



The European Organisation for Civil Aviation Equipment
L'Organisation Européenne pour l'Équipement de l'Aviation Civile

AIRCRAFT LIGHTNING DIRECT EFFECTS CERTIFICATION

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ED-113

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FOREWORD

1. The development of this document was jointly accomplished by EUROCAE Working Group 31 and the Society of Automotive Engineers (SAE) Committee AE2 through a consensus process. It was accepted by the Council of EUROCAE on September 2002 as ED-113, and by SAE on September 2002 as ARP 5577.
2. Whenever a reference document appears in this document, it carries the minimum revision level of the reference document acceptable to meet the intended requirements. Later versions of the reference document are also acceptable but earlier versions are not acceptable. In all cases, other documents shown to be equivalent to the reference document are also acceptable.
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CHAPTER 1

SCOPE

This document provides guidance for a means of showing compliance with regulations for protection against lightning direct effects for aircraft of conventional design, as well as for those involving advanced composite structures or other new technologies. This guidance also applies to those aspects of aircraft systems and components not addressed in the regulations covering the protection of electrical/electronic systems (for example, FAR/JAR xx.1316) or fuel systems (for example, xx.954). The guidance provided in this document applies to initial designs as well as modifications.

1.1

PURPOSE

The purpose of this document is to provide information and guidance concerning an acceptable means, but not the only means, of compliance with Parts 23, 25, 27, and 29 of the Federal Aviation Regulations (FAR) and Joint Aviation Regulations (JAR), applicable to aircraft for protection against the direct effects of lightning. Accordingly, this material is neither mandatory nor regulatory in nature and does not constitute a regulation. In lieu of following this method, the applicant may elect to establish an alternate method of compliance that is acceptable to the Federal Aviation Administration (FAA) / Joint Aviation Authorities (JAA) for complying with the requirements of Sections 23.867, 25.581, 27.610, (a) and 29.610(a), (b) and (c).

NOTE: *This material does not explicitly cover fuel systems as required by FAR/JAR 23.954, 25.954, 27.954 and 29.954 or electrical/electronic systems as defined in 23.1309(e) 25.1316, 27.1309(d) and 29.1309(h).*

This document is one of several documents related to the effects of lightning on aircraft. Figure 1-1 shows the relationship between the external environment, zoning of the aircraft, and testing requirements.

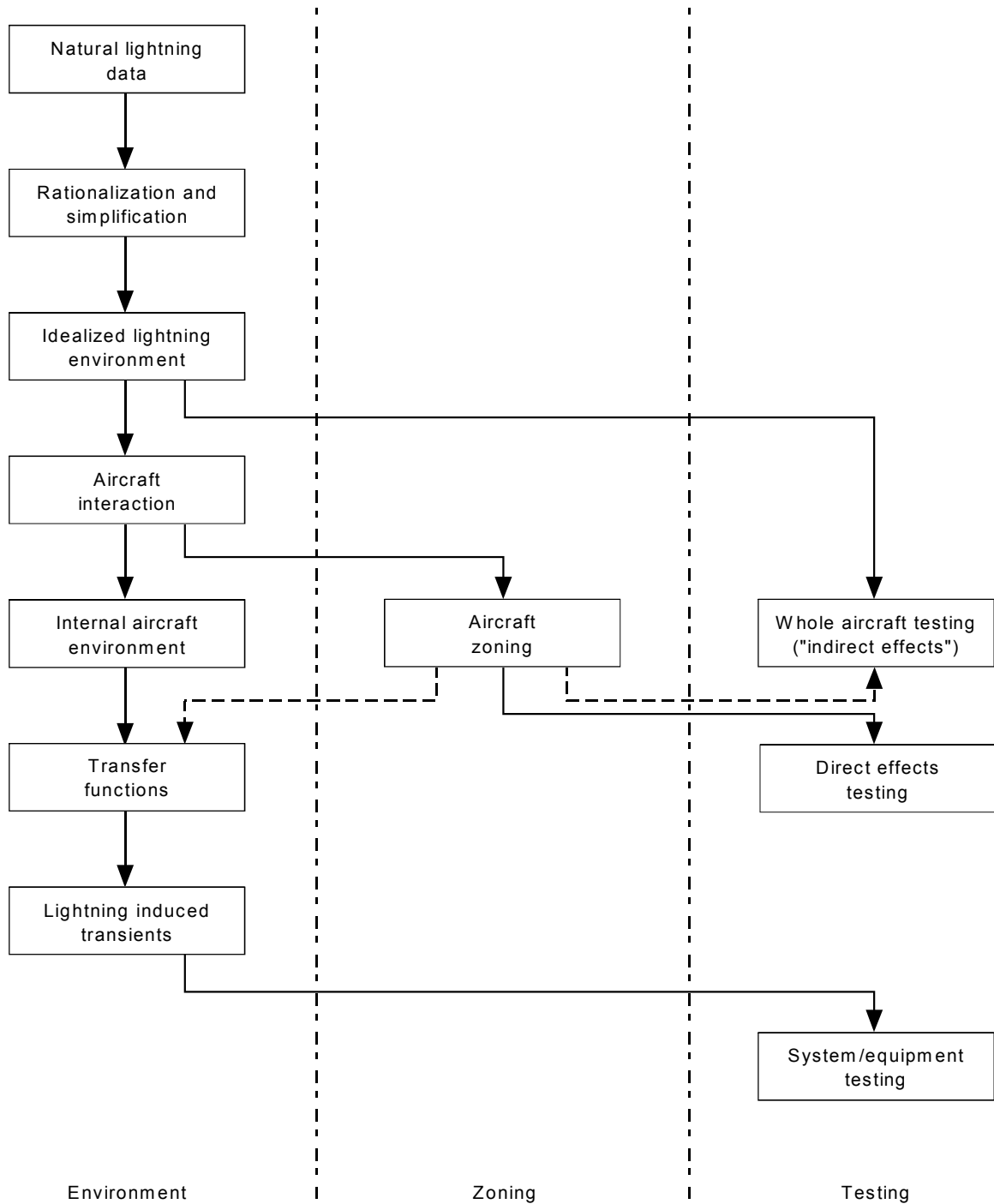


FIGURE 1-1: RELATIONSHIP BETWEEN AIRCRAFT ENVIRONMENT, ZONING AND TESTING