A POST PROFILE

Huachuca Fighting Commo Chaos

By GENE FAMIGLIETTI

FORT HUACHUCA, Ariz. — In the next five years the Army will spend $90 million at Fort Huachuca for answers to the problems caused by the increasing use of electronic devices by the combat army.

Officials at this post told national newsmen recently that contractors are "right on schedule" in setting up an electronic test range in southern Arizona.

Known as the Electromagnetic Environmental Test Facility, the Army says the outdoor laboratory is urgently needed to help all the services as well as industry in their never-ending struggle against electrical interference which exists within a heavy population of radio transmitters. Unless this problem is solved, an army in the field could be crippled by communications chaos.

One Huachuca officer illustrates the size of the Army's problem like this: During World War II, a field army operated less than 30,000 electrical devices in a 100-mile-square. Today a field army would use nearly three times this number in the same area.

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PRIME CONTRACTOR FOR THE WORK centered near Gila Bend, Ariz., is Pan American World Airways Inc. The subcontractor is Bell Aerosystems Inc.

At the range a modern army's electronic equipment will be tested in the electromagnetic environment in which it will perform in combat.

According to Col. George Redheffer, EETF will try to find equipment being used by the Army that interferes with the operation of other equipment.

Another job of the outdoor laboratory will be to test the plan by which the Army assigns frequencies. It is believed that by the proper assignment of equipment operating frequencies, radio interference can by minimized.

In addition, the lab will try to set up standards for developing and testing new electronic equipment.

EETF will occupy a considerable amount of real estate. The lab's drone test facility now has launch, control and recovery areas at Yuma Test Station, Ariz., with a flight corridor extending nearly 80 miles east of the station.

To increase the capability of the drone division, instruments are being installed along a 250-mile corridor between Huachuca and Yuma.

The work carried out by EETF will have significant application to all services. But Maj. Gen. Francis F. Uhrhane, commanding general of Fort Huachuca

Gen. Uhrhane

SAYS GEN. UHRHANE

Isolation a Blessing

THE FIELD commander of tomorrow may not realize it, but he will owe much to soldiers at the Electronic Proving Ground at Fort Huachuca. As Maj. Gen. Francis F. Uhrhane puts it, all activities here are directed toward giving the combat commander better control of his troops and the battlefield situation.

To carry out this work, the post will be gradually expanded. "Our construction program calls for some additional quarters and for permanent facilities such as a hospital, barracks and the like to replace temporary facilities now used."

About the post's remoteness, Uhrhane explains: "The post was selected because of its remoteness and this remoteness contributes directly to our success in carrying out our mission."

On the liability side, he admits that this factor causes some personal problems as well as difficulties in recruiting the qualified scientists Huachuca needs.

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DEPUTY COMMANDER of the Electronic Proving Ground and Fort Huachuca is Col. Charles H. Burch.

Chief scientist at Huachuca is Joseph G. Reid Jr. Before coming to the Electronic Proving Ground, he directed part of U.S. Geophysical Year earth satellite activities while associated with the National Academy of Sciences.

Some of this new equipment includes:

- A high-speed camera that can produce fast sharp, detailed pictures of a battlefield area;
- Infrared detection equipment which can pinpoint targets by heat radiation, and
- Surveillance drones.

The first operational surveillance drone, the SD-1, is already being used by troops. It has a speed of 184 miles per hour and an endurance or flight time of 40 minutes. Radioplane, the manufacturer, says the SD-1 can operate at altitudes up to 40,000 feet. This drone is considered an interim system, however.

The department is also testing the SD-2 drone at Yuma Test Station. In addition, another drone, the SD-5, has made several successful test flights in Arizona. Army Times learned that the SD-5 would be in troop hands in three years.

This 3000-pound turbo-jet powered drone can be launched from a flat bed trailer. It is believed to be faster and have a longer endurance than drones now in

partment led by Lt. Col. Frank J. Evans tries to see that the field army has the best in communications equipment. At Huachua it tests new commo systems.

The department reports these developments in communications:

- An electronic long distance switchboard that will provide 200 lines that can be electrically switched in seconds. All equipment will be housed on a 2½-ton vehicle and will require only one operator.
- "Troposcatter," a major breakthrough in communications. It was developed to overcome certain liabilities in conventional radio systems.

In troposcatter, VHF and UHF waves are transmitted upward where they are partially reflected from the troposphere and bounced back to the earth as scattered energy. Terminals, up to 150 miles away, can pick up the energy clearly.

Troposcatter does not require relay stations, a must with conventional radio systems. Since troposcatter is transmitted upward

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To increase the capability of the drone division, instruments are being installed along a 250-mile corridor between Huachuca and Yuma.

The work carried out by EETF will have significant application to all services. But Maj. Gen. Francis F. Uhrhane, commanding general of Fort Huachuca, sees little possibility of the facility becoming a tri-service operation. "I would think we should have some small tri-service representation," he told Army Times.

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TESTING THE RELIABILITY and effectiveness of the "eyes and ears" of the modern Army at the proving ground is the Combat Surveillance Department. It is commanded by Col. Roy F. Blackmon. One of the biggest problems facing the Army today, combat surveillance is described as a continuous—all weather, day and night—systemic watch over the battle area to provide timely information for tactical ground operations. The Army is developing a variety of sensory devices to find and identify a target in sufficient detail to allow effective use of weapons.

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This 3000-pound turbo-jet powered drone can be launched from a flat bed trailer. It is believed to be faster and have a longer endurance than drones now in use. The Fairchild-made SD-5 will also be able to work day and night all weather for the combat commander. The SD-5 as well as the SD-1 and 2 are recoverable. The SD-2 will be service tested next year.

The Combat Surveillance Department operated the only formal Army school training drone crews. More than 40 crews have been trained and sent to the field. Each crew has about 15 missiles.

What's ahead for drones: The department envisions a drone that will be an almost independent craft. After being launched, it would be capable of its own independent evasive and offensive actions. Other features of this drone would be the ability to transmit graphic information by television as well as carry its own data processing system.

The proving ground's Signal Communications De-

tted upward where they are partially reflected from the troposphere and bounced back to the earth as scattered energy. Terminals, up to 150 miles away, can pick up the energy clearly.

Troposcatter does not require relay stations, a must with conventional radio systems. Since troposcatter is transmitted upward, mountain ranges are no barrier. This new system, Signal Corps officers claim, is hard to jam.

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ABOUT the only area the Army was secretive about at Huachuca was the Electronic Warfare Department. The Army said:

"The entire effort of EWD, under guidance from the Chief Signal Officer, is oriented toward providing the field commander with suitable electronic warfare organizations, equipment and tactics for their deployment. All of these combined serve to provide the commander with one powerful, offensive weapons."

Col. Walter E. Lotz commands the department.

Supporting a wide variety of research and development activities is the Meteorology Department, com-

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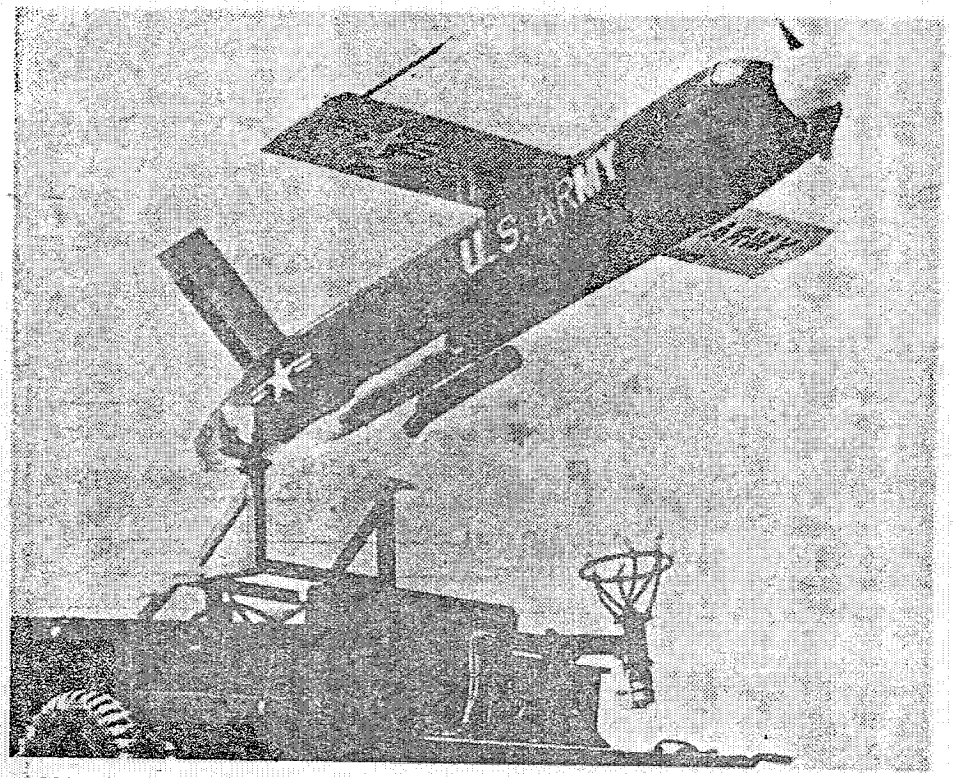

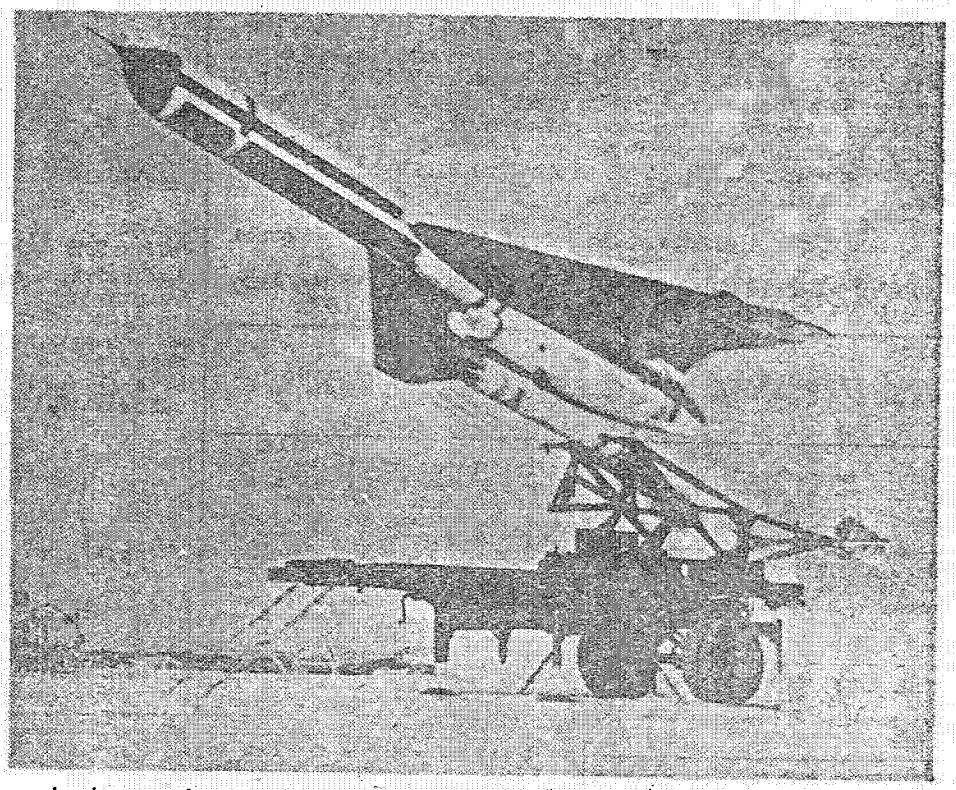

ONE OF THE LATEST flights of the SD-2 drone, left, indicates that this aerial surveillance system can climb to 10,000 feet within three minutes after being launched. Sensory devices such as infrared, photo transmission, radar and photography are being tested for the SD-2. Seen at the right is the SD-5 drone. It is a delta-wing, high-speed surveillance system. In the advance state of development, the drone was successfully flown for the first time 14 May. Procurement authorities say the system will probably be available to troops in three years.

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Huachuca Will Track Satellite

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manded by Col. Eric Osborne. Teams from his group are scattered throughout the northern half of the Western Hemisphere. These units give year-round weather data to all seven Army technical services as well as 11 other federal agencies engaged in research.

However, at Huachuca teams are engaged in intensive micrometeorology study, a new science which deals with climital conditions in the border area where the earth meets the atmosphere. This region includes the first few feet of the earth and the lowest portion of the atmosphere. It is in this layer that the Army lives and fights.

Key to the weather research program at Huachuca is an analogue computer which is programmed to function as a model of an air-earth boundary layer. Measurements are fed into the computer and results are compared with actual observed conditions.

The department carries on its roster 25 officers, 280 enlisted men and 50 civilians.

The center of activities at the Electronic Proving Ground is Greely Hall, named for Brig. Gen. Adolphus W. Greely, Chief Signal Officer from 1887 to 1906. Part of the $10 million structure is finished and in mid-1961 Greely will have more than 400,000 square feet of floor space. The commanding general and his staff in addition to some technical departments are current tenants.

Despite what is a significant role in national defense, Huachuca is probably not a well known post. And many who know it remember the post in the past tense.

The emphasis on Huachuca's past proved an irritation to one former commanding general. When the conversation turned to the cavalry at Huachuca, he would firmly remind those present that the cavalry had faded away, and Huachuca was now a Signal Corps post.

Nonetheless, Huachuca's past is part of the story of the American Southwest. After the Civil War, troops were withdrawn from the Arizona Territory. In 1863, the white population of the territory was less than 600.

Hostile Apaches and outlaws had the run of the territory. In 1877, Capt. Samuel M. Whiteside with Co. B, 6th Cav., and Capt. William A. Rafferty with Co. M, 4th Cav., were dispatched to the San Pedro Valley to protect settlers. In the Huachuca mountains, Whiteside set up Camp Huachuca.

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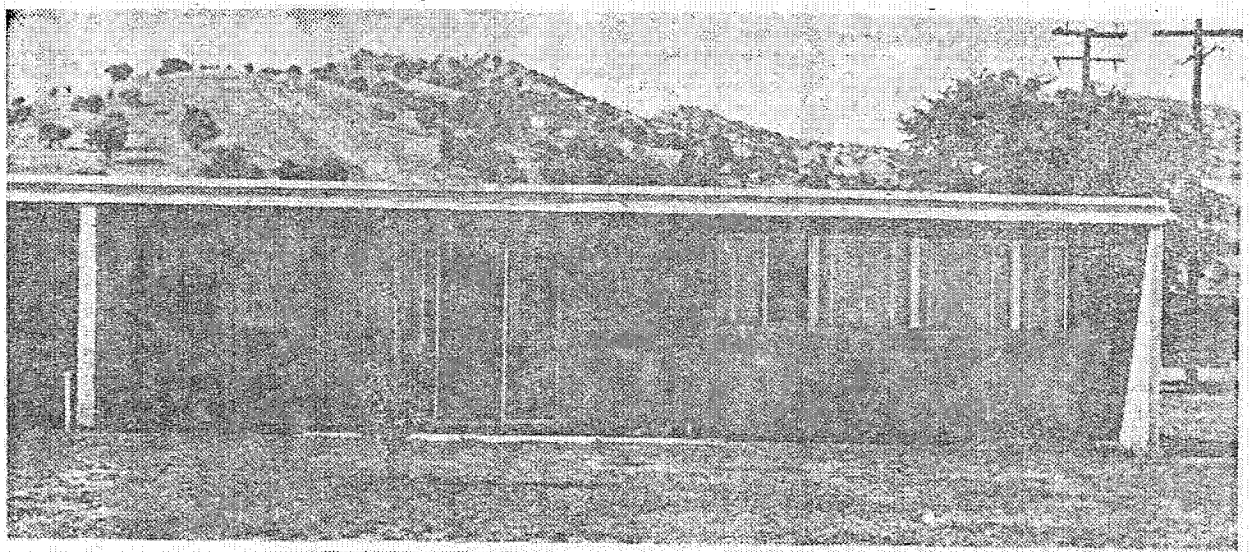
DURING THE 1880s the post was an important station in a heliograph network extending from mountain to mountain across the southwest. The heliograph



ONE OF the several types of housing at Fort Huachuca is this Capehart program ranch-style home, top picture. A photo taken sometime ago at Huachuca shows an NCO's family cooking on their outside grill. Like many other posts, there is a housing shortage at Huachuca. Waiting time varies from none for field grade officers to up to four months for enlisted men. Housing costs off-post range from $85 to $125 monthly.

Computers to Do More Jobs

UNLESS the performance of several television network computers on election night changes plans, electrical brains will do an increasing amount of work for the Army. And a group having a considerable voice in determining the role computers will play is an Automatic Data Processing Department at the Electronic

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A Fort Huachuca a guidebook notes that the "most vivid of the post's long record was the part Huachuca played in rounding up Geronimo and his band."

The 4th Cav., the principal unit involved in the capture of the Apache outlaw, left the post in 1890. There followed units of the 2d, 9th and 5th Cavs. The Spanish American War saw units arrive, and leave for Cuba, Puerto Rico, the Philippines and China.

In 1916 when Gen. Pershing launched his punitive Expedition into Mexico, the 10th Cav. from Huachuca played a prominent role. But after 19 years at Huachuca, the 10th left in 1932. Elements of the 25th Inf. Div. replaced the cavalry.

During World War II several divisions trained here. And in 1944 Indian Scouts held their last parade as a unit at Huachuca. In 1947, as was the fashion of the times, the Arizona post was declared surplus.

The post remained closed until 1954 except for a brief time during the Korean War. Six years ago, as buffalo and small wild pigs roamed the post, Huachuca was reopened as the Electronic Proving Ground. The first CG of the proving ground was Maj. Gen Emil Lenzner.

The proving ground is located about 85 miles from Tucson and is approximately 5000 feet above sea level. Newcomers are warned they will temporarily experience a tendency toward drowsiness, lack of energy and other effects because of the smaller amount of oxygen in the air. Those reporting to Huachuca are urged to bring clothes for "western living."

Even Huachuca boosters admit it's isolated. But its isolation is the reason for its existence as a military installation. This factor, plus terrain features, make an excellent electronic test range.

The post, according to latest figures, is spread over 73,500 acres with an additional 29,000 under lease. Operating funds for FY 1961 are slightly under $60 million. Military and civilian payroll here is $22.5 million annually.

Building at the proving ground has cost $39 million since 1954. This includes family housing as well as barracks, a mess hall, field house, air field facilities and Greely Hall. But there is not enough housing on post for the 5100 military here. Lt. Col. Raymond J. Baker, Hq. commandant, gave the following rundown on housing:

On post there are more than 1660 units. They include 520 for officers and nearly 1150 for enlisted men. Baker said Huachuca has 18 efficiencies, 100 one-bedroom; 850 two-bedroom and 689 three-bedroom quarters. There are also 11 units with five bedrooms.

Computers to Do More Jobs

UNLESS the performance of several television network computers on election night changes plans, electrical brains will do an increasing amount of work for the Army. And a group having a considerable voice in determining the role computers will play is an Automatic Data Processing Department at the Electronic Proving Ground.

The department was set up in 1957 to help the Signal Corps work with other branches to meet their needs. Huachuca is described as a sort of proving ground for computers. The department here also does some development work.

Probably the biggest news military computers have made recently was the announcement at Huachuca disclosing that tests indicate that artillery units using computers may soon be able to score first round hits on targets.

Early last month, a Huachuca artillery unit demonstrated the new system for Brig. Gen. Edwin S. Hartshorn and members of his staff from the Artillery and Missile School at Fort Sill.

"Without a shadow of a doubt," Hartshorn said, the demonstration showed that computer-director fire "will be of real value to the field artillery commander." The general was especially enthusiastic about the possibility of units firing for effect almost immediately.

Col. Mark T. Muller, commander of the ADP Department, revealed that computers have shown the ability to cut the fire planning time for division artillery units. Computers have shaved the time from 36 hours to four or five hours.

Computers are also getting a chance to "pay" a field army at Huachuca. So far the test is in its infancy, but project officers, Capt. Harold McCormick and 1st Lt. James M. Gordon report that "trial runs have been very successful."

They said that they were looking at the many problems from the view of the tactical army. But, "if the rest of the Army likes the results of the Huachuca test, it could be used."

Col. Muller discussed four areas where computers are being employed:

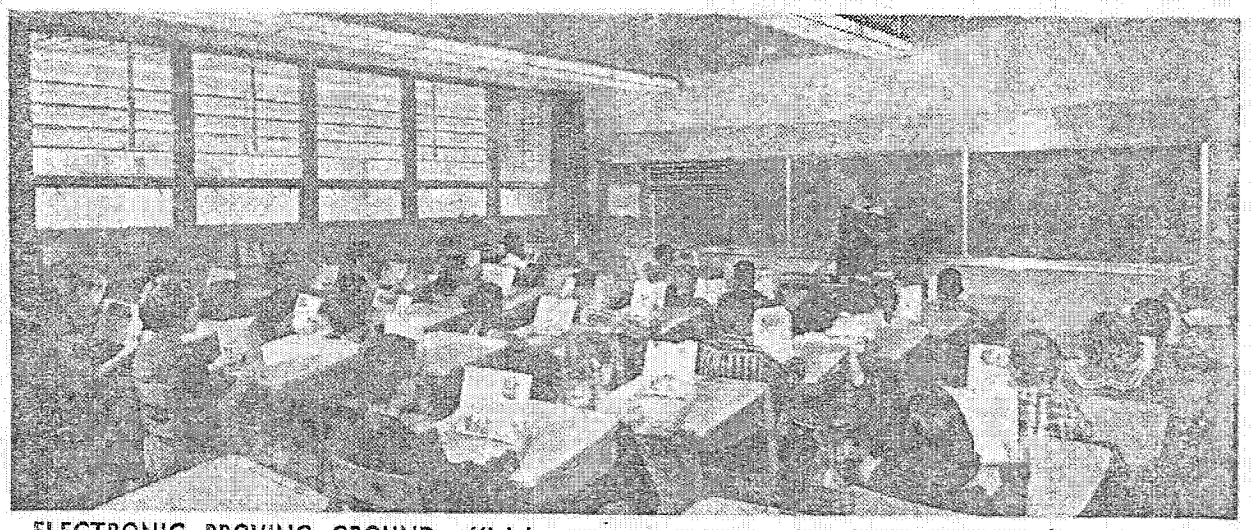
- personnel and administration
- communications and operations
- intelligence and
- logistics.

Known as the Fieldata family, the Army's militarized mobile computers will include a small electronic brain for lower echelons and also what the Army calls the Basicpac for more complex applications.

Biggest member of the family is the Mobidic-mobile digital computer — a general purpose, completely transistorized computer mounted in one or more 30-foot vans.

Current plans call for use of the Mobidic computer at army level and possibly at the corps level. A Mobidic is being checked at Fort Monmouth for shipment to the Seventh Army Stock Control Center in Germany. A crew to operate the computer has left for Europe, Muller said.

Officials say that the principal value of Fieldata equipment to the commander will be its data processing abilities. By serving as a warehouse of almost immediately available information, the ADP system will aid the commander and his staff to judge the tactical situation and to make accurate decisions with a small reaction time.



ELECTRONIC PROVING GROUND officials say this is a typical classroom in one of the four accommodation schools at the post. All schools on post are grade schools. High school students attend classes in the surrounding area. There are also adequate parochial schools in the area.

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