

## **A comparison of Techniques for Ultrasonic Inspection of Composite materials**

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The use of Composite materials In critical applications continues to increase, Modern applications include Aircraft Spars and Control surfaces, Ballistic Armour, Bridges, and Utility Poles. As Composites replace metal parts, Customer confidence requires that they can be inspected with Equal certainty. A wide variety of approaches have been developed, but which to apply in a given situation?

In this paper I will look at several Ultrasonic methods, including:

- Conventional Ultrasonics
- Dry Coupled Inspection using contact probes
- Water coupled Ultrasonic inspection
- Air Coupled Ultrasonic Inspection
- Rapid, Array based scanning
- Resonance Spectroscopy.

The capabilities, advantages, and disadvantages of each will be discussed, and some practical guidelines developed to aid selection of an approach capable of giving the desired results.

References:

- [1] Technical papers by Joe Buckley on Non-Destructive Testing  
<http://www.joe.buckley.net/papers/>