

Books - Videos - Software -Training

■ ■ Complete Index on last page

Avionics Installation Handbook

Hundreds of pin connections and other useful info

Over 330 pin connection diagrams for most General Aviation avionics: navcoms, transponders, indicators, ADF, glideslope, DME, autopilots, Loran, GPS, audio panels, encoders, intercoms and weather detection.

Plus ten chapters on selecting wire, connectors and contacts, coaxial cable, case sizes and useful conversion factors. No theory--just solid reference material usually found scattered through many volumes.

This information was selected after 20 years of experience as the most valuable content for a single, handy reference. All installations must follow the manufacturer's guidance, but you'll save time and effort with the familiarization possible with this data-filled volume.

For a complete list of pin connection diagrams covered, and Table of Contents, please check www.avionics.com



Avionics Installation Handbook
488Pages Cat. No. AIH-2
Price: \$75.00



Principles of Avionics

Pages: 501

Cat. No. POA-7

Price: \$95.00

ISBN

978 1 885544 29-2

Principles of Avionics- Seventh Edition

The most up-to-date text on avionics is expanded in its Seventh Edition to cover the most recent developments.

The new edition has 34 more pages for enhanced chapters on aircraft databuses, networking and GPS. Appendices cover ARINC and RTCA documents, with an expanded section on inertial guidance

Written by an eminent professor of avionics, Dr. Albert Helfrick, this book includes every communication and navigation system, plus the latest space-based avionics. The text describes navcom, transponder, VOR, ADF, DME, TACAN, instruments, radar, autopilot, collision avoidance, enhanced ground proximity warning and other traditional avionics.

The book then covers all recent systems; Mode S, electronic displays, Free Flight, GPS space and earth segments, laser gyro's, fiber optics and avionics architectures. Principles of Avionics -Seventh Edition is the most timely book on avionics now available. (For complete Table of Contents, please see: www.avionics.com)

The author describes the theory of each system with figures, photos, problems and solutions. Over 150 graphics illustrate basic principles. Dr. Helfrick is well-known as an avionics test equipment designer, consultant to FAA, and a frequent speaker at the Digital Avionics Systems Conference. In his teaching role at Embry-Riddle Aeronautical University, Professor Helfrick's students are in 2- and 4-year avionics technician and engineering programs. He wrote this book to meet a long-standing need for a text and reference for anyone needing to know the latest theory and practice behind airborne electronic systems.

Order on www.avionics.com, or contact:

Avionics Communications Inc.

P.O. Box 2628 Leesburg, VA 20177 USA

Tel: 703/777-9535

Fax: (703) 777-9568

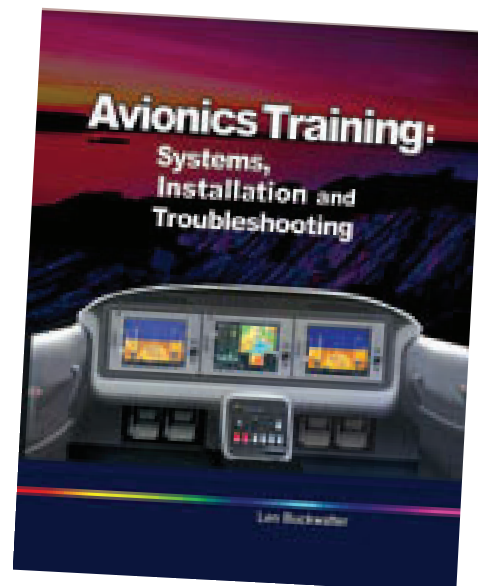
E-Mail: publisher@avionics.com

Widely Used in Aviation Schools

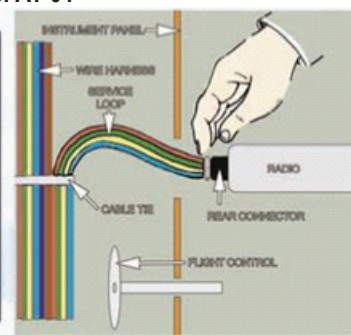
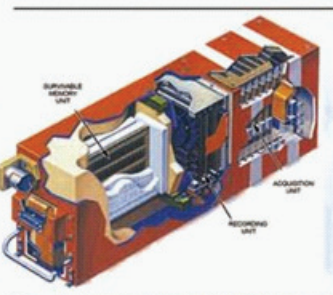
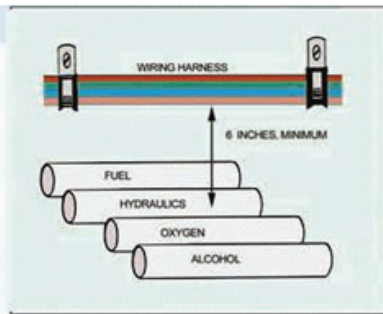
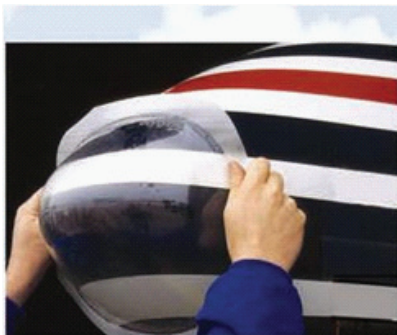
Avionics Training

Systems, Installation and Troubleshooting

- Covers ramp-level maintenance for aviation technicians.
- A hands-on approach to solving avionics problems.
- 30 systems explained in easy-to-understand images.
- Covers General Aviation and airlines, including latest “glass cockpits” and GPS.
- For student, classroom, A&P mechanic & avionics tech.
- Instructor materials--- images on disk, notes, Q&A.



Size: 8-1/2 x 11; pages: 320; over 400 photos and line drawings. Full color throughout. Publication: June, 2005; ISBN 1-88-5544-21-9. Price: \$79.00. Catalog No. AT-01



Hundreds of illustrations in full color show actual equipment. Drawings contain no confusing abbreviations or acronyms; everything is clearly spelled out.

This book assumes no prior background in avionics

About the Author

Len Buckwalter started Avionics Magazine and served as Publisher and Editor for 17 years. Specializing in aviation electronics, he wrote over 2000 magazine articles and 25 books. Mr. Buckwalter started www.avionics.com in 1993 to launch Avionics Library, publisher of books, CD's and software for technicians and engineers in the avionics industry.

A graduate of New York University, he served in the U.S. Signal Corps as Communications Chief of an air-ground signal battalion, constructing communications systems. He was founder and president of Avionics Center, an FAA-certified repair station.

Mr. Buckwalter is an instrument-rated pilot with 3000 hours and attends the ARINC Avionics Maintenance Conference, Aircraft Electronics Association and Airlines Electronics Engineering Committee meetings.



Every Technician Will Have to Know Avionics Systems

This book responds to important changes facing aviation maintenance. As digital electronics spread through all aircraft, the job of “bench technician” is disappearing. New, computerized avionics must be sent back to the factory for repair. It's created a growing need for technicians who can identify a faulty black box on an airplane, remove it, then re-install and check it out after the repair.

The demand for technicians with a systems knowledge will increase as avionics expand beyond communications and navigation. Nearly every electrical and hydraulic system aboard aircraft is changing-- by adding electronics. A new industry—cabin electronics (for Internet, e-mail, telephone and entertainment)—places hundreds more devices on board that fall under “avionics.”

For this reason, many airlines now require A&P mechanics to get an FCC license, which teaches general electronic theory—but no avionics of practical value.

The aviation industry is moving toward the “all-electric” airplane, where hydraulic and electromechanical components are replaced by small, smart electronic devices. Even today, electronics are over 30% the cost of an airplane.

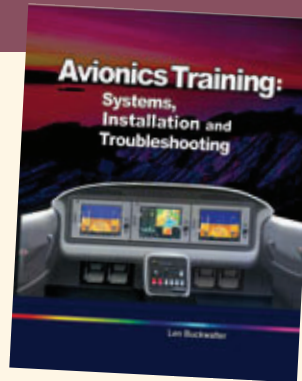
There's a new air traffic system just now starting. It requires upgraded avionics for aircraft to receive shorter routes, favorable winds and many new services.

These trends promise a bright future for the aviation maintenance technician trained in avionics systems.

For complete Table of Contents, see next page

Table of Contents

Avionics Training: Systems, Installation and Troubleshooting



Avionics Training: Systems, Installation and Troubleshooting

ISBN 1-88-5544-21-9 Cat. No. AT-01 Price: \$79

Section 1: Systems

Chapter 1. Meaning of "Avionics"

Chapter 2. A Brief History

Chapter 3. VHF Com

VHF Com Radios ---VDR (data radio)
Navcom Connections---Com Control
Panel
---Splitting VHF Channels

Chapter 4. HF Com

HF Control-Display --- SSB (Single
Sideband)
---Line Replaceable Units---HF Datalink
---Control Panel (Airline)---HF Trans-
ceiver
---Antenna Coupler---HF Antenna
Mounting

Chapter 5. Satcom

Inmarsat --- Space Segment--- Ground
Earth Station (GES) --- Aircraft Earth
Station (AES) --- Satcom Antennas---
High Speed Data---
Aero Services

Chapter 6. ACARS

ACARS System---Messages and
Format---
ACARS Bands and Frequencies

Chapter 7. Selcal

Controller, Decoder---How Selcal Code
is Generated---Ground Network---
Airborne System

Chapter 8. ELT

Search and Rescue---ELT Compo-
nents---406 ELT System--- Fleet
Operation---Cospas-Sarsat

Chapter 9. VOR

Coverage---Signal Structure---VOR
Receiver---
Navigation---Horizontal Situation Indi-
cator (HSI) --- Radio Magnetic Indicator
(RMI) ---
Nav Control-Display

Chapter 10. ILS

ILS Components and Categories---
Flight Inspection and Monitoring---
Signals---Glideslope
---Marker Beacon Receiver

Chapter 11. MLS

Azimuth Beam---Elevation Beam ---
Time Reference --- Multimode Receiver

Chapter 12. ADF

ADF System --- NDB (Non-Directional
Radio Beacon)---ControlDisplay
(Airline)---Line-Replaceable Unit
(Airline)---Limitations---Digital ADF ---
EFIS Display

Chapter 13. DME

Obtaining Distance --- DME "Jitter" for
Identification --- EFIS Display--- Air-
borne and Ground Stations--- Channels
X and Y

Chapter 14. Transponder

Transponder Interrogator ---ATCRBS
and Mode S---Transponder System---
Airline Control-Display---Line-Replace-
able Unit---Mode S Interrogations and
Replies

Chapter 15. Radio Altimeter

Antennas---Operation

Chapter 16. GPS/Satnav

GPS Constellation---Frequencies--- Sat-
nav Services---Panel-Mount Receiver---
Time Difference Measurement---Finding
Position ---The Satellite Signal --- GPS
Segments
---WAAS: Wide Area Augmentation
System
---LAAS: Local Area Augmentation
System
---RAIM: Receiver Autonomous Integ-
rity Monitoring---Galileo Constellation

Chapter 17. EFIS Electromechanical

to EFIS ---Three-Screen EFIS --- EFIS
Architecture--- Multifunction Display
(MFD) --- EFIS on the B-747---Airbus
A-320 Flight Deck

Chapter 18. Cockpit Voice and Flight Data Recorders

CVR Basics---Underwater Locating De-
vice (ULD) --- CVR Interconnect--- Flight
Data Recorder---Solid State Flight Data
Recorder---Stored Information

Chapter 19. Weather Detection

Radar Color-Coding---Multifunction
Display
---Types of Detection---Radar
Transmitter-Receiver---Weather Radar
Control Panel---
Radar Antenna---Datalink--- Radomes---
Windshear---Lightning Detection---
Windshear Computer

Chapter 20. TCAS

Basic Operation---Traffic and Resolu-
tion Advisories (TA, RA)--- TCAS I and
II---
Coordinating Climb and Descend---
TCAS Components--- Whisper-Shout---
Directional Interrogation---
Non-TCAS Airplanes ---TCAS III--- Voice
Warnings

Section 2: Installation

Chapter 21. Planning the Installa- tion

Replacing "Steam Gauges"---

Required Instruments and Radios---
Flight Instrument Layout---Basic T---
Large Aircraft EFIS---
Flat Panel Integrated---Avionics
Planning Worksheet---Manuals and
Diagrams---
Connectors and Pin Numbers--- Schem-
atic Symbols---Viewing Angle---
Survey the Airplane --- Navcom Con-
nections

Chapter 22. Electrical Systems

AC and DC Power---Airline Electrical
System ---Switches---Lighted Pushbut-
ton--- Circuit Breakers/Fuses

Chapter 23. Mounting Avionics

New or Old Installation?---Hostile
Areas---
Selecting Metal---Cutting Holes---
Structures---
Avionics Bay---Airlines (ARINC) Case
Sizes
---Electrostatic Discharge---Cooling for
Airline Avionics---Locking Radios in
Racks---
Panel-Mounted Radios---
Remote-Mounted Radios (Corporate)---
Locking Systems (Airline) ---Indexing
Pins---Instrument Mounting---Round
Instruments: 2- and 3-inch---Airline
Mounting

Chapter 24. Connectors

Typical Connectors --- RF Connec-
tors---
How to Identify Connector Contacts
Identify Mil-Spec Part Numbers--- Co-
axial Connectors, Typical--- ARINC
Connectors---
Crimping Contacts---Releasing Con-
nector Pins
---Heat Gun for Shrink Tubing--- Safety
Wiring Connectors--- Attaching Coaxial
Connectors

Chapter 25. Wiring the Airplane

Swamp---High Risk Areas---High-Grade
Aircraft Wire---Wire Sizes--- Wire and
Cable Types---
Wire Stripping---Nicked or Broken
Wires---
Precut Cables---Splicing ---Location of
Splices

Ring Terminals---Terminal Strip (Block)
Marking Wires---Harnessing the Wire
Bundle
---Tie Wraps---Problems: Chafing and
Abrasion
---Clamping---Grounding to Airframe---
Bending Coaxial Cable--- Service
Loops

Chapter 26. Aviation Bands

Radio Frequency Bands---Higher
Bands (Microwave, Millimeter)--- Low
Frequencies---
Skipping through Ionosphere---High
Frequencies---Very High Frequencies---
L-Band---From Hertz (Hz) to Gigahertz
(GHz)
---Line of Sight Communications---
Control and Display of Bands and
Frequencies

Chapter 27. Antenna Installation

Antennas for Airline, Corporate and
Military---
How to Read an Antenna Spec Sheet---
Antennas for Light Aircraft---Airline An-
tenna Locations---Bonding the Antenna
to the Airframe---Antenna Mounting---
Antenna Couplers--- Base Station and
Mobile Antennas--- GPS Antennas

Chapter 28. Panel Labels

Silk Screen--- Engraving---Tape--- Panel
Abbreviations

Section 3: Test and Troubleshooting

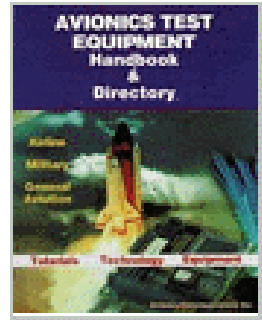
Chapter 29. Test and

Troubleshooting ADF---Antennas---
Antenna VSWR--- Autopilots
---Com Transceivers --- DME --- ELT-
Emergency Locator Transmitter---
Glideslope Receiver---
Lightning Strikes---Software Loading---
Transponder---Wiring and Connec-
tors---
Fault Detection Device (Wiring)---
Precipitation (P) Static---Avionics
Checklist

Index

Avionics Test Equipment-Third Edition

Textbook plus Directories of 500 Suppliers and products



Avionics Test Equipment Handbook & Directory

Cat. No. TEHB-3 187 pages Price: \$64.95

1. Tutorial

Describes each instrument.

2. Technology Trends

Developments affecting industry in military and civil sectors.

Air Data ARINC ATLAS
Cable Fault Detectors
Calibration
Communications
Couplers
Databus Interfaces
Data Recording
Dedicated ATE

Emulators
Flight Control
Flight Line Test
Frequency Counters
Generators
General Purpose ATE
Instrumentation
Oscilloscopes

PC-based Tools
Ramp Testers
Reflectometers
Signal Monitors
Simulators
SMART
Spectrum Analyzers
VME and more

3. Test Standards

How the industry is responding to new-generation avionics

4. Test Directories

Comprehensive listings

Editor: Len Buckwalter, founder of Avionics Library, has written numerous books and articles on aerospace subjects.

Author: Dr. Albert Helfrick, designs avionics test equipment. He is Professor of Avionics, Embry-Riddle University.

World Airline Fleet Directory - CD-ROM



- Details on 45,000 commercial aircraft
- Information on 5,700 fleet operators
- Airlines, Governments, Agencies

For 31 years, "*Airline Fleets*" has been the best single information source for executives planning to reach the aviation market with technical products and services.

Airline Fleets, CD-ROM Cat. No. AFI-01 CD Price: \$99.00

For Windows or Mac. Note: A search is limited to words ("747" or "TWA", etc.). Fields cannot be combined, as database sorting.

Data on every aircraft over 3,000 lbs:

Tail Number (Registration)
Aircraft type, model name, serial number, date of manufacture & delivery
Engines: number, type, model, manufacturer
Max take-off weight, seating configuration operator details, including:
Name, address, phone, fax, number of employees, head of company, airline logo Identifier codes for Selcal, IATA, ICAO
Name of previous operator

Covers 236 countries

Avionics Displays Handbook on CD-ROM

A tool and reference for the avionics equipment designer, modifier, installer and anyone who deals with instrumentation for the flight deck and cabin.

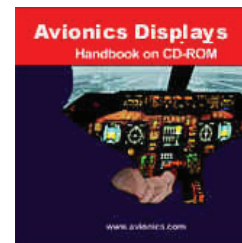
Covers basic technology. Each display type is described: LCD, CRT, LED, EL, Plasma, FED, OLED, night vision, chromaticity, switches, human factors and others. Includes display standards. Complete text of FAA Advisory Circulars with specific guidance on designing and installing avionics displays. Also contains a document on display engineering principles.

Panel legends and labels. If you plan to design or modify a system, this section provides hundreds of recommended panel abbreviations to use for display and control functions.

Many practical display examples. More than 200 color illustrations of actual panels, flight decks and avionics systems now flying on commercial transport, GA and military aircraft. Sections on head-up, helmet-mounted, helicopter, night and synthetic vision displays

Equivalent to a 450-page book, the CD is easily navigated through hyperlinks and search engine. Pages may be printed out.

Compiled and edited by Len Buckwalter, Publisher, www.avionics.com



Avionics Displays Handbook on CD-ROM

ISBN 1-885544-12Y

Price: \$69.00

Cat. No. DSCD-1

Visit www.avionics.com for the latest listings and prices.

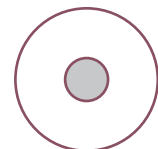
ARINC Avionics Maintenance Conference (AMC)

From 1983 to 1998: 15 years of airline troubleshooting history easily searched



Key in desired topics--by part number, airplane, LRU, etc. The related text quickly appears.

- Locate data quickly by avionics system, LRU part number, manufacturer, airline or ATA number.
- Over 1 million words are rapidly scanned to find desired data --in any combination.
- Print out a custom report, or view it on the screen. Save hours of searching.
- PC requirement: 8 MB RAM, VGA display, CD-ROM,



4000 pages of AMC Reports on CD-ROM. Search software is included.

AMC Conference on CD-ROM

Cat. No. AMC-001 Price:\$149

(From 1983-1998)

Digital Avionics Validation The Official Handbook on CD-ROM

The document used by FAA engineers for certifying avionics systems.

The most comprehensive text ever written on digital avionics, it consists of two volumes for a total of 3000 pages. Covers hundreds of subjects of interest to engineers, manufacturers, installers and others concerned with software-driven avionics. Its authors are drawn from two dozen major aerospace organizations in government and industry.

For the first time, the handbook is offered on CD-ROM---eliminating 13 pounds of paper and reducing the original cost of \$274 by two-thirds. The complete set, published exclusively on CD-ROM by avionics.com, is priced at only \$95.

Just as important, the CD-ROM enables you to instantly retrieve information anywhere in 33 chapters, 6 appendices and several glossaries. Every subject has a hypertext link---just click and you're at the topic of interest. You can also key in any combination of words to rapidly search the whole document. For the first time, an encyclopedia of digital avionics is at your fingertips to consult on design, engineering, software, reliability, certification and other vital issues. Major highlights of the 2-volume set include:

Volume 1

- 1 Introduction
- 2 Applicable Documents
- 3 System Life Cycle (Overview)
- 4 Mission Factors
- 5 System Architectures
- 6 Crew Workload Evaluation
- 7 Issues
- 8 Known Concepts/Methodologies
- 9 Current Validation Procedures
- 10 Recommended Validation Procedures
- 11 Recommended Configuration Management
- 12 Aircraft Electrical Power Systems
- 13 Electronic Engine Controls
- Appendices
- A Examples of Formats for Documentation

B Reliability Analysis Models, Fault Trees, Failure Modes and Effects Analysis Synopsis

- C Fault Tree Example
- D Advisory Circ. 25:1309 Sys Design Analysis
- E Advisory Circ 20-115 on RTCA DO- 178
- F Software Metrics
- Glossary

Volume 2

- 1 Executive Summary
- 2 Introduction
- 3 Integrated Assurance Assessment
- 4 Quadruplex Digital Flight Control System
- 5 Advanced Fault Insertion & Simulation
- 6 Digital Databases for Aviation Applications
- 7 Analytical Sensor Redundancy

8 Estimation and Modeling for Real-Time Software Reliability Models

- 9 Fault Tolerant Software
- 10 Latent Faults
- 11 Aircraft Electromagnetic Compatibility
- 12 Fast Rise-Time Transients
- 13 Lightning Studies
- 14 High Intensity Radio Frequency Fields (HIRF)
- 15 Electromechanical Actuator Systems
- 16 Advanced Validation Issues
- 17 Software Quality Metrics
- 18 Avionic Databus Integration
- 19 Pilot-Vehicle Interface
- 20 Artificial Intelligence



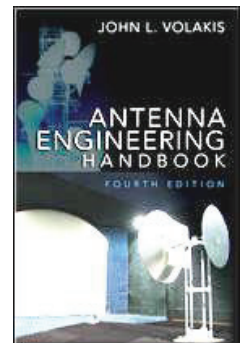
Digital Avionics Validation Handbook on CD-ROM
3000 Pages - ISBN 1-885544-13-8
Cat. No. VAL-CD
Price: \$95.00

Antenna Engineering Handbook Fourth Edition

This best-selling reference provides principles and data to solve problems in design and application

Content: Introduction and Fundamentals. Arrays of Discrete Elements. Dipoles and Monopoles. Loop Antennas. Small Antennas. Microstrip Antennas. Slot Antennas. Slot-Antenna Arrays. Leaky-Wave Antennas. Long-Wire Antennas. Surface-Wave Antennas and Surface-Wave Excited Arrays. Helical Antennas. Frequency-Independent Antennas. Horn Antennas. Lens Antennas. Reflector Antennas. Feeds for Lenses and Reflectors. Electromechanical Scanning Antennas. Frequency-Scan Antennas. Phased Arrays. Conformal and Low-Profile Arrays. Adaptive Antennas. Methods of Polarization Synthesis. Low-Frequency Antennas. Medium-Frequency Broadcast Antennas. High-Frequency Antennas. VHF and UHF Communications Antennas. TV and FM Transmitting Antennas. TV Receiving Antennas. Microwave Relay Antennas, Radiometer Antennas. Radar Antennas. Microwave Beacon Antennas. Tracking Antennas. Satellite Antennas. Earth Station Antennas. Aircraft Antennas. Seeker Antennas. Direction-Finding Antennas and Systems. ECM and ESM Antennas. Radio-Telescope Antennas. Transmission Lines and Waveguide. Impedance Matching and Broadbanding. Radomes. Microwave Propagation. Antenna Measurements, Materials, Design Data.

Authors: Hughes Aircraft, Georgia Tech, Scientific Atlanta, Harris, COMSAT, AIL/Eaton, Ohio State U., RCA, NIST, General Electric, Raytheon, Texas Instruments, Loral, GTE, Westinghouse and Rome Laboratory (US Air Force).



Antenna Engineering Handbook
1,800 Pages Cat. No. AEN-01
Price: \$175.00

Introduction to Airborne Radar

The most widely read book on airborne radar, now updated for stealth, synthetic aperture, EW and weather detection

The best-selling work on radar, the latest edition has 30 percent new material (12 added chapters), over 1,100 multicolored graphics, side notes and explanatory panels.

Author: George W. Stimson, former Technical Manager, Hughes Aircraft.

Radar fundamentals Frequencies, power, attenuation, noise, Doppler shift, antenna directivity, radiation patterns, electronic beam steering, angle measurement, pulsed operation, detection range, ghosts, target tracking, pulse compression, FM ranging, digital filters, ground clutter.

Applications Weather detection, navigation, anti-collision, ground mapping, reconnaissance, surveillance, fighter/intercept, raid assessment, target identification, fire control, air-ground weapon delivery, search missions.

Air-To-Air Low, medium and high PRF's, automatic tracking, single targets.

High Resolution Ground Mapping and Imaging

Electronic Warfare Countermeasures (ECM), counter countermeasures (ECCM), intelligence (ELINT), support measures (ESM), warning receivers.

Advanced Concepts Electronically steered phased array, antenna size reduction, multiple frequency operation, advanced waveform and mode control.

Representative Radar Systems AWACS, Joint Stars, E-2C, F-22 Stealth Fighter, F/A-18, F-16, F-4, B-2, B1 B, Apache, C1 30J, RDR-4B.



Introduction to Airborne Radar
672 Pages
Cat. No. ARAD-1
Price: \$139.00

FAA Library on DVD 35,000 pages, quickly searched

Now includes:

- Type Certificate Data Sheets
- STC Summaries

Contains:

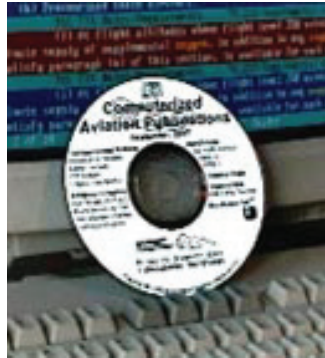
- AD'S (Airworthiness Directives)
- Advisory Circulars

Plus more than 35,000 pages of FAA regulations and handbooks

Powerful search: view or print out any text, find any combination of words, search all publications simultaneously, make notes and bookmarks.

Now in use by: Boeing, Lockheed-Martin, most major airlines, FAA, CAA's, and thousands of manufacturers and maintenance organizations world-wide. *Software by Folio Infobase.*

For PC.



FAA Library on DVD

Cat. No. FCD-001 Price: \$99.00

Annual Subscription (4 DVD's, one every 3 months):

Cat. No. FCD-4 Price: \$396.00

UPDATES ISSUED EVERY 3 MONTHS

Complete Federal Air Regulations (FARs 1-199)

Air Carrier Regulations (200-1199)

Advisory Circulars: Over 650 AC's on design, installation and operation of electronic systems, communications, navigation, flight control, weather radar, navigation, displays, electronic instruments, interference, audio, simulators, software,

Airworthiness Directives (AD's) All AD's issued from 1943 to date.
Type Certificate Data Sheets

STC Summaries (Supplemental Type Certificates)

Airworthiness Inspectors Handbook (Order 8300.10)

This handbook prepares you for a visit from the Airworthiness Inspector. Air Transportation Operations Inspectors Handbook (Order 8400.10) Air Traffic Control Handbook (Order 7110.65)

General Aviation Operations Inspectors Handbook (Order 8700.1) Maintenance, Volume 1: Acceptable Methods, Techniques and Practices— Aircraft Inspection and Repair (AC-43.13-1A) and Acceptable Methods, Techniques and Practices—Aircraft Alterations (AC 43.13-2A). repairing electronic, electrical and instrument systems.

Maintenance, Volume 2: A&P General Handbook (AC 65-9A). Maintenance, Volume 3: Mechanics Powerplant Handbook (AC 65-12A). Starters, engines, fuel, fire protection and other systems.

Maintenance, Volume 4: A&P Airframe Handbook (AC 65-15A). Helicopter Series,

Basic Helicopter Handbook (ACs 61-13B).

Aeronautical Information Manual

For anyone who designs, installs or maintains avionics

FAA Avionics Certification and Approval

Over 2,300 pages of documents, handbooks and official guidance for approving avionics systems and services.

Applies to electronic components installed aboard General Aviation and Air Transport aircraft--- both hardware and software.

Search over a million words in seconds to see information on any subject. At your fingertips is the full text of FAA handbooks, the same ones followed by government engineers and inspectors to certify and approve your product or service.

Retrieve any part of these documents with a few key strokes--or tailor your search for data within specific limits.

Also included are catalogs of the avionics standards-making associations, describing the content and availability of their documents.

For the engineer or technician new to the industry, an introductory section explains every level of approval and certification---including TC, STC, PMA, TSO and other regulations affecting airworthiness

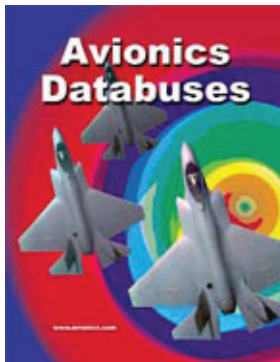


FAA Avionics Certification and Approval CD

Pages: 2400
Price: \$89.00
Cat. No. CERT-1

Principles of Avionics Databases Third Edition

Completely revised and rewritten, covers databuses on today's civil and military aircraft. Includes the latest Ethernet/Internet bus for Boeing and Airbus and Eurofighter EFABus.



PRINCIPLES OF AVIONICS DATA BUSES

260 pages **Cat. No.** DB- 003 **Price:** \$95

Explains every major bus

ARINC-429: *The digital airliner bus*

Now aboard current airliners---B-757/767/747-400, MD-11 and Airbus's, as well as a major interface for corporate and business aircraft.

ARINC-629: *Newest airline standard*

ARINC-629 is aboard the Boeing 777, planned or future Airbus's and other emerging aircraft. First known as "DATAC," this once-proprietary design is now open to anyone.

Time-Triggered Protocol (TTP)

High speed bi-directional bus for distributed hard real-time safety-critical applications. Used in systems by Boeing, Airbus, Honeywell and NASA

MIL-STD-1553: *The Military Databus*

Mandated by the Dept. of Defense, 1553 is aboard numerous military aircraft and other vehicles.

Plus: Linear Token Passing, High Speed Ring Buses and others.

This book is based on official guidance prepared for government certifying agencies, design engineers and manufacturers. Includes a glossary of databus terms and a directory of databus manufacturers.

ASCB/CSDB: *For General Aviation*

These buses (by Honeywell and Collins) are in the cockpits of business aircraft.

Chapters on bus theory, architecture, bus integration, testing and regulations. Each bus---ARINC 429, 629, MIL-STD-1553, AFDX and others explained . 23 chapters and 3 appendices include:

1. Databus Architecture
2. Topologies
3. Protocol
4. Bus Interface Units
5. Bus Capacity
6. Bus Monitoring
7. Error Checking
8. Fault Correction
9. ARINC 429
10. ARINC 629 (DATAC)
11. MIL-STD-1553
12. SAFEbus (ARINC 659)
13. Linear Token Passing Bus
14. AFDX (Ethernet)
15. TTP (Time Triggered Protocol)
16. EFABus



Visit www.avionics.com for latest titles and prices

Aircraft Electrical Systems

Electrical Power in Aircraft - How It's Generated, Distributed and Used



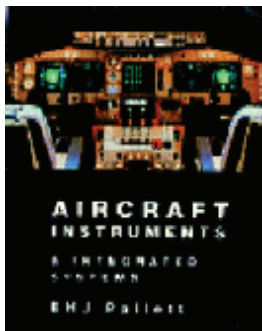
Aircraft Electrical Systems 256 Pages
Cat. No. AEL-1
Price: \$89.00

Subjects

DC Supplies	Power Distribution	Warning Indicators
AC Supplies	Circuit Control	Power Utilization by
Power Conversion	Circuit Protection	Systems and Motors
Auxiliary Power	Measuring Instruments	Electrical Diagrams

Ten Appendices: Electrical and Magnetic Units, Power in AC Circuits, Connecting Capacitors and Inductors, Fundamental AC circuits, Conversion Factors, Power Generation in typical aircraft, Symbols, Ice/Rain Protection, Abbreviations/Acronyms, Logic/Truth Tables

Up-to-date information on principles and application of equipment for the generation, distribution and utilization of electrical power. This edition adds digital signal processing and other new developments.



Aircraft Instruments & Integrated Systems
446 Pages Cat. No. AIN-1
Price: \$89.00

Aircraft Instruments & Integrated Systems

Operating theory and construction of instruments: mechanical, electromechanical and electronic.

How Information is indicated: circular, vertical and digital instruments

Display Technologies: LED, LCD, CRT, digital, head-up, panel lay-outs, plumbing systems for air data Technician, engineer and student: keep up to date on every conventional and new flight deck instrument, and how they integrate with other systems aboard the aircraft.

Contents: Gyroscopic instruments, air data, direct-reading instruments, synchronous data, digital data transfer, magnetic heading, flight directors, inertial navigation, EFIS, CRT, fuel quantity, engine power and control, airframe instruments, flight management systems.

Many charts and tables: Mach number/airspeed, temperature/resistance, temperature/millivolts, dielectric constants and fuel densities, symbols, abbreviations, logic gates, truth tables, acronyms, abbreviations

FCC License Home-Study

Learn at your own pace- at home, in your car, anywhere.

Everything is described in simple, everyday language with clear illustrations and explanations.

Even beginners can pass the FCC exam using the study materials supplied.

40 lessons on CD's. Complete discussion of exam questions Answers to actual test

All multiple choice exams included.

FCC Home-Study Course Cat. No. FCC-CP1 Price: \$189

This course has been used by the FBI, General Electric, Iowa State University, Embry-Riddle, ITT, US Navy and thousands of individuals at home. Recommended for A&P mechanics.

Manuals explain fundamentals in simple language for self-study

Includes CD's, textbook and workbook

US Aviation Registry on CD-ROM

Quickly locate any US aircraft or owner Print your own mailing lists and labels Covers over 230,000 aircraft

Search any combination of:

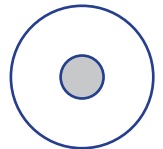
Works in Windows

N-number-Owner or Operator Name-Aircraft model-Serial number-Class of aircraft-Engine type-Location (state, city,zip) -Date of ownership

Search additional categories:

Air taxi operators-Repair stations-Certified aviation schools-New radio repairmen-New A&P mechanics-Airport managers-IA's Designated Alteration

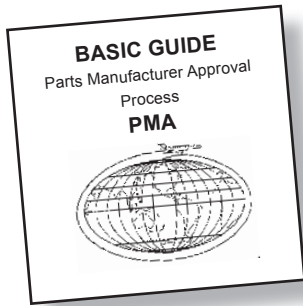
Stations Designated Mfr Inspection Reps Designated Airworthiness Reps Designated Mechanic Examiners Designated Pilot Examiners



US Aviation Registry CD-ROM

Cat. No. REGCD-1
Price: \$115

PMA Guidebook (Parts Manufacturer Approval)



PMA Guidebook
205 pages Cat. No. PMA-001 Price: \$149

How to meet FAA requirements for components not covered by a type certificate, approved inspection system or TSO

Every major event for obtaining a PMA certification is explained. Beginning with a review of the approval process, the text covers regulations and standards. This is a practical book, describing what to expect during your first phone call to an aircraft certification office (ACO), through the final audit phase.

The text discusses each requirement of a certification package; how to write a Fabrication Inspection System manual, and how to describe manufacturing processes, supplier control and tech manuals. It tells how to avoid pitfalls such as overly complex procedures and inadequate instructions---to avoid repeating common errors.

Now contains full text of latest FAA Order on PMA guidance

This book leads you through each PMA step, giving practical examples of letters, product illustrations, tech manuals, service bulletins and forms.

Safety Certification For Avionics Components



More avionics are required by law to pass a "safety assessment." This book leads you through all major steps---including fault trees, failure modes and other tools required by FAA Part 25.1309.

If you are designing a device critical to flight ---one that affects flight controls, displays, power supplies and others---certifying authorities will often require a "safety analysis".

Written by an expert in the field, this book leads you through each major step, using worksheets and formats that prove successful with FAA.

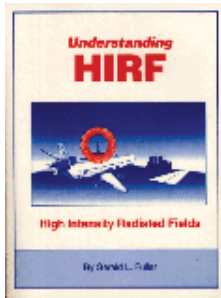
Step-by-step coverage of each major requirement: Functional Hazard Assessment. Reliability Prediction Failure Modes and Effects Analysis.

Fault Tree Analysis. Common Cause Analysis System Safety Assessment. System Validation

Performing a Safety Certification

126 pages Cat No. SAF-001 Price: \$95

Understanding HIRF (High Intensity Radiated Fields)



Understanding HIRF

138 pages Cat. No. HIR-001
Price: \$89

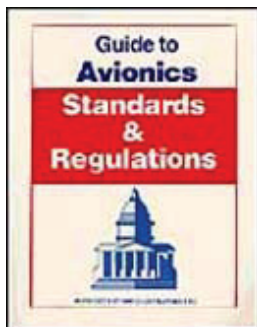
- Relates major technical and regulatory issues.
- Traces history of HIRF threat and response of regulatory agencies
- Explains theory and practice for hardening systems against HIRF
- Describes steps toward obtaining HIRF certification

A guide to certifying products to interference standards

This volume is written for anyone planning to protect aerospace components against electromagnetic radiation from ground emitters; radio broadcast, HF communications, radar, micro-wave, and industrial RF sources.

The author, Gerald Fuller, has trained over 500 FAA certification officials, corporate managers and avionics engineers in HIRF requirements. A former chief of Vulnerability Assessment, U.S. National Security Agency, he has 35 years' experience with EMI/HIRF issues and now works with SAE, IEEE, AIAA and Lawrence Livermore National Laboratory

Guide to Avionics Standards & Regulations



Guide To Avionics Standards & Regulations

260 pages Cat. No. STD-001 Price: \$79

Titles of documents affecting avionics are listed in one handy directory

- A reference for anyone who designs, manufactures or maintains avionics systems or aerospace components.
- Saves hours of searching through documents for relevant regulations.
- Reduces design and production error due to non-compliance.

Cross-referenced three ways:

1. By sponsoring agency (FAA, ICAO, RTCA, etc.)
2. By general area (flight control, instruments, databus, etc.)
3. By document number & title. Addresses are given for ordering the full text of any document from the sponsoring agency.

Gives titles of hundreds of regulations and standards;

ARINC Characteristics
RTCA Documents
SAE Aerospace Practises
Federal Air Regulations
Military Standards

ISO
ICAO Standards
IEEE
Genl Aviation Mfrs
DoD, NATO and others

FAA Airspace Modernization CD

Nine official documents that describe in detail every new system for the coming air traffic system. The ultimate reference for anyone who flies, designs or manufactures in the global aviation environment through the year 2015. Over 1,000 pages are quickly searched by any word or topic. A complete library of definitions, planning, graphics, technology description and implementation—all easily accessible

Major Topics Include:

Transition Plan: How today's systems will be maintained as new technology phases in over the next 12 years. **Navigation and Landing:** The changeover from ground-station navigation to satellite-based (GPS), augmented by Wide and Local Area Augmentation (WAAS and LAAS). The new basis for direct routing and precision approaches to most runways. How existing navigation systems will be retained as back-up. **Surveillance:** How today's air traffic radar (primary and secondary) will evolve into digital radar, automatic dependent surveillance (ADS) and the basis for Free Flight. Primary radar (skin return) will disappear from en route operations. New approach control surveillance will improve weather detection. Specialized radar will be dedicated to airport surface detection. Secondary surveillance radar will interrogate transponders selectively. Automatic dependent surveillance-broadcast (ADS-B) will provide airplane-to-airplane surveillance. **Communications:** The FAA will transition from analog voice to digital communications in NEXCOM. Datalink will reduce

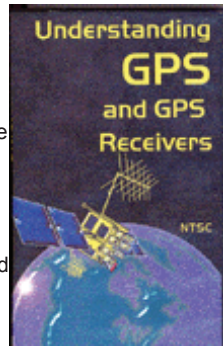
voice congestion. Ground-to-ground and administrative communications will integrate into a digital telecommunications system. **Avionics:** Aircraft will change over to satellite technology for navigation, landing and reporting position information (to the ground and other aircraft. Multifunction traffic cockpit displays will show nearby aircraft, weather, maps and data. **Traffic Management:** ATM (Air Traffic Management) will replace ATC (Air traffic Control) to reduce congestion and delay. A system-wide network will consolidate numerous systems and enable users to share services. En route computers will receive new hardware, operating systems and controller positions. Oceanic aircraft tracking, now done manually, will be accomplished by satellite data link. **Many other changes are described**—for improving terminal operations, better tools for tower and airport surface operations and widespread remote monitoring for reducing delays. Hundreds of images, charts, tables, presentations and documents on the new global airspace.



**FAA Airspace
Modernization on CD**
Cat No. NAS-CD
Pages: 1100
Price: \$95.00

GPS Explained (DVD or Video)

Combining live action and animation, this video covers system configuration, signals, coordinate systems, receiver capability, sequencing, multiplexing, multi-channels, differential GPS, accuracy, GDOP, selective availability, GLONASS and more. Concepts are presented by film, video clips, charts and other graphics. Produced by K. McDonald, foremost GPS authority and trainer, formerly of FAA, DoD and President of Institute of Navigation.



GPS and GPS Receivers -
45 minutes. DVD- Cat. No. GPS-1

SATCOM Fourth Edition

Latest Satellite Communications Techniques

Orbits: Earth, inclined, sun, geostationary, drag, perturbation, coordinate systems, eclipse, visibility, Kepler's Laws.

Radio Wave Propagation: Losses, ionosphere, rain.

Polarization: Signal and antenna, cross-, rain/ice

Antennas: Radiated fields, power flux, isotropic radiators, patterns, beam, angle, gain, aperture, parabolic.

Space Segment: Attitude control, stabilization, station-keeping, transponders, receivers, demultiplexer, amplifiers. **Earth Segment:** Antennas, transmit-receive, earth stations.

Digital/Analog Signals: Pulse code, time division, bandwidth

Satellite Access: FDMA, TDMA, CDMA

Interference: Types, sources

Charts, Tables, 8 Appendices



Satellite Communications

636 pages

Cat. No. STL-01

Price: \$99.95

Global Positioning System: Theory and Applications

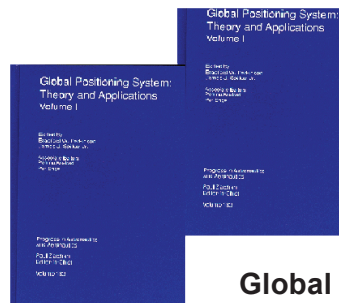
Two-volume set covers GPS technology ---from fundamentals to practical systems

Volume 1

GPS signal structure and operation
The satellite constellation
GPS receivers
GPS error analysis
Ionospheric and tropospheric effects
Multipath
Ephemeris and clock nav messages
Selective availability
Interference and mitigation

Volume 2

Integrity monitoring
Wide Area Differential GPS
Wide Area Augmentation System RAIM, GLONASS, integrated systems
Precision and automatic landings
GPS for attitude control
GPS carrier phase (Partial contents)



- Over 1400 pages
- Written by GPS authorities
- Editorial Board: U.S. Air Force Academy, Mitre, Lockheed-Martin, and these universities; Michigan, Texas A&M, Stanford and Colorado

Recommended for practicing engineers, managers, and engineering students

Global Positioning System: Theory and Applications 2 Volumes

1,413 pages Cat. No. GP-2V Price: \$189

New Edition: Trammell's Weather Radar Training

For 25 years, Archie Trammell has been acclaimed as the world's leading instructor in the operation and interpretation of airborne weather radar. This DVD is based on his seminar, presented to hundreds of major airlines, corporate flight departments, the military and governments.

Mr. Trammell brings clarity to subjects which confuse the most experienced pilots; "black holes," attenuation, how to adjust gain control, proper ground-mapping to avoid terrain collision, correct use of tilt control, measuring cloud tops, recognizing hazardous storm contours and gradients, predicting turbulence, understanding side lobes and in-flight calibrating the display

Illustrating with actual weather accidents, he answers each problem, often with easy-to-remember rules-of-thumb. Professional pilots come away from Trammell's seminar amazed at what they didn't know!

Over 35,000 pilots have been trained on these materials; American, Alaska, Continental, Northwest, United, USAir, FAA, NASA, all military services and over 3,000 corporate flight departments.



Weather Radar Training DVD
1 hr 45min

Cat. No. WRV-DVD

Price: \$229

Spells out over 8,000 Avionics Terms

For the first time in a single volume, you can rapidly locate unknown avionics terms in the civil

Need to translate an industry standard or government program? Just look up the MIL-spec,

FAR, SAE or ARINC number--and you'll find

Sources include: government agencies, mili-

ARINC- FAA- RTC A- SAE- IEEE- AI A- ATA- AI AA- NASA-ICAO-GAN1A- EUROCAE -AIEM - ISO- DOD -CAA- AOPA-AEA-DOT- ALFA- AOCI-ATCA-AFCEA- JAA-NBAA-FSF - NATA NATO- PAN1A-SITA-INMAR-SAT

This book is based on more than 3000 documents of technical associations,

A Time-Saving Reference for Engineers • Technicians • Marketers



Avionics Acronyms & Abbreviations
160 pages Cat. No. ACR-001 Price: \$69

Fundamentals of High Accuracy Inertial Navigation

The text is divided into three parts: inertial navigation, inertial explain the fundamentals without requiring knowledge of statistical analysis which determines the effect of errors on accuracy. The third part defines criteria for accuracy, then leads the reader through the process.

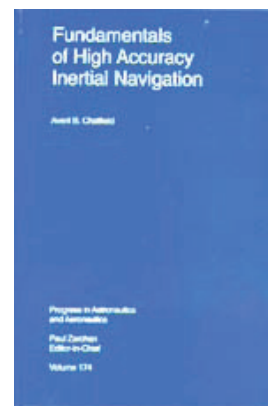
This book is intended for third- or fourth-year engineering students, as well as professional engineers and scientists trained in mathematics, control theory, analytical mechanics, geodesy, or physics. It is a valuable text for anyone with a need to understand inertial navigation's basic principles.

Major Topics

- Inertial Navigation
- Notation, Coordinate Systems, and Units
- Equations of Motion in a Central Force Gravity Field Inertial Instrumentation
- Calibration
- Initial Alignment and Attitude Computation
- Geodetic Variables and Constants
- Equations of Motion with General Gravity Model
- Inertial Navigation with Aids
- Inertial Navigation with External Measurements
- Error Equations for the Kalman Filter
- State Variable Error Models Accuracy Analysis
- Error Equations for Calibration, Alignment, Initialization Evaluation of Gravity Model

Written for students and engineers, this book covers physical and mathematical principles which define any INS system

Editor-in-Chief: Paul Zarchan
Draper Laboratory



Fundamentals of High Accuracy Inertial Navigation Systems
by Avril B. Chatfield
337 Pages Cat No. INS-2 Price: \$105.95

Dvd's on Airbus and Boeing Avionics



**BOEING
767-300ER**

Boeing 767-300ER

80 min.

Cat. No. 767-DVD \$69



**BOEING
747-400**

Boeing 747-400

60 min.
Cat. No. 747-400-DVD \$69



AIRBUS

Airbus A320-200
85 min.

Cat. No. A320-\$69

See the 777 during an actual flight.



Boeing 777 1 hr-41 min.

Cat. No. 777-DVD \$89

Flat Panel "Glass Cockpit" including 6 LCD displays
Fly By Wire: Control surfaces are operated by digital signals
Cursor Control Device: A touch sensitive pad and display screen

Subjects include:

EFIS, EICAS, flight management, nav, com, weather radar, fly-by-wire, TCAS, autopilot, autoland and flight operations.

