TACTICS AND PROCEDURES TRAINER (TPT)

COMPRO's Tactics and Procedures Trainer (TPT) provides a high-fidelity, high-performance training solution at a fraction of the cost of other training devices that use real aircraft avionics. The TPT's flight controls and displays are driven by realistic computer simulations of the actual aircraft's systems, providing accurate responses to pilot input.

By simulating the aircraft's systems, autopilot, and navigational and operational instruments, COMPRO's TPT allows a large number of pilots to be trained to a consistently high level of competence in a short time.

FEATURES

- **Highly-accurate On-board System Models**

- **170º FOV Visual System**

- **Full Cockpit Replica**

- **Modular Software Design**

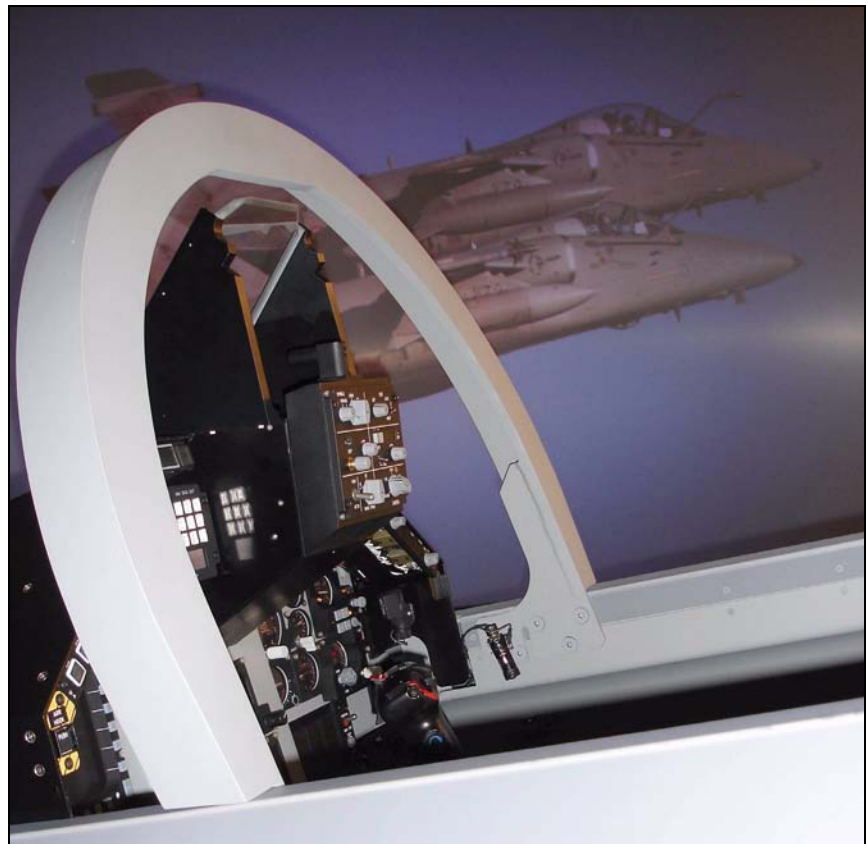- **Mission Planning/ Debriefing Facilities**

- **Active Tactical Environment**

BENEFITS

- **Realistic Training**

- **Low Maintenance**

- **Expandability**

Capabilities

The TPT is ideal for pilot familiarization, mission rehearsal, and most flight operations, which includes:

- Radar and weapon systems training
- Combat scenario development tools
- Attack training
- Real-time scoring mechanisms
- Navigation training
- Realistic audio
- Navigation systems training

- Dynamic tactical scenarios
- Instruments flight training
- Network connectivity
- Independent pilot/user operation
- Advanced avionics and sensors
- High fidelity cockpit replicas
- Full systems integration

Cockpit

The cockpit is a faithful replica of the third batch, single place aircraft cockpit, from the lateral panels to the pedals. This includes a replica head-up display, instrument panel, and seat.

All functional controls, instrument panels, and cockpit hardware used are representative of the actual aircraft parts and reflect the same mechanical characteristics; that is, look, feel, and operate like the actual component. Non-functional components include silk-screened panels and components that are not connected to the I/O system.

Controls are representative of the actual aircraft. Primary flight control is through an electric control loading system and secondary flight controls using replicated components. The rudder pedals have the aircraft's position and adjustment capabilities.

Cockpit lighting (interior, light plates, and placards) closely resembles the actual aircraft lighting system including where feasible, the color of the light plates.

The cockpit seat is a mock-up of the actual aircraft seat and is equipped with simulated harness and non-functional oxygen regulator controls. The seat is electrically adjustable in height.

Instructor/Operator Station (IOS)

The IOS is equipped with two large color graphic monitors that operate via a high-performance personal computer and are designed to minimize the instructors' workload while maximizing control/visibility over student activities. The IOS configuration includes an illuminated writing area for the instructor as well as a joystick for Man-In-The-Loop (MITL) operations.

The IOS uses COMPRO's Modular Universal Simulation Environment (MUSE™) software, which includes support training in emergency procedures, instrument flight, and air-to-air and air-to-ground combat within a dense threat environment. MUSE™ has an intuitive graphical user interface (GUI) that provides the capability to:

- Perform mission planning, which is comprised of the development and modification of tactical/ visual scenarios.

- Initialize and control multiple facets of the mission training exercises while simultaneously monitoring student operations/flight path.

- Store executed missions for After Action Review (AAR)/debriefing purposes.

- Communicate with the student and control aircraft sound volume.

Visual System

COMPRO uses standard personal computers to generate the Out-the-Window (OTW) imagery and display it on a three-channel high-resolution rear-screen graphics projector system. This configuration provides the pilot with a greater than 170° Field of View (FOV).
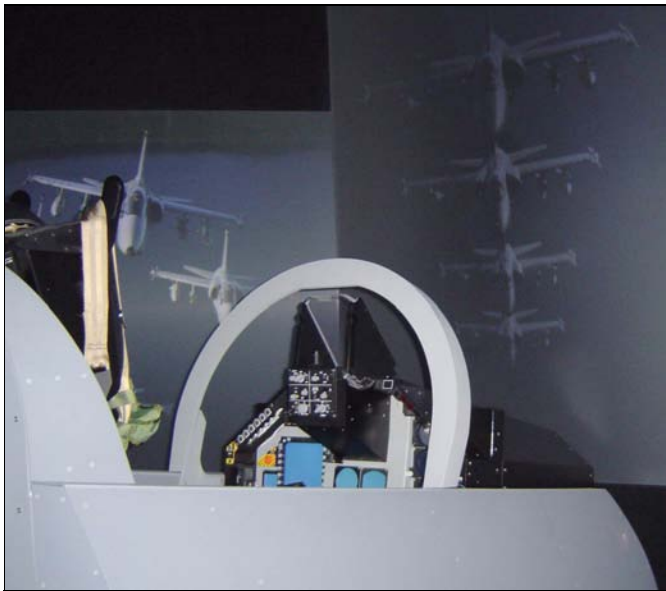
The TPT includes one 300 nm x 300 nm visual database consisting of approximately 90% land and 10% seashore.

The image generation features provide:

- 3-D textured terrain
- 3-D fixed models
- 2-D culture
- Mobile targets (at least six simultaneously)
- Special effects (tracer, shading, etc.)
- Meteorological conditions (clouds, haze/fog, snow, rain, lightning)

Debriefing Station

The Debriefing Station consists of a commercial-off-the-shelf PC and peripherals that perform debriefing sessions remotely, thereby allowing the TPT to continue training other pilots.

The Debriefing Station has an easy-to-use graphical user interface (GUI) that provides the capability to:

- Control the speed and direction during the playback of the recorded mission (frame-by-frame, forward, rewind, fast forward, stop).
- Move the eye point to any angle in the mission arena.
- Display a log with time stamps of all events that occurred during the mission, including switch movements and emergencies.
- Display cockpit indicators for visual reference.
- Show the position and movement of all players in the arena using trails. The trails show yaw, pitch, and roll of the moving object, bomb drops, and ordnance impact points.

Computational System

The computational system, which uses commercially-available personal computers, executes all the necessary and relevant calculations in order to simulate the procedures training of the TPT.

The system is designed to ensure future growth capacity and spare processing capability.

SDF and VDF

The software provided as part of the Software Development Facility (SDF) enables you to modify and update the TPT software (that is, the simulation, data acquisition/simulation, instructor station software, etc.).

The SDF provides the means to:

- Alter aircraft and systems characteristics.

- Modify/activate malfunctions and abnormal conditions.

- Change ordnance load configurations and armament characteristics to follow the aircraft make and model.

- Create/modify radio stations and navigation aids.

- Create/modify software models.

The Visual Database Development Facility (VDF) provides the means to:

- Create/modify the tactics scenario/training area.

- Perform terrain modeling using unclassified Defense Mapping Agency (DMA) digital terrain elevation data (DTED), satellites images, maps, charts, photos, etc.

- Create/modify 2- and 3-dimensional moving and fixed models.

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