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Description of Interview Data Regarding Pittsburgh and Confluence Toxic Chemical Accidents

G. O. Rogers
B. L. Shumpert
J. H. Sorensen

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ENERGY DIVISION

DESCRIPTION OF INTERVIEW DATA REGARDING PITTSBURGH AND CONFLUENCE TOXIC CHEMICAL ACCIDENTS

George O. Rogers
Barry L. Shumpert
John H. Sorensen

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ABSTRACT

Evacuation is the protective action most often recommended in response to chemical releases in the United States. The appropriateness of a decision to evacuate depends on whether the affected area can be cleared of residents before it is contaminated by the chemical release. In determining whether an evacuation can be completed in time, emergency officials must consider both technical and behavioral aspects. The technical components (e.g., size of area to be evacuated and length and capacity of evacuation routes) can be readily conceived and quantified. In contrast, the behavioral components (i.e., how and when the public will react to the evacuation warning) are much more abstract and more difficult to estimate.

This report summarizes the univariate analysis of responses to surveys conducted in two communities where evacuation was recommended following train derailments involving hazardous chemicals. The surveys were designed to identify the actions taken by residents upon receiving the emergency warning; determine when people received the warning, decided to take action, and implemented the action; and ascertain factors that might explain the nature and timing of their actions.

The surveys were conducted in the Bloomfield section of Pittsburgh, Pennsylvania, and in the town of Confluence, Pennsylvania. Interesting similarities and differences were found in the responses from residents of the two communities. Confluence residents were found to have been more likely to have complied with the evacuation recommendation than their counterparts in Pittsburgh. They also received the warning and responded more quickly and were less likely to report the need for additional information regarding the hazard. In both communities most respondents first received the warning to evacuate from official sources, but reported that informal contagion of the warning was important in spreading the warning and in helping them decide how to respond. The surveys also provide information on the specific actions the respondents took when they received warning, their evacuation logistics and concerns, and their evaluation of the performance of public officials and the media in handling the emergency.

The study confirms that compliance with an emergency warning to evacuate varies and that potentially dangerous delays can be expected. Significant differences were noted, however, in the rate and speed of compliance in the two communities. The surveys provide information on several factors that may be useful in determining the reasons for differences in the responses from the two communities as well as differences among individual respondents. Such factors include the time of day when the accident occurred, where the respondent was at the time, whether the family was together, previous disaster experience, pet ownership, the content of the warning message, and demographic characteristics.

1. INTRODUCTION

Local emergency planners must develop strategies for dealing with the release of toxic chemicals from accidents occurring at fixed sites and during transport. In the United States, the most common response to these types of accidents is evacuation of the potentially affected area. In deciding whether or not to order an evacuation, local emergency planners and officials must compare the amount of time available before chemical contamination will reach the affected area with the amount of time required to evacuate the area. Estimating the time available before an area becomes contaminated is largely a technical matter involving the nature and amount of the chemical release and meteorological conditions. Estimating the time required to evacuate the area, on the other hand, involves both technical and sociological aspects. Although considerable attention has been given to the technical aspects of evacuation, researchers have not yet developed a full understanding of the sociological aspects. Important questions include: How long does it take to communicate the evacuation order to most of the people in the affected area? How will the public respond to such an order? Why do some people remain in the area in spite of the evacuation order? What factors influence the variability of the public's response? Relevant variables may include density of population, sociological characteristics of the residents, timing of the evacuation order, presence of visual or olfactory evidence of the release.

This study presents the results of interviews conducted with local residents and emergency-response officials following two transportation accidents involving hazardous chemicals that occurred in western Pennsylvania in 1987. Evacuation was a primary protective response in both situations. The interviews were designed to elicit information on how long it took to communicate the evacuation order to affected residents, how long it took them to react to the evacuation order, how they reacted, and why they reacted as they did.

By providing some empirical indication of how these affected publics reacted to evacuation orders precipitated by chemical emergencies, the surveys contribute to an understanding of the sociological components of the evacuation decision. This report presents a summary, univariate description of the survey results. It is not intended to provide an explanatory analysis of interrelationships among the variables measured, although possible explanations are occasionally offered for some results. As such, the report represents an initial reference point from which additional, more substantively focused analyses of the survey data can be conducted. In addition to further analysis of the current data, similar studies conducted in other contexts are needed to produce a level of understanding complete enough to allow officials to predict the public's response to an evacuation order.

The following section of this study describes the events and the contexts in which they occurred, pointing out pertinent similarities and differences that may have been reflected in the public's responses. Section 3 describes the questionnaires used in the survey of residents and the open-ended interviews with emergency-response officials. Section 4 presents the findings of the two survey efforts, focusing individually on the warning process, the public response, and the evacuation. Section 5 completes the study with a summary of significant findings and a discussion of their implications for emergency planning and response.

2. DESCRIPTION OF THE EVENTS

2.1 PITTSBURGH

On Saturday, April 11, 1987, at 12:29 p.m., a train accident in the Bloomfield section of Pittsburgh, Pennsylvania, resulted in the derailment of 33 rail cars, including 4 tank cars containing hazardous materials. Sparks from the accident started a fire, but none of the hazardous materials ignited. However, one tank car containing phosphorus oxychloride developed a leak, spilling 30 to 100 gal of lading before emergency personnel sealed the leak and neutralized the chemicals that had escaped. Smoke from the fire was visible over a fairly large area (Federal Railroad Administration 1987).

When Pittsburgh emergency personnel arrived on the scene about 20 min after the accident occurred, some residents of immediately adjacent areas had already begun to evacuate. Emergency personnel immediately initiated an evacuation of the area in close proximity to the accident site and later expanded the area in response to changing weather conditions. As many as 22,000 people were evacuated. The fire was extinguished by 3:30 p.m.; however, the derailed tank car containing phosphorus oxychloride remained a primary concern. Although the car was no longer leaking, it was overturned and damaged. Emergency officials assessed the car's condition and decided that it was temporarily stable. By 5:50 p.m., the affected areas was declared safe, and the initial evacuation order was rescinded. A second, precautionary evacuation was planned for 1:00 p.m. the following day to right the leaking tank car.

Shortly after midnight, however, an inspection revealed continued degradation of the damaged car, leading officials to decide to right the car as soon as possible rather than wait until the following afternoon. At 1:30 a.m., an evacuation order was issued affecting between 14,000 and 16,000 residents within half a mile of the scene. At 4:35 a.m., the evacuation was complete, and the damaged tank car was righted, producing a small chemical release which was contained by emergency personnel. The second evacuation order was not rescinded until 4:30 p.m. on Sunday, April 12, 1987, after all hazardous material had been unloaded from the damaged car and removed from the scene. Approximately 25 people were treated for eye and throat irritation at area hospitals, and 3 people were hospitalized during the accident (Federal Railroad Administration 1987).

2.2 CONFLUENCE

On Wednesday, May 6, 1987 at 4:00 a.m., 21 railroad tank cars carrying product residues (including propane, chlorine, caustic soda, carbon disulfide, methyl chloride, chloroform, and isobutane) derailed in Confluence, Pennsylvania. Because tank cars carrying residue can haul up to 3% of the maximum load, emergency officials were unable to determine the exact amount of products remaining in the cars. After examining the train's manifest, emergency management officials initiated a precautionary evacuation of the community's 986 residents. A 3-minute, nonstop siren blast was sounded, which primarily alerted the volunteer fire fighters because residents could not be expected to know what the siren indicated. At approximately 4:30 a.m., volunteer fire fighters and untrained volunteers began door-to-door and portable loudspeaker alert and notification of the community residents. A public shelter was established in the area's high school; local school buses and ambulances provided transportation for those needing it; and the

evacuation was complete within 45 min. Emergency personnel from throughout the area cooperated to seal two leaking propane tankers by 9:48 a.m, but, because of the chance of explosion or fire during wreckage cleanup, the evacuation order was not rescinded until 6:10 p.m. (Snyder and Schlarb 1988).

2.3 PERTINENT DIFFERENCES IN THE EVENTS AND THEIR CONTEXTS

Similarities and differences in the two events and their contexts may have influenced the responses of the affected communities. Pertinent similarities include location and time. Confluence is located approximately 55 miles from Pittsburgh and receives much of its news via Pittsburgh-based media. It is possible that the response to the emergency that occurred in Confluence was influenced by the residents' knowledge of the accident that had occurred in Pittsburgh less than 1 month earlier.

Pertinent differences in the two events may also have affected the ways in which people responded. The Pittsburgh event involved release of a toxic chemical along with a fire that produced visible evidence of the accident. In Confluence, no release or fire occurred. The Pittsburgh event began at midday, when most residents were awake and active. The Confluence accident occurred at night when most family members were asleep in their homes. Finally, the sequence of events in Pittsburgh was more complicated and protracted than in Confluence.

Differences in the contexts of the events may also have affected the responses. The fact that Pittsburgh is a densely settled, metropolitan center while Confluence is a small, rural community, certainly affected the response of emergency officials and may have influenced the actions of affected residents as well. The response to the Pittsburgh event was managed by trained professionals of the city's Department of Public Safety backed up by trained professionals of the county and volunteer agencies. The response to the Confluence event depended heavily on trained and untrained volunteers. It is also likely that social networks and attitudes of urban Pittsburgh differed markedly from those of rural Confluence. Such differences would be reinforced by the fact that 54% of the residents of Confluence are more than 60 years old. These differences may have led residents of the two areas to react differently to the emergency situations.

3. DATA AND METHODS

3.1 SURVEYS OF RESIDENTS OF THE EVACUATION AREAS

3.1.1 Pittsburgh

Two surveys of residents in the Bloomfield section of Pittsburgh were conducted by the University Center for Social and Urban Research (UCSUR) at the University of Pittsburgh. A self-administered mail-back survey was distributed to 750 households in the emergency area in mid-June 1987, approximately 9 weeks after the accident. Households were selected from each street in each Census tract in the affected area to ensure even coverage. No follow-up letters or contact was initiated by UCSUR, although the cover letter included with the survey provided information for respondent-initiated follow-up. A total of 220 questionnaires was returned by mid-August, yielding a response rate of 29.3%. An additional survey, consisting of 129 telephone interviews of area residents, was made between July 14 and 22, 1987. This telephone survey employed a reverse listing of telephone numbers by street name to represent various areas within the impact zone of the city. A total of 214 working residential telephones was selected, representing households in the affected area that had not been selected for study via the mail-back survey. A three call-back procedure was employed by UCSUR, which means three attempts to complete the interview were made at various times of the day and days of the week for each selected number. This procedure yielded an effective response rate of 60.3%. When combined, the two surveys represent the 7,000 households in the Bloomfield area with 349 completed survey instruments with a combined response rate of 36.2%.

3.1.2 Confluence

In Confluence, approximately 12% of the listed and unlisted residential telephone numbers were sampled. The interviews were conducted October 20-28, 1987, approximately 22 weeks after the May 6, 1987, accident and precautionary evacuation. Interviews were completed with 106 residents of Confluence, resulting in an 89.8% response rate (Rogers and Sorensen 1988). The survey methodology is discussed in greater detail by Snyder and Schlarb (1988).

3.2 INTERVIEWS WITH EMERGENCY RESPONSE OFFICIALS

In both Pittsburgh and Confluence, the sample of affected residents was supplemented by interviews with local emergency management officials. Open-ended questions posed in face-to-face interviews were used to obtain in-depth information on each community's response to its chemical emergency. All of the officials contacted were very cooperative in providing information and documentation. Information regarding the Confluence event was gathered through interviews with the mayor, fire chief, and local emergency management director of Confluence and with the fire chief of the nearby town of Somerset (Snyder and Schlarb 1988). Information regarding the Bloomfield incident was provided by the director of public safety, assistant fire chief/fire marshall, disaster-planning coordinator, public-safety-department public information coordinator, and

assistant chief of emergency medical services/head of the hazardous materials team of the city of Pittsburgh; the deputy coordinator, training officer, and operations officer of the Allegheny County Emergency Management Agency; and with the director of emergency social services of the Pittsburgh-Allegheny County Chapter of the Red Cross.

4. FINDINGS

Because of the way the survey questionnaires were designed, not all respondents were asked all questions. An inquiry as to whether or not the respondent evacuated at any time during the emergency was among the first questions in both of the Pittsburgh questionnaires and the Confluence questionnaire. Respondents who indicated that they had not evacuated were directed to skip the many questions dealing with the respondent's reaction to the emergency. In the Pittsburgh telephone survey and Confluence survey, these non-evacuating respondents were asked to skip all remaining questions except general demographic questions at the end of the questionnaire; in the Pittsburgh mail-back survey, however, respondents were directed to skip all remaining questions. For questions affected by this limitation, the number of eligible respondents (i.e., the denominator used in calculating the percentage of positive responses to each question) was thus reduced to 171 for the Pittsburgh mail-back survey, 87 for the Pittsburgh telephone survey, and 91 for the Confluence survey.

Since the Pittsburgh event involved two evacuation orders, Pittsburgh respondents were asked several duplicate questions for the daytime and nighttime evacuations. For example, they were asked separate but identical questions to identify the times at which they were warned to evacuate for the daytime and nighttime events. For these questions, the pool of eligible respondents for each event consisted of the people who indicated that they had evacuated during that event. Responses to a question asking whether the respondent evacuated for the daytime event, the nighttime event, or both events indicated that 167 of the survey respondents evacuated during the day and 195 evacuated during the night. These numbers were used to calculate the percentage of positive responses to the questions that were asked separately for the daytime and nighttime evacuations in Pittsburgh.

4.1 WARNING

4.1.1 Receipt of Warning

In both the Pittsburgh and Confluence surveys, respondents were asked to indicate the time at which they received the warning to evacuate. These data are summarized in Fig. 4.1 as the cumulative proportion of the population warned by time of warning receipt. The inherent measurement difficulties are clearly evidenced by the proportion of respondents who reported receiving warning before the event occurred. This seems to occur at least partly because of the way people think about and recall time. For example, the daytime Pittsburgh event actually occurred at 12:25 p.m., but many of those who reported having been warned before that time said they were warned at noon. It is not hard to construct that many people would recall the time in terms of what they were doing (e.g., eating lunch) and report it as noon, which would be recorded as 12:00 p.m.

Both warning situations are characterized as consisting primarily of route-alerting and door-to-door warning systems. When graphically depicted, each warning situation is characterized by an S-shaped curve, with the Confluence event reportedly approaching 90% warned in approximately 2 h, and the Pittsburgh event reportedly approaching 80% warned in approximately 3 h. However, because of methodological uncertainties, it is possible to identify only people who positively report having received some kind of

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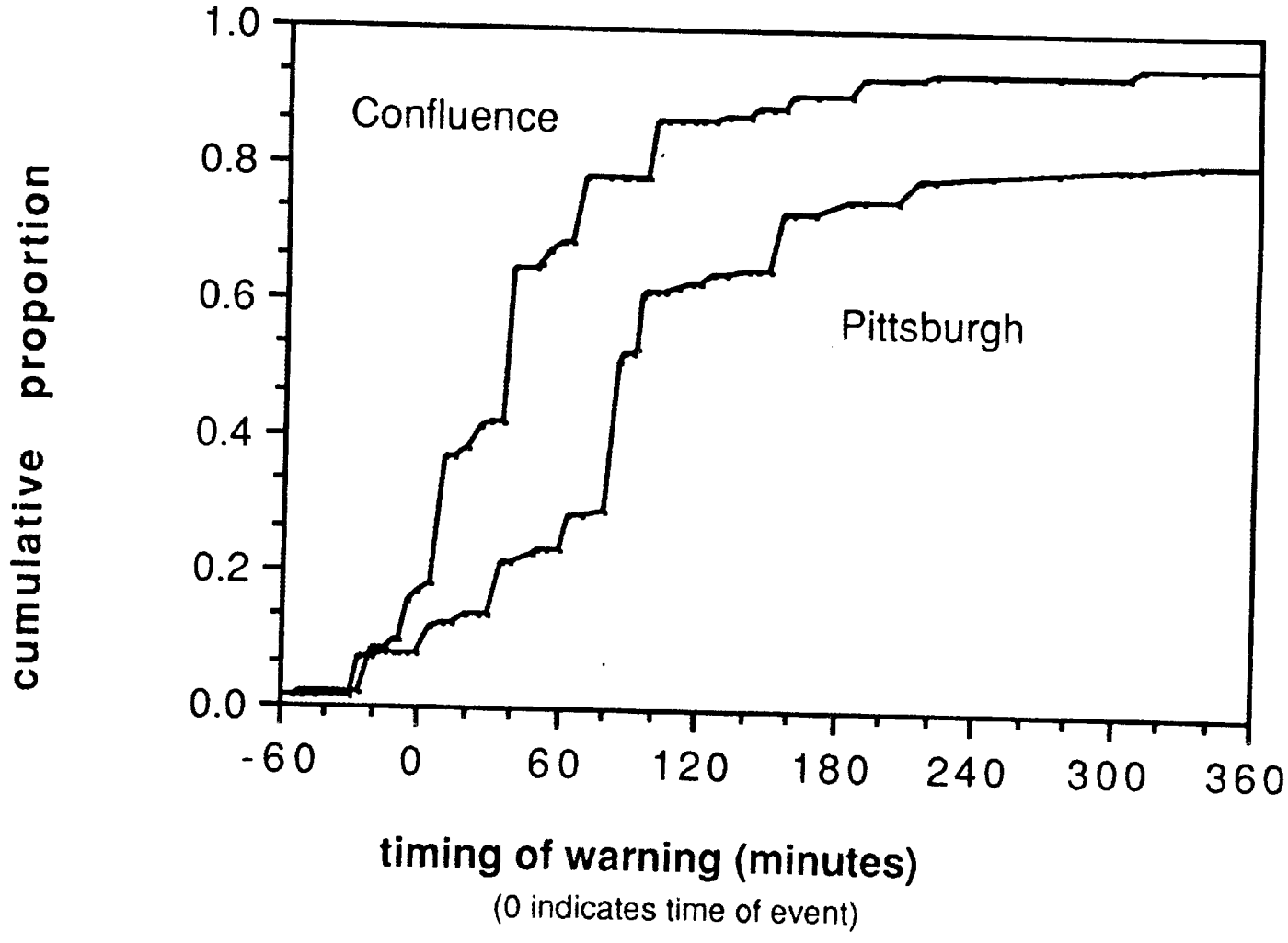

Fig. 4.1 Timing of warning received.

warning; it is not possible to identify those who were not warned. Although the warning situations in Confluence and Pittsburgh are characterized by rapid dissemination within 1.5 h of the event, only 12.5% of Pittsburgh respondents reported being warned within 15 min, while 36.8% of Confluence respondents reported being warned within 15 min. This difference may be attributed to a number of factors, including the type of event, the size of the area to be warned, distance from the source, time of day, the initiation of the warning process or a bias associated with attributable experience gained vicariously in Confluence when the Pittsburgh event occurred (about a month earlier). In Confluence nearly 70% of the respondents reported having received warning within 1 h, while only 23% reported having received warning in the same period in Pittsburgh. Neither event is characterized by complete (100%) warning, and both events indicate that emergencies with very rapid onset can result in people being engulfed in danger before they receive a warning (Sorensen, Rogers, and Clevenger 1988).

Officials in both Pittsburgh and Confluence relied primarily on portable loudspeakers and door-to-door notification to warn the public of the evacuation. Responses to the surveys indicate that these direct, official sources provided the initial warning to many residents of the affected areas, but that other warning sources (television, radio, and friends) also played a significant role in notifying residents of the need to evacuate. Table 4.1 lists the percentages of evacuees warned by each warning source for each evacuation event.

The official warning sources account for a large portion of the people warned in all three events. Official sources provided the initial warning for 51.3% of the respondents of the Pittsburgh daytime event; 45.9%, for the Pittsburgh nighttime event; and 71.1%, for the Confluence event. For the Pittsburgh nighttime event and the Confluence event, sirens provided the initial warning for more respondents (20.2% and 35.6% respectively) than any other official source, followed by officials on loudspeakers (19.3% and 23.3% respectively) and officials at the door (6.4% and 12.2% respectively). In the Pittsburgh daytime event, on the other hand, officials on loudspeakers provided the initial warning to more respondents (34.5%) than other official sources, followed by officials at the door (15.1%), and sirens (1.7%).

Unofficial sources also played a significant role, providing the initial warning to 47.1% of the respondents for the Pittsburgh daytime event; 36.8%, for the Pittsburgh nighttime event; and 27.8%, for the Confluence event. Friends, relatives, and neighbors provided the initial warning for more respondents than any other unofficial source. (For the Pittsburgh nighttime event, more respondents were initially warned by friends, relatives, and neighbors than by any other source, official or unofficial). Radio and television provided initial warning for relatively small percentages of respondents in both of the Pittsburgh events. (Residents of Confluence were not asked if they were initially warned by radio or television.)

4.1.2 Context in which Respondent Received Warning

It is reasonable to believe that the context in which an evacuation warning is received influences the response to the warning. Several questions were included in the surveys to identify pertinent aspects of the warning context.

Respondents were asked where they were when they first heard the warning to evacuate. The results, summarized in Table 4.2, indicate that most respondents were at home. In Pittsburgh, 73.7% and 65.1% reported that they were at home when warned of

Table 4.1. Percent of respondents receiving initial warning by warning source (in percent of respondents who evacuated for the subject event and who indicated a single initial warning source[a])

Initial warning source	Percent of evacuees warned		
	Pittsburgh day	Pittsburgh night	Confluence
Officials at door	15.1	6.4	12.2
Officials on loudspeakers	34.5	19.3	23.3
Sirens	1.7	20.2	35.6
Radio	1.7	3.7	NA[b]
Television	8.4	5.5	NA[b]
Friends, relatives, or neighbors	26.1	24.8	17.8[c]
Other	10.9	2.8	10.0
Not warned	1.7	17.4	1.1
Number of eligible responses (*n*)	119	109	90

[a]More than one source of initial warning was indicated by 1.1% of Confluence respondents, 28.7% of respondents for the Pittsburgh daytime event, and 44.1% for the Pittsburgh nighttime event. To promote comparability among the results for the three events these responses are not included in this table.

[b]Responses not included on Confluence questionnaire.

[c]Confluence statistic represents a combination of two responses: friends, neighbors, or relatives at the door; and friends, neighbors, or relatives on the phone.

Table 4.2. Respondents' locations when they heard the evacuation warning (in percent of respondents who evacuated for the subject event)

Location of respondent	Percent of evacuees		
	Pittsburgh day	Pittsburgh night	Confluence
Home	73.7	65.1	100.0
Shopping	6.0	27.2	0.0
Work	3.0	0.0	0.0
On way home (from other than shopping)	3.6	0.0	0.0
Somewhere in the evacuation area	9.6	1.0	NA
Home of neighbor, relative, or friend	1.2	0.5	0.0
Other	3.0	2.1	0.0
Inapplicable	0.0	2.6	0.0
No Response	0.0	1.5	0.0
Number of eligible responses (*n*)	167	195	91

the daytime and nighttime evacuations respectively. Significant numbers also reported that they were shopping or, for the daytime event, somewhere else within the evacuation area. In contrast, all of the Confluence respondents who were within the evacuation area at the time of the warning report that they were at home.

Respondents were asked whether their families were together when they received the emergency warning. The responses indicate that the proportion of families that were together increased dramatically for the nighttime events. For the Pittsburgh daytime event, 47.3% of the respondents reported that their families were together, compared with 83.6% for the Pittsburgh nighttime event and 70.3% for the Confluence event.

Of the respondents who reported their families were not together at the time they received warning, the separation caused no problems for 33.3% during the Pittsburgh daytime event, 36.8% during the Pittsburgh nighttime event, and 42.9% during the Confluence event. The problem most frequently reported was making contact with the absent person(s), cited by 43.5% for the Pittsburgh daytime event and 42.1% for the Pittsburgh nighttime event. Other problems caused by family separation included general confusion (8.7% for the Pittsburgh daytime event and 21.1% for the Pittsburgh nighttime event), lack of transportation or assistance (7.2 for the Pittsburgh daytime event and

14.3% for the Confluence event), and anxiety on the part of the absent family member (14.3% for the Confluence event).

Pittsburgh respondents who evacuated during the night were asked if any members of their households were usually awake between midnight and about 6 a.m., either at home or somewhere else. Nearly two of five (38.5%) respondents reported that a household member was normally awake at some time during that period, with 8.2% reporting someone awake between midnight and 1:00 a.m., 29.2% between 1:00 a.m. and 2:00 a.m., 23.1% between 2:00 a.m. and 3:00 a.m., 14.9% between 3:00 a.m. and 4:00 a.m., 9.7% between 4:00 a.m.and 5:00 a.m., and 9.2% between 5:00 a.m. and 6:00 a.m.

Respondents were asked if evidence of the train derailment was apparent at their homes. Of the Pittsburgh respondents, 65.0% reported that they saw a "visible sign . . . such as smoke." Only 24.5% of the Confluence respondents, on the other hand, reported a "visible or audible sign" of the accident. Respondents were also asked if they were aware, before the accident, that toxic chemicals were transported on the rail line. Only 25.6% of the Pittsburgh respondents reported prior knowledge of the transport of toxic chemicals, compared to 72.5% of the Confluence residents. However, high proportions of respondents (90.7% in Pittsburgh and 85.7% in Confluence) in both communities reported that they knew the reason for the evacuation when it occurred.

Since it was believed that previous disaster experience might influence the way a person would respond to an evacuation warning, respondents were asked if they had previous experience with a disaster. A fairly small but significant number—10.9% in Pittsburgh and 14.2% in Confluence—reported previous experience. Among the Pittsburgh residents, 3.9% reported experience with a flood; 3.1%, a fire; 2.3% a tornado; 0.8% (one respondent), a hurricane; and 0.8% (one respondent), a toxic chemical accident. Of the Confluence residents, 1.9% reported experience with a tornado; 1.9%, a flood; 0.9% (one respondent), a hurricane; and 8.5%, some other, unidentified type of disaster. Only 1.7% of the Pittsburgh respondents and 2.8% of the Confluence respondents had previously evacuated their homes as a result of any such disaster. In contrast, 10.9% of the Pittsburgh residents and 11.3% of the Confluence residents reported having provided temporary housing in their homes for other people who had been forced to evacuate their homes.

4.1.3 Content of the Warning Message

Respondents were asked several questions about the content of the message they received warning them to evacuate and were asked if they needed additional information. Of the Pittsburgh respondents who evacuated during the day, 21.6% reported that they were told how far to go when warned to evacuate, compared with 67.0% of the Confluence respondents. When asked how far they were told to go, 0.6% (one respondent) of the Pittsburgh respondents said they were told to go 1 mile, and another 0.6% (one respondent) reported they were advised to go 5 miles. Among the Confluence residents, 19.8% reported being directed to go 1 mile; 26.4%, 2 miles; 7.7%, 3 miles; 2.2%, 5 miles; and 1.1% (one respondent), 7 miles.

Pittsburgh respondents who evacuated during the day and Confluence respondents were asked if they were told where to go when warned to evacuate. Of the Pittsburgh respondents, 32.3% reported they were told where to go, compared with 79.1% of the Confluence respondents.

The survey indicates that, for the most part, the respondents were satisfied with information provided to them, although many had wanted additional information or advice (see Fig. 4.2.). Among the Pittsburgh respondents, 58.5% indicated that they needed more detailed information about the danger of the train derailment; 35.7% said they needed more frequent information; and 39.5% said they needed more advice regarding what to do and where to go. In Confluence, 25.3% of the respondents needed more detailed information; 26.4% reported a need for more frequent information; and 18.7% reported a need for more advice. The need for some other, unspecified type of information was cited by 21.8% of the Pittsburgh respondents and by 2.2% of the Confluence respondents.

4.2 Response to the Warning

4.2.1 Nature of Response

Several questions were asked to determine how the public responded to the warning to evacuate. First, respondents were asked to choose one of several possible descriptions that best described their response when they became aware of the evacuation. The set of descriptions was designed to indicate a general response to and attitude toward the evacuation warning. The responses, reported in Table 4.3, indicate that the majority of respondents immediately took protective action, although significant numbers in Pittsburgh initially elected to wait and see or to seek additional information.

Respondents were then asked to identify the specific actions they took following the warning to evacuate. The results are summarized in Table 4.4.

Respondents who evacuated were also asked to estimate the time at which they departed. This mobilization time does not include the time it took the respondents to evacuate, but rather is limited to the time at which they decided to evacuate. Figure 4.3 summarizes the response to warning in terms of the cumulative proportion of the respondents beginning to evacuate by minutes into the warning process. In other words, this decision-to-evacuate time is the number of minutes between the respondent's receipt of the warning and his or her beginning the evacuation. One might postulate that as the warning process progresses, the salience of the warning message increases and people respond more quickly. Figure 4.4 examines this hypothesis by summarizing the mobilization in terms of cumulative proportions of respondents warned and responding from the beginning of the event. The observed pattern does not seem to confirm the hypothesis; rather, it suggests a response that is more complex than a simple stimulus-response system.

4.2.2 Additional Information Requested from Official Sources

Advice about evacuating was sought from local authorities or officials by 17.4% of the Pittsburgh respondents but by only 2.2% of the Confluence respondents. Table 4.5 presents the percentage who contacted various authorities or officials.

Of the respondents who contacted officials, 68.9% of those in Pittsburgh reported that the advice they received was very important in their decision on whether or not to evacuate. The remaining Pittsburgh respondents were equally divided (13.3% each) between those who rated the advice somewhat important and those who considered it not very important. Only two Confluence respondents reported contacting local officials for advice.

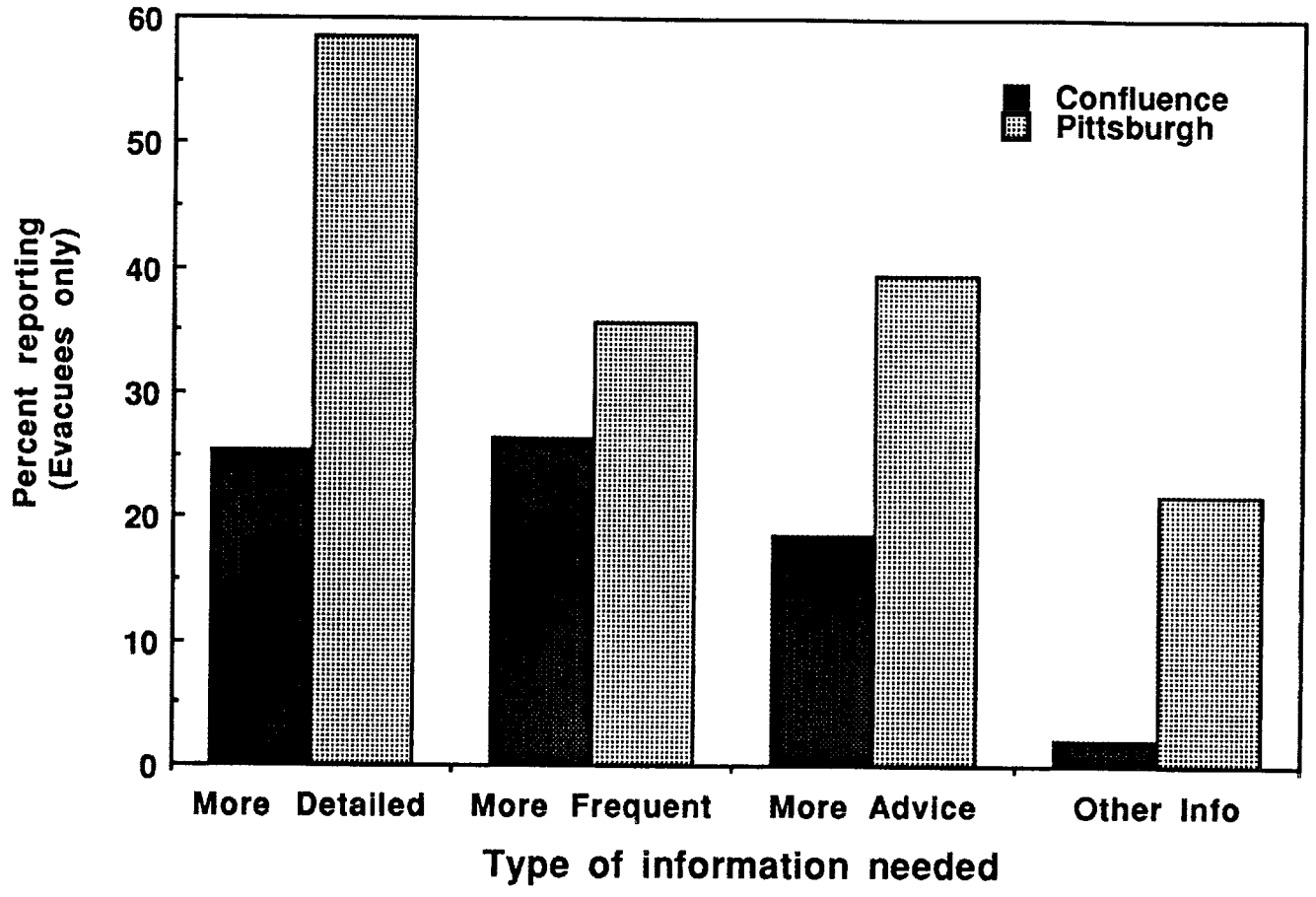

Fig 4.2. Reported information needs by survey.

Table 4.3. Respondents' responses on becoming aware of evacuation (in percent of respondents who evacuated for the subject event)

Response	Percent of evacuees[a]		
	Pittsburgh day	Pittsburgh night	Confluence
Wait and see	22.8	7.2	8.8
Seek additional information	21.6	9.2	8.8
Evacuate immediately/ take action immediately	58.7	32.3	81.3
Disregard the information	0.0	52.3	1.1
Other	2.4	1.0	1.1
Number of eligible responses (*n*)	167	195	91

[a]Columns total more than 100% because respondents were permitted to indicate more than one response.

Table 4.4. Actions taken following the warning to evacuate (in percent of respondents who evacuated for the subject event)

Response	Percent of evacuees[a]	
	Pittsburgh day[b]	Confluence
Shut/locked windows or doors	85.0	26.4
Turned on radio or television	49.1	8.8
Turned off utilities	24.0	26.4
Called officials for confirmation	10.2	1.1
Called friends, relatives or neighbors	62.3	37.4
Gathered food and supplies	11.4	12.1
Anything else/Other	6.6	4.4
Nothing in particular	2.4	29.7
Number of eligible responses (*n*)	167	91

[a]Columns total more than 100% because respondents were permitted to indicate more than one action.

[b]Question not asked for Pittsburgh nighttime event.

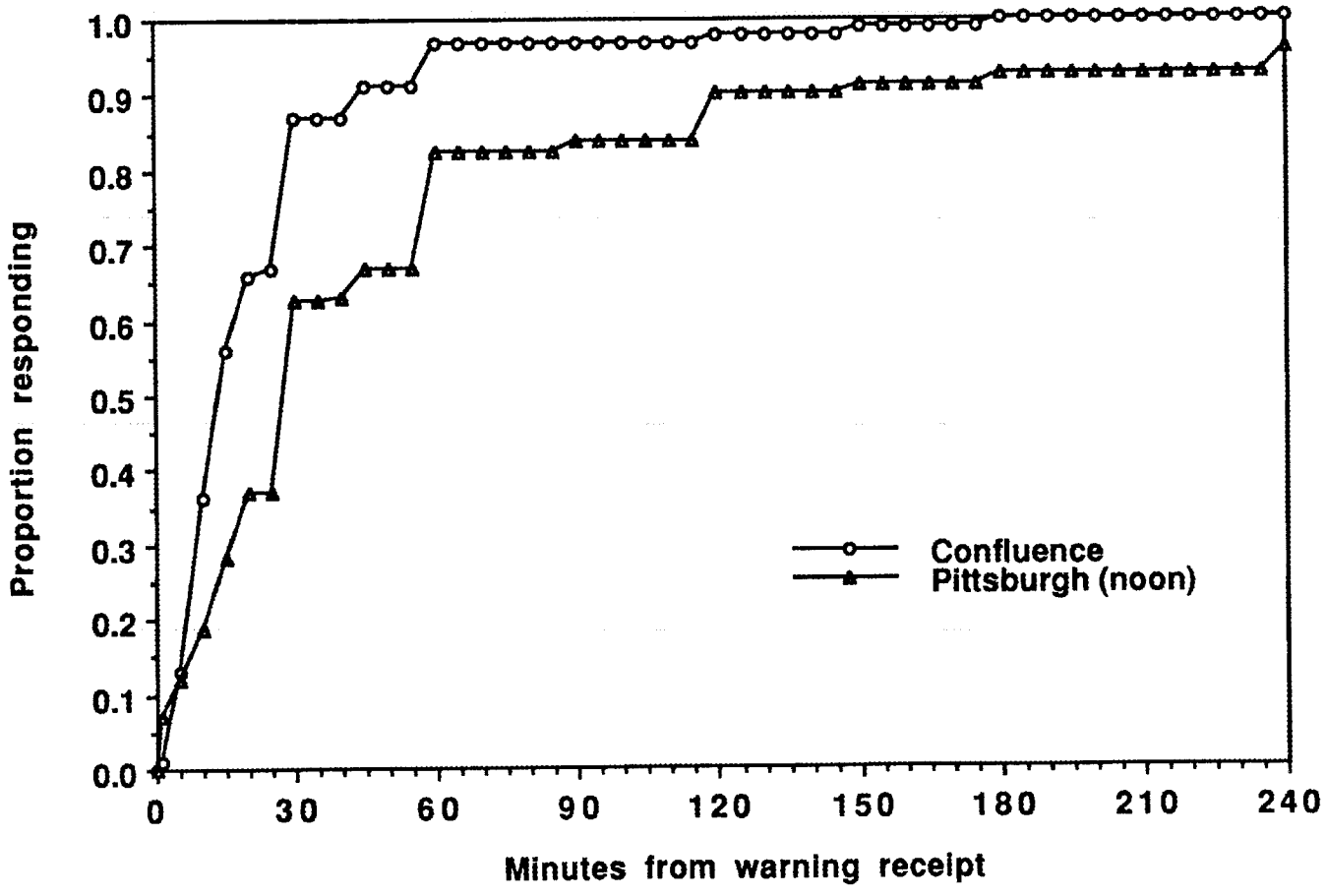

Fig. 4.3. Cumulative response to warning.

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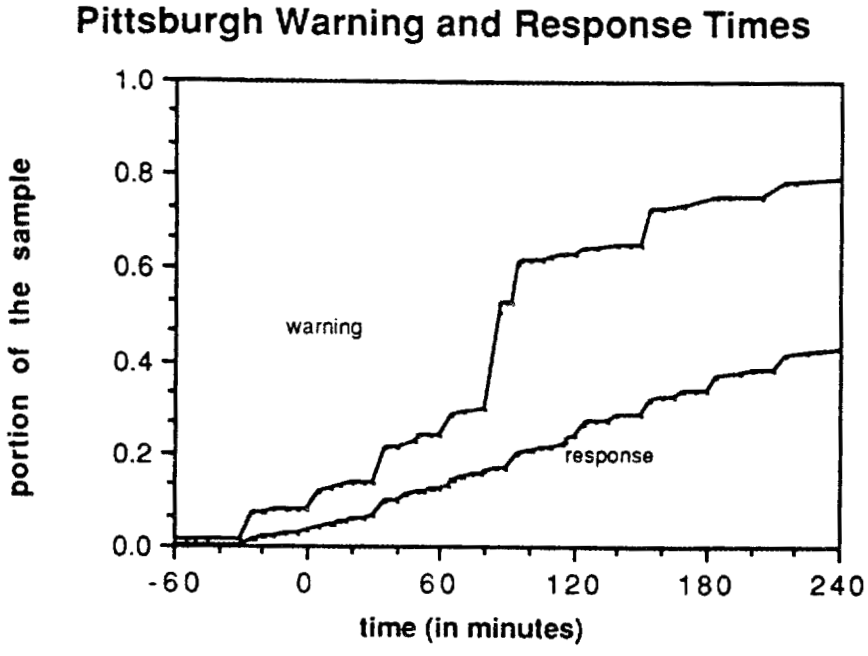

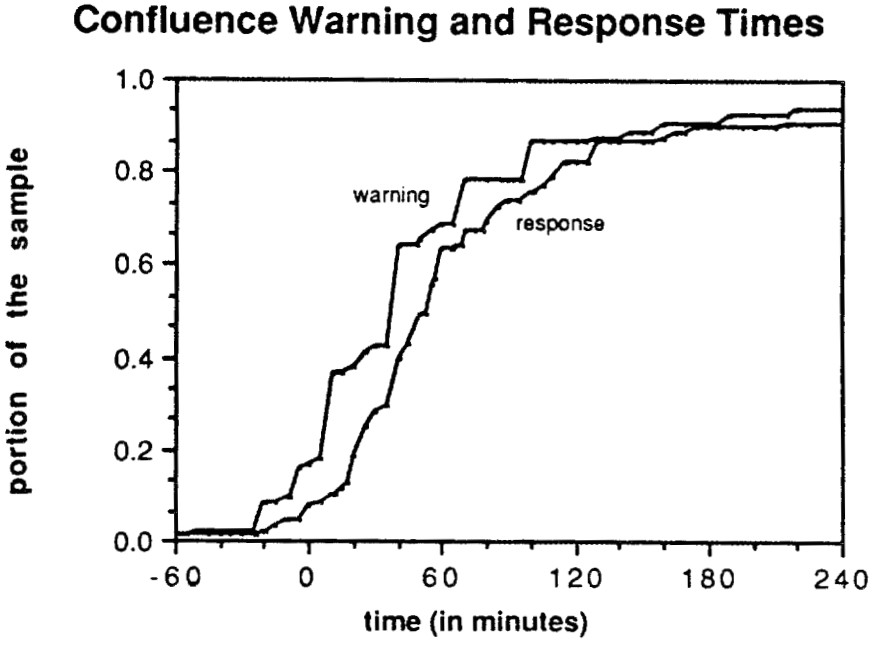

Fig. 4.4 Timing of warning and response for the Pittsburgh and Confluence events.

Table 4.5. Authorities or officials contacted for advice about evacuating (in percent of respondents who evacuated)

Authority/official contacted	Percent of evacuees	
	Pittsburgh	Confluence
Police Department	9.7	0.0
Fire Department	1.6	0.0
Sheriff	0.4	0.0
Civil Defense	0.0	1.1
Red Cross	0.4	0.0
TV Station	7.4	1.1
Radio Station	0.8	0.0
Other	1.6	0.0
Number of eligible responses (*n*)	258	91

4.3 CONTAGION OF WARNING AND RESPONSE

Two sets of questions were asked to obtain information regarding the way news of an evacuation warning spreads through a community via unofficial channels. Respondents were first asked if they had made a special point of telling anyone else of the evacuation. Of the respondents who evacuated during the Pittsburgh daytime event, 80.8% reported that they had contacted someone else. For the Pittsburgh nighttime event, 16.8% reported they had contacted someone else. Among the Confluence respondents, 54.9% reported telling someone else of the evacuation. Respondents who reported that they had told someone else were asked to identify whom they had notified. The responses are summarized in Table 4.6.

Respondents were also asked if they were contacted by other people regarding the evacuation. Of the respondents who evacuated during the Pittsburgh daytime event, 55.1% reported that they were contacted by someone else, compared with 10.8% for the Pittsburgh nighttime event and 49.5% for the Confluence event.

Respondents were asked if they discussed the decision to evacuate with anyone else. Of respondents who evacuated in Pittsburgh, 54.7% reported that they discussed the decision with others, compared with 18.7% of the Confluence respondents. (The question was not asked separately for the Pittsburgh daytime and nighttime events). Table 4.7 indicates the people with whom respondents discussed the decision to evacuate.

Table 4.6. Contagion of warning: people contacted by the respondent and people contacting the respondent (in percent of respondents who evacuated for the subject event)

	People whom respondent notified[a]			People who notified respondent[a]		
	Pittsburgh day	Pittsburgh night	Confluence	Pittsburgh day[b]	Pittsburgh night[b]	Confluence
Family members at home	31.7	1.0	0.0	1.8	0.0	0.0
Family members not at home at the time	21.6	1.5	4.4	5.5	5.3	7.7
Relative not living in the household	43.7	6.2	19.8	16.4	12.3	11.0
Neighbors	44.9	6.2	36.3	9.1	8.8	23.1
Close friends who are not neighbors	10.2	1.0	7.7	3.6	7.0	7.7
Workmates	3.6	0.0	0.0	0.0	0.0	0.0
Other	0.6	0.0	1.1	0.0	1.8	4.4
Number of eligible responses (*n*)	167	195	91	55	57	91

[a]Columns total more than 100% because respondents were permitted to indicate more than one response.

[b]Question was not included on Pittsburgh mail-back survey; responses are from Pittsburgh telephone survey only.

Table 4.7. People with whom respondent discussed decision to evacuate (in percent of respondents who evacuated)

People with whom decision discussed	Percent of evacuees	
	Pittsburgh	Confluence
Household members	35.7	7.7
Friends and/or neighbors	20.9	7.7
Officials	5.3[a]	1.1
Relatives (not members of household)	30.6	5.5
Other	0.8	0.0
Number of eligible responses (*n*)	258	91

[a]Not on Pittsburgh telephone survey; eligible responses (*n*) equal 171.

4.4 EVACUATION

When asked if they had evacuated at any time during the respective train derailments, 73.9% of the Pittsburgh respondents and 85.8% of the Confluence respondents indicated that they had. Of the Pittsburgh respondents who evacuated, 40.3% indicated they had evacuated during both events, 24.2% reported that they had evacuated during the daytime event only, and 35.5% said they had evacuated only during the nighttime event.

A significant analytical issue regarding both events is the extent to which the evacuation rates indicated by survey respondents accurately reflect the evacuation rates of the communities. The most straightforward approach to this issue is to assume that the survey results are representative of their populations; that is, that 85.8% of the people in Confluence (approximately 845 households) and 73.9% of the people in the Pittsburgh evacuation area (approximately 5870 households) evacuated. Before this assumption is accepted, however, consideration must be given to the significant portions of the sample frames in both communities who chose not to respond to the survey. (Response rates were 89.8% in Confluence and 36.2% in Pittsburgh.)

In the case of the Pittsburgh event, where the lack of response was particularly problematic, an alternative assumption could be made that all the people who did not respond also did not evacuate. This approach is likely to underestimate the number evacuees because it assumes that all nonrespondents failed to evacuate, although approximately seven out of ten people who responded to the survey did evacuate. This

minimum information approach results in an estimated evacuation rate of 26.8%, which, coupled with a 95% confidence interval, results in a minimum evacuation rate of 24.9%, or 1977 households.

Still another approach would be to assume that various proportions of the nonrespondents may have evacuated. For example, suppose only one household in ten evacuated among the nonrespondents. This is equivalent to arguing that even though the evacuation rate among the survey respondents was approximately seven out of ten, the evacuation rate among nonrespondents was only one out of ten—clearly a strong nonevacuation, nonresponse bias. This would mean that approximately 33.1% of the residents evacuated (a 95% confidence interval minimum of 31.65% or about 2509 households).

While these kinds of simulations "games" can be done with any single survey, the survey data in Pittsburgh allow better estimation by linking the response rates achieved by the two distinct survey methods (i.e., phone and mail-back) with the evacuation rates. Examining the phone and mail-back surveys separately, we discover that the phone survey achieved a better response rate (60.3%) than did the mail-back survey (29.3%). Additionally, the evacuation rate in the phone survey was 67.4%, while the evacuation rate for the mail-back surveys was 77.7%. Using a straightforward linear extrapolation, an estimate is achieved that takes advantage of the knowledge gained by the advent of two separate methods for collecting the data. The result is a "best" estimate of 59.2% of the proportion evacuating, with a 95% confidence interval minimum of at least 54.9%, or approximately 4359 households evacuating.

Various reasons, summarized in Table 4.8, were cited by those who said they had not evacuated. It is notable that in the Confluence survey, all of the respondents who did not evacuate indicated that they were not in the evacuation area at the time. Among the Pittsburgh respondents, on the other hand, significant numbers of respondents indicated that they either were not warned by officials or decided not to evacuate for other reasons.

4.4.1 Evacuation Logistics

Respondents who evacuated at some time during the emergency were asked what kind of transportation they used. The results are summarized in Table 4.9. It is notable that approximately 90% of the evacuees in all three events relied on private automobiles to evacuate. Although most people used their own vehicles, 25% to 30% relied on vehicles supplied by friends, neighbors, or relatives in the Pittsburgh events. In contrast, only 15% of the Confluence evacuees relied on the vehicles of friends, neighbors, or relatives for evacuation. Confluence evacuees were also more likely to use public transportation than their Pittsburgh counterparts.

Table 4.10 summarizes the personal possessions respondents reported taking with them during the evacuation. While a variety of possessions was reportedly taken, the most frequent response among Confluence respondents was "nothing." In Pittsburgh, this response tied for most frequent with money/wallet/purse (32.6% each). The second most frequently mentioned item among Confluence respondents was also money/wallet/purse (23.1%). The third most frequently reported item was jewelry (7.8%) among Pittsburgh evacuees, and medication (17.6%) among Confluence evacuees.

The care and protection of pets can be particularly problematic during an evacuation. The surveys revealed that 44.2% of the Pittsburgh evacuees and 48.4% of the

Table 4.8. Reasons cited for not evacuating at any time during the train derailments (in percent of respondents who did not evacuate)

	Percent of nonevacuees	
Reasons for not evacuating	Pittsburgh	Confluence
Not at home at the time	21.6	80.0
Home not in evacuation zone	2.3	20.0
Not warned by officials	30.7	0.0
Did not feel any danger	18.2	0.0
Poor health of respondent	5.7	0.0
Did not want to leave pet	1.1	0.0
Did not receive help to evacuate	1.1	0.0
Felt safer at home	1.1	0.0
Afraid home would be burglarized	1.1	0.0
Missing	2.3	0.0
Inapplicable	14.8	0.0
Number of eligible responses (*n*)	88	15

Table 4.9. Type of transportation used to evacuate (in percent of respondents who evacuated for the subject event)

	Percent of evacuees		
Type of transportation	Pittsburgh day	Pittsburgh night	Confluence
Public transportation	4.8	4.1	7.7
Respondent's car	59.9	62.6	76.9
Friend's, relative's, or neighbor's car	28.7	26.7	15.4
Walked	4.2	2.1	0.0
Other	2.4	1.5	0.0
Missing	0.0	0.5	0.0
Inapplicable	0.0	2.6	0.0
Number of eligible responses (*n*)	167	195	91

Table 4.10. Personal possessions taken with respondent during evacuation (in percent of respondents who evacuated[a])

	Percent of evacuees	
Possessions taken	Pittsburgh	Confluence
Nothing	32.6	47.3
Money (purse, wallet)	32.6	23.1
Medication	6.6	17.6
Clothes	23.6	11.0
Jewelry	7.8	4.4
Insurance policies	0.0	2.2
Baby items	0.0	2.2
Important papers	4.3	1.1
Pet food	2.3	1.1
Toiletries	7.0	1.1
General personal items	3.5	0.0
Food	2.7	0.0
Radio	1.9	0.0
Blankets or pillows	1.6	0.0
Identification	0.8	0.0
Other	3.5	0.0

[a]Responses total to more than 100% because respondents were permitted to indicate more than one possession.

Confluence evacuees owned pets. Of these pet owners, those in Pittsburgh were approximately equally divided among those who left the pets at home (48.2%) and those who took the pets along on the evacuation (50.0%). Pet owners who evacuated Confluence were somewhat more inclined to take their pets with them (63.6%) than to leave them behind (36.4%).

Respondents who evacuated were asked what time they returned to their homes following the evacuation. From these responses, the length of time that elapsed between the occurrence of the accident (or the decision to evacuate in the case of the Pittsburgh nighttime evacuation) and the respondents' return home was calculated. The results of this calculation are summarized in Table 4.11.

Table 4.11. Time elapsed between the accident/decision to evacuate and the evacuee's return home

	Time (in h)		
	Pittsburgh day	Pittsburgh night	Confluence
Minimum	2:35	2:00	2:40
Maximum	34:35	22:30	19:40
Median	7:35	16:30	14:10
Mean	9:36	15:35	14:13
Standard deviation	7:06	3:47	1:42
Number of eligible responses (*n*)	167	195	91

4.4.2 Concerns Regarding Evacuation

Respondents were asked what worried them most about evacuating their homes. Differences in the responses given in Confluence and Pittsburgh (summarized in Table 4.12) may reflect differences between the attitudes of rural and urban residents toward their environment. More than half of the Confluence respondents reported that nothing worried them, while only 12.4% of those in Pittsburgh gave this response. By far the most frequently cited worry among the Pittsburgh respondents was fear of looting.

4.4.3 Evacuation Assistance

Of the respondents who evacuated during the emergency, 10.9% of those in Pittsburgh and 7.7% of those in Confluence reported that a member of their household needed special assistance to evacuate. These proportions compare with 17.1% of the Pittsburgh respondents and 6.6% of the Confluence respondents who report that they received help in evacuating. In Pittsburgh, 13.4% of the respondents reported that they were helped by a relative, and 0.4% were helped by police and paramedics respectively. In Confluence, 5.5% of the respondents reportedly received assistance from a neighbor or relative, and 1.1% (one respondent) received transportation assistance from officials.

4.4.4 Sheltering During the Evacuation

Respondents who evacuated were asked where they stayed during the evacuation. The results, shown in Table 4.13, indicate that the homes of friends and relatives provided shelter for more respondents than did any other source for both Pittsburgh evacuations and

Table 4.12. Main source of worry concerning evacuation (in percent of respondents who evacuated)

Source of worry	Percent of evacuees	
	Pittsburgh	Confluence
Fear of looting	42.2	23.1
General Uncertainty	8.5	7.7
Destruction of home	5.4	2.2
Safety while evacuating	16.3	2.2
Food spoilage	0.8	0.0
Not knowing where to go	2.7	0.0
Evacuating an elderly or sick person	1.2	1.1
Leaving a pet	3.5	3.3
Did not know reason for evacuation	0.0	1.1
Missing work	0.0	1.1
Other	2.3	1.1
Nothing	12.4	56.0
Don't know	0.0	1.1
Missing	4.7	0.0
Number of eligible responses (*n*)	258	91

Table 4.13. Where respondents stayed during the evacuation (in percent of respondents who evacuated during the subject event)

Where stayed	Percent of respondents		
	Pittsburgh day	Pittsburgh night	Confluence
Friend's home	15.6	13.8	6.6
Relative's home	61.1	63.1	41.8
Official evacuation shelter	5.4	12.8	44.0
Motel or hotel	0.6	4.1	0.0
Other	16.8	3.1	6.6
Inapplicable	0.0	2.6	0.0
Missing	0.6	0.5	1.1
Number of eligible responses (*n*)	167	195	91

for the Confluence evacuation. Official evacuation centers were used by only a small portion of the evacuees during the two Pittsburgh events but provided shelter for a large portion of the Confluence evacuees.

Several official evacuation shelters were available to evacuees during the Pittsburgh events. Table 4.14 summarizes the reported usage of these shelters by the survey respondents.

The Pittsburgh survey included several questions regarding public evacuation shelters. More than two-thirds (69.8%) of the Pittsburgh respondents who evacuated reported that they knew shelter was available to them when they left home. They indicated that they had been made aware of the availability of shelter by relatives (5.8%), neighbors (10.1%), friends (5.0%), public officials (27.9%), and other sources (34.1%). Of the Pittsburgh respondents who evacuated, 10.9% reported using the official evacuation centers. Among these respondents, 42.9% reported the personnel in charge of the evacuation centers were very helpful, 10.7% reported they were somewhat helpful, and 10.7% reported they were not very helpful. All Confluence respondents, who used the official evacuation shelter, indicated that the people in charge of the shelter were very helpful.

4.4.5 Financial Loss Due to Evacuation

Respondents were asked several questions regarding financial losses incurred as a result of the accident or evacuation. Some form of financial loss was reported by 26.0% of the Pittsburgh respondents and 17.6% of the Confluence respondents. The amount of

Table 4.14. Usage of official shelters during the Pittsburgh evacuations (in percent of respondents who evacuated for the subject event and stayed in an official evacuation shelter)

	Percent of respondents using public shelters	
Evacuation shelter	Pittsburgh	Confluence
Lawrence Convention Center	44.4	52.0
West Penn Hospital	11.1	0.0
Civic Arena	0.0	8.0
Federal Reserve Building	11.1	0.0
Other	33.3	40.0
Number of eligible responses (*n*)	9	25

the reported losses varied from $24.00 to more than $996.00 dollars in Confluence and from $5.00 to more than $996.00 in Pittsburgh ($996.00 was used to indicate $996 or more). In Confluence the median reported loss was $60.00, and the mean was $193.13 with a standard deviation of $318.16. In Pittsburgh, the median reported loss was $100.00, and the mean was $138.81 with a standard deviation of $161.34. Table 4.15 indicates the types of losses reported.

4.5 OVERALL ASSESSMENT

Respondents were asked to evaluate the performances of public officials and the media during the emergencies. The results, given in Table 4.16, indicate that the respondents were generally pleased with the performances of the officials and the media. More than 90% of the Confluence respondents and more than three-fourths of the Pittsburgh respondents rated the performances of the officials and media as either excellent or good.

The questions that best reveal the respondents' evaluations of their communities' emergency response capabilities are perhaps those which ask (1) how confident they are of the ability of their community officials to protect public health and safety during similar emergencies, and (2) whether or not they would evacuate if a similar situation occurred in the future. In both communities, respondents expressed confidence in the ability of their community officials and would probably evacuate in future similar events. The responses to these questions are summarized in Tables 4.17 and 4.18.

Table 4.15. Types of financial losses experienced as a result of accident or evacuation (in percent of respondents who evacuated)

Type of loss	Percent of evacuees	
	Pittsburgh	Confluence
Transportation	4.3	0.0
Dining costs	8.5	0.0
Lodging (hotel or motel)	1.6	0.0
Lodging (relative's home)	1.2	0.0
Medical bills	2.7	0.0
Loss of work, business or wages	10.5	17.6
Food spoilage	1.2	0.0
Inconvenience	1.9	0.0
Other	3.5	0.0
Missing	0.4	0.0
Number of eligible responses (*n*)	258	91

Table 4.16. Respondents' rating of the performance of public officials and the media (in percent of respondents who evacuated)

	Public officials		
Rating	Warning[a]	Evacuation[b]	Media[c]
	Pittsburgh		
Excellent	39.1	33.3[d]	56.6
Good	38.8	47.1[d]	31.4
Fair	15.1	12.6[d]	8.9
Poor	6.2	5.7[d]	2.3
Don't know	0.4	1.1[d]	0.8
Missing	0.4	0.0	0.0
Number of eligible responses (*n*)	258	87[d]	258
	Confluence		
Excellent	54.9	57.1	41.8
Good	37.4	37.4	49.5
Fair	5.5	4.4	4.4
Poor	1.1	1.1	0.0
Don't know	1.1	0.0	4.4
Number of eligible responses (*n*)	91	91	91

[a]Respondents' rating of the performance of public officials in warning the community of danger.

[b]Respondents' rating of the performance of public officials in evacuating the community.

[c]Respondents' rating of the performance of the media (television and radio) in covering the incident.

[d]Data from the Pittsburgh telephone survey only; question was not included in the Pittsburgh mail-back survey.

Table 4.17. Respondent's confidence in the ability of community officials to protect the health and safety of the public during emergencies like the train derailments (in percent of respondents who evacuated)

	Percent of evacuees	
Level of confidence	Pittsburgh	Confluence
Very confident	30.6	50.5
Confident	46.1	42.9
Not very confident	17.8	6.6
Not confident at all	4.7	0.0
Don't know	0.4	0.0
Missing	0.4	0.0
Number of eligible responses (*n*)	258	91

Table 4.18. Likelihood that respondents would evacuate if a similar situation occurred in the future, based on experience with these train derailments (in percent of respondents who evacuated)

	Percent of evacuees	
Likelihood of future evacuation	Pittsburgh	Confluence
Likely to evacuate	91.9	95.6
Neither likely to nor unlikely to evacuate	3.5	1.1
Unlikely to evacuate	3.1	3.3
Don't know	0.4	0.0
Missing	1.2	0.0
Number of eligible responses (*n*)	258	91

5. SUMMARY AND CONCLUSIONS

This report includes the principal univariate findings of two post-emergency surveys conducted in the spring and summer of 1987. Both chemical emergencies that were studied resulted from train derailments involving potentially hazardous materials. Both events led to the evacuation of nearby areas. Officials of both communities warned the public with similar emergency warning system technology (i.e., ad hoc route alerting). But the two communities also vary sufficiently in population size, jurisdictional resources, and, presumably, kinship networks and social structures to present some interesting differences. Moreover, the two emergencies are similar enough in nature and spatially and temporally close enough to posit that the response in Confluence was influenced by the emergency response in Pittsburgh (approximately 55 miles away) the month before.

Although the public in both communities received emergency warning from similar warning systems, the people of Confluence seemed to receive warning more quickly than did the people of Pittsburgh. This may be a function of the more complex emergency warning situation in Pittsburgh. The proportion of people reporting that they needed additional information was higher in every category among Pittsburgh respondents than Confluence respondents. Most significantly, Pittsburghers were more than twice as likely to report that they needed more detailed emergency information (i.e., 58.5% to 25.3%). This suggests that the initial warnings in Pittsburgh did not contain sufficiently detailed information. Public officials often feel details will impede response when, in fact, a lack of information is more likely to create confusion among the public.

Like warning receipt, public response to warning in Pittsburgh lagged behind that observed in Confluence. Again, it remains unclear whether this is a function of a more complex emergency warning situation, unmet information requirements, perceptional problems associated with defining and communicating the area/population at risk, or emergency response system deficiencies. Another complicating factor is the sheer magnitude of the emergency response problem in Pittsburgh compared with the response problem in Confluence; warning and evacuating fewer than 1000 people is substantially less problematic than warning and evacuating around 15,000 to 20,000 people.

In a similar vein, the slower Pittsburgh response may be partially explained by the risk area being socially less distinguishable than the more clearly demarcated Confluence evacuation zone. As a result, people impacted at Confluence may have perceived the hazard at higher levels and personalized the hazard consequences more easily. Moreover, it could be argued that, because of the more easily described risk area in Confluence, the certainty of the communication about the hazard may have been more easily understood, or, for that matter, the hazard assessment itself may have reduced uncertainty, leading to a surer expression of the emergency warning message. Although the survey data described herein have not been analyzed to explore these hypotheses, the results suggest a series of important issues requiring further investigation.

Respondents in Confluence reported both contacting and being contacted by relatives not living in the same domicile and by neighbors more frequently than did their Pittsburgh counterparts. This difference may be postulated to relate to community characteristics, reflecting differences between the small, tight-knit community and the larger, less cohesive urban area. Conversely, Confluence respondents reported limited contact with members of the household, while Pittsburghers reported considerable contact with family (not at home) and other household members. This latter finding seems to

reflect the time of the accident, with people being more likely to have household members away from home and to contact them at noon (in Pittsburgh) than at 4: a.m. (in Confluence).

More importantly, in both communities more respondents reported having contacted others about the emergency than having been contacted. This pattern could be explained in several ways. One explanation suggests that people want to appear to be altruistic to the researcher and report initiating contact more frequently than they actually did, but report being contacted by others more accurately. Another explanation suggests that many people may actually make contact with others, but people receiving contact report it (i.e., remember that it occurred) only when it expands their personal understanding of the situation or the nature of appropriate responses. Similarly, people may report being contacted by others only when that contact influenced their own actions. It is also conceivable that people may include unsuccessful attempts to contact others among the contacts they initiated.

Alternatively, the mismatch between the number of respondents contacting and contacted by others could indicate a measurement problem associated with the structure of the questions. For example, the questions may mask the number of people in each response category contacted by and contacting each respondent. As an extreme example, suppose one respondent was contacted by ten other respondents. In responding to the survey, ten would report contacting someone else, but only one would report being contacted by others. A second possible structural explanation is that the response pattern occurs because of the questions' failure to distinguish between contacts made before and after evacuating. A significant number of the contacts initiated by respondents may have occurred after the respondents had evacuated. They would be unlikely to have been contacted by others after evacuating, however, because other people would have been less likely to know how to reach them and would have been unlikely to contact them to "tell [them] about the evacuation."

Although concern among people evacuating, particularly over looting and evacuation safety was real, these same concerns seldom were expressed as reasons for not evacuating. In fact, in Confluence, only two reasons were given for not evacuating: (1) either respondents were not home at the time or (2) were not in the evacuation zone. In Pittsburgh, on the other hand, many people reported having not been warned by public officials; however, it remains unclear whether this was because they were not in the evacuation zone or simply were not warned. In addition, a number of other reasons for not evacuating were given in Pittsburgh, including concern over leaving pets, not receiving help to evacuate, and either feeling safer at home or not recognizing any real danger. Many of these concerns were shared among evacuees in both the Pittsburgh and Confluence surveys, including general uncertainty, leaving pets and looting or vandalizing of the residence.

While most people in all evacuation events stayed with friends or relatives, nearly half of the Confluence respondents reported using official evacuation shelters. That people decided to stay with relatives most often in Pittsburgh may reflect the close family relationships of Pittsburgh combined with the larger metropolitan area. This may mean that residents of the area would prefer to stay with relatives, but in Confluence, many may have found that their relatives were also in the evacuated area and thereby could not offer refuge. The high proportion of Confluence evacuees who used official shelters may also reflect the time of day the incident occurred. People in Confluence, warned to evacuate at 4:00 a.m., had less opportunity to contact friends and relatives.

Generally, the people surveyed in Pittsburgh and Confluence found the performance of local officials to be good. When asked to rate the performance of public officials, the vast majority rated it as either excellent or good; 75% to 95% of the respondents rated public officials' warning performance as either good or excellent; and 80% to 90% of the respondents rated officials' evacuation performance as either good or excellent. Confluence performance ratings for public officials were consistently better than those for Pittsburgh officials, with Confluence officials receiving more excellent ratings than officials in Pittsburgh. Conversely, Pittsburgh media found were given greater approval ratings than were the media in the Confluence event, but here again, media in both events enjoyed very high ratings, with approximately 80% receiving good or excellent ratings.

More importantly, respondents in both events expressed continued confidence in the ability of public officials to protect the health and safety of their communities. More than 75% of the Pittsburgh respondents remained either confident or very confident, and more than 90% of the Confluence respondents voiced such confidence. Also, more than 90% of respondents in both places said they would evacuate again in a similar situation. Once again, however, Confluence respondents seemed slightly more favorable than did the Pittsburgh residents. One potential explanation is that residents of Confluence know the people involved in emergency management in relatively direct ways. Many of the people performing emergency response activities in Confluence are volunteers. Pittsburgh, commensurate with a large metropolitan area, has a professional emergency response force. People in Confluence may have had limited expectations of their volunteer force, and found that they were pleasantly surprised at the abilities of the response organizations to handle a community-wide emergency. In Pittsburgh however, people have a limited (at best, indirect) association with emergency personnel. They know only that, as citizens, they pay for emergency services. This may serve to raise expectations and make any emergency response seem less outstanding. To reiterate, both performances were viewed as being quite good by the residents, these foregoing explanation is for the seeming difference between overall performance ratings in Pittsburgh and Confluence.

It is also important to note that the Pittsburgh emergency response was conducted primarily by professional emergency workers, while volunteer emergency workers seemed to dominate the response effort in the Confluence event. Hence, the slightly less positive rating of the performance of emergency officials in Pittsburgh than in Confluence may reflect different expectations on the part of the citizens. However, the pattern of positive performance ratings for emergency officials and even more positive ratings of media performance in Pittsburgh is reversed in Confluence, with more than half rating emergency officials performance as "excellent" for both warning and evacuation, and media performance slipping.

These surveys are part of a limited number of "after-emergency" public surveys. One of the problems inherent in this kind of survey involves the delays between the event and conducting the field work. To some extent, these delays are unavoidable, because of the nature of the sampling problems as well as the logistics of fieldwork operations. In these surveys, researchers opted to sample residents of the impacted area rather than people arriving at emergency shelters. While this approach yields unbiased information about where emergency shelter was obtained and can yield unbiased data regarding response (including those who choose not to evacuate), it does present recall problems associated with interviewing people several weeks or months after the event. Fortunately, these types of events are rare and, as such, are likely to be recalled with some clarity.

Unfortunately, the researcher can be assured that the events being recalled have been constructed and reconstructed numerous times in the interim. This seems to indicate a general need to find better methods to use surveys after disasters to quantitatively assess responses. One possibility would be to conduct surveys as quickly as feasible after the impact (as these surveys were) and augment them with interviews with on-the-scene "participant-observers" as independent verification of key public behavior.

Several substantive issues raised in these surveys and elsewhere continue to require additional research. One important area involves attaining a better understanding of public response to warning. What drives rapid mobilization of the public to respond, vs more leisurely mobilization to respond? Another important area involves the role of contagion in the dissemination of emergency warnings. These surveys clearly indicate a significant role of contagion in both disseminating and verifying the emergency warning message but cannot address the impact these social network contacts have on personal response, perception and salience of the hazard, and appropriateness of alternative responses. Another area that continues to require attention is the degree to which the impact of emergency warnings can be limited to the targeted population. For example, how do people adjacent to the impact area interpret the warning messages compared to those within? What are the key factors in producing differences in these interpretations so as to engender appropriate responses on both sides of sometimes arbitrary boundaries?

6. REFERENCES

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APPENDIX A

BACKGROUND CHARACTERISTICS OF RESPONDENTS

APPENDIX A

BACKGROUND CHARACTERISTICS OF RESPONDENTS

Table A.1. Summary of data availability.

	Confluence	Pittsburgh telephone	Pittsburgh mail-back
Personal characteristics of the respondent			
Year of birth	X	X	X
Educational level	X	X	X
Marital status	X	X	X
Race	X	X	X
Sex	X	X	
Religious preference	X	X	
Strength of religious feelings	X	X	
Number of times moved in last 10 years	X	X	
Automobile ownership		X	
Household characteristics			
Number of members	X	X	X
Number of members less than 18 years old			X
Number of members 65 years old or older			X
Presence of disabled/ handicapped members	X	X	X
Respondent's position in household	X	X	X

Table A.1. (cont.)

	Confluence	Pittsburgh telephone	Pittsburgh mail-back
Employment and income characteristics			
Number of wage earners in household	X	X	
Number of labor union members in household	X	X	
Respondent's employment status	X	X	
Length of respondent's unemployment	X	X	
Respondent's occupation	X	X	X
Respondent's industry	X	X	
Spouse's employment status	X	X	
Length of spouse's unemployment	X	X	
Spouse's occupation	X	X	
Spouse's industry	X	X	
Annual household income	X	X	X
Profile of household safety items			
Smoke detector		X	
Burglar alarm/security system		X	
Flood/disaster insurance		X	
Fire extinguisher		X	
Inventory of household items		X	
Radiation detection device		X	
First aid kit		X	
Interviewer's assessment			
Length of interview	X	X	
Cooperativeness of respondent	X	X	
Interest of respondent	X	X	
Understanding of respondent	X	X	

Table A.2. Personal characteristics of respondent.

	Confluence	Pittsburgh telephone	Pittsburgh mail-back
Would you please tell me your date [year] of birth?			
1890-1899	2	0	0
1900-1909	9	6	4
1910-1919	30	23	18
1920-1929	18	30	41
1930-1939	13	8	19
1940-1949	13	17	23
1950-1959	15	19	43
1960-1969	4	17	17
1970-1979	0	0	1
Missing	2	9	5
Total response	106	129	171
What is the last grade or year in school that you completed?			
No schooling	0	1	0
Grammar school (1-8 years)	16	13	5
Some high school (9-11 years)	14	21	23
Completed high school (12 years)	52	42	83
College, incomplete	5	14	16
College, graduated	8	15	17
Higher than college graduate	3	6	8
Technical school	7	8	17
Missing	1	9	2
Total number of response	106	129	171

Table A.2. (cont.)

	Confluence	Pittsburgh telephone	Pittsburgh mail-back
What is your marital status?			
Single	8	26	46
Married	60	56	91
Divorced	7	6	15
Widowed	29	31	17
Separated	2	0	2
Missing	0	10	0
Total number of response	106	129	171
What is your race?			
White	104	115	163
Black	0	4	4
Other	0	0	2
Missing	2	10	2
Total number of response	106	129	171
Sex of respondent.			
Male	22	35	
Female	84	88	
Missing	0	6	
Total number of response	106	129	

Table A.2. (cont.)

	Confluence	Pittsburgh telephone	Pittsburgh mail-back
Would you mind telling me your religious preference, if any at all?			
Protestant	92	14	
Roman Catholic	3	94	
Orthodox Catholic	0	2	
Jewish	0	1	
Other	3	1	
None	5	7	
Don't know	1	0	
Missing	2	10	
Total number of response	106	129	
How strongly do you feel about your religious beliefs?			
Very Strongly	43	52	
Strongly	26	36	
Moderately	24	13	
Not so strongly	3	9	
Not strongly at all	0	2	
Inapplicable	2	5	
Don't know	3	0	
Missing	5	12	
Total number of response	106	129	

Table A.2. (cont.)

	Confluence	Pittsburgh telephone	Pittsburgh mail-back
How many times have you moved in the past ten years?			
None	60	70	
Once	26	18	
Twice	10	16	
3 times	4	6	
4 times	2	6	
5 times	2	1	
6+ times	0	1	
Don't know	0	1	
Missing	2	10	
Total number of response	106	129	
Do you own a car?			
Yes		76	
No		44	
Missing		9	
Total number of response		129	

Table A.3. Household characteristics.

	Confluence	Pittsburgh telephone	Pittsburgh mail-back
Including yourself, how many people live in this household?			
1 person	30	25	30
2 people	36	45	54
3 people	18	22	35
4 people	14	12	29
5 people	5	13	12
6+ people	3	3	6
Inapplicable	0	0	1
Don't know	0	0	2
Missing	0	9	2
Total number of response	106	129	171
How many children under 18 years of age live there?			
None			112
1			24
2			25
3			7
5			1
6+			1
Missing			1
Total number of response			171

Table A.3. (cont.)

	Confluence	Pittsburgh telephone	Pittsburgh mail-back
How many people 65 years of age or older live there?			
None			114
1			41
2			13
3			2
Missing			1
Total number of response			171
Are there any individuals who live in your household that would be considered disabled or handicapped?			
Yes	19	24	39
No	87	96	132
Missing	0	9	0
Total number of response	106	129	171
What is your position in this household?			
Head	57	63	88
Spouse of head	46	33	53
Son or daughter of head	2	14	17
Father or mother of head	1	1	3
Niece or nephew of head	0	0	2
Other	0	8	8
Missing	0	10	0
Total number of response	106	129	171

Table A.4. Employment and income characteristics.

	Confluence	Pittsburgh telephone	Pittsburgh mail-back
How many wage earners are there in this household?			
None	46	36	
1	39	40	
2	19	31	
3	2	9	
4	0	1	
5	0	1	
Missing	0	11	
Total number of response	106	129	
How many people in your household belong to a labor union?			
None	79	89	
1	26	25	
2	1	2	
3	0	1	
Don't know	0	2	
Missing	0	10	
Total number of response	106	129	

Table A.4. (cont.)

	Confluence	Pittsburgh telephone	Pittsburgh mail-back
How would you characterize your current employment status?			
Employed full-time	21	41	
Employed part-time	7	15	
Unemployed or laid-off	0	7	
Retired	36	30	
Self-employed	3	0	
Homemaker	31	22	
Disabled	7	12	
Student	1	2	
Total number of response	106	129	
For respondents who are unemployed/laid-off: How long have you been unemployed?			
6 weeks		1	
8 weeks		1	
20 weeks		1	
8 years		1	
Missing		3	
Total number of response		7	

Table A.4. (cont.)

	Confluence	Pittsburgh telephone	Pittsburgh mail-back
What type of work (occupation) do/did you do?			
Professional, Technical, and Kindred	13	9	16
Managers and Administrators, nonfarm	8	7	7
Sales Workers	7	6	9
Clerical and Kindred Workers	7	11	23
Craftsmen and Kindred Workers	9	6	14
Operatives	6	10	3
Laborers, nonfarm	4	4	4
Farm Managers and Workers	1	0	0
Service Workers	18	22	20
Housewives	20	0	29
Unemployed	0	0	4
Retired	0	0	26
Deceased	0	0	2
Inapplicable	11	28	0
Missing	2	26	14
Total number of response	106	129	171

Table A.4. (cont.)

	Confluence	Pittsburgh telephone	Pittsburgh mail-back
What type of work (industry) do/did you do?			
Agriculture, Forestry, and Fisheries	6	1	
Manufacturing, Durable Goods	3	4	
Manufacturing, Nondurable Goods	6	3	
Transportation, Communications and Public Utilities	4	2	
Retail Trade	15	10	
Finance, Insurance, and Real Estate	3	5	
Business and Repair Services	0	3	
Personal Services	6	2	
Entertainment and Recreation Service	1	0	
Professional and Related Services	21	19	
Public Administration	3	4	
Inapplicable	31	26	
Missing	7	50	
Total number of response	106	129	

Table A.4. (cont.)

	Confluence	Pittsburgh telephone	Pittsburgh mail-back
How would you characterize your spouse's current employment status?			
Employed full-time	34	26	
Employed part-time	4	4	
Unemployed or laid-off	0	2	
Retired	16	13	
Self-employed	1	0	
Homemaker	3	11	
Inapplicable	46	63	
Disabled	2	10	
Total number of response	106	129	
For respondents whose spouse is unemployed/laid-off: How long has your spouse been unemployed?			
2 weeks		1	
3 years		1	
Total number of response		2	

Table A.4. (cont.)

	Confluence	Pittsburgh telephone	Pittsburgh mail-back
What type of work (occupation) does/did your spouse do?			
Professional, Technical, and Kindred	9	3	
Managers and Administrators, nonfarm	4	3	
Sales Workers	5	4	
Clerical and Kindred Workers	2	7	
Craftsmen and Kindred Workers	12	6	
Operatives	6	6	
Laborers, nonfarm	14	3	
Farm Managers and Workers	1	0	
Service Workers	2	5	
Housewives	3	0	
Inapplicable	47	73	
Missing	1	19	
Total number of response	106	129	

Table A.4. (cont.)

	Confluence	Pittsburgh telephone	Pittsburgh mail-back
What type of work (industry) does/did your spouse do?			
Agriculture, Forestry, and Fisheries	10	1	
Manufacturing, Durable Goods	4	2	
Manufacturing, Nondurable Goods	4	2	
Transportation, Communications and Public Utilities	7	2	
Wholesale Trade	0	1	
Retail Trade	5	3	
Finance, Insurance, and Real Estate	1	2	
Business and Repair Services	2	1	
Personal Services	1	0	
Entertainment and Recreation Service	1	0	
Professional and Related Services	7	4	
Public Administration	3	5	
Inapplicable	52	73	
Missing	9	33	
Total number of response	106	129	

Table A.4. (cont.)

	Confluence	Pittsburgh telephone	Pittsburgh mail-back
Which category best represents your annual household income?			
<$10,000	31	41	45
$10,000–$25,000	45	45	71
$25,000–$50,000	19	28	34
>$50,000	1	2	5
Don't know	6	1	0
Missing	4	12	16
Total Responses	106	129	171

Table A.5. Profile of household safety items.

	Confluence	Pittsburgh telephone	Pittsburgh mail-back
Do you have a smoke detector in your home?			
Yes		99	
No		21	
Missing		9	
Total number of response		129	
Do you have a burglar alarm or security system in your home?			
Yes		18	
No		102	
Missing		9	
Total number of response		129	
Do you have special flood or disaster insurance?			
Yes		36	
No		78	
Don't know		6	
Missing		9	
Total number of response		129	
Do you have a fire extinguisher?			
Yes		55	
No		65	
Missing		9	
Total number of response		129	

Table A.5. (cont.)

	Confluence	Pittsburgh telephone	Pittsburgh mail-back
Do you maintain an inventory of hour household belongings for insurance or recovery purposes?			
Yes		62	
No		57	
Don't know		1	
Missing		9	
Total number of response		129	
Do you have a radiation detection device in your home?			
Yes		0	
No		120	
Missing		9	
Total number of response		129	
Do you have a first aid kit?			
Yes		98	
No		22	
Missing		9	
Total number of response		129	

Table A.6. Interviewer's assessment.

	Confluence	Pittsburgh telephone	Pittsburgh mail-back
Length of interview (in minutes)			
All Respondents			
Minimum	3	10	
Maximum	40	40	
Mean	13	25	
Standard deviation	6	5	
Respondents who evacuated			
Minimum	7	10	
Maximum	40	40	
Mean	14	26	
Standard deviation	5	5	
Respondents who did not evacuate			
Minimum	3	12	
Maximum	10	36	
Mean	5	21	
Standard deviation	1	5	
Cooperativeness of respondent.			
Very cooperative	80	90	
Somewhat cooperative	22	31	
Not cooperative	4	4	
Missing	0	4	
Total number of response	106	129	
Interest of respondent.			
Very interested	63	57	
Somewhat Interested	36	59	
Not interested	7	9	
Missing	0	4	
Total number of response	106	129	

Table A.6. (cont.)

	Confluence	Pittsburgh telephone	Pittsburgh mail-back
Understanding of respondent.			
High	53	35	
Moderate	38	57	
Low	13	33	
Missing	2	4	
Total number of response	106	129	

APPENDIX B

SAMPLE OF PITTSBURGH MAIL SURVEY

University of Pittsburgh
UNIVERSITY CENTER FOR SOCIAL AND URBAN RESEARCH

June 22, 1987

Dear City of Pittsburgh Resident:

The University Center for Social and Urban Research is conducting a small study of the recent experiences you and your family have had in connection with the toxic spillage in the Bloomfield area (the train derailment). We would be deeply appreciative if you took the time to fill out the attached questionnaire. The results of this research, as is the case with studies of many disasters, will help in better understanding problems which people have under such difficult conditions. This research will enable us to make recommendations that lead to better ways of warning residents in the event of an emergency, and of handling all aspects of an emergency, including evacuation.

You have been randomly selected to be a part of a small sample of the residents who were affected by the train derailment. Please, fill out the questionnaire and mail it in the enclosed postage-paid envelope at your earliest convenience. The information you provide will be treated in strict confidence and **will not be used in any way that can identify your household or any members of your household.** Should you have any questions concerning this study, please, call Janet Schlarb at 624-5523 or Pam Snyder at 624-5527. Your help is greatly appreciated. Thank you.

Sincerely yours,

Janet Schlarb

Janet Schlarb
Research Assistant

16TH FLOOR CATHEDRAL OF LEARNING, PITTSBURGH, PA 15260

1. Was there any visible sign of the train derailment on April 11th, such as smoke, from your home?

____ 1. Yes
____ 2. No

2. Before the train derailment, had you ever evacuated your home as a result of a disaster or emergency?

____ 1. Yes
____ 2. No

3. Did you evacuate at any time during the train derailment?

____ 1. Yes
____ 2. No -- **Please just answer question 3A and return the questionnaire in the pre-addressed, postage-paid envelope. Thank you.**

3A. Why didn't you evacuate? (Please feel free to write <u>any</u> comments you may have concerning the accident and evacuations on the back of this page.)

_____

_____

_____

_____

4. Did you evacuate during the daytime evacuation, the nighttime evacuation, or both times?

____ 1. Daytime only
____ 2. Nighttime only -- **PLEASE SKIP TO QUESTION 19**
____ 3. Both times

5. How were you first warned of the daytime evacuation?

____ 0. Officials knocking at the door
____ 1. Officials on loudspeakers
____ 2. Sirens
____ 3. Radio
____ 4. Television
____ 5. Friends, neighbors or relatives
____ 6. Was Not Warned
____ 8. Other (**please specify**)

_____

6. What was your response when you became aware of the evacuation? Did you decide to:

____ 1. Wait and see?
____ 2. Seek additional information?
____ 3. Take action immediately?
____ 4. Disregard the information?
____ 5. Other (**please specify**)

_____

7. Did you make a special point of telling anyone else of the evacuation?

____ 1. Yes -- **PLEASE ANSWER QUESTION 7A**
____ 2. No

7A. Who did you notify? (**Please check all that apply.**)

____ 0. Family members at home at the time
____ 1. Family members not at home at the time
____ 2. Relatives not living in your household
____ 3. Neighbors
____ 4. Close friends who are not neighbors
____ 5. Workmates
____ 6. Other (**please specify**)

_____

8. Did anyone contact you to tell you about the daytime evacuation?

____ 1. Yes
____ 2. No

9. Where were you that day when you first heard the warning to evacuate?

_____

_____

10. Was your family together when you heard the warning to evacuate?

____ 1. Yes
____ 2. No -- **PLEASE ANSWER QUESTION 10A**
____ 7. Not applicable

10A. How did this create problems, if any?

_____

_____

_____

11. At what time did you hear that you should evacuate?

_____

12. How much time passed between the time you first heard that you should evacuate and the time that you left your residence?

_____

13. What actions did you take following the warning to evacuate? **(Please check all that apply.)**

____ 1. Shut and/or locked windows
____ 2. Turned on radio or television
____ 3. Turned off utilities
____ 4. Called officials for confirmation
____ 5. Called friends, relatives or neighbors
____ 6. Gathered food and supplies
____ 7. Did nothing in particular
____ 8. Other **(please specify)**

_____

_____

_____

14. What kind of transportation did you use to evacuate during the daytime evacuation?

____ 1. Public transportation (buses, vans provided)
____ 2. Own car
____ 3. Friend's, relative's or neighbors's car
____ 4. Walked
____ 5. Other **(please specify)**

_____

15. Were you told how far to go when you were warned to evacuate?

____ 1. Yes
____ 2. No
____ 7. Wasn't officially warned

16. Were you told where to go when you were warned to evacuate that day?

____ 1. Yes
____ 2. No
____ 7. Wasn't officially warned

17. Where did you stay during the daytime evacuation?

____ 1. Friend's home
____ 2. Relative's home
____ 3. Shelter provided by city -- **PLEASE ANSWER 17A**
____ 4. Motel or Hotel
____ 5. Other (**please specify**)

_____

17A. Which evacuation center did you go to?

_____

18. At what time did you return to your home after the daytime evacuation?

_____

IF YOU DID NOT EVACUATE DURING THE NIGHT, PLEASE SKIP TO **QUESTION 31.**

19. In your household, is there anyone that is usually awake at any time between midnight and about 6 AM, at home or somewhere else?

____ 1. Yes -- **PLEASE ANSWER QUESTION 19A**
____ 2. No

19A. Please specify the hours that someone from your household is awake.

_____

20. How were you first warned of the nighttime evacuation?

____ 0. Officials knocking at the door
____ 1. Officials on loudspeakers
____ 2. Sirens
____ 3. Radio
____ 4. Television
____ 5. Friends, neighbors or relatives
____ 6. Was Not Warned
____ 8. Other (**please specify**)

_____

21. What was your response when you became aware of the evacuation? Did you decide to:

____ 1. Wait and see?
____ 2. Seek additional information?
____ 3. Take action immediately?
____ 4. Disregard the information?
____ 5. Other (**please specify**)

_____

22. Did you make a special point of telling anyone else of the evacuation that night?

____ 1. Yes --- **PLEASE ANSWER QUESTION 22A**
____ 2. No

22A. Who did you notify?

____ 0. Family members at home at the time
____ 1. Family members not at home at the time
____ 2. Relatives not living in your household
____ 3. Neighbors
____ 4. Close friends who are not neighbors
____ 5. Workmates
____ 6. Other (**please specify**)

_____

23. Did anyone contact you to tell you about the nighttime evacuation?

____ 1. Yes
____ 2. No

24. Where were you that night when you first heard the warning to evacuate?

_____

_____

25. Was your family together when you heard the warning to evacuate that night?

____ 1. Yes
____ 2. No --- PLEASE ANSWER QUESTION 25A
____ 7. Not applicable

25A. How did this create problems, if any?

_____

_____

_____

26. At what time did you hear that you should evacuate?

_____

27. How much time passed between the time you heard that you should evacuate that night and the time that you left your residence?

_____

28. What kind of transportation did you use to evacuate during the nighttime evacuation?

____ 1. Public transportation (buses, vans provided)
____ 2. Own car
____ 3. Friend's, relative's or neighbors's car
____ 4. Walked
____ 5. Other (please specify)

_____

29. At what time did you return home?

_____

30. Where did you stay during the nighttime evacuation?

____ 1. Friend's home
____ 2. Relative's home
____ 3. Shelter provided by city -- PLEASE ANSWER 30A
____ 4. Motel or hotel
____ 5. Other (please specify)

_____

30A. Which evacuation center did you go to?

_____

**** EVERYONE ANSWER THE FOLLOWING QUESTIONS ****

31. Do you have any pets?

____ 1. Yes --- PLEASE ANSWER QUESTION 31A
____ 2. No

31A. What did you do with your pet(s) when you evacuated?

_____

_____

32. Did you talk over the decision to evacuate with anyone?

____ 1. Yes --- PLEASE ANSWER QUESTIONS 32A AND 32B
____ 2. No

32A. Who did you talk with about the decision to evacuate? (Please check all that apply.)

____ 1. Household members
____ 2. Friends and/or neighbors
____ 3. Officials
____ 4. Relatives (not members of household)
____ 5. Other (please specify)

_____

32B. How important was their advice in your decision to evacuate or not to evacuate?

____ 1. Not very important
____ 2. Somewhat important
____ 3. Very important

33. Did you call any local authorities or officials to ask for advice about evacuating?

____ 1. Yes --- PLEASE ANSWER QUESTIONS 33A AND 33B
____ 2. No

33A. Who did you call? (**Please check all that apply.**)

____ 1. Police Department
____ 2. Fire Department
____ 3. Sheriff
____ 4. Civil Defense
____ 5. Red Cross
____ 6. TV Station
____ 7. Radio Station
____ 8. Other (**please specify**)

_____

33B. How important was their advice in deciding whether or not to evacuate?

____ 1. Not very important
____ 2. Somewhat important
____ 3. Very important

34. What worried you most about evacuating your home?

_____

_____

_____

35. What personal possessions, if any, did you take with you?

_____

_____

36. Did you know the reason for the evacuation when it occurred?

____ 1. Yes
____ 2. No

37. Before the accident, did you know that toxic chemicals were transported on these train tracks?

____ 1. Yes
____ 2. No

38. Did you receive any help to get evacuated?

____ 1. Yes
____ 2. No --- PLEASE ANSWER QUESTION 38A

38A. Who helped you and how did they help?

_____

_____

_____

39. Is there any member of your household (including yourself) who needed special assistance to evacuate?

____ 1. Yes
____ 2. No

40. At the time you left, did you know that sheltering was available to you?

____ 1. Yes -- PLEASE ANSWER QUESTION 40A
____ 2. No

40A. How did you find out about the evacuation centers?

____ 1. Relatives
____ 2. Neighbors
____ 3. Friends
____ 4. Public Officials
____ 5. Other (please specify)

_____

41. Did you use the evacuation centers provided during the evacuation?

____ 1. Yes --- PLEASES ANSWER QUESTION 41A
____ 2. No

41A. In your opinion, would you say that those in charge of the evacuation centers were very helpful, somewhat helpful, or not very helpful?

____ 1. Very helpful
____ 2. Somewhat helpful
____ 3. Not very helpful

42. In your opinion, did your public officials do an excellent, good, fair, or poor job in warning the community of the danger?

____ 1. Excellent
____ 2. Good
____ 3. Fair
____ 4. Poor

43. In your opinion, did the media (TV and radio) do an excellent, good, fair or poor job in covering the incident?

____ 1. Excellent
____ 2. Good
____ 3. Fair
____ 4. Poor

44. How confident are you about the ability of community officials to protect the health and safety of the public during emergencies like the Bloomfield train derailment?

____ 1. Very confident
____ 2. Confident
____ 3. Not very confident
____ 4. Not confident at all

45. As a result of your experience with this train derailment, would you be likely to evacuate or unlikely to evacuate if a similar situation were to occur in the future?

____ 1. Likely to evacuate
____ 2. Neither
____ 3. Unlikely to evacuate

46. Did your family suffer any financial loss as a result of the evacuations or the accident itself?

____ 1. Yes --- **PLEASE ANSWER QUESTIONS 46A AND 46B**
____ 2. No

46A. What was the nature of your loss?

_____

_____

46B. Approximately, how much was the loss?

_____

47. On what street do you live?

_____

48. Of the information you received during the Bloomfield emergency, do you feel that you needed: **(Please check as many as apply.)**

____ 1. More detailed information about the danger of the train derailment?
____ 2. More frequent information about the danger of the train derailment?
____ 3. More advice regarding what to do and where to go?

Your responses to the following questions will greatly aid us in our analysis. Once again, please be assured that all the information that you provide to us is completely confidential and will not be used in any way that can identify your household or any members of your household.

49. Are there any individuals who live in your household that would be considered disabled or handicapped?

____ 1. Yes
____ 2. No

50. Including yourself, how many people live in this household?

_____

51. How many children under 18 years of age live there?

_____

52. How many people 65 years of age or older live there?

_____

53. What is your position in this household?

____ 1. Head of household
____ 2. Spouse of head
____ 3. Son/daughter of head
____ 4. Father/mother of head
____ 5. Niece/nephew of head
____ 6. Other (please specify)

_____

54. What is your marital status?

____ 1. Single
____ 2. Married
____ 3. Separated
____ 4. Divorced
____ 5. Widowed

55. What is your occupation?

_____

56. What is the last grade or year in school that you completed?

____ 0. No schooling
____ 1. Grammar school (1-8 years)
____ 2. Some high school (9-11 years)
____ 3. Completed high school (12 years)
____ 4. College, incomplete
____ 5. College graduate
____ 6. Graduate school or more
____ 7. Technical school

57. Into which category does your annual household income fall?

____ 1. $5000 or less
____ 2. $5001 to $10,000
____ 3. $10,001 to $15,000
____ 4. $15,001 to $20,000
____ 5. $20,001 to $25,000
____ 6. $25,001 to $30,000
____ 7. $30,001 to $35,000
____ 8. $35,001 to $40,000
____ 9. $40,001 to $45,000
____10. $45,001 to $50,000
____11. More than $50,000

58. When is your birthday?

_____
month date year

59. What is your race?

____ 1. White
____ 2. Black
____ 3. Hispanic
____ 4. Oriental
____ 5. Other (please specify)

_____

Thank you once again for taking the time to answer these questions. Your cooperation is greatly appreciated.

APPENDIX C

SAMPLE OF PITTSBURGH TELEPHONE SURVEY

BLOOMFIELD TRAIN DERAILMENT SURVEY
July, 1987

University of Pittsburgh
University Center for
Social and Urban Research

SAMPLE ID NUMBER: _____

INTERVIEWER ID: _____

CASEID: _____

DATE: _____

TIME: _____

Hello, my name is _____ and I'm from the University of Pittsburgh. We're conducting a survey concerning emergencies, disasters, and civil defense. As part of this survey we would like to ask you some questions concerning the April 11th train derailment below the Bloomfield Bridge. This telephone number has been randomly selected to be part of our sample. Have I reached a private residence?

IF NOT RESIDENTIAL, POLITELY TERMINATE INTERVIEW

May we talk to an adult -- that is someone 18 years of age or older -- that lives in the household?

IF NOT AVAILABLE: When can I reach _____?

IF APPROPRIATE: REPEAT FIRST PARAGRAPH FOR NEW RESPONDENT

Your responses are extremely important in helping us to establish emergency preparedness measures for this area and the nation. All of your answers will be held in strict confidence and will be reported in such a way that no one in your household can be identified.

1. Was there any visible sign of the train derailment, such as smoke, from your home?

____ 1. Yes
____ 2. No

2. Before the train derailment, had you ever had an experience with a disaster?

____ 1. Yes -- ASK 2A AND 2B
____ 2. No

2A. What kind of disaster was it? (DO NOT READ RESPONSES)

____ 01. Tornado
____ 02. Flood
____ 03. Flashflood
____ 04. Hurricane
____ 05. Earthquake
____ 06. Fire (PROBE FOR KIND OF FIRE)_____
____ 07. Toxic chemical accident
____ 08. Other
(SPECIFY) _____
____ 97. Inappropriate

2B. Before the train derailment, had you or your family ever evacuated your home as a result of such a disaster?

____ 1. Yes
____ 2. No
____ 7. Inappropriate

3. Have you ever provided temporary housing in your home for other people who had to evacuate their place of residence?

____ 1. Yes
____ 2. No

4. Did you evacuate at any time during the train derailment?

____ 1. Yes
____ 2. No -- ASK 4A, THEN SKIP TO 51, PAGE 14

4A. Why didn't you evacuate?

_____

_____

_____

5. Did you evacuate during the daytime evacuation, the nighttime evacuation, or both times?

____ 1. Daytime only
____ 2. Nighttime only -- SKIP TO QUESTION 20, PAGE 6
____ 3. Both times

6. How were you first warned of the daytime evacuation?

____ 0. Officials knocking at the door
____ 1. Officials on loudspeakers
____ 2. Sirens
____ 3. Radio
____ 4. Television
____ 5. Friends, neighbors or relatives
____ 6. Was Not Warned
____ 8. Other (PLEASE SPECIFY)

_____

7. What was your response when you became aware of the evacuation? Did you decide to wait and see, seek additional information, evacuate immediately or disregard the information?

____ 1. Wait and see
____ 2. Seek additional information
____ 3. Evacuate immediately
____ 4. Disregard the information
____ 5. Other (PLEASE SPECIFY)

_____

8. Did you make a special point of telling anyone else of the evacuation?

____ 1. Yes -- ASK 8A
____ 2. No

8A. Who did you notify? (PLEASE MARK ALL THAT APPLY)

____ 0. Family members at home at the time
____ 1. Family members not at home at the time
____ 2. Relatives not living in your household
____ 3. Neighbors
____ 4. Close friends who are not neighbors
____ 5. Workmates
____ 6. Other (PLEASE SPECIFY)

_____

9. Did anyone contact you to tell you about the daytime evacuation?

____ 1. Yes -- ASK 9A
____ 2. No

9A. Who contacted you?

____ 0. Family members at home at the time
____ 1. Family members not at home at the time
____ 2. Relatives not living in your household
____ 3. Neighbors
____ 4. Close friends who are not neighbors
____ 5. Workmates
____ 6. Other (PLEASE SPECIFY)

_____

10. Where were you that day when you first heard the warning to evacuate?

_____

_____

11. Was your family together when you heard the warning to evacuate?

____ 1. Yes
____ 2. No -- ASK 11A
____ 7. Not applicable

11A. Did this create problems? (IF YES, PROBE)

_____

_____

_____

12. At what time did you hear that you should evacuate?

_____

13. How much time passed between the time you first heard that you should evacuate and the time that you left your residence?

_____

14. What actions did you take following the warning to evacuate? Did you ..... (INTERVIEWER: READ RESPONSES AND CHECK ALL THAT APPLY.)

____ 1. Shut and/or locked windows or doors?
____ 2. Turn on radio or television?
____ 3. Turn off utilities?
____ 4. Call officials for confirmation?
____ 5. Call friends, relatives or neighbors?
____ 6. Gather food and supplies?
____ 7. Did you do anything else? (IF YES, PROBE)

_____

_____

_____

15. What kind of transportation did you use to evacuate during the daytime evacuation?

____ 1. Public transportation (buses, vans provided)
____ 2. Own car
____ 3. Friend's, relative's or neighbors's car
____ 4. Walked
____ 5. Other (PLEASE SPECIFY)

_____

16. Were you told how far to go when you were warned to evacuate?

____ 1. Yes -- ASK 16A
____ 2. No
____ 7. Wasn't officially warned

16A. How far were you told to go?

_____

17. Were you told where to go when you were warned to evacuate that day?

____ 1. Yes
____ 2. No
____ 7. Wasn't officially warned

18. Where did you stay during the daytime evacuation?

____ 1. Friend's home
____ 2. Relative's home
____ 3. Shelter provided by city -- ASK 18A
____ 4. Motel or Hotel
____ 5. Other (PLEASE SPECIFY)

_____

18A. Which evacuation center did you go to?

_____

19. At what time did you return to your home after the daytime evacuation?

_____

IF RESPONDENT DID NOT EVACUATE DURING THE NIGHT, SKIP TO QUESTION 32, PAGE 9.

20. In your household, is there anyone that is usually awake at any time between midnight and about 6 AM, at home or somewhere else?

____ 1. Yes -- ASK 20A
____ 2. No

20A. During what hours is someone from your household awake?

_____

21. How were you first warned of the nighttime evacuation?

____ 0. Officials knocking at the door
____ 1. Officials on loudspeakers
____ 2. Sirens
____ 3. Radio
____ 4. Television
____ 5. Friends, neighbors or relatives
____ 6. Was Not Warned
____ 8. Other (PLEASE SPECIFY)

_____

22. What was your response when you became aware of the evacuation? Did you decide to wait and see, seek additional information, evacuate immediately or disregard the information?

____ 1. Wait and see?
____ 2. Seek additional information?
____ 3. Evacuate immediately?
____ 4. Disregard the information?
____ 5. Other (PLEASE SPECIFY)

_____

23. Did you make a special point of telling anyone else of the evacuation that night?

____ 1. Yes --- ASK 23A
____ 2. No

23A. Who did you notify?

____ 0. Family members at home at the time
____ 1. Family members not at home at the time
____ 2. Relatives not living in your household
____ 3. Neighbors
____ 4. Close friends who are not neighbors
____ 5. Workmates
____ 6. Other (PLEASE SPECIFY)

_____

24. Did anyone contact you to tell you about the nighttime evacuation?

____ 1. Yes -- ASK 24A
____ 2. No

24A. Who contacted you?

____ 0. Family members at home at the time
____ 1. Family members not at home at the time
____ 2. Relatives not living in your household
____ 3. Neighbors
____ 4. Close friends who are not neighbors
____ 5. Workmates
____ 6. Other (PLEASE SPECIFY)

_____

25. Where were you that night when you first heard the warning to evacuate?

_____

_____

26. Was your family together when you heard the warning to evacuate that night?

____ 1. Yes
____ 2. No --- ASK 26A
____ 7. Not applicable

26A. Did this create problems? (IF YES, PROBE)

_____

_____

_____

27. At what time did you hear that you should evacuate that night?

_____

28. How much time passed between the time you heard that you should evacuate that night and the time that you left your residence?

_____

29. What kind of transportation did you use to evacuate during the nighttime evacuation?

____ 1. Public transportation (buses, vans provided)
____ 2. Own car
____ 3. Friend's, relative's or neighbors's car
____ 4. Walked
____ 5. Other (PLEASE SPECIFY)

_____

30. At what time did you return home?

_____

31. Where did you stay during the nighttime evacuation?

____ 1. Friend's home
____ 2. Relative's home
____ 3. Shelter provided by city -- ASK 31A
____ 4. Motel or hotel
____ 5. Other (PLEASE SPECIFY)

_____

31A. Which evacuation center did you go to?

_____

****

32. Do you have any pets?

____ 1. Yes --- ASK 32A
____ 2. No

32A. What did you do with your pet(s) when you evacuated?

_____

_____

33. Did you call any local authorities or officials to ask for advice about evacuating?

____ 1. Yes --- ASK 33A AND 33B
____ 2. No

33A. Who did you call? (CHECK ALL THAT APPLY)

____ 1. Police Department
____ 2. Fire Department
____ 3. Sheriff
____ 4. Civil Defense
____ 5. Red Cross
____ 6. TV Station
____ 7. Radio Station
____ 8. Other (PLEASE SPECIFY)

_____

33B. How important was their advice in deciding whether or not to evacuate? Was there advice very important, somewhat important or not very important?

____ 1. Very important
____ 2. Somewhat important
____ 3. Not very important

34. Did you talk over the decision to evacuate with anyone esle?

____ 1. Yes --- ASK 34A AND 34B
____ 2. No

34A. Who else did you talk with about the decision to evacuate? (CHECK ALL THAT APPLY)

____ 1. Household members
____ 2. Friends and/or neighbors
____ 3. Relatives (NOT MEMBERS OF HOUSEHOLD)
____ 4. Other (PLEASE SPECIFY)

_____

34B. How important was their advice in your decision to evacuate or not to evacuate? Would you say it was very important, somewhat important or not very important?

____ 1. Very important
____ 2. Somewhat important
____ 3. Not very important

35. What worried you most about evacuating your home?

_____

_____

_____

36. What personal possessions, if any, did you take with you?

_____

_____

37. Did you know the reason for the evacuation when it occurred?

____ 1. Yes
____ 2. No

38. Before the accident, did you know that toxic chemicals were transported on these train tracks?

____ 1. Yes
____ 2. No

39. Did you receive any help to get evacuated?

____ 1. Yes -- ASK 39A
____ 2. No

39A. Who helped you and how did they help?

_____

_____

_____

40. Is there any member of your household (including yourself) who needed special assistance to evacuate?

____ 1. Yes
____ 2. No

41. At the time you left, did you know that sheltering was available to you?

____ 1. Yes -- ASK 41A
____ 2. No

41A. How did you find out about the evacuation centers?

____ 1. Relatives
____ 2. Neighbors
____ 3. Friends
____ 4. Public Officials
____ 5. Other (PLEASE SPECIFY)

_____

42. Did you use the evacuation centers provided during the evacuation?

____ 1. Yes --- ASK 42A
____ 2. No

42A. In your opinion, would you say that those in charge of the evacuation centers were very helpful, somewhat helpful, or not very helpful?

____ 1. Very helpful
____ 2. Somewhat helpful
____ 3. Not very helpful

43. In your opinion, did your public officials do an excellent, good, fair, or poor job in warning the community of the danger?

____ 1. Excellent
____ 2. Good
____ 3. Fair
____ 4. Poor

44. In your opinion, did your public officials do an excellent, good, fair, or poor job in evacuating the community?

____ 1. Excellent
____ 2. Good
____ 3. Fair
____ 4. Poor

45. In your opinion, did the media (TV and radio) do an excellent, good, fair or poor job in covering the incident?

____ 1. Excellent
____ 2. Good
____ 3. Fair
____ 4. Poor

46. How confident are you about the ability of community officials to protect the health and safety of the public during emergencies like the Bloomfield train derailment? Are you very confident, confident, not very confident or not confident at all?

____ 1. Very confident
____ 2. Confident
____ 3. Not very confident
____ 4. Not confident at all

47. As a result of your experience with this train derailment, would you be likely to evacuate or unlikely to evacuate if a similar situation were to occur in the future?

____ 1. Likely to evacuate
____ 2. Neither
____ 3. Unlikely to evacuate

48. Did your family suffer any financial loss as a result of the evacuations or the accident itself?

____ 1. Yes --- ASK 48A AND 48B
____ 2. No

48A. What was the nature of your loss?

_____

_____

48B. Approximately, how much was the loss?

_____

49. On what street do you live?

_____

50. Of the information you received during the Bloomfield emergency, do you feel that you needed: (INTERVIEWER: ASK EACH OF THE FOLLOWING AND CHECK ALL THAT RESPONDENT SAYS "YES" TO)

____ 1. More <u>detailed</u> information about the danger of the train derailment?
____ 2. More <u>frequent</u> information about the danger of the train derailment?
____ 3. More <u>advice</u> regarding what to do and where to go?

____ 4. Is there any other kind of information that you feel you needed? (IF YES, PROBE)

_____

_____

_____

Now, I'd like to ask you some questions concerning disasters, emergencies and civil defense that do not deal with the Bloomfield incident.

51. How likely is it that within the next five years your community will be subjected to..... Would you say it's likely or unlikely?

USE CODES 1, 3, 5, AND 6 ONLY IF SPONTANEOUSLY MENTIONED BY RESPONDENT

1. Very likely.....1 (SPONTANEOUS)
2. Likely.....2
3. 50-50 chance.....3 (SPONTANEOUS)
4. Unlikely.....4
5. Very unlikely.....5 (SPONTANEOUS)
6. Never will happen.....6 (SPONTANEOUS)
8. Don't know.....8

	VERY LIKELY	LIKELY	50-50 CHANCE	UN-LIKELY	VERY UN-LIKELY	NEVER	DK
A. A major earth-quake?	1	2	3	4	5	6	8
How about a							
B. A major nuclear power plant accident?	1	2	3	4	5	6	8
C. A dam failure?	1	2	3	4	5	6	8
D. A tornado?	1	2	3	4	5	6	8
E. A flood?	1	2	3	4	5	6	8
F. A hurricane?	1	2	3	4	5	6	8
G. A flashflood?	1	2	3	4	5	6	8
H. A toxic chemical accident?	1	2	3	4	5	6	8

52. How likely is it that within the next five years ..... will happen anywhere in the United States? Would you say that it is likely or unlikely?

USE CODES 1, 3, 5, AND 6 ONLY IF SPONTANEOUSLY MENTIONED BY RESPONDENT

1. Very likely.....1 (SPONTANEOUS)
2. Likely.....2
3. 50-50 chance.....3 (SPONTANEOUS)
4. Unlikely.....4
5. Very unlikely.....5 (SPONTANEOUS)
6. Never will happen.....6 (SPONTANEOUS)
8. Don't know.....8

	VERY LIKELY	LIKELY	50-50 CHANCE	UN-LIKELY	VERY UN-LIKELY	NEVER	DK
A. A major nuclear power plant accident	1	2	3	4	5	6	8
How about							
B. A terrorist takeover of a nuclear power plant?	1	2	3	4	5	6	8
C. A major accident involving radio-active waste?	1	2	3	4	5	6	8
D. A group of terrorists claiming to have a nuclear weapon and holding a city/community hostage?	1	2	3	4	5	6	8

53. How well does your community deal with disasters and emergencies? Would you rate their effectiveness as excellent, very good, good, fair, or poor?

____ 1. Excellent
____ 2. Very good
____ 3. Good
____ 4. Fair
____ 5. Poor
____ 8. Don't know

54. How well does the Federal Government deal with disasters and emergencies? (Would you rate their effectiveness as excellent, very good, good, fair, or poor?)

____ 1. Excellent
____ 2. Very good
____ 3. Good
____ 4. Fair
____ 5. Poor
____ 8. Don't know

55. A lot of communities have "self-help" groups that develop and carry out programs mostly on their own, without involvement or funding by the Government. When it comes to emergency preparedness, would you rate the idea of such self-help groups as excellent, very good, good, fair, or poor?

____ 1. Excellent
____ 2. Very good
____ 3. Good
____ 4. Fair
____ 5. Poor
____ 8. Don't know

56. Is there a nuclear power plant within 50 miles of your home?

____ 1. Yes (ASK 56A, B, C AND D)
____ 2. No (SKIP TO 57)
____ 8. Don't know (SKIP TO 57)

56A. About how far is it from your home?

_____ (miles)

____ 97. Inappropriate

56B. Is that plant in operation or under construction?

____ 1. In operation
____ 2. Under construction
____ 3. Other
(SPECIFY) _____
____ 7. Inappropriate
____ 8. Don't know

56C. What is the name of the facility?

_____

____ 97. Inappropriate

56D. Have you received any information about how you would be warned and what actions you should take in the event of a nuclear power plant accident?

____ 1. Yes ----------:
____ 2. No :--------(SKIP TO 58)
____ 7. Inappropriate :
____ 8. Don't know ----------:

57. If a nuclear power plant was built within a 50-mile radius of your home, would you favor or oppose it?

____ 1. Strongly favor (SPONTANEOUS)
____ 2. Favor
____ 3. Neither (SPONTANEOUS)
____ 4. Oppose
____ 5. Strongly oppose (SPONTANEOUS)
____ 7. Inappropriate
____ 8. Don't know

58. Do you favor or oppose the continuing operation of existing nuclear power plants?

____ 1. Strongly favor (SPONTANEOUS)
____ 2. Favor
____ 3. Neither (SPONTANEOUS)
____ 4. Oppose
____ 5. Strongly oppose (SPONTANEOUS)
____ 8. Don't know

59. Do you favor or oppose the construction of new nuclear power plants?

____ 1. Strongly favor (SPONTANEOUS)
____ 2. Favor
____ 3. Neither (SPONTANEOUS)
____ 4. Oppose
____ 5. Strongly oppose (SPONTANEOUS)
____ 8. Don't know

60. Could you please tell me what civil defense means to you?

_____

_____

_____

_____

61. I'm going to read to you some things that might be considered goals of civil defense. Please tell me how important a goal each one is, using a scale of 0 to 5, with 0 being not important at all and 5 being extremely important.

A. Providing protection in case of nuclear war _____

B. Providing information so people can help themselves respond to emergencies _____

C. Providing protection in case of natural disasters _____

D. Warning the public of impending danger _____

E. Providing protection in case of conventional war _____

F. Evaluating community disaster plans _____

G. Contributing to the prevention of nuclear war _____

H. Providing protection in case of technological hazards (such as nuclear power plant accidents or chemical spills) _____

I. Providing assistance to communities hit by disaster(s) _____

62. How likely do you think it is that we're in for a big World War--one where nuclear weapons would be used? Would you say it is likely or unlikely?

____ 1. Very likely (SPONTANEOUS)
____ 2. Likely
____ 3. 50-50 chance (SPONTANEOUS)
____ 4. Unlikely
____ 5. Very unlikely (SPONTANEOUS)
____ 6. Never will happen (SPONTANEOUS)
____ 8. Don't know

63. In your judgment, how much warning time would there be if a nuclear war were to occur? (DO NOT READ RESPONSES)

____ 1. No time
____ 2. Minutes (15-30)
____ 3. Hours
____ 4. About a day
____ 5. Two to three days
____ 6. Four days to a week
____ 7. A week or more
____ 8. Don't know

64. In case of nuclear war, do you think that the danger of this area being a target is high, medium or low, or none at all?

____ 1. High danger (ASK 64A)
____ 2. Medium danger (ASK 64A)
____ 3. Low danger ----------:
____ 4. No danger at all :----------(SKIP TO 65)
____ 8. Don't know ----------:

64A. What in your area makes it a target?

RECORD AS MANY ANSWERS AS RESPONDENT GIVES. IF RESPONDENT GIVES AN ANSWER WHICH DOES NOT INDICATE A FUNCTION, PROBE. FOR EXAMPLE, IF RESPONDENT SAYS "JONES," PROBE FOR "JONES AIR FORCE BASE"

_____

_____

____ 97. Inappropriate

65. Do you think that plans to deal with peacetime disasters, like tornadoes or nuclear power plant accidents, would be helpful in coping with a nuclear attack, should it ever take place?

____ 1. Yes (ASK 65A)
____ 2. Depends (PROBE AND ASK 65A)
____ 3. No (ASK 65B)
____ 8. Don't know (SKIP TO 66)

65A. In what way might they be helpful?

_____

_____

_____

_____ 97. Inappropriate

65B. Why wouldn't they be helpful?

_____

_____

_____

____ 97. Inappropriate

66. If a nuclear war started next week, how good are the chances that people in this area would survive? Would you say the chances would be very good, fairly good, about 50-50, fairly bad, or very bad?

____ 1. Very good
____ 2. Fairly good
____ 3. 50-50 chance
____ 4. Fairly bad
____ 5. Very bad
____ 6. None (SPONTANEOUS)
____ 8. Don't know

67. How good would the chances be that people in this area would survive if they were in blast shelters, that is shelters that protect against blast heat and initial radiation, in addition to providing some protection against fallout? Would the chances be very good, fairly good, about 50-50, fairly bad, or very bad?

____ 1. Very good
____ 2. Fairly good
____ 3. 50-50 chance
____ 4. Fairly bad
____ 5. Very bad
____ 6. None (SPONTANEOUS)
____ 8. Don't know

68. How about if they evacuated to areas considered to be much less likely targets of a direct attack? (Would you say their survival chances would be very good, fairly good, about 50-50, fairly bad, or very bad?)

____ 1. Very good
____ 2. Fairly good
____ 3. 50-50 chance
____ 4. Fairly bad
____ 5. Very bad
____ 6. None (SPONTANEOUS)
____ 8. Don't know

69. And how about if they didn't evacuate, but were in fallout shelters? (Would you say the chances would be very good, fairly good, about 50-50, fairly bad, or very bad?)

____ 1. Very good
____ 2. Fairly good
____ 3. 50-50 chance
____ 4. Fairly bad
____ 5. Very bad
____ 6. None (SPONTANEOUS)
____ 8. Don't know

70. How good would the chances be that people in this area would survive if they were relocated to another location where sheltering against fallout would be provided, in the event of a nuclear war? (Would you say survival chances would be very good, fairly good, about 50-50, fairly bad, or very bad?)

____ 1. Very good
____ 2. Fairly good
____ 3. 50-50 chance
____ 4. Fairly bad
____ 5. Very bad
____ 6. None (SPONTANEOUS)
____ 8. Don't know

71. Would you (and your family) be inclined to evacuate your place of residence and go somewhere else if there were a major international crisis and it seemed very likely that it might lead into a nuclear war?

____ 1. Yes
____ 2. Probably yes (SPONTANEOUS)
____ 3. Depends (PROBE)
_____

____ 4. Probably no (SPONTANEOUS)
____ 5. No
____ 6. Other (RECORD VERBATIM)
_____

____ 8. Don't know

71A. If you were to evacuate, where would you go?

IF GEOGRAPHIC LOCATION IS NOT MENTIONED THEN PROBE FOR TOWN OR CITY

_____

_____

72. Do you think there could be a situation in which the President would urge or suggest that people evacuate the cities and some areas of the country?

____ 1. Yes
____ 2. No
____ 8. Don't know

73. Do you favor the development of plans to evacuate cities and other risk areas in the event of a crisis in which war seems very likely?

____ 1. Yes
____ 2. Depends (PROBE)
_____
____ 3. No
____ 8. Don't know

74. Would you and your family leave your place of residence and relocate if the President would urge evacuation or relocation of our people?

____ 1. Yes
____ 2. Probably yes (SPONTANEOUS)
____ 3. Depends (PROBE)
_____
____ 4. Probably no (SPONTANEOUS)
____ 5. No
____ 8. Don't know

75. If the people in this area were to evacuate and go somewhere else because of the danger that nuclear war might start, would there be enough time for them to do so?

____ 1. Yes
____ 2. Depends (PROBE)
_____
____ 3. No
____ 8. Don't know

76. Thinking about this area and the number of people who live here, in your opinion, approximately how long would it take to evacuate?

_____(hours)

_____(days)

____ 998. Don't know

77. In a severe international crisis, suppose you noticed that many people in your area were packing and leaving. Would that make you more likely or less likely to evacuate?

____ 1. More likely
____ 2. No difference (SPONTANEOUS)
____ 3. Less likely
____ 4. Depends (PROBE)
_____
____ 8. Don't know

78. Suppose, on the other hand, that you were to notice that many people in your area decided not to evacuate. Would that make you more likely or less likely to evacuate?

____ 1. More likely
____ 2. No difference (SPONTANEOUS)
____ 3. Less likely
____ 4. Depends (PROBE) _____
____ 8. Don't know

79. Suppose you and your family were in an area which did not have to be evacuated and which, in fact, became a host area for evacuees from elsewhere. Would you say your community would be helpful or not helpful?

____ 1. Very helpful (SPONTANEOUS)
____ 2. Helpful
____ 3. Neither (SPONTANEOUS)
____ 4. Not helpful
____ 5. Unhelpful (SPONTANEOUS)
____ 8. Don't know

80. If your community were to receive evacuees, would most people be willing to have evacuees stay in their homes?

____ 1. Yes
____ 2. Depends (PROBE) _____
____ 3. No
____ 8. Don't know

81. Would you (and your family) be willing to have a few evacuees stay at your place of residence?

____ 1. Yes
____ 2. Depends (PROBE) _____
____ 3. No
____ 8. Don't know

82. The Federal Government spent about $130 million on programs of preparedness against nuclear attack in the past fiscal year. That is about 56 cents per person. Do you think this spending should be increased, decreased, or is about right?

____ 1. Increased (ASK 83)
____ 2. About right ----------
____ 3. Decreased !------ SKIP TO 84
____ 8. Don't know ----------

83. Would you be willing to pay an additional 25 cents for each member of your household per year if used for civil defense purposes?

____ 1. Yes (ASK 83A)
____ 2. Depends (PROBE AND ASK 83A)
_____
____ 3. No
____ 7. Inappropriate
____ 8. Don't know

83A. How much more than 25 cents per person would you be willing to pay?
_____ cents

____ 9996. "Any amount necessary"
____ 9997. Inappropriate
____ 9998. Don't know

84. Rather than paying additional money, would you favor shifting money from some other program or programs to increase the civil defense budget?

____ 1. Yes (ASK 84A)
____ 2. Depends (PROBE AND ASK 84A)
_____
____ 3. No (SKIP TO 85)
____ 7. Inappropriate
____ 8. Don't know (SKIP TO 85)

84A. Which program(s)?

_____

_____

85. If the nation were well prepared for civil defense against nuclear attack, including local plans, do you think that would help us to cope with peacetime disasters and emergencies?

____ 1. Yes (ASK 85A)
____ 2. Depends (PROBE AND ASK 85A)
____ 3. No (ASK 85B)
____ 8. Don't know (SKIP TO 86)

85A. In what way would it be helpful?

_____

_____

____ 97. Inappropriate

85B. Why wouldn't it be helpful?

_____

_____

____ 97. Inappropriate

86. Please tell me if you agree or disagree with the following statements.

USE THE FOLLOWING CODES:

1. Strongly agree (SPONTANEOUS)
2. Agree
3. Uncertain (SPONTANEOUS)
4. Disagree
5. Strongly disagree (SPONTANEOUS)
8. Don't know

A. There is no need for civil defense because nuclear war will not come. _____

B. Given our strategic might, no enemy would dare to attack, so there is no need for civil defense. _____

C. No civil defense program makes sense because it would not be able to help save enough people. _____

D. Civil defense programs could save many lives should nuclear war ever happen. _____

E. Police and fire services in evacuated areas would have to be increased to prevent looting, arson, and other problems. _____

F. Even if people were to survive a nuclear attack, life would not be worth living. _____

G. Civil defense programs in general increase anxiety and fear on the part of our people. _____

H. Civil defense programs make our people more complacent about nuclear war and might lead to a "false sense of security" making nuclear war more acceptable. _____

I. Civil defense efforts increase the chances of nuclear war because they signal to the Soviets that we are preparing to start a war. _____

J. Civil defense makes further agreements on arms control more difficult, if not impossible. _____

K. By showing that we are prepared for anything that could happen, civil defense contributes to deterrence and makes nuclear war less likely. _____

L. Even after a nuclear war, the survivors could rebuild America and make the best of it under the circumstances. _____

87. Have you heard the term "nuclear winter"?

____ 1. Yes (ASK 87A)
____ 2. No ----------:_____(SKIP TO 88)
____ 8. Don't know----------:

87A. Would you please tell me what the term means to you?

_____

_____

_____

88. In your opinion, who should have the responsibility for planning what ought to be done to prevent, or deal with, technological emergencies, such as nuclear power plant problems, spillages or toxic chemicals? Should it be community volunteers, the private sector, or the government?

CHECK ALL THAT ARE MENTIONED

____ 1. Community volunteers
____ 2. Private sector (industry, businesses, etc)
3-6. Government
PROBE FOR LEVEL OF GOVERNMENT
Do you mean local, county, state, or federal government?
____ 3. Local government
____ 4. County government
____ 5. State government
____ 6. Federal government
____ 7. Other
SPECIFY _____

____ 8. Don't know

89. Who should have the responsibility for planning measures to deal with natural disasters? (Should it be community volunteers, the private sector, or the government?)

CHECK ALL THAT ARE MENTIONED

____ 1. Community volunteers
____ 2. Private sector (industry, businesses, etc)
3-6. Government
PROBE FOR LEVEL OF GOVERNMENT
Do you mean local, county, state, or federal government?
____ 3. Local government
____ 4. County government
____ 5. State government
____ 6. Federal government
____ 7. Other
SPECIFY _____

____ 8. Don't know

90. And who should be responsible for civil defense measures to protect people against a possible nuclear attack? (Should it be community volunteers, the private sector, or the government?)

CHECK ALL THAT ARE MENTIONED

____ 1. Community volunteers
____ 2. Private sector (industry, businesses, etc)
3-6. Government
PROBE FOR LEVEL OF GOVERNMENT
Do you mean local, county, state, or federal government?
____ 3. Local government
____ 4. County government
____ 5. State government
____ 6. Federal government
____ 7. Other
SPECIFY _____

____ 8. Don't know

91. Please tell me which of the following protective devices you own or preventative actions you have taken. (CIRCLE APPROPRIATE RESPONSE)

		YES	NO	DK
A.	Do you have a smoke detector in your home?	1	2	8
B.	Do you have a burglar alarm or security system in your home?	1	2	8
C.	Do you have special flood or disaster insurance?	1	2	8
D.	Do you have a fire extinguisher?	1	2	8
E.	Do you maintain an inventory of your household belongings for insurance or recovery purposes?	1	2	8
F.	Do you have a radiation detection device in your home?	1	2	8
G.	Do you have a first aid kit?	1	2	8

Now I have a few background questions.

92. Are there any individuals who live there that would be considered disabled or handicapped?

____ 1. Yes
____ 2. No

93. Including yourself, how many people live in this household?

_____

94. What is your position in this household?

____ 1. Head of household
____ 2. Spouse of head
____ 3. Son/daughter of head
____ 4. Father/mother of head
____ 5. Niece/nephew of head
____ 6. Other (SPECIFY) _____

95. What is your marital status?

____ 1. Single
____ 2. Married
____ 3. Divorced
____ 4. Widowed
____ 5. Separated

ASK 96A AND 96B AS APPROPRIATE FOR RESPONDENT

96. How would you characterize (A. your) (B. your spouse's) current employment status? (CIRCLE APPROPRIATE RESPONSE)

	96A. Are you currently...	96B. Is your spouse currently...
0. Employed full time?.....	0	0
1. Employed part time?.....	1	1
2. Unemployed/laid-off?.....	2	2
3. Retired?.....	3	3
4. Self-employed?.....	4	4
5. Homemaker (do not work outside home)?.....	5	5
6. Currently on strike?.....	6	6
7. Inapplicable.....	---	7
8. Don't know.....	8	8
9. Disabled.....	9	9
S. Student.....	S	S

IF EITHER ARE UNEMPLOYED OR LAID-OFF, ASK FOR EACH PERSON UNEMPLOYED:

97. How long have (A. you) (B. your spouse) been unemployed?

_____ You _____ Your Spouse

98. What type of work ...

	OCCUPATION	INDUSTRY
A. do/did you do?	_____	_____
B. does/did your spouse do?	_____ (CODE 997 WITHOUT ASKING IF NO SPOUSE)	_____ (CODE 997 WITHOUT ASKING IF NO SPOUSE)

99. How many wage earners are there in this household?

_____

100. How many people in your household belong to a labor union?

_____

101. What is the last grade or year in school that you completed?

____ 0. No schooling
____ 1. Grammar school (1-8 years)
____ 2. Some high school (9-11 years)
____ 3. Completed high school (12 years)
____ 4. College, incomplete
____ 5. College, graduated
____ 6. Higher than college
____ 7. Technical school
____ 8. Don't know

102. Which category best represents your annual household income? Is it below $10,000, between $10,000 and $25,000, or over $25,000?

____ 12. Below $10,000

What range does it fall into?

____ 1. $3000 or less
____ 2. $3001 to $7000
____ 3. $7000 to $10,000

____ 13. Between $10,000 and $25,000

What range does it fall into?

____ 4. $10,000 to $13,000
____ 5. $13,001 to $16,000
____ 6. $16,001 to $20,000
____ 7. $20,001 to $25,000

____ 14. Over $25,000

What range does it fall into?

____ 8. $25,001 to $30,000
____ 9. $30,001 to $40,000
____ 10. $40,001 to $50,000
____ 11. More than $50,000

____ 98. Don't know

103. Would you please tell me your date of birth?

Date of birth _____

104. Would you mind telling me your religious preference, if any at all?

____ 1. Protestant
____ 2. Roman Catholic
____ 3. Orthodox Catholic (Greek, Russian, etc.)
____ 4. Jewish
____ 5. Other (SPECIFY) _____
____ 6. None
____ 8. Don't know

105. How strongly do you feel about your religious beliefs?

____ 1. Very strongly
____ 2. Strongly
____ 3. Moderately
____ 4. Not so strongly
____ 5. Not strongly at all
____ 8. Don't know

106. What street do you live on?

_____

107. How many times have you moved in the past ten years?

_____

108. Would you mind telling me your race?

_____ 1. White
_____ 2. Black
_____ 3. Hispanic
_____ 4. Other (SPECIFY) _____

109. Do you own a car?

____ 1. Yes
____ 2. No

That's the end of the interview! You've been extremely cooperative in answering these questions and I'd like to thank you very much for sharing your views on these important issues.

IMMEDIATELY AFTER HANGING UP, FILL OUT ITEMS A-H

A. TIME INTERVIEW ENDED:_____AM
PM

B. DATE OF INTERVIEW:

Month (enter No.) _____
Day _____
Year _____

C. TOTAL LENGTH OF INTERVIEW:
_____ minutes

D. COOPERATIVENESS OF RESPONDENT:

____ 1. Very cooperative
____ 2. Somewhat cooperative
____ 3. Not cooperative

E. INTEREST OF RESPONDENT:

____ 1. Very interested
____ 2. Somewhat interested
____ 3. Uninterested

F. RESPONDENT'S LEVEL OF UNDERSTANDING:

____ 1. High
____ 2. Moderate
____ 3. Low

COMMENT REGARDING THE RESPONDENT'S LEVEL OF UNDERSTANDING:

_____

_____

_____

G. SEX OF RESPONDENT:

____ 1. Male
____ 2. Female

H. INTERVIEWER'S SIGNATURE:

_____

APPENDIX D

SAMPLE OF CONFLUENCE TELEPHONE SURVEY

CONFLUENCE TRAIN DERAILMENT SURVEY
July, 1987

University of Pittsburgh

University Center for
Social and Urban Research

SAMPLE ID NUMBER: _____

INTERVIEWER ID: _____

CASEID: _____

DATE: _____

TIME: _____

Hello, my name is _____ and I'm from the University of Pittsburgh. We're conducting a survey concerning the May 6th train derailment in Confluence. As part of this survey we would like to ask you some questions about this accident. This telephone number has been randomly selected to be part of our sample. Have I reached a private residence?

IF NOT RESIDENTIAL, POLITELY TERMINATE INTERVIEW

May we talk to an adult—that is someone 18 years of age or older—that lives in the household?

IF NOT AVAILABLE: When can I reach _____ ?

IF APPROPRIATE: REPEAT FIRST PARAGRAPH FOR NEW RESPONDENT

Your responses are extremely important in helping us to understand the evacuation process during emergencies and disasters. The information that you provide will add to the knowledge of emergency personnel as to what is needed for an efficient evacuation in similar situations. All of your answers will be held in strict confidence and will be reported in such a way that no one in your household can be identified.

1. Was there any visible or audible sign of the train derailment from your home?

_____ 1. Yes
_____ 2. No

2. Before the train derailment, had you ever had an experience with a disaster?

_____ 1. Yes—ASK 2A AND 2B
_____ 2. No

2A. What kind of disaster was it? (DO NOT READ RESPONSES)

_____ 0. Tornado
_____ 1. Flood
_____ 2. Flashflood
_____ 3. Hurricane
_____ 4. Earthquake
_____ 5. Fire (PROBE FOR KIND OF FIRE) _____
_____ 6. Toxic chemical accident
_____ 8. Other
(SPECIFY) _____
_____ 7. Inappropriate

2B. Before the train derailment, had you or your family ever evacuated your home as a result of such a disaster?

_____ 1. Yes
_____ 2. No
_____ 7. Inappropriate

3. Have you ever provided temporary housing in your home for other people who had to evacuate their place of residence? (RECORD NUMBER OF TIMES IF OFFERED SPONTANEOUSLY)

_____ 1. Yes
_____ 2. No
_____ 8. Don't know

Number of times_____

4. Did you evacuate at any time during the train derailment?

_____ 1. Yes
_____ 2. No—ASK 4A, THEN SKIP TO Q39

4A. Why didn't you evacuate?

_____

_____

5. How were you first warned of the evacuation?

_____ 0. Officials knocking at the door
_____ 1. Officials on loudspeakers
_____ 2. Sirens
_____ 3. Friends, neighbors or relatives at the door
_____ 4. Friends, neighbors or relatives by phone
_____ 5. Was Not Warned
_____ 6. Other (PROBE)

_____

6. What was your response when you became aware of the evacuation? Did you decide to wait and see, seek additional information, evacuate immediately or disregard the information?

_____ 1. Wait and see
_____ 2. Seek additional information
_____ 3. Evacuate immediately
_____ 4. Disregard the information
_____ 5. Other (PROBE)

_____

7. Did you make a special point of telling anyone else of the evacuation?

_____ 1. Yes—ASK 7A
_____ 2. No

7A. Who did you notify? (PLEASE MARK ALL THAT APPLY)

_____ 0. Family members at home at the time
_____ 1. Family members not at home at the time
_____ 2. Relatives not living in your household
_____ 3. Neighbors
_____ 4. Close friends who are not neighbors
_____ 5. Workmates
_____ 6. Other (PLEASE SPECIFY)

_____

8. Did anyone contact you to tell you about the evacuation?

_____ 1. Yes—ASK 8A
_____ 2. No

8A. Who contacted you?

_____ 0. Family members at home at the time
_____ 1. Family members not at home at the time
_____ 2. Relatives not living in your household
_____ 3. Neighbors
_____ 4. Close friends who are not neighbors
_____ 5. Workmates
_____ 6. Other (PLEASE SPECIFY)

_____

9. Where were you that morning when you first heard the warning to evacuate?

_____

_____

_____

_____

10. Was your family together when you heard the warning to evacuate?

_____ 1. Yes
_____ 2. No—ASK 10A
_____ 7. Not applicable

10A. Did this create problems? (IF YES, PROBE)

_____

_____

_____

11. At what time did you hear that you should evacuate?

_____

12. How much time passed between the time you first heard that you should evacuate and the time that you left your residence?

_____

13. What actions did you take following the warning to evacuate? Did you .....
(INTERVIEWER: READ RESPONSES AND CHECK ALL THAT APPLY.)

_____ 1. Shut and/or lock windows?
_____ 2. Turn on radio or television?
_____ 3. Turn off utilities?
_____ 4. Call officials for confirmation?
_____ 5. Call friends, relatives or neighbors?
_____ 6. Gather food and supplies?
_____ 7. Do nothing in particular?
_____ 8. Other (PLEASE SPECIFY)

_____

_____

_____

_____

14. What kind of transportation did you use to evacuate during the evacuation?

_____ 1. Public transportation (buses, vans provided)
_____ 2. Own car
_____ 3. Friend's, relative's or neighbors's car
_____ 4. Walked
_____ 5. Other (PROBE)

_____

_____

15. Were you told how far to go when you were warned to evacuate?

_____ 1. Yes—ASK 15A
_____ 2. No
_____ 7. Wasn't officially warned

15A. How far were you told to go?

_____

16. Were you told where to go when you were warned to evacuate?

_____ 1. Yes
_____ 2. No
_____ 7. Wasn't officially warned

17. At the time you left, did you know that sheltering was available to you?

_____ 1. Yes—ASK 17A
_____ 2. No

17A. How did you find out about the evacuation centers?

_____ 1. Relatives
_____ 2. Neighbors
_____ 3. Friends
_____ 4. Public Officials
_____ 5. Other (PLEASE SPECIFY)

_____

18. Where did you stay during the evacuation?

_____ 1. Friend's home
_____ 2. Relative's home
_____ 3. Shelter—ASK 18A
_____ 4. Motel or Hotel
_____ 5. Other (PLEASE SPECIFY)

_____

18A. Which evacuation center did you go to?

_____

19. At what time did you return to your home after the evacuation?

_____

20. Who informed you that the evacuation was over?

_____

21. Do you have any pets?

_____ 1. Yes—ASK 21A
_____ 2. No

21A. What did you do with your pet(s) when you evacuated?

_____

_____

22. Did you talk over the decision to evacuate with anyone?

_____ 1. Yes—ASK 22A AND 22B
_____ 2. No

22A. Who did you talk with about the decision to evacuate? (CHECK ALL THAT APPLY)

_____ 1. Household members
_____ 2. Friends and/or neighbors
_____ 3. Officials
_____ 4. Relatives (NOT MEMBERS OF HOUSEHOLD)
_____ 5. Other (PLEASE SPECIFY)

_____

22B. How important was their advice in your decision to evacuate or not to evacuate? Would you say it was very important, somewhat important or not very important?

_____ 1. Very important
_____ 2. Somewhat important
_____ 3. Not very important

23. Did you call any local authorities or officials to ask for advice about evacuating?

_____ 1. Yes—ASK 23A AND 23B
_____ 2. No

23A. Who did you call? (CHECK ALL THAT APPLY)

_____ 1. Police Department
_____ 2. Fire Department
_____ 3. Sheriff
_____ 4. Civil Defense
_____ 5. Red Cross
_____ 6. TV Station
_____ 7. Radio Station
_____ 8. Other (PLEASE SPECIFY)

_____

23B. How important was their advice in deciding whether or not to evacuate? Was there advice very important, somewhat important or not very important?

_____ 1. Very important
_____ 2. Somewhat important
_____ 3. Not very important

24. What worried you most about evacuating your home?

_____

_____

_____

25. What personal possessions, if any, did you take with you?

_____

_____

_____

26. Did you know the reason for the evacuation when it occurred?

_____ 1. Yes
_____ 2. No

27. Before the accident, did you know that toxic chemicals were transported on these train tracks?

_____ 1. Yes
_____ 2. No

28. Did you receive any help to get evacuated?

_____ 1. Yes—ASK 28A
_____ 2. No

28A. Who helped you and how did they help?

_____

_____

_____

29. Is there any member of your household (including yourself) who needed special assistance to evacuate?

_____ 1. Yes
_____ 2. No

30. Did you do any type of volunteer work during the evacuation?

_____ 1. Yes—ASK 30A
_____ 2. No

30A. What was the nature of your volunteer work? (INTERVIEWER PROBE)

_____

_____

31. In your opinion, would you say that those in charge of the evacuation centers were very helpful, somewhat helpful, or not very helpful?

_____ 1. Very helpful
_____ 2. Somewhat helpful
_____ 3. Not very helpful

32. In your opinion, did your public officials do an excellent, good, fair, or poor job in warning the community of the danger?

_____ 1. Excellent
_____ 2. Good
_____ 3. Fair
_____ 4. Poor

33. In your opinion, did your public officials do an excellent, good, fair, or poor job in evacuating the community?

_____ 1. Excellent
_____ 2. Good
_____ 3. Fair
_____ 4. Poor

34. In your opinion, did the media (TV and radio) do an excellent, good, fair or poor job in covering the incident?

_____ 1. Excellent
_____ 2. Good
_____ 3. Fair
_____ 4. Poor

35. How confident are you about the ability of community officials to protect the health and safety of the public during emergencies like the Confluence train derailment? Are you very confident, confident, not very confident or not confident at all?

_____ 1. Very confident
_____ 2. Confident
_____ 3. Not very confident
_____ 4. Not confident at all

36. As a result of your experience with this train derailment, would you be likely to evacuate or unlikely to evacuate if a similar situation were to occur in the future?

_____ 1. Lively to evacuate
_____ 2. Neither
_____ 3. Unlikely to evacuate

37. Did your family suffer any financial loss as a result of the evacuations or the accident itself?

_____ 1. Yes—ASK 37A AND 37B
_____ 2. No

37A. What was the nature of your loss?

_____

_____

_____

_____

37B. Approximately, how much was the loss?

_____

38. Of the information you received during the evacuation, did you feel that you needed: (INTERVIEWER: READ THE RESPONSES AND PLEASE CHECK AS MANY AS APPLY)

_____ 1. More detailed information about the danger of the train derailment?
_____ 2. More frequent information about the danger of the train derailment?
_____ 3. More advice regarding what to do and where to go?
_____ 4. Other (PLEASE SPECIFY)

_____

Now I have a few background questions.

39. Are there any individuals who live there that would be considered disabled or handicapped?

    _____ 1. Yes
    _____ 2. No

40. Including yourself, how many people live in this household?

    _____

41. What is your position in this household?

    _____ 1. Head of household
    _____ 2. Spouse of head
    _____ 3. Son/daughter of head
    _____ 4. Father/mother of head
    _____ 5. Niece/nephew of head
    _____ 6. Other (SPECIFY) _____

42. What is your marital status?

    _____ 1. Single
    _____ 2. Married
    _____ 3. Divorced
    _____ 4. Widowed
    _____ 5. Separated

ASK 43A AND 43B AS APPROPRIATE FOR RESPONDENT

43. How would you characterize (A. your) (B. your spouse's) current employment status? (CIRCLE APPROPRIATE RESPONSE)

	43A. Are you currently	43B. Is your spouse currently
0. Employed full time?	0	0
1. Employed part time?	1	1
2. Unemployed/laid-off?	2	2
3. Retired?	3	3
4. Self-employed?	4	4
5. Homemaker (do not work outside home)?	5	5
6. Currently on strike?	6	6
7. Inapplicable	-	7
8. Don't know	8	8
9. Disabled	9	9
S. Student	S	S

IF ANY ARE UNEMPLOYED OR LAID-OFF, ASK FOR EACH PERSON UNEMPLOYED:

44. How long have (A. you) (B. your spouse) been unemployed?

_____ You

_____ Your Spouse

45. What type of work?

	OCCUPATION	INDUSTRY
A. do/did you do?	_____	_____
B. does/did your spouse do?	_____ (CODE 997 WITHOUT ASKING IF NO SPOUSE)	_____ (CODE 997 WITHOUT ASKING IF NO SPOUSE)

46. How many wage earners are there in this household?

_____

47. How many people in your household belong to a labor union?

_____

48. What is the last grade or year in school that you completed?

_____ 0. No schooling
_____ 1. Grammar school (1-8 years)
_____ 2. Some high school (9-11 years)
_____ 3. Completed high school (12 years)
_____ 4. College, incomplete
_____ 5. College, graduated
_____ 6. Higher than college
_____ 7. Technical school
_____ 8. Don't know

49. Which category best represents your annual household income? Is it below $10,000, between $10,000 and $25,000, or over $25,000?

_____ 12. Below $10,000

What range does it fall into?

_____ 1. $3000 or less
_____ 2. $3001 to $7000
_____ 3. $7000 to $10,000

_____ 13. Between $10,000 and $25,000

What range does it fall into?

_____ 4. $10,000 to $13,000
_____ 5. $13,001 to $16,000
_____ 6. $16,001 to $20,000
_____ 7. $20,001 to $25,000

_____ 14. Over $25,000

What range does it fall into?

_____ 8. $25,001 to $30,000
_____ 9. $30,001 to $40,000
_____ 10. $40,001 to $50,000
_____ 11. More than $50,000

_____ 98. Don't know

50. Would you please tell me your date of birth?

Date of birth _____

51. Would you mind telling me your religious preference, if any at all?

_____ 1. Protestant
_____ 2. Roman Catholic
_____ 3. Orthodox Catholic (Greek, Russian, etc.)
_____ 4. Jewish
_____ 5. Other (SPECIFY) _____
_____ 6. None
_____ 8. Don't know

52. How strongly do you feel about your religious beliefs?

_____ 1. Very strongly
_____ 2. Strongly
_____ 3. Moderately
_____ 4. Not so strongly
_____ 5. Not strongly at all
_____ 8. Don't know

53. What street do you live on?

_____

54. How many times have you moved in the past ten years?

_____

55. What race are you?

_____ 1. White
_____ 2. Black
_____ 3. Hispanic
_____ 4. Other (SPECIFY) _____

You've been extremely cooperative in answering these questions and I'd like to thank you very much for sharing your views on these important issues.

IMMEDIATELY AFTER HANGING UP, FILL OUT ITEMS A-M

A. TIME INTERVIEW ENDED: _____AM
_____PM

B. DATE OF INTERVIEW: _____Month (enter No.)
_____Day
_____Year

C. TOTAL LENGTH OF INTERVIEW:_____minutes

D. COOPERATIVENESS OF RESPONDENT:

_____ 1. Very cooperative
_____ 2. Somewhat cooperative
_____ 3. Not cooperative

E. INTEREST OF RESPONDENT:

_____ 1. Very interested
_____ 2. Somewhat interested
_____ 3. Uninterested

F. RESPONDENT'S LEVEL OF UNDERSTANDING:

_____ 1. High
_____ 2. Moderate
_____ 3. Low

COMMENT REGARDING THE RESPONDENT'S LEVEL OF UNDERSTANDING:

_____

_____

_____

_____

G. SEX OF RESPONDENT:

_____ 1. Male
_____ 2. Female

H.CALL BACK DATE AND TIME:

_____

I. INTERVIEWER'S SIGNATURE:

_____

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40. Russell Dynes, University of Deleware, Department of Sociology, Newark, DE, 19716
41. Denzel Fisher,Department of the Army, Office of the Assistant Secretry, Installations, Logistics, and Environment, The Pentagon, Washington, D.C. 20310
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48. Roger Kasperson, Professor of Government and Geography, Graduate School of Geography, Clark University, Worcester, MA 01610
49. Del Kohl, Federal Emergency Management Agency, Office of Training, 500 C Street, SW, Room 816, Washington, DC 20472
50. Michael Lindell, Department of Psychology, 129 Psychology Building, Michigan State University, Ann Arbor, MI 48824-1117
51. John F. Long, Jr., Schneider Engineers, 3605 Vartan Way, Harrisburg, PA 17110
52. Dennis Mileti, Director, 1120 Monaco Parkway, Denver, CO 80220
53. D.E. Morrison, 333 Oxford Road, East Lansing, Michigan 48823
54. Jiri Nehnevajsa, University of Pittsburgh, Department of Sociology, Pittsburgh, PA 15260

55. Office of Assistant Manager for Energy Research and Development, DOE-ORO, P. O. Box 2001, Oak Ridge, TN 37831-8600

56-65. OSTI, U.S. Department of Energy, P. O. Box 62, Oak Ridge, TN 37831

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67. William Reibsame, University of Colorado, Natural Hazards Internation and Applications Center, Boulder, CO

68. Ralph Swisher, Federal Emergency Management Agency, 500 C Street, SW, Room 602, Washington, DC 20472

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