



Australian Government

Civil Aviation Safety Authority

NANDTB Audit May 2019

Summary

An audit of the Australian National Aerospace Non-Destructive Testing Board was conducted on the 28th May 2019.

The audit was conducted using European Federation for Non-Destructive Testing audit criteria dated 3 January 2018.

The results of the findings of the audit are detailed in the attached report.

The following notes provided below are for guidance of the reader regarding some findings observed during the audit.

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Audit Notes:

Para 4.9

Under regulation MOS 145.A.30(e) the AMO must specify standards (including, but not limited to, qualifications and experience) in its exposition for the competence of individuals involved in any maintenance, management or quality audit task and must ensure these individuals meet the standards for a task that they are authorised to perform.

The employer is therefore responsible for ensuring that this occurs and is supported by regulatory oversight. The regulator does not release the findings of such audits to the board.

The NANDTB, through procedure NA-013 show the Board may review and recognise examinations it is provided by the employer's level 3 upon request.

Para 4.10

Under regulation MOS 145.A.30(e) the AMO must specify standards (including, but not limited to, qualifications and experience) in its exposition for the competence of individuals involved in any maintenance, management or quality audit task and must ensure these individuals meet the standards for a task that they are authorised to perform.

The employer's level 3 is responsible for training and examination as detailed in the employer's exposition.

The employer is therefore responsible for ensuring that this occurs and is supported by regulatory oversight. The regulator does not release the findings of such audits to the board.

Para 4.11

The content of certificates is not detailed in EN 4179.

Para 4.15

This is not a requirement of EN 4179, however matters related to the question are detailed in Civil Aviation Safety Regulations and are managed by the regulator.

Chapter 5

The NANDTB does conduct audits of outside bodies, therefore the subsequent questions do not appear to be relevant as they are subordinate to the primary question.

3.0

GENERAL INFORMATION

During the audit, the representative of the Board shall provide verbal or written translations as required to assure the Auditor's understanding and proper assessment for all technical data.

NANDTB Country: Australia
NANDTB Representative contact: Frank Simmer
Address where the audit is conducted: QANTAS Sydney Jet Base
Telephone: 0 418273181
E-mail: secretary@ndtboard.com
Date of Audit: 27 May 2019
Auditor Name: Richard Allen

3.1

For re-approval audits, were corrective actions from the previous audit implemented?

Compliance Assessment Guidance: Verification of corrective actions taken as a result of non-conformances identified during the previous audit will be conducted by the auditor. In addition, the auditor shall verify corrective actions associated with a previous audit that resulted in "failure". The auditor shall use investigative means to assure these are implemented. NA if this is the initial audit or there were no non-conformances identified during the previous audit.

Evidenced by:
Initial audit

3.2

Requirements – Structure of the NANDTB

- 3.2.1 Is there evidence to show that the NANDTB is chartered by the participating prime contractors? YES

Compliance Assessment Guidance: Prime contractor is an organization having overall responsibility for design, control and delivery of a system, component or product.

Evidenced by: The current membership of the board is made up of industry sectorial representation with level 3 membership.

Note: The Australian industry is limited with regard to prime contractors however the membership provides services to the prime contractors that do exist.

- 3.2.2 Is there evidence to show that the NANDTB is recognized by the nation's regulatory agency? YES

Compliance Assessment Guidance: The national Regulatory Agencies are termed the Competent Authority (CA) or National Aviation Authority (NAA).

Evidenced by: Letter of recognition from the Civil Aviation Safety Authority, dated 13th March 2006, as detailed in NANDTB procedure NA 001.

- 3.2.3 Is there evidence to show that the voting members from participating Primes or type certificate holders are NDT level 3 personnel? YES

Compliance Assessment Guidance: There may be co-opted members who are allowed to vote however the deciding entity shall be level 3 personnel from participating prime contractors or type certificate holders.

Evidenced by: NANDTB procedure NA -003 Membership. NA-003 details the constitution of the membership based upon the makeup of the Australian aerospace industry.

- 3.2.4 Is there evidence to show that the National Regulatory agencies for civilian and / or defense are included as observer members? YES

Evidenced by: NANDTB NA-003 Membership details observer membership. The funding agreement between the regulator and the NANDTB also includes CASA's involvement on the NANDTB.

- 3.2.5 Does the NANDTB have a website (webpage) where it is able to disclose information? YES

Compliance Assessment Guidance: Information such as written constitution, terms of reference, recognition by authority, NANDTB members, approved training and examination bodies, published procedures and specifications and requirements for qualification certificates.

Evidenced by:

www.ndtboard.com

3.2.6 Is the audit of examination bodies performed by the NANDTB? NA

Compliance Assessment Guidance: NA is applicable if the audit is performed by a national NDT society.

Evidenced by:

Outside Agencies are not recognized (audited) by the NANDTB. The employer's Level 3 is responsible for training and examination and shall show by means of the employer's procedures that such services are delivered by suitably qualified and resourced organisations. The Board does have a procedure (NA-013) which provides for Board recognition of examinations submitted to it as being suitable for the method and level of qualification

3.2.7 Is the audit of examination bodies performed by a national NDT society? NA

Compliance Assessment Guidance: NA is applicable if the audit is performed by the NANDTB.

Evidenced by:

3.2.8 Does the NANDTB employ the services of an auditor to audit examination bodies? NA

Compliance Assessment Guidance: NA is applicable when a national NDT society performs the audit.

Evidenced by:

3.2.9 Does the national NDT society employ the services of an auditor to audit examination bodies? NA

Compliance Assessment Guidance: NA is applicable when the NANDTB performs the audit.

Evidenced by:

3.2.10

Is there evidence to show that the auditor satisfies the requirements of EN4179 / NAS410?

NO

Compliance Assessment Guidance: Personnel performing technical NDT audits shall have the training, skills and knowledge to understand the processes and procedures utilised in the application of NDT processes.

Evidenced by:

Refer to previous question relating to auditor as being NA. The oversight of this process is conducted by the regulator that ensures via the organizations exposition that they are suitably resourced regarding training and ensuring of competency to meet the standard specified in the organization exposition.

3.2.11

Does the NANDTB have access to the audits conducted by the national NDT society?

NO

Compliance Assessment Guidance: NA is applicable when audits are performed by the NANDTB.

Evidenced by:

Refer to previous question relating to auditor as being NA. The oversight of this process is conducted by the regulator that ensures via the organizations exposition that they are suitably resourced regarding training and ensuring of competency to meet the standard specified in the organization exposition.

4.0

QUALITY REQUIREMENTS (PROCEDURES)

4.1

Has the NANDTB published a constitution, terms of reference and methods of the working of the Board?

YES

Evidenced by:

NANDTB procedures as detailed in NA-001 through NA-023.

See www.ndtboard.com

4.2 Has the NANDTB published its aims and objectives? YES

Evidenced by:

Strategic plan and business plan and objectives as detailed on the NANDTB website

See www.ndtboard.com

4.3 Has the NANDTB published its rules of procedure for voting and agreeing resolutions? YES

Evidenced by:

Detailed on the NANDTB website

See www.ndtboard.com

Detailed in procedure NA-005

4.4 Has the NANDTB published its criteria to be met by member organizations? YES

Evidenced by:

Most members of the NANDTB are not organisations, and are individuals representing sectors of the industry. To be elected the member must be nominated by that industry sector as detailed NA-003.

The Australian Defence Force (ADF) is a voting member, and CASA is a non-voting member (observer)

See www.ndtboard.com

4.5 Has the NANDTB published a procedure for applying for membership and election of member organisations? YES

Evidenced by:

Procedure NA-008.

See www.ndtboard.com

4.6 Has the NANDTB published a procedure for termination of membership? YES

Evidenced by:

Procedures NA-003 and NA-006.

See www.ndtboard.com

4.7 Has the NANDTB published the names and status of organisations presently in membership of the Board? YES

Compliance Assessment Guidance: This shall include prime contractors, national NDT society, competent or national aviation authority, operators, maintenance organisations, etc.

Evidenced by:

See www.ndtboard.com

4.8 Has the NANDTB published the duties, responsibilities and tenure of appointed offices? YES

Compliance Assessment Guidance: This should include chairman, secretary, convener of working groups.

Evidenced by:

Procedure detailed in NA-003

See www.ndtboard.com

4.9 Has the NANDTB published the method(s) by which it controls qualification examinations administered by internal and external examination bodies? NO

Evidenced by:

Australian legislation dictates the responsibility of the training, examination of competency is provided by the employer and detailed in their exposition. The National aviation authority is responsible for oversight of those organizations' procedures and compliance with those procedures.

Regarding review and recognise examinations upon request from the employers Level 3 or the NAA.

Procedure detailed in NA-013

See www.ndtboard.com

4.10 Has the NANDTB published criteria for examination bodies including how these bodies are to be audited and approved? NO

Evidenced by:

The board does not provide recognition for outside agencies. The employer's level 3 is responsible for training and examination as required by Australian legislation.

4.11 Has the NANDTB published guidance to examination bodies on the content of certificates of qualification (training and examinations)? NO

Evidenced by:

No requirement detailed in EN 4179.

4.12 Has the NANDTB published a policy on the recognition of examination body approvals issued under the control of other National Boards? YES

Evidenced by:

Procedure NA-020 and NA-021 refer.

See www.ndtboard.com

4.13 Does the NANDTB have a process for qualifying a Level 3 in a new or emerging method? NA

Compliance Assessment Guidance: NA is applicable where the NANDTB has elected to follow the default requirements for emerging NDT methods per EN4179 / NAS410.

Evidenced by:

The NANDTB does not offer qualification to Level 3 of NDT.

4.14 Where the NANDTB is required to provide services to a Responsible level 3, is there evidence that the board has developed processes and procedures that ensures full compliance with the requirements of EN4179 / NAS410? YES

Compliance Assessment Guidance: The Responsible 3 may use an NANDTB to:

- *Develop training course outlines and training material*

- *Create examination questions and administer examinations*
- *Approve outside and/or internal organisations providing training and or examination services*
- *Define requirements for qualification of NDT personnel in emerging NDT methods*
- *Retain written and practical examinations*
- *Designate Examiners and/or instructors at outside or internal organisations providing training and examination services.*

NA is applicable when the NANDTB does not provide any of the above services.

Evidenced by:

The NANDTB has adopted the ISO 25107 as an acceptable syllabus. The only service of those listed above is a review of examination questions provided by an employer's Level 3.

4.15

Does the NANDTB have a procedure detailing the actions necessary in the event that a finding had implications for safety or product integrity?

NO

Compliance Assessment Guidance: The auditor should notify the NANDTB of the finding and the corrective action taken?

Evidenced by:

The NAA has primary carriage of this requirement under Australian legislation. The NAA has an agreement with the NANDTB to provide subject matter expert input when requested to do. Any correspondence is recorded by the NANDTB.

This is not a requirement of EN4179.

5

COMPLIANCE

The NANDTB and/or the national NDT society shall make available three representative audit reports conducted at approved Outside/Inside Agencies which have been approved by the NANDTB. These audit reports shall be evaluated to determine compliance with EN4179 and ANDTBF/08

These audit reports should be selected to represent a variety of Outside/Inside Agencies and should also represent different methods and levels used by the Outside/Inside Agency.

The NANDTB or national NDT society must provide objective evidence that all non-conformances have been successfully closed.

It is expected that the auditor shall review:

1. Root cause analysis.
2. Immediate corrective action to resolve the discrepancy.
3. Actions taken to preclude recurrence.
4. Any relevant documentation to support the close out of the non-conformance.

5.1 **Review of Audit Packages**

5.1.A.1	Name of Outside/Inside Agency: _____
5.1.A.2	Name of Auditor: _____
5.1.A.3	Date of Audit: _____
5.1.A.4	Initial or Re-approval: _____
5.1.A.5	Methods: _____ Levels: _____

5.1.B.1	Name of Outside/Inside Agency: _____
5.1.B.2	Name of Auditor: _____
5.1.B.3	Date of Audit: _____
5.1.B.4	Initial or Re-approval: _____
5.1.B.5	Methods: _____ Levels: _____

5.1.C.1	Name of Outside/Inside Agency: _____
5.1.C.2	Name of Auditor: _____
5.1.C.3	Date of Audit: _____
5.1.C.4	Initial or Re-approval: _____
5.1.C.5	Methods: _____ Levels: _____

5.2 If the audit is performed by a national NDT society, is there evidence to show that the audit activity is overseen by the NANDTB? NA

Compliance Assessment Guidance: NA should be used when the NANDTB performs the audits.

Evidenced by:

The NANDTB does not audit outside agencies

5.3 Does the audit criteria include a review of the Outside/Inside Agency's quality system documents and procedures as defined by the NANDTB? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.4 Does the audit verify that the Outside/Inside Agency had a written practice based upon EN4179 and was approved by the Outside/Inside Agency's Responsible Level 3? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.4.1 Does the audit verify that the written practice has identified the standard(s) to which it is compliant? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.4.2 Does the audit verify that the written practice has identified each method and each specific technique within the method(s) used by the Outside/Inside Agency? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.4.3 Does the audit verify that the written practice has addressed the levels of qualification and certification as used by the Outside/Inside Agency? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.4.4 Does the audit verify that the written practice has addressed personnel duties and responsibilities in the applicable levels / methods used by the Outside/Inside Agency? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.4.5 Does the audit verify that the written practice has addressed the required training requirements? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.4.6 Does the audit verify that the written practice addressed the experience requirements? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.4.7 Does the audit verify that the written practice addressed the examination requirements? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.4.8 Does the audit verify that the written practice addressed the required records to be maintained? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.4.9 Does the audit verify that the written practice addressed expiration, suspension and revocation of approvals? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.4.10 Does the audit verify that the written practice addressed certification and recertification requirements? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.4.11 Does the audit verify that written practice addressed the re-certification option to be used for the Level 3, whether it was by examination and/or by a credit system? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.5 Does the audit verify that the Outside/Inside Agency had designated a Responsible Level 3? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

- 5.6 Does the audit verify that any instructors and/or examiners employed by the Outside/Inside Agency were designated and approved by the Responsible Level 3 or NANDTB? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

- 5.7 Does the audit verify that the examiners used by the Outside/Inside Agency were Level 3 approved in the method(s)? NO

Compliance Assessment Guidance: NA should be used were there are no exams administered.

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

- 5.8 Does the audit verify that the Outside/Inside Agency had sufficient instructors and/or examiners to cover all methods employed by the agency? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

- 5.9 Does the audit verify that instructors and/or examiners were approved in writing by the Responsible level 3 or the NANDTB? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

- 5.10 Does the audit criteria ensure that the relevant codes, standards and specifications were available? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.11 Does the audit criteria include an evaluation of contract review to ensure that clients' requirements were fully specified, recorded and understood by the examination body? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.12 Does the audit criteria include an evaluation that the examination body had appointed appropriately qualified and experienced examination staff? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.13 Does the audit criteria include an evaluation that the Outside/Inside Agency ensured confidentiality, impartiality and security? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.14 Formal Training

5.14.1 Does the audit verify that training facilities and classrooms provided an environment that was conducive to learning? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.14.2 Does the audit verify that training facilities and classrooms were sufficiently well equipped with equipment and training aids, models, samples etc? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

- 5.14.3 Does the audit verify that sufficient number of representative test samples containing natural or artificial features and / or flaws were available to cover the range of testing to be conducted by the candidate? NO

Compliance Assessment Guidance: Test samples used for training practical examinations shall not be used for training purposes.

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

- 5.14.4 Does the audit verify that the equipment used for practical training purposes was sufficiently compatible to that which the candidate would use in the performance of their job? NO

Compliance Assessment Guidance: NDT techniques within the method used for training are the similar techniques to those used by the candidate's employer.

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

- 5.14.5 Does the audit verify that where appropriate safety related training was provided? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

- 5.14.6 Is there evidence to show that all required records of training, qualification and certification were available during the audit? NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.15**Administration of Examinations**

5.15.1

Does the audit criteria include the compilation of written specific and practical examinations which were appropriate to scope?

NO

Compliance Assessment Guidance: These examinations shall be relevant to products, NDT procedures and processes.

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.15.2

Does the audit verify that the examinations were checked and verified against a client's requirements?

NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.15.3

Does the audit verify that the content of the examinations was balanced and appropriate to the approval level?

NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.15.4

Does the audit verify that the marks awarded to a successful candidate achieved a minimum of 70% for each examination and 80% overall for each method?

NO

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.15.5

Does the audit verify that latest results for written and practical examinations are on file?

NO

Compliance Assessment Guidance: The Outside Agency shall maintain the results of all qualification examinations.

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

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5.16 **General Examinations**

5.16.1 Does the audit verify that General examinations were closed book? NO

Evidenced by: The NANDTB does not audit outside agencies

5.16.2 Does the audit verify the minimum numbers of questions were administered? NO

Compliance Assessment Guidance: Minimum of 10 questions for level 1 limited and 40 questions for level 1, 2 and 3

Evidenced by: The NANDTB does not audit outside agencies

5.17 **Specific Examinations**

5.17.1 Does the audit verify that Specific examinations were open book? NO

Evidenced by: The NANDTB does not audit outside agencies

5.17.2 Does the audit verify the minimum numbers of questions were administered? NO

Compliance Assessment Guidance: Minimum of 8 questions for level 1 limited and 30 questions for level 1, 2 and 3

Evidenced by:

The NANDTB does not audit outside agencies

5.17.3 Does the audit verify what reference material was made available to the candidate? NO

Compliance Assessment Guidance: reference material can be specifications, tables formulas etc.

Evidenced by:

The NANDTB does not audit outside agencies

5.17.4 Does the audit verify that answers to specific examination questions demonstrated the candidates understanding of information contained within the reference documents rather than merely its location? NO

Evidenced by:

The NANDTB does not audit outside agencies

5.17.5 Does the audit verify were the specific examination covered a wider scope within the method used? NO

Compliance Assessment Guidance: NA is to be used were wider scope examinations are not used.

Evidenced by:

The NANDTB does not audit outside agencies (See also NA response to 5.2)

5.18

Practical Examinations

5.18.1

Does the audit verify that test samples used for the practical examination contained known discontinuities or conditions?

NO

Evidenced by:

The NANDTB does not audit outside agencies

5.18.2

Does the audit verify that a written checklist had been developed for the practical examination?

NO

Compliance Assessment Guidance: The checklist shall be developed by the Outside Agency to assure adequate coverage and assist in the administration and grading of the examination?

Evidenced by:

The NANDTB does not audit outside agencies

5.18.3

Does the audit verify that in addition to a written checklist, the Outside Agency had determined how the examination results obtained by the candidate were to be documented?

NO

Compliance Assessment Guidance: This can be part maps, drawings, sketches, written descriptions etc.

Evidenced by:

The NANDTB does not audit outside agencies

5.18.4

Does the audit verify were the practical examination covered a wider scope within the method?

NO

Compliance Assessment Guidance: NA is to be used were wider scope examinations are not used.

Evidenced by:

The NANDTB does not audit outside agencies

5.18.5 Does the audit verify that all discontinuities, flaws or conditions as specified were detected? NO

Evidenced by:

The NANDTB does not audit outside agencies

5.18.6 Does the audit verify that test pieces, used for practical examinations, were identified, documented and held securely? NO

Evidenced by:

The NANDTB does not audit outside agencies

5.18.7 Does the audit verify that for level 3 candidates the practical examination involved the preparation of an NDT procedure or work instruction appropriate to the client's current requirements for the method? NO

Evidenced by:

The NANDTB does not audit outside agencies

5.18.8 Does the audit verify that the NDT procedure or work instruction was developed in conjunction with the general and/or specific examination(s)? NO

Evidenced by:

The NANDTB does not audit outside agencies

5.19 **Training Outlines and Material**

5.19.1 Does the audit verify that all training was conducted in accordance with a detailed course outline? NO

Evidenced by:

The NANDTB does not audit outside agencies

5.19.2

Does the audit verify that, as a minimum, training include:

NO

- Basic theory
- Test principles, including choice of NDT methods, relevance to different materials and part and test variables
- Product forms and materials: defect formation and characterization
- Equipment operation and standardization
- The importance of appropriate processing steps and parameters
- Safety
- Applicable techniques and the advantages and disadvantages of each method and technique
- Limitations and capabilities of each method and technique
- Applicable specifications, codes, operating procedures and work instructions
- If applicable, evaluation, interpretation and documentation of inspection results?

Evidenced by:

The NANDTB does not audit outside agencies

5.19.3

Does the audit verify that the Outside Agencies Responsible Level 3 had verified that all training met the client's requirements?

NO

Evidenced by:

The NANDTB does not audit outside agencies