

Communication Lessons Learned in Hurricane Season 2005

Katrina communications scenario:

Few hurricanes have impacted the U. S. as severely as Katrina. Power was lost immediately. Telephone service and cellular phone service were also lost immediately, not just because of the overload common to disasters, but because the infrastructure of these systems was destroyed or severely damaged. Even the communications systems serving law enforcement, fire departments, medical facilities and other governmental agencies failed within a very short time. Reports from the area indicate that only 2 modes of communication were available in the impacted area, amateur radio and satellite telephones. Amateur radio because it is very simple, flexible and not dependent on any infrastructure. Satellite telephones because its infrastructure was safely outside of the impacted area (in space and at distant switching facilities). We take comfort in the fact that these two modes of communication are the two that the Church has incorporated in its planning.

The following are observations and conclusions made from experiences of individuals responding in behalf of the Church to Hurricanes Katrina and Rita.

Satellite telephones:

1. The Comm Center (formerly known as the Media Center) should be installed in an appropriate location in the bishops' storehouse and periodically tested. (The Comm Center in Slidell was still in the box when Katrina struck) A test should be run just prior to a predictable disaster to verify both incoming and outgoing call capability. Apparently no one at the Slidell bishops' storehouse had assumed responsibility for the Comm Center. It is recommended that installation and training on the Comm Center be a cooperative effort between the storehouse manager and the emergency communications specialist. It is imperative that there be regular calls placed to verify Comm Center functionality and operator proficiency.
2. The Com Center requires an analog telephone. It will not work with the digital phones commonly used in Church facilities. Every Comm Center user should verify that they have a compatible analog telephone. Future shipments of Comm Centers should include an analog telephone. (It was necessary to borrow an analog phone for the Comm Center in Slidell.)
3. A conventional analog telephone is more reliable than a cordless phone because the cordless phone requires power to operate and periodic recharging of the battery.
4. There are two optional locations for installing the Comm Center, the communications room and the office area. If the Comm Center is installed in the communications room because of antenna installation limitations, a line should be run to the office area so that it is not necessary to run back and forth between the offices and the Comm Center location.
5. Handheld satellite phones did not work indoors and some places outdoors. They were unusable for receiving calls because the satellite could not be accessed from indoors and battery life limited the amount of time they could be left on.
6. Placement of handheld satellite telephones with users prior to the disaster (if possible) increases the likelihood of the user being able to successfully operate the device. More importantly, it gives the user communication capability in the early hours of the aftermath when communication is most critical.
7. Users are still having difficulty with the operation of handheld satellite phones. It has been requested that the instructions be simplified. However, nothing is more effective than one-on-one training. It would be best to have the person issuing the phone give the recipient instructions in its use and limitations, and place at least one test call to verify that the user can successfully operate the phone.

8. One reason handheld satellite phones did not work is that the antenna was not locked firmly in place. A note should be added to the instructions to have the operator verify that the antenna is firmly locked into the phone.
9. Handheld satellite phones worked very well when used in vehicles with the magnetic mount antenna and the cigarette lighter power adapter.

Amateur Radio:

1. Amateur radio worked very well as the main communication link between wards and stake and between the stake and the bishops' storehouse.
2. The value of redundancy was proved. When one mode fails a backup mode maintains communication continuity. Example: When the telephone service at Slidell was cut off almost immediately after it was initially restored, a message was passed to the Houston bishops' storehouse by amateur radio informing them of the lost telephone service. The radio operator in Houston was able to contact the right person at Bell South and have telephone service restored at the Slidell storehouse within a matter of minutes.
3. Amateur radio allowed the off-loading of health and welfare messages which reduced the workload of leaders at Slidell. (Information on 18 evacuated missionaries was passed to Houston where telephone calls were placed to anxious parents informing them that their sons were safe and engaged in serving in the relief effort.)
4. Radio operators were very helpful in passing messages in behalf of leaders, enabling the leaders to continue on with their duties. This was more efficient than leaders wasting time trying to get a call through on a satellite phone.
5. The technical expertise of licensed amateur radio operators proved very valuable in areas other than the operation of the radio system. The operator assigned to Slidell installed the satellite phone system, put the radio system in operation, located 2 usable analog phone lines in the building, rewired the building telephone system to optimize routing of calls, installed emergency lighting and assisted the neighboring county police and fire station with their communication problems. It is recommended that training of emergency communication specialists be broadened to prepare them to respond effectively to telephone, satellite phone, lighting, and computer/internet problems.
6. HF capability was a valuable asset in filling in where VHF did not have the range needed. VHF and UHF mobile radios were much more useful than handhelds because greater power output was required for communication between Church buildings.
7. Not publicizing the radio frequencies for our communication links proved helpful in eliminating interference from radio operators wanting to help or be involved.
8. A major deficiency exists in the dissemination of information on the emergency communication program down to the stake level. There appears to be a breakdown at the second level in the bishops' storehouse organization. Training and organization do not appear to be extending beyond the first level of bishops' storehouses. This is due mainly to the lack of emergency communications specialists in the second level storehouses. Stake leaders and specialists cannot get information on local frequencies and plans from their second level bishops' storehouses because there is no specialist to establish frequencies and formulate a communication plan. Stake leaders are frustrated at not being able to find information on emergency communications from Church sources. The basic information exists on the Provident Living web site but is difficult to find. (This problem is being fixed)
9. Bishops' storehouses should have emergency plans. A sample plan would be very useful. The plan should include a procedure for activating the emergency communication organization.
10. Bishops' storehouses should have access to the stake plans of the stakes they serve.

GENERAL CONCLUSIONS REGARDING THE ROLE OF AMATEUR RADIO:

1. Amateur radio proved to be a very useful, but under-utilized resource for supporting Church relief efforts during both Katrina and Rita. Lesson to be learned: Priesthood leaders directing the local relief effort did not seem to be aware of the role that amateur radio could play in supporting their efforts. Until the awareness level is raised, amateur radio may continue to be under-utilized in similar events.
2. Radio communications between the field (stakes and wards) and the supporting storehouse (i.e. Slidell for Katrina and Houston for Rita) as well as radio communications between supporting/sister storehouses (Slidell Houston- Dallas) is more critical than radio communications between the field and Church Headquarters. Lesson to be learned: Focus on developing reliable communications plans (frequencies versus time of day) between local stakes and their supporting storehouse. Develop and practice communicating between 1st and 2nd-level storehouses at the local level. ERC training and ongoing activities should be modified to encourage this.
3. The majority of local stakes directly impacted by Katrina and Rita did not have trained radio operators. In addition, the majority of the stakes surrounding the impacted areas did not have trained radio operators and were not able to supply communications resources to assist. We were able to establish radio communications by bringing radio operators from more distant prepared locations, but that left the impacted area without radio communications for the first several days. In addition, bringing in operators from a distance made it difficult to sustain communications operations beyond the initial two weeks. Lesson to be learned: We need to increase the resource pool of local operators who can be used to support local field and supporting storehouse communications for future events. We need to continue to encourage all stakes to develop an emergency communications plan. Emphasis should be made that developing these resources is as much about helping other stakes in time of need as in helping their own stake. A good forum for beginning this training is the semi-annual regional welfare council. Stakes in the Southeast did a remarkable job of aiding their impacted neighbors during the recovery phase, but better preparation is needed for extending aid in the response phase (0 to 72 hours after the event).
4. Portable and mobile HF/NHF radio installations are as essential as the fixed storehouse radio installation. Operators need to have experience in setting up and operating from a portable location to facilitate communications between the stakes and the supporting storehouse. Lesson to be learned: Katrina destroyed essentially all local communication infrastructure, including local amateur radio stations. While the radio station at the Slidell Bishops' storehouse remained intact due to good planning, there were no other local stations with which to communicate until portable equipment could be brought in and set up. The ability to set up and operate from portable field locations is critical to successfully support field relief operations.
5. Using multiple HF communication locations separated by a few hundred miles provided more reliable due to geographic spatial diversity. For Katrina and Rita, we used the Bishops' storehouses in Slidell, Houston, and Dallas to provide an HF communications triangle which proved to be very reliable. Lesson to be learned: Local communication exercises between first-level and second-level storehouses should be encouraged so that local radio operators will be familiar with propagation, frequencies, and times which best support reliable communications in their area during both daytime and nighttime hours.

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**EMERGENCY COMMUNICATIONS EXPERIENCES WITH HURRICANES
KATRINA AND RITA:
GENERAL CONCLUSIONS AND RECOMMENDATIONS**

1. In a devastating disaster, many victims are either evacuated or are too burdened with personal and family challenges to serve effectively as responders. Emergency response planning at the stake and ward level should emphasize the need to prepare and plan to aid neighboring Church units.
2. The Comm Center (formerly know as the Media Center) is a more versatile and reliable communications tool than the hand-held satellite phone. Comm Centers with accessories should be purchased for portable use at relief supply distribution centers and other critical response locations.
3. Amateur radio was very effective in communications within the stake and between the stake and the bishops' storehouse, but was underutilized. Many Church leaders are unaware of how amateur radio can serve their needs with very little investment in time or money on their part. Better dissemination of information on the capabilities of amateur radio from Church headquarters to the stakes is needed.
4. The technical expertise of the emergency communication specialist in areas other than radio communication, e.g. satellite communications, telephone service restoration, computer/internet operation and emergency power and lighting, can be very valuable in the response effort. Emergency Response Communications should encourage their personnel to further broaden their technical capabilities.
5. Communication at the local level (ward-to-stake and stake-to-storehouse) is more essential to effective emergency response than communications between the disaster site and Church headquarters. More encouragement and instruction is needed in calling qualified emergency communication specialists and developing stake and ward emergency communication plans.
6. Bishops' storehouses have never been directed to develop emergency response plans. It is suggested that consideration be given to the idea of each bishops' storehouse formulating an emergency response plan that would include a procedure for activating their emergency communication organization and contacting key personnel, including local government and relief organizations.
7. Many reports published following Hurricane Katrina called attention to the severe crisis caused by the almost complete failure of communications. Only two modes of communication survived the destruction of Katrina: Amateur radio because it is simple, flexible and does not depend on any infrastructure. Satellite telephones, because its infrastructure was safely outside of the impacted area (in space and at distant switching facilities).The Church should continue to build their back-up communication plan around these two modes of communication.