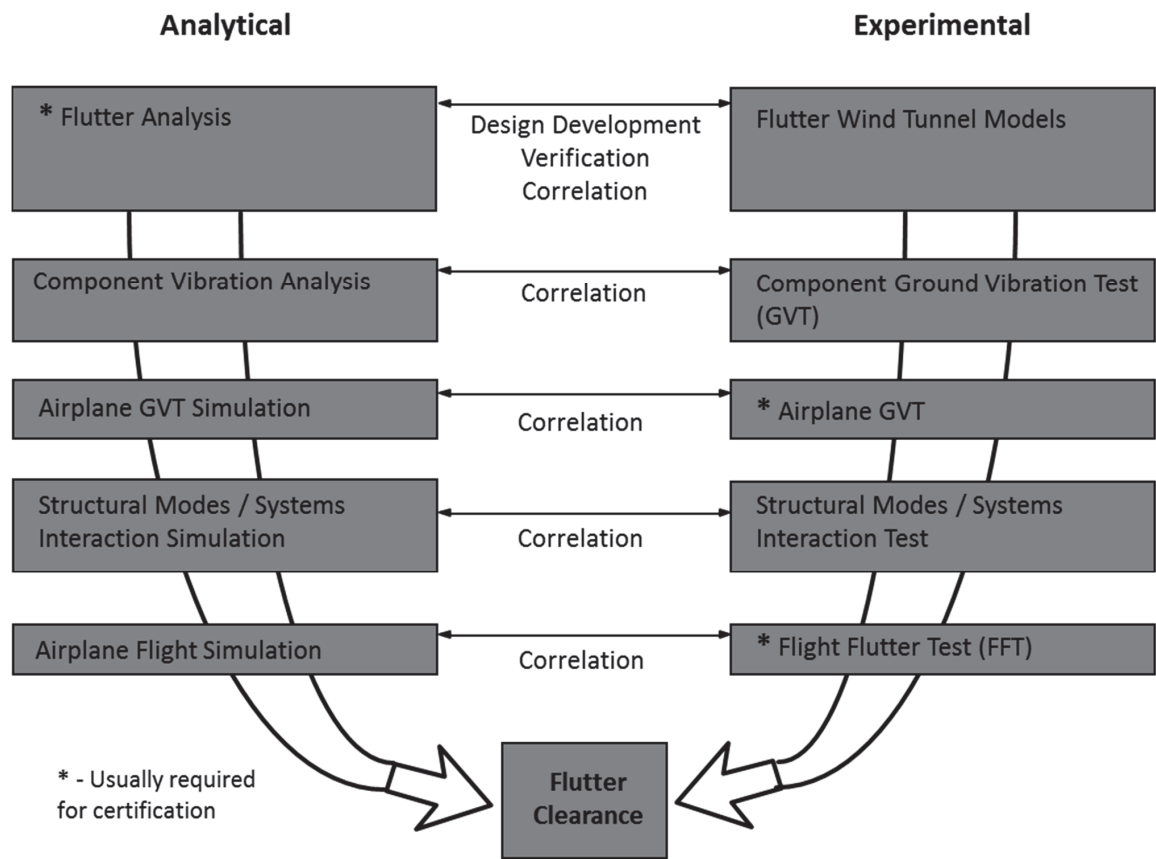


Figure 5.18: Schematic of interaction between analysis and test in certification; from Niedermeyer (2014), Federal Aviation Administration, used with permission