

An Introduction to Ground Search Management for the Police Authority

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The first function to break down in the search for a lost person is the management function, and when this happens it affects virtually every component of the search operation, most especially and unfortunately its outcome. When the search manager loses control of the incident, confusion reigns, tempers flare, the media gets hostile, and the search becomes a protracted and painful ordeal. . . ending in the necessity for recovery rather than rescue.

In Nova Scotia, as in other Canadian Provinces, the responsibility for locating lost persons lies with the jurisdictional police authority, most typically the R.C.M.P., but occasionally city police in urban areas having wooded areas within their boundaries. However, toward meeting this responsibility, all police authorities have at their disposal the services of 24 ground search and rescue teams, consisting of volunteers functioning under the auspices of the Province's Emergency Measures Organization (EMO). All of these volunteer teams make some effort to train and prepare for the search incident, although there are wide variations among the teams in training standards and objectives. For example, while practically all teams endeavor to teach their members basic survival skills as well as the principles of using map and compass, a number of teams have extended their training programs to include search management, as endorsed by the National Association for Search and Rescue (NASAR). Commonly, the motivation to acquire such management skills is provided by negative experiences with poorly controlled search incidents in the past, as described above.

This paper will provide descriptions of some indications that the search managers may be at risk for losing control of the incident, and will suggest some steps that the police officer can take to prevent this from happening. However, before embarking on this task, it will be necessary to describe the positive side of the topic, that is, those signs indicating that the search is being well managed. Toward this goal, it will be necessary to present a brief outline of search management theory, strategy, and tactics.

The Incident Command System (ICS)

NASAR has adopted the Incident Command System (National Interagency Incident Management System, 1981) for the management of the search and rescue emergency. ICS is presently used throughout North America, as well as many other countries of the world, because it provides systematic, efficient guidelines for the control of the emergency incident, including large incidents involving numerous responding agencies. Some of the advantages of ICS include: (1) Roles and functions of managers are clearly defined and coordinated: search management is a team effort; (2) Sound management principles are specified so that leaders can maintain optimal control of the incident; (3) A common terminology is provided so that people can communicate effectively; (4) All actions taken on behalf of the lost subject are goal-directed rather than resulting from isolated decisions: that is, they are driven by operational objectives, thereby contributing to an overall plan for finding the subject; (5) All decisions, clues, and activities are documented: ICS provides a comprehensive set of forms for keeping a visible record of search progress.

1. The Overhead Team. Also referred to as the General Staff, the overhead team is responsible for managing the search and devising an Incident Action Plan for finding and rescuing the lost person. There are four basic functions that must be performed during the incident:

The Command Function: Although search management is a team effort, someone has to be responsible for leading the overhead team and overseeing all on-scene activities. The person who performs this function is called the **Incident Commander**. He (or she) will set the Incident Objectives and ensure that other members of the overhead team implement those objectives. While he supervises the performance of other search functions (for example, decisions concerning search tactics), he will not become overly involved with any particular function, as this will detract from his ability to maintain "the big picture" on the incident.

The Planning Function: Searching for a lost person involves gathering information (lost person data, witness reports, clues, weather forecasts, etc.) and, based on that information, acquiring and applying search resources (ground searchers, helicopters, dogs, etc.) to specific areas of the search locale. The **Plans Chief** performs this function. He will take the Incident Objectives (for example, "Confine the area to 8 square miles; Search high probability areas with a 90% cumulative probability of detection; Find the subject before nightfall") and translate them into an operational strategy, including an assessment of the resources necessary to implement the strategy. For example, he will segment the search locale on a status map and — based on a review of the behaviour of past lost persons of a similar type — assign varying probabilities that the subject is located within each segment; he will decide where to set up confinement points for keeping the subject from leaving the area; and he will keep a careful record of the extent to which different segments of the search locale have been searched. Generally, the Plans Chief is

in charge of both *documentation* (keeping accurate records of search progress) and *investigation* (acquiring the information necessary to conduct a successful search).

The Operations Function: The **Operations Chief** will make tactical decisions about how to apply available resources in order to implement the search strategy. For example, if the Plans Chief wants a certain degree of coverage in a particular segment, the Ops Chief will decide whether to use grid searchers, trackers, dog teams, aircraft, or some other search resource in order to get the job done. He makes up the assignments and commits searchers to the field.

The Logistics Function. A final but no less important function is a supportive one. Someone has to ensure that searchers are fed and have a place to rest, that adequate transportation is available, that a communications system is established, that helicopters have a place to land, that medical services are available for injured searchers, and that order is maintained at the search base. Anything that is necessary to support the search incident is provided and supervised by the **Logistics Chief**.

2. Sound Principles of Management. As applied to search and rescue, ICS specifies a number of guidelines for optimal management of the search incident. Some of these include:

Efficient Use of Resources. Using resources efficiently means getting the most coverage from the resource for the number of manhours expended, and, ultimately, finding the lost person sooner rather than later. For example, it has been shown that grid searchers can cover a much larger area if they will widen their spacing somewhat — at only a slight loss in their ability to detect available clues.

Operational Periods. The number of hours for which search managers can remain effective, rational decision-makers is limited. Normally, the quality of thinking processes begins to wane after eight hours of duty and becomes severely impaired after 12 hours. The usual operational period therefore consists of 12 hour shifts, with an overlap of approximately one hour at shift changes so that the next overhead team can be adequately briefed.

Manageable Span of Control. The number of people whom a manager can effectively supervise or control is also limited, especially during an emergency incident. ICS recommends that the number be no higher than seven, with five suggested as an optimum. When the number becomes larger than this, it is time to delegate authority to assistants, for whom the manageable span of control will also apply.

Decision by Consensus and Consultation. In search management, the basic tenet is "Never Plan Alone". Consultation requires discussion, and discussion facilitates a rational and systematic approach to search planning, where ideas are analyzed and reevaluated through dialogue. For example, although the Incident Commander has sole responsibility for establishing the incident objectives, he will consult with members of the overhead team before doing so. Similarly, the Plans Chief will draw upon all available expertise when assigning priorities to different segments of the search locale.

Being Proactive Rather than Reactive. A proactive search manager anticipates events before they occur and is fully prepared to cope with emerging problems or difficulties. Bad weather, injuries, accidents, equipment failures, and the depletion of resources are planned for rather than merely reacted to. Most importantly, search managers will have at their disposal a **preplan**, which guides many of the decisions that will have to be made during a search emergency. A good preplan will anticipate such problems and suggest optimal courses of action for each.

3. A Common Terminology. For effective management, everyone must speak the same language. A number of central terms basic to ICS have already been introduced, such as "Incident Commander" and "Operational Period". More specific to the search and rescue are the following, important "buzzwords" that anyone involved with the incident should understand:

Probability of Detection (POD). Expressed in terms of a percentage, this is the probability that a clue would have been seen or detected, given the application of a particular search resource under specified conditions. Stated differently, POD refers to the number of clues — out of 100 — that a resource would have detected in a particular area. For example, a grid team in which searchers are spaced 10 feet apart is estimated to yield a 95% POD, while the same team using 50 foot spacing acquires a 75% POD. Every resource will have its own POD, depending on skill, terrain, vegetation, weather conditions, and the nature of the available clues.

Cumulative POD refers to that probability of detection an area has acquired after two or more search resources have been applied. POD is the single most important indication of search progress and no competent Plans Chief would ignore it.

Probability of Area (POA). Also expressed in terms of a percentage, POA refers to the assigned probabilities (based on consensus among the overhead team) that the subject is contained within the respective segments in the search locale, including the area outside the locale which isn't being searched. POA forms the basis of establishing priorities for the assignment of search resources. They will always sum to 100, although individual POA's for individual segments will "shift" after being searched, according to mathematical formulas computed by the Plans Chief.

Place Last Seen (PLS). Simply defined, the PLS is the location at which the subject was last seen by witnesses. This is a very important fact to establish as early in the incident as possible, as it will form the basis of search planning.

Type I Searchers. Also referred to as "hasty teams", these are the normally the first ground searchers sent into the field. They search trails, drainages, water boundaries, and other areas most likely to contain the lost person, in an effort to locate the subject as quickly as possible.

Type II Searchers. These are "grid" searchers spaced more than 50 feet apart. (A grid consists of a line of searchers who move in a parallel fashion some designated distance, then step down and travel in the opposite direction.) This approach is used in heavily vegetated areas when it is expected that the subject will be responsive. The method is described as efficient, because it

yields a high probability of detection per searcher-hour of effort, and relatively large segments can be covered during one shift.

Type III Searchers. Ground searchers involved in this approach use a closed-grid or "sweep" technique, involving narrow spacing between searchers. Although it can be described as "thorough", because it yields a high POD, it should be used only as a last resort. A Type III search is slow, inefficient, and hazardous to the lost person's health. However, it may be the method of choice when it is suspected that the subject may be unconscious or otherwise unresponsive, such as with Alzheimer's patients and small children.

4. An Incident Action Plan. All operational and logistical decisions are guided by reference to the Incident Action Plan, prepared by the overhead team. Basically, the Plan provides a framework for search strategy and tactics, keeps managers informed of the status of search resources, and encourages the overhead team to be proactive rather than reactive. The most important components of the Plan include (a) the Incident Objectives, (b) an organizational chart of the current overhead team, (c) a profile of the lost person, (d) an up-to-date status map of the search locale, (e) check-in lists of resources arriving on the scene, and (f) unit logs containing information provided by search resources returning from the field. The Incident Action Plan will be updated for every operational period.

5. Thorough Documentation. All decisions, schedules, plans, forecasts, clues, reports, and investigative results should be documented in such a way that they are immediately accessible and legible. The "acid test" for the adequacy of documentation is whether the search managers (specifically, the Plans Chief), after the search is over, can describe all significant events that occurred during the incident. ICS provides nearly all of the forms necessary for thorough documentation, with the exception of the status map (which will be unique for each incident) and the subject profile. Regarding the latter, NASAR distributes a comprehensive Lost Person Questionnaire which provides an excellent basis for establishing a profile of the lost person.

When the Search is Not Going Well

Case example. A small child wandered away from his home into a large, forested area. After a brief investigation, the R.C.M.P. called in the volunteer search and rescue team, who in turn called several other teams from adjoining jurisdictions for assistance. There were also numerous, untrained volunteers on the scene. The search was managed by two Incident Commanders who alternated 12-hour shifts. There were no overhead teams. The **command post** consisted of a small recreational vehicle with a fold-up table, at which sat the Incident Commander and a radioman who handled base communications. Typically, the command post was filled with people milling about, carrying on various conversations, while the I.C. stared vacantly at a small status map containing hatch marks. There was no other visible documentation. As team leaders

arrived to receive their assignments, the I.C. would stare more purposefully at the map for a few minutes, perhaps consult the team leader for an opinion or two, then decide upon a tasking.

Undoubtedly, the person doing the most "managing" on the scene was the senior R.C.M.P. officer. Although the command, planning, and operations functions were not being performed, the R.C.M.P. had full control of the logistics function. Searchers ready to go into the field were diverted to **staging areas**, rather than being allowed to crowd around the vicinity of the command post. Adjoining streets were blockaded and access to the base by vehicle was monitored. A designated feeding station was established where searchers could rest and eat, waited on by a contingent of food servers. Indeed, anyone not standing inside the command post might easily have been deluded into believing that this was a well-managed incident. Ironically — and befitting a certain, poetic justice — it was people involved in the logistics function (serving food) who found the lost child when he walked out of the woods, three days after his disappearance.

It is examples such as this — which are all too numerous — that provide the impetus for this paper. Although, in this case, the police authority was performing important management functions on its own initiative, there was much it could have done (with little additional effort) to assist the incident commanders in maintaining control of the actual search operation. There are at least two reasons why this did not happen. Firstly, the police authority were not cognizant of many of the signs that a search incident may be out of control, and, secondly, even when they may have suspected that problems existed, they were uninformed about what steps to take to rectify them. Conversely, there are other occasions, similarly due to a lack of information, where the police officer may unintentionally hinder or disrupt the efforts of a well-organized overhead team. Therefore, in addition to describing some of the indications that the search managers may be having difficulties, we shall provide some "Do's and Don't's" for the on-scene police officer which should contribute beneficially toward finding and rescuing the lost subject.

Signs of trouble. From the previous discussion of the Incident Command System, the reader should have a picture of how a search incident should be managed, particularly with respect to the basic functions that have to be performed, as well as the application of sound management principles. At this point, therefore, it should go without saying that a search incident (of any size) that is handled by a single search director who makes operational decisions "off the cuff" may be headed for trouble. However, many such indications are considerably less obvious, requiring astute and informed observation for their recognition. For example:

The command post is noisy or disorderly. No one should be in the command post who does not absolutely need to be there at that particular moment. Distractions contribute significantly to an already stressful situation and will detract from the overhead team's ability to make sound decisions.

The Incident Commander is spending too much time performing other management functions. The I.C.'s function is one of command — he supervises all functions and operations related to the search incident. Therefore, as stated previously, he needs to maintain "the big

picture" on the incident at all times. He cannot adequately do this if he is hovering over the status map for lengthy periods (a planning function) or is busy tasking search resources to the field (an operations function).

Members of the overhead team are showing signs of stress. This may occur when people have surpassed either their effective operational period or their manageable span of control. In the first case they need to be relieved, while in the second they just need help. Some signs of stress include: (a) an unusually flushed complexion; (b) stammering; (c) memory loss or delayed retrieval: for example, the person has trouble remembering familiar names; (d) periods of apparent unresponsiveness: the person may have a "far away" expression, not responding well to questions or other stimuli.

There is a lack of visible documentation. For example: (a) There should be a posted organizational chart, indicating which persons are performing which management functions: no one should have to ask, "Who's in charge?" (b) Team leaders should be given written assignments, and, in turn, should be supplying the Plans Chief with written debriefings when returning from the field, describing clues found, safety hazards, and other significant information.

Searchers are complaining about apparently trivial matters. When people are griping about the absence of lettuce on the sandwiches, it may be time to wonder about searcher morale. There are a number of factors which may undermine morale, including: (a) searchers may not feel they are being properly informed or briefed about the search, or that their needs are being otherwise considered; (b) they may feel they are not being properly utilized in the field; or (c) they may merely be overtired from unrealistically difficult or lengthy assignments. Experience dictates that there is almost always a grain (or more) of truth in such beliefs, and that they may reflect serious problems in search management. In any case, when the Incident Commander appears to be ignoring searcher complaints — no matter how trivial they may seem — morale, and searcher performance, can be expected to deteriorate.

Ineffective search tactics are being employed. This may be the most difficult "red flag" for the untrained observer to spot, but there are a number of reliable indications which signal the lack of a search strategy or the use of less than efficient search tactics. Frequently, this may be due to inadequate training on the part of the overhead team, but can also be due to stress, poor planning, or the absence of discussion or consultation in decision making. The more obvious examples are: (a) insufficient consideration is given to confining the subject to the search locale (for example, trail blocks, string lines); (b) segments are starting to be re-searched before other segments receive their first coverage; (c) the search is being focussed too close to the PLS rather than the median distance for lost persons of a similar category; and (d) ground searchers are being tasked to Type III grid sweeps early in the incident, before due consideration has been given to confinement and hasty searches of trails, natural boundaries, and other "likely spots."

Helping the Search Managers Do Their Job

The following represents a list of ways that the police officer can be of assistance to the volunteer search and rescue team, and, therefore, to the lost person.

1. ***Don't delay the callout.*** Every hour for which the search team is delayed in its response increases the search area exponentially. For example, after one hour, the **theoretical search area** is 3.14 square miles, while after three hours the area is 28.26 square miles. Don't be afraid of a "false alarm". Any search team worthy of the name will welcome the opportunity to practice its callout procedure, and the reaction to a false alarm will be one of relief rather than resentment. Ideally, the callout should occur the instant it is suspected there is any reasonable possibility that the missing person may be in the woods.

2. ***Protect the Place Last Seen.*** As stated previously, the PLS provides the basis for all search planning. If, by examining footprints and other signs, searchers can determine the subject's direction of travel, search efforts can be reduced tremendously and the chances of finding the subject in good condition will be greatly enhanced. Therefore, people arriving on the scene must be prevented from walking or driving in the vicinity of the PLS, as this will destroy the subject's tracks. Moreover, automobile exhaust will destroy scent from the lost person and make it difficult for a dog team to pick up his trail.

3. ***Let them know that you expect to be involved and informed.*** Be visibly available at all times. Periodically, ask to be briefed about the current status of the search, particularly with respect to operational decisions. Ask for the rationales underlying such decisions.

4. ***Ask the right questions.*** Keep them honest, and don't be afraid to use the buzzwords. For example:

"Who's going to help you manage this thing?"

"What are your objectives for this operational period?"

"How many segments do you have?"

"What's the median distance for this kind of lost person?"

"How are you going to confine this guy?"

"What POD's do you have so far?"

"Who's handling the paperwork?"

"Do you need any help with the lost person questionnaire?"

"What kind of resources do you have scheduled for tomorrow?"

"You look a little tired. When are you due to be relieved?"

"It's a little noisy in here. Would you like me to chase some people out?"

4. *Don't undermine positive search efforts and planning.*

Case example. A mentally disturbed 23-year-old man, threatened with hospitalization by his family, wandered into a large forested area near his house. Six days later, after an extensive search, he was found dead from exposure in a highly remote area inaccessible by roads. The overhead team had prepared a plan for recovering the body, involving an advance team who would secure the area, followed by a recovery crew equipped to bring the body out by helicopter. Unfortunately, the police officer who arrived with the helicopter became impatient and assigned the advance team the task of recovering the body, despite the fact that they were unequipped for such a task and had no experience with corpses. The searchers had to rig a makeshift stretcher with their belts, which proved inadequate for the long trek necessary to reach the helicopter. The body kept slipping from their grasp, requiring excessive manhandling during the recovery process. Added to the psychological effects of prolonged, direct contact with the remains was the searchers' perceptions of indignity for the subject at having to be carried in various, unnatural postures and even occasionally dropped. All of these searchers subsequently suffered the ill effects of **critical incident stress**, including sleep disturbances, recurrent and unwanted images, restlessness, and anxiety.

5. *Expect high standards of performance.* Don't excuse or overlook poor performance, merely because the searchers are "volunteers". Members of ground search teams who are competent to manage such life-threatening emergencies should take their jobs seriously, train constantly, and refer to themselves as *professionals* (regardless of monetary compensation). They should therefore welcome constructive criticism, particularly during post-mission debriefings, so that they can prevent future mistakes and improve the quality of the service they provide.

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