



AGR TD Phased Array and TOFD

Course Description

131-AGR TD Phased Array and TOFD

This AGR TD course is designed to reveal the capabilities of the combined volumetric inspection method which uses Phased Array and TOFD. The content covers the underlying principles of TOFD and Phased Array as well as hardware and software instrument operation. The Phased Array inspection acts as a complement to the TOFD by providing coverage of the TOFD dead zones as well as additional volumetric data. The material is presented by theory, practical demonstrations and hands-on exercises.

Course Content

Ultrasonic phased array principles
TOFD principles
Ultrasonic digitization principles
Ultrasonic beam steering and focusing
Linear and sectorial (swept angle) scan definitions
TOFD limitations of detection and resolution
TOFD Dead zone coverage
Instrument features
Instrument operation
Instrument applications including:

- Technique development
- Software and scanning configurations
- Optimizing PCS and angles
- System calibration
- Data acquisition and interpretation
- Flaw location and sizing
- TOFD analysis
- Reporting

Eclipse Scientific promotes inspection setup design and planning through use of their ultrasonic modeling software package ESBeamtool3. This software allows inspection techniques to be easily developed even for complex applications and it is quickly becoming the industry standard. All Eclipse courses include some content devoted to this very useful tool. We lead the participant through the operation of ESBeamtool3 in step by step format.

Course Duration

40 hours (5 days) with a start time of 8:00am

50% classroom with powerpoint presentation component and feedback

40% hands-on software (application data manipulation and examination / problem solving includes lab exercises)

10% Testing (Daily quiz and final test includes class review)

The Benefits of taking an Eclipse Scientific AUT Training Course at the Waterloo, Ontario Training Facility

Eclipse Scientific currently owns and operates 11 Phased Array instruments with an associated transducer list ranging in frequency and configuration. In addition the participant is encouraged to operate a number of application specific scanning systems such as the Eclipse raised face flange scanner. Participants have access to an abundance of fabricated and documented flaw samples to challenge the most experienced advanced AUT participant.

“Seeing is believing”. Participants also have access to the Photo Elastic Visualization system which allows the user to actually see the propagation of sound through transparent material. This important part of Eclipse’s R & D and training programs allows the user to examine complex circumstances such as interface reactions or the manner in which steered and focused phased array wavefronts are constructed.

Eclipse promotes “sound” philosophy course content. The participant is led from basic to advanced inspection technique development by an experienced instructor using all the tools available, from manual calculations to advanced software packages such as ESBeamtool3.

Eclipse has developed a learning centre environment where the participant will enjoy a multi-media learning experience at a workstation complete with all of the necessary equipment to ensure a successful learning experience.

The Eclipse staff of facilitators hold a multitude of certifications and represent a great deal of industry experience so courses are not based solely on theoretical concepts. Participants are encouraged to enquire about problematic inspection applications.

The Benefits of taking an Eclipse Scientific AUT training Course at Your Onsite Facility

Onsite training is a cost effective method of training your company in Advanced Ultrasonic Testing (AUT). Eclipse transports the course to your international company for six participants or more. Participants can learn in your controlled environment with the necessary equipment for hands-on training. The Eclipse qualified facilitator can take care of the AUT teaching process armed with industry experience and application specific solutions for your company.

Requirements for Successful Completion

80% is required for successful completion and certification
Final pass mark is based on combined daily quiz marks and final exam

Course Equipment and Materials

Sample files along with the data acquisition instruments will be used to explore the many features of the "[Enter Course topics to be covered]"

Course Registration Fees

Please refer to the course calendar. The course fee is due upon registration. The fees listed are applicable for training performed at an Eclipse Scientific training facility. Fees may be adjusted for courses conducted at a client's preferred location.

Upon Successful Completion

Eclipse Scientific will provide an approved course certificate, stating that the participant has gained the necessary knowledge for operation of the AUT inspection package.

Current 2009 International Course Calendar

The current schedule can be viewed on our web site www.eclipsescientific.com or dial 519-886-6717 or 1-800-490-1072 within North America. Please visit our web site often as it automatically updates as new courses are added and listed courses are completed or registration limits are reached.