

# **ARES Operations during the Joplin Tornado Event: May 22, 2011**

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**First off it is important to note that this is a communication of what I did as the person in charge of the ARES operation in Joplin disaster. The decisions were mine but were not made without communicating with the ham operators available in the EOC, outside the disaster zone and in the field. This is not THE way to do it, just A way to do it.**

**Second, there were way too many ham operators to mention by name, those who assisted us with this operation are much appreciated. Not one complained about any assignment I had to give out. Without their support this operation could never have succeeded. I am blessed to have worked with and know, so many fine people both in and out of the amateur radio world.**

## **The Initial Request**

On Monday the 23rd of May I was contacted by the Missouri State Emergency Coordinator Ken Baremore, W0RBK, and asked to respond to the Joplin Tornado emergency as the Amateur Radio Emergency Services ADEC, District D for all ARES operations in the disaster zone. The initial assignment was to evaluate and oversee the demobilization of the ARES team assisting the Red Cross.

On Tuesday May 24th at about 1630 hours The Red Cross officially request that ARES stand down as communications had been restored to them. Demobilization went smoothly and ARES operations were suspended. I was contacted by the Newton County EC and advised that a request will be made for communications support either that evening or early the next morning. I contacted the Webster County EC and asked that he be prepared to respond.

On Wednesday May 25 at about 0700 hours I received a request to provide amateur radio communications between Newton County (Neosho) Emergency Operations Center and Jasper County (Joplin) Emergency Operations Center. I assigned all available ARES personal to the task of establishing amateur radio communications in the Jasper County EOC, meanwhile I spoke with the ARES Emergency Coordinator for Newton County, who was present at the Red Cross with me, and asked that they man the ARES station in the Newton County EOC. I advised SEC Baremore of the request. I then called the Webster County ARES EC and had him bring down operators and more equipment.

Within 10 minutes Newton County EOC amateur radio station was manned. A 24 hour schedule was made up of radio operators that would be manning the station and communicated to me via the Newton County ARES repeater. VHF/UHF communications were established between me and the EOCS.

Upon arriving at the Jasper County EOC, I discovered that it was in the basement of the Public Safety building. I contacted the Emergency Management Director and was shown to the basement and a room that was to be used for ARES communications. The first thing I noticed was that there were no coax cables available and no exterior antenna systems in place. I then noticed that there were no access ports to pass the coax cable through to erect an antenna system outside or anyway to run any. I spoke with the Emergency Manager and voiced the problem. After some conversation it was decided to look at other options. I was taken up stairs to an office that had access to a stairway leading directly to the EOC.

We started bringing in the radios and equipment needed to communicate and got them set up. No access ports were available in this office either, however, we were able to run coax cable over the false ceiling, out to the lobby, in between both sets of double doors and out to the antenna system.

The antenna system comprised of 2 dual band VHF/UHF antennas and a HF dipole antenna as well as a fiberglass pushup mast with antenna connections pre-mounted. All in all within 1.5 hours of being requested, communications were established between the two EOC's. Two repeaters were working in Joplin and two in Neosho for a total of three VHF repeaters and one UHF repeater. A fourth Repeater had taken a direct hit when St. Johns Hospital was hit and the floor it was on was ripped away.

## Operations

On Wednesday May 25<sup>th</sup> the first message passed was to Newton County EOC to confirm communications on VHF and UHF systems that were functioning i.e. simplex and repeater operations. The second message sent was to an out of the area station to confirm HF operations were established. After communications were proved to be established, I informed both EOC's that communications were functional and ready for their use.

I was asked by the Jasper County EOC for a schedule to provide 24 hour, around the clock, communications operators until further notice. I established the first 24 hour rotation with the ARES operators I had already called to respond and the ones that were available from the local ARES team. (Note: most of the local ARES members were directly affected by the tornado by either direct damage or affected family.) At this point I was informed that Community Emergency Response Teams had been requested to assist with Search and Rescue operations. I requested that extra Ham Operators be sent to support the Search and Rescue teams.

Thursday May 26<sup>th</sup>, saw message passing, however it also saw a mission change for our communications. Although the police and fire units from Joplin could communicate, many of the National Guard and out of town/state police and fire departments couldn't. I was asked if communications at the different check points could be provided. I spoke with the communications officer in the EOC and worked out a communications plan. It was then decided, after a common (mostly) frequency was found, that communications were acceptable. ARES was put on the communications list as a backup communications for that purpose.

I returned to the ARES EOC upstairs and checked to see what was needed, what new requests had been made and what the message status was. While I was at the ARES EOC the Communications Officer from the disaster EOC came in and asked if I had any ideas what could help with getting real time information from the field and he stated that there was no communications with the search and rescue teams. I then suggested that Ham operators be placed with the search teams. This would allow real time information to be passed directly to their EOC and if they needed any information or verification from the disaster zone, a message could be sent with an immediate response as well as provide a way to relay emergency information i.e. injuries to a team member or other medical event encountered in the field, directly. He agreed that the plan was one they could use and asked if I would assign someone to each team.

After conversing with the ARES team it was decided to allocate repeater use. The Salvation Army had arrived and needed a repeater for use. A repeater was dedicated to their use and the search teams had a dedicated repeater on VHF to be used as the skywarn repeater in case of more bad weather. The thinking on this is that the search teams would be recalled in case of inclement weather. The UHF and VHF repeaters in Newton County were dedicated to communications between the two EOCs. UHF simplex frequencies were dedicated to communications between the basement EOC and the ARES EOC. Other VHF simplex frequencies were assigned as needed.

While meeting with the CERT teams and explaining that a ham operator would be placed with each team, I asked if any of the team members were Ham Radio operators. Five people raised their hand and I assigned them to be the radio operator for their individual team. I had received 4 volunteers from the district as well. Three were assigned to search teams and one was unassigned. Eight teams of ten people sent on search and rescue missions in the disaster zone. I gave each radio operator a grid map of the disaster zone and the operating frequency as well as instructing them to radio their assigned search area by using the grid number once they received them.

Just after the CERT teams departed to be given their assigned search areas, I was contacted by the Salvation Army with a request to provide them with 5 ARES radio operators to help with communications from their food distribution centers. I informed them that I had one operator and that I would request more. I assigned the operator I had to go to the Salvation Army and that he needed to communicate to me that he arrived and his assignment given and that he would report to them after that.

I then contacted the Americorp Volunteer Center and asked that all amateur radio operators that had checked in be sent to my location for assignment. I explained that they had to have a hand held radio and a license for identification and proof they had a current radio license. Americorp sent 12 Radio operators. Seven of which were verified ARES members. I assigned five to the Salvation Army and kept the rest in reserve for other assignments as needed.

I contacted SEC Baremore and asked that he take over the Salvation Army request for operators since communications with people outside the disaster zone would be necessary and that, due to our MOU

with them only ARES members could fill their request. He agreed and I contacted the Salvation Commander on hand and relayed the contact information to him. By now several Ham operators from Missouri, Oklahoma, Kansas, Arkansas, Colorado and other states had arrived to help in the Joplin disaster. Some were assigned and screened by SEC Baremore and others were checking in at the Americorp volunteer center and the other volunteer centers and then sent to me for use as needed with communications. This would come to be valuable resource the next day.

When the search teams began returning they informed me of a dead spot in the communications net by St. Johns Hospital. It was then that a local ARES member informed me that he had a plug and play repeater that was available if we could use it. I asked him to check the area of the dead spot and get back to me with a position to put it up and in the mean while I would try to locate an antenna, coax and a mast to deploy it on. On his arrival back to the ARES EOC he stated that he had found a 700 foot tower with a 2 meter/VHF antenna already on it. I asked him if he could contact the owner and get permission to check the antenna and if it worked to ask if we could use it for ARES purposes. The antenna checked to be useable and the owner gave permission for the use of the tower and the power system with it. We then plug the new repeater in, made minor adjustments and this closed the gap in communications coverage. This repeater was dedicated to search and rescue for hand held use.

I was contacted by the Disaster EOC and informed that the needed communication operational period would go to a 12 hour schedule starting 0700 and ending 1900 Friday, May 27th.

On Friday May 27<sup>th</sup> I again was tasked with assigning ham operators to the search teams. Seventeen ten member search teams were assigned operators with instructions on reporting grid map locations they would be searching and operating frequencies. At this time I had to program SEVERAL radios with the operating frequency because the owners were unable to program their own radios - they simply didn't know how.

After the search teams had been deployed I asked for radio checks from them in the former dead zone across the disaster area. All stations were able to communicate with hand held radios everywhere in the disaster zone AND the debris zone to the east. I relieved the radio operator to provide a break for him when we received an emergency message that a Marine on one of the search and rescue teams was down and having problems breathing. The second message relayed that his throat was swelling and he had taken an over the counter medication that had an ingredient he was allergic to. I passed the message to the EOC along with their grid square and location in it. The EOC responded that eleven minutes after receiving the message an Ambulance was loading the Marine and he was in route to the field hospital.

Shortly after I was relieved on the radio I was contacted by the EOC for a briefing. At the EOC I was informed that on Sunday, May 29<sup>th</sup>, the president would be in Joplin to tour the damage and speak to the people there. I was informed that all search and rescue would be stopped while the president was in Joplin. I contacted SEC Baremore and informed him on this change so he could schedule resources accordingly.

At the afternoon briefing of the ARES EOC team it was brought up that over 1500 messages had been relayed by the ARES EOC operators to this point. During the briefing it was reported that there were no communications failures or incidents at this time.

On Saturday, May 28<sup>th</sup> twenty search and rescue teams were deployed with ham operators attached as before. After the assignment of radio operators, while monitoring the traffic and messaging I was contacted by the Operations Officer from the Disaster EOC and asked if I had an idea of how a radio operator could be at the water and food distribution areas for occasional check in. After some conversation of what the actual need was, we determined that a mobile ham radio operator that knew the area could drive the locations and radio back real time conditions of water supplies, food supplies, port-a pots and other concerns. A ham operator was assigned that lived in the area for the task. A ham operator was placed on the supply trucks and assisted the delivery of supplies to the areas indicated to be low by the mobile ham station.

On Sunday, May 29<sup>th</sup> ten search and rescue teams were assigned limited operations until 1100 hours. They were briefed that they were to stand down during the Presidential visit and to radio the ARES EOC and report they were ending operations. This information was then relayed to the Disaster EOC.

During the Presidential visit the amateur radio frequencies were allowed to stay up in case of emergency.

After the President exited the area search teams resumed their assigned tasks.

At the end of the day I was contacted by the EOC and informed that the search and rescue would transition to search and recovery on Monday May 30<sup>th</sup>. I was also told that ARES operations would no longer be needed after tomorrow 1900 hours. I contacted SEC Baremore and informed him of the change.

On Monday May 30<sup>th</sup> Four search and recovery CERT teams were deployed. I briefed the radio operators and gave them the frequency to be used and a grid map. After Briefing I instructed that all unnecessary equipment be demobilized and packed for demobilization at the end of the day.

After all teams returned the ARES operations ended for the Disaster EOC at 1900 hours Monday May 30<sup>th</sup>. The Salvation Army ARES operation headed by SEC Baremore continued.

On Tuesday May 31<sup>st</sup>, at my residence in Webster County (150 miles away) I received a call from A CERT team leader asking my help in contacting the Disaster EOC. The remains of a person from the missing persons list had been discovered and the leader could not make contact by phone, due to no answer, to relay the information. I contacted the Disaster EOC and gave them the information on the message and gave the contact number of the CERT leader for them to contact. They informed me they had her on the phone and I terminated contact.

## Lessons Learned

As I wrote this I tried to tell the issues and include the fix we used. I would like to touch on some of them again in brief.

When we first arrived at the Joplin EOC building we were directed to the basement where there were no coax cables connected to any exterior antennas. The noise level was too high to effectively work with a radio and pass messages. Our solution was to relocate to the top of the stair way, in an office and run RG 8X coax over the false ceiling and out between the double doors to the push up pole with the attached antennas. We used three all in one radios that went from 440 up to 160 meters and two dual band VHF/UHF radios with multi band antennas. It worked well.

We had to adapt as our mission changed to provide support to the search teams in the field. When teams from all over the country come to help in a disaster, their radio equipment wasn't the same if they had it at all. Ham radio and ARES made communications possible when nothing else works. A fix implemented in my district was to have all the ECs have their ARES group practice entering a repeater and simplex frequency by key pad interface, with no computer software, at least three times a year. I ask that one of them be in March of every year at the beginning of severe weather season. We continue to train to be successful.

The next issue was providing communications to search teams. When the CERT teams arrived it was a natural marriage to put amateur radio operators with them. Some had ham operators with them which made it easy to assign communications to them. The others quickly noticed the benefits of amateur radio being built in as an asset. The district I serve has eighteen counties and CERT is a very big part of the disaster response plan. I am a Community Emergency Response Team instructor as well as a ham radio volunteer examiner for the ARRL and W5YI. That being said District D in Missouri is working to incorporate the two programs together to be better prepared for a disaster. When CERT is called out amateur radio is automatically requested to go as communication support. We still serve our MOUs and anyone else requesting communication support, we are just getting better at what we do.

Then we had the issue of a dead spot in the disaster zone. We fixed this with a plug and play repeater. Now not every situation is going to yield a 700 ft tower with useable antenna but we were prepared to put the repeater on a push up pole and go operational. No plan can cover every possibility but it has to be flexible enough to allow you to improvise.

