

AWINS Supports Katrina Relief

At the ribbon cutting for Anne Arundel County's new Mobile Command and Control Unit, code named MCCU-1, County Executive Janet Owens noted that MCCU-1 is "...the first in the nation to connect neighboring counties, state and federal emergency officials to all other law enforcement agencies." MCCU-1 is the first mobile command vehicle in the nation to be equipped with ARINC Wireless Interoperable Network Solutions (AWINS™), the technology that gives MCCU-1 the ability to communicate so broadly.

Less than a week after the ceremony, hurricane Katrina rumbled in to the Gulf Coast. The hurricane destroyed much of the Louisiana, Mississippi, and Alabama coastline and flooded New Orleans, a city of about half a million people. Along with all of the homes, businesses, roads, and hospitals the hurricane also destroyed almost the entire emergency services infrastructure, including radio communications. The lack of communications was nationally recognized as one of most critical issues in the subsequent search and rescue efforts, and delivering aid in the hours immediately following Katrina. Without solid communications, leadership was unable to send aid to where it was needed most, and first responders were left to fend for themselves, unable to call for backup.

It was natural to think that MCCU-1 would be able to help improve communications and support the rescue effort. When Maryland's offer of assistance was accepted, MCCU-1 was soon on the road to New Orleans as part of a large contingent of Maryland agencies under the direction of the Maryland Emergency Management Agency. Along with MCCU-1, Anne Arundel sent enough equipment and supplies to make themselves self-supporting for at least two weeks. Equipment included a large generator, tents, cots, meals ready to eat (MREs), a custom trailer to refuel the equipment (quickly built in time to support this mission), ambulances, pickup trucks, and vans to carry equipment and people. The team consisted of county fire officials, a small technical support team from ARINC, and a technician from Wilmer's Communications.

MCCU-1 had been outfitted for use throughout Maryland, and could communicate with first responder and emergency services organizations statewide at the push of a button. However, its first real test would be over eleven hundred miles away from its home base in an environment of extreme destruction and chaos. The deployment team would have to reprogram the sophisticated communications capabilities of MCCU-1 to meet the impromptu demands of what ever they were thrown into in Louisiana.

The Anne Arundel team joined other Maryland teams, whose mission was to support the critical deployment of seven walk-in medical clinics, staffed with over 100 doctors and nurses. They were assigned a base of operations at

Meadowcrest Hospital, evacuated just after the hurricane, in Jefferson Parish just outside of New Orleans. With a very diverse multi-agency team, it was obvious that the interoperability capabilities of MCCU-1 would be in critical demand.

The mission included 14 entities from Maryland:

- Anne Arundel
- Ocean City
- Harford County
- Howard County
- Montgomery County
- Prince George's County
- Calvert County
- Joppa-Magnolia
- Aberdeen
- Bel Air
- Maryland Defense Task Force
- MedStar Ambulance
- Cecil County
- Chesapeake City

Locally, resources from seven jurisdictions were part of the team over the course of the mission:

- Jefferson Parrish Police
- Jefferson Parish Fire
- The National Guard (multiple jurisdictions)
- Louisiana State Patrol
- Georgia State Patrol
- Park Police (helicopter)
- Private ambulances

There was little commonality among the radios from the 18 organizations. This meant that the interoperability solution that the team would have to be built would be broad and complex. Without MCCU-1, there would be no way to coordinate the organizations' efforts, particularly those at remote medical clinics.

After the hospital parking lot was cleared of debris, MCCU-1 was set up. Dispatch operations commenced within 45 minutes. Communications bridges and dispatch services were set up as they were required.

Over time, the network grew to include at least 9 different types of radio connections:

- UHF
- VHF Hi Band
- VHF Lo Band
- 800MHz TAC2
- 800MHz TAC4
- 800MHz talkaround
- VHF Lo
- Aviation
- Marine Radio

Four interoperable talk groups were configured for the various operational groups:

- Ambulances and transport
- Security
- Clinics
- Base camp logistics and hospital staff

The talk groups enabled people who had never worked together and had completely different radios, to act as a team. For example, the ambulances had a mix of 800MHz and VHF Lo Band radios, and normally would not be able to communicate. The talk group established by MCCU-1 enabled the ambulances to coordinate a backfill when a transport to the hospital was required. While the dispatcher could monitor the conversation, there was no direct interaction required, saving time, and the possibility of communication errors.

It was also critical for the various security personnel to communicate. With looters and armed gangs in the area, everyone was at risk, including clinics that were more or less out on their own with minimal security. Without the MCCU-1 to tie their communications back to the base camp at Meadowcrest they would be at much greater risk.

While some bridges were used on an on-going basis, dispatchers in MCCU-1 created ad-hoc bridges as the need arose. When medical staff at a clinic needed supplies, the dispatcher created a bridge to temporarily enable the clinic to talk to the logistics group at the hospital. The bridge would then be disabled when all of the logistics were agreed upon.

WiFi-enabled phones allowed commanders and support teams to work in and around the base camp, but always stay in touch. Each one could participate in the radio-based talk groups at the push of a button.

MCCU-1 was designed for use as a command center and communications bridge at a disaster or event site, augmenting any existing communications infrastructure already in place. It was never expected to be the primary radio system covering more than 50 square miles in Jefferson Parrish, but the flexibility of the system was demonstrated over and over.

A good example of this was the ability to use an antenna on the roof of the hospital to get better range on radio reception. Recognizing that the infrastructure was disabled, the ARINC team brought a VHF repeater and extra antennas, and multiple portable radios with them. While not part of the original equipment in the MCCU, it gave the team added capacity, particularly for staff that didn't have radios for each person.

The MCCU-1 also had the ability to hook into other local radio resources, such as Jefferson Parish 800MHz repeaters as they came back online. The ability to reach out and utilize other resources proved vital in the success of the mission.

Without a functional cellular, telephone, or data network infrastructure, communications with the outside world would have been impossible, but the multi-purpose satellite dish proved it's worth. Because it's an IP-based communication path, it was able to accomplish multiple tasks same time.

Streaming video over satellite was used for conferences with the Anne Arundel Emergency Operations Center and the Maryland Emergency Management Agency (MEMA), which oversaw the entire Maryland contingent. Even the Maryland Governor's office was kept up to date via IP phone.

E-mail and voice communications enabled the team to stay in contact with both the leadership back home and their families. After critical systems were up and running, the team used the WiFi network (also connected to the satellite) to create an "Internet café" outside MCCU-1. Here everyone on the mission could communicate with home by either e-mail or phone.

As the mission wore on, maintaining high moral became important. MCCU-1 helped in this regard too. The team downloaded sports scores, news stories, and other useful information, such as hurricane tracks that were posted on a large bulletin board for the team to use.

The team could also keep up with events in other parts of the disaster area, and kept a close eye on weather and order supplies when they ran low.

From its initial set up, MCCU-1 ran flawlessly for 6 straight days before its first power cycle. As part of a training exercise for the operations staff, the system was restarted, and ran for an additional 9 days. The entire mission was run on a generator brought from Maryland.

MCCU-1 was a critical component of a medical mission that treated in excess of 5800 patients, including more than 55 who had to be transported to operational hospitals. The team also rescued 35 people, including 20 children.

MCCU-1 received significant praise from all members of the team, many of whom recognized that without the powerful communications capability, their job would certainly have been more dangerous and challenging. Not having to concern themselves with communications problems made their mission that much more successful.

When word of MCCU-1's capabilities spread through the area, other teams specifically sought out the Anne Arundel vehicle to get a tour and learn more about its powerful communications ability.

Eleven hundred miles from home, and in extremely adverse conditions, MCCU-1 “aced” its first exam.