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Contingencies Affecting the Issuing of
Public Disaster Warnings at Crescent
City, California

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within a few blocks of the downtown area. The communications center has three telephone lines plus equipment to handle dispatching for five radio nets in the area: California Highway Patrol, Fish and Game, Crescent City Police, Crescent City Fire District and Del Norte County Police. When the dispatcher on duty received the first bulletin at 11:08 p. m. he immediately called the Sheriff, Civil Defense, Crescent City Chief of Police, and California Highway Patrol. The Sheriff, the CD director and his alternate, the CD communications chief, were all at headquarters by 11:20. Among the preliminary steps taken were: alerting all Sheriff's deputies, monitoring short wave frequencies for further information, conferring about what action to take.

Thus far there was nothing unusual about the situation. The Sheriff and the CD director with their alternates had worked together in this way during many prior seismic wave alerts. When the second bulletin was received at 11:50, the Sheriff sent his deputies to the low water front areas to warn people in the locality that a seismic wave was expected. He did not order an evacuation. The deputies had not completed their door-to-door alerting when the first wave came. It was right on schedule, 12:00 p. m. A rather mild surge, it reached across the beach to Front Street, the farthest seaward of Crescent City's streets. Aside from depositing debris it did little damage. Three more waves followed; the second at about 12:40, the third approximately 1:20 and a fourth at about 1:45. The first three waves were all mild surges which deposited debris on the beach and on the closest streets but otherwise did little damage.

It was the fourth wave which caused major damage. By the time of the

fourth wave the Sheriff had made the decision to close off the entire waterfront district to keep out sightseers and potential looters. This involved an area of about 2 1/2 by 11 blocks within Crescent City and extending about 1/2 mile south of town along Highway 101. Some of the firemen were assisting in this work when the fourth wave struck. Their presence in the area proved to be a fortuitous circumstance because a number of fires broke out in the harbor front area in the city and south of town as electric power lines were short-circuited and oil tanks ruptured. However, water over Highway 101 south prevented fire trucks from proceeding immediately to the burning oil tanks.

The Sheriff and CD director did not issue a general public alarm until after the fourth wave hit. Then both city and county fire sirens were sounded. All county reserve police were called in by the Sheriff. The City Police Chief did the same for his reserves. In addition, the Sheriff deputized volunteers as special police to help guard the area.

Damage was extensive. Twenty-nine city blocks were affected in all. The damaged area all along the harbor front (primarily business places) and south of the city was generally unpopulated at that time of night except for a number of bars and motels. Relatively few residences were involved. Thus casualties were not extremely heavy. On April 2, the local newspaper reported 11 dead and between 15 and 20 missing. Because of the transients and tourists in bars and motels hit by the waves, it was difficult to establish a clear cut casualty list. The Seaside Hospital reported treating 24 injured as a result of wave action. Half of these were released immediately after treatment.

Some Observations

Adequate prior warning of impending disaster can save many lives and alleviate property loss. However, when a community or an area is forewarned and the predicted disaster does not materialize a very negative public reaction toward the officials who issued the warning can develop. This is especially true where evacuation procedures are carried out. Previous disaster studies have indicated that repeated instances of warning not followed by some visible danger cues, result in disbelief or nonacceptance by people in general.¹ As in Aesop's fable, the cry, "Wolf!" repeated too often without subsequent validation ultimately produces a response of either inaction or active rejection.

Public officials charged with responsibility for protecting life and property must make certain crucial decisions upon receipt of information that a disaster is probable: (1) whether or not to warn the populace and, if affirmative, (2) whether to alert them and let them decide upon appropriate actions,

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Palmer, George T., Jr., "Behavioral Research Related to Post Nuclear Attack Adaptation and Recovery: Individuals and Groups in Disaster", Human Sciences Research, Inc., Westgate Industrial Park, McLean, Virginia, (October 1963), pp. 50-51 (working paper). See also N. J. Demarath, "Human Adaptation to Disaster, Some General Propositions: An Interpretive Summary", Human Organization, Vol. 16 (1957), pp. 28-29; Janet F. Rayner, "Hurricane Barbara: A Study of the Evacuation of Ocean City, Maryland", Committee on Disaster Studies, National Academy of Sciences, Washington, D. C., 1953 (unpublished staff report); Raymond W. Mack and George W. Baker, The Decision Instant: The Structure of Social Responses to Unanticipated Air Raid Warnings, Publication 945, Washington, D. C.: National Academy of Sciences, 1961, pp. 45-46, 52, 55.

advise them what action to take, or order them to follow certain procedures.²

The Crescent City situation illustrates several of these points.

1. Public officials (in this case the Del Norte County Sheriff, his deputy, the CD director, and his alternate the CD communications chief) did not immediately institute alert procedures in the threatened area. It was not until the second warning bulletin had been received at the communications center that deputies were sent to alert the harbor front area. This was 10 minutes before the predicted impact. The deputies were unable to complete their rounds before the first wave arrived. Had the wave at 12:00 been as severe as the one at approximately 1:45, there probably would have been far more casualties. Fortunately, it was relatively mild.

The delay in initiating alert procedures may be attributed to the wording of the first bulletin and the prior experiences of the decision makers. A "probable" but "unconfirmed" wave warning is not sufficient basis for alerting townspeople, especially when there have been a number of "probables" during the past year which failed to materialize.

2.A. Public officials did not order an evacuation but warned the people in the port area that a seismic wave was expected. Three things in the information they received influenced this decision.

- (1) Ambiguity in the information received. Both bulletins they received (11:08 and 11:50 p. m.) indicated that a "tidal"

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Williams, Harry B. Jr., "Communication in Community Disasters," Unpublished Ph. D. dissertation, University of North Carolina, 1956, p. 120.

wave was probable. The 11:08 bulletin further stated:

"This is not confirmed because the tidal stations in Alaska are not reporting but is (sic) the times that a tidal wave would hit if one has been generated."

- (2) Limited information. There was no information concerning the size of the wave.
- (3) Seemingly contradictory information. After the 11:08 communication was received the CD communications chief began monitoring short wave frequencies for further information. Before the 12:00 deadline, he reported that at least one place farther north the deadline had passed and there had been no wave.

B. Several less tangible factors were also involved in the decision not to order an evacuation. All of the decision makers present had prior experience with seismic wave warnings. In their experience seismic wave warnings were not always followed by waves. More important, they took into account "expected" public response to whatever action they might initiate. The officials believed that a precipitous evacuation would result in severe disapproval by the public if no wave appeared. Several past experiences were cited:

- (1) In the late 1950's the Chief of Police in Crescent City evacuated the "whole town" after receiving a seismic wave alert. No wave came and "he was just about laughed out of town. He was ridiculed."

- (2) Just last year seismic warnings had been received early each Sunday morning for three successive weeks. The waves did not appear. In each instance deputies were sent to knock on doors and alert everyone in the low areas. The first time there were no repercussions. The second and third alert brought increasing complaint and criticism -- and a lack of belief. One man called the sheriff and said, "I don't want any more of your guys coming down getting me out of bed in the middle of the night."

Higher echelons in warning and alert systems that give general information to local officials should be aware of the problems involved in implementing decisions based upon such knowledge. Implementation does not occur in a social vacuum but in the context of past, present and future social relationships. Public officials in a situation like the one which faced Del Norte County and Crescent City officials have to draw a fine line between several types of risks.

- (1) If they fail to act and the disaster agent strikes: a potential loss of life and property attributable to their inaction.
- (2) If they act and the disaster agent does not strike: a potential loss of effectiveness and/or potential criticism and ridicule from the public.

As one official said, ".....this happy medium is something you sweat out as to whether you think you've reached a point where you think you should

take drastic action or not. And if you take drastic action too many times then when you actually need to take drastic action, you lose your effectiveness..... we've played it cool many nights here, warnings that people never know about. "

Knowledge that such problems exist does not automatically eliminate or even alleviate them but it should make for greater rationality in planning and implementation at all levels.