



## Refresher Outlines:

### Online Refresher Phased Array Ultrasonic Testing

Our Phased-array UT Level II Refresher is based on ASNT and ISO Standards topical outlines. The refresher is divided in 3 sections: Self-evaluation test, theory and interactive exercises. The refresher covers manual PAUT as well as automated and semi-automated PAUT.

#### **SECTION 1: SELF-EVALUATION TEST**

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- 40-question test
- Link to an explanatory video for each question
- Grade

#### **SECTION 2: THEORY**

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- Introduction to phasing, steering, focusing
- Pulsers/receivers, Digitizers, sub-sampling, filters, gain, multiplexing
- Multi-element probes
- Optimal wedge height calculation
- Scanner components, encoder
- PAUT A-Scan, L-Scan, S-Scan
- C-Scan depth, C-Scan from S-Scan
- Cursors, gates, A-Scan extractor, weld centerline, skip lines
- Producing PAUT, PAUT wave front, PAUT beam
- Steering, shear and longitudinal waves
- Focused and unfocused beams, active focusing, passive focusing
- Signal compression, angular resolution, scan resolution, filtering
- Setup, element step, angular range and resolution, focal distance
- Number of samples, voltage, gain, PRF
- Velocity calibration, 0-degree, angled
- Wedge delay calibration, 0-degree, angled
- TCG calibration, 0-degree, angled
- Encoder calibration
- Probe positioning, zero datum, scanning direction
- Sizing indication 0-degree, depth, width, length
- Sizing indication angled beam, depth, height, length

#### **SECTION 3: INTERACTIVE EXERCISES**

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- Lamination check exercises, setup, calibration, scanning, data analysis
- Corrosion mapping exercises, setup, calibration, scanning, data analysis
- Weld testing exercises, setup, calibration, scanning, data analysis