TABLE 1

EXAMPLES OF NEWS MEDIA QUESTIONS

Topic Labels		Example Questions By Topic (News Media Questions of PIO)
I.	Background Information	-What about other quakes? -How would you describe the response, the citizens' reactions? -Parkfield, is that the nearest fault?
II.	Preparedness	-This disaster program at the end of the month, was it going to be here? -Was it going to be a county-wide conference? [The earthquake exercise] -What was the strength of the quake gonna be?
III.	Injuries	-Still no deaths, forty-five injuries? - Could you go over the injuries again?
IV.	Damages	-How many homes down? -How many buildings damaged, commercial and residential? -Any dollars and cents being mentioned in terms of damages now, Bob?
V.	Emergency Response	-Who's in charge here? -We also see private contractors here, are they helping? -What's his name? [contractor] -What's his business? [contractor]
VI.	Functional Response	-Are you satisfied there's no one in there now? [The Coalinga Plaza, SAR] -How many people do you estimate are in the clean-up and rescue effort? -What exactly are they [damage assessment teams] going to assess?
VII.	Recovery Activities	-What's the situation now? -How about food and water? -I missed what you said [about natural gas service restoration] how long will it be?
VIII.	Information Source Access	-Bob, what's your role? -So, we're never actually going to be able to talk to the mayor? -What is the number of the station?
IX.	Media Tours of Coalinga Plaza	-When are we going to get another tour? A walking tour? -You told the other gentleman about a walking tour?

TABLE 2

TOPICAL CONTENT CATEGORIES

Topic Labels		Definition of Topic Category
I.	Background	Either accounts of what the community was like prior to the disaster, or personal accounts from the PIO's experiences.
II.	Preparedness	Accounts of activities or experiences or planning processes that helped to prepare the community for the problems of coping with the disaster event.
III.	Injuries	Accounts of the disaster impact on the persons of victims, narratives or the basic statistics of injuries.
IV.	Damages	Accounts of the disaster effects upon property, commercial, residential or public; type and value of property, the severity of property damage.
V.	Emergency Response	Accounts of organized responses to the disaster's effects in terms of who responded, the actors.
VI.	Functional Response	Accounts of organized responses to the disaster's effects in terms of what was done, the actions.
VII.	Recovery Activities	Accounts of plans or intended effects of current actions, in relation to restoring vital services (gas, power, water), or rebuilding.
VIII.	Information Source Access	Information concerning the status, location, identity or availability of authoritative information sources.
IX.	Media Tours of Coalinga Plaza	Talk about news media access to Coalinga Plaza for photo-opportunities, damage backdrops for interviews, actualities.

FIGURE 1

Topics II with III with VII

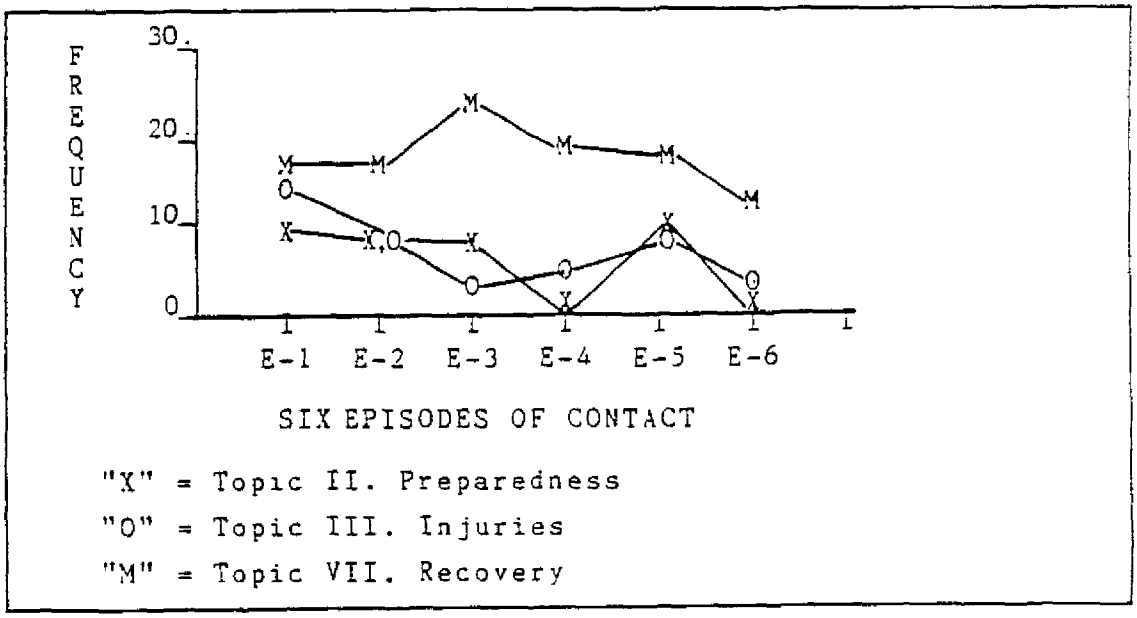
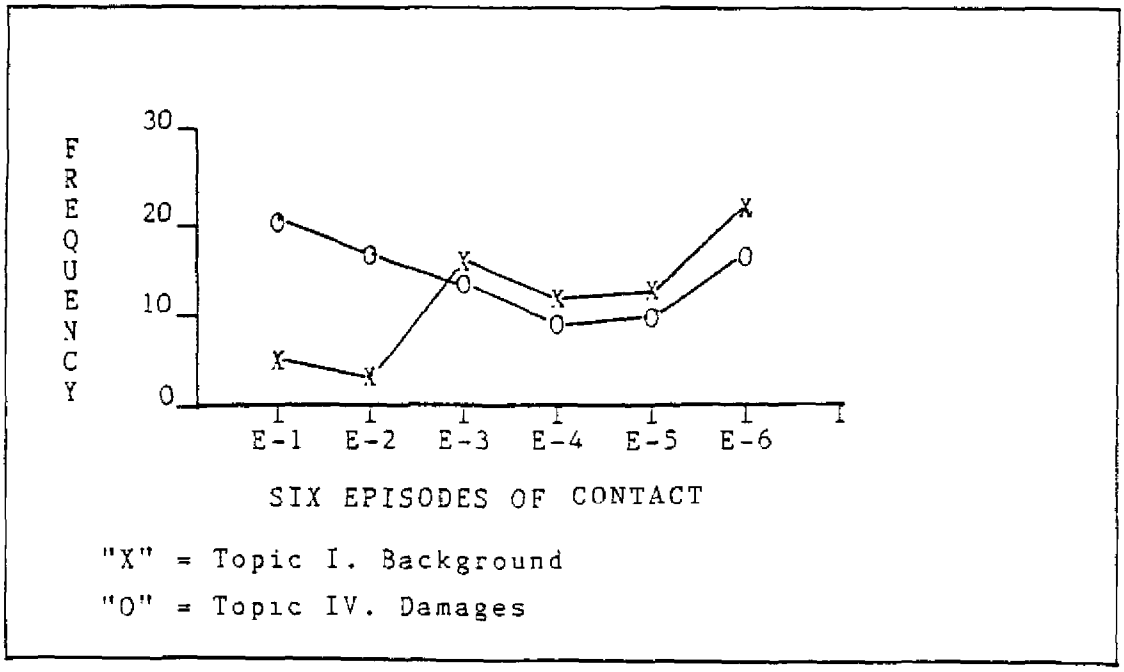


FIGURE 2

Topic I with Topic IV



information system and had not reached the PIO, he was unable to give current, factual answers about the extent of the damages.

4c) News media questions will change as the "key players" change from city to county to state to federal levels, and as the disaster moves from remedy to early recovery stages.

We measured two indexes of change in news media questions that indicate the need for the disaster information system to provide the PIO with updated information in the EMO network as representatives of higher levels of government become players in the disaster response effort.

When we looked at the way the PIO talked about the "key players" (Table 3) we found increasing reference to people at higher levels of government as time passed (Table 4). This means that the PIO has to gather more information about those new people who will be of interest to the news media if credibility is to be sustained through this transition. The news media will increasingly ask about more and more senior members of the management team at disasters. Therefore, the PIO must continually update this type of changing information.

We also looked at references the PIO made, over time, in answering news media questions about different levels of government. We found that as time passed the PIO talked about different departments or agencies or offices of government. The focus shifted from the city of Coalinga to the state of California and then to the U.S. Government. This shift was salient for the news media, who needed to keep abreast of changes in the structure of the management team. An example of this shift is the way the U.S. Army Corps of Engineers became an important organization as the focus of disaster operations moved from SAR, fire suppression, and emergency medical services to damage assessment, recovery, and applications for disaster declarations.

4d) News media questions will change as news personnel learn more about the community and the disaster response, and after they have begun to answer the question: "Who did what?"

We found that there was a dramatic set of changes in the types of questions the news media asked, and we think the changes can be explained by a "learning curve." We collapsed the counts we had of news media questions concerning functional response and emergency response into one category and looked at the pattern (Figure 3). We also collapsed the categories of information source access and news media tours of Coalinga Plaza into one category (Figure 4). We then compared these two new composite categories (Figure 5) and found that the news media asked first about "who did what" and then asked the PIO either for information about where to find the people identified, or asked for access to the "what" of the disaster effects.

This sequence of questioning leads us to believe that there is a strong likelihood that the PIO is going to need a great deal of updated information on the movements of the people involved in the disaster response if the news media are to be satisfied.

TABLE 3

PIO REFERENCES TO INDIVIDUALS

Rank	Name	Title	Frequency	Percent
1.	George Deukmejian	Governor of California	32	23.36
2.	Glenn Marcussen	Coalinga City Manager	26	18.98
3.	Robert Semple	Coalinga PIO	16	11.68
4.	Keith Scrivener	Coalinga Mayor	13	9.49
5.	Lt. Greening	Incident Commander	11	8.00
6.	Tony Coehlo	United States Congressman	9	6.57
7.	Jerry Schmidt	Sgt. Fresno Sheriff's Ofc.	6	4.38
8.	Fred Hatfield	Assistant to Tony Coehlo	4	2.92
N/A	All Those Mentioned Once or Twice	(n=14)	20	14.61
TOTALS:			137	99.99*

* Total equals less than 100% due to rounding error.

TABLE 4

PIO REFERENCES TO LEVELS OF GOVERNMENT

Rank	Govt. Level	Frequency Mentioned	Total Percent	Chi Sq.	Significance Level
1.	Coalinga	62	29.9	29.06	.01
2.	State	44	21.2	20.61	.01
3.	Federal	32	15.4	19.01	.01
4.	Fresno County	14	6.7	3.29	n/s
All Others:		56	26.9	n/a	n/a
TOTALS:		208	100.1*	n/a	n/a

* Exceeds 100% due to rounding error.

FIGURE 3

Topic V with Topic VI

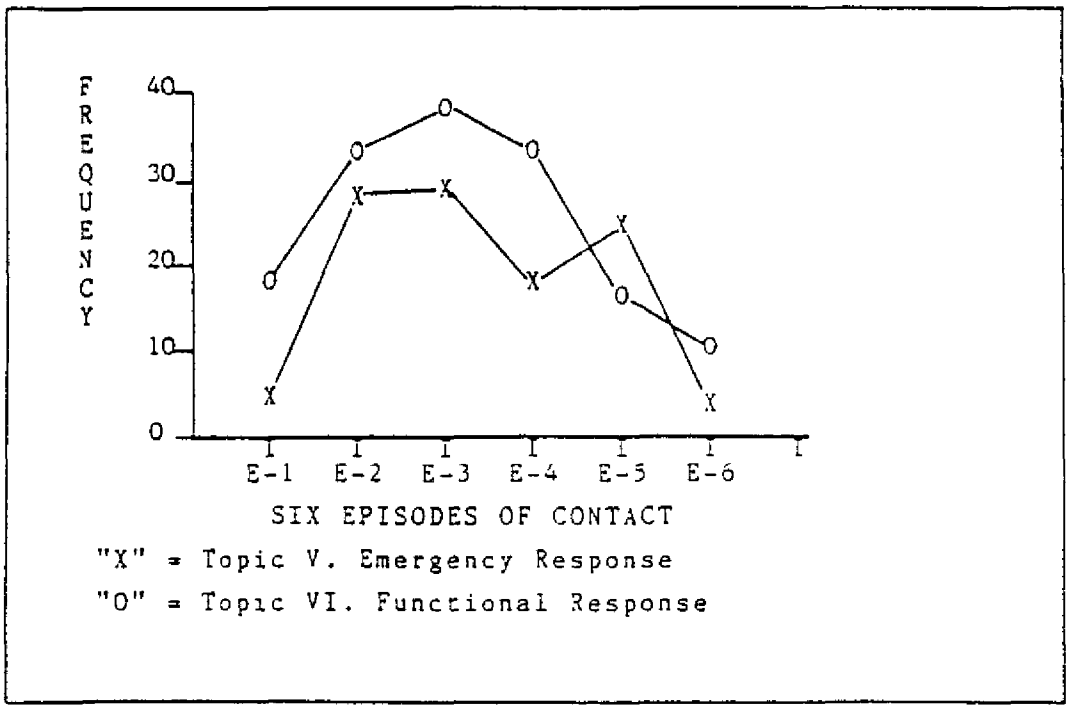


FIGURE 4

Topic VIII with Topic IX

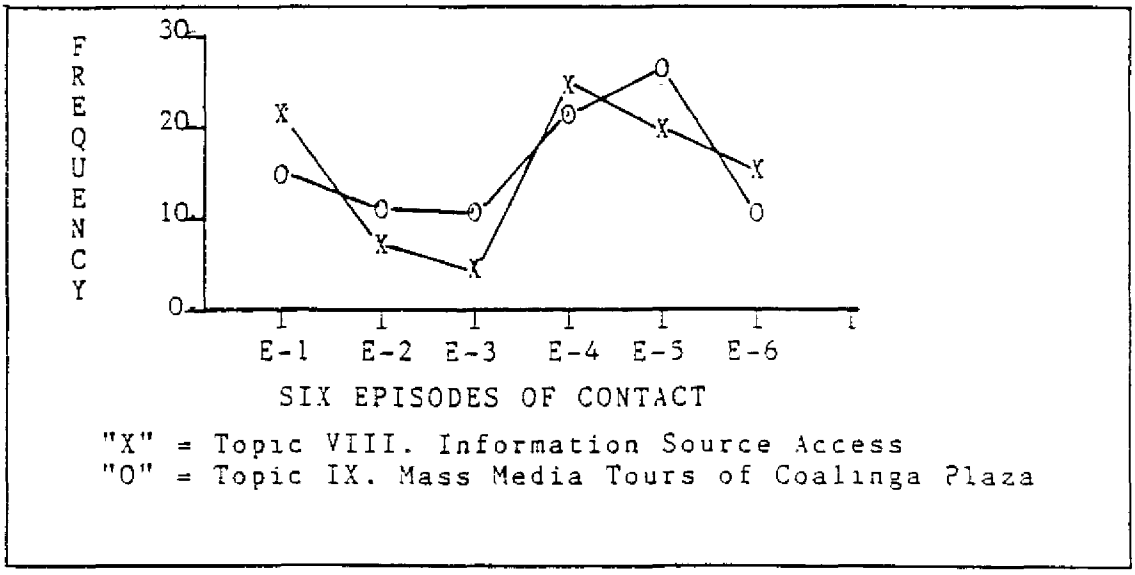
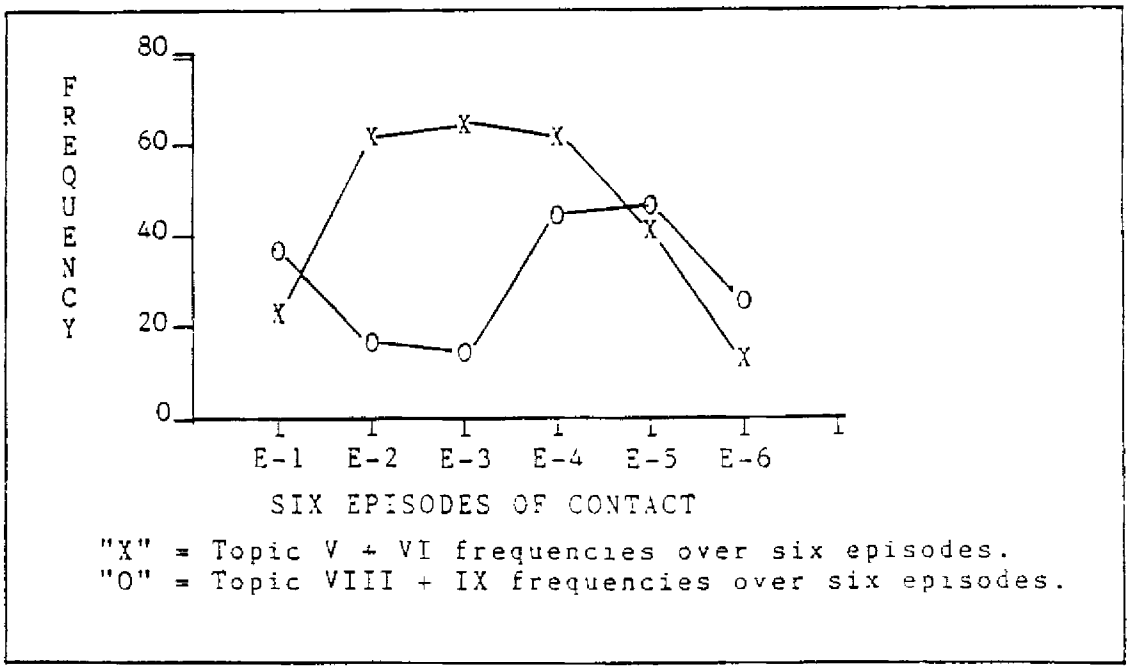


FIGURE 5

Topics V and VI with Topics VIII and IX



CONCLUSIONS

The conclusions we can draw from our observations at Coalinga are limited by the type of disaster we observed. We investigated the emergency public information operations in a community-wide, rapid-onset, natural disaster. The investigation site is close to two major media markets (Los Angeles and San Francisco). At the time of our investigation, a wide array of national and international media were present in Los Angeles for press conferences addressing preparations for the 1984 Los Angeles Olympic Games. In some ways these conditions make it prudent to limit our claims to what we saw in this small California town in May 1983. Yet, it is likely that the types of changes we noticed at Coalinga in the topics of interest to the news media, and the changes in disaster operations, will occur in other disasters.

We saw the news media convergence that Stephens (1980) claimed was going to continue to be common in American disasters (Appendix 1). We saw the news gathering process described by Scanlon (1978), and the evolution of the EMO network management structures noted by Drabek (1981). The interaction of these three factors produced effects that are likely to be common in a wide array of future disaster events. Thus, it becomes increasingly important for those planning emergency public information systems to be aware of the patterns and processes of interaction with the news media.

We also observed the scoop mentality in action (Tunstall, 1971). The San Francisco Chronicle erroneously published a front page, banner headline: "One Dead in Coalinga." In contrast, CBS News in New York received a report from California's Office of Emergency Services (OES) that one fatality had been reported in Coalinga. Before going on the air with the story, a CBS producer called OES to confirm the authenticity of the report, found that the report had been mistaken, and "killed" the story.

This study has improved and extended our understanding of the overall disaster information system, the role of emergency public information, and interaction between the PIO and the news media in many important ways.

1) Our empirical findings strengthen understanding of the sensitivity of the emergency public information system both to the evolution of disaster response operations and to the news media need for emergent information.

The findings confirm contemporary wisdom concerning the news media's desire for certain types of information, such as damage and injury estimates. We also learned the nature of additional information the PIO must manage. By identifying the changing salience of news media topics of interest we have been able to better appreciate the role the larger disaster information environment plays in influencing emergency public information.

In the past, training for PIOs was based on anecdotal experience that specified the types of information the news media seemed to desire. In our experience, this has led to overestimates of the news media's desire for damage and injury data, and to underestimates for other types of information managed by the PIO. This brings us to a second conclusion.

2. Our findings help clarify the different types of information PIOs need and the different roles the PIO must fill.

Our research shows that the news media do desire a great deal of information about topics other than injuries and damages. This finding is no doubt skewed by the observation period at Coalinga. Had we audiotaped the PIO in the first several hours following the earthquake, we would have seen a far greater proportion of questions about injuries, damages, and search and rescue. Within the time frame of this study, we have been able to mark the shift in topics as they change over time. From this evidence we can see that the PIO needs to fulfill several different functions in the management of emergency public information in an EMO network. In a basic sense, this evidence suggests the need to reconceptualize the PIO function from that of "spokesperson" to that of

"information manager." The experience at Coalinga more clearly suggests the need for options in delegating information gathering functions, thus allowing the PIO flexibility in managing emergency public information dissemination.

3. The relationship between the creation of information through disaster response operations, and the movement of that information to the PIO has been down-played. This past oversight suggests the need to devote resources to understanding the linkages between the PIO (as "information manager") and the people that are busy creating new information.

Detailed research needs to be undertaken on the types of communications systems in use in EMO networks--that is, on the systems that move information to the PIO.

4. Our research can help to pinpoint opportunities for the PIO to fulfill a public educator role through planned use of the news media "open channel."

If we extend the findings from this study, it becomes apparent that the PIO has several possible roles. Semple did a remarkable job of adjusting to the difficulties in Coalinga, and satisfied the role requirements of information disseminator exceptionally well. However, because of the structure (or lack of structure) of the communications systems that supported his operation, he was unable to maximize the opportunities presented by the news media.

Several instances were identified in which the PIO was offered the use of news media channels for official announcements. Because these channels were presented, we feel compelled to imagine circumstances under which they might be used more innovatively. For example, we know that disaster coverage draws a very large audience. This audience is particularly attentive, and therefore more receptive to specific information. The PIO can fulfill a powerful public education role by using the channels offered by the news media. In Coalinga, this might have meant that the PIO made comments on overall regional preparation for the impending California earthquake disaster. When asked by the news media, "How do you think you've done in handling this disaster?" the PIO might have responded by talking about how lucky they had been that resources were available,

that communications were adequate, that roads were open, and that the city of Fresno had not been the site of the worst damage. This type of hypothetical response requires a broader conception of the value of the news media than was evident in Coalinga. Use of media channels requires an agenda shift. To maximize the opportunity presented, the PIO needs a support staff and the resulting time in which to design public service communication.

To maximize news media opportunities, three premises need to be linked. First, the news media actively offer public officials the opportunity to comment on a disaster, and more broadly, to place the particular disaster into a more general context. Second, officials have a difficult time getting the public to take disaster preparation issues seriously enough to support adequate funding, training, and exercises. Third, people seem to be able to learn most effectively when ideas are coupled with vivid, dramatic imagery. This leads us to conclude that additional resources should be devoted to more specific understanding of how opportunities identified within disaster operations can be used to educate the public.

5. <u>This study will enable us to more precisely focus future research on the management of emergency public information operations</u>.

If we are to improve the methods employed in this study, and thus the quality of the data available to PIOs, emergency managers and planners, and the news media, we must incorporate the lessons learned at Coalinga into future studies. In Coalinga we found that poor early communications management blocked our access to the PIO in the first hours of the disaster. We had a researcher on site at 10:30 on the night of the earthquake, but personnel at a roadblock could not verify permission for him to enter the community. To develop good general models of the evolution of disaster information systems, emergent events need to be recorded. This can only be accomplished through quicker, more predictable access to emerging disaster events.

If three conditions had been markedly different, the quality of our findings would have been powerfully amplified. First, had we been able to move our research team into the field more quickly, we would have been able to record a much broader spectrum of emerging communication processes. For example, had we flown rather than driven to the site, we would have arrived with the first wave of news media representatives. This requires far greater commitment of resources for field data collection than is normally available for this type of research.

Second, if we had contacted in advance all the organizations which might be involved, we could have assured quicker access to the disaster area and to the PIO. As a practical issue, this would only have solved the problem for the limited time that our research team was available for a field study. A more general system needs to be developed to support full access to emerging disasters. Emergency managers might need to participate more actively in developing goals for disaster research and to lend their support to researchers in the field. Broadened participation by emergency managers in setting research agendas might also generate better means of identifying researchers prior to disaster events. With broader acceptance of researchers in disaster environments, a uniform identification system could be developed.

Finally, the scope of our study allowed us to capture a very sharp picture of a very limited portion of the disaster information system. We had four scholars in the field, two of whom had extensive disaster field experience. We obtained excellent data on the PIO and news media, but we did not get complementary data on the movement of information elsewhere in the information system. Larger teams would facilitate collection of the types of information that will eventually allow more precise modeling of the evolution of disaster information systems. We are convinced that more complete data is needed if the roles of the PIO and the possible functions of the emergency public information system are

to be planned to maximize available resources.

Two additional, complementary points can be drawn from the methods used in this study. First, more precise modeling can lead to planning that maximizes use of available resources without straining them. Second, the detailed data collected in this study lend themselves to a far greater array of analytical approaches than would be feasible with less complete records. For example, the transcripts from Coalinga might be used as the core of a training program for PIOs that employed information system design exercises, dramatization and role playing. Such an approach would merge both anecdotal and systematic empirical findings into a far more sophisticated education program than that which is currently used to train PIOs.

RECOMMENDATIONS

To help the various groups that will be involved in planning and managing information movement in disasters, we feel we can now make the following recommendations:

For PIOs: Some Solutions to the Information Lag Problem

Changing Topical Agendas. In the discussion of findings, the problem of information lagging behind changes in disaster operations was described using an example from Semple's experience. In Coalinga, the news media asked repeatedly for new data on damage assessment before Semple had any figures to give them. Semple did not seem to be aware that it was fine to say "Look, I won't have those figures for a couple of hours, let's talk about something else. I mean, really, its gonna take hours to get a good fix on how much of the housing is habitable, how much is marginal and how much has to come down. The engineers have got to go inside each of those dwellings and check for structural soundness. Now, we could talk about that topic, how it takes thousands of person hours to accurately assess the quality of shelter after an earthquake like this one. We

have structural engineers coming from all over the state and volunteering their time." This hypothetical change of subject imposes a topical agenda upon the news media. It also points out that the information sought by the news media has not been created yet, at least not in any comprehensive way. Little bits of information are being added to the total picture as time passes but there is no possible way to have an answer to the question until the assessment process is complete. Changing the agenda requires skill.

Status Boards. There is a technique of posting updates that helps to solve this problem. If a status board is posted prominently, with statements about the percentage of an operation that has been completed, it relieves the PIO of having to answer questions in the negative. The PIO can post a statement on the status board that reads: "The damage assessment is 35% complete at 1:35 p.m., May 3."

Additional Recommendations for PIOs

1) Clarify the goals of emergency public information relevant to your community. Interact with local public policy makers to effect clarification before the disaster happens.

2) Identify and use appropriate media for the type of emergency public information most salient for your community. Recognize the vulnerability of various media to particular hazardous events; for example, electronic and print media are vulnerable to earthquakes.

3) Identify personnel and equipment that can augment your emergency public information operations in the disaster events to which your community is vulnerable.

4) Meet and work with PIOs in neighboring communities to plan and refine emergency public information operations and develop sound working relationships.

5) Educate your emergency managers to the need for time-phased information gathering. The news media will move from one type of question to another, and the relative salience of information will change whether you are prepared or not.

6) Educate your emergency managers to emergency public information needs of the different groups you may need to address in emergency operations; the news media, the local population, other regional communities, and distant mass audiences all need different types of information.

7) Prepare for the fatigue that is an ever-present consequence of disaster response operations. Learn to recognize when you have had too much, and rest. Learn to eat and exercise for the stress of emergency operations; it is not only the law enforcement and fire suppression people that have to be in good shape to fulfill their professional responsibilities.

8) In addition to status boards, make emergency public information operations more efficient through handbills for announcements and dissemination of repetitive information.

Recommendations for Emergency Managers

1) Develop respect for the news media as a viable channel for emergency public information. The news media may often provide communication channels when emergency response agencies cannot.

2) Improve operational communication systems. Multiagency emergency response operations are problematic for communications in emergent multiorganizational networks because of the need for greater channel capacity for "coordination by feedback." This problem must be addressed if effective operational management and successful emergency public information are desired.

3) Learn the emergency management skills that are likely to be required in your community's future. You must be able to answer affirmatively the question, "Are you able to effectively deal with news media questions?" Without a clear understanding of the skills needed it becomes very difficult to appreciate useful contact with the news media when it happens.

Recommendations for the News Media

1) News gatherers need to learn more about the technical aspects of hazards and emergency response. Technical information concerning hazards is important as a result of the general pattern of increasing technological sophistication of society. News gatherers cannot report effectively on that which they do not understand. Effective criticism of emergency management practices can only be made when the issues and options are understood.

2) Understand which emergency response activities occur at different points in time and then avoid the mistake of demanding information that does not yet exist.

3) Develop compassion for local PIOs and emergency managers. Community-wide disasters are rare for any given community, whereas the same news personnel are often sent to many disasters. The emergency response personnel you encounter may well be less experienced than you in coping with the problems of information management in disasters.

4) News managers should devote some resources to educating their news-gathering staff (see recommendation 1).

5) News managers should devote some time to appropriate community-relevant local emergency planning. This public service is an essential support to professional relations when disaster does strike.

6) News managers need to withhold reports until confirmation of sensational stories can be made; avoid being driven by a "scoop" mentality. Deadline pressures do not justify the grief caused by erroneous reports of death and destruction.

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APPENDIX 1

IDENTIFIED MEDIA AT COALINGA

	California-Based		External to California			Total
	Local	Non-Local	Regional	National	Inter-National	
Television						
Institutions		13	1	2	1	17
Personnel		50	3	25	3	81
Radio						
Institutions		5		3		8
Personnel		13		19		32
Print						
Institutions	1	3		4	3	11
Personnel	5	14		13	5	37
Services						
Institutions				2		2
Personnel				17		17
Totals:						
Institutions	1	21	1	11	4	38
Personnel	5	77	3	74	8	167

* Figures compiled by Sheizaf Rafaeli between 10:00 AM and 1:00 PM. on May 3, 1983.

APPENDIX 2

PIO REFERENCES TO FUNCTIONAL AREAS

Rank	Functional Area	Percent	Frequency
1.	Command and Control	28.64	114
2.	Damage Assessment	18.59	74
3.	Emergency Medical Services	13.06	52
4.	Public Works	11.56	46
5.	Fire Suppression Services	8.54	34
6.	Law Enforcement Services	6.53	26
7.	Mass Care (Sheltering)	4.77	19
	Emergency Public Information	4.77	19
9.	Search and Rescue	3.52	14
TOTALS:		99.98*	398

* Total equals less than 100% due to rounding error.

APPENDIX 3

TOPICS RANKED BY MEAN PERCENTAGE OF TOTAL

Rank		Topic Label	Mean Percent	s	Raw Frequency
1.	VI.	Functional Response	18.81	7.26	149
2.	VII.	Recovery Activities	13.20	1.38	102*
3.	V.	Emergency Response	13.16	7.39	107
4.	VIII.	Information Source Access	12.18	6.29	91*
5.	IX.	Media Tours of Coalinga Plaza	12.12	4.10	94
6.	IV.	Damages	11.55	4.68	85
7.	I.	Background	9.37	7.35	67
8.	III.	Injuries	5.35	3.31	41
9.	II.	Preparedness	4.22	3.32	34

* Note that in two cases the raw frequency for a topic is lower than the next lower ranked topic. This is due to fluctuation in the absolute frequency for topics raised by the mass media within each of the six episodes of contact between the PIO and mass media. Fluctuations are smoothed using mean percentages.

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