

# Battle-Proven Military Principles for Disaster Leadership

BY RICHARD MARTIN

**Editor's note:** The information presented here is based on the Canadian military model and does not mirror the tenets of the National Incident Management System (NIMS), with which all U.S. fire departments are to conform.

**A**S THE HURRICANE CONTINUED ITS RELENTLESS track toward the coastline, the weather service warned the public to brace and expect the worst. Civilians in the hurricane's path were evacuated in an orderly manner, starting with the poorest and most helpless members of society. Government emergency command centers were opened, local authorities activated well-rehearsed contingency plans, and military forces were mobilized in anticipation of the need for their considerable logistical and medical means. Meanwhile, emergency response forces were put at the ready and waited to spring into action in a concerted and coordinated manner. Reinforcements from neighboring jurisdictions were brought in ahead of the main assault and thus could rehearse and plan measures with their colleagues in the targeted areas.

Sounds good, doesn't it? Unfortunately, authorities rarely react in such a timely and effective manner. More often than not, elected representatives underestimate the potential impact of predictable disasters and overestimate their competencies for coping in a crisis. Contingency plans, if they even exist, are rarely if ever exercised, and politicians jealously guard their authority. The result is often a poorly coordinated hodgepodge of *ad hoc* responses to a rapidly developing situation.

The most critical lesson learned from the response to Hurricane Katrina was the need for strong leadership. Other important lessons concerned the need for situational awareness, valid information, and solid communications. There is really only one way to provide this kind of leadership and supporting infrastructure in a large-scale crisis, and that is military-style command and control. In fact, this a common theme to the lessons of major disasters in North America over the past decade or so, whether it be the Manitoba floods in 1997, the Ice Storm of the Northeast in 1998, 9/11, or Katrina.

This article provides an overview of the basic transferable principles of military command and control that are readily adaptable to civilian-led disaster and crisis response. I will examine each of these principles of military command and control and apply or adapt them to

disaster response and crisis management.

Most of the real-life examples in this article are of Hurricane Katrina, as reported in the May 2006 issue of *Fire Engineering* (references are to *Fire Engineering*). As the most devastating natural disaster in U.S. history, the Katrina experience, especially as it was lived in New Orleans, provides the most relevant and pressing lessons for management of future crises of all magnitudes.

## UNITY OF COMMAND

The essence of command and control is unity of command. As defined in the Federal Lessons Learned Report (FLLR) on the response to Hurricane Katrina, unity of command is "the concept by which each person within an organization reports to one, and only one, designated person. The purpose of unity of command is to ensure unity of effort under one responsible commander for every objective." (FLLR, 13) Without unity of command, resources are squandered and emergency response forces are not employed to their full effectiveness.

As examples of poor unity of command, *Fire Engineering* Editor in Chief Bobby Halton has written, "Lack of information and situational awareness led to (SAR and US&R) teams' being held in staging (areas) and left idle while needs unknown were left unanswered. This also led to the discovery of assets unused." Halton cited as an example "not using the Department of the Interior's flat-bottom boats despite their having been offered several times." (*Fire Engineering*, 221)

These types of mistakes are inexcusable in a crisis, and they can be readily addressed through centralized command, control, and planning. At a recent conference on ethics and emergencies hosted by the Centre for the Study of Democracy at Queen's University in Kingston, Ontario, there was considerable discussion about "Who's in charge?" during a crisis or disaster. Federal, state, and provincial governments in the United States and Canada have been legislating for years to answer this question. For instance, legislation in the Province of Ontario is quite clear on the matter. Mayors in Ontario have considerable discretion to exercise command during a crisis. Why so many politicians fail to exercise command and leadership effectively during a crisis is beyond the scope of this article. However, there are means that can be put in place starting at the local and municipal levels that can help greatly during a disaster.

This is when local emergency experts have to take a leader-

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ship role and provide timely and robust advice to elected officials at all levels of government. A clear lesson from large-scale disasters during the past decade has been that citizens expect nothing less than complete cooperation and proactive leadership of the most robust kind during a crisis.

Let's look more closely at the military approach. Command is the legal authority vested in selected individuals to exercise leadership, direction, and control of forces. Forces under command are legally responsible to follow the commander's orders if they are legally given. The headquarters and command post (CP) staff assists the commander in these functions and acts on his or her behalf, but final authority and responsibility always reside with the commander.

A central tenet of military organizations is that forces should be grouped into near-standardized units of progressively larger size that are deployed on a geographical basis. This ensures a balanced mix of forces to conduct operations in most conditions. Consequently, individual soldiers are grouped into squads; these are then grouped into platoons, companies, battalions, and brigades. Army divisions generally have the most balanced mix of forces. Large fire departments tend to follow this model closely.

Each of these units has one overall commander; an assistant or deputy commander; a headquarters with staff; a main CP; an alternate CP; and logistical, medical, and other support elements. They are responsible for all operations within a set geographical area. Generally speaking, especially in low-intensity operations, local commanders have the lead in deciding how to apportion their respective resources and in requesting reinforcements should the need arise. This is most relevant to disaster management.

It should be readily apparent that large-scale disasters and crises can be most efficiently and effectively managed using a similar pattern of organization. Many municipalities have this type of chain of command for local response, as indicated in Figure 1. There is an overall area commander for a small town. This individual is seconded by a deputy commander and has a headquarters with a staff and a CP. Each of the specialized emergency services has its own commander and is responsible for its own area of expertise.

In New Orleans during the Katrina response, many areas and elements of the fire department, EMS, and police were cut off without reliable communications. Forces reverted to localized rescue operations under the control of the fire companies. These local "mini-fire departments" established roving patrols to compensate for lack of central dispatch and effectively ran a "mini-city" in their respective areas of operation (*Fire Engineering*, 48). Local emergency responders, led by firefighters, adapted magnificently to the situation.

The similarity to the way an army would search for and then destroy the enemy (in this case, the "enemy" could be viewed as fires, wanton destruction, and looters) is uncanny. The fact that they spontaneously adopted the approach recommended here further testifies to the effectiveness of grouping firefighting, EMS, police, and scouting (reconnaissance) elements together into multirole and flexible "combined arms" teams working synergistically to create havens of safety and security for the local population.

There is also a clear need for a similar type of organization for large-scale crises that cross jurisdictional lines. Although geographical units of combined forces have a certain level of flexibility and a variety of resources, many capabilities are best centralized because of their rarity, inherent mobility, or value. The best example is air assets, specifically helicopters. Simply

Figure 1. Organization Chart

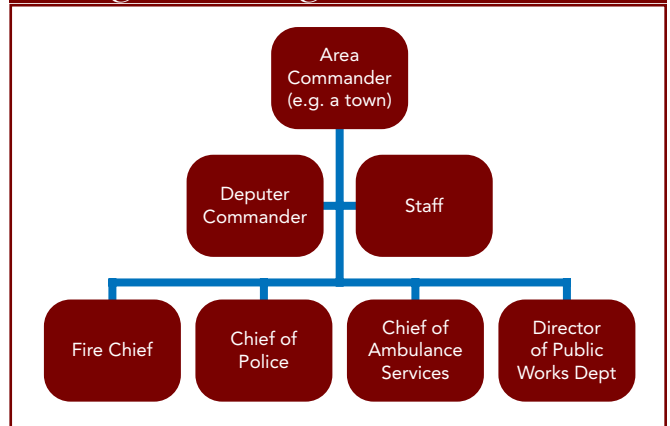
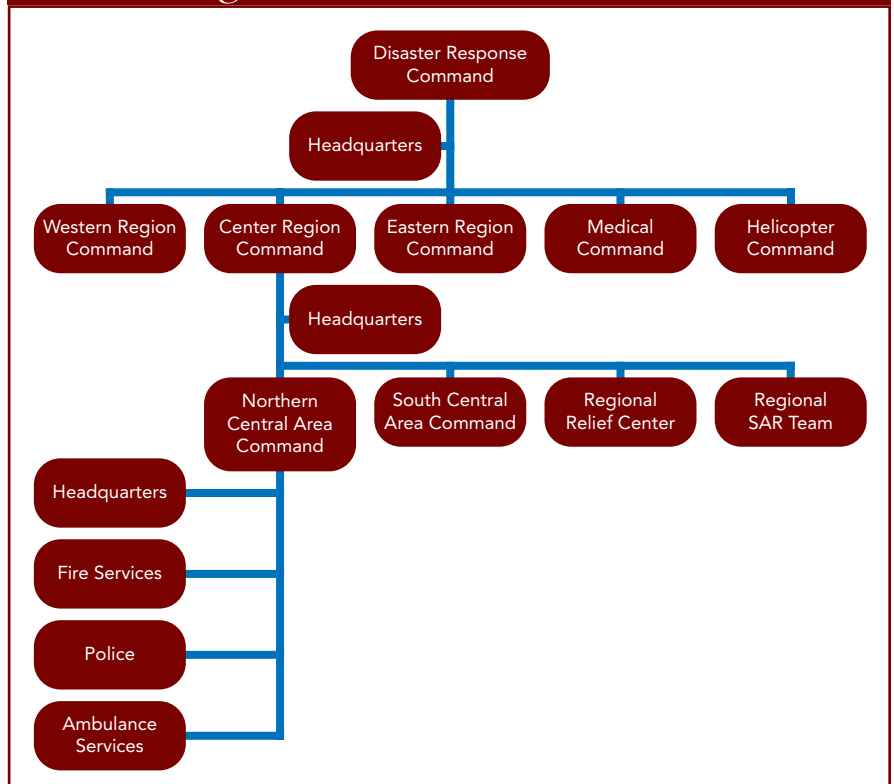


Figure 2. Centralized Control



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put, there are never enough rotary-wing assets. Moreover, their inherent utility in disaster response combined with special operating and maintenance requirements compel centralized control. This is illustrated in Figure 2.

The "ground" commander is responsible for assigning action priorities to the aircrew while the helicopter is present. However, the aircrew commander retains the overall command of the aircraft, including safety of crew and passengers.

Moreover, any ground forces on the helicopter come under the command of the crew commander. So long as the mission is being carried out in safety, the ground commander should be content to let the helicopter commander do his job. The same applies to other specialists such as medical teams, US&R teams, engineering task forces (for road clearance, for example), and the like.

Let there be no mistake: Line diagrams and preliminary arrangements prior to a

crisis are no substitute for leadership on the ground. They do, however, provide a ready-made approach that can be tailored to any situation. As the example of "mini-fire departments" in New Orleans shows, the principle of unity of command is timeless for the simple reason that it is the most efficient and effective means of dealing with a major crisis. No two situations are alike, and no two jurisdictions will ever come up with the exact same solution to the problem of unity of command. The key is to recognize its utility and to apply it unwaveringly in the face of disaster. Unity of command is the conduit for the exercise of heroic leadership in a crisis.

### PLANNING AND ORGANIZATION

Military forces excel at complex problem solving in a chaotic environment. One of the most telling examples of this occurred during the massive Red River flood in Southern Manitoba in the spring of 1997. The Canadian Army was called out almost immediately to assist civilian authorities at the specific request of the Manitoba government. (Note: The Canadian Army can be called on to play a role similar to that of the National Guard during disasters and crises.) The headquarters of the 1st Canadian Division provided much needed staff planning assistance to authorities of the City of Winnipeg (population approximately 500,000). Within a 24-hour period, led by the chief of staff and staff officers of the division, city planners were able to assess the situation, develop contingency plans for the most likely scenarios for the progression of flooding, and create highly realistic evacuation plans for the city. Had the flooding reached Winnipeg, these plans likely would have made a significant positive impact on the beleaguered population.

Planning and organizing operations are the responsibility of staff officers within a headquarters and CP. Staff officers are the brains behind any military operation. It is their job to take the commander's intent and concept of operations and to convert them into actionable plans, with assignment of responsibilities, tasks, and resources for subordinate organizations. These are



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then issued as orders and tracked by other operations staff officers, who help the commander control and coordinate operations.

There is a method to the madness. Various known as the Operational Planning Process (OPP), Joint Operational Planning Process (JOPP), the estimate of the situation, the combat estimate, and the commander's estimate, military forces the world over have developed means for group problem solving and planning in support of field commanders. Staff officers are highly trained in the art and science of planning and conducting operations. Most armies devote up to one year of formal training to future staff officers. This is not surprising given the high complexity of modern military operations. It is arguable whether disaster management requires such a major time commitment; but any training, individually or collectively, that can be delivered before a disaster likely would be extremely beneficial. The key is to recognize the direct applicability of such methods to civilian-led disaster response.

The basic approach to military planning involves a sequential analysis of the situation and problem at hand. The aim is to identify factors affecting the outcome; key deductions with their full implications; likely scenarios and courses of action to respond to them; and then a final decision by the commander on which course of action to take, along with a detailed plan for its execution. The approach discussed herein is adapted to the requirements of disaster response.

Here are the steps for a disaster response estimate:

- **Aim.** What is the objective or goal of the operation? This is often equivalent to the mission statement.

- **Factors.** What factors need to be considered in addressing potential courses of action? Examples of some factors to consider in a disaster include the following:

- Potential scenarios—most likely and most dangerous for the population and the organization
- Time and distance
- Weather and light conditions
- Assigned tasks and implied tasks
- Resources available or required
- Degree of danger to population and members of the organization
- Priorities

- **Courses of action (COA).** There should always be at least two courses of action, one to cater to the most dangerous scenario and one to the most likely. In other words, the commander should assume the worst at the same time as he plans for the most likely scenario to unfold. This reduces the likelihood of being surprised if the situation deteriorates quickly. For each COA, identify the tasks and the individuals who will be responsible to carry them out, along with the resources and the time needed to achieve them.

- **Comparison of COAs.** Compare the COAs in accordance with each factor. There are many methods for doing so, including complex quantitative weightings. However, simply identifying the relative advantages and disadvantages of each



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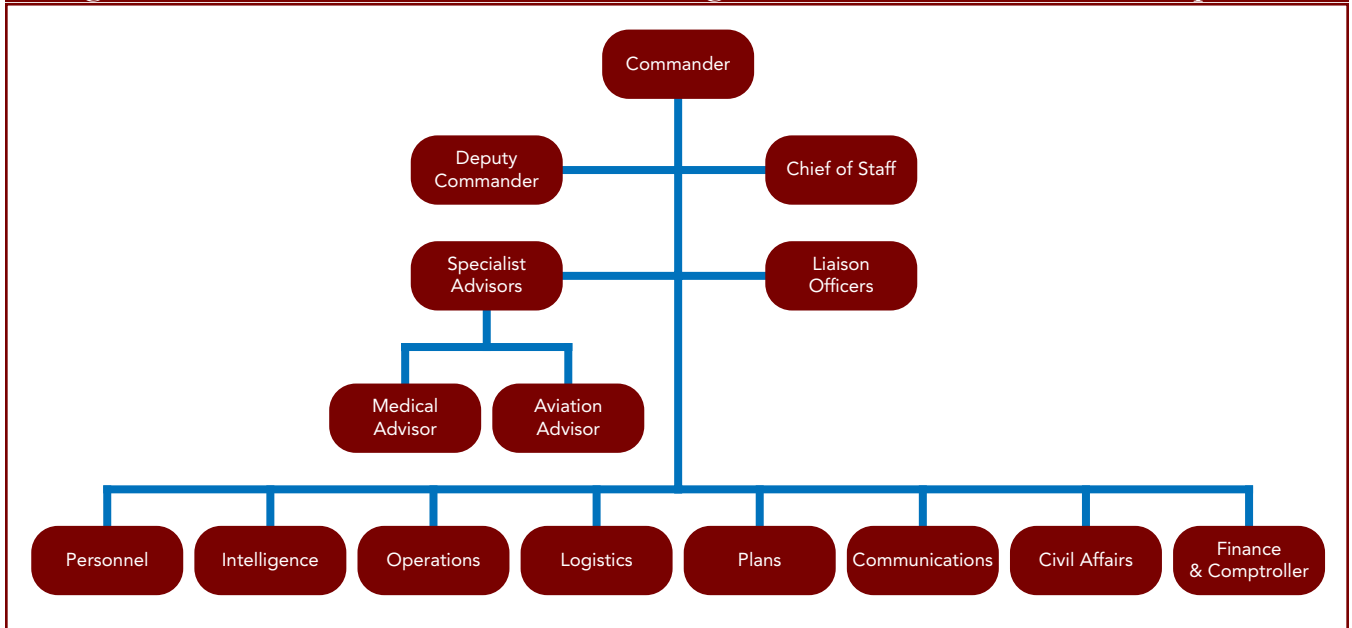


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Figure 3. Command and Control Organization for Disaster Response



option for each factor and overall provides plenty of insight into which COA is optimal. If a sufficient number of COAs have been generated and analyzed, this can also provide input for further contingency planning once the operation is underway, as a variety of scenarios would have been considered.

- **Decision.** The commander decides on the best course of action and then develops the plan and orders himself, or assigns this task to his staff if he has one, under the direction of the chief of staff.

Planning and organizing are amenable to rational analysis by groups of people. Although the expertise of specific areas is needed, many good ideas and insights can be generated by ordinary people who are willing to “think outside the box.” The important thing to remember is not to panic. By all means, respond to existing situations, but it is also critical to identify a dedicated staff of planners. The sooner these people can gel into a cohesive unit that provides deliberate option analysis and planning to a commander, the better will be the overall command and control of the operation.

### INFORMATION MANAGEMENT AND SITUATIONAL AWARENESS

Information is the lifeblood of crisis management. A truism of military operations is that initial intelligence is usually wrong, sometimes by a large margin. The same applies to any crisis or emergency situation. The first responsibility of any commander and staff is to gather the most valid and timely information possible. A key function of the staff in any headquarters is to manage information effectively. In fact, most poor decisions can usually be traced to lack of timely information, not to incompetence or other professional factors. This is the lesson of the flat-bottom boats that went unused in New Orleans. If local commanders and staff had simply known of the Department of the Interior’s offer of assistance, they surely would have pounced on the opportunity.

The military staff system provides a ready-made approach to managing and disseminating the mass of data, information, and knowledge created during a disaster of any scale. Figure 3 gives a sample command and control organization for disaster response. It is modeled on the continental general staff systems that most armies now use.

- **Commander.** Has the overall responsibility for conducting and planning operations and for the personnel and populations under his care.

- **Deputy Commander.** Second in command of the organization. This individual usually spells off the commander during the night shift. In lower-level organizations and in small-scale disasters, this individual may act as the chief of staff, thereby obviating the requirement for someone in that position.

- **Chief of Staff (COS).** Responsible for the effective and efficient running of the headquarters and staff. This individual can act as deputy commander in the absence of the actual one. There could also be a deputy COS to spell off the COS during night hours.

- **Specialist Advisors.** Figure 3 shows a medical advisor and an aviation advisor. In practice, advisors usually are only at higher levels of command. In smaller units or lower levels of command, these individuals would usually be the team leaders of specialist reinforcements. This category could also include less generic advisors. For instance, if dangerous chemicals are a concern in a specific area, then the higher commander may assign a special response team to that organization. In such a case, the team leader may be the special advisor to the commander for dangerous chemicals.

- **Liaison Officers.** Higher and flanking commands could have liaison officers present in the headquarters. The headquarters is also responsible for ensuring proper liaison with subordinate headquarters and commanders.

- **Head of Personnel.** Responsible for headcount, admin-

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istrative services, and reimbursement of personal expenses. May also have responsibility for medical care of emergency workers and volunteers.

- **Head of Information and Intelligence.** Responsible for gathering and collating all necessary information about the disaster, including extent of damage, location, and numbers of population requiring rescue, evacuation, or relief. If public security is an issue, police forces may be needed to track threats such as looting and arson.

- **Head of Operations.** Responsible for gathering and maintaining information about emergency forces engaged in operations within the boundaries of the organization. Generates and maintains a common operating picture of the disaster area using mainly graphical means. Operates main and alternate CPs 24/7. The public relations staff could be subordinated to the Operations Branch to ensure timely and accurate transmission of relevant information to the media and the public.

- **Head of Logistics.** Responsible for logistical planning and tracking of resources. Coordination of support services such as base camps, transportation, materials supply, and medical support to disaster workers.

- **Head of Plans.** Responsible for conducting future planning under the direction and guidance of the commander and the chief of staff. The aim is to free the commanders and current operations staffs to command and control operations with the knowledge that planning for the next phase of operations is underway. This is normally only one or two individuals. For major planning, a planning team can be assembled under their direction with representation from each of the staff branches and the specialist advisors.

- **Head of Communications and Information Systems.** Responsible to ensure that all subordinate elements, headquarters, and CPs have reliable communications within the area of operations of the command. This is a top-down responsibility, which means that a superior command is responsible to ensure connectivity with each of its subordinate commands. An additional function is to maintain the information

technology and to ensure the computer networking systems are functioning properly.

- **Head of Civil Affairs.** Responsible for the identification and inventory of civilian infrastructure, equipment, and people that could be of help in responding to the disaster and in providing relief. Also responsible for establishing and maintaining lines of communication and cooperation with governmental and nongovernmental aid and relief agencies, governmental authorities, and volunteer groups.

- **Head of Finance and Comptroller.** Responsible for budgeting, tracking expenses, and auditing. This function could also be included under the chief of logistics function.

The central product of information management, and the main tool in attaining situational awareness, is the common operating picture (COP). The Canadian Army's command and control manual defines the COP as a "representation of operations that can be tailored by users, based on common data and information shared by more than one command. (It) facilitates collaborative planning and assists all echelons to achieve situational understanding."

Visual displays are often the most effective and efficient means of encapsulating and conveying the required data and information. Examples of visual displays follow:

- Maps of varying scales depicting the area of operations and adjoining regions.
- Clear plastic overlays to depict various elements of relevant information, such as areas of flooding and power outages, for example, in a natural disaster.
- Weather maps and weather forecasts for varying lengths of time.
- Organization charts of the headquarters and subordinate elements within the command.
- Various action lists, such as areas requiring coverage by search and rescue teams, those requiring evacuation, and those requiring supplies.

This list is not exhaustive. Generally speaking, any kind of information, especially if it can be conveyed visually by graphical means, is useful in building

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a common operating picture. This could also include graphical depictions of future operations currently being planned, complete with assembly areas, routes, and no-go areas, for example.

The key thing to remember in assessing whether to include such information in the COP is whether it is likely to add to the commander and the organization's awareness and understanding of the situation or whether it simply complicates matters and creates confusion. In practice, this may involve a judgment call by the chief of staff or chief of operations. That is why it is important to keep an open mind and to adjust the content and format of the COP as experience and the situation dictate. The commander's key role is to make his preferences known, although he must also realize that the staff running the CP also needs this information to manage and control operations efficiently and effectively on his behalf.

### ORDERS AND COORDINATION

Military commanders generally exercise their authority by giving orders. These orders are then executed by subordinate commanders with the assistance of their staff. Orders can be formal or informal, deliberate or fragmentary.

Whether or not the commander has a staff, he should always prepare written instructions and directions for his troops at the beginning of an operation. The same should apply to a commander in a disaster response operation. Although it may take a bit longer to produce written direction, it also has the main advantage of being a clear and precise exposition of the entire plan, from start to finish. In addition, written direction can be referred to later, when the situation becomes more confused and hectic. As the operation unfolds and the commander and staff go through another planning cycle, they can issue briefer orders, known as fragmentary orders (Frag Os), and they usually refer to elements of the written orders.

Whether issued verbally or in written form, orders should always follow a set format. Most military forces in the world use some variant of the NATO standard orders format. This subject is too vast for this article, but here are the key head-

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ings to cover:

- **Situation.** A brief exposition of the situation in the area of operations. This should include expected weather patterns, a physical description of the area, the extent of damage and destruction, and disaster response forces already in place. This section should also provide a brief overview of the higher commander's intentions and plan.
- **Mission.** This is a concise statement of what the organization is expected to

accomplish. Here is an example: "By no later than 1800 hours tomorrow, we will establish a firefighting and rescue capability in Area A with a view to assisting the local authorities of County X."

- **Execution.** This is a complete description of the plan. It includes the following key subject areas:
  - The commander's intent and concept of operations, including phases of the operation.
  - How the force is to be organized

into specific groupings, as well as identification of element commanders.

- The specific tasks of each subordinate element for each phase of the operation. These tasks are the basis of the subordinate commanders' own mission analysis, estimate, and planning.
- Detailed coordinating instructions such as timings, locations of assembly areas, base camps, areas of operations, relief camps, police facilities, and government assistance centers.

- **Support.** This section details all of the logistical and medical details needed to run the organization for the particular operation. This includes special financial arrangements; how and where to get supplies; sleeping and hygiene facilities; rations and meals; fresh water; fuel; and locations of hospitals, clinics, and infirmaries for the population and for the disaster response workers.

- **Command and Communications.** The section should give a clear description of the chain of command, including the succession plan in case of death or injury of key personnel. It should also indicate the expected locations of the commander, deputy commander, and key staff officers, as well as the means of communicating with them at all times.

## COMMUNICATIONS AND COMMAND POST OPERATIONS

If information is the lifeblood of crisis management, then the communications network is the circulatory system. Simply put, you can have the best-laid plans and superb orders, but if you can't get the information out to subordinates and supporting organizations and coordinate their activities, then there is no command and control.

In fact, this is one of the key lessons of Hurricane Katrina, one that has been reported in the Federal Lessons Learned Report as well the House of Representatives report into the response: It is recognized that "Massive communications damage and a failure to adequately plan for alternatives impaired response efforts, command and control, and situational awareness." (*Fire Engineering*, 29) This had a direct impact on the ability to deliver relief in a timely and efficient

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manner and resulted in "paralyzed command and control." These are very strong statements; they show how critical effective communications are in a crisis.

A properly functioning communications network is vital to the exercise of effective and efficient command and control (also known as C2). This net can be based on a variety of means. Ideally, there should be many redundant means of communication. For instance, there should be a VHF command net to ensure reliable radio communications at all times. This can be supplemented by another VHF net (operating on a different frequency) for logistical and support matters. All of this should be supplemented with satellite and cellular phones, as well as landlines, although the latter two are likely to be nonoperational in a widespread disaster, at least in certain areas.

But, effective networks aren't the only piece of the puzzle. A military-type CP is the information hub in disaster management operations. This is where the commander and his key staff get the most up-to-date information on the situation and the area of operations. The staff of the CP must ensure continuity at all times through the deliberate establishment of a battle rhythm, generate and maintain a common operating picture, and run the communications network. Let's look at each of these aspects in sequence.

The organization and running of the CP should be delegated to the deputy commander or the head of operations, if

there is one. This leaves the commander with the flexibility to get out and see the area of operations, the population, and the members of the organization. It is critical that the commander have someone reliable and competent to run the CP while he exercises his command presence. Whenever a commander is on the go, he must have access to secure and reliable communications, so he can stay in touch with the CP and subordinate elements and be easily reached by the principal staff officers. However, this may be limited to radio and satellite phone, depending on the level of destruction to landlines and the cellular network.

Each level within the disaster management organization requires a CP. In the case of a very small element, there might be only one or two people available and needed to run it. That may include the commander part of the time. The larger and more varied the reach and responsibilities of the organization, the more the CP must have its own dedicated staff. This entails a permanent current operations staff led by a highly competent officer (such as the deputy commander) to ensure continuity and effective information management. Moreover, at higher levels of command, the CP will likely be only one part of the headquarters. At lower command levels, the CP itself will provide the entire headquarters function, in combination with a few key individuals such as the commander and his deputy. Most important of all, the CP is essential to maintaining continuity of command and control.

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Municipal emergency response systems such as fire and police departments, ambulance services, and 911 dispatch services are designed and built to operate 24/7 at a normal load. However, disasters don't only strike from 9 a.m. to 5 p.m. and certainly don't recognize the restrictions of shift changes. When disaster strikes, local emergency services must immediately go into full response mode and keep command and dispatch centers at a much higher level of readiness.

Governmental authorities at all levels must activate their respective centers as soon as possible. They must be staffed and equipped to operate 24 hours a day for weeks or even months.

Once activated, they must operate on the assumption that the disaster will take months to resolve. Even more important, though, is the requirement to have headquarters and CPs to direct the operations of disaster response forces. A shift system must be instituted as soon as they are activated. Deputy commanders and key staff officers must be assigned on a staggered basis throughout each day to ensure adequate authority and decision-making power at all times. This is most important during the early days of a disaster when key people will want to be present at all times.

After about 48 hours, however, the human body starts to shut down. It becomes increasingly difficult to exercise sound judgment and to reason properly. Sleep deprivation can even lead to hallucinations and mild psychosis. The bottom line is this: Once a commander has been spelled off by his alternate, he must get out of the CP and get some rest and refreshment. He will be of no use if he turns into a walking zombie during the most active phase of the response. The same applies to key staffers and advisors. They must get their rest because they will need it.

Another aspect of this problem is that there is a natural daily cycle that applies to all operations of this type. Even military forces can't really operate all the time, despite all the modern night-vision technology. Nighttime poses a natural limitation on disaster response activities of an extended nature. There are two reasons for this. The first is that operations in the dark are not as speedy and efficient as daytime operations, and darkness also poses a major threat to the safety of all types of operators. The second reason is that humans are less effective at night. This is a basic biological rhythm that affects all humans. Even well-rested, competent people can become quite inept in the early morning hours. Imagine when disaster relief operations have been ongoing for days, or even weeks. Trying to operate at three or four in the morning is especially dangerous. A regular cycle of sleep and rest helps, as do regular meals and personal hygiene. But in the final analysis, true 24-hour operations are more of an ideal than a reality.

The extent of damage to emergency facilities during Hurricane Katrina highlights the requirement to ensure redundancy of resources, especially command facilities and support bases. There must be main and alternate headquarters or CPs at all command levels, as well as dedicated C2 facilities for the support elements. At lower command levels, alternate and support CPs are often one and the same, and this could be applied to

### Sample of Key Activities for Sequencing in the Daily Battle Rhythm

- 0600: Shift change.
- 0700: Morning operations briefing using the common operating picture in the CP. This involves key staff and is directed by the staff officer in charge of the CP, either the deputy commander or the chief of staff.
- 0830: Commander's morning update on overnight events and unresolved issues. Review of key tasks and events for the day, including the commander's schedule. Issuance of guidance and direction for the day to the staff and subordinate commands.
- Throughout the day: Coordination meetings and planning conferences as required.
- 1200: Shift change.
- 1530: Daily press conference by commander or his representative using information gleaned from the common operating picture and situation reports from the day's activities.
- 1800: Shift change.
- 1900: Evening operations briefing.
- 2030: Commander's evening update. Issuance of guidance and direction for the night to the staff and subordinate commands.
- 2400: Shift change.

the highest levels also.

The CP's battle rhythm sets the pace for operations within the entire organization. According to the Canadian Army's command and control manual, battle rhythm is the "daily operations cycle for briefings, meetings, report requirements, etc...." This cycle is essential "to ensure information is available when and where required." See "Sample of Key Activities for Sequencing in the Daily Battle Rhythm" above.

What is the role of digitization and computerization in all of this? There is much to be gained from automating and digitizing much of the data and information management, as well as the graphical display of images as part of the COP. The organization could make significant gains in speed and efficiency, potentially leading to a requirement for less staff. Moreover, you can convey digitized data and information rapidly over digital communications networks. However, you must weigh these advantages against the following constraints.

The management and transmission of large volumes of digital data and information require the existence of secure and stable information systems and wideband digital communications networks. There is a high likelihood that many of the systems that we as a society rely on to conduct our electronic business would be wiped out or severely hampered in any kind of large-scale disaster.

This has been illustrated time and again; Hurricane Katrina is only the most recent example: "The complete devastation of the communications infrastructure left responders without a reliable network for coordinating emergency response operations; ... neither 911 service nor public safety radio communications functioned sufficiently." (*Fire Engineering*, 24) In fact, it was this precise lack of communications that led to the formation





## ● DISASTER LEADERSHIP

structure, though, airports play a very special role during large-scale disasters. Despite the chaos at Louis Armstrong International Airport in New Orleans, it was a major hub for logistics, relief, and evacuations. The fact that it was overwhelmed only adds to the lesson that airports are probably the most critical infrastructure. Quite simply, airports are large flat areas with good drainage and some level of hangar space. Case in point: "The amount of space required to house the large volumes of commodities and people required large industrial and military staging areas—often filling entire runways with hundreds of trailers—accessible to heavy equipment and aircraft" (*Fire Engineering*, 22).

In fact, this is a common lesson of disaster relief in recent years. The example of Pensacola Airport during Hurricane Ivan in September 2004 is instructive. As reported in *Airport Magazine* (July/August 2005, 22-25): "No food, no water, no cell phones, no landlines—and no chance of closing Pensacola Regional Airport. In the span of a few days..., the medium hub airport was transformed into a pre-storm evacuation center, suffered a direct hit from a violent hurricane, and immediately re-opened as the staging area for an entire city's relief efforts."

At the other end of the spectrum is the need to cater to the human element of operations. Commanders must assume that the disaster will require the full forces' resources for an extended duration. This makes regular rest and replenish-

ment absolutely essential. Everyone must be expected to work extended shifts and to make Herculean efforts; but all people, no matter how robust and resilient, need to rest, eat, and clean up every day. Napoleon said that an army marches on its stomach. This means that hot food, clean water for drinking and washing, and decent ablution and toilet facilities are needed. They must be provided to emergency workers, even if the local populations must do without. This may appear cruel; but if firefighters, search and rescue specialists, police officers, and troops go without these amenities, morale will sag as will effectiveness and efficiency. This is a simple reality.

...

This article provides a quick overview of the basic principles of command and control that are readily applicable to disaster response and large-scale crisis management. It is a highly complex subject that needs serious consideration and study in times of calm, before the "storm." But preliminary preparation and contingency planning can go only so far. They cannot cater to every possible situation and eventual-ity. Military techniques of command and control provide an approach that allows tailoring of response to the situation as

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## ● DISASTER

it unfolds while allowing the exercise of unified command, centralized planning, decentralized execution, and efficient and effective relief of beleaguered populations. That is the key role of emergency responders during a disaster. Citizens expect nothing less.

Take the time now, while the lessons of Katrina and other recent major disasters (including 9/11) are still fresh in everyone's minds. Review the contingency plans of your jurisdiction and department as well as command and control arrangements. Do you have the means to exercise leadership and to support the heroism of firefighters, police officers, soldiers, search and rescue specialists, doctors, nurses, ambulance attendants, and paramedics?

Would your organization be capable—RIGHT NOW—of continuous 24/7 operations for months on end? Would you know how to call out all first responders and volunteers in a crisis, despite disruptions to the power grid and communications networks? Have you stockpiled radios, batteries, medical supplies, rations, and fresh water? Have you scouted alternate locations for CPs and facilities? Do you have preliminary arrangements with private companies and neighboring jurisdictions? Most importantly, are your people ready? Do they have the skills and knowledge they need to be the leaders and the heroes in a crisis? ●

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