Publications and Training Solutions
Course Syllabus: 523-0779403

COURSE TITLE: ACARS CMU-900/DLM-700 - Operations & Maintenance

PREREQUISITES:

Students should have completed a two-year technical electronics school or have equivalent knowledge of aircraft avionics systems and a working command of the English language.

PURPOSE:

This course provides students with skills and background knowledge required for operation, utilization, and comprehension of the ACARS system using applicable manuals and pilot guides.

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

Provide an overall understanding of ACARS principles, operations, and testing of equipment.
Identify system components and the functional/operational characteristics of each line replaceable unit (LRU).
Identify typical aircraft system interface/system architecture.
Perform fault isolation to a faulty LRU using built-in diagnostics.

COURSE LENGTH: 1 Day

TRAINING DEVICES:

Laboratory

TRAINING MATERIALS:

PowerPoint Presentation with LCD/Box Light projector
TV/VCR equipment
Student Guide
Data Link Management and Communications Management Units – Pilot's Guide: 523-0780471
Avionics Glossary: 523-0780410

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REFERENCES:

CMU-900, Communications Management Unit, Component Maintenance Manual (CMM) : 523-0810641

Data Link Management and Communications Management Unit – Pilot's Guide: 523-0780471

CMU-900 CPDLC Operator's Guide: 523-0790130

CMU-900 User's Guide: 523-0790174

Rockwell Collins

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COURSE OUTLINE

0. Welcome & Introductions

    A. Training Overview

        i. Welcome

        ii. Student Policies and Procedures

        iii. Facility Layout

        iv. Introductions

        v. Course Registration

        vi. General Information

        vii. Course Description/Objectives/Course Materials/Evaluation

        viii. Critique

1. Chapter 1 – ACARS Overview

    A. Introduction to ACARS

        i. What is ACARS?

        ii. Why use ACARS?

        iii. The ACARS system

            1. Ground Station Network

            2. Airborne Subsystem

            3. VHF Communications Network

            4. Communications Management Unit

            5. MCDU/MIDU Control Unit

            6. Printer

            7. Optional Components

    B. Principles of ACARS Operation

        i. How ACARS Works

            1. Demand Mode

        2. Polled Mode

     ii. Integrated Aeronautical Communications

     iii. VHF Coverage

     iv. HF Coverage

     v. INMARSAT-III Satellite Coverage

     vi. Maintenance Unit Functions

     vii. OOOI Events

     viii. Ground Station Processor Functions

     ix. How Ground Network Works

     x. How Airborne Management Unit Works

         1. Management Unit Block Diagram

  C. Uplink/Downlink Message Formats

     i. Preamble

     ii. Text

     iii. Block Check Sequence

     iv. System-Essential Group and Service-Related Group Downlinks

2. Chapter 2 – ACARS Operations

  A. Introduction to the Communications Management Unit

     i. Two Generations of ACARS Management Units

     ii. CMU-900 System Software Applications

         1. Air Traffic Services Software

         2. Technical Software

         3. Airline Operational Control Software

         4. CPDLC

     iii. Communications Management Unit Interface and Function

         1. Hardware Characteristics

2. Interface with Other Aircraft Systems

3. Aircraft Data Communications Architecture

4. Aircraft Personality Module (APM-900) Functionality

5. CMU-900 Block Diagram

6. Built-In Test

7. Typical Non-ARINC 429 Interface

8. Typical ARINC 429 Interface

B. Advisories

    i. Active Advisories

    ii. Inactive Advisories

    iii. Visual/Aural Annunciations

C. OOOI Flight Phases

    i. IN

    ii. OUT

    iii. OFF

    iv. ON

    v. IN

    vi. Flight Summary

    vii. New Flight Leg

    viii. Special Conditions

        1. Return to Gate Report

        2. Touch and Go Report

    ix. OOOI Flight Phase Summary

D. Selecting the ACARS Function

E. Display Pages

    i. Standard CPDLC Application Menu

  ii. Standard ACARS Application Menu

  iii. Standard AOC Application Menu

  iv. Standard ATS Application Menu

  v. Standard Technical Application

3. **Chapter 3 — Configuration and Maintenance**

 A. Protected Menu

  i. Operation Overview

  ii. Protected Menu Pages

 B. Configuration

  i. APM Configuration Menu

  ii. Programming

 C. Maintenance

  i. Troubleshooting Diagram

  ii. Self-Test/Built-In Test Equipment

  iii. Pinouts

4. **Summary/Evaluation/Critique**

 A. Test

 B. Critiques

EQUIPMENT TYPE:

EQUIPMENT	NOMENCLATURE	PART NUMBER
Communications Management Unit	**CMU-900**	**822-1239-001/-101/-151/-501**
Data Link Management	**DLM-700**	**622-6817-001/-003/-004/-005/-006**