EC-130Es of the 42nd ACCS play a pivotal role in the course of an air war.

The Eyes of the Battlespace

Photography by Dean Garner

The EC-130E Airborne Battlefield Command and Control Center may well be the most heavily worked system in today's Air Force. Its aircrews provide a link between air and ground force commanders, orchestrating the integration of air assets with ground forces to achieve specific objectives.

As fighting flared in Vietnam in the 1960s, the US saw a need for an aircraft to coordinate air and ground fire there. USAF wanted a reliable low-flying craft with superior communications, capable of loitering for long periods and directing fire against enemy ground forces. Ten C-130Es were modified to C-130E-II configuration, and some were deployed to South Vietnam in fall 1965.

One was destroyed in Vietnam, while the remaining nine were redesignated EC-130Es in 1977. The EC-130Es are now operated by the 42nd Airborne Command and Control Squadron—the only unit of its kind. Based at Davis–Monthan AFB, Ariz., it is truly an on-call force, playing a role in every Balkan operation of the 1990s. In Operation Allied Force, the ABCCC controlled the entry and departure of the attack airplanes and had a big role in deconflicting the flight paths of hundreds of airplanes traversing the Balkans.

Above, flight deck crew verifies that everything is in order for the next sortie. The ABCCC aircraft not only have a full flight crew but also a complement of up to 15 battle staff personnel who work in a specially designed capsule (right)—the USC-48 ABCCC III—that fits into the aircraft's cargo area. The battle staff includes operations, intelligence, and communications personnel.

ABCCC workstations (below) glow and hum away inside the capsule. At right, the flight deck crew reviews the checklist, preparing for a new sortie. USAF has only a few ABCCCs.

Photos by Dean Garner

The ABCCC capsule is 40 feet long and weighs about 20,000 pounds. The capsule does not change the stability and control characteristics of the aircraft. It can be loaded onto an aircraft in about three hours and off-loaded in two. Generally, the aircraft deploys with the capsule installed. Maintenance crews perform preventive maintenance checks with the capsule in place. The ABCCC is cooled by large air-conditioning units throughout long 12-hour missions.

The capsule contains 23 radios, a secure teletype, automatic radio relay capability, satellite communications, and modems. The advanced Joint Tactical Information Distribution System (JTIDS) on board each aircraft receives data transmitted by E-3 AWACS aircraft and other systems, enabling the crew to see a real-time picture of air operations over a battlefield. An onboard recording system tapes conversations on the intercom and all radios, providing after-action reviewers a complete and accurate mission history.

The EC-130E's extensive and sophisticated external antennas (above and right) to accomodate the vast number of radios in the capsule make for an impressive sight.

The standard mission briefings can sometimes contain a jolt. For example, as Maj. Alan Cordeiro (right) and others listen intently to the briefer, they get word that they are the target of a gas attack. Everyone in the room dives for the floor (below) and takes proper defensive steps. It's all part of a quarterly operational readiness exercise.

Below, a crew member caught in the "attack" tugs on his pair of gloves to complete his hastily donned mission-oriented protective posture gear.

To ensure a highly realistic exercise, the squadron's planners recruit troops to be the "bad guys" who will try to get past the flight line security forces. At left are some who didn't succeed, having been detained in their chem gear while an ABCCC aircraft waits for takeoff.

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An "all clear" sounds, and the crew continues to prepare the aircraft for the training sortie. Visible at the left is one of the EC-130E's trademark inlets for the two huge air-conditioners that help keep the tons of electrical equipment operating in the ABCCC capsule. The flight crew proceeds through the checklists, and battle staff members take their stations in the capsule.

Within the capsule are oversize tactical situation display monitors (right), providing a clear picture of all pertinent information on the battlefield. In another part of the aircraft resides the communications section, which provides all communications for the battle staff. The liaison section can include up to six members from the airborne command element or ground liaison officer section, depending on the mission type.

The monitors display information called up from the tactical database that is updated with the daily air tasking order and other data. The monitors also display large-scale vector maps of the battlefield, with pertinent overlays of friendly and enemy troop and vehicle positions. Much of the data pouring in from various external sources come from the JTIDS. The broadcast intelligence system provides near real-time information on various threats in and around the battlefield, including SAM sites and theater ballistic missile launches. All these data are then analyzed by various sections and quickly displayed on the situation display monitors for operators to view and assess.

The ABCCC team must absorb mountains of data continuously, then accurately process and disseminate it as quickly as possible. Each battle staff member is highly skilled at his or her job and must undergo rigorous training to maintain effectiveness.

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The EC-130E airframe dates from the early 1960s. Despite their advanced age, the aircraft remain on the cutting edge of technology, thanks to constant system upgrades. In addition, ABCCCs have an unblemished safety record. The unit is small, and everyone knows everyone else, so repairs can be made swiftly. Squadron leaders, moreover, emphasize safety. "The attitude of the people is not to take anything for granted," said Lt. Col. Ernest Jones, 42nd ACCS commander.

Because of its extremely high operations tempo, the squadron's cadre of top-notch maintenance personnel must be ever vigilant to ensure that the vintage EC-130E aircraft stay mission-ready at all times. Since 1993 regular rotations of the squadron personnel and aircraft have been deployed to Aviano AB, Italy. Members at first operated out of tents and hardened aircraft shelters, but in the last few years, squadron operations have moved into prefabricated buildings.

Regarding training at home, Lt. Col. Ernest Jones, 42nd ACCS commander, said, "We have improved our position a lot." By that, he meant that the squadron is turning to civilians formerly assigned to the 42nd. These contractors train the new members, freeing active duty personnel to carry on with the actual deployments. "Most Air Force personnel will move in two or three years," noted Jones. "The civilians will be here for a lot longer. Now I can take my warfighters and send them to war, rather than having them here training."

The aircraft may be old, but no one doubts that the Air Force has a continuing need for the capabilities provided by the EC-130E aircraft of the 42nd. ■