

Publications and Training Solutions

Course Syllabus: 523-0809440

COURSE TITLE: Tailwind 500/550 Installation and Maintenance

PREREQUISITES:

1. Familiarity with computers, DOS commands, and Windows Operating Systems
2. Basic understanding of electronics
3. Proficiency in speaking and reading simplified English
4. Ability to read system block diagrams
5. Familiarity with avionics system testing and troubleshooting

PURPOSE:

Through the use of classroom lectures, installation and maintenance personnel will be provided sufficient information that they will be confident in their ability to install, checkout and troubleshoot common issues on the Rockwell Collins Tailwind 500/550 Satellite TV system.

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

1. Identify Line Replaceable Units (LRU) within the Tailwind 500/550 system.
2. Install and utilize Tailwind Antenna Installation Tool (TAIT).
3. Install and utilize the RCTV 5000 spectrum analyzer.
4. Identify possible faulty areas for audio and video failures.

COURSE LENGTH: 3 Days

TRAINING DEVICES:

1. TAIT Laptop
2. RCTV 5000 Laptop
3. Tailwind 500/550 training device or customer supplied aircraft

TRAINING MATERIALS:

1. PowerPoint Presentation
2. Student Reference material provided on Universal Serial Bus (USB) thumb drive
3. System Block Diagram

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REFERENCES:

1. Tailwind 500 Installation and Maintenance Manual 523-0817995
2. Tailwind 500 User Guide 523-0811268
3. Tailwind 550 Installation and Maintenance Manual 523-0818564
4. Tailwind 550 User Guide 523-0813628
5. Tailwind Antenna Installation Tool (TAIT) User Guide 523-0814519
6. RCTV 5000 User Guide 523-0818198
7. AVCOM of Virginia RCTV-5000 and Rockwell Collins Standard Graphical User Interface GUI User Guide

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COURSE OUTLINE (Add and remove chapters as required, the following is an example)

0. Chapter 0 – Welcome & Introductions

- A. Course Overview
 - i. Welcome
 - ii. Student Registration

1. Chapter 1 – Satellite Television Overview

- A. Purpose
- B. Terms
- C. Satellite TV providers
- D. Satellite TV delivery system
- E. Programming source
- F. Broadcast center
- G. Satellite operation
- H. Transponders
- I. Satellite polarization
- J. Transponder numbering
- K. Satellite dish
- L. Receiver

2. Chapter 2 – System Description

- A. What is Tailwind 500/550?
- B. Tailwind 500/550 features
- C. Where does it work?
- D. Airborne considerations
- E. Factors affecting performance
- F. Tailwind 500/550 system similarities
- G. Tailwind 500/550 system differences

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3. Chapter 3 – Component Overview

- A. Tail Mount Unit (TMU) (Antenna)
- B. Gimbal Electronics (GEM)
- C. Fuselage Mounted Unit (FMU) (Antenna)
- D. System Signal Processor (SSP and SPU)
- E. Configuration Data Module (CDM)
- F. Intermediate Frequency (IF) Multiplexer Unit (IMU)
- G. Receiver Decoder Unit (RDU and RDUI)

4. Chapter 4 – System Interconnect

- A. SSP ports
- B. Flap position input (TW500 only)
- C. Passenger control
- D. IR or Primary RS-485 control?
- E. Secondary RS-485

5. Chapter 5 – Installation Highlights

- A. Special equipment
- B. Radome
- C. TMU
- D. SSP/SPU
- E. IMU
- F. RDU/RDUI
- G. Wiring and RF cables

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6. Chapter 6 – Initial System Checkout

- A. Customer account setup
- B. Ground Test
- C. Operational test
- D. Reception checks
- E. Account activation before delivery

7. Chapter 7 – Tailwind Antenna Installation Tool (TAIT)

- A. Installing TAIT
- B. TAIT familiarization
- C. Antenna alignment overview

8. Chapter 8 – Troubleshooting

- A. No reception
- B. Missing only odds or evens
- C. IMU circuit troubleshooting
- D. Remote control
- E. For ordering information

9. Chapter 9 – Hands On

- A. Hardware familiarization
- B. TAIT operation
- C. Perform antenna alignment

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EQUIPMENT TYPE:

EQUIPMENT	NOMENCLATURE	PART NUMBER
TMU	Tail Mounted Unit	932001-10X
FMU	Fuselage Mounted Unit	932000-100
FMU	Fuselage Mounted Unit	932000-20X
FMU-201	Fuselage Mounted Unit	822-3407-001
FMU-202	Fuselage Mounted Unit	822-3408-001
FMU-203	Fuselage Mounted Unit	822-3409-001
FMU 4000	Fuselage Mounted Unit	822-3293-001
GEM	Gimbal Electronics Module	936006-100
GEM-1000	Gimbal Electronics Module	822-3405-001
SSP	System Signal Processor	932002-100
SPU-1000	Signal Processing Unit	822-3406-001
CDM	Configuration Data Module	932003-100
IMU	IF Multiplexer Unit (8) IF Multiplexer Unit (16)	930011-02 932007-101/102
RDU	Receiver Decoder Unit	931000-2XX
RDUI-4000	Receiver Decoder Unit International	822-3152-001
RCTV-5000	Portable Spectrum Analyzer	983-9767-002
TAIT	Tailwind Antenna Installation Tool	SSP006-06