

Lost and found: The missing person search

Fire departments are often enlisted to aid a search for a missing person. Here's how incident commanders can marshal the necessary resources, establish a search area and control the scene effectively.

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Most children can make national news, but what we see on television is just the tip of the iceberg compared to the number of searches conducted in the United States and the organization it takes to manage one.

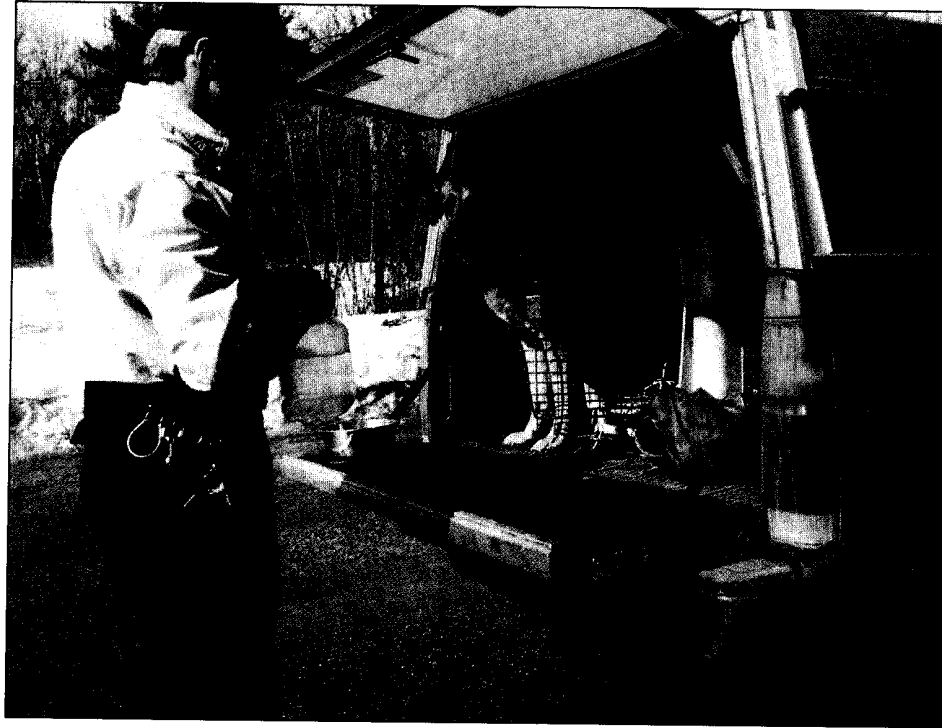
Emergency services organizations operating in rural areas must expect to assist in a lost person search. As with many other situations, the fire service is called on because of the expertise and dedication of its members and its capability to mobilize many people in a short time.

When the mobilization of search forces is not balanced with proper management, however, problems can develop. Incident commanders and their staffs must adapt to special circumstances and available resources, and as the search escalates from step to step, all participants must understand how their actions fit into the overall picture.

Initial response and size-up

The first investigator usually will be a police officer who meets with the reporting party to begin the on-scene data collection needed to initiate a search. For the reporting party, this information should include name, address, telephone number and relationship to the missing person.

Information on the missing person should include all those elements, plus:



Photos by Chad Celinas

- age, sex and physical description;
- clothing description (including shoe style and tread pattern);
- any destination plans the missing person may have had;
- the missing person's state of mind and any statements made when last seen;
- health and general condition;
- any previous missing incidents involving this person;
- names and addresses of work, close friend, and usual hangouts;
- and, most importantly, time and place last seen or heard from.

The officer who initially obtained all the necessary data must determine the urgency of the particular call. For example, is the missing person a healthy adult who is a few hours overdue from a fishing trip, or an elderly nursing home resident? Is the person a teenager who is late returning home from a dance, or a young child who has wandered away? Information on the individual's health, mental status, time of day and weather will influence the urgency of the search.

If the responding officer decides the situation isn't urgent, then standard patrol procedures should be followed, that is, checking hangouts

One of the initial resources to be deployed in a missing person search should be K-9 units, with tracking dogs sent out first, followed by air-scent dogs.

and route traveled. If the officer determines that the situation is urgent, then the search is escalated.

A profile of the missing person is vital to the search commander's plan and will help pinpoint areas where the person is more likely to be found. Four factors should be considered when assembling a search.

- The identity of the lost person (child, skier, hiker and so on).
- The type of terrain. Flat terrain will yield a greater travel distance than hilly terrain, and the area should be examined for barriers, escape routes, ridges and other natural features.
- Weather conditions that can contribute to a person's travel distance and to medical problems, such as hypothermia or heat prostration.
- Personality features such as mental state, fears or phobias, knowledge of the area's terrain, and comfort level in the outdoors.

The incident command staff analyzes this data about the individual and area and decides how to search



Above: These volunteers are gathering for a search training exercise. Below: The Mattson Consensus Formula is used to determine which sector to search first, based on the averaged percentages assigned to each area by the search leaders.

Mattson Consensus Formula for probability of detection

Rescuers	Search sector percentages									
	A	B	C	D	E	F	G	H	I	World*
1	10	5	30	15	20	0	3	1	15	1
2	5	3	20	15	25	5	2	4	20	1
3	9	6	10	10	20	3	5	5	30	2
4	4	4	15	10	25	3	5	3	30	1
5	12	3	25	10	15	7	3	1	22	2
6	15	5	15	10	20	5	3	1	24	2
Averages	9	4.5	19	12	21	3.5	3.5	2.5	23	1.5

Search order based on averages: I, E, C, D, A, B, F, G, H, World*

* Area outside defined search area

with the resources available. The information provided by the original dispatcher and investigating officers gives the staff a picture of the missing person. Using this information, the command staff can decide where to search.

The first step for the command staff in establishing a search area is determining its borders. Statistics compiled by the National Association for Search and Rescue show that about one-third of all lost people are found within one-half mile of the point last seen, and 90% are found within a 5-mile radius. The search perimeter should be drawn using drafting tools and a topographic map, with the center the "point last seen" and the radius of the circle the estimated travel distance of the lost person. (See page 104.)

The Mattson Consensus, a formu-

la that breaks topographic maps into sections and determines the missing person's "probability of location," is a helpful way to decide which sector to search first.

Using this technique, six to eight command personnel develop a chart of sector probabilities for evaluation by each of the group members. Based on their knowledge of terrain and the individual, they assign each sector a probability percentage of the lost person being found there. Each sector's probability estimates are averaged, and the one receiving the highest percentage will be the first to be searched, with the others ranked in numerical order.

Coordination

During a missing person search in a rural area, a large number of people will be required to cover the terrain. A typical search can involve 50 to

300 emergency service personnel from many agencies and communities, so a unified approach should be used when setting up the incident command staff.

A unified command is needed because each agency's efforts are needed, and every agency must be kept up-to-date on the search and its status. No incoming organization should be operating on its own; all resources must be managed under the incident command system.

As these forces are marshaled, they must be staged. Incoming resources should be assembled some distance from the actual search site, under the control of a staging officer. The command post itself can be some distance from the "point last seen." It may be the local police or fire station, or even a private building or home, but it should always provide shelter, water, telephones and rest rooms.

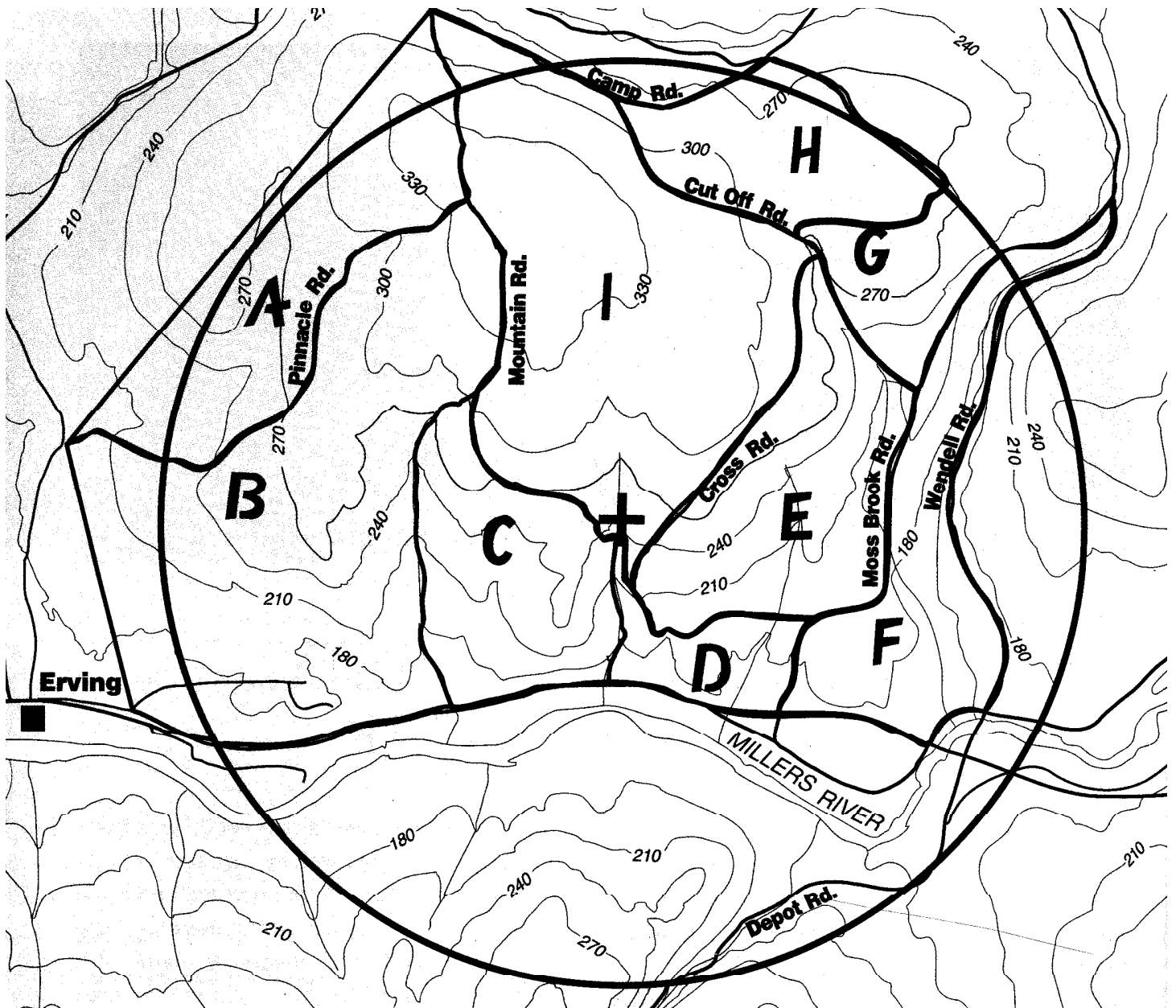
As people arrive, the staging officer should begin breaking them into groups, the number of people needed in each dictated by the terrain and nature of the search. Specialty groups like K-9 search units, dive teams and air support should have access to the command post through liaisons. They also should be organized and dispersed into the search area first, with teams using trained air-scenting dogs given first priority. A good resource in the command post is a person with K-9 handling experience to help coordinate their efforts.

Once specialty groups have received their assignments, foot searchers should be organized into teams. Each team should be accompanied by a radio operator and medic and have a leader who is familiar with orienteering.

Safety officers should check their groups for proper dress, physical conditioning, adequate supplies of water and other necessities before moving them into the assigned search sectors. To ensure personal accountability, safety officers also should record attendance when teams leave and return to the staging area.

Once the groups have been established, briefed and given their assignments, they are ready for transport to their particular sectors. Traffic congestion can be kept to a minimum by allowing only one or two personal transport vehicles into the search area at a time. Under some circumstances, K-9 units should be permitted to take their own vehicles into the search area to carry equipment and supplies for their dogs.

While the search teams are orga-



nizing, a "hasty search" should be under way. In this type of search, mobile units in contact with the incident commander cover the roads within the search area and at the perimeter, stopping frequently to listen and call for the missing person. During the hasty search, a trained K-9 tracking dog (as opposed to an air-scent dog) should be placed at the point last seen to attempt a track. The vehicle patrols and tracking dog might find the lost person before foot searchers even begin looking.

Difficulties increase as the search area increases. It's important to remember that the search area can grow larger with each passing hour, so keeping personnel in reserve in the staging area is a smart idea. If they're needed because the area is increasing, or a sector can't be completed by the original team, they're ready. By establishing the perimeter

of the search area quickly, the missing person can be confined and the search brought to an early end.

Personnel debriefing

As a group completes a search of its assigned sector and returns to the staging area, each person should be given a quick survey for any injuries or medical problems. After returning to the staging area, the group leader must report to the command post, either in person if it's nearby or through radio if it's not easily accessible. The command staff and incident commander need to know if the team members located any missing people, were injured or ran into unforeseen problems.

The command staff also needs to know if the group was able to complete its mission, if the leader thinks the sector was cleared, or if another search group should re-enter that sector. Certain types of vegetation

Working outward in a circle from the "point last seen," search leaders should establish a perimeter for the search area and separate it into sectors, based on topography and natural and man-made barriers. The sectors should be searched in the order calculated by using the Mattson Consensus Formula.

and terrain might require that a sector be searched by more than one group.

While the group's leader is briefing the incident commander and staff, the members should be medically rechecked and given food, water and rest. The leader should also be medically rechecked after debriefing and tell the group about any new developments. This added information will help keep the team members focused and reduce some of the stress associated with the search.

If a search continues for a long

time, or ends with the discovery of a severely injured or deceased person, the incident commander must deal with the effects of traumatic stress on the rescuers. A search that is prolonged or that ends in tragedy is a classic example of a critical incident, so CISD teams should be made available to rescuers needing their services.

Although a CISD team need not be dispatched to the site initially, one should be put on alert when the search is being organized. Then if critical incident stress concerns arise, the team has already had preliminary contact.

Logistical concerns

Sometimes the easiest part of a search operation is the marshaling and deployment of numerous agencies and several hundred emergency responders. The difficult part is managing the resources needed to support the operation. Several important logistical concerns must be addressed throughout the operation.

Scene control

If a child is missing, the public will appear. There are scanners in every community, making the possibility of people showing up "to help" a certainty. With few exceptions, only trained personnel should be searchers. This keeps civilians from injury and limits the community's liability.

There may be times, however, when the need for additional personnel will make using civilians as searchers a necessity. The staging area still serves a vital function in this regard.

Volunteers can be reviewed in the staging area for physical conditioning, health problems, proper dress and any other concerns. All civilians capable of participating in the search should be assigned to experienced searchers with specific instructions as to their duties and responsibilities.

Good Samaritans who aren't assigned in the field can still be a great asset. For instance, civilians can assist in cooking for and feeding personnel in the staging area or keeping records.

The search scene itself should be secured to keep Good Samaritans away from the area. As with fire-ground operations, there should be no free-lance operations; everyone participating in the operation does so under the goals and objectives of the incident commander. Free-lancing Good Samaritans can not only jeopardize their health or the health of others, but also hinder or inter-

rupt the searching techniques and patterns of tracking dogs.

EMS

The fact that the missing person might require immediate medical attention is reason enough to warrant an on-scene EMS group, but no one, especially a rescuer who has been injured, should have to wait for an EMS vehicle to respond.

If there are a large number of searchers in the field, several standby units may be required. At no time, however, should less than one EMS unit be on scene.

Public information

A public information officer is vital, because the public and the media will hear about the search and want more information.

Media representatives must be dealt with courteously, because they can make your operations look good — or just the opposite. If no PIO is available, the media will find someone to speak with who may not be the best person for the job. Media representatives looking for information could also enter the search area and hinder operations.

Continuation of operations

Ideally, every lost-person search

would be conducted on a nice, warm, sunny day. Unfortunately, that's not the way the world works. What if the search is still going on and dusk is approaching? What if the original call came in shortly before dark, or after dark?

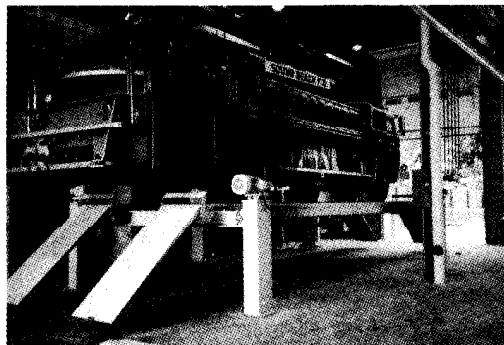
Under most circumstances, it's not a good idea to put foot searchers in the woods after nightfall. In the event of a night search, foot patrollers should be told to get rest and return to the staging area shortly before dawn. Then they can be briefed and organized into groups to start or continue the search.

The lost person doesn't have to be abandoned just because daylight has ended, however. At night, the focus of the operation should switch from sector searches in the woods to perimeter and road searches with vehicles. Shifts of rescuers can patrol the roads, access paths and trails with emergency vehicles and ATVs. As with the hasty search, during these patrols the units should stop every 100 yards or so and shut off their equipment to listen for anyone in the woods and call out.

General considerations

Emergency services personnel should sit down and develop an action plan in the event of a search.

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National search and rescue resources

American Rescue Dog Association
Penny G. Sullivan, president
P.O. Box 151
Chester, N.Y. 10918
914-469-4173

This association acts as a coordinating agency for rescue dog teams across the country.

Appalachian Search and Rescue Conference
David Carter, incident commander
P.O. Box 440
Newcomb Hall Station
Charlottesville, Va. 22901
804-924-3472
For immediate contact, call Carter at 804-466-8094 or 804-437-4635.
Eight trained search teams in Virginia, Maryland and Pennsylvania are affiliated with this group, the largest interstate organization of its kind.

Emergency Response Institute
Robert Stoffel, president
4537 Foxhall Drive N.E.
Olympia, Wash. 98516
360-491-7785 or 509-782-4832
The institute publishes an internationally recognized standard text on search management, called "Search is an Emergency," and offers a 38-hour training course for public safety personnel that includes basic search procedures and practical map problems.

International Association of Dive Rescue Specialists
Steven J. Linton, executive director
P.O. Box 5259
San Clemente, Calif. 92674-5259
714-489-2004
fax: 714-489-5955
24-hour emergency hotline: 800-423-7791
This non-profit association coordinates water rescue teams across the country.

International Critical Incident Stress Foundation
5018 Dorsey Hall Drive, Suite 104
Ellicott City, Md. 21042

If your department is in a rural area, it's not a question of whether you will ever mobilize a search, but when. Preplanning is essential.

It's 4:30 p.m. on Friday of Labor Day weekend, and your department has been called on to begin a missing person search that could last several days in a densely wooded area. Where can you get portable toilets? These are some of the logistical concerns that must be thought out prior to any search being started.

Your plan should include the availability of resources such as ambulance services, aircraft, ATVs and snowmobiles, boats, communications, dive teams, search dogs, food and water, fuel, generators and lighting, heavy equipment, personnel, toilets, buses, and tow trucks.

Operation guidelines should

include strategies for getting and using this equipment under all circumstances. After the plan is finished, a series of drills should be held to practice and hone the principles needed to effectively manage a lost-person rescue. The time to work out the problems among agencies and with guidelines is on the drill field, not when someone's 3-year-old is in the forest.

The morning after the search is over, your department members, townspeople and elected officials will be reading about the operation in the local papers and seeing it on the news. Overreaction on the part of search operations is justifiable. Underreaction is inexcusable.

Preplanning is the key to an effective search operation. Control and communication are the keys to a

410-730-4311
fax: 410-730-4313
24-hour emergency hotline: 410-313-2473
This agency coordinates more than 350 critical incident stress management teams nationwide, offers training in disaster services and serves as a national clearinghouse for information.

Mountain Rescue Association
200 Union Blvd., Suite 430-1355
Denver, Colo. 80228
More than 80 rescue teams, staffed by 2,200 volunteer members nationwide, belong to this association, which provides regional training and testing in mountain rescue and safety. Contact Vice President Tim Cochrane at 303-328-5332 for information on educational programs, and Tim Kovacs at 602-973-5586 for member services.

National Association for Search and Rescue
Lynn Leahy, training programs director
P.O. Box 3709
Fairfax, Va. 22038
703-352-1349
fax: 703-352-0309
This non-profit educational organization offers a full range of training in search management, from tracking to incident command to wilderness first aid. NASAR has qualified instructors in every state who can provide training for public safety personnel.

Wilderness Medical Society
P.O. Box 2463
Indianapolis, Ind. 46206
317-631-1745
fax: 317-259-8150
Most of the 3,000 members of this international organization are physicians trained in the practice of emergency medicine in wilderness areas. Call the society to find out if there are any members in your area.

Search management training and assistance are also available in many areas through county sheriff's departments or state emergency offices. Contact officials in your area for information. **PC**

well-run search, and their lack will lead to a crisis-based operation.

For a search to be executed effectively, guidelines and resources must be in place before the call comes. Agencies also must train together to work together. The point of a search operation is not whether it was police, fire or K-9 personnel who found the lost person. The point is that the person was found. **PC**

Robert F. LaFord has been active in the fire service for 11 years. He has been a career firefighter with the Orange (Mass.) Fire Department for nine years and is currently involved with the department's training. LaFord is also an instructor at the Massachusetts Fire Academy. Clay Rushford is a 14-year veteran patrol officer with the Orange (Mass.) Police Department. He has been the community's K-9 handler for 12 years and is a certified search manager through the National Association of Search and Rescue.