Servicing the Philips Family Ultrasound

Epiq 5/7 (2.5 Day)

RADIOLOGICAL SERVICE TRAINING INSTITUTE

Introduction

Ultrasound systems are found in most radiological/diagnostic imaging departments. They are typically exposed to a higher abuse level due to elevator openings, tight room entrances, limited patient access, and lack of space for maneuverability. This constant abuse will cause premature mechanical failure if not properly identified and corrected early. The trained service professional will be taught the skills necessary for mechanical, electromechanical, and electronic maintenance of the Ultrasound system. Each sub-system of the mechanical unit and the generator are thoroughly analyzed.

Prerequisites

To attend this course, the service professional must have a good understanding of the principles of Ultrasound or 3 years equivalent experience.

Objectives

At the conclusion of this course participants will be able to:

- Understand theory of operation of the Philips Ultrasound Family
- Demonstrate the operations
- Evaluate overall system performance
- Troubleshoot mechanical and electronic problems on all components of the unit
- Perform a complete and thorough preventive maintenance inspection on each unit
- Follow circuit operations of system detail block diagrams
- Identify signal flow and label system block diagrams
- Understand image quality as it pertains to ultrasound
- Identify probes and their uses
- Perform networking and DICOM setup

Course Outline

Day 1

- Introduction
  - System Features
  - Basic theory of operations
    - Switches/Controls
    - Terminology
  - Specifications
  - Software Navigation
- Basic system/unit differences
  - Mechanical
    - Covers and Panels
  - Electronic
  - Documentation
- Lab Activities
  - Basic operation
- Modes of Operation
  - B-modes
  - M modes
  - Doppler (PW/CW) Modes
- Lab Activities
  - Scanning session
- Lab Activities
  - Disassembly, parts location and identification and reassembly
- Power supplies analysis
  - Theory
  - Block diagrams
- Lab Activities
  - Power supply checks and test points
- Diagnostic tools and menus
  - LEDs and test points

Day2

- DICOM and Networking
  - Conformance statement basics
  - Networking basics
  - DICOM basics
- Lab Activities
  - Perform networking setup and verify operations
  - Perform DICOM setup and verify operations
- PM procedures
- QA procedures
- Lab Activities
  - Perform a PM on each system
  - Perform a phantom QA for each system

Day 3

- System troubleshooting
  - Mechanical
  - Electronic
- Lab Activities
  - Mechanical troubleshooting
  - Electronic troubleshooting
- Overall system review
- Final exam
- Course evaluation

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Hands-On Training Course
Course Length: 1 Week
CEU's Awarded: 4 CEU's
State of Ohio Registration No. 93-09-1377T