

Guidelines for Training and Qualifying Personnel in Nondestructive Testing Methods

Revision 2022.1



Airlines for America
We Connect the World

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Highlights

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Location	Description of Change
Section 1-5 Table 1-5.2 Minimum Experience Requirement Note 3	To include all time accrued at Level 1 Special and/or at Level 1

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Introduction

In June of 1988, the Federal Aviation Administration sponsored an **Aging Aircraft Conference**, which included separate discussion sessions on nondestructive testing (NDT) of aircraft structure. Such sessions included discussions on what training is received by NDT specialists at a typical airline and whether this training is adequate. Certain attending NDT specialists from the Air Transport Association (ATA)-member airlines expressed the view that a uniform approach to training NDT inspectors among the airlines was highly desirable but that certification of individuals should be accomplished within the existing framework of each airline's maintenance training program.

Existing standards, such the **American Society for Nondestructive Testing (ASNT)** Recommended Practice No. [\[SNT-TC-1A\]](#), National Aerospace Standard [\[NAS-410\]](#), and EN 4179, directly respond to the training and qualification of NDT personnel. In fact, the curriculum of individual member programs upon which this guideline was developed was primarily derived from such standards. However, ATA NDT-specialists required a training guideline that was specifically tailored for airplane inspection. A guideline that could be adopted among ATA-member training programs was needed.

The first draft of this guideline was developed by NDT representatives from American Airlines, Eastern Airlines, Trans World Airlines, United Airlines and US Air. This draft was distributed among the other ATA members for comment and, following minor changes, was adopted in January 1990 by the ATA Engineering, Maintenance and Materiel Council (EMMC). Also approved by the EMMC was the formation of the ATA NDT Panel, which is responsible for review and approval of subsequent changes to this specification.

ATA Specification 105 does not, in itself, impose any performance obligations on any airline or any other entity. Its provisions become effective only to the extent they are adopted by an airline and incorporated into its manual provided in the Federal Aviation Regulations (FARs). For this reason, any entity that contractually performs maintenance for an airline must determine from that airline which provisions of that airline's manual are applicable to the specific situation. Any recommendations for changes or amendments to the manual of a given airline must be communicated directly to it.

It is important to note that the Federal Aviation Regulations 14 CFR do not require NDT, but do specify that procedures and inspector qualifications be documented when NDT is used. The following 14 CFRs have requirements related to NDT: 14 CFR 23.1529 & Appendix G, 14 CFR 25.611, 14 CFR 25.621, 14 CFR 25.1529 & Appendix H, 14 CFR 27.1529 & Appendix A, 14 CFR 29.1529 & Appendix A, 14 CFR 33.4 & Appendix A, 14 CFR 35.4 & Appendix A, 14 CFR 43.11, 14 CFR 91.403, 14 CFR

121.135, 14 CFR 121.369, 14 CFR 121.371, 14 CFR 121.1109, 14 CFR 135.419, 14 CFR 135.427, 14 CFR 135.429, 14 CFR 145.61, 14 CFR 145.155, and 14 CFR 145.161.



Chapter 1. General

1-1. Scope

This guideline establishes the minimum requirements for training, qualifying, examining, and certifying of nondestructive testing personnel for inspection of aircraft, powerplants, and components. It establishes criteria for the qualification for personnel requiring appropriate knowledge of the technical principles underlying the nondestructive tests they perform.

It is recognized that the effectiveness of nondestructive testing applications depends upon the capabilities of the individuals who are responsible for performing nondestructive testing.

This guideline applies to one or more of the methods listed in [\[Section 1-3\]](#), Nondestructive Testing Methods.

Compliance with this document, along with the knowledge and experience gained while attending Airframe and Powerplant Technical Schools, and/or knowledge and experience gained while working as an Airframe and/or Powerplant technician or repairman's certificate, may serve to provide equivalent competency as set forth in [\[NAS-410\]](#), EN 4179, and [\[SNT-TC-1A\]](#).

The acronyms NDT (Nondestructive Testing), NDI (Nondestructive Investigation) and NDE (Nondestructive Evaluation) used within this document are synonymous.

1-2. Definitions

Terms included in this document are defined as follows:

Certification	Written testimony by the certificate holder that an individual has met the applicable requirements of this standard; may be recorded in electronic or hardcopy format.
Certifying Agency	The employer of the personnel being certified.
Grandfathered	Certification of individuals who are considered qualified under a prior qualification program. <u>This option can only be used to start a new program or accommodate specification change.</u>
Comparable	Being at an equivalent or similar level of NDT responsibility and difficulty as determined by the employer's Level III or other designated individual.
Direct Readout Instrument	Instruments that physically display measurements in dimensional or electrical units (e.g. inches, millimeters or %IACS, etc.) either as digital readout or an analog display, such as a scale/pointer configuration and do not require special skills or knowledge to set up the instrument and do not involve adjusting signal displays such as gates, delays, gain, or phase to obtain measurements. For example, common direct readout instruments include basic ultrasonic thickness