



U.S. Army Research Institute for the Behavioral & Social Sciences

FACT SHEET



RWARU – Use of Simulator Research Facility for Rotary Wing Training

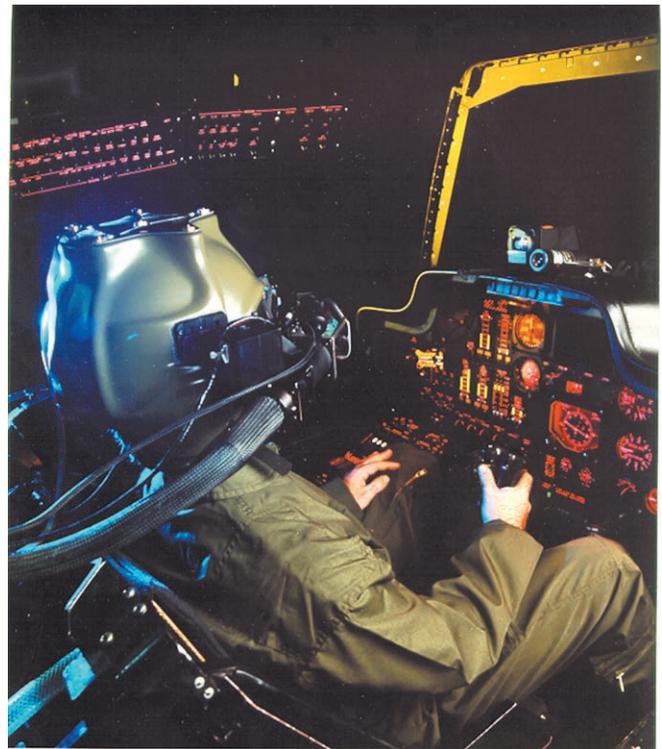
Summary

The Army Research Institute, at its Rotary-Wing Aviation Research Unit (RWARU) located at Fort Rucker, Alabama, operates the only flight simulation research facility dedicated to examining the design and functioning of flight simulators in rotary wing flight training. This device, called the Simulator Training Advanced Testbed for Aviation or STRATA, is used in RWARU's research program to provide a full-mission capability to examine fidelity and training issues for flight students.

Located at the Army Aviation Center, Fort Rucker, Alabama, the STRATA is a set of simulators and simulation tools used to examine the relationship between simulator fidelity and the transfer of aviator skill to the flight environment. Located in the facility at ARI's Rotary-Wing Aviation Research Unit (RWARU), STRATA consists of a full-mission AH-64A Apache flight simulator, an OH-58D Kiowa Warrior simulator, a TH-67 simulator and numerous developmental devices. RWARU's simulator building is networked to other simulator building on Fort Rucker and can provide its simulations via Distributed Interactive Simulation/High Level Architecture (DIS/HLA) protocols through a fiber optic link. By using the Defense Simulation Internet (DSI) STRATA simulators can be "virtually anywhere". These devices have been used in a host of experiments, demonstrations, and exercises ranging from an examination of the use of a total simulation approach for Apache pilot qualification course, the evaluation of the mission effects of Air Warrior NBC protective gear, to preparation of FORSCOM units for deployment to Bosnia.

Aviation Training Exercises (ATX)

Over the last few years a series of exercises were carried out at Fort Rucker employing a number of simulation assets at the U.S. Army Aviation Center

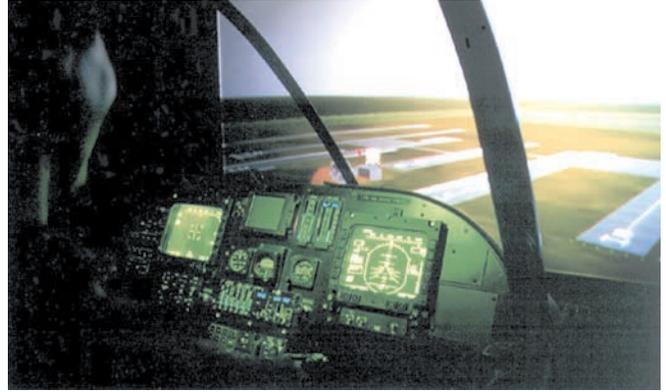


(USAAVNC). Among the tools employed to execute these simulated missions was the U.S. Army Research Institute's (ARI) OH-58D, Kiowa Warrior simulator one component of RWARU's STRATA. This simulator represents the flight characteristics and mission package of the Kiowa Warrior aircraft. The primary purpose of the most recent series of exercises was to support aviation units in preparation for their deployment to Bosnia. These Aviation Training Exercises (ATX) allowed the task force leaders to deal with changing variables and diverse missions, in an environment as close to the real world as possible. These mission rehearsals allow for interaction between pilots and ground forces. Through the use of simulation, aviators were able to respond during missions as though they were flying over Bosnia.

BUCS Training

ARI has been recently charged by the PM Apache with providing a mechanism for training Apache students in the finer points of the Apache's Backup Control System (BUCS). This will result in an upgrading of the AH-64A simulator with a more flexible image generator, database development capability, new display devices, and a new, updated host computer system. Beginning in January 2001, STRATA's Apache simulator will be used one week per month by students attending the AH-64 aircraft qualification course (AQC) to gain familiarity with the control systems changes which occur when the Apache's primary control system is compromised and the BUCS begins to function.

This continuing support for the Apache AQC and the training of FORSCOM units makes the STRATA a truly multi-use facility. This concept mixes the best flight simulation tools the Army has with an ongoing research and development program in order to capitalize on the synergy which obtains when real world needs are met in an R&D environment. Efforts at STRATA have focused on flight training research, mis-



sion training, and testing of crew effectiveness while using new equipment. STRATA's ability to represent and simulate the Apache and Kiowa Warrior in all flight regimes, together with its flexibility and data collection capabilities, make it a unique tool for the testing of new concepts in a robust tactical aviation environment.

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