
AFTERMATH OF THE LOMA PRIETA EARTHQUAKE

- HOW RADIO RESPONDED TO THE DISASTER-

by

Tsuneo Katayama

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ABSTRACT

The responses of radio stations to the 1989 Loma Prieta earthquake are summarized based on the interviews made with several leading radio stations in the San Francisco Bay Area. Under the condition in which television became useless because power was lost, the radio generally did very well in communicating disaster information to the people affected by the earthquake. Problems related to news gathering and dissemination during and after the immediate hours are pointed out. The importance of having emergency back-up power is strongly acknowledged and the shortcomings of the present Emergency Broadcast System are clearly shown. Appendices include the transcription of the KCBS-AM radio broadcast during the first two hours after the earthquake and those of the interviews made with three persons professionally engaged in the earthquake preparedness efforts in the State of California.

Keywords: Earthquake, Emergency measures, Loma Prieta, Radio response

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INTRODUCTION

When a strong earthquake shakes a city like San Francisco, there is naturally a variety of aftermath and responses in every sector of urban activities. That was what actually happened when the 1989 Loma Prieta earthquake struck San Francisco Bay Area at 17:04 on October 17, 1989. There were damages to buildings, bridges, highways, factories, and to a number of equipment and facilities. Transport, water supply, gas services, and telecommunication lines were disrupted, and a widespread power outage took place immediately after the earthquake. In addition to the effects on structures and utility systems, there were several millions of people who were physically and psychologically affected by structural damage and system disruption. Sixty-three people lost their lives and some 3,000 were injured.

There were as many responses to the disaster as the number of people and organizations affected by the earthquake. All of them can never be fully treated. This paper intends to summarize the responses of radio stations immediately after the earthquake. About six weeks after the earthquake, I had a chance to visit the Bay Area as head of the Tokyo Metropolitan Government's reconnaissance team, which included two people each from two radio companies in Tokyo. They visited five radio stations, including the three major AM stations, in the Bay Area and interviewed key persons who were responsible for the broadcast during the immediate aftermath of the Loma Prieta event. It should be noted that when the earthquake hit, most people in the Bay Area had no television because of the widespread power outage. Radio really became the most important medium of communication. It was indeed a skewed picture where people in other parts of the world were able to watch local but devastating damage to several structures, mainly because of the media which had gathered to report the World Series, while those in the Bay Area had no other means to get information than the radio.

The tapes of the interviews were kindly offered to me so that they can be utilized to impart lessons which could only be obtained through real experiences. Although I listened to all the tapes and found them extremely interesting and informative, I have not so far done anything substantial using these invaluable materials. Almost two and a half years have passed since the earthquake, but only few reports describing the response of radio after the Loma Prieta event have been published. Recently, when I had all the tapes transcribed and had read the transcripts carefully, I began to strongly feel that this information should not be wasted. This is the reason why I have decided to write this paper.

It has become routine these days to carry a tape recorder and record a dozen tapes of interviews during a reconnaissance of disaster. However, to my best knowledge, these tapes have rarely been fully utilized, as exemplified by my experience mentioned above. Talking with people on

the scene makes the interviewer share the experience with the interviewee. It is extremely useful, for those who were not on the scene and who could not visit the disaster site, to go through this quasi-experience, which in many cases is more informative than reading a flat and dreary report. However, it often happens that opinions expressed by interviewees differ according to the situations they were and are in. It is perfectly normal that people who had faced a crisis responded in different ways and that they often express different views after everything is over. What is important is that there are several lessons that we can learn from their candid views.

Therefore, the appendices of this paper include the transcription of an about two-hour long KCBS-AM broadcast immediately after the earthquake, and also transcriptions of three interviews I made with persons engaged in earthquake preparedness activities in the State of California.

POWER WAS LOST

In the Bay Area, KGO, KCBS, and KNBR are the three largest AM radio stations. All of them were doing a five-minute top-of-the-hour news when the earthquake hit at 17:04. Power went off immediately after the earthquake, which made radio become the most important medium of communication in the following few hours. The disaster broke radio down into its primary components - people gathering information and telling it to other people via this marvelous technology we call radio. However, the responses of these three major stations were significantly different.

In KGO, the number one station in the Bay Area, the announcer went off the air. It was even difficult to hear him say "Oh, my God!" or something. KGO was off for nearly 90 minutes, "a lifetime for radio" according to a person in one of the rival stations. It had two of its transmission towers knocked over and severely damaged. KGO Radio's news director was one of the many media executives stranded at Candlestick, where Game Three of the World Series between the San Francisco Giants and the Oakland Athletics was due in some thirty minutes. It may be unfair, however, not to mention that KGO provided some of the best coverage in the days following the earthquake.

KCBS-AM, which is the only all-news AM station in the Bay Area, was taking hourly news feed from CBS in New York so local announcers were not on the air. Although the network news was actually knocked off the air for one minute, the people in New York did not even know what was happening. After the news feed, local coverage of the World Series at Candlestick began at once but at 17:07, KCBS Newsline took over. They lost power but a rooftop emergency generator kicked in. After changing studios at the last minute, the station quickly came back on the air at 17:08 with only a one-minute interruption. The majority of radio listeners is reported to have tuned to KCBS-AM.

The KNBR building was severely shaken and lost all power, and half of the phones were knocked out. But a back-up emergency generator system kicked right in and they could stay on the air. Their transmitter, being in a different location on the peninsula from some of the other transmitters, was not damaged. What was on at the actual time of the earthquake was a recorded interview of a baseball player prior to the start of the game. With the majority of the staff either at home or at the ball park, they had only a small staff in the station, one engineer on the board running the controls, a news person on duty who was out of the building, and two technical people. The tape was still on after the earthquake, and then the newsman who had been out came on and announced that there had been a severe quake and that he did not know its significance nor its resulting damage. So, they continued local coverage of the World Series for a while because there seemed to be no serious damage at Candlestick. Programming was coordinated from the ball park. They had to maintain the bulk of broadcast from the stadium because of the small staff in the station.

The on-duty news person was asked to get whatever information he could and to get on the microphone whenever he was ready to update earthquake information.

Problems that smaller stations had to face were similar to those of the major stations. KSFO, the flagship station for the Oakland Athletics, is basically a music station, specializing in classic rock'n roll. News was on the air at the time of the earthquake. By 5:04, an announcer was just coming out of a commercial and was just about to throw it to a sports reporter at Candlestick. The announcer recalls, "As soon as I felt the shaking, I started to say that we were experiencing an earthquake. But before I got <earthquake> out, we were already in the dark and off the air. The first things I did were to grab my tape recorder, run outside, and talk to people who were coming out of this building. Then I ran back in hoping to get the tape on the air right away but we had two things working against us. We were off the air and even when we got the transmitter back-up, there were no facilities for me to cut up the tape or to get it broadcasted. The crew at Candlestick got back on the air fairly quickly. They started talking about things they were hearing, what the sixty-five thousand people there were experiencing, what they were being told, and so on. Meanwhile, the engineering crew figured out a way to patch me into that broadcast, which was about after twenty to thirty minutes. I was actually in an engineering closet with a flashlight in one hand and a microphone in the other."

Smaller stations are not always less prepared for an earthquake. An announcer of KNEW, whose daily regular program is mostly country music, said, "I was in the midst of doing the 5:00 newscast. I was sitting at the desk and it felt much like a ship at sea. When the shaking began, my first instinct was to keep reading my script - the show must go on - an American tradition. For the first three seconds or so, I continued to read and tried to ignore the tremors. Finally, the shaking became too intense to ignore and I began describing what was happening around me. The clock and the calendar on the wall fell down. All the tape cartridges in the other room fell out of the racks to the floor and were scattered all around. And then it went dead on the air. The electricity went out. At that point, I went to stand in the doorway. No sooner than when I got there, our emergency power kicked in. And the station was back on the air. It was about ten seconds. Everything fell over. All the tapes were all over. But our equipment survived with no problems. We collected ourselves and I said, <Well, I guess that blows the World Series out of the water.> In fact, people all over the Bay Area who perhaps have never listened to us before were listening to us very thoroughly and very intensely for a while because we were the only source of news."

A total of 1.4 million customers, probably over 4 million people, were affected by the power outage immediately after the earthquake. Within about 24 hours, the number decreased to about 463,000 customers, including 120,000 in the City of San Francisco, but there still were some 96,000 customers without electricity as of 6:00 AM of October 19, some one and a half days after the earthquake.

SCARED BUT NOT PANICKED

It may be important to note that there was no panic among the radio people who were in the studios or in other places. This is clearly exemplified in the KCBS's transcription in Appendix I of this paper. It is true that the voices of some of the reporters on the air right after the earthquake sounded shaky and excited. But no one was panicked. It was the same with the people who worked in the stations. A KCBS person commented, "Well, no one panicked. We were scared but there was no panic. Everyone stayed on the floor and continued to work. I think the real answer to that question is that we were too busy to be panicked. Although it was a little scary, our people were very calm."

The person who directed the KNBR's earthquake coverage from Candlestick mentions, "It was severe but there was no panic. We provided first-hand accounts but we did not over inflate the damage. We wanted to be cool, calm, and composed. The hundreds of letters and calls we got from people once it was all over let us know that they were really reassured by listening to us, our cool and professional approach." A disc jockey of KNEW articulates, "Well, we really did not say, <Everybody, be calm.> But it was our presence and the fact that we were calm that made them calm. I think that sometimes saying <Please do not panic> makes people panicky."

At the same time, the following comments made by a news person of KFSO are worth noting: "It was a little tough to be completely composed especially when the reports of the damage came in. I do not think that we need to hide our emotions at a time like this. I think it is okay to be a human being, to be a personality, and to identify with the listener because if I go in and do my straight delivery, it is going to sound banal and it is going to sound phony."

To an excited reporter who called from his home describing what were happening in his neighborhood, which did not seem to be devastating at all, a KCBS anchor woman responded, "Oh Mike, I'll tell you something. I have lived in San Francisco since 1975 but I haven't felt like that. My heart is still beating as fast as it can go. It's just unbelievable."

A woman was walking up to the KGO's office to report to work at five o'clock. When the earthquake hit, she ran out and ran home, and saw that her house was wrecked completely. She could not find her baby and husband, and then saw them across the street. She lives within thirty yards of the big fire in the Marina. They just bought the house. The contractor just finished the last bit of painting two hours earlier. She went on the air describing her own house.

Having been asked if there was a moment during the earthquake when he wanted to run away, a disc jockey of KNEW answers by quoting Rudyard Kipling's saying "If you can keep your head while all about you

are losing theirs, then you are a man, my son," and saying, "But in this case, it was <If you can keep your head while all about you are losing theirs, maybe you do not know how serious the situation is.>"

THE IMMEDIATE HOURS

News gathering became most important during the immediate hours. A KSFO news person says, "I had no input. I had to keep the public informed but I had no way of getting information other than listening to other radio stations. If you were hearing the person from the agency talking about it on another station, then you knew it was pretty true. You did not have to guess on that. We started to look for alternative sources of information. One source we found was the front of the phone book. The local phone book has a whole section on earthquake preparedness. We started reading some of the safety tips from there. We also found a folder containing some materials with earthquake information in the station. Then, we finally got a little portable television and started seeing some of the damage."

KCBS, being one of the two all-news stations in the Bay Area, seems to have had advantages over other stations. They have about thirty-five to forty full-time news people - anchors, reporters, editors - and the number is closer to fifty when part-time people are included. Their reporters in the field and at home called to report what had happened in their areas. A KCBS news person recalls, "Our reporters went to where the damage was. We had reporters right away at the Marina. We did live phone interviews with the phone company, power company, water company, mayors, and officials. As for getting information about what people should do, we have some recorded announcements telling people what to do which are used in the event of an earthquake. We used them quite a bit. These are pre-recorded and set to go."

However, everything did not go as smoothly as recollected after everything is over. There were twelve different pre-recorded announcements called Earthquake Emergency Safety Advisories, six announcements to be broadcasted in the first ten minutes, two between ten minutes and two hours, and four between two and six hours after an event. According to the transcription (Appendix I), however, the first pre-recorded announcement went on the air about thirty minutes after the earthquake, and it was the one prepared for the first-ten-minute use. Although the Marina District, where the damage was most severe in San Francisco, is almost within walking distance from the KCBS station, the first report from the Marina went on the air almost one and a half hours after the earthquake. It should be also noted that KCBS was off the air for some twenty minutes, after it had been on the air for about one hour because the fuel pipe to the emergency generator got clogged up.

Although KNBR managed to stay on the air, most of the staff were away on remote location. Their two-way radios were not usable because the two-way link on the roof of the station building was knocked out. So, the main link to the reporters was the telephone, especially the cellular phones.

Immediately after the earthquake, telephones started lighting up in every radio station, be it large or small. Smaller stations had to rely more heavily on the calls from listeners because of their weaker news-gathering capabilities. Nobody knew what happened or what the magnitude was.

For the first ten to fifteen minutes after the earthquake, KNEW was one of the few stations on the air. They got information from the telephone and broadcasted it. "Nobody gave us false information. In fact, we could not believe the first report we received about the Bay Bridge collapsing. We said, <Well, thank you for your report but I need to get confirmation from other people before we credit this.> That was because I did not want to panic people unnecessarily. Of course, it turned out that the report was correct."

A KSFO person who was at home when the earthquake hit recalls, "We really could not get in to the radio station right after the earthquake. So, we thought it would be better if we stayed in our homes and started calling out and finding out what the damage in our areas was. Then, we reported it to our radio station."

A lot of calls from listeners were actually allowed to go on the air. It might have been a gamble but they were the main source of information because the devastation was so widespread. According to KCBS, "We did not get any false information, any malicious call, or anything like that from people who were calling in."

AFTER THE IMMEDIATE HOURS

KNBR's whole staff consists of about sixty-five members, including thirteen in news and seven in sports. However, most of the staff were at Candlestick or at home when the earthquake occurred, and there were only four persons in the station. Back at the station, the people regrouped and came in as best as they could come in on the air and started reporting on the impact of the earthquake in spite of some severe handicaps. There were no wire machines to provide them information. It became increasingly difficult for them to call out or to receive calls because of the very limited use of telephones.

Within an hour or so, KNBR had half a dozen of news people and talk show hosts coming from their houses. Within a couple of hours, there were up to fifteen people working, from the initial four, including those who got back from the ball park. They came in on the air with their first-hand accounts of what they observed and with any information or news account that they could gather for that first immediate impact.

By dropping all commercials and all music, KNBR went into consecutive earthquake programming until the early hours of the next morning. Since everybody was exhausted, a previous broadcast that night was replayed for two hours. The only mistake was that they left some time checks. Some people were kind of wondering what time it was when they turned on their radios and the announcer said it was one-thirty when it was actually three-thirty. KNBR basically had almost forty-eight hours of continuous update information on the earthquake with no commercials and no music.

Immediately after the quake and as soon as KSFO got back on the air, from the engineering closet, which was about after twenty to thirty minutes, one news person basically had to go non-stop until another person finally made it in from Candlestick Park two hours after the earthquake. It was like a talk radio station where the listeners were calling in and telling the anchor person what they felt. KSFO did that for several hours and then filled in with information as they got it. They had a mobile home or a recreational vehicle which the crew cranked up when it returned from Candlestick. They ran an extension cord in the studio, and was able to power up broadcast, their microwave link from the studio to the transmitter. Then, they were finally able to move out of the closet into a studio with a couple of microphones working.

The KFSO's news department finally managed to have four on-air people and a couple of peripheral producers or people who gather tape. The electricity was out and even their phones were not working properly. They could get calls in but could not call out. They were all working in the dark with nothing but flashlights early in the next morning. One wire machine, UPI, was up by the next morning. It took a long time just for the news gathering through the regular channels to come back on board.

In KCBS, the vast majority worked in some capacity that night and the next day as well. They did eighty-four hours straight of earthquake news without any commercials, from Tuesday afternoon at 5:04 until Saturday morning at 5:00, when they started playing commercials and other things as well. But Saturday and Sunday were still mostly earthquake coverage.

KNEW did their emergency programming on the following day. They tried mainly to get people in touch with their friends and relatives, by announcing the names, because many people could not use the telephone system very well. They kept on talking for forty-eight hours, "If we were not talking, our listeners were. We would just put them on the air directly so anybody in the audience who knew the answer would call us and we would put that on."

KGO, although having been off the air for one and a half hours after the earthquake, did good coverage of the earthquake. They consciously blended telling the listeners about disasters, fires, damage with telling them where they can get help, where they can get shelter, when their power is going to go on, when their phone is going to go back on, and when their water is going to go back on. Their coverage tried to remedy the mistake the national media had made; i.e., giving the impression that the Bay Area had all fallen in the ocean when it did not.

After having had the news program for four days, KGO went back to the regular program. "You could feel it. It was time to get back to normal. People were tiring. Even though we had all the information and we were still getting it on, there comes a point when people are just going to turn off their radio or turn off their television because they are depressed. And you need to start getting back to normal. You need to tell people that they can go shopping or that there is a new movie out and things like that."

After the earthquake, radio listenership in the Bay Area is reported to have increased by four times. There were two reasons: first, the power was out and television became useless and second, the commute was longer for drivers because the Bay Bridge collapsed. As a result, television viewership was way down in the media mark

EMERGENCY BROADCAST SYSTEM

The Emergency Broadcast System (EBS) is something that local and regional political authorities set up, and in which the radio is supposed to be the conduit for information from the Office of Emergency Services (OES); i.e., to broadcast information to the public about what to do in an emergency. KNBR is the primary EBS station for the San Francisco Bay Area, five counties with about four million people. The primary EBS station is selected based on the signal - how strong it is, and the technical ability to provide the link, the airwave link, between OES and the various emergency government agencies. KNBR is fifty-thousand watts. KCBS and KGO, also with powerful fifty-thousand watts, are secondary and tertiary EBS stations.

There is a designated command center, an Office of Emergency Services, which may be called a disaster room. When there is a disaster, wherever it is, people are supposed to go to the designated emergency command center and function out of there. They get calls with reference to gas and electricity, water, fire, hospitals, highway patrol, and any other coordinating office. All of these then would be functioning under one room and one coordinator. KNBR was the primary radio link to pass that information to the public.

EBS is not always on. Someone has to physically activate it, when it becomes necessary. Since KNBR stayed on the air using their emergency generator, they were able to hook up the signal from the emergency command center which was activated within forty-five minutes. As the primary EBS station, KNBR was required to let the Mayor of San Francisco, the Acting Governor, come on the air and provide updated information. The Mayor is designated to speak to the city or the Governor to speak to the entire region what they know and what actions people need to take.

However, there seems to be a lot of discussions about the usefulness and reliability of the EBS in its present form, and opinions differ among news people. Three of the five AM stations Japanese radiomen visited expressed their criticisms on the present Emergency Broadcast System.

The following is a relatively mild comment: "We are one of the EBS stations, not the primary one. All of the stations are supposed to be part of the EBS. This system is to be used for emergency announcements by officials in charge. But it did not really work that well in this case. It took quite a while before there was anything of value on the EBS from the originating station. By the time the Mayor got on with an official announcement, we already had the Mayor on live and we had reporters with the Mayor. This was probably sometime between the first hour and the second hour. (The Mayor was at Candlestick, and) I do not know exactly when he got to the Office of Emergency Services. We tried to take one of the Mayor's emergency announcements later on but they fed it on the wrong

channel. It did not work very well. There was a lot of confusion about the Emergency Broadcast System. And there was nothing really of value on it."

Another news person from a different station says, "Are you familiar with our Emergency Broadcast System set-up in this country? You are? EBS? Ours did not work. There was virtually no information coming from EBS. So, I would suggest that they study the American Emergency Broadcast System and make improvements so that everybody knows exactly what to do when it happens. The radio station in San Francisco, KNBR, was supposed to provide this information but did not. So, we had to do it on our own. Every station had to do it on its own. EBS has been a good idea but there has never been any real effort made to understand what exactly are we going to do when it happens. Originally, it was set up for a missile attack. Well, it is also applicable to a natural disaster like an earthquake. But the people who are in charge of it did not know what to do when the earthquake occurred. It would have been very helpful if they had done it properly."

An example of more sarcastic comments may be: "The EBS system? We never heard about it. I did not hear that it was activated until two days later. We are not the official station. That is KNBR. I will tell you something, though. Had it been declared, given what we knew at that time, we would not have turned over our facility to another station to run. We have many more people and many more resources to cover an earthquake than the station that is the designated EBS station. We would not have given up the air."

According to a KNBR person, the very first thing that happened within an hour (an hour and a half?) was the Mayor came on and announced that all off-duty policemen and firemen for the City and County of San Francisco and Oakland were to report to work. Another newsman, however, points out, "The problem with EBS and OES is you have so many cities here. You have Oakland, you have Berkeley, you have San Jose. San Francisco said, <All policemen and firemen, come back to work.> Oakland did not want them to come back to work. It gets confusing in this situation and we still do not have it clarified and I bet you we would not get it clarified."

One of the criticisms is that the first official announcement was too slow to come on the air. It is understandable that information need to be ascertained before an EBS announcement is out on the air. During the critical period when EBS is most badly needed, many things happen with all the handicaps. However, the Loma Prieta experience seems to have left more than slight concern over EBS; i.e., if it can be effective in case of a real ongoing continuous disaster in which there is an explosion and people have to evacuate.

A person in KNBR, the primary EBS station, sincerely admits, "One important thing we learned from the EBS and from the quake was that we are still very unprepared to get out information quickly, clearly, and uninterruptedly. We were fortunate that we were able to hook up and establish the EBS. But there were so many links in the chain that were not communicating."

WHAT WERE THE LESSONS THEN?

Two of the most important points commonly mentioned by the radio people were back-up power and news gathering capability during a disaster. Some of the comments are summarized below:

[KCBS] We learned that back-up power is extremely important and we have to make sure that it is always in working condition and that a lot of our people know how to operate the back-up equipment. Also, I think we learned that we need to organize our coverage in the immediate aftermath of an earthquake so that there is someone with the anchor who is kind of acting as a producer with the anchor and keeping track of the information as it comes in.

[KNBR] The most important lesson was the importance of having back-up systems, the back-up to the phone, and I think, having our two-way system more protected from the impact of an earthquake because the two-way radio is not dependent on the phone company or on phone lines which get overloaded in impact. What we learned is we want to have a better stabilized set-up for the two-way receivers and the transmitters, so that our reporter, no matter where he is, can be in communication and will not have to depend on phone lines which do not only get knocked out of service but clog up very quickly that you cannot get through.

[KSFO] Having our own power supply is the most important thing. And that was the thing that was missed most in the minutes right after the earthquake. If we had that, we could have gotten back a lot sooner and serve our listeners better. We could prepare by just having things like flashlights and batteries handy. I wish we can have more capability for communication with our people; i.e., more cellular phones, hand-held radios, portable marty units, or whatever is available, so we do not have to depend on phones.

One of the biggest controversies right after the earthquake was estimating the death toll. During the early disaster hours, there was a critical disparity in the number of dead people from the earthquake. The highest reported death toll reached 270 at one time, whereas the true number turned out to be 63. Most of the deaths were caused by the collapse of the Cypress structure.

KGO says that they did not go with the death toll because they did not believe it. Although they had early on that two hundred fifty-three people had died, they did not go with it. According to KCBS, "We said that the Alameda County Office of Emergency Services is reporting that as many as two hundred or more people could be killed. We phrased it that way - not confirmed dead, and then we would say <But there have been only six people who have been pulled out of the wreckage who are confirmed dead.>"

For KSFO, which is a music station, the figure had to be taken as something like gospel because it was released by government agencies. A KSFO news person recalls, "It was not anything somebody made up and spread as a rumor to the radio stations. We were given that figure by the Office of Emergency Services in Alameda County where the Cypress structure collapsed. We had to take it as gospel."

KNBR broadcasted basic information in seven languages. KCBS had only English programs, but they started to consider doing some of the special earthquake announcements to be aired in several foreign languages, especially Spanish and maybe Chinese.

The Loma Prieta earthquake has made California's and Bay Area's radio go through invaluable experiences with respect to news gathering and dissemination during a disaster. The earthquake struck the San Francisco Bay Area about half an hour before Game Three of the World Series was due at Candlestick Park. This was unusual and the disaster itself was not a devastating one on the whole. However, as a KNBR person put it, "It was a good learning experience - having the worst case scenario of very few people in the station able to cover it."

It should be noted that competition is pervasive in the radio business in the Bay Area. There was no real cooperation in news gathering among different stations, although small stations had to heavily rely upon the information broadcasted by larger stations. One news director candidly commented, "This is a business. It could have been better if all the stations worked together in gathering information. It would never happen." In addition, the Emergency Broadcast System did not work as expected. It was true that the Loma Prieta disaster did not put a large number of people's lives at real stake; therefore, neither the competition among stations nor the malfunction of EBS did not hurt the general situation. However, the interviews with the radio persons seem to indicate that such would not have been the case if the event was much larger and more destructive. The Loma Prieta experience has clearly shown that radio stations have to increase their combined efforts to gather disaster information and disseminate it to the public in a more concerted and unified manner in case of a really life-threatening disaster.