'The star of life' means efficient emergency care

By RANDY WALTER

The insignia on Ocean City Volunteer Fire Company ambulances is called the "star of life." It is used across the nation to signify medical units, but nowhere is it more appropriate than Ocean City.

Although it is 30 miles from the resort to the nearest hospital, emergency medical service here is as good if not better than in any other area in the state.

The city has four paid emergency medical technicians (EMT's), who can administer advanced first aid, immobilize fractures, and stabilize spinal injuries. The resort also employs 11 cardiac rescue technicians (CRT's, the equivalent of paramedics) who have had an additional 150-200 hours of instruction in cardiac-related problems. About 40 of the volunteer firefighters are also certified EMT's.

The city also has six mobile intensive care units, equipped with a drug cabinet, a defribulation monitor (the same thing as an EKG) and direct communications with the area trauma center at Peninsula General Hospital in Salisbury. These vehicles differ from regular ambulances, which only carry first aid equipment and oxygen.

The area is served additionally by a Maryland State Police Med-Evac helicopter, which transports seriously injured patients to Salisbury or any of several metropolitan hospitals. There are 11 landing zones for the helicopter in the Ocean City area.

ARRIVAL AT HOSPITAL — Ocean City cardiac rescue technician Wayne Parsons, right, assists emergency medical technician Mace McCabe wheel a patient out of a mobile intensive care unit. The patient, who suffered an emphysema attack, was brought to Peninsula General Hospital for care. (Randy Walter photo)

These men and machines respond to auto accidents, heart attacks and water accident victims. The EMT's and CRT's work 12-hour shifts and are on-call at home in case of serious emergencies. At least one CRT is working on each shift.

The city has five firehouses, two of which are manned 24 hours a day during the winter. All four in Ocean City proper are manned around the clock during summer.

The fifth firehouse is in West Ocean City and houses equipment only. One ambulance is stored there to insure access to that area in case of a problem with traffic on a bridge, impairing access from the town. In nearby Ocean Pines, there are two firehouses serving that community.

The Ocean City Volunteer Fire Company has proportionately more trained medical technicians than most firehouses in Maryland. During the winter, an average month will produce 100 ambulance calls. At the peak of the summer season, 450 calls a month are not unusual.

Off-season calls often involve routine transports and non-emergencies. Summer brings more serious situations, especially cardiac cases. As a group, those are the most serious, although some automobile accidents cause more severe injuries.

Particularly difficult are auto ac-

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A few weeks ago I was astonished to read in a Salisbury newspaper a letter written by an Ocean City woman who was outraged by the language and (I gather) the behavior depicted in the movie Raging Bull. I had seen Raging Bull in

Cinema Screenings

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his story ought to
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On the other hand
"best picture," in all

'The Star of Life'

From page 3

cidents in which an injured passenger is intoxicated, said CRT Wayne Parsons. He was working the 7 a.m.-7 p.m. shift at the 15th Street firehouse. "We try to be conscious of what hurts them, but alcohol masks some symptoms," he said. "With an accident, the injury is already done. With a cardiac patient, anything can happen at any time.

"We get a lot of calls for chest pain and shortness of breath, but each is different. When you get there, some have a lengthy history of heart problems, and for others it's the first time. You have to treat each patient as a major case because that's what they are.

"Then sometimes when we get there, the subject is 45 years old, unconscious and in cardiac arrest. His heart has stopped. You only have one shot and four to six minutes to do it in. You have a lot to do in that time," Parsons added.

Ocean City is one of the few fire companies in Maryland with its own CRT instructor. In addition to teaching classes to CRT's at the hospital in Salisbury, he also gives EMT instruction and classes on cardiopulmonary resuscitation (CPR) at the 15th Street firehouse.

Also available to CRT's in Ocean City is the opportunity to attend medical school at no expense to the technician or the town. The Ocean City Paramedics Foundation raises funds for that purpose and disburses tuition in exchange for an agreement by the CRT to continue his employment in the resort for a specified period of time.

Not all ambulance calls are cardiac cases or auto accidents. There are swimming and boating accidents and general first aid cases like broken bones.

"It's hard to work with people in lots of pain," Parsons said.

"You have to have some bedside manner," added Mace McCabe, an EMT who was on duty with Parsons. "If you move them, you have to tell them first or else you'll scare them." For many patients, just the noisy ride to the hospital is enough of a scare.

A short time later the red telephone rang in the 15th Street control room. It was a call for the mobile intensive care unit to go to West Ocean City.

A 71-year old woman with emphysema was having trouble breathing. Relatives had put her in the car to take her for help, but decided to call for a paramedic instead.

When Parsons and McCabe arrived, the technicians placed the woman on a stretcher in a sitting up position and administered oxygen. The woman's daughter rode in front, talking with driver McCabe, while Parsons took the patient's vital signs and began administering dextrose intravenously.

CARDIAC RESCUE TECHNICIAN Wayne Parsons, left, and emergency medical technician Mace McCabe are one crew of this $40,000 mobile intensive care unit. Specially designed for patients with heart problems, the vehicle allows the paramedics to take a patient's vital signs and call the information in to doctors at the area trauma center at Peninsula General Hospital. (Randy Walter photo)

The trip to Salisbury is quick in a mobile intensive care unit. Red and white strobes reflect off buildings, street signs and the road itself. Other vehicles change lanes or pull off the road to make a path. The siren blares at traffic and when the ambulance approaches intersections.

After completing an EKG, Parsons called in the patient's vital signs to PGH. About halfway to Salisbury, Parsons and McCabe heard the MedEvac helicopter broadcast the condition of an 18-year old motorcycle accident victim to the hospital. The helicopter was in route and would arrive at the same time as

Please turn to page 22

LETTERS

Tough luck for West Ocean City

Editor:

For the last 15 years we have enjoyed vacationing in Ocean City. In 1969 we bought a lot in Cape Isle of Wight. We planned to build a summer home within the next year or so. However, last year we learned of the building moratorium in that area. This was very disappointing news after the years of saving to make the home a reality. Would it be possible for you to find out when and/or if the moratorium will be lifted on new construction? We also feel it is unfair to pay full taxes on our property at this point. Is it possible to have the taxes reduced until conditions change? If so, how?

We recently started receiving your publication and are finding it very informative. Thank you for any help you can give us.

Mr. & Mrs. Karl Stoecker
Bel Air

Editor's Note: The lifting of the moratorium depends on the completion of the planned West Ocean City sewage collection system, and it's anyone's guess when — and if — the system will ever be built. The Worcester County Sanitary Commission has anywhere from nine months to a year before final planning is completed and a public hearing unveiling cost estimates — hook-up fees and use charges — is held. Then a referendum of property owners must be held to determine whether they are willing to pay these charges for a central sewer system, assuming federal fundng is available for this project, which is by no means certain. At best, the lifting of the moratorium is years away.

Property taxes are based on the assessed value of the property, which presumably reflects the fact that you cannot presently build a home on your lot. The chance of receiving special dispensation from the county on taxes is negligible.

'The star of life'

From page 15

the mobile intensive care unit.

The motorcycle driver had labored respiration, dialated pupils and possible internal injuries, the radio said.

Meanwhile, the patient in the ambulance nodded when Parsons asked her, "Are you breathing a little better now?" Before arriving at PGH, Parsons prepared a written report on the woman's condition.

The helicopter could be heard on the hospital roof when the ambulance arrived. The motorcyclist brought in by helicopter was in serious condition. For trauma patients like him, the first hour after the injury occurs is the most important period of treatment if he is to survive.

While doctors worked to save the cyclist's life, Parsons and McCabe assisted other emergency room staff members in making their patient comfortable.

"Not many calls are as serious as the guy they brought in on the helicopter," Parsons said. "That was a typical call we just had."

Carving competition

From page 6

Bill Veasey-Dodd Studios. List price for this one-of-a-kind sculpture is $2,000. The money received from the auction will be used to help defray the expenses of the World Class Decorative Miniature Carvings Award. The winning miniature will be donated to the Ward Museum in Veasey-Dodd Studio's name.

Other bargains or unique finds will be in the retail area. Merchants and craftsmen will be on hand selling nearly any item imaginable pertaining to feathers.

Hours for the World Championship Wildfowl Competition are from 10 a.m. to 10 p.m. on Saturday, May 2, and from 10 a.m. to 5 p.m. on Sunday, May 3.

Offshore rescue drill joins Coast Guard, fire service

Captain Albert E. Tyldesley
Harwich Fire Department, Massachusetts

Fire departments on Cape Cod, Massachusetts, are beginning to team up with the U.S. Coast Guard for more effective rescues at sea.

They initiated this partnership on 31 October 1980 with a four-hour joint drill that explored their complementary capabilities.

History of rescue efforts

Recreational boating and commercial fishing are major industries on Cape Cod, Massachusetts. Consequently, the region has a long history of water related rescues and maritime disasters.

By the 1950s most local fire departments had purchased some type of rescue boat, ranging from the open sea skiffs used by many departments to the government surplus amphibious truck purchased by the town of Harwich.

As water rescue calls increased, so did the training and skill levels of fire fighters.

Now every Cape Cod fire department has rescue boats. Most of these are equipped with radios and rescue equipment that allow fire fighter/paramedics to perform routine rescues and recoveries in both fresh and ocean water. Survival suits and special ice rescue boats enable most departments to perform year-round water rescues.

At the same time that the 19 Cape Cod fire departments were expanding their water rescue capabilities, another agency was also expanding because of a tremendous increase in calls. In 1970 the U.S. Coast Guard took over a section of Cape Cod's Otis Air Force Base and installed Air Station Cape Cod, which is now the second largest search and rescue base in the world. Seven helicopters and six fixed-wing aircraft respond to calls for help.

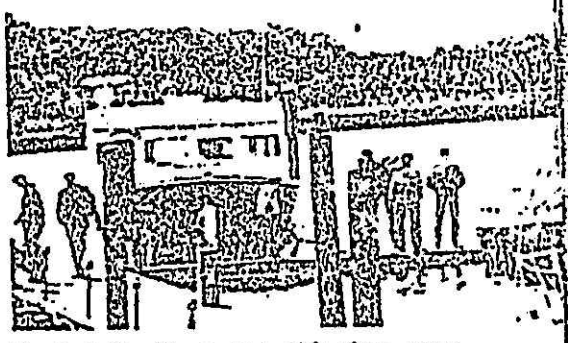
Thousands of commercial fishing boats from all over the world fish the waters off Cape Cod. By 1980, Air Station Cape Cod was responding to more than 400 calls per year from the Canadian border all the way down to New York City. Many times the Coast Guard had to airlift sick or injured seamen from vessels far at sea and fly them to local hospitals. In 1980, Coast Guardsmen from Air Station Cape Cod saved 83 lives from the sea; 26 lives were lost in their area.

Overlapping service

The Cape Cod fire departments and the Coast Guard receive similar types of calls, but each has equipment, skills, and resources that the other does not. It seems natural that the two services should be able to call on each other for help. On occasion local fire departments and the Coast Guard have worked together, but these tended to be isolated instances resulting more from afterthought than from preplanning.

The need was there. The expertise and equipment were there. The question was: how do you get small town fire departments and the federal government together administratively?

In the fall of 1980, officers from the Harwich Fire Department, a petty officer from Air Station Cape Cod, and a boatswain mate from the Chatham Coast Guard Station began to organize a combined drill. Plans and objectives were drawn up and submitted to the administrations of both services. The reaction was positive.



On 31 October seven local fire departments, the Harwich police department, a harbormaster, commercial fishermen, and Coast Guard personnel from the Chatham Boat Station and Air Station Cape Cod participated in a very exciting and productive drill.

The drill

At 0900 a Coast Guard helicopter landed in the parking lot at Harwich Fire Department headquarters and a 44-foot motor rescue boat from the Chatham Coast Guard Station tied up at nearby Saquatucket Harbor. The Coast Guard commander who flew the helicopter and the Chatham station's chief officer gave a crash course on Coast Guard equipment, capabilities, and operating procedures. Fire department officers then spoke on

Communication experiment was included in drill

The following material is excerpted from an analysis of the communications used during the joint drill of the Coast Guard and the Cape Cod fire departments. The report was prepared by Joseph McNeil, a Harwich fire fighter/paramedic and dispatcher for the Barnstable County Police Service Center.

Communications between the Coast Guard and civilian agencies during offshore rescue operations in years past has always been a problem. The Cape Cod and Islands fire departments were operating on a common low band frequency of 33.70 MHz and the Coast Guard units were operating on their own high band marine radio frequency. This made direct communication between the two almost impossible. Units cooperating in a rescue operation had to rely on information and instructions relayed through several people whose only communication link was the telephone.

For a year prior to the drill the supervisors and dispatchers who operate the EMS radio console in the Barnstable County Police Service Center had discussed this problem and found that:

- Almost every offshore rescue operation involves the Cape and Islands fire departments.
- All these fire departments are charged with the responsibility of providing emergency ambulance service to their constituents.
- All of the first line ambulances are equipped with the latest UHF radios for direct contact with their area hospitals.
- All radio traffic between these ambulances and hospitals must go through the EMS console at the Barnstable center.
- As part of its operation, the Barnstable center has the capability to transmit and receive on the high band frequency of 155.280, the Hospital and Emergency Ambulance system.
- The units of the Coast Guard's Air-Sea Rescue Service also have the capability to transmit and receive on 155.280.
- Through the use of the automatic patching capabilities built into the EMS

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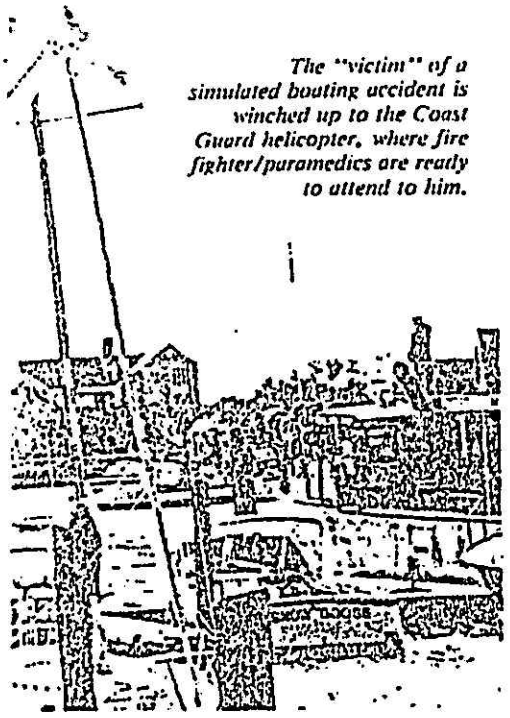

The "victim" of a simulated boating accident is winched up to the Coast Guard helicopter, where fire fighter/paramedics are ready to attend to him.

their communications, equipment, and operating procedures. Four main drill objectives were outlined for the 70 emergency services guests present, They were:

1. To demonstrate the ability and practicality of the Coast Guard's landing a helicopter at a local fire department to pick up fire fighters trained in underwater (SCUBA) rescues and recoveries before flying to offshore rescues and disasters.

2. To demonstrate the ability and practicality of the Coast Guard's landing at a local fire department to pick up fire fighter/paramedics and medical equipment before flying offshore to a shipboard medical call.

3. To demonstrate and test the possibility of fire fighter/paramedics' using telemetry to send EKG strips and voice communications from a helicopter in flight to local hospitals and land-based fire equipment.

4. To demonstrate the fire fighting capabilities found on board the Coast Guard's 44-foot motor rescue boats.

Communications

The participants went from the indoctrination session to the harbor to watch the live drill. Radio channels common to the fire department and Coast Guard and radio channels with repeaters were used so that every radio transmission during the drill could be heard by guests and spectators. The success of the communication link between different equipment came as something of a surprise and made a significant contribution towards the success of the drill. At all times the Coast Guard helicopter, the Coast Guard boat, and the Harwich Fire Department rescuers were in radio contact with each other.

During the first phase of the drill, the helicopter touched down and picked up two Harwich fire fighters in SCUBA gear. These men were flown over the harbor, where a simulation of a boating accident had been created, complete with manikin victims. While the helicopter hovered over the accident scene, the fire department divers jumped into the ocean and successfully saved the two victims. Harwich and Dennis fire department rescue boats responded from shore and effected the recovery of victims and divers.

In the second and third phases of the drill the helicopter landed and picked up two Harwich fire fighter/paramedics for a flight to a simulated offshore medical emergency. A basket was lowered from the helicopter to the Coast Guard's 44-footer. A Coast Guardsman "victim" was placed in it, then winched back up to the helicopter for treatment. Fire fighter/paramedics treated the victim's injuries and hooked him up to the Life Pak they had brought aboard the helicopter. While the helicopter flew at various heights, an EKG strip was sent 15 miles to Cape Cod Hospital with perfect results.

In the fourth phase of the drill, the Coast Guard's 44-footer was brought alongside the dock and its fire fighting pumps and equipment were activated to demonstrate its ability to fight fires at sea and in boats and buildings along the waterfront.

Critique calls drill a success

At the drill's conclusion all personnel returned to Harwich Fire Department headquarters for a review and question-and-answer period. The success of each phase of the drill had more than proved that a local fire department could cooperate with an agency such as the Coast Guard. Follow-up inquiries seem to indicate that the Coast Guard also recognizes that the fire service has something to offer it.

Two weeks after this drill, two off-duty Harwich fire fighters responded to a Coast Guard call and went 12 miles out to sea on the Chatham station's 44-footer to aid a commercial fishing boat. Using SCUBA gear, the fire fighters worked several hours in tremendous seas to cut tangled fishing nets away from the boat's propeller.

A Harwich fire fighter/paramedic, who is also an electronics expert, has made three additional training flights in the helicopter to test the EMS telemetry and has successfully sent an EKG strip more than 70 miles from the airborne helicopter to a local hospital.

The cooperation between the Coast Guard and local fire departments was, in this case, excellent. This drill happened because a few people asked the right questions of the right people, drew up practical plans, then worked hard to make the cooperative effort work smoothly. Several hundred spectators watched this drill, and three local newspapers gave it extensive coverage. All participants agreed that the results were well worth the time and effort.

Look around your community. Take an inventory of other agencies' capabilities. Work with them on preplanning. Take a chance on a combined drill. You may find that your department's life-saving capacity can be greatly extended with little, if any, cost.

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console it should be possible to put all units in touch with each other.

When I learned that a combined practice and exercise involving the Harwich fire department and the Coast Guard was being planned, I brought up the communication ideas we had discussed at the Barnstable center. Harwich Fire Captains Robert Peterson and Albert Tyldesley felt it would be a good idea to try to implement some sort of direct communications between the fire department and the Coast Guard during the drill.

The following radio tests were made during the training exercise:

1. An ambulance at fire department headquarters operating on frequency 468.175 (CMED Channel 8) communicated landing instructions to Coast Guard Helicopter 1368, which was operating on frequency 155.280.
Purpose: To test the feasibility of using a rescue vehicle as a landing zone coordinator during rescue operations.
Result: The direct communication between ambulance and helicopter was adequate. There was some breakup in the signal received by the ambulance, but at no time was safety compromised.
Recommendation: Whereas the Coast Guard pilots refer to compass points for directions, the ground personnel directing landing operations should also be equipped with a compass so that proper bearings can be given.

2. A fire department ambulance in the Saquatucket Harbor parking lot using CMED 8 communicated with the fire department rescue boat in the harbor, which was using an EMS portable, also on CMED 8.
Purpose: To test the feasibility of using a rescue vehicle as a mobile coordination center for communication with civilian watercraft that normally operate on their own frequencies.
Result: Excellent communication was obtained and maintained throughout the exercise.
Recommendation: None.

3. The ambulance in the Saquatucket Harbor parking lot using CMED 8 communicated with Coast Guard Patrol Boat 44403, which was in the harbor and operating on frequency 155.280.
Purpose: To test the feasibility of using a

(Continued on page 20)

communication experiment *continued* rescue vehicle as a mobile coordination center for communication between land-based civilian agencies and Coast Guard watercraft during rescue operations.
Result: Excellent communication was obtained and maintained throughout the exercise.
Recommendation: This patch system should be put into use any time civilian agencies and Coast Guard watercraft are involved in joint emergency exercises.

4. A fire department rescue boat in the harbor, operating an EMS portable radio on CMED 8 in conjunction with the built-in repeater of the ambulance in the parking lot, communicated with the Coast Guard patrol boat, which was operating on frequency 155.280.
Purpose: To test the feasibility of providing direct voice communication between civilian agencies and Coast Guard watercraft.
Result: Excellent communication was obtained and maintained throughout the exercise.
Recommendation: The patch system, in conjunction with the repeater capabilities of the ambulance, should be used to its maximum during joint rescue operations.

5. Coast Guard Helicopter 1386, flying over Harwich using frequency 155.280, communicated with Cape Cod Hospital, Hyannis, through the automatic patch capabilities of the EMS console at the Barnstable center.
Purpose: To test the feasibility of direct communication from Air-Sea Rescue to area hospitals.
Result: The Coast Guard pilot and the nurse in charge at the hospital both reported adequate signals; no problems were encountered using the automatic patch.
Recommendation: I am under the impression that the aircraft commander had to relay information from the paramedics on board the helicopter to the hospital because the paramedics had no control of the radio on 155.280. I feel this could lead to a misunderstanding of orders from the hospital. I would like to see the paramedics gain control of this transmitter during periods of communication with the hospital.

6. The paramedic on board the Coast Guard helicopter flying over Harwich used an EMS portable radio in conjunction with the built-in repeater of the ambulance to communicate with Cape Cod Hospital.
Purpose: To test the feasibility of providing both voice and electrocardiogram signals between an airborne fire department paramedic and the hospital emergency room.
Result: The signal ranged from none to excellent. Voice transmissions from the paramedic, when heard, were excellent; no noise cancelling was necessary. It should be noted that the portable radio used was equipped with an extension microphone-speaker combination. EKG telemetry also ranged from poor to excellent, and it was noted that the distance between the helicopter and the ambulance was a definite factor. The best signals were received when the aircraft crewman held the portable radio outside the helicopter's side door. The EKG tracing received at the hospital during this time was excellent, and a reliable diagnosis could have been made if it were needed.
Recommendation: A study should be undertaken to see if it is possible to connect the EMS portable to an exterior helicopter antenna (see box below). The possibility of using some type of signal booster on board the aircraft should also be considered.

7. A Harwich Fire Department officer acting as an observer on board the Coast Guard helicopter used a portable radio to communicate with his headquarters and fire department vehicle.
Purpose: To test the feasibility of using an airborne civilian agency observer to coordinate and direct mobile units during rescue operations that might involve non-EMS radio equipped units, *i.e.*, fire trucks.
Result: Excellent communication was obtained and maintained over a distance of several air miles.
Recommendation: The officer was using a hand held portable radio without the extension microphone-speaker combination. His comments to me after the drill were such that I would recommend the mandatory use of the extension microphone-speaker combination or a headset unit. This would minimize repeating transmissions because the observer was unable to hear all the radio traffic.

Joseph McNeil
Fire fighter/paramedic
Harwich Fire Department

Communications follow-up

On 8 December the feasibility of using an EMS portable radio attached to the UHF antenna of a Coast Guard helicopter was explored.

During the test flight the EMS portable was attached to the aft UHF antenna of the aircraft. Using CMED channel 4 (463.075) an attempt was made to contact the Barnstable County Police Service Center.

The signals sent and received were excellent, as they had been in previous tests. A test EKG tracing was then sent, by way of the Barnstable Center, to the Falmouth Hospital Emergency Room for evaluation. This signal was also excellent and the tracing at Falmouth was very legible.

When the helicopter was approximately 20 nautical miles northwest of Otis Air Force Base, I attempted to contact the communications center at Boston. CMED Boston reported they were receiving our transmissions loud and clear. This call-up was made to test the range of the radio's transmitter; the signal was excellent.

A test EKG tracing was also sent to CMED Boston. It was recorded at their console and deemed adequate.

The test subject, who had been sitting up, was placed on a stretcher in the supine position. A portable aluminum and nylon stretcher equipped with rubber feet had been brought along for this test.

The EKG tracing taken with the portable monitor on board the aircraft was acceptable, with only a small amount of artifact noted.

The test subject was then placed into the standard Coast Guard Stokes stretcher, which is made of aluminum and fiberglass.

With this change, the EKG tracing taken with the portable monitor on board the aircraft was excellent; no artifact was visible.

When the helicopter was approximately 70 nautical miles from Hyannis at an altitude of 1500 feet, I sent a test EKG tracing through the Barnstable Center to the Falmouth Hospital. At this point we were at the maximum distance set up for the test flight.

The tracing and voice communications received at the hospital were excellent.

Based on the excellent reception obtained throughout the test, it is my opinion that radio communication between a paramedic on board a helicopter and an emergency room physician located in any area hospital could be maintained at a very acceptable level, even at distances of more than 100 miles.

I feel this will improve the lifesaving capabilities of the Coast Guard during emergency transfers from ships at sea, because trained paramedics could perform advanced life support under the direction of land-based doctors.

Joseph McNeil, Fire fighter/paramedic
Harwich Fire Department