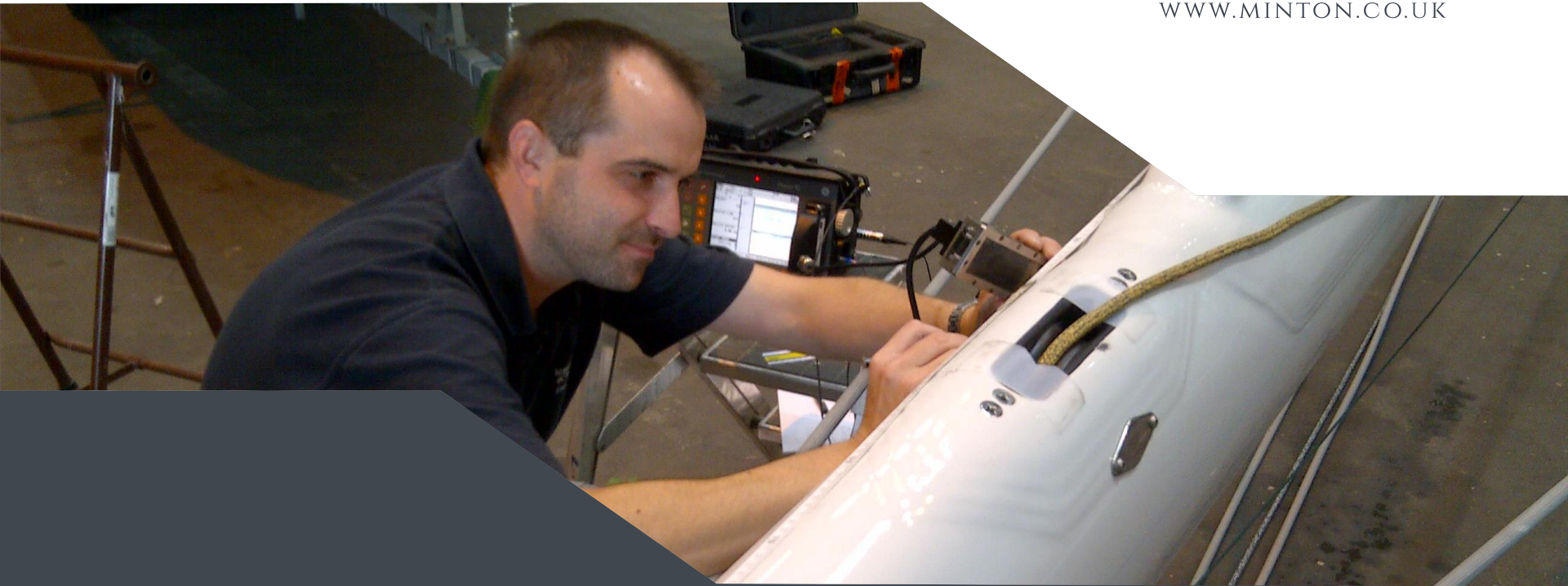




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NDT Requirements for Marine Composites

Marine Composite Certification Group



27/2/18



Chris Minton

Division Director: Engineering Services

- *Chris has been involved in materials failure investigation for the last nine years, focusing on the Marine and Energy markets. Over the last four years, Chris has become increasingly involved in the day to day running of the Engineering Services Department, whilst expanding MTD's capabilities in the composite inspection arena.*
- *Chris is currently running several inhouse marine composite projects, looking at the characterisation of defects in monolithic structures, using Phased Array Ultrasonics and assorted mechanical testing methods.*
- *As of 2018, Chris has taken over the management of MTD's Engineering Services Department, which includes NDT Services, Materials Testing, Composite Inspection and the South West School of NDT.*
- *Chris holds EN4179 NDT Level 2 qualifications in Ultrasonic and Shearographic Inspection of composite materials.*

Comparison between the Aerospace Industry and Marine Industry

Aviation Industry Requirements

Critical Components require inspection

- To an approved inspection criteria
- Inspection performed by a suitably certified and qualified individual

The “approved inspection criteria” process –

- During the initial stages of part development, an NDT L3 will be consulted to ensure that the part can actually be inspected satisfactorily and by what method.
- An Inspection Technique will be drawn up, that details the application of the method.
- This technique allows a suitably qualified technician to calibrate the correct equipment, perform the required inspection and verify the suitability or otherwise of the part.

Suitably Certified and Qualified –

- Certification Standard depends on the region, lets consider EN4179.
- MINIMUM requirements for Ultrasonic Inspection 80hrs formal, classroom training and 800hrs of experience obtained under supervision of a suitably qualified technician.
- Specific training and examination to follow.

Why do these requirements exist?

Comparison between the Aerospace Industry and Marine Industry

Marine Industry Requirements

THERE ARE NO CURRENT REQUIREMENTS FOR THE INSPECTION OF A PART (Critical or otherwise)



THERE ARE NO CURRENT REQUIREMENTS FOR THE CERTIFICATION OF AN INSPECTOR



Why don't these requirements exist?

Formation of Marine Composites Certification Group

Case Study – Cheeki Rafiki

MAIB Flyer to the leisure industry

Safety Lessons

“Matrix detachment is possible in yachts where a GRP matrix and hull are bonded together. The probability of this occurring will increase with longer and harder yacht usage. There is therefore a need for regular structural inspection by a nominated, competent person as part of a formal verifiable procedure, as well as before embarking on an ocean passage.”

“Any grounding has the potential to cause significantly more damage than may be subjectively assessed or visually apparent, including matrix detachment. It is therefore important that all groundings, including those perceived to be “light”, result in an inspection for possible damage by a suitably competent person.”



Formation of Marine Composites Certification Group

Aims of the group

- ✓ To develop BINDT accredited training and examination syllabi that will provide the Marine Industry with suitably qualified technicians, proficient in the Non-Destructive Testing of Marine Composite Materials.
- ✓ To consider the wide variety of composite materials and applications currently used in the marine industry and their specific inspection nuances.
- ✓ To develop the training syllabus and examination requirements in such a way that they can be easily aligned with existing personnel and company based certification schemes.



Formation of Marine Composites Certification Group

Formation of the Group

Any volunteers?

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20
17

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