

Next wave for naval air training

T-45s land at NAS Pensacola as Boeing develops curriculum upgrades

By DOUG CANTWELL

When four U.S. Navy T-45C jet trainers recently touched down in the Florida Panhandle sporting a freshly painted “F” on their orange tails, they opened a new chapter of naval air training.

The “F” signifies their new assignment to Training Air Wing 6 at Naval Air Station Pensacola, which has responsibility for training naval flight officers, weapon systems officers and others who occupy the “back seat” of tactical strike and electronic attack aircraft. Meanwhile, two St. Louis-based Boeing teams had already started work on projects that will dramatically raise the bar of realism for TRAWING 6’s Undergraduate Military Flight Officer (UMFO) training program.

These efforts reflect the teams’ commitment to continuously improving their product as a fully integrated training system—not just as a sum of the parts. The concurrent upgrades to the airborne and ground-based facets of the T-45 system will enrich the UMFO curriculum dramatically, and the work has been greeted with applause by the customer.

“Having the T-45s on board, together with the upgrades Boeing is developing, marks the biggest modernizing effort we’ve seen here in 40 years,” said Commander Pete Silva, who oversees the UMFO curriculum for CNATRA, or the Chief of Naval Air Training.

LEG UP ON RADAR TRAINING

The training upgrades that the T-45 team is developing consist of two systems.

One system, the Virtual Mission Training System (VMTS), simulates tactical radar that provides air-to-air and air-to-ground modes as well as simulated weapons and simulated electronic warfare.

These functions can be networked between the participating aircraft and the instructor ground station that controls the mission presentation. The current phase of work on VMTS, which will be retrofitted to fielded aircraft, will provide student aviators with airborne training in the use of radar and weapons against virtual enemy aircraft, including cooperative strategizing with friendly real and virtual aircraft.

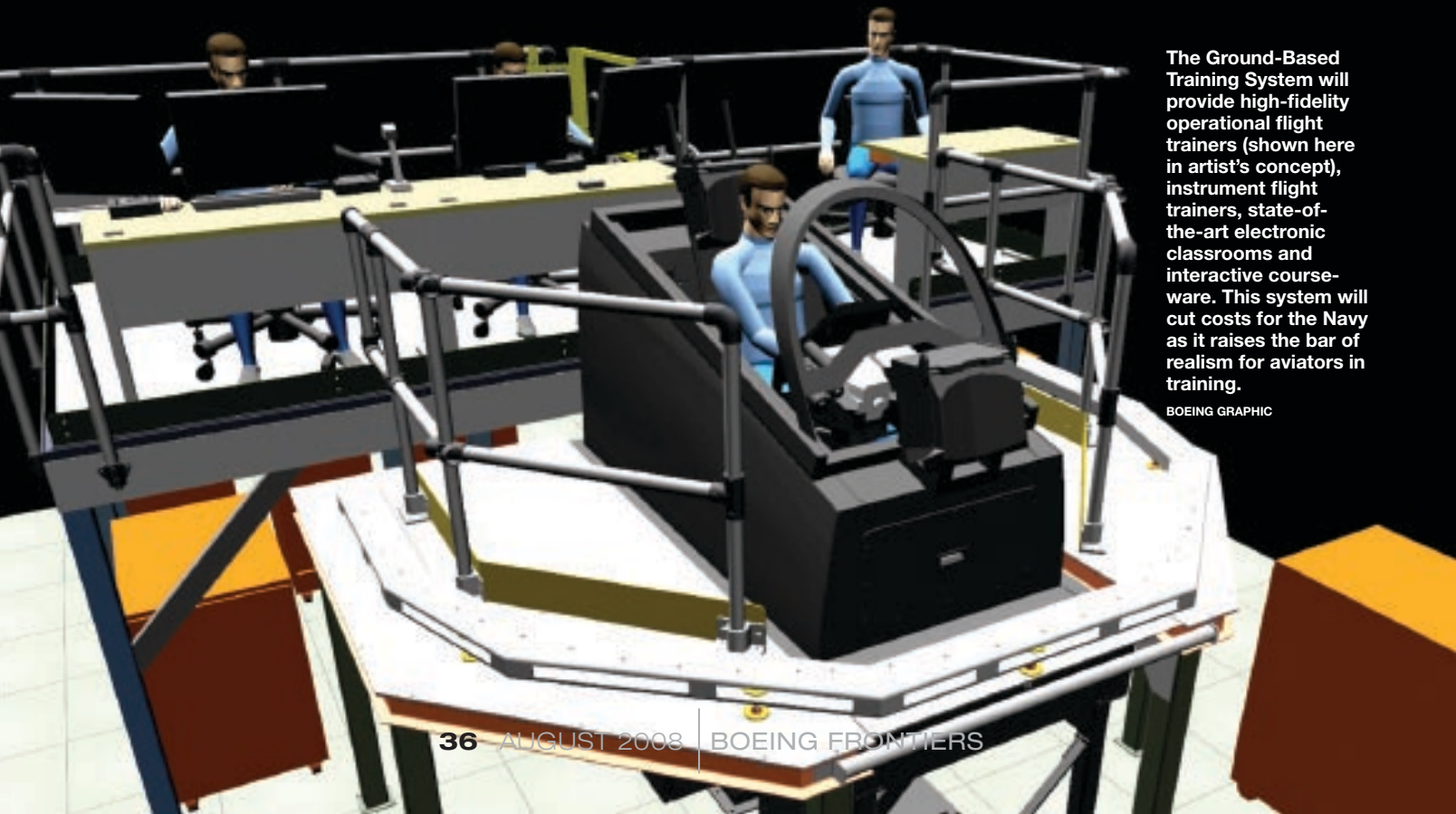
“Adding this degree of sophistication to the tactical training earlier in the game will make a huge difference,” said Barbara Wilson, director and program manager for the T-45 Training System. “It will produce flight officers who are better prepared to transition to carrier duty with the fleet, which will cut costs substantially both in the near term and down the road.”

Silva put it in more direct terms: “If you’re a green aviator entering the fleet with some tactical training already under your belt, you’ll be better able to think while you’re upside down, sucking on the [oxygen], trying to perform an air-to-air radar intercept. That’s a big deal.”

As CNATRA lead for UMFO training, Silva has to worry about cost issues as well. “With VMTS on board, we can give students an intensive introduction to tactical radar during their core training at Pensacola at a significantly lower cost in the T-45 than in an F/A-18 once they’ve transitioned to their FRS [Fleet Readiness

The Ground-Based Training System will provide high-fidelity operational flight trainers (shown here in artist’s concept), instrument flight trainers, state-of-the-art electronic classrooms and interactive courseware. This system will cut costs for the Navy as it raises the bar of realism for aviators in training.

BOEING GRAPHIC



Squadron],” he said. “If we have to wait until they’ve transitioned to an F/A-18 in their FRS, the cost jumps to about \$7,000 an hour.”

As a system being retrofitted to fielded aircraft, VMTS presents remarkably few headaches to the engineers or accountants. While live, functioning radar would cost a lot and require major refitting of the T-45, VMTS adds only two processing boxes and some wiring modifications. It also allows for future upgrades, or “spirals,” such as the ability to train in a network-centric environment using more sophisticated connectivity.

Some 19 T-45s are currently slated for reassignment to the UMFO program at Pensacola, the last of them arriving near

tactical communication—duties that either didn’t exist a few years ago or have ramped up in sophistication.

GBTS deliveries will begin next February with instrument flight trainers, followed by the first electronic classrooms and interactive courseware in August. Once they’ve delivered the full complement of three instrument flight trainers and three operational flight trainers, the Boeing team will upgrade the instrument flight trainers to operational flight training capability.

“Our objective was to ‘push down’ training that currently takes place at the FRS level to the core training level at Pensacola,” said Mark Von Hatten, program manager for GBTS at Training and Support Systems in St. Louis. “With GBTS, the Undergraduate Military Flight

fidelity we’ve achieved in the courseware, students can practice tasks in the classroom that used to require a flight simulator.”

The simulations focus on operation of the subsystems such as communications, radio, weapons and cockpit functionality. Interactive courseware also introduces students to VMTS exercises they will encounter in the operational flight trainer and then in actual flight, including use of the air-to-air and air-to-ground tactical radar modes and electronic warfare.

NEW DEBRIEF ABILITY IS KEY

Along with the Virtual Mission Training System and Ground-Based Training System will come a major upgrade in debriefing ca-



The first of 19 T-45 Goshawk jet trainers recently arrived at Naval Air Station Pensacola, Fla., sporting the “F” that signifies Training Air Wing 6. TRAWING 6 has responsibility for the U.S. Navy’s Undergraduate Military Flight Officer program. The program also will receive major curriculum upgrades developed by St. Louis-based Boeing teams from the T-45 program and Training and Support Systems.

DOUG CANTWELL PHOTO

the end of 2012. As they come on board, the Wing’s legacy T-2 Buckeye and T-39 Sabreliner trainers will be retired. The first VMTS-equipped T-45 is scheduled to enter service in January 2012, and TRAWING 6 will begin training full classes using the Virtual Mission Training System in July of that year.

LEAP IN TRAINING FIDELITY

Demand for higher-fidelity UMFO training has been driven partly by the greater complexity of the backseater’s job in today’s missions. The Ground-Based Training System (GBTS) will greatly enhance TRAWING 6’s ability to train to CNATRA’s 2010 requirements, which include multitasking, battlespace management, mission-commander responsibilities and

Officer will get up to speed sooner and thus be ready for the fight sooner.”

Von Hatten noted the huge leap in fidelity that GBTS will bring with its electronic classrooms. The new facilities will include three different configurations: lecture classrooms designed for instructor-led sessions, interactive classrooms that provide each student with a computer workstation for use of interactive courseware and task simulations, and a Learning Resource Center that allows self-paced use of interactive courseware and task simulations without an instructor.

“The task simulations we’ve brought to the classroom are another example of ‘pushing down’ the training to a lower, more cost-effective level,” Von Hatten said. “With the

pability, which Silva considers invaluable. It’s not so much what you experience during the actual sortie as how well you’re able to review and learn from it afterwards. The addition of state-of-the-art debriefing stations with sophisticated graphic displays will also enable other students and instructor-pilots to learn from sorties they didn’t actually fly.

“Everything we’ll be getting from here on will be higher-fidelity, more adaptable and more flexible in terms of how we’ll be able to review the training mission,” Silva said. “We’ll be able to plug in a thumb drive from each aircraft that participated in a sortie and synch up their flight and mission data for a comprehensive debrief.” ■

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