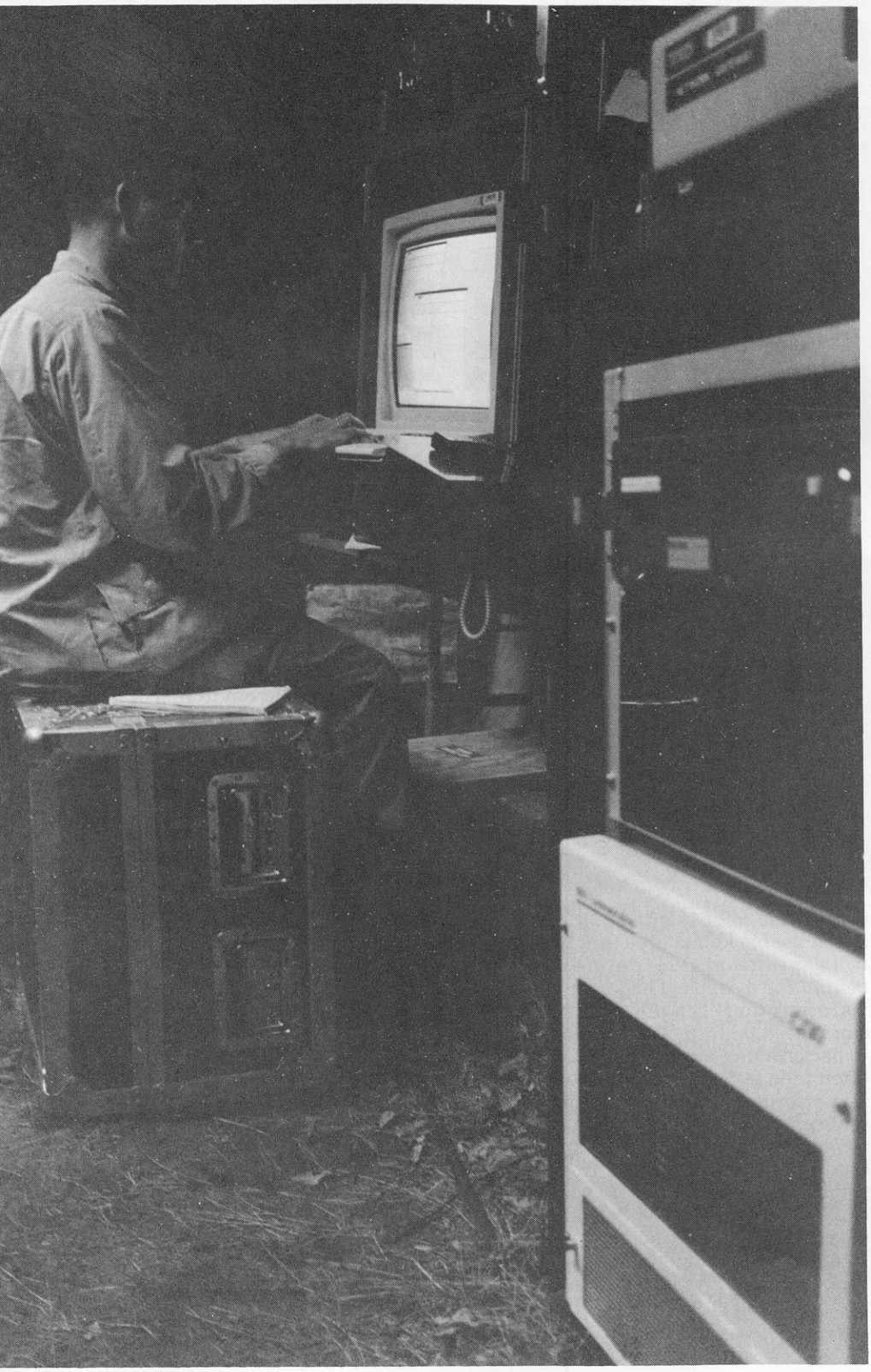
Battlefield computer



by Sgt. Kirk Wyckoff

The XVIII Airborne Corps is leading the way in a five-year $24 million testing of the most high-tech tactical warfare computer the world has ever seen.

This new "state-of-the-art" computer can reduce the reception, dissemination, and decision making time in a tactical environment from hours to seconds. No longer will commanders be tied to a central control point while waiting to receive crucial, updated battle information. Because it is decentralized, the computer will allow commanders to move wherever a "host" computer is located. Simply by punching in their code, they will be able to retrieve all current messages sent to their home base.

"The Corps now has the technology that will change the whole concept of tactical warfare," said MSgt. Manuel Franquez, a member of the Army DARPA Distributed Communications and Processing Experiment (ADDCOMPE).

Franquez explained that today it usually takes from 2 to 10 minutes for a forward observer to receive information and radio it back for a decision about whether or not to engage enemy troops. However, in the near future, this new computer can be linked to a forward observer as well as to air and ground support. Just by pushing a couple of buttons, a commander will be able to access the latest critical information. Then, if he decides to engage the enemy, he can push another button on his host computer to order an immediate air or ground strike.

ADDCOMPE is a joint program of the Defense Advanced Research Project Agency (DARPA) and the Department of the Army. Its goal is to enhance tactical command and control survivability on the battlefield of the near future.

Another advantage that ADDCOMPE equipment offers is its ability to communicate simultaneously with host computers around the world, according to Bob Hutson, a member of ADDCOMPE. "This enables commanders to communicate instantly worldwide

without using a telephone." Also, the computer is "user friendly," meaning the average soldier can learn to operate it. Instructions displayed on the screen are designed to teach soldiers, whether they are privates or generals, how to operate the computer.

ADDCOMPE began the five-year experiment in 1983. ADDCOMPE and the XVIII Airborne Corps Automation Management Office (CAMO) presently co-host 7 prime computer contractors, 50 subcontractors, and the MITRE Corporation, a federally contracted research center approved by Congress.

"There are a total of three testbeds or testing sites for the computer system," said Dr. Jude Dahmann of MITRE Corporation. "The Corps testbed at Fort Bragg is the first and largest in the world. The two smaller testbeds are located at Fort Lewis, Wa., with the 9th Light Infantry Division, and Fort Knox, Ky., with the United States Army Armor Center and School.

"The experiment consists of incorporating one interlocking state-of-the-art computer system Army-wide," Dahmann continued. "We are including the computers in various field exercises so the troops can get some hands-on practice. Since we have never had these capabilities before with computers, we need to practice war games so the contractors can get an idea of what kinds of programs they need to write to suit the needs of individual units."

The Corps' garrison exercise, "Caber Dragon," ended on November 24, and according to Col. Donald H. Lewis, commander of the Corps' 35th Signal Brigade, its use of the new computers was highly successful. "My soldiers as well as others are starving for a modern system they can use," said Lewis.

"We effectually gave our soldiers some practice during the Caber Dragon exercise," Lewis added. The 82nd Airborne Division, 101st Airborne Division (Air Assault), and other Corps elements participated in Caber Dragon along with the 24th Infantry Division.

Those involved with the new computer system during Caber Dragon came away singing its praises. According to MSgt. Arvie D. McCauslin, from 35th Signal Brigade, "If we purchase a new computer through standard Army procurement channels, it would be outdated by the time we got it. I think the ADDCOMPE experiment will solve this problem.

"The computer has already solved one of our biggest problems during Caber Dragon," added McCauslin. "It normally takes five minutes to an hour to transmit a message in a tactical environment. First the commander has to write his thoughts down on paper. Next he hands the message to a currier who hands it to a typist. Then the message is finally typed and sent according to its priority code. But with this computer, a message is sent and received as quickly as it can be typed onto the screen."

Col. John F. Stewart, from the Corps G-2 (security branch), was so impressed with the computer during Caber Dragon that he said, "I have never seen anything like this in the 24 years of my military career. It allows me to distribute intelligence reports to my people almost as soon as I can receive them. This has never been available before.

"The computer system also cuts down on a lot of paper shuffling. In a tactical environment we can now produce intelligence reports every two hours as opposed to the old way with only two reports going out a day. We have certain reports that normally take 6 to 24 hours to disseminate, but with this computer we can do them in 6 to 24 seconds. And the computer is so simple to use that if I lost my operator I could learn to operate it myself in about an hour."

A highly skilled computer operator, Sp4 Patrick Waugh, an infantryman who works in G-2, said, "This computer was an excellent choice. It represents the cutting edge of technology and is capable of performing the Corps' mission. It allows the rapid transfer of intelligence. There is a tremendous effort being made to talk directly to the operator and allow the users and managers of the system to have a direct impact on it."

Sp4 Denise Rich, a four-year computer science major from the 194th Armor, Fort Knox, Ky., was also a computer operator in Caber Dragon. "With the technology today, the next war we fight will be high-speed," said Rich. The next war will be won with these state-of-the-art computers that give us simultaneous communication and immediate decision making ability."

Rich added that "though average soldiers can learn to operate this computer, they will need more than just the 12 hours of training that we received."

Capt. James Davis from the 1st Corps Support Command's 18th Personnel and Administration Battalion was also impressed with the computer. "It shows me how the war is going. It gives me a consolidated strength report of the gains and losses of battlefield units. It provides cross checks of personnel status, manifests, and assignments. In a tactical environment these reports take about five hours, but this computer can do them in seconds.

"The computer is relatively easy to learn," Davis continued. "The screen displays preprinted forms, and all you have to do is answer the questions. I like the computer because I can receive a multitude of messages in seconds and pick out the message I need to read first."

Sp4 Barry Williams, an administrative typist from XVIII Corps' 525th Military Intelligence Brigade, especially enjoyed the filing characteristics of the computer.

"I can type on up to five sheets of paper, or "windows", that can be displayed on the screen at the same time. I can overlap the windows on top of each other or reduce them to the size of a quarter and move them out of my way, in either corner of the screen. I think that the average soldier can learn this computer if he really applies himself," said Williams.

The purpose of using this computer during Caber Dragon was to explore new concepts of tactical warfare. The results from the ADDCOMPE experiment will be programmed into an automated system that might give today's soldier the edge on the modern battlefield.

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