Publications and Training Solutions
Course Syllabus: 523-0819227

COURSE TITLE: HF-9087D Radio Receiver-Transmitter
Level II Intermediate Maintenance

PREREQUISITES: Students should have an avionics background in component level repair and a working knowledge of analog, digital, microprocessor, and radio frequency systems. A working command of the English language (interpreters are available for special cases).

PURPOSE: This course provides training to perform operational test, alignment, troubleshooting, and testing of the KF-9087D Radio Receiver-Transmitter.

OBJECTIVES: Upon completing this course, the student will be able to:

1. State Equipment Functions and Operational Characteristics of the HF-9087D Receiver-Transmitter.
2. Trace Signal Flow through the HF-9087D Receiver-Transmitter Block Diagrams.
3. Perform Assembly/Disassembly, Testing, Adjustment/Alignment, and Troubleshooting of the HF-9087D Receiver-Transmitter.

COURSE LENGTH: 10 Days

TRAINING DEVICES:

1. Equipment
    a. HF-9087D
2. Special Test Equipment
    a. HF Test Station

TRAINING MATERIALS: (as applicable)

1. PowerPoint Presentation with LCD/Box Light projector
2. Student Guide – Flash drive (pdf) – Training Presentation Information Sheets
3. HF and HF System Test Stations Operator Manuals

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REFERENCES:

1.	HF-9000 Receiver-Transmitters Intermediate Maintenance IB	523-0806628
2.	HF-9087D Radio Receiver-Transmitter Supplement	523-0780303
3.	HF-9000 Receiver-Transmitters Depot Maintenance IB	523-0775445

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COURSE OUTLINE

0. **Welcome & Introductions**
    - A. Course Overview
        - i. Welcome
        - ii. Student Registration
        - iii. Student Policies and Procedures
1. **Chapter 1 – Course Overview**
    - A. Introduction to HF-9087D
    - B. Block Diagram Theory of Operation
    - C. Subassembly Block Diagram Theory of Operation
    - D. Testing
    - E. Review/Critique
2. **Chapter 2 – Introduction to HF-9087D**
    - A. Equipment Specifications
        - i. Mechanical
        - ii. Electrical
        - iii. Major Assembly Locations
    - B. Equipment Description
        - i. Modes of Operation
            1. Receive
            2. Transmit
            3. Automatic Link Establishment (ALE)
    - C. Assembly/Disassembly

3. **Chapter 3 – Block Diagram Theory of Operation**
    - A. Overall Block Diagram
    - B. Simplified Block Diagram
    - C. Functional Block Diagram

4. **Chapter 4 – Subassembly Block Diagram Theory of Operation**
    - A. Power Supply/Control (A1) 988-6887-003
    - B. Audio Input/Output (A2) 944-1143-003
    - C. Receiver/Exciter/DSP (A3) 988-6915-004
        - i. Receiver/Exciter (A3A1)
        - ii. DSP (A3A2)
    - D. Radio Frequency Interface Filter (A4) 988-6889001
        - i. EMI Circuit Card (A4A1)
        - ii. EMI Circuit Card (A4A2)
    - E. Power Amplifier (A5) 659-9032-002
        - i. PA/PS (A5A1)
        - ii. PA/LPF (A5A2)
        - iii. Low Pass Clipper/Filter (P/O A5)
        - iv. Filter Circuit Card (P/O A5)
    - F. Chassis (A6) 988-6888-001
        - i. Backplane Circuit Card (A6A1)
        - ii. PA Filter Circuit Card (P/O A6A1)

5. **Chapter 5 – Testing**

6. **Chapter 6 – Review/Critique**

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EQUIPMENT TYPE:

EQUIPMENT	NOMENCLATURE	PART NUMBER
Radio Receiver-Transmitter	HF-9087D	822-1069-002