TORNADO RADIO WATCH

An Essay On

Emergency and Disaster Communications

For Hospitals and Civil Defense

by

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St. Charles, Ill.

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INTRODUCTION: The 1967 Tornado Watch

Tornados struck Geneva, St. Charles, Belvidere, Lake Zurich, Barrington, Addison, and Oak Lawn, Illinois the late afternoon of April 21st, 1967. The damage inflicted and the people killed and injured are common knowledge at this time.

First hand reports indicate that the damaged communities of Belvidere and Oak Lawn suffered a relative shortage of emergency communications during the early hours after tornados struck. Police and national guards men blocked entrances to these areas as part of their duties, but in so doing, prevented radio amateurs from entering to set up reliable communications networks. Relatives could not find relatives; people could not telephone in or out of these areas. The local hospitals were overloaded. Police radio was overloaded. Personal calls were impossible.

Outlying communities which were not hit by tornados could not find out if they were about to be hit or not. Communities which were hit by tornados knew about it after they had been hit, but not before. After the weather front moved through St. Charles, Illinois, the telephone lines there became swamped due to excessive calls and it took from 5 to 10 minutes for a circuit to open up after lifting the telephone off the hook.

Twelve houses were damaged by a tornado 1 mile north of St. Charles at 4:30 P.M. The Civil Defense Director, Mr. Russ Forkins, had to send radio-equipped cars to the scene to determine if anyone was still alive. Fortunately, no one was injured.

The Community Hospital in Geneva received a report that a town west of them had been "wiped out" and that great numbers of injured were being brought in. Hospital personnel awaited the arrival of the injured, completely cut off from the disaster scene and from the ambulances because of the absence of all communications. Meanwhile, Community Hospital in Geneva had difficulty telephoning Delnor Hospital in adjacent St. Charles, because of the swamped telephone lines. Fortunately, only 4 injured people arrived at Community Hospital from the West, and the earlier report about a town being wiped out was found to be in error.

Meanwhile, 8 houses in Geneva had been struck by a tornado. Communications to the local broadcast station, to and from the local hospital, and to anxious friends and relatives were all delayed because of the telephone system jam-up.

Civil Defense Director in St. Charles had been tracking the Belvidere, Illinois, tornado on his map in the C. D. center by means of the information getting to him from the state police radio. This information was relayed from a weather bureau teletype and was frequently delayed for as long as 30 minutes from the time of occurrence of the event being reported. No official warning had been given to the St. Charles police or to civil defense and no reports were received in advance of the 2 tornados which did touch down in the local area. All the information came in too late to be of any value in all of the towns that were struck. After these towns were struck, the foul-up naturally proceeded from bad to worse and then to impossible.

According to available reports, the 46 tornados that struck Northeast Illinois the late afternoon of April 21st, 1967 produced the worst tornado disaster here since March 28, 1926.

The communications deficiency revealed by this disaster proved that the Chicago metropolitan area and surrounding towns were almost totally unprepared for disaster communications.

Civil Defense is the agency that is supposed to take care of these matters, and the fact that this has not been done in the 22 years since the beginning of the atom bomb threat to Chicago, is a problem that all citizens must ponder.

"Communications a Problem in Disasters" was the headline to a story on page 2 of the May 1st, 1967, edition of the AMA News, "The Newspaper of American Medicine", published by the American Medical Association. The first portion of this news story to doctors is reprinted below because of the relevance of the facts to the discussion at hand:

> "Education of the community to the need for adequate emergency communication, transportation, and facilities and services was discussed at the opening session of the Conference on Emergency Medical Services in Chicago.
>
> "Lack of communication is the greatest problem which has been encountered in every disaster in this country," said James C. Owens, M.D., U. of Colorado Medical Center, Denver.
>
> Communication is the "key area," he said, because of its importance not only for disaster control but for daily emergencies.
>
> Poor Utilization: Dr. Owens said that although adequate communication was available, its utilization is "amazingly inefficient."
>
> "The knowledge and experience of all persons who work in emergency medical services should be utilized to determine what communication formula needs to be developed to improve the management and organization of these services," he said.
>
> Dr. Owens suggested the publishing of a single master list of all types of communication, including, however, only those types of apparatus providing efficient management of emergency medical services.
>
> Better Facilities: The communication industry, working with the governmental regulatory agencies, he said, also should be "encouraged to improve existing facilities according to medically determined criteria."

The following letter from a radio amateur in Arlington Heights, Illinois suggests one answer to the tornado warning dilemma of civil defense directors. Following this are reprinted some of the actual weather bueau teletype broadcasts of the tornado warnings which he received at his ham station in his home.

123 N. Reuter Avenue
Arlington Heights, Illinois
April 26, 1967

The attached copies of radioteletype transmissions from the Chicago Weather Bureau Office were received at my amateur radio station W9KEI and all other stations in the Cook County Radio Amateur Civil Emergency Service. Many of these stations are installed in suburban civil agency offices such as the Elk Grove Village Police Department, Skokie Civil Defense Center and the Winnetka Fire Department, to name a few.

The transmissions originated from an amateur radioteletype station located in the Weather Bureau office in Chicago which is operated by Weather Bureau personnel. This is the same information that is put out on leased line teletypewriter circuits to radio and TV stations and other Government agencies, including State and County Police Departments.

However, it has been my observation in the past two years of monitoring commercial radio and TV stations and the Police Point-to-Point channel, that this information is not always distributed to the public (or suburban police) until conditions threaten the city of Chicago. In these cases it is often too late for the suburbs. In addition, I'm sure that in reviewing the information received by radioteletype, you will recall that much of this information was late, or not broadcast at all, on the above mentioned services.

The Amateur Radio Operators (Hams) of the Chicago area are ready, willing andable to provide this service free to any person or agency who desires it and will make use of the information to warn the general public in order to avoid disasters similar to those of Oak Lawn and Belvidere.

RON S. HARVEY
W9IZB

CHICAGO WEATHER RADAR SUMMARY
FRIDAY APRIL 21ST 1967

AT 4 15 PM CST RADAR SHOWERS SHOWERS AND THUNDERSTORMS OVER THE NORTH HALF OF ILLINOIS.. NORTH INDIANA AND SOUTH WISCONSIN.

A TORNADO WAS REPORTED ABOUT 0) MILES EAST OF ROCKFORD.

WARNINGS HAVE BEEN ISSUED FOR THE TORNADO.

NUMEROUS REPORTS OF HAIL HAVE BEEN RECEIVED.

MAX TOPS ARND 4) THSD FT.

CH31

TORNADO WARNING BULLETIN
EMERGENCY ACTION NOTIFICATION SIGNAL REQUESTED

A TORNADO WARNING IS IN EFFECT UNTIL 530 PM FOR PERSONS IN EASTERN WILL... SOUTHEAST COOK...LAKE COUNTY INDIANA

A TORNADO WAS SIGHTED 2 AND 1/2 MILES WEST OF PEOTONE AT 4:5 PM. THIS TORNADO IS MOVING TOWARD THE NORTHEAST.

IF A TORNADO IS SIGHTED ... BE PREPARED TO MOVE TO A PLACE OF SAFETY

ISSUED 430PM

ESSA WEATHER BUREAU CHICAGO FRDAY APRIL 21 1967

CH31

TORNADO WARNING BULLETIN
EMERGENCY ACTION NOTIFICATION SIGNAL REQUESTED

A TORNADO WARNING IS IN EFFECT UNTIL 6PM FOR PERSONS IN LA SALLE KENDALL BRUNDY COUNTIES

A TORNADO WAS REPORTED BY THE PUBLIC 3 MILES NORTH OF LA SALLE AND 0 MILES SOUTH OF TISKILWA AT 4.45 PM. THIS TORNADO IS MOVING TOWARD THE NORTHEAST.

IF A TORNADO IS SIGHTED...BE PREPARED TO MOVE TO A PLACE OF SAFETY.

CH31

TORNADO WARNING BULLETIN
EMERGENCY ACTION NOTIFICATION SIGNAL REQUESTED

A TORNADO WARNING IS IN EFFECT UNTIL 6PM FOR PERSONS IN LA SALLE
KENDALL GRUNDY COUNTIES

A TORNADO WAS REPORTED BY THE PUBLIC 3 MILES NORTH OF LA SALLE
AND 2 MILES SOUTH OF 2 MILES SOUTH OF TISKILWA AT 445 PM. THIS TORNADO IS MOVIN
TOWARD THE NORTHEAST.

IF A TORNADO IS SIGHTED .. BE PREPARED TO MOVE TO A PLACE OF SAFETY.

ISSUED 5 PM FRIDAY APRIL 21, 1967

ESSA WEATHER BUREAU CHICAGO

CH31

TORNADO WARNING BULLETIN
EMERGENCY ACTION NOTIFICATION SIGNAL REQUESTED

A TORNADO WARNING IS IN EFFECT UNTIL 5:30 P M FOR PESONS IN ALL OF COOK...
DUPAGE...AND KANE COUNTIES.

A TORNADO WAS INDICATED BY RADAR 6 MILES NORTH OF ELGIN AT 5PM
THIS TORNADO IS MOVING TOWARD THE EAST.

ANOTHER TORNADO WS REPORTED BY THE PUBLIC IN N ORTH BARRINGTON ILLINOIS.
THIS TORNADO IS MOVING TOWARD THE EAST.

IF A TORNADO IS SIGHTED ...BE PREPARED TO MOVE TO A PLACE OF
SAFETY

ISSUED 5 PM FRIDAY APRIL 21, 1967
ESSA WEATHER BUREAU CHICAGO

IMPROVEMENT OCCURS

Intense discussion by the citizens in Northeast Illinois following the April 21st disaster resulted in acute awareness of the communications problem by everybody, including hospital Administrators, Civil Defense Directors, Government Officials, and in pa'ticular, by the citizens who hold F.C.C. radio amateur licenses and who have the capabilities for providing communications services to the public.

One of these groups of radio amateurs is the " C F A R" Chicago FM Amateur Radio repeater system. This is a highly sophisticated system of 2- way radios in Northeastern Illinois numbering at least 100 separate units, which is tied together by a Repeating station located 350 feet high in a building in Chicago's Loop. The Repeater actually receives and then repeats the messages automatically, but because of the high location and the extra power of the repeater transmitter , the range is greatly increased. The technical details of this highly reliable radio system are beyond the scope of this paper and will be presented elsewhere. Suffice it to say, the characteristics of the system make it the foremost auxiliary communications service in the Chicago Metropolitan area. The fact that the system is F.M., is repeater-engineered, has redundacy, is widely dispersed, is composed of many mobile, fixed, and portable radios, and is operated by upward of a hundred skilled, mature, and disciplined men, all amateurs with advanced training and advanced F.C.C. licenses,

(See P. 13)

The CFAR system not only is an abbreviation for Chicago F.M. Amateur Radio, but also could be paraphrased to mean "See Far by means of Amateur Radio Repeater". These radios are all owned by private individuals who pay dues to use the repeater. The Repeater operates 24 hours a day automatically and makes it possible for a man in his car in Milwaukee, for example, to have a round table conversation with another operator in his car in Gary, Indiana, another on in St. Charles, Ill., and a fellow ham sitting at his desk in an office in Skokie, all by means of converted taxicab radios. This entire effort is officially under the sponsorship of the Society of Radio Operators of Chicago, a 30-year-old amateur radio club composed of about 100 men and women. It is a special group of people, in that most are especially skilled in communications and in electronics. Represented in this group of people are doctors, dentists, engineers, executives, technicians, machinists, factory owners, inventors and others. These people are proud of having a radio system that is not owned, run, or subsidized by any government agency.

makes it apparent that this system is a unique apparatus for emergencies (See Page 12a)

On May 18, 1967, an emergency occurred again. This time the CFAR system was ready for multiple input and output of weather information.

At 5:00 P.M., the author of this essay was informed that a Chicago Broadcast Radio Station (WAIT) reported a severe weather front over Iowa, heading toward Chicago. At 5:25 P.M. he telephoned from his office in St. Charles, I M., which is 50 miles due west of Chicago's Loop, to the F.A.A. Air Traffic Control Center 9 miles away in Aurora for information. The radar controll operators stated that there was a line of thunderstorms on a line going from North of Milwaukee to Omaha, Nebraska, and that the entire line was moving East at such a speed that the front was expected in St. Charles at Some time from 9:00 P.M. to midnight.

At 5:30 P.M., W9DDX telephoned Russ Forkins, The C.D. Director, and informed him of this data. The Director had just received the same information from the Illinois State Police warning radio and preparations were made to activate the St. Charles Civil Defense Communications Center in the bomb proof basement of the City Hall.

At 7:10 P.M. W9DDX phoned FAA again and learned that the weather front had spawned its first tornado in Cedar Rapids, Iowa, that it was now 120 miles due West of St. Charles, was 20 miles wide, was proceeding at 40 miles per hour, and was 50 miles away from Rockford, Ill.

At 7:22 P.M. A Tornado watch was officially declared on CFAR 2-meter repeater radio network and from then until midnight, approximately 50 amateur radio stations in this net gathered and distributed weather information for the public. By the time the watch was over, a total of 14 tornados was compiled, mapped and tracked in the Civil Defense Center in St. Charles. Fortunately, this emergency produced no disaster and there were no injuries. The reason was primarily one of chance, this time; the tornados did not strike highly populated areas.

The sources of information available during this alert were of interest to several amateur radio-equipped automobiles were dispatched westward into the approaching storm to give eyewitness accounts. Three stations in the net were equipped with radio-teletype from the Chicago weather bureau via the Cook County Civil Defense channel on 147.06 mc. Two stations in the net forwarded reports from all over the midwest via Ham radios operated on a 75 meter weather net. Other mobile units on 2 meters continuously provided weather data from all over metropolitan area. Other Amateurs monitored broadcast radio and television services and fed this information into the net.

The C.D. Center in St. Charles, meanwhile, utilized other sources of weather data, including a local Citizen's Band Group of 20 mobile Radio Stations.

As a consequence of this rapidly activated communications system, the public in the Fox Valley Area was kept fully informed of the approaching tornados. This information reached the public primarily by way of the town's sirens, at first, and then by frequent bulletins the local A.M. Radio Station, WCSB. At 9:00 P.M. the town sirens blew continuously for 5 minutes and practically everybody headed for shelter.

It was learned later that other towns in the area were similarly alert. In Genoa, Ill., to the West, all the residents of a nursing home were shepherded to the basement when the town siren blew. In Dekalb, Illinois, home of Northern Illinois University, the local A.M. Broadcast Radio Station informed listerners about a tornado sighted nearby and relayed weather informationfrom citizen band mobiles which were fanned out into the storm. In Elmhurst, Illinois, Dr. Max Klinghoffer heard of the nearby Addison Tornado via the State Police alerting radio on 42.5 mc. and he immediately ordered patients in the DuPage Memorial Hospital to seek shelter.

Weather information was continuously provided to the civil defense directors of Wheaton, Des Plaines, Elk Grove, Arlington Heights, and other towns from the CFAR Tornado Watch. Fourteen tornados had been tracked in the Northeast quadrant of Illinois by the time the weather front roared out of Chicago in Indiana and over Lake Michigan.

The men who participated in this emergency are now seasoned and are in a unique position to inform others about the needs of towns and hospitals for comprehensive communications. The story that follows is a summary of this experience and an analysis of the problem.

****

Part II

COMMUNICATIONS MANUAL

To be logical and orderly in making a series of sweeping proposals, one must analyze the various aspects of a problem and then agree upon the premises. It would seem that the first set of premises should be the criteria that will be used to judge any recommendation. These criteria are:

1. Redundancy:

   The equipment and the personnel are redundant; that is, there are multiple units and people so that breakdown or absence does not cause failure.

2. Reliability:

   The equipment is of the best for reliability. The people are of reliable types.

3. Versatility:

   Communications are flexible, and can perform many tasks in many ways at any time and at variable distances. The nature of emergencies is that they are unpredictable in time, nature, and scope. Communications need to be versatile to deal with anything as unreliable as an emergency.

4. Mobility:

   Communications equipment and operators need to be mobile and portable so that messages can get from an operator standing on a pile of rubble, from a sidewalk in the middle of town, or from an automobile 50 miles out in the countryside.

5. Simplicity:

Pushbutton operation is best during stress. Delays are intolerable in an emergency and personnel with minimum training must do a job rapidly.

6. Instantaneous:

Communications should be direct. That is, the information should get from the informant to the one that needs to know with the least possible delay. This means that the fewer people to relay the data, the better.

7. Dispersal:

The Communications system must be dispersed. If one station in the system becomes inoperative, the system must continue to operate. The Data input must be dispersed for increased variety of information. The data output must be dispersed for greater utilization.

EMERGENCY COMMUNICATIONS FOR THE COMMUNITY

An analysis of the communications during the April and May, 1967 tornados in Illinois reveals that the needs of a community for communications that meet the previously discussed criteria can be described in three categories:

1. Warnings to a central authority: This is the data input system. In St. Charles, weather information reached the civil defense communications center from radios in the amateur, police, citizens, and broadcast services. Telephone, television, and teletype information from observers, radar operators, and relay points added to the input.

2. Warnings to the populace: This is the data output system. Once the information about the oncoming tornados is received and digested, it has to get out to the right people and it has to get there in time.

3. Disaster communications: If and when a disaster strikes a town, communications must be provided for people.

   a. At the disaster scene

   b. Outside of the community

   c. Inside the Community.

SOURCES OF WEATHER INFORMATION

Those involved in the data input system, such as hospital administrators, civil defense directors, and mayors, will wish a comprehensive list of possible sources of this type of information. Such a list for one town, St. Charles, Illinois, has been prepared and appears below. This list will be different, of course, for other places, but can serve as a model:

1. State Police radio: 42.S m.c.
2. Broadcast radio
   a. WNUS A.M. & F.M.
   b. WGSB (A.M.)
3. Chicago weather bureau
   a. Teletype by leased wire
   b. Radio teletype from Cook County Civil Defense net (RACES): 147.06 M.C.
4. ROCKFORD WEATHER BUREAU
   a. Leased wire teletype
5. Broadcast television
6. Telephone calls to other cities to the west:
   a. to civil defense
   b. to police
   c. to friends
   d. to and from citizens by prior agreement
7. Amateur radio mobiles dispatched as observers: CFAR net
8. Business and government mobile radios dispatched as observers
9. F.A.A. Air Traffic Control Center: Aurora

For those who wish a separate list of non-Broadcast sources of weather and disaster radio reports, a compiled list of these sources follows for the Chicago area:

I. SHORT WAVE AND LONG WAVE RADIO SOURCES OF WEATHER DATA

1. Chicago Aviation weather reports(continuously): 350 Kilocycles,A.M.
2. Joliet Airport weather(15 minutes after the hour and 15 minutes before the hour): 108.4 Megacycles(M.C.), A.M.
3. Chicago Civil Defense Teletype direct from weather bureau in Chicago: 147.06 M.C.
4. Chicago RRdio Amateur F.M. Repeater Net. 147.750 M.C.
5. DuPage County Civil Defense RRdio Amateur Net: 146.94 M.C., F.M.
6. Chicago Civil Defense F.M.(Voice) Net: 147.3 M.C.
7. Television station WFLD (Channel 32) single-side band emergency net: 14.289 M.C.: call sign K9TRP
8. Illinois State Police point to point radio: 42.5 M.C.

WARNINGS TO THE POPULACE

The data input system has been briefly described. What methods are available to put the data out to the people? A detailed discussion of this problem is undesirable here, but a summary is necessary so that continuing study and application to the varying local conditions in the different towns can be made:

1. Local Broadcast A.M. and F.M. radio stations.
2. Television stations .
3. Town sirens, both fixed and mobile .
4. Factory whistles.
5. Fixed-tuned radio monitors on the State Police warning frequency (42.5 M.C., F.M.) (Voice transmission.
6. Fixed-tuned radio alarms on the State Police alarm frequency (42.7 M.C.)(this actuates a signal only: no voice transmissions.)
7. Public Address systems:
   a. Mobile or fixed, to the entire town from the communications center.
   b. In-plant public address systems to factory workers, school children and teachers, office workers. This is a relay from the institution authority.
8. Telephones: regular phone calls are one variety, "hot-line" phone circuits are another.

HOSPITAL COMMUNICATIONS.

The recent tornados provided an opportunity to analyze the problems of hospitals in disaster. What are the needs of a hospital in communications?

Can these needs serve during disaster conditions and also during daily emergency conditions? Can these needs be generalized to all hospitals for now and for future conditions? An outline of such a general analysis follows. The hospital should have:

1. Warning of impending emergencies and disasters.
2. Notification of accidents and disasters which have just occurred within its geographic area of service.
3. Two-way communications to any disaster site.
4. Two-way communications to emergency vehicles bringing patients to the emergency room.
5. Hot-Line telephone and back-up radio communications to nearby hospitals for optimal utilization of facilities and personnel.
6. Back-up, on-site radio communications to and from relatives of patients both in and outside of the community and to hospital suppliers.
7. Emergency portable two-way radio systems for auxiliary and back-up intercom work within the hospital and on the hospital grounds.

KINDS OF COMMUNICATIONS

In this electronic age, we no doubt forget that personal messages are possible. Messengers, letters, memoranda, word-of-mouth, runners, and printed bulletins are means from yesteryear that may still have a place in disaster communications. Still, it is of value to list in one place all the modern modes that might be utilized in an emergency. Planners can choose from this list for their own local circumstances.

KINDS OF COMMUNICATIONS FOR CIVIL DEFENSE

1. RADIO
    a. Broadcast
        1. Standard
        2. Shortwave
    b. One way alerting systems
    c. Radio-teletype
    d. Two-way radio
        1. Citizens band
        2. Amateur
        3. Fire
        4. Police
            a. City
            b. County
            c. State
        5. City Government
            a. Base
            b. mobiles
        6. Local businesses
        7. Hospital radio
            a. local
            b. Point to point
2. LAND LINE
    a. Regular telephone
    b. Direct line telephone
    c. Direct-line conference telephone

2. LAND LINE (continued)

    d. Field Telephones (battery).

    e. Wire teletype

3. TELEVISION BROADCASTS

4. RADAR

TYPES OF TWO WAY RADIOS

Some of the readers will buy radios for their towns or hospitals. They will seek expert guidance, of course. It will be useful for them to peruse a list of general characteristics of two way radios as these characteristics pertain to disaster. In general, for example, the hospital administrator needs to know;

a. how do you power this radio?

b. where are we going to put it?

After he decides these things, then technical specifications can be supplied by his advisors. A brief outline of these radios which considers only the parameters of location and power supply follow.

GENERAL TYPES OF 2-WAY RADIOS

1. portable
   a. Battery
      1. regular
      2. rechargeable
   b. Battery or A.C.
2. MOBILE (attached to a vehicle)
   a. mobile only
   b. removable for A.C. power at base station
   c. high antenna can be attached for increased range when vehicle stationary in emergency
3. BASE STATION
   a. tied to city power
   b. emergency generator can be available
   c. Portable Unit can be adopted for base station.

SUMMARY; A CHECK LIST

This essay requires some kind of a summary that will be useful to the most people in the easiest manner. A check list is therefore presented which those involved in communications planning can easily utilize for their own situations. It is not even necessary to read any of the previous material to use this list. The list can be separated from this article and used for local manuals, committee meetings on the subject, pre-emergency practice drills, post-emergency review sessions, presentations to boards of trustees, to city councils, and to other departments for fund requests, and the like.

CHECK LIST FOR CIVIL DEFENSE COMMUNICATIONS

1. Is there a contral communications center?

2. Does adequate information get to the center?

   a. Is it redundant in case of break downs?

   b. Is the equipment reliable?

      1. Do you use it frequently?

      2. Are there people to repair it immediately in an emergency?

   c. Does the information arrive from multiple sources for reliability?

   d. Do you have multiple operators to handle all the incoming and outgoing traffic for versatility?

   e. Do you have emergency power and emergency antennas?

   f. Does the information get into the center fast and does it get out to where it is needed fast?

   g. Is the equipment simple in operation so that training of personnel is minimized?

3. Can you distribute the information to hospitals, police, fire, broadcast radio stations, ambulances, and to the community? Is your distribution reliable, redundant, simple, and rapid?

4. Can you get information directly from a disaster scene

   a. inside the city?

   b. Outside of the city?

5. Can you provide communications into and out of your city during the first 24 hours after a disastor if all power and telephone lines are inoperative?

   a. To request supplies

   b. to request more personnel

   c. to contact anxious relatives

6. Can you reliably warn all people to seek cover?

7. Can you provide continuous communications between ambulances and all hospital emergency rooms in your area for proper distribution of patients and personnel?

8. Have you organized all existing resources for radio communications?

   a. Radio amateurs

   b. Citizens Band

   c. Business radio

   d. Civil government radio

9. Have you requested engineering advice from

   a. The telephone company?

   b. The local radio station?

   c. The telegraph company/

   d. Manufacturers of equipment such as motorola, Hollicrafters, General Electric?

   e. The local power company?

10. Have you joined RACES (Radio Amateur Civilian Emergency Service) and have you an official Radio Officer?

11. Are your Federal Matching Funds being used properly?

12. Do you have civil defense people who can devote as much time as is necessary? Is any one salaried for this job?

13. Are you dependent on people who, when unavailable, cause the organization to fold up?

CHECK LIST.

14. Have you told administrators of places where people gather

    a. how to get warning information

    b. what preparations to make for a disaster

15. Do you hold meaningful drills? Or do you have a regular drill that is only a roll call?

16. Do you use every possible alert as a drill?

17. Have you set up forward tornado observers?

    a. by mobile radio

    b. by telephone from police or friends

18. Do you have direct telephone lines where needed?

19. Do you have communications that are adequate, reliable, instant, and redundant with other civil defense emergency communications centers in nearby towns?

20. Do you have spare antennas affixed to appropriate buildings such as the hospital for mobile units which can hook on to provide auxiliary long distance communications?

21. Does the hospital need portable radios for communications from one internal station to another during emergencies?

22. What kind of communications are available for the packaged 200-bed Civil defense disaster hospital? Do you need field telephones within this hospital?

23. Does the local Broadcast radio station have a remote control operating point within the emergency communications center so that there is no delay in dissemination of the disaster information to the public?

RECOMMENDATIONS

Specific equipment and systems needs have been identified for the St. Charles-Geneva hospitals and civil defense centers which might serve as a model for other communities in the Chicago area, and probably also for towns elsewhere. The items listed below are considered to be the high priority requirements and are not intended to take the place of thoughtful planning of all emergency communications. It is recommended that the following be accomplished as soon as possible.

1. Develop a direct hot-line telephone circuit with a total of five stations plus extensions at the followin sites: Community hospital, Geneva; Delnor Hospital, St. Charles: Central DuPage Hospital, Winfield; Civil Defense Communications center, Geneva. Each instrument should be provided with a hands-off public address amplifier so that it can function like a radio and with a push-to-talk switch so that ambient noise from all five stations is kept to a minimum.

2. Operate Monitor radios*at a 24-hour station in each hospital to provide an audible and visual alarm preceeding the announcement of impending or actual disaster by the State Police Warning service on 42.5 MC.

*"Plektron" and "Ten-Tenner" are in use in this locale.

3. Obtain Radioteletype units fixed - tuned to the Cook County Civil defense frequency of 147.06 MC. F.M. from the Chicago weather bureau for the two local civil defense communications rooms. These units can be of second-hand inexpensive equipment and should be provided with automatic start and stop relays ("auto-start") so that the machinery operates only when a weather bulletin is broadcast.

RECOMMENDATIONS.

4. Locate a two-way radio, base station type, in a strategic place within each hospital to provide back-up and auxiliary communications to the civil defense centers and to the other hospitals. This should not be Citizens Band, but could be either of the following:

    a. Hospital radio service on a shared frequency with all five points.

    b. Amateur radio in the CFAR network, transmitting on 147.5 mc. and receiving on both 147.750 and 147.500 mc. F.M.

5. Install an Amageur Radio in the CFAR Repeater Net for each Civil Defense communications center.

6. Organize local radio amateurs with FCC licenses of Conditional, General, or above, for operation of the amateur radios at the above locations and for providing other auxiliary services.

7. Give serious consideration to a commercial two-way radio hospital system with shared facilities and frequencies for the aforementioned three hospitals.

8. Give all volunteer mobile radio operators identification cards containing photographs and fingerprints so that they can travel through police and National Guard lines to a disaster area.

9. Keep a list of radio operators and telephone numbers in civil defense headquarters. This list should include the CFAR list, number 67-3.

10. Make the CFAR group an official auxiliary communications instrument in each town.*

* The City Council of Des Plaines, Illinois passed such a resolution May 15, 1967, and appointed Mr. Robert Johler (W9INF), a CFAR member and Des Plaines resident, as its official radio officer.

11. Each hospital and each civil defense communications center should obtain one, and preferably two, broadcast A.M. and F.M. receivers that are battery-powered. Consider rechargeable batteries and capability of powering the radios from the regular A.C. line. These radios will be available for monitoring broadcast A.M. and F.M. news reports. Remember: During severe electrical disturbances accompanying thunderstorms and tornados, regular A.M. reception may be useless due to radio static, but F.M. reception will continue to be intelligible.