



AIRCRAFT EFIS/EICAS Trainer (CBT-100D) is a complete and fully functional simulation of typical aircraft cockpit. It includes essential flight, engine and pitot-static instruments. This training set provides hands-on maintenance training while also functioning as a demonstration tool for instructors. It demonstrates the principles of gyros, altimeter and the engine instruments, and also can be used for teaching of instrument removal and replacement.

**NOTE:** If you wish to upgrade this system with navigation systems such as VOR/ILS/VHF, please contact us.

**NOTE:** The trainer can be customized with sensors and indicators according to your training needs. Please contact us for your special requests.

This trainer also allows to perform practical tasks of EASA PART 147 ATA-31-00-00.

## Specifications

### Features

- The system combine, “primary flight instrumentation”, “aircraft systems instrumentation” and “engine instrumentation”.
- Trainer use the latest in GPS and Digital ADAHRS (Air Data and Attitude Heading and Reference Systems).
- “Air Data and Attitude Heading and Reference Systems” provide highly accurate and reliable referencing of aircraft position, rate, vector and acceleration data.
- Three degrees of freedom instrument panel permits full demonstration of attitude and directional gyro functions.
- Functional engine monitoring system be connected to engine sensors.
- Primary flight display be mounted on a panel that can simulate roll, pitch, and yaw movements controlled by a mechanism operated by a control yoke.
- Provision of engine sensor simulation.
- Pitot-static system to conduct pitot static system checks for digital instrument at the trainer.
- Instructor’s Panel for fault insertion.

## Components

- **Smart PFD-MFD Screen**
- **Engine Data Modules**
- **Sensors**
  - Oil Temperature Sensor
  - Carburetor Air Temp Sensor
  - Manifold Pressure Sensor
  - Fuel Level Sensor
  - Oil Pressure Sensor
  - Fuel Pressure Sensor
  - Engine RPM Sensor
  - Fuel Flow Sensor
  - Ammeter Shunt
  - CHT Thermocouples (Qty 4)
  - EGT Thermocouples (Qty 4)
  - OAT Sensor
  - Pitot Tube
  - Static Port
  - Inductive sensor
- **GPS receiver / antenna**
- **Aircraft circuit breakers.**
- **Throttle Lever**
- **Propeller Lever**
- **Pitot-Static System:**
  - Pitot Tube
  - Fuselage Static Port
  - Alternate Static Port
  - Static Source Selector Switch
  - Two Test Ports for Pitot-Static Test Set
- **Power**
  - Main Power
  - PDF
  - Tachometer
  - Vacuum Pump
- **Contacts:**
  - Pitot Heater
  - L/G
  - Taxi Light

- **Auxiliary Flight Control:**
  - Aileron Trim
  - Elevator Trim
  - Flap Position
- **Electronic Simulation of Sensors:**
  - Oil Temperature Manifold Pressure
  - Engine RPM
  - Oil Pressure
  - Fuel Level
  - Fuel Press
- **Sender Selector Panel**
  - Fuel System
  - Oil System
- **Vacuum Control Panel**
  - Static System Instrument
  - MAP
  - Fuel Flow

## Components Technical Specs

- **Smart PFD-MFD Screen**
- **NOTE:** Smart PFD-MFD Screen brand/model and some technical specs can be change due to market availability. ( Dynon-Bendix-Garmin or similar )
- Screen is very bright and high-resolution driven by advanced graphics processors create highly visible and readable display.
- Display is 1280 x 800 pixel, 1200+ nit TFT active-matrix capacitive multi- touch LCD screen.
- High-Definition Touch Screen
- Display Connectors Specification
  - There are 37-Pin DIN Connector for the main wiring harness.
  - There are four (4) RS-232 connector ports for connection to compatible equipment.
  - All serial ports have configurable baud rates and data formats for use as general-purpose inputs and output.
  - There are minimum three (2) USB Connectors.
  - There is an Ethernet Connector to be used to synchronize data between displays.
- Displays operate between 10- and 30-volts DC.
- Display show “engine instrument data”
- Display show “flight instrument data”

## Components Technical Specs

- Screen Dimensions
  - 7.64" 7.64" Wide
  - 5.59" High
  - 3.13" Deep
- Users should be able to interact via the two knobs, two buttons integrated into the knobs, and eight buttons along the bottom of the display's bezel and via touch gestures on the display screen itself.
- Display have a robust GPS moving map.
- Display backlighting is controlled by its ambient light sensor to actively adjust the brightness based on the current lighting conditions or user should be able to adjust the brightness by buttons.
- The default layout of screen show below
  - PFD
  - MAP
  - ENGINE
- Screen switch into 100% window or 50%/50% split windows.
- There is Count-Up/Count-Down timer in the display.
- PFD Page Layout have at least the following:
  - Airspeed Indicator
    - Ground Speed (GS)
    - True Airspeed (TAS)
  - Airspeed Bug
  - Airspeed Trend Rate
  - Attitude Indicator
  - Flight Path Marker
  - Altimeter
    - Setting Barometer (BARO)
  - Altitude Bug
  - Altitude Trend Rate
  - Barometer Setting, and Density Altitude.
  - Vertical Speed Indicator
  - Vertical Speed (VS) BUG.
  - Heading Indicator/Directional Gyro
  - Heading (HDG) BUG
  - Slip Ball
  - Angle of Attack Indicator

## Components Technical Specs

- OAT(Outside air temperature)
- Winds Aloft magnitude and vector
- Artificial Horizon/Synthetic Vision
- Menu Page have at least the following:
  - Six Pack
  - G-meter
  - Terrain Alert
  - Airport Flags
  - HSI SRC
  - Bugs
- There is a Six-Pack presentation options on the PFD.
- Main Menu bar are at the bottom of the screen and should include following functions:
  - NRST – Nearest:
  - Info page
  - FPL – Flight Plan
  - INFO
  - MENU
  - Message( NO MSG / MESSAGE / CAUTION / WARNING )
- KNOPs functions have at least the following:
  - Adjust Bug (HDG, ALT, etc.)or BARO value
  - Change Map scale
  - Activate and/or move cursor
- Flight Data Modules have at least the following:
  - All sensors should be solid state.
  - Accelerometers, which measure forces in all three directions
  - Rotational rate sensors, which sense rotation about all three axes
  - Pressure transducers for measuring air data
  - Magnetometers on all three axes for measuring magnetic heading.
- Engine Data Modules have at least the following:
  - These modules support popular four and six-cylinder engine installations and should measure a variety of engine and environmental parameters, such as:
    - RPM
    - Manifold pressure
    - Oil temperature

## Components Technical Specs

- Oil pressure
- Exhaust gas temperature (EGT)
- Cylinder head temperature (CHT)
- Fuel levels for multiple tanks
- Voltage
- Current
- Fuel pressure
- Fuel flow
- Carburetor air temperature
- Coolant pressure and temperature
- Flap and trim potentiometers
- External contacts
- Fuel Computer
- Pitch Trim Indicator
- Roll Trim Indicators
- Flap Indicator

## Documentation

- User's Manual
- Study Guide
- Instructor's Guide
- Device's original Manual
- Device's original Wiring Diagrams
- Components Diagrams

## Power Specs

- Electrical box
- Residual current device
- Emergency Button
- Energy Signal Lamp
- 110 VAC 60 Hz or 220-240 VAC 50 Hz

## Others

- GPS receiver / antenna
- Aircraft circuit breakers.
- Throttle lever.