Student Revs Up Flight Simulator

By Ensign Eric L. Petersen

How do you add an edge to your flight training experience? Follow the lead of Ensign Herb Lacy, a student aviator in Training Air Wing (TRAWING) 4 at NAS Corpus Christi, Texas . . . design "the edge" yourself. With the help of an off-the-shelf flight simulator program and some software add-ons that he developed, he found the edge he was looking for—and he never left his chair.

Ens. Lacy spent his off-duty hours enhancing the flight simulator program on his personal computer to give it the look and feel of a T-34C *Turbo-Mentor* training aircraft. "I bought a flight stick, rudder pedals and even a throttle to apply the techniques and procedures that we learned in aeronautics and engines classes," Lacy said. "Once I went through navigation class, I couldn't be stopped." He also added local Corpus Christi landmarks and visual references. "I was flying around Corpus Christi before I even checked out of API [Aviation Preflight Instruction at NAS Pensacola, Fla.]."

Lacy wanted to get ahead, and he ended up becoming one of the best student Naval Aviators to complete primary flight training. According to Rear Admiral Michael Bucchi, Chief of Naval Air Training, Ens. Lacy then "pegged the top of the grading scale" during intermediate flight training. The Navy is hoping the program that helped him will also help future students.

The Assessment Division of the Chief of Naval Education and Training (CNET) is studying the feasibility of using commercially available computer simulator games as an educational tool. The Micro-Simulator Systems for Immersive Learning Environments (MiSSILE) project is being conducted by the University of Central Florida's Institute for Simulation and Training to determine how well the new training concept works, and where it can fit into the current flight training syllabus.

The MiSSILE project began in 1997 when the Assessment Division began searching for a deployable simulation to complement existing training tools. According to Commander Mike Kennedy, Deputy Director of the Assessment Division, the fleet needed a flight training tool that could help pilots practice what are called perishable skills. "A pilot's carrier landing ability degrades over time with lack of use, and some type of simulation program is needed to help bring pilots up to speed before carrier deployments," he explained.

After an investigation of the large fixed-base simulators already in use, desktop simulators developed by software companies were considered as a viable option. Kennedy added, "This technology has the potential to be an affordable way to enhance basic skill development and sharpen pre-existing skills, and it allows the practice of tactical thinking every day."

During the research it was discovered that student Naval Aviators had been using Microsoft Flight Simulator 98 as a way to help themselves prepare for their flights. Lacy had been assisting some of his fellow student pilots, and the word spread about the program that he developed. The concept was brought to the attention of RAdm. Bucchi. "I was absolutely flabbergasted by what I saw. Never have I seen any student or instructor buy software and modify it to enhance training. What he has done is impressive," the admiral said.

While other students had already been using the program to assist in their training, no one had

taken it to the level that Lacy did.

Cdr. Kennedy came across Lacy when he was questioning flight instructors and students about the viability of desktop simulation. Because of Lacy's experience with the software, Kennedy put him in contact with the Institute for Simulation and Training to assist in the development of the MiSSILE project. The finished simulation program to be used by the Navy will be a combination of what Ens. Lacy was able to accomplish and the results of his collaboration with the institute.

RAdm. Bucchi stated that "this will enhance the training. The more you can visualize the process the better you can get." This learning tool will mark a change from the way students used to try to learn about the flight environment. The admiral described learning how to fly by sitting in a chair in his home, closing his eyes and visualizing everything he would have to do in his next training flight. He would lay out cards with procedures written on them and then "fly" his chair around the room. With the new simulators, students will be able to see what previous student Naval Aviators have been trying to visualize for years. Pilots can also work on aspects of their training that are giving them trouble. They will be allowed to stop the program and review until they feel comfortable, thus saving time in the air.

According to Cdr. Kennedy, the new simulators will not be used as a replacement for actual training flights, but as a tool to make more effective use of flight time. The syllabus will remain unchanged.

The use of commercially available training tools is new in the procurement process. Instead of the military having to turn to the commercial sector to ask for a particular product to be designed and built, military officials can go "shopping" among the off-the-shelf products, in this case, simulation games.

This type of lifelike simulation on a desktop computer has become available only within the last few years. As the capabilities of computers have increased, so have demands from the private sector for realistic games. The huge demand has pushed the price of these simulation games down, allowing the Navy to step in as just another PC gamer. The cost to the Navy for having to produce these programs would have been prohibitive.

The simulators are scheduled for delivery in May, and NAS Corpus Christi will be implementing a new learning resource center to accommodate them. Cdr. Kennedy expects to receive 8 to 10 T-34C simulators and two T-44A *King Air* simulators at a combined cost of about $72,000.

Ens. Lacy "turbocharged" his flight simulator to clone real-time experience, such as in this T-44A *King Air.*

Once the simulators are available for use by the students at NAS Corpus Christi, the Institute for Simulation and Training will gather data for six months. This data, including flight performance and test scores, will be compared with the same statistics from a control group that did not use the new simulators. The results are expected to be positive.

The focus of this study is on pilot training; however, desktop simulation can be applied to other warfare communities, as well. The Navy's submarine school in Groton, Conn., is utilizing the game "688I Hunter/Killer" by Sonalyst, which replicates the *Los Angeles*-class attack submarine and helps develop tactical skills and knowledge. The Naval Surface Force, U.S. Atlantic Fleet staff is currently working with gaming companies to develop a simulation for the surface community.

The goal is to have highly trained individuals who are able to maintain a higher level of proficiency in their tactical training. Because of the limited steaming and flight time available to the Navy for training, this will provide another tool to reach that goal.

Lacy said, "I like it when the Navy does things that make sense, and this does."

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Background photo by Ted Carlson