The Air Force sees a strong need for a new breed of combat systems officers.

Versatile, Ready, and Rated

By Otto Kreisher

The future US Air Force almost certainly will have far fewer aircraft needing rated officers other than pilots—that is, navigators, electronic warfare officers, and weapon systems officers. Air Education and Training Command therefore has begun transforming its training programs to ensure that officers in those fields are more highly skilled and versatile.

They are now known as combat systems officers, or CSOs, and in the future they will all be trained at NAS Pensacola, Fla., alongside their Navy and Marine Corps counterparts. The Air Force already merged most of the nav and EWO training, leaving just one month of the six-month program separate.

The concept for the CSO is to have an airman skilled in all areas of navigation and missions. "He is someone who can put it all together," said Lt. Col. Peter Deitschel, operations officer at the 562nd Flying Training Squadron, Randolph AFB, Tex. The 562nd trains most of the officers who will become CSOs.

AETC trains them in all aspects of air missions. "They may go to B-52s or might go to C-130s, but they go through training side by side," Deitschel said. The formerly specialized officers will "know a good portion of what the other guy is doing" through the exposure.

The transition from today's parallel tracks to the pure CSO training will start in 2009 and will be completed in April 2010, when the last class will graduate from Randolph and all training moves to Pensacola. The Air Force is building two new facilities for the CSO training in Florida.

The CSO program will try to give all the nonpilot rated officers a better background, so they "will be more proficient on the different systems, throughout multiple airframes," said Lt. Col. Samuel Lightfoot, CSO career field manager on the Air Staff.

The airmen will be "more useful and can be utilized in a broader sense" because of their broad-based expertise, Lightfoot added.

The Air Force has had nonpilot flying officers for much of its history. Most of them have specialized in a particular skill, such as long-range navigation, or weapons delivery as bombardiers and radar-intercept officers, or as electronic warfare officers to counter the threat of radar guided weapons.

USAF photo by SSgt. Tony R. Tolley

Two F-15Es from the 494th Fighter Squadron on a training flight.

A standard B-52 crew, for example, has a "panel navigator" responsible for getting the BUFF to its target and back, a radar navigator or bombardier to find and hit the target, and an EWO to protect the bomber.

But technology now can handle most of the navigation and can make it easier for one person to handle multiple tasks.

As a result, USAF's B-1B Lancers have one "offensive" and one "defensive" officer assisting the pilots. Newer B-2 stealth bombers, and C-5 and C-17 strategic airlifters, perform their globe-spanning missions with no navigators or EWOs whatsoever.

The impact of technology, and the Air Force's need to save money by reducing personnel, required a change.

The concept of the CSO was initiated in 2001 by Gen. John P. Jumper, then Air Force Chief of Staff. Jumper wanted "a more relevant aviator for our evolving missions," said Lt. Col. Brent Bigger, commander of the 562nd, "an aviator who is more savvy in advanced electronic warfare, navigation, and mission—of the overall airspace in the area of operations."

Although Jumper wanted to improve command and promotion opportunities for the nonpilot aviators, career advancement can still be somewhat limited.

"We'd like to say that navs are on equal footing with pilots, but that's not the case," said Lightfoot.

Part of the problem is "the sheer numbers," he said. The Air Force has about three times as many pilots as CSOs. Furthermore, many aircraft do not have a navigator position, limiting the number of squadrons that a navigator could realistically command. The career field is contracting, but it is not entirely without command opportunities.

New Opportunities

"There are plenty of opportunities out there," Lightfoot said, citing about 90 squadron commander and deputy wing commander positions and about 60 operations officers slots available for navigator-EWOs.

Navigators have also been filling many staff positions that offer leadership potential, owing to a longstanding shortage of midgrade pilots available to fill those spots. At least five of the Air Force's current two-star generals rose through the ranks as navigators.

The transition will become effective in Fiscal 2010. That is when the Air Force consolidates its CSO training with naval flight officer production. The three service programs will be collocated at NAS Pensacola—a move ordered by the 2005 Base Realignment and Closure commission.

The move is possible because, of 179 training days, only 37 require something unique for the various specialties. A main issue now is that the Air Force has yet to come up with an Air Force specialty code for CSOs. "They're still handling it as navigator and EWO," Deitschel said.

The training at Randolph and NAS Pensacola, where F-15E and B-1B weapon systems officers learn their basic skills, is already joint. Air Force and naval students share classrooms, and the services trade command of the training units, Bigger said.

The Air Force had a retention problem with navigators and EWOs in the late 1990s and offered a bonus to encourage them to stay in uniform.

But "right now, we have plenty of navs, CSOs to fill the current jobs," Lightfoot said. "We have a slight surplus, which was intentionally designed to help offset the shortage in pilots that we had a couple years ago." Many navigators are now performing staff jobs normally held by pilots.

The community, however, is still affected by its own "bathtub," or shortage, in midgrade navigators. Similar to what had happened with pilots, this nav and EWO shortage emerged in the early 1990s when the Air Force downsized following the collapse of the Soviet Union, noted Tom Winslow, aircrew analyst on the Air Staff.

"For a couple of years, there was essentially zero production of navigators and EWOs," Winslow said. The effects of that shutdown will stay with the Air Force for 20 to 25 years, as officers work their way through the service. It will be a while before the service is completely out of the navigator and EWO bathtub.

The demand is changing, however. Stand-alone navigators are "a dying breed with the advent of GPS," Lightfoot said, and in many of the fighters the electronic suites are so advanced that "a lot of the things that the second person would be doing are automated."

There were a total of 4,453 navigators and EWOs in the Air Force as of April 30. The service already slightly reduced CSO production, "in anticipation that the need for CSOs will not be as great in the out-years," Lightfoot said. The yearly requirement for new CSOs has been cut from 360 to 310 for Fiscal 2008.

In terms of supply and demand, however, the numbers now are a much better match than they were, and the retention bonus has been terminated, Lightfoot added.

The F-15Es, B-1s, and B-52s are going to be in service for years to come, and Special Operations Command's C-130 missions "are very complex, and they like to keep an extra person in those."

Lightfoot also noted that EWOs are helping to counter deadly improvised explosive devices in Iraq, creating what is in essence a new mission for electronic warfare officers.

And with Air Force Cyber Command coming onboard soon "with all the electronic warfare officers being labeled

USAF photo by Amn. Stacey Jeanpaul

At left, Capt. Jonathan Laatch, a WSO, performs a preflight check on his station in a USAF F-15. Below, Capt. Michael Brazda, a WSO aboard a B-1B, works at his console.

a target, maneuvering around threats, and problem solving skills.

Then everyone comes back together for the integration phase, which "culminates in a capstone briefing," similar to what an air operations center staff would give the joint air component commander prior to a multi-aircraft mission, Bigger said.

All the students then go through the final T-1 phase at the 99th Flying Training Squadron, also at Randolph. There they will fly three sorties in the T-1 Jayhawk and one in a simulator to learn the crew coordination and teamwork needed in operational squadrons.

Photo by Ted Carlson

as cyber-warriors, that's another area of expertise where the navs and CSOs can be used," he said.

Although the demographics may look bleak, the Air Force in the future will still need mission commanders with CSO skills, Bigger said.

"We will always need those folks."

At Randolph, the 562nd today gets most of its Air Force students fresh from commissioning. But before they start instruction with the squadron, they complete a 60-day initial flight screening program that gives them the basics of aeronautics and 20 hours of flight time in light aircraft. Most of that training is done in six private flight schools in the San Antonio area.

Primary Phase

All the Navy and USAF trainees start with a primary phase, which includes nine flights in T-43s (modified 737-200 airliners), 12 sessions in the 24 T-45 simulators, and two check flights.

There is "a lot less" curriculum devoted to time-consuming log keeping and paperwork, Bigger explained, and students no longer learn celestial navigation.

The intermediate phase that comes next is much changed, Bigger said. It includes "operationally relevant profiles," such as air refueling, timing to an operational area, loitering, search and rescue, and diverting to a different airfield, which requires replanning in flight.

The operational elements were added in late 2005.

Next is the operations phase in which the students receive a classroom introduction to electronic warfare, with the help of instructors from the 563rd Flying Training Squadron, located across the street.

At that point, the current training syllabus splits. One track is for students who will become electronic warfare specialists. Those who will serve as navigators in bombers or E-3 AWACS aircraft, tankers, or special mission variants of the C-135 and C-130s have their own program.

Graduates of the WSO program who are heading for B-1s, and some of the future F-15E backseaters, also go through the EWO training at the 563rd, after completing the 220-training-day course in Pensacola, Deitschel said.

EWO trainees learn to identify and counter electronic threats in two T-43 flights and multiple sessions in the 563rd's advanced EW simulators. Navigators are getting two flights and 12 simulator missions, learning basic low-level navigation, runs over

About 13 percent of the students fail to complete the program, with most of those eliminated for "not holding to standards. We have increased the standards here quite a bit," Deitschel said. Many seemingly qualified aviators "just can't do the mission."

Surprisingly, despite the consolidation at the Navy's Pensacola air station, future training will not be more joint.

"Our training down there is going to be as joint as possible, but it's not going to be side by side," because of different training agendas, Deitschel said.

"We're two separate training units," Bigger added, and the move was mandated by the most recent BRAC commission, which saw an opportunity to "dramatically increase efficiency." ■

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