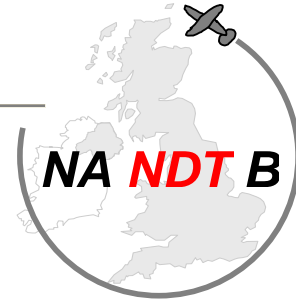


UK National Aerospace **NDT** Board

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CONFIRMED MINUTES OF THE 17TH MEETING OF THE UK NATIONAL AEROSPACE NDT BOARD

Meeting Date: 14th August 2008
Location: BINDT Northampton

Rev 2008-08-19

NANDTB/2008/M3

1. The agenda was confirmed with the addition of a new item "Level 2 limited certification"
2. Attendance & apologies for absence
 - a. The meeting was attended by Messrs Barker (CAA), Berkley (Agusta Westland), Biddulph (Chairman - Rolls Royce), Chapman (CAA), Dootson (BAE Systems), Hewitt (Airbus UK), Hogarth (British Airways), Lambie (BINDT), Scott (Bombardier), Thomas (UK TEG and Messier Dowty) and Thompson (Secretary – BINDT).
 - b. Apologies were recorded for Messrs Murrell (Messier Dowty), Gane (Honeywell), Hiscox (Airbus UK), McCully (Outside Agencies) and Rossiter (Messier Dowty).
3. The Minutes of the last meeting were confirmed as tabled. Under 'matters arising' from the minutes, the assigned actions were reviewed and progress noted in the table attached to the minutes of the last meeting. Those actions not discharged were carried forward and are recorded in the table annexed to these minutes.
4. Those present reviewed the Membership ([current list](#)), noting status and confirming contact details. Alexander Lambie was co-opted as an observer representative of BINDT, which provides the Board's secretariat. A correction was made to the date for re-appointment of the BA representative, and the representatives of Agusta Westland, Airbus UK, Bombardier, Honeywell, Messier Dowty and Rolls Royce were requested to reconfirm their company's nominated representative(s) in writing before the nomination expiry date of 31 December 2008.

Action 2008/21. Specified members to reconfirm nominated representative(s) in writing by 31st December 2008.

Action 2008/22. Secretariat to upload revised NANDTB/06 (Member List)
5. NANDTB documents due review this calendar year ([NANDTB/01](#))
 - a. NANDTB/02, 03, 04 and 05 were reconfirmed without amendment, and the review date for these documents was reset to 2011-08-14 in NANDTB/01.
 - b. It was noted that NANDTB/09 (Co-option to the membership of the NANDTB) was due review by 2008-11-23. Members were asked to review and comment on whether amendment of this document was considered necessary.

Action 2008/23. Members to review and comment on the need for revision of NANDTB/09.

Action 2008/24. Secretariat to upload revised NANDTB/01 (document register)

6. PCN/Aero draft [Appendix A7](#) (NDT of composites)
 - a. Members had been requested to review PCN/Aero draft [Appendix A7](#) (NDT of composites) and make recommendations for amendment and approval to implement. The secretary had received no suggestions for amendment, nor positive proposals to approve for implementation.
 - b. This document had been drafted in recognition of the need to address the reality that inspection of composite materials was presently not adequately addressed in any PCN examination, and many NDT personnel were actively testing a range of composite materials using a range of inspection methodologies without holding an appropriate qualification.
 - c. Roger Hogarth again expressed his concerns that the introduction of this qualification into the aerospace sector of the PCN Scheme would increase the qualification and recertification burden upon industry.
 - d. The secretary stressed that it was BINDT policy to NOT implement new qualifications unless it had the overall support of industry to do so, and he asked that the meeting discuss and agree whether there was a real need for the qualification(s) embodied in the present draft. It was pointed out that this was a product based, rather than a method based qualification and, in the fullness of time, it could be expanded to include qualifications for composite inspection using other methodologies. As such, it represented a flexible approach to qualifying personnel, offering a range of qualifications (presently numbering two – UT and Bond Testing).
 - e. Following extensive discussion, it became apparent that there was support in principle for the introduction of a PCN composite testing qualification, and the members agreed to review and comment in detail, as well as indicating whether their nominating organisation(s) supported approval to implement, with or without amendment.

Action 2008/25. Secretary to issue with protection for tracking changes, and all members to review PCN/Aero draft [Appendix A7](#) (NDT of composites) and indicate whether the present draft should be approved for implementation, with or without amendment(s), providing written comments to the Secretary by 1st October 2008.

7. The present meeting had been intended to include a review for issue and implementation of PCN specific examination papers. However, due to problems encountered, it was agreed to defer this action to the next meeting.

Action 2008/26. The Secretary to provide new draft PCN specific examination papers for review and approval at the Thursday 20th November 2008 meeting.

8. Changes in applicable certification standards and/or regulations
 - a. The two standards on which PCN/Aero is based, EN 473 and EN 4179 / [NAS 410](#), had both been recently issued in revised editions. EN 473:2008 was published as a CEN standard, and prEN4179 was published as an ASD standard.
 - b. The Secretary indicated that he was about to review PCN/Aero against EN 473 : 2008, and asked whether the Board wished him to include prEN 4179 : 2008 in that review, and to subsequently revise and present PCN/Aero : 2008 to the next meeting.
 - c. Following a brief discussion the Board agreed that, given that the changes in the latest revision of EN 4179 were not fundamental (though there was some concern regarding a revised vision standard), it would be appropriate to embark upon the revision of PCN Aero at this time.

Action 2008/27. Secretary to revise PCN Aero for circulation and comment prior to the next meeting, where the revision would be considered for approval to implement.

- d. The meeting also agreed that it would be appropriate to mandate the implementation of prEN 4179 : 2008 by Outside Agencies. Any newly drafted written practices should conform to this revision immediately, and all existing written practices should conform to this revision within a transition period of six months ending 01 April 2009.

Action 2008/28. Secretary to convey to BINDT Accredited Qualification Agencies that future written practices should comply with prEN 4179 : 2008 criteria immediately, and

all existing written practices should be revised to comply with this edition by 1st April 2009.

9. Qualification for 'fringe' techniques within the main NDT methods (action 2008/19)
- a. This item had been included in the agenda primarily to determine whether the Board should assist industry by publishing guidance or policy on the levels of qualification (training, experience, etc.) required for so called 'fringe' NDT/NDE methods and techniques not presently addressed within EN 4179.
 - b. It was recognised that such methods and techniques were often used for condition or dimensional assessment, rather than for detection and characterisation of defects, and in such cases the full qualification criteria in EN 4179 *may not* be appropriate or necessary.
 - c. It was agreed to draw up a matrix of potential and actual 'fringe' methods and techniques in the form of a matrix, and in this matrix indicate whether the full qualification criteria of EN 4179 were applicable, or whether some reduction in the training and experience time required for each application was appropriate. When completed and approved by the Board, it was agreed that this matrix should be published as a UK NANDTB guidance or policy document (TBD).

Action 2008/29. Chairman to draw up initial draft of matrix, circulating to Board members for expansion, with the Secretary collating for final distribution to the next meeting for discussion/approval.

10. Level 2 limited certification

- a. Discussion on this item was led by CT with contributions from the CAA representatives present. The present proposal, which arose from a letter, addressed to CAA SRG, from the QA manager of [GE Dowty Aerospace Propellers.](#), for which company CT acted as consultant Level 3, sought confirmation that the company could implement a Limited Level 2 UT application for ultrasonically testing propeller blades whereby personnel were trained and examined to the full EN 4179 requirements for the method, but were qualified after gaining 800 hours (rather than 1600 hours) experience. Such qualifications would not, it was made clear, include the ability to write NDT instructions or supervise lower levels. It was confirmed by CT that this test was conducted under the company's part 21 approval.
- b. The meeting, with the assistance of CAA contributions, concluded that for part 21 (production) NDT, the responsible level 3 was already empowered by EN 4179 to implement such reductions for limited applications, but the CAA wished to stress that, were this to be implemented under an EASA part 145 approval, such personnel could NOT be accepted as qualified to sign certificate of release to service (CRS), though they could, in principle, sign a route card on completion of an inspection or test.
- c. The CAA representatives present indicated that they sought advice and guidance from the appropriate industry committee on such matters. The CAA was of the view that the NANDTB had a key role to play in this area, which is to issue a policy document which states what qualification criteria should be applied in generic and specific terms, thus avoiding having to consider each of a 'raft' of case applications. Airworthiness surveyors could then refer to and implement such policy without having constantly to refer such questions to higher authority or the relevant industry committee (the NANDTB).
- d. CT queried whether this was prohibited by GR23, which specified qualification to Level 2. IC clarified: so long as the limited L2, qualified under EN 4179 clause 5.1, was not signing a CRS, the CAA would not be concerned – provided the NANDTB had issued a policy document:
 - i. giving guidance on how to interpret clauses 4.5.2 and 5.1.1, and
 - ii. pointing out the fundamental difference between signing for tasks carried out and certifying a task (i.e., signing a CRS).

Action 2008/30. It was agreed that CT, IC and the Chairman would draft an NANDTB policy document providing guidance on qualification for limited applications, with

clarification of difference between Signing route cards and signing a CRS for approval to publish at the next meeting.

11. Control of Qualifying Agencies

- a. A [template](#) detailing scopes of accreditation was approved.
- b. The PCN [AQB](#) Audit Programme was reviewed and the NANDTB overview of the 2009 assessment of AIT (Norwich) was registered in the AQB assessment rolling programme.
- c. The BINDT accredited Qualifying Agency audit programme was reviewed, and those assessments subject to NANDTB/CAA overview were noted.
- d. The meeting reviewed [UK TEG Correspondence](#) between J Manson (AIT) and Colib Thomas (UK TEG co-opted representative to the NANDTB). Mr. Manson had raised two issues:
 - i. Qualification of personnel for Infra-red Thermography and Bond Testing. The Board noted that prEN4179:2008 covered qualification criteria for IRT (though no syllabus was provided), but did not address bond testing, which the Board would be addressing in the near future.
 - ii. Visible contrast/greyscale differentiation. Phil Berkley drew attention to the existence of a SMPTE website which displayed a chart for testing contrast differentiation. The meeting was unsure whether this would provide a quantitative test for radiographers, or indeed whether there was a need for one. It was suggested that a radiograph with the ideal density with an IQI displaying the thinnest wire should present an adequate test of the ability to discern contrast. The Board questions whether there was a problem in this area, and requested further information from Mr. Manson.
Action 2008/31. Secretary to request further information from Mr. Manson.
- e. Irish ANDTB assessment of UK Outside Agencies (see [Irish Board document](#), [JRT report](#) and INANDTB response) (**added 2008-07-31**)

12. ANDTBF matters

- a. The meeting reviewed, one by one, the [Responses from EASA](#) to questions raised through the Forum. The agreed position of the UK Board, where it wished to take a particular position, is recorded in the text at Annex B.
Action 2008/32. Secretary to send annex B to the Forum delegation leader (ANDTBF Chairman).
- b. The UK NANDTB considered that the prime objectives of EASA and ANDTBF were (i) harmonisation of regulations, and (ii) pro-active involvement of EASA within the Forum. Furthermore, the UK NANDTB considered that EASA should avoid putting the responsibility for decision making into the rules.
- c. The Secretary announced that he proposes not to stand for the position of Forum Secretary upon expiry of his terms of office at 31st November 2008. The Secretary asked for The Board's support in the nomination of the Chairman and secretary of the German NANDTB for the positions of Chairman and Secretary of the Forum. The UK Board gave its support to this proposal.
Action 2008/33. Secretary to convey this to the German Board and to the members of the Forum.

13. Any other business

- a. A vote of thanks was passed in recognition of the support for the Board provided by Mark Barker over the years.

14. Date and location of the 18th meeting of the UK NAndTB

- a. Thursday 20th November 2008 @ Broughton (attendance to be notified and confirmed in advance, giving personal and company details, bringing safety footwear).

Annex A - Summary of agreed actions

Reference	Agreed action	Assignment	Remarks
2008/14	Review and comment upon the draft PCN/Aero Appendix A7	All members	Carried forward
2008/21	to reconfirm nominated representative(s) in writing	Specified members	by 31 st December 2008.
2008/22	to upload revised NANDTB/06 (Member List)	Secretariat	Completed
2008/23	to review and comment on the need for revision of NANDTB/09	Members	ASAP
2008/24	to upload revised NANDTB/01 (document register)	Secretariat	Completed
2008/25	to review PCN/Aero draft Appendix A7 (NDT of composites) and indicate whether the present draft should be approved for implementation, with or without amendment(s), providing written comments to the Secretary	Secretary and all members	by 1 st October 2008.
2008/26	to provide new draft PCN specific examination papers for review and approval at the Thursday 20 th November 2008 meeting.	Secretary	Partly completed – follow-up action required
2008/27	to revise PCN Aero for circulation and comment prior to the next meeting, where the revision would be considered for approval to implement.	Secretary	Partly completed – follow-up action required
2008/28	to convey to BINDT Accredited Qualification Agencies that future written practices should comply with prEN 4179 : 2008 criteria immediately, and all existing written practices should be revised to comply with this edition by 1 st April 2009.	Secretary	Completed
2008/29	draw up initial draft of matrix, circulating to Board members for expansion, with the Secretary collating for final distribution to the next meeting for discussion and approval.	Chairman	Completed
2008/30	draft an NANDTB policy document providing guidance on qualification for limited applications, with clarification of difference between Signing route cards and signing a CRS for approval to publish at the next meeting.	CT, IC and the Chairman	Completed
2008/31	request further information from Mr. Manson on <i>possible</i> greyscale contrast deficiency detected	Secretary	Not completed – follow-up action required
2008/32	send annex B of these minutes to the Forum delegation leader (ANDTBF Chairman).	Secretary	Completed
2008/33	convey to the German Board and to the members of the Forum the UK nomination of Messrs. Henrich and Holstein for Chairman and Secretary of the Forum from 1 st December 2008.	Secretary	Completed, but not accepted. 20 th November 2008 meeting to be advised of current position

Annex B – UK Board position on EASA responses to Forum questions:

1. Who is responsible for (recognizing) the legal status of the Board - Should EASA approve the Board?

EASA is not in a position to approve any NANDTB (National Aerospace NDT Board) or the ANDTBF (Association of NDT Board Forum), since there are no provisions for such approval in the Basic Regulation 216/2008

If the question is related to the NANDTBs, EASA assumes that these boards are already legal entities in the corresponding Member States and have enough recognition at national level (including endorsement by the competent authority) so that their competence in NDT matters is not questioned.

If the question is related to the ANDTBF please refer to question 2.

UK NANDTB response of 2008-08-14: The UK Board is not a legal entity, and all of the work of the Board should be covered by some form of statement regarding liability. The [terms of reference](#) of the Board state:

Neither the Board, its Chairman, individual members, the bodies they represent, nor any working party or sub-committee appointed by the Board shall carry any financial liability for any scheme(s) operated for the Board, or be liable for any damages resulting, or claimed to have resulted, from decisions of personnel implementing the scheme(s), or for any consequential loss arising out of the operation of the scheme(s).

The UK NANDTB is disappointed that EASA does not appear to formally 'recognise' the Forum for NANDTB.

Ian Chapman agreed to review this Q&A, and revert having given due consideration to the question and the EASA response. Action: Ian Chapman.

2. What is the formal link between the Board and EASA?

EASA is not in a position to approve any NANDTB (National Aerospace NDT Board) or the ANDTBF (Association of NDT Board Forum), since there are no provisions for such approval in the Basic Regulation 216/2008.

Nevertheless, EASA and the ANDTBF could mutually agree to cooperate on NDT matters. Several interesting aspects would be considered:

- which standards would be considered as equivalent to EN4179 in the future
- how to follow and accept new versions of already "accepted standards".

3. Will EASA make EN4179 the NDT standard for Part 21? The AMC for Part 21 does not quote an NDT standard at this time.

Currently, the only reference in Part-21 regarding qualifications for NDT are found in the following Guidance Material:

GM 21.A.145(a)

"An evaluation of the competence of personnel is performed as part of the quality system. This should include, where appropriate, verification that specific qualification standards have been implemented, for example NDT, welding, etc. Training should be organised to establish and maintain the personal competence levels determined by the organisation to be necessary."

GM n°2 to 21.A.126(a)3

Production Inspection System - Means of checking of the production processes

"Availability of personnel with suitable qualification, experience, and training for each required production, inspection, and test task. Special attention should be paid to tasks requiring specialised knowledge and skill, e.g., NDT/NDI, welding..."

GM 21A.126(b)(1)

Production Inspection System - Inspection of parts in process

During the manufacturing process, each article should be inspected in accordance with a plan which identifies the nature of all inspections required and the production stages at which they occur. The plan should also identify any particular skills or qualification required of person(s) carrying out the inspections (e.g., NDT personnel). A copy of the plan should be included in, or referenced by, the manual required by 21A.125(b).

As a consequence, it is the responsibility of the Part-21 Production Organisation to determine the NDT standard applicable to their activities and include such standard as part of the qualifications that need to be described in the corresponding organisation exposition.

4. Will EASA amend the AMC for Part 145 to EN4179 (without the date – currently 2005)?

This amendment was already proposed as part of the NPA 2007-09 that was published in June 2007 and which is currently under review to address the comments received during the external consultation.

In addition, EASA is reviewing Part 145 AMCs under rulemaking task 145.023 in order to solve some inconsistencies in relation to the approval of foreign Part-145 organisations. This is a good opportunity to propose additional equivalent standards, such as NAS410 and AS3669.

This proposal would be valid for any Part 145 organisation, whatever the location.

This notice of proposed amendment (NPA) is expected to be ready for public consultation during the summer 2008. Please register at <http://hub.easa.europa.eu/crt/> in order to be informed when the document is ready.

The link works, and the [document](#) was downloaded to the PCN office 2008-08-15.

The UK Board was concerned to establish whether EASA have sufficient resources to monitor changes in 'equivalent standards'. It felt that this was unlikely, and reasoned that it should require the responsible NANDTB or Competent Authority to demonstrate equivalence, remembering that making undated references requires monitoring for change. This was considered to be worth communicating to the ANDTBF delegation to EASA. Action: Secretary.

5. Will EASA harmonize NDT requirements across all Regulations?

There are no current plans in the Rulemaking Programme to do so.

6. Is NAS 410 the only equivalent standard to EN4179?

See answer n°4

In the case of mutual cooperation between the ANDTBF and EASA, the ANDTBF may recommend to EASA other standards for recognition as equivalent after evaluation.

However, the introduction of such standards in AMC 145.A.30(f) would need to follow the current rulemaking procedures.

A case for acceptance for equivalency has to be made to EASA (not to the competent national authority). AMC is published by EASA under its own authority, whereas rulemaking comes under the European Commission. The EASA answer in this case is not considered practical. Refer to ANDTBF delegation for further discussion with EASA. Action: Secretary.

7. Under EN4179 employers can conduct the examination themselves – is this acceptable to EASA as there is no standard for oversight of this process?

Competent Authorities are responsible for granting Part-145 approval certificates after verification of compliance with Part-145 requirements, following articles 145.B.20, 145.B.25, 145.B.30 and 145.B.35. In particular, 145.B.35 (b) imposes that each organisation must be completely reviewed

for compliance with the Part 145 at periods not exceeding 24 months. NDT qualification activities are part of the audit programme.

In addition, AMC 145.A.30 (f) states that "Notwithstanding the general references in EN 4179 to a national aerospace non destructive testing (NDT) board, all examinations should be conducted by personnel or organisations under the general control of such a board".

This means that examiners belonging to the Part-145 organisation shall be authorised by the Part-145 organisation in accordance with a procedure developed following the guidelines of the NANDT board.

8. Who is responsible if NDT training overseen by the Board is found to be deficient?

The training and examination provided to the NDT personnel of a Part-145 organisation must follow the guidelines issued by the NANDT board. This training and examination may be performed by the Part-145 organisation or by the NANDT board directly following such guidelines.

It is the responsibility of the organisation performing the training/examination (either the Part-145 or the NANDT board) to ensure that those guidelines are followed.

If the question is related to oversight performed by the NANDT board, this can only be performed by delegation of the competent authority, which in any case is the only one responsible for the oversight of the Part-145 organisation.

Now, if the question is if someone can question that the guidelines issued by the NANDT board are deficient, the position of EASA is that the NANDT board should have enough recognition at national level (including endorsement by the competent authority) so that this is not questioned.

9. Is it EASA's intention also (or instead) to recognise the latest revision of AIA NAS 410 standard?

See answer to "Question 4".

10. Would it be true to say that, if a NANDTB in a EU state, supported by the Airworthiness Authority in that member state, recognized EN 473 (as applied by an accredited certification body in the Aerospace sector) as equivalent to EN 4179 (as implied in the above clause), this would then be accepted by EASA? If the answer is yes, should this be explicit in an amended AMC 145.A.30(f)?

As already mentioned in "Question 6", in the case of mutual cooperation between the ANDTBF and EASA, the ANDTBF may recommend to EASA other standards for recognition (for example EN473). This would be evaluated and if found justified, could be introduced in AMC 145.A.30(f) following the current rulemaking procedures.

However, until such process is complete, the EN473 would not be considered as accepted by EASA.

UK NANDTB wonders who would carry out the evaluation? Refer to ANDTBF delegation for further discussion with EASA. Action: Secretary.

11. Since PCN Aero, which is approved and recognized by the UK NANDTB (and the UK CAA), effectively embodies the qualification principles and criteria of EN 4179, could this also be recognized by EASA alongside NAS 410 and AS 3669?

It could be recognized by EASA but it has to be formally introduced in AMC 145.A.30(f) before it can be used.

The UK NANDTB wishes to point out that the alternative standard has already been accepted. PCN Aero reflects EN 4179 qualification criteria exactly.

12. Will EASA be represented at future meetings?

It may not be necessary for EASA to attend all future ANDTBF meetings since they include also discussions on internal issues. It may be more productive instead that the Agency and representatives of the ANDTBF meet annually or upon arousal or the need at a convenient location to discuss NDT matters.

The UK NANDTB is disappointed with the EASA response in this matter. Refer to ANDTBF delegation for further discussion with EASA. Action: Secretary.