



Australian Government

MEA60311 Advanced Diploma of Aviation Non-Destructive Testing

Release 2

MEA60311 Advanced Diploma of Aviation Non-Destructive Testing

Modification History

Release 2 - Licensing requirements clarified - equivalence

Release 1 - New qualification

Description

This qualification applies to individuals who perform aircraft and aircraft component non-destructive testing (NDT), develop NDT techniques and provide training in NDT in accordance with *AS 3669-2006 Non-destructive testing – Qualification and approval of personnel – Aerospace* at Level 3. The qualification also meets the regulatory requirements of CASA and the ADF.

The requirement for the awarding of MEA60311 Advanced Diploma of Aviation Non-Destructive Testing is demonstrated competency in listed units of competency under the conditions set out below. It consists of core units and electives chosen from Electives Group A.

Core units include:

- common and technical stream units that relate to the aviation maintenance environment
- technical stream and imported units relating to the NDT work environment
- imported units that specifically cover the competencies required to perform each relevant NDT technique to the standard specified in *AS 3669-2006 Non-destructive testing – Qualification and approval of personnel – Aerospace* for Level 2 and 3 personnel
- imported units that cover competencies in the development, delivery and assessment of training.

Electives Group A units consisting of:

- Common units specific to either CASA or ADF regulatory requirements
- Technical stream and imported units that are applicable to various areas of employment in the NDT field at *AS 3669-2006 Non-destructive testing – Qualification and approval of personnel – Aerospace* Level 3.
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Pathways Information

Individuals who have a Certificate IV in Aeroskills and/or the MEA50511 Diploma of Aeroskills (Non-Destructive Testing) will already have a significant number of credits towards this qualification.

The qualification also provides credits towards the MEA60211 Advanced Diploma of Aviation Maintenance Management (Mechanical).

Licensing/Regulatory Information

This qualification complies with the requirements of *AS 3669-2006 Non-destructive testing – Qualification and approval of personnel – Aerospace* at Level 3 and with the airworthiness regulatory requirements of CASA and the ADF.

Entry Requirements

Individuals seeking this qualification must meet one of the following entry criteria:

- MEA50511 Diploma of Aeroskills (Non-Destructive Testing)
- Certificate IV in Aeroskills
- Aircraft Maintenance Engineer Licence issued by CASA
- Attainment of the following nine (9) Aeroskills units of competency:

Unit code	Unit title	Prerequisites
MEA101B	Interpret occupational health and safety practices in aviation maintenance	Nil
MEA103B	Plan and organise aviation maintenance work activities	MEA101B, MEA105C, MEA107B, MEA108B
MEA105C	Apply quality standards applicable to aviation maintenance processes	MEA101B, MEA107B
MEA107B	Interpret and use aviation maintenance industry manuals and specifications	Nil
MEA108B	Complete aviation maintenance industry documentation	MEA105C
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance	MEA105C, MEA108B
MEA340A	Lay out and set up aircraft systems	MEA101B, MEA107B, MEA109B
MEA341A	Apply basic aircraft design characteristics	MEA101B, MEA107B, MEA109B
MEA342A	Apply basic aircraft power plant design characteristics	MEA101B, MEA107B, MEA109B

Employability Skills Summary

Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	• Understanding complex directions from senior managers • Understanding input from professional engineers, specialist personnel and technical representatives • Liaising with maintenance personnel and specialists regarding NDT problems and applications • Talking to senior managers about NDT tasks and requirements and making presentations • Providing guidance to others and describing clearly faults found during NDT and the application of NDT procedures • Negotiating with team members, senior managers and aircraft owners/operators regarding timing and progress of work activities • Negotiating with potential suppliers of NDT equipment, piece parts and consumables • Negotiating with clients regarding the drafting of technical publications and NDT data • Negotiating with senior managers regarding issues such as activity timelines and budgetary matters • Understanding and interpreting regulations, procedures, instructions and maintenance publications • Giving written instructions such as NDT procedures, maintenance orders and compilation of maintenance documentation • Writing reports and proposals as required by regulations and organisational procedures • Interpreting organisational charts, wiring diagrams and system schematics, reading drawings relating to NDT activities and interpreting specific NDT procedures • Using computers to obtain maintenance and maintenance management data, complete documentation and correspond using email • Networking with other maintenance managers and with others involved in maintenance-related integrated logistic support activities
Teamwork	• Performing tasks as an individual while being responsive to team members or colleagues and senior managers and allowing for relevant human factors • Working effectively with others who may be of different ages, gender, race, religion and political persuasion • Assisting team members with task definition and providing advice on work processes and troubleshooting • Matching team member skills and authorisations to the task and

	adapting to contingencies • Providing leadership and development of team commitment and dynamics • Monitoring and assessing team performance and providing mentoring and performance feedback • Gaining the trust and confidence of team members and resolving conflict within the team • Providing team members with the opportunity for ongoing competency development
Problem solving	• Identifying problems in a timely manner and developing practical solutions to maintenance problems requiring NDT • Proposing solutions to problems associated with the development and application of NDT processes • Assisting with the resolution of complex problems as a team effort • Constantly reviewing problem solving skills and ability to effectively apply competencies to solve problems within the limits permitted by regulatory and organisational guidelines • Responding to emergencies or accidents in accordance with legislative, regulatory and organisational requirements • Using mathematical techniques to relate test results to system or component performance, to convert values between systems of measurement, to calculate weight and balance, to develop management solutions to problems, and in performing integrated logistic support procedures
Initiative and enterprise	• Adapting to new situations that arise as a consequence of regulatory changes, technology, contractual requirements, personnel management changes, operational circumstances, revised NDT data, practices and procedures • Varying work practices and behaviour as a result of performance feedback from subordinates, peers and managers • Evaluating ideas to ensure that technical and regulatory aspects have been fully covered before proposing action that may result in new or revised NDT procedures or changes to work processes • Applying human factors to avoid maintenance errors and maintain quality standards • Adapting competencies to the performance of a wide range of NDT tasks • Managing a process of innovation and continuous improvement and a willingness to initiate, support and participate in the effective introduction of new work practices • Assessing risks and taking action to achieve a recognised benefit or advantage to the organisation as a consequence of revised processes and procedures • Evaluating software requirements and hardware enhancements

Planning and organising	• Clarifying task objectives and required outcomes through discussion with managers and team members • Planning the use of resources and allocating personnel and resources to tasks • Monitoring the time taken to complete tasks against team requirements or targets provided by management • Assessing work requirements for quotations • Collecting, analysing and organising information relating to assigned NDT tasks and confirming the purpose and required work outcomes • Identifying contingency situations and taking action to resolve problems • Identifying the extent of impact on assigned work of changes in procedures, work instructions or regulatory requirements • Analysing customer requirements and organisational work capacity • Developing, managing and evaluating aircraft and component NDT strategies and plans • Establishing clear task goals and deliverables • Reviewing or developing budgets and managing financial resources • Surveying and assessing organisational and customer needs
Self-management	• Accepting responsibility for managing individual workload to meet target completion times or fit in with team milestones • Assessing personal knowledge and skills when assisting team members with NDT tasks and when developing new or modified NDT procedures • Actively seeking opportunities to develop competencies and to apply them across a range of tasks and application of legislation, regulations, policy and procedures to achieve required outcomes and build confidence in own ideas and vision • Effectively manage personal work priorities and professional development • Identifying career paths and training opportunities that will assist in attaining career goals
Learning	• Taking advantage of learning opportunities that arise through training courses provided by the organisation or external providers and through mentoring and on-job training • Adapting competencies to accommodate new ideas and techniques • Using feedback from subordinates, peers and managers to identify ways in which competence can be improved • Mentoring and providing on-job training and induction training to team members • Interpreting units of competency and applying them to

	attainment of identified career goals
Technology	• Operating and maintaining NDT equipment and reference standards • Performing NDT procedures on aircraft and aircraft components • Developing and documenting NDT techniques • Storing and caring for components, parts, tools, test equipment and support equipment • Complying with requirements to complete maintenance records, develop and revise maintenance data and propose amendments to technical publications • Amending various forms of maintenance data • Using computers and microfiche to obtain maintenance data and using computers to complete records, reports and documentation

Packaging Rules

To be awarded the MEA60311 Advanced Diploma of Aviation Non-Destructive Testing, competency must be demonstrated in **thirty eight (38)** units.

Core units of competency

Complete the following **thirty four (34)** core units.

Unit code	Unit title	Prerequisites
MEA116B	Apply occupational health and safety procedures at supervisor level in aviation maintenance	Nil
MEA120B	Manage an aviation maintenance quality system	Nil
MEA133B	Communicate aviation technical and maintenance management knowledge	Nil
MEA134B	Establish, maintain and evaluate the organisation's occupational health and safety system	Nil
MEA135A	Use computers in aviation maintenance-related integrated logistic support activities	Nil
MEA137A	Write aviation technical publications	MEA135A
MEA138B	Perform aviation technical publication management activities	MEA137A
MEA142B	Manage self in the aviation maintenance environment	Nil
MEA260B	Use electrical test equipment	MEA101B, MEA103B, MEA105C, MEA107B, MEA108B, MEA109B
MEA261C	Use electronic test equipment	MEA101B, MEA103B, MEA105C, MEA107B, MEA108B, MEA109B
MEA349B	Apply basic scientific principles and techniques in aeronautical engineering situations	Nil
MEA350A	Select and test aeronautical engineering	Nil

	materials	
MEA424A	Evaluate aircraft non-destructive tests	MEA109B, MEA133B, MEM13013B, MEM16010A, MEM24002B, MEM24004B, MEM24006B, MEM24008B MEM24010B, MEM24012C
MEM09002B	Interpret technical drawing	Nil
MEM09003B	Prepare basic engineering drawing	MEM09002B
MEM12003B	Perform precision mechanical measurement	MEM12023A (see Note 1)
MEM13013B	Work safely with ionising radiation	
MEM15017B	Use and maintain reference standards	MEM11011B MEM12003B MEM12004B (see Note 2) MEM12005B MEM12023A (see Note 1) MEM18001C (see Note 1) MEM18002B (see Note 1)
MEM16010A	Write reports	MEM14005A (see Note 4)
MEM24002B	Perform penetrant testing	MEM18001C (see Note 1) MEM24012C
MEM24004B	Perform magnetic particle testing	MEM18001C (see Note 1) MEM24012C

MEM24006B	Perform eddy current testing	MEM18001C (see Note 1) MEM24012C
MEM24008B	Perform ultrasonic testing	MEM18001C (see Note 1) MEM24012C
MEM24010B	Perform radiographic testing	MEM13013B MEM18001C (see Note 1) MEM24012C
MEM24011B	Establish non-destructive tests	MEM13013B MEM16010A (see Note 3) MEM18001C MEM24002B MEM24004B MEM24006B MEM24008B MEM24010B MEM24012C
MEM24012C	Apply metallurgy principles	Nil
MEM30007A	Select common engineering materials	Nil
MEM30012A	Apply mathematical techniques in a manufacturing, engineering or related environment	Nil
MSAENV672 B	Develop workplace policy and procedures for environmental sustainability	Nil
TAEDEL402A	Plan, organise and facilitate learning in the workplace	Nil
TAEASS401B	Plan assessment activities and processes	Nil
TAEASS402B	Assess competence	Nil

TAEASS403B	Participate in assessment validation	Nil
TAEASS502B	Design and develop assessment tools	Nil

Notes

- MEA109B is equivalent to MEM12023A, 18001C and 18002B
- MEA260B and MEA261C are together equivalent to MEM12004B
- MEA137A is equivalent to MEM16010A
- MEA103B is equivalent to MEM14005A

Elective units Group A

Complete **four (4)** units chosen in accordance with the unit selection guidelines in column four.

Unit code	Unit title	Prerequisites	Unit selection guidelines
MEA112B	Plan and implement civil aircraft maintenance activities	All relevant technical units	mandatory for CASA regulatory system
MEA113C	Supervise civil aircraft maintenance activities and manage human resources in the workplace	All relevant technical units	mandatory for CASA regulatory system
MEA123B	Manage aviation maintenance work environment policy and practices	Nil	
MEA140A	Supervise aviation maintenance teams and perform maintenance quality inspections	Nil	Mandatory for ADF regulatory system
MEM09009C	Create 2D drawings using computer aided design systems	MEM09002B MEM16008A	
MEM15010B	Perform laboratory procedures	Nil	
MEM16002C	Conduct formal interviews and negotiations	Nil	
TAEDES401A	Design and develop learning programs	Nil	

Custom Content Section

Not applicable.