Coordination of Disaster Response by National and International Agencies

by Frederick M. Cole

In 1964, in the aftermath of the Skopje, Yugoslavia, earthquake the U.S. government established the Office of the U.S. Foreign Disaster Relief Coordinator to bring some order to what had proven an ill-coordinated effort on the part of several American agencies to provide relief to the disaster victims. Following the ravages of a severe cyclone and civil strife in East Pakistan in 1970-71, the United Nations recognized the need for international coordination and the Office of the United Nations Disaster Relief Co-ordinator (UNDRO) was established in Geneva. During the intervening years, several other donor governments and international organizations have created or strengthened a capacity for international disaster assistance.

During this same period, we have seen a dramatic improvement in international communications available to donors and disaster-prone nations alike. The state-of-the-art in short- and long-range communications technology can now support virtually any disaster-related demands through either extant services or transportable equipment. These technical advances are addressed elsewhere in this study, as are the constraints posed by the complex of regulatory issues which govern international communications.

Even if we have access to all necessary equipment and transmission networks, and are able to use them freely, there remains an additional variable which, when absent, can negate the value of communications: the political will to coordinate. This paper looks at the elements required for a coordinated international relief effort and how they relate to the communications media available to them.

Disaster Response Elements

The affected population, in most severe disaster situations, will assume the primary responsibility for recovery. The speed and effectiveness of relief, rehabilitation and reconstruction will be largely determined by the cohesiveness of the communities affected, the coordinative abilities of the local organizations assuming responsibility and the resources that they can bring to bear.

Locally available materials and services will rarely be adequate to meet the needs of a severely stricken community, necessitating the intervention of outside agencies representing provincial or national resources. Communications and coordination are facilitated to the extent that these agencies--public and private--cooperate in non-disaster times and maintain viable plans and procedures for disaster response Communications are often disrupted when new networks and reporting relationships are introduced.

The international community often wishes to be responsive to the disaster victims' humanitarian needs or the economic and political exigencies of the affected government. Coordination mechanisms are nearly always strained at the local disaster site level when

foreign elements are introduced, unless they are already a part of the local networks through local representation. Often this poses a problem at the national level as well, if the host government fails to provide adequate coordinating mechanisms to insure efficient deployment of external resources.

The Nature of Disaster Intervenors

Disasters bring out the best in people. The plight of the victim seems transparent: shock and suffering are rife; the victims need all the care and attention that can be afforded them. The responder, whether digging in the rubble, expediting aid in the host capital or arranging airlifts in a donor city, can take immense personal satisfaction from such life-sustaining, humanitarian activities. To a large degree, the energy needed to sustain arduous, frenetic and sometimes lengthy relief efforts is derived from the personalization of the disaster situation. An intervenor needs to relate his own efforts to the relief of the victims in order to sustain a high level of activity.

Heroes emerge in disasters. People who often go unnoticed in the normal scheme of things may be recognized for their efforts. Media attention may focus on individuals or groups which are otherwise less notable. Being visible--or merely present--in a relief effort can enhance a person's image in his own organizational structure. Disasters often provide a limelight which feeds egos and careers.

This is all very rewarding for the individual or group involved; it keeps the adrenalin flowing and encourages greater effort. The down side is that it also encourages competition among entities which need to work together.

- The local hero, if perceived to be basking in limelight, may provide a disincentive to others who want to share in the effort. Interpersonal communications--and coordination--may suffer.
- Local officials, while necessarily encouraging the infusion of outside assistance, will often be affronted by the intrusion of intervenors who are there clearly because the local authorities couldn't resolve their own problems.
- The host government may similarly be affronted by the perception that they cannot do the job themselves and must rely on the international donor community to fix the situation.
- International donor organizations, with mixed humanitarian and political motivation, wish to believe (and impart to their constituents) that their assistance is the quickest and most important succor received by the disaster victims.

None of which serves to create an environment in which objective communications and coordination are a top priority.

The Will to Coordinate

The disaster-stricken population is best served when the activities of all responder

groups are coordinated. If they are not, the disaster site will suffer from confusion as goods and services accumulate without reference to end use. Frustrations will rise in the recipient community, because the needed assistance can't get to the intended beneficiaries; and in the donor community, because their good intentions are being thwarted. Left in the middle are the national and local officials whose only fault may lie in an inability to control circumstances because they lack effective communications.

If the objective of the relief operation is purely humanitarian--to help the victims--it is clearly to everyone's advantage to encourage and facilitate optimum coordination. There is, however, the temptation to revert to motivations which bear on self interest: political goals, and personal or organizational aggrandizement. Mutual interests can be accommodated only if the affected community and host authorities exercise a concerted will to insure coordination, either through their own control or that of a designated intermediary, such as an international organization.

It is worth looking at the levels of intervention in major relief operations to isolate the factors that facilitate and deter coordination.

- The first responders on the ground are from the community itself; local officials, including (perhaps) firefighters and health workers; constabulary or civil defense staff; non-governmental organizations such as the Red Cross. These elements are likely to coordinate effectively only if disaster responses are frequent, say every two or three years.
- Military personnel, if present in the area, will often be deployed to the disaster site to implement search and rescue, clean-up, security, distribution, or other relief functions. Operational units may be under the direction of local or provincial authorities or a central command. Their communications networks usually will not be compatible with civil systems.
- Indigenous and foreign private voluntary organizations, particularly those with established programs in the affected region, usually wish to participate in relief and rehabilitation activities. Their established communications systems will most often fail to meet the extraordinary needs imposed by the disaster.
- International organizations, the United Nations in particular, may represent significant resources in several sectors: food, agriculture, health, maternal/child services, construction, etc. Their inputs in disaster situations vary considerably, depending on their development linkages and tasks in the affected country. The U.N. Resident Representative/Coordinator serves also as the representative of UNDRO.

The Coordinative Potential of the Media

The role of the media in disaster communications is discussed at length elsewhere in these papers. The media offer benefits specific to national and international coordination.

- In early warning, radio and television are particularly useful in alerting response organizations to imminent threats as well as the populations at risk to cyclones, floods, volcanic eruptions and other disaster agents for which precursor activity may facilitate prediction.

- Increasingly, the media have been instrumental in spotting and publicizing "creeping disasters" such as famine following on drought. Media attention can be a very effective means of coalescing response groups at the national and international levels.
- The media can be instrumental in "keeping the system honest." By pointing out inappropriate or inadequate relief, the media sometimes provide insights which are helpful in restructuring or better coordinating responses.

From an operational viewpoint, to be honest, the media have represented a mixed blessing. It is well understood that bad news sells--and sensational bad news sells even more. It is natural then that the media appear to have a bias toward reporting the worst aspects of disaster response. When the media blow a disaster situation out of proportion, it is not helpful to those who are attempting to sift the factual details out of rumor and hypothesis. By escalating the perceived proportions of a disaster, media also escalate pressure from the public--and their representatives--on the relief agencies. Where warranted, this can be useful in garnering resources. It can also lead to hasty and inappropriate decisions that waste the limited response resources available.

In seeking out the "bad news," the media occasionally will concentrate too much on the holes in relief efforts rather than the positive--and often heroic--actions that deserve mention. Further distortions, and resulting problems for the coordinators, occur when media reporting on the progress of relief efforts is delayed by a day or more due to whatever reasons. The picture of an injured or homeless child evokes a powerful response from media audiences. If that child has been treated and sheltered a week prior to the image appearing, an inaccurate message may be sent.

This is not intended as a criticism of the media. There is a solid understanding that responsible media are an important support mechanism for disaster victims and the agents of their recovery. Many disaster responders increasingly understand that they can derive significant benefits from thorough cooperation with the media. This is evidenced by the increasing acceptance of the potential coordinating value of the LifeNet concept as developed by the Foundation for Global Broadcasting. Logic dictates that, since we can't beat them, we who share responsibility for coordinating disaster responses should join with the media in the mutual benefits of candor in responsible news dissemination.

Coordinating Institutional Players

Disaster research and management analysis have burgeoned in the past 20 years to the point where it's virtually impossible to keep track of all the pertinent resources. Numerous attempts at tying the pieces together are ongoing. These tend to concentrate on one or another bias, each pertaining to the disciplinary, geographic, hazard-oriented or technological base of the networking group. We can expect that there will be increased interest in creating networks of networks to meet the exigencies of such ambitious programs as the International Decade for Natural Disaster Reduction. Emerging electronic networking techniques make it increasingly feasible to link very large numbers of diverse interest groups

and individuals through selective processes.

Coordinating institutional resources, academic and professional alike, usually presents a problem only if the disaster (or threat) requires multiple disciplines and skills in its analysis: say, an earthquake that causes landslides, a dam failure, and a gas explosion which threatens a chemical plant. Seismology, geology, structural and lifeline engineering, toxicology, triage, burn treatment and many more disciplines might be brought into play. How does the local disaster manager select the most relevant institutional resources, assemble them and coordinate their activities? Communications provides part of the answer.

Communications: The Key to Coordination

Disaster relief interventions are cued by communications. If those communications are inaccurate, everyone's response will be inappropriate. If the communications are accurate and timely, then the onus of an inappropriate response will clearly lie upon the responsible intervenor. By ensuring good communications to and from all participating groups, the disaster coordinator, whether a local, provincial, national or international official, can affect an open and honest response system.

In a disaster of serious consequences, in which the international community would wish to become involved, response coordination will likely be assumed by the host national government. That government will be more or less effective at coordinating response depending on four factors:

--its control over national/provincial affairs;

--its capacity to carry out a pretested disaster response plan;

--its influence over national and international donors, and

--its capacity to communicate valid needs assessments to potential responders.

Communications systems, when properly planned and controlled, can serve to impose necessary discipline on the systems' users. This is the basis of the command and control concept. The availability of communications hardware, and a network to use it, does not guarantee effective coordination. If these elements are lacking, however, coordination will most certainly fail.

Precepts of International Disaster Communications

The Office of U.S. Foreign Disaster Assistance (OFDA) in the Agency for International Development has long recognized the importance of communications in disaster responses. Extant State Department and other U.S. government communications facilities in foreign countries are impressive, yet fail to meet many of the exigencies of field response. Until recently, we have been slow in assembling the equipment and networks necessary to augment service--in part due to the bewildering array of emerging technological options, and in part due to costs. Trial and error has served to narrow the options while equipment costs have declined. A number of constraining factors remain:

- Sovereign nations retain authority over the importation of communications equipment

and the frequencies on which they operate. Some nations may not be amenable to foreigners (or for that matter their own citizenry) operating nonregulated communications.

- Deployment of communications equipment generally requires expert attendance for calibration, siting, set up, antenna installation, testing and for some equipment, operations.
- Cost, particularly for commercial satellite services and equipment, remains relatively high for all but priority usage.

OFDA has in the past few years "bitten the bullet" and found that these constraints are manageable if we take the time to plan for contingencies.

The OFDA Communications Network

As an organization involved in foreign disasters, our communications needs are specific to four discrete spheres of operations, as discussed below (see also Figure 1):

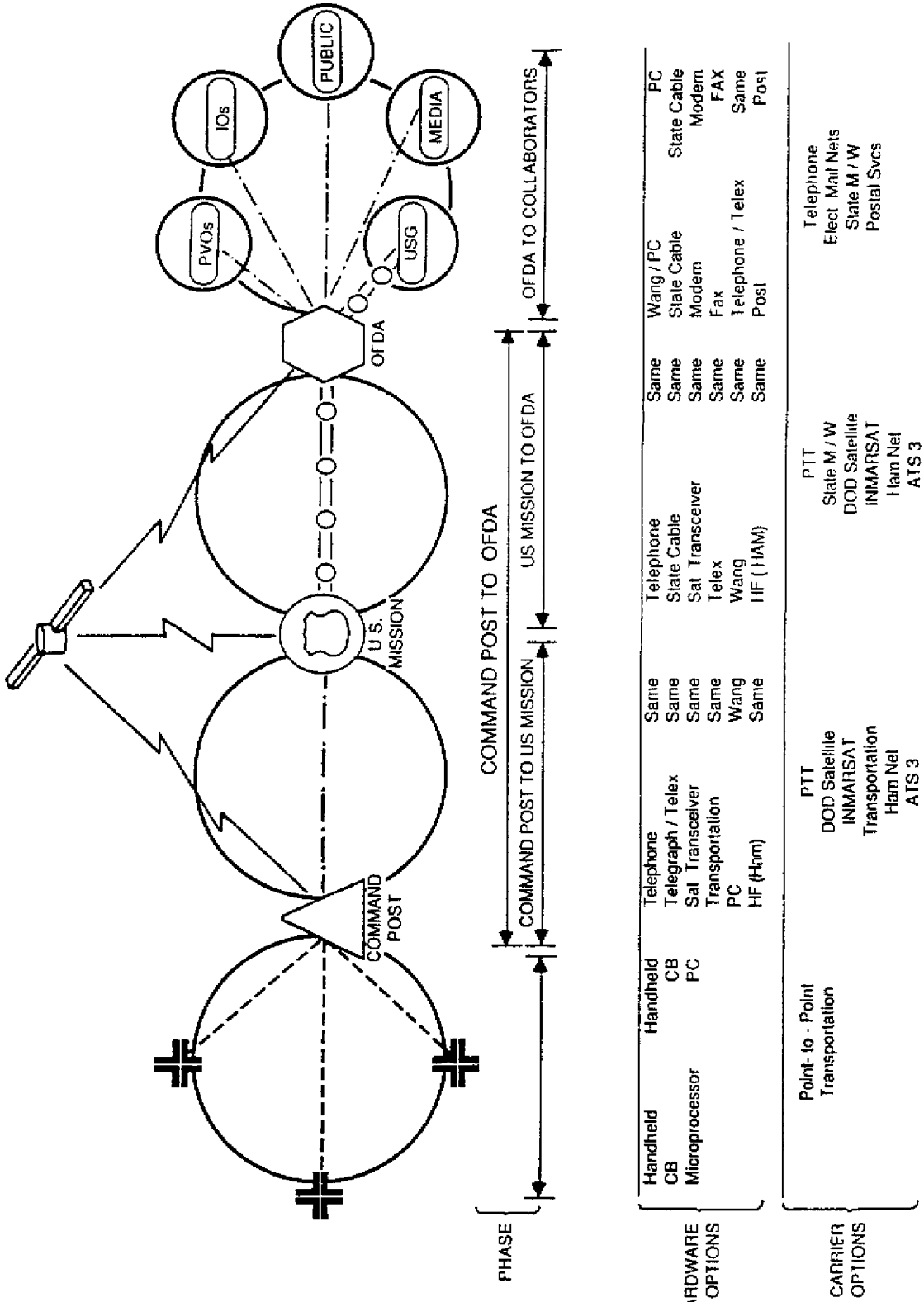
- the Disaster Area,
- Command Post to Mission,
- Mission to OFDA, and
- OFDA to Collaborators.

Disaster Area

The environment is generally one of confusion and uncertainty, requiring fast deployment and redeployment of multiple reporting units. The purpose is to gather hard information on disaster-induced damage and needs and to tabulate this information in a way that will facilitate a coordinated response. The host government may maintain relevant equipment and trained personnel in military, civil defense or local constabulary/firefighting capacities. We assume that these resources will have to be augmented. To insure availability of appropriate equipment and skills, we have entered into cooperative agreements with U.S. federal and municipal agencies to share the assets they maintain for their own domestic use. Primarily, these resources include hand-held radios (walkie-talkies) in the high frequency or ultra high frequency ranges to meet the exigencies of the environment (e.g., rural logistics vs. urban search and rescue). This short-range equipment, prepackaged for multiple users and programmable to appropriate frequencies, may be augmented by longer-range portable radio devices.

At the center of the disaster area network is a command post--most simply, a coordinator manning a base station and keeping tabs on assessment data while serving as dispatcher for the field representatives in the network. In a more complicated situation, the command post may integrate assessment and logistics functions, utilizing skills dedicated to each, and maintaining records on a lap-top computer. Some of these activities may rely on pre-programmed computer checklist applications, such as an assessment program which has been developed (and is being tested as of this writing) under the auspices of the University

Figure 1: Four spheres of disaster-response operations and their communications options.



of Wisconsin's Disaster Management Center. In the future, we can look to more sophisticated computer field operations which will benefit from the fast expanding fields of Geographic Information Systems, artificial intelligence and command and control.

Command Post to Mission

The disaster site operation maintains basic, detailed data designed to quantify needs and expedite response to those needs. It also serves to coordinate U.S. government activities "on-the-ground" with those of the community, the national effort, the private voluntary agencies and other donors. The linkage between the command post and the U.S. mission in-country is critical in insuring that the response is adequate, appropriate and coordinated. OFDA depends on the U.S. foreign missions (either the U.S. A.I.D. mission or the embassy, as appropriate) as our communications link with the field in the vast majority of disaster situations. Unless the disaster has occurred in the capital, the mission environment presents a new level of dynamics in terms of political exigencies and coordination needs. It is probably in the capital that national and international resources are being mobilized; priorities are being set; level of effort is being determined. Knowledge of these dynamics is important to the efficient operation of the disaster area team. The missions' role then is to offer policy guidance to the field staff and to transmit those policy concerns to OFDA along with assessment data and recommendations for response. Usually the extant telephone/telegraph systems are adequate for this purpose. They may need to be supplemented by radio if they fail, due to disaster or other interdictions, or if they are overloaded due to increased traffic. Alternatives include inexpensive high-frequency radios and satellite transceivers. Data communications devices can be added to any of these voice grade linkages for purposes of data retention.

In widespread disaster scenarios (famine, locust plague and the like) these longer-range devices may be needed simply to cover the disaster area, provide ground-to-air communications, etc. Ham operators have frequently provided radio links in this intranational context as well as in the international setting. We expect that hams will take on an increasing role in disaster field operations as their potential becomes better known to disaster managers, and as the state-of-their-art develops into high-tech (including satellite) applications.

Mission to OFDA

The State Department telegraphic system and commercial telephone systems are generally adequate to meet disaster coordination needs between OFDA and the field missions. When they do fail, or become overloaded to the point where official traffic is severely constrained, it is usually the consequence of a severe disaster. Then we're in trouble. OFDA has determined that we need dedicated resources to handle such situations. Because of the vagaries of long distance propagation, we have acquired a portable voice-grade satellite transceiver (the "Standard A" configuration utilizing the Inmarsat satellite network) and have access to others through federal and municipal collaborators.

The advent of greater portability and lower cost of satellite receiving equipment will no doubt be instrumental in dramatically increasing the capacity of the international disaster

response community to coordinate through communications. Attuned to this wave of the future are the advances of the amateur radio people and the Foundation for Global Broadcasting LifeNet program.

OFDA to Collaborators

OFDA has limited resources. We depend on other U.S. government agencies, the private sector, including voluntary organizations, and international organizations for many aspects of relief. Coordination through traditional means of letter, telephone and telex have been cumbersome. In recent years there has been a trend toward such electronic solutions as facsimile transmission. The wave of the present is symbolized in the concept of electronic mail which offers relatively simple and extremely fast transmission of messages at a cost consistent with some of the traditional media. The very concept of E-mail suggests networking; large numbers of respondents are tied into individual or group message dissemination and simultaneously (in most networks) into group-sharing "bulletin board" capabilities.

An encouraging example of this electronic networking is UNDRONET. Starting from the successes demonstrated by UNICEF in their groundbreaking networks, UNDRO has developed its own capacity and databases (e.g., situation reports) which are accessible to subscribers including other U.N. offices, national government agencies and private institutions and groups. U.N. field missions are being brought into the network, which theoretically, in the future, may offer UNDRO access to the full array of U.N. resident representatives and coordinators who serve also as UNDRO representatives around the world.

Using the combined capacities of computers and electronic mail, Volunteers in International Technical Assistance (VITA) has developed for OFDA an information sharing system that will collect, index, file and disseminate data to facilitate the matching of relief needs, offers and availabilities in the U.S.

This brief sampling of new communications applications is an indicator of the importance OFDA places on our coordinative function. We fully recognize the need for open and responsive coordination to best meet the needs of disaster victims--and those threatened by natural and man-made hazards.

Putting It in Perspective

OFDA has assembled hardware and skills to meet our perceived communications needs and to help disaster-stricken countries whose communications capacity may be lacking. Responsibility for coordinating a disaster relief effort, however, must reside with the government of the afflicted population. Once this reality is accepted, it is clear that the most effective means of improving coordination is to upgrade disaster-prone countries' communications capacity. OFDA has approached this challenge in three ways:

- introduction of basic radio equipment, e.g., single-sideband radios and antennae for national and regional network building;

- training in emergency communications and relief management skills;
- and encouragement in establishing and exercising standard procedures for coordinating relief responses.

On the international scene, the U.N. bears a significant responsibility in assisting disaster-stricken governments in receiving coordinated, appropriate relief from the donor community. UNDRO's mandate supports this function in the majority of disaster situations. The U.N. Resident Coordinators formally serve as UNDRO's agents in the field. The International Telecommunications Union has in the past been supportive in sorting out the priorities in disaster telecommunications policy and operations.

With some notable exceptions, the U.N. system has not had an outstanding record in providing timely coordination between host government and donors, including those within the U.N. system itself. There are encouraging signs: UNDRONET, as mentioned above, and the signal successes of the Office of Emergency Operations for Africa (OEOA) during the drought of '85-'86. The U.N. can serve as an effective coordination mechanism to serve the needs of disaster victims in a timely and appropriate fashion. It needs the political will to do so.

The Author

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