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PTN-X: A Virtual Reality Testbed for Flight Training Experiments

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Abstract: This presentation describes a virtual reality (VR) testbed, Pilot Training Next – Experimental (PTN-X), which we designed to explore methods and technologies to make flight training more effective. There is a widespread pilot shortage across military and commercial sectors. For example, estimates suggest the USAF could be roughly 1,600 pilots short by the year 2023. One way the DoD is addressing this shortfall is through training innovation leveraging VR technologies. As part of this effort, we evaluated the effectiveness of VR-based training within the Airmanship Next program at USAFA using a quasi-experimental approach. Cadets transferred a number of skills to the live flight environment including takeoff, general knowledge, and emergency procedures and increased their perceived self-efficacy associated with flight. The results of this study informed the design of PTN-X and our initial proof-of-concept study to take place after the Coronavirus Pandemic.

Keywords: Virtual Reality, Pilot Training Next, Training Innovation