Improved long-range communications enhance combat readiness.

Better communication for improved patient care.

"The first people into battle are no longer just the infantry, they are the medical personnel as well," says US Army Staff Sergeant Richard Barnhill, an experienced field medic stationed at the Army Medical Department (AMEDD) Headquarters, Fort Sam Houston Texas. With such a strong emphasis on its medical presence, the US Army has made critical advances in the equipment and communications it uses to ensure advanced medical treatment for soldiers in tactical units. In addition to serving its service men and women, the US Army also provides medical services to the local populace while abroad as part of an extensive humanitarian aid program and peace keeping. Often, these efforts rival the conditions Army medics find in combat.

Falcon™ II AN/PRC-138B high-frequency (HF) and very high-frequency (VHF) vehicular and base station radios were selected by AMEDD for their reliability, mobility and short- and long-range communication capabilities and will be used by 33 of the Army's combat medical units.

Harris provides 82nd Airborne and others with lightweight comms on-the-move.

As the largest parachute force in the free world, the 82d Airborne Division is trained to deploy anywhere, at any time. Almost every piece of divisional combat equipment used by the 82nd can be dropped by parachute onto the field of battle. That's why the 82nd Airborne chose Harris Falcon™ II AN/PRC-138B (V) 3 and AN/VRC-102B (V) 2 radio systems to provide the US Army's only airborne division with flexibility and durability during operations. The systems' manpack and vehicular configurations provide the paratroopers with reliable communications on the move. The embedded COMSEC is critical in protecting the integrity of forward tactical communications between the 82nd Airborne and remote upper-echelon command.

The Harris Falcon II AN/PRC 138B Systems are available in manportable, transportable, vehicular, and base station configurations.

Other applications for the Harris Falcon II Family include:

- Long range surveillance
- Intelligence gathering
- Command and control
- Forward fire support
- Movement control
- Logistics
- Civil affairs

Sgt. Barnhill works with the Army's Medical Communications for Combat Casualty Care (MC4) division of AMEDD and coordinates efforts for logistics requests, patient regulating and evacuation procedures for domestic and overseas medical units. It is MC4, in conjunction with the Program Executive Office Standard Army Management Information Systems (PEO STAMIS), that has implemented an upgrade to the Army's current combat medical communications systems. The Army has selected Harris Corporation to provide tactical radio communications between field hospitals and forward deployed medical units with its Falcon™ II AN/PRC-138B radio equipment.

The Falcon™ II AN/PRC-138B is an HF/VHF transceiver covering the radio frequency range from 1.6 to 60 MHz in both SSB and FM modes. The Harris radios are the first communications systems deployed for missions where there are now no standard Army communications platforms. For example, the Falcon™ II AN/PRC-138Bs serve as the primary direct mode of communications between the Army's missions in Africa and its headquarters and supporting medical units in the Continental United States (CONUS).

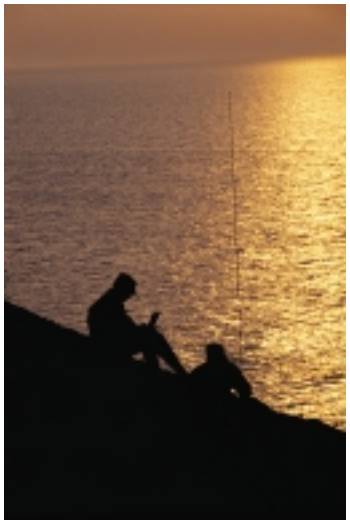
The HF radios are the Army's strongest long-distance link during major regional conflicts, when there is no immediate access to dedicated military or commercial phone lines, cellular telephone systems or tactical satellite communications. Combined with Near Vertical Incidence Skywave (NVIS) antenna systems, the HF radios assure direct, gap free communications between Army medical command facilities and their Combat Support Hospitals, Forward Support Medical Companies and MEDEVAC helicopters.

The radio system being deployed features digital signal processing (DSP) technology, a 125-watt vehicular, and a 400-watt transportable base station configuration. "The base station is particularly well liked by the operators because its higher power can provide greater system reliability than the smaller 125-watt version, while still providing scalable power for communications security and a high level of tactical mobility," says Sgt. Barnhill. The system also helps to maintain a tested tactical communications link in the garrison environment for medical units in the United States, Europe or Korea that need to communicate directly with their headquarters or subordinates. For example, the 44th Medical Brigade at Ft. Bragg, NC, has units under its command at Ft. Detrick, MD, and Ft. Drum, NY. Long range HF circuits are maintained between these units for training, operations, and emergency backup using the Falcon™ II AN/PRC-138B equipment.

Lieutenant Colonel J.B. Crowther, product manager for MC4, states that the radio procurement represents a significant tactical communications upgrade for the Army and the medical community. The upgrade will help form part of a new all-digital communications backbone as the medics prepare to move from strictly analog communications to digital voice-and-data communications over the next eighteen months.

The Army is purchasing the Falcon™ II AN/PRC-138B radio system as a replacement for the AN/GRC-193 and AN/GRC-213 HF radios used since the 1970's.

While some radio systems have already been fielded, many more will be delivered over the next several months. Operating in peacekeeping missions, such as those in Kosovo, US Army medics using Falcon™ II AN/PRC-138Bs for tactical communications have treated civilian casualties in addition to providing medical care to the thousands of US service members. Combat medical units located at home and abroad will use the Harris Falcon™ II AN/PRC-138B communications as they evacuate casualties, treat patients, provide medical supplies, and conduct medical command and control.



Harris Falcon™ II AN/PRC-138B radio systems will enable combat medical units in the battle zone to transfer patient information and other medical information needed to support soldier and civilian care. The radios' embedded MIL-STD-188-141A automatic link establishment (ALE) system assists medics in passing a patient's vital signs and symptoms on to the next appropriate level of health care by always finding the best radio frequency available and authorized for communications.

"The ALE capability is a great advancement in HF technology," says Sgt. Barnhill. "It enables the medic who is usually not a trained radio operator to reliably establish contact with other members of an HF network for both short range and wide area operations. The ALE option affords the greatest probability of contact because it automatically selects the best frequency of those available to the unit."

The voice and data systems are equipped with full wireless e-mail capability to provide telemedicine capabilities that most radios cannot provide. The Falcon™ II system will enable doctors in the combat zone to consult with medical experts for enhanced patient care. Field medics, for instance, can make notes of a patient's symptoms and e-mail the data to the necessary specialist. Supporting images of the symptoms can be digitally compressed and transmitted through the radio system. The receiving doctor can make an appropriate diagnosis and send back comments and prescribed treatment.

Small military units may not have immediate access to medical specialists, so they can utilize the radios to transfer diagnostics directly to the nearest trained military expert. Remote consultations have been particularly beneficial in cases involving the expert opinions of dermatologists, radiologists and ophthalmologists.

Dermatology consultations have been conducted via the radio systems for skin rashes and abrasions due to a variety of agents. While typical radiology consults have been needed for broken bones, the e-mailed x-ray results have been also very helpful in determining less obvious illnesses such as potentially cancerous tumors.

The e-mail capabilities are also helpful when medical information needs to be passed to numerous recipients simultaneously. The communications system can relay an early indication of potential widespread chemical or biological threats allowing illness to be kept geographically isolated. The radio's internal high-speed MIL-STD-188-110A serial-tone modem allows passage of e-mail and images among medical facilities when a dedicated LAN or WAN connectivity is unavailable, providing reliable over-the-horizon data operation at rates up to 2400 bps.

"We can give a situational status report on symptomatic trends and disseminate this to other units," says Crowther. "We can textually and visually describe symptoms we're seeing in one location so other folks can take counter measures to help prevent that spread or do something proactively to counter that medical threat."Medics in the field can also communicate diagnostic information using the Army's PIC (Personal Information Carrier) cards. The PICs are solid, matchbook-size, data-storage cards worn around the neck of military personnel along with their traditional dog tags. These PICs store medical information and other vital statistics for each soldier. In the case of injury, the PICs can be read and relayed to mobile hospitals via Falcon™ II AN/PRC-138B radios for expedient treatment.

In addition to patient treatment, the radio systems are used to monitor a patient's level of recovery through the health system. The systems also assist in tracking how patients are moved from the field hospital back to base hospitals. Blood-orders can be monitored alerting personnel to blood type shortages in the field.

"This communications system assists doctors in conducting a full interpretation of the patient's health," says Crowther. "Whether someone suffers from combat wounds or diseases unrelated to battle, the remote consultations help in delivering comprehensive patient care. We are not only concerned with treating active symptoms, but are ultimately searching for ways to maintain good health and prevent illness for all those we serve."