



Standard Test Method for Acoustic Emission for Aerial Personnel Devices Without Supplemental Load Handling Attachments¹

This standard is issued under the fixed designation F914/F914M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method describes a procedure for non-destructive testing using acoustic emission (AE) testing for aerial personnel devices, which do not have a supplemental load handling attachment.

1.1.1 *Equipment Covered*—This test method covers the following types of vehicle-mounted insulated aerial personnel devices:

- 1.1.1.1 Extensible boom aerial personnel devices,
- 1.1.1.2 Articulating boom aerial personnel devices, and
- 1.1.1.3 Any combination of 1.1.1.1 and 1.1.1.2.

1.1.2 *Equipment Not Covered*—This test method does not cover any of the following equipment:

- 1.1.2.1 Material-handling aerial devices,
- 1.1.2.2 Digger-derricks with platform, and
- 1.1.2.3 Cranes with platform.

1.2 The AE test method is used to detect and area-locate emission sources. Verification of emission sources may require the use of other nondestructive test (NDT) methods, such as radiography, ultrasonics, magnetic particle, liquid penetrant, and visual inspection. **Warning**—This test method requires that external loads be applied to the superstructure of the vehicle under test. During the test, caution must be taken to safeguard personnel and equipment against unexpected failure or instability of the vehicle or components.

NOTE 1—This test method is not intended to be a stand alone NDT method for the verification of the structural integrity of an aerial device. Other NDT methods should be used to supplement the results.

1.3 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards*:²

- E94 Guide for Radiographic Examination
- E114 Practice for Ultrasonic Pulse-Echo Straight-Beam Contact Testing
- E164 Practice for Contact Ultrasonic Testing of Weldments
- E569 Practice for Acoustic Emission Monitoring of Structures During Controlled Stimulation
- E610 Terminology Relating to Acoustic Emission (Withdrawn 1991)³
- E650 Guide for Mounting Piezoelectric Acoustic Emission Sensors
- E750 Practice for Characterizing Acoustic Emission Instrumentation
- E976 Guide for Determining the Reproducibility of Acoustic Emission Sensor Response
- E1417/E1417M Practice for Liquid Penetrant Testing
- E1444/E1444M Practice for Magnetic Particle Testing
- F2174 Practice for Verifying Acoustic Emission Sensor Response

2.2 *ANSI Standard*:

- ANSI A92.2 Standard for Vehicle-Mounted Elevating and Rotating Aerial Devices⁴

2.3 *ASNT Standard*:

- ASNT Recommended Practice SNT-TC-1A⁵

3. Terminology

3.1 *Definitions*:

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Withdrawn. The last approved version of this historical standard is referenced on www.astm.org.

⁴ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

⁵ Available from American Society for Nondestructive Testing (ASNT), P.O. Box 28518, 1711 Arlingate Ln., Columbus, OH 43228-0518, <http://www.asnt.org>.

¹ This test method is under the jurisdiction of ASTM Committee F18 on Electrical Protective Equipment for Workers and is the direct responsibility of Subcommittee F18.55 on Inspection and Non-Destructive Test Methods for Aerial Devices.

Current edition approved April 1, 2015. Published May 2015. Originally approved in 1985. Last previous edition approved in 2014 as F914/F914M – 14. DOI: 10.1520/F0914_F0914M-15.