PREDATOR MISSION AIRCREW TRAINING SYSTEM (PMATS)

The First Choice in High-Fidelity Simulation for Predator/Reaper Aircrew Training

L3 Link Training & Simulation's Predator Mission Aircrew Training System (PMATS) is ushering in a new, advanced level of simulation to train pilots and sensor operators. PMATS consists of a form, fit and function interface for the pilot and sensor operator stations that uses ground control station hardware from General Atomics Aeronautical Systems, Inc., builder of the Predator and Reaper aircraft.

Link has integrated this hardware with training system software to produce a high-fidelity training system that is unequaled within the unmanned aircraft system (UAS) market today.

As part of its high-fidelity solution, PMATS models Predator MQ-1 and Reaper MQ-9 systems, sensors and weapons. Robust environmental simulations support both initial qualification and mission training, including emergency and abnormal procedures training. PMATS also is integrated with instructional systems, including an Instructor Operator Station (IOS) that supports brief and debrief capabilities. To support collective training exercises, multiple PMATS units can be linked over both local and long haul networks for Distributed Mission Operations (DMO).

HIGH FIDELITY USER INTERFACE

For students training within a PMATS, the level of realism between simulated exercises and real world operations is transparent. Use of OEM production pilot and sensor operator station hardware ensures all training exercises have a realistic look and feel. As a result, pilots and sensor operators can easily transition to operating Predator or Reaper aircraft.

TRAINING ENVIRONMENT

Learning how to operate the UAS systems under a wide range of environmental conditions is key to mission success. As a result, Link has developed a PMATS training environment that accurately simulates real-world conditions that aircrews experience.

This high-fidelity database environment simulates variations in thermals, slope winds, wind shear, visibility, icing and runway conditions.

REALISTIC DATALINK

In an environment where the command and control datalink is the pilot's and sensor operator's connection to the aircraft, Link has developed a datalink model that enables the instructor to introduce realistic operational conditions. The capability includes selectable signal delay for both satellite uplink and down link, degradation, malfunctions, loss of link and remote video terminal (RVT) operation.

EMERGENCY PROCEDURES

PMATS allows instructors to introduce numerous comprehensive simulation-based emergency procedures and malfunction scenarios during a training exercise. As a result, students can undergo training - without putting UAS platforms at risk - that enables them to develop key competencies.

Instructors use the PMATS IOS to introduce aircraft, systems and sensor malfunctions or degradations. These malfunctions can impact control surfaces, engine performance, aircraft systems and a full range of sensors, including Day TV, infrared sensor, synthetic aperture radar and Hellfire targeting systems. PMATS also has a built-in capability to support future mission requirements, including multi-aircraft control.

INSTRUCTOR OPERATOR STATION

L3 Link's PMATS IOS has been designed to support UAS operators' unique instructional requirements. The result: an easy-to-use IOS that provides extensive capability and rapid access to all instructional functions.

A single instructor can support crew training, two instructors can oversee individual pilot and sensor operator training or students can initiate their own training exercise. The IOS also enables instructors to set conditions or introduce malfunctions while viewing student behavior. The IOS also supports the ability to conduct playback for mission debrief.

DISTRIBUTED TRAINING

Simulation-based distributed training involving multiple platforms is helping warfighters better prepare for future coordinated actions. Link has designed PMATS to participate in this environment via the U.S. Air Force's DMO portal, enabling aircrews to conduct collaborative mission level training with other DMO-compliant platforms.

CONCURRENCY MANAGEMENT

PMATS supports system upgrades on all Predator and Reaper variants. Easily updating PMATS is made possible through use of actual platform operational flight program software. Before system upgrades are fielded they are verified on a PMATS development platform L3 Link operates at its System Support Center. This thorough level of concurrency management supports modifications to the Predator MQ-1 and Reaper MQ-9 training system upgrades.

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