

KMCARA HISTORY

By Bill White

It seems that every idea is initiated as the result of a need and the forming of the Kettering Medical Center Amateur Radio Association was no exception. In January 1978, a major **blizzard** occurred which paralyzed the entire Miami Valley area. Due to treacherous roads and impassable snowdrifts, a state of emergency was declared.

Because of the hazardous road conditions, doctors and nurses as well as other hospital personnel were unable to get to work. Four-wheel drive vehicles were borrowed to bring essential staff and medical personnel into the hospital. As calls came in from various staff members indicating that they were stranded, there was no way to communicate the information to drivers on the road. Often, delays were encountered, due to insufficient directions and a lack of information.

CB radio was enlisted to fill the gap. However, users found it to have very short range especially since the band was overloaded by many casual users who also found themselves at home.

A real need for reliable communication was established as a result of that experience and a small group of employees at Kettering Medical Center felt that amateur radio could be the answer to the problem.

On April 6, 1978 with the blizzard being history, this group decided that it would form an amateur radio club to help fill this need and to foster radio knowledge and the fellowship of radio operators. Nelson Lawhorn was the founding president and supportive guide for many years until he moved out of the area. The six founding members also include: WD8LWR, WB4LAI, WD8LWQ, WD8NLK(N8AJ0), and WD8DLQ.

In the early years, a borrowed HF radio was set up at the old Charles Kettering home at Ridgeleigh Terrace. In 1979, a home was found at Kettering Hospital in one of the equipment rooms on top of the new northwest wing which was dubbed Penthouse 3. For a while, the club struggled with how to raise funds to purchase new equipment. A fundraising plan was presented to the hospital administration but was rejected because key personnel did not want public fund-raising to take place in the name of the hospital. Instead, the administration gave the club \$1500 and the Development Department matched the funds with an additional \$1500. The monies were spent in the purchase of a complete R. L. Drake **HF station, a 2 meter FM radio**, towers and antennas.

During the early years, the Monsanto Amateur Radio Association allowed the KMC group to use their repeater system, however, it was soon apparent that a club-owned repeater would have many advantages. In September of 1980, a vacated frequency pair of **147.075/147.675** was obtained and by October, the first KMC repeater was on the air.

The first system was nothing more than a receiver and transmitter hooked to separate antennas with a home brewed control circuit built by Bill, WB4LAI. By mid 1981, new equipment had been purchased with a new duplexer that improved the system's performance greatly. The new equipment was placed in Hospital Equipment Room Penthouse 1 and two 19 inch racks were added to allow for the experimentation that was to follow. This system operated for many years as 147.675 output but was inverted to 147.075 in 1987 to comply with the new ARRL band plan that was adopted by the Ohio Repeater Council. This system had interference from two Cincinnati systems 15 kHz away, therefore, its operating profile

could not be increased without incurring additional interference.

In early 1982, the need for a higher profile frequency was recognized and the 145.33 repeater was added at Sycamore Hospital. The old 147.675 was linked to the **145.33** to supply communication between the two hospitals. In late 1982, a much better location was offered to the club on a new tower that was to be built in the spring of 1983. The 145.33 was changed to **145.11** in February 1983 to minimize any interference to Indiana systems, and placed into service in March 1983 at the 1000 foot level on the new WPTD channel 16 tower. This site used a common duplexed antenna that caused problems from the beginning due to tower joint noise and mixing with the local TV signals. The site had another antenna added in late 1984 at the 850 foot point to separate the transmit and receive antennas which helped the situation but did not cure the problem. In November of 1986, the receiver was removed from the channel 16 site and numerous lower level receivers were added to the system which finally cured the age old joint noise problem. Our first remote receiver was near Eaton and was installed in July of 1985. In November 1984 we installed our new computer controller on the 145.11 system. This controller was hand wired and designed by Bill WB4LAI.

In January of 1982, coordination papers were sent to the Ohio Repeater Council for a new 220 system on **223.50** that was designed to be the hub of a regional link system dubbed the "MetroLink." The system was changed in March 1983 to **223.90** due to interference from the Bellefontaine area, but before it could get well established, there were questions about the continued use of the 220 band. Due to this concern, the link system was put on hold and then abandoned, however, the repeater stayed in operation and was moved to a higher location near the Dayton Mall in 1983. At the Dayton Hamvention in April of 1986, the Association's old Drake HF system was sold and new equipment bought which could be computer controlled. This system was then linked with the 223.90 repeater near the Dayton Mall to create a **remote base for HF**. This new system was designed to operate on the 160, 75, 40, 20, 15 and 10 meter bands running 1000 Watts or more output on the first four bands with touch tone control of the station's triband beam.

In the spring of 1987, the old 850 foot site on the channel 16 tower was converted to a 224.16 MHz repeater site. In January 1988, the **145.11 repeater in Columbus** went on the air and was permanently linked to the 145.11 and 224.16 system in Dayton. This system became the "Emergency Gateway to the Capital" which interfaces with the Ohio Emergency Management Agency through the Central Ohio ARES of Columbus.

In the spring of 1989 the Association developed a new **packet node** system that had a 2 meter local area network node on 145.69 MHz which was linked to the mid-net trunk system. This system also has a Converse node for multiple connect QSOs. The Association also supplied the Mid-Net trunk system, the Dayton and Springfield trunk nodes and sites. This system supplies reliable packet communications for Cincinnati, Dayton, Columbus, Cleveland and many point between.

Through 1990 a new organizational structure was developed that defined the Association as an employee auxiliary organization with an identity separate from KMC. All equipment is owned and insured by the KMCARA.

ACTIVITY HISTORY

The Association has been involved in many activities since its founding. The ideas and

imagination of its members have produced an interesting history of achievements. Some of these special events are recalled in the following history.

From the beginning of its formation, the Association and the hospital have seen numerous benefits in the participation of the KMCARA operators in **hospital drills** and tests. These tests are conducted at least twice a year and provide a mechanism to improve response time and communication efficiency.

The group's participation in **area-wide amateur radio drills** and scenarios has also been very helpful.

For a time, the organization was strong in trying new radio technology to improve communication. Twice in area-wide tests, the Association members provided live **amateur television** coverage of the disaster site to the hospital. Video data was also sent via television to the hospital concerning numbers of victims and transportation. Television has played an interesting part in the story of the Association. Beyond the capability of supplying amateur radio television to and from the hospital, the Association meetings were televised live with call-in questions over the Continental and Viacom cable systems. This was done from November 1982, to September 1984. Many aspects of amateur radio and special guest speakers were presented to the general public. This program came to an end when key television personnel left the employment of KMC.

As a result of a special waiver granted to the KMCARA by the FCC, **space shuttle** transmissions have been made available on the repeater system. The waiver has also made it possible for other amateur radio groups to provide this service.

Communication is always a critical item at a modern health care institution. On June 19, 1983, due to a possible lightning strike, the internal **telephone systems** at both Kettering and Sycamore Hospitals were rendered inoperative. Members of the KMCARA moved into position at both hospitals. Some 25 amateur operators took part in setting up and operating stations in key areas of both hospitals such as the emergency room, surgery, central supply, public relations, several of the nursing units, the main telephone switchboard and other strategic locations. Many of the medical personnel soon realized the value of amateur radio communication as only a selected few telephone lines were operative to the outside Bell system. The radio communication kept our repeaters busy for almost 14 hours until normal telephone service could be restored. At later dates, the impact of other telephone failures was also reduced by the service of the KMCARA radio operators.

In April of 1985 we held our first **West Central Ohio Amateur Radio Emergency Service** net. This net started by Phil KA8KEJ(N8LJA) has been a real training device for area hams.

The Association repeaters and members have been used in many other public service and emergency events. During the **Miamisburg train derailment**, the system was used for phone patches, coordination of agencies throughout the state, contact of radio operators with each other and information updates during the disaster.

Well over a hundred calls for assistance a year have been handled through the KMCARA system. From medical emergencies to stranded motorists, the system has performed well. Soccer tournaments, bike rallies, triathlons, long distance runs, and many other events have benefitted from the public service aspects of the KMCARA.