MPAT Single Gunner/Single Pilot Training

Immersive Technology Brings New Dimension to Single Gunner/Single Pilot Training

Kratos' new Multi-Position Aircrew Trainer (MPAT) provides rotary-wing warfighters with a complete capability for single Gunner/single Pilot concurrency and proficiency training in an easily reconfigurable modular system. The MPAT is equipped with blended live and simulated mission equipment facilitating training under day, night and NVG conditions. The MPAT includes a Gunner Station mounted in a Kratos 'Holodeck' Mixed Reality (MR) enclosure; a Pilot Station; an Instructor Operator Station (IOS), rack-mounted computational system, and M240, M134, or other simulated weapon system.

The Gunner Station can be reconfigured virtually and physically to either a right or left crew position, replicating actual aircraft workstation environments and equipment. MR technology allows crew to experience real world tasks such as reading live checklists and conducting weapon readiness checks, without removing or looking under their head-mounted display (HMD), while interacting with virtual training scenarios making training natural and realistic. Initial qualification, refresher and continuation training plus scenario-driven system currency and proficiency training events can be achieved and quantified.

The Pilot Station, with a virtual reality (VR) HMD, is reconfigurable to either a Pilot or Copilot position depending on the desired training scenario. The cyclic and collective replicate helicopter physical controls including force trim function, collective friction control, control loading, and Heading/Speed Indicator (HSI). The addition of this pilot station enables defined specific aspects of Crew Resource Management (CRM) and coordination to be enabled for complete currency and proficiency training and sign off.

Enhance Training Efficiency

Kratos MR technology is deployed in service with the U.S. Air Force Global Strike Command (AFGSC), significantly increasing combat readiness rates for AFGSC aircrew The ability to customize the MR enclosures for different platforms and training scenarios, coupled with the benefits of immersive technology, makes training more affordable as well as more effective. The modular components are readily configured to fit in a standard classroom through a standard door, with the system operating on domestic power.

Kratos' methodical approach to our customers current Pilot and Aircrew training challenges has quantitatively improved their Aircrew readiness by increasing student throughput, reducing student attrition, as well as reducing syllabus training durations. Additional cost benefits include not needing to dedicate operational aircraft for training, scheduling/availability and associated costs involving aircraft live ranges, or the costs of using live ammunition. The Kratos MPAT solution also addresses training delays caused by aircraft availability, weather delay/cancellations, and student re-fly sorties.

MPAT System Configuration

Mixed Reality (MR) Enclosure

Rack-Mount Computers

Instructor Operator Station (IOS)

- Height Adjustable Workstation
- IOS Computer
- Displays
- Keyboard and mouse
- Audio Headset with PTT buttons
- After Action Review (AAR) Recorder

Reconfigurable Gunner Station

- Gunner workstation – Platform specific
- M240/M134 simulated weapon with mount
- ICS Cable and Push To Talk (PTT) button
- Ambient speaker
- After Action Review (AAR) camera
- Reconfigurable (from left to right) door frame
- MR Head Mounted Display (HMD) with head tracking

Reconfigurable Pilot Station

- Pilot Seat
- Virtual Reality (VR) helmet-mounted display
- Collective, cyclic, and pedals replicate helicopter controls
- Reconfigurable from left to right seat
- Includes Heading/Speed Indicator (HSI) knobs
- ICS Cable and PTT button
- Ambient speaker
- AAR camera

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