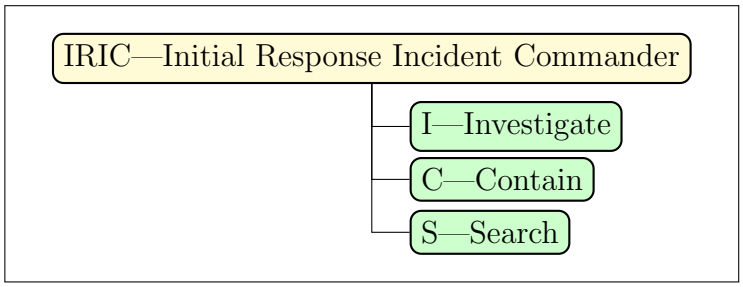

Initial Response Incident Commander Wilderness SAR

Knowing the right things to do, in the right order, at the right time . . . and doing them!

2nd Edition, 1st printing

03/23/2021

Willcox, Arizona, USA

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Disclaimer

Preface

Why an 'Initial Response Incident Commander' text?

Many SAR responders have training in search tactics. Fewer have training in Search Leadership and Incident Management. About 85% of all searches last less than 12 hours, and only 3% of all searches last more than 24 hours. Thus the vast majority of searches are resolved by the Initial Response effort. Why is this the case? Leadership is the determining factor: Knowing the right things to do, and doing them in the right order, at the right time. This text is intended to give you the knowledge to do the right things right. However to become a practiced Initial Response Incident Commander (IRIC), you should take a training course and practice your skills.

The Book

This book is devoted to managing the Initial Response phase of searches for missing persons, primarily in wilderness environments. It is designed to be used by prospective and experienced search coordinators, field park rangers who will lead the Initial Response, volunteers who are delegated the IRIC responsibility, and other First Responders. The book forms the basis of a multi-day IRIC course that assumes a minimum of search leadership and management knowledge on the part of the participants.

The structure of this book is based in large part on the work of Paul Anderson who developed the 12-hour "Find 'Em: Initial Response Incident Commander" course.

The book is intended to be a work in progress, being continually revised. After one course ends, the book is updated with the latest information, so that the new edition can be released in time for the next course. This version of the book is dated 03/23/2021.

Navigating this Book

This book uses "hot" links allowing the reader to navigate easily. For example, if the text states that the Table of Contents starts on page 9, then clicking on that page number (9) takes the reader to the Table of Contents. (Try it!) The same is true for Part numbers, Chapter numbers, Section numbers, Appendix letters, Figure numbers, Table numbers, and Page numbers. In the Table of Contents, which starts on page 9, clicking on a Part, Chapter, or Section title (not the page number) immediately opens the associated part, chapter, or section. Web links, such as `http://www.saraz.org/`, open the associated web page in the default browser. Typically the color or shape of the cursor changes when over a hot link, which can be seen by hovering the mouse over the previous web link.

Most PDF readers have the facility to return to the previously viewed page, allowing the reader to follow a hot link and then return to the original page containing that hot link. For example, Adobe Reader®, Foxit Reader, and Sumatra PDF, all use the keyboard combination Alt ← to return to the previously viewed page.

At the bottom of most pages in thisbook, following the copyright notice, are four buttons, Anatomy, Glossary, JAS, and TOC. Clicking on these hot-links opens the Anatomy, the Glossary, the JAS, or the Table of Contents. The Anatomy is a checklist of steps designed to manage the Initial Response phase of a search, together with links to relevant parts of the book. This button permits the reader to consult the Anatomy from any place in the book. The Glossary is a list of terms and acronyms commonly used in SAR. The JAS is the IRIC Job Action Sheet, a tool for defining, clarifying, and performing the IRIC's role and responsibilities.

Acronyms, Abbreviations, Terms, and Resource Names

There are numerous acronyms, abbreviations, terms, and resource names used in SAR and in the Incident Command System, sometimes more than one for the same item. In the case of these conflicts, the authors use the expressions suggested by FEMA, `http://www.fema.gov/pdf/plan/prepare/faatlist07_09.pdf` and `http://www.fema.gov/pdf/emergency/nims/508-8_search_and_rescue_resources.pdf`. A summary of the corresponding terms used in this book can be found in the Glossary, Appendix F on page 180.

Style

When writing this book, a conscious decision was made to exclude all occurrences of "he/she", and use the generic "they" in its place. Thus a sentence like "He/she sets the incident objectives" is replaced with the sentence "They set the incident objectives". Sometimes this leads to slightly awkward phrasing, but not enough to warrant the use of "he/she".

Items in brackets, such as Reference [Syrotuck], refer to the Bibliography on page 184.

Typeset

This book was typeset with MiKTEX, available from `http://miktex.org/`, using TEXstudio as the front end, available from `http://texstudio.sourceforge.net/`. The flowcharts were created by MiKTEX using the Ti*k*Z graphical package, as were some of the other figures.

Photo Credits

Unless stated otherwise, the photographs and images are courtesy of

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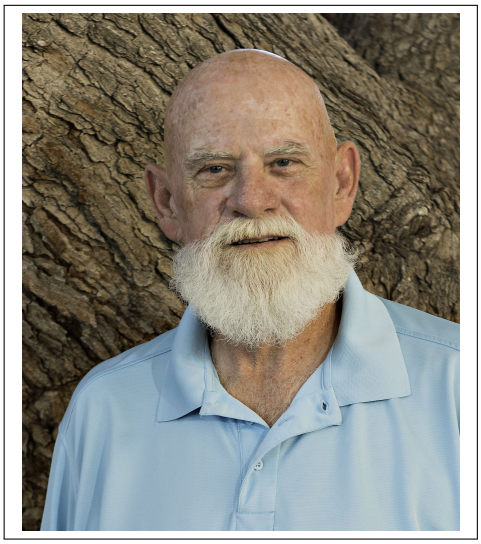
Finally, we would particularly like to thank the Arizona Search and Rescue Coordinators Association, Ltd. for permission to quote freely from their publications "Inland Search Management for AZ SAR Coordinators" and "Find 'Em: A Guide for Planning the Missing Person Incident Response", copies of which can be freely downloaded from `http://www.saraz.org/`.

Please email any corrections or suggestions to David Lovelock at `dsl@math.arizona.edu`.

Paul Anderson, Aaron Dick, David Lovelock, Chuck McHugh

James K. Langston



James K. Langston

(photo courtesy of Chuck McHugh)

This book is dedicated to James K. Langston for his lifelong devotion to Search and Rescue in the State of Arizona.

Throughout James Langston's 18-year tenure as State SAR Coordinator, countless subjects of SAR missions have benefited from his flawless dedication and skill. Known to his peers as "Langston", he owned the State SAR Coordinator's job. With the exception of vacations, he readily responded to calls for assistance and supported SAR missions 24 hours a day, seven days a week.

Achieving beyond the expectations of the job, he was a central player in a network of cohesive multi-agency responses. Through his actions, he earned legendary credibility as a leader in Arizona's SAR community. Including his time in the Maricopa County Sheriff's Office, Langston is a 30-year veteran of SAR missions and respected throughout the nation.

Langston supported an average of 600 SAR missions per year from his office at the Papago Park Military Reservation and after hours at his home in Gilbert, Arizona. Through his reputation as a savvy search planner, Sheriffs' SAR Coordinators routinely looked to him for insightful analysis and advice. Among his strongest qualities, he possesses a remarkable back country intuition, understanding of lost person behavior, and a sixth sense of where to look for lost persons and missing aircraft.

Langston separates himself from his peers because of his endurance and tenacity in complex, long-term searches. It's these tough searches with no results that exhaust all participants and inevitably SAR managers are ready to suspend frustrating, unsuccessful search efforts. The chal-

lenging missions were always in Langston's mind, taking them home and living the details while finding it difficult to sleep. When many wanted to give up on these searches, Langston typically suggested that the search continue, often resulting in successful outcomes.

In May 2015, Langston retired from the State of Arizona Department of Emergency and Military Affairs. In over 40 years in public safety, he has been a central player in the saving of human life and the reduction of human suffering. In the following excerpt of a letter[1] to Arizona's Governor Ducey, all of Arizona's fifteen county sheriffs recognized his extraordinary dedication to the SAR mission.

> "*Over the past 17 years, the Sheriffs of Arizona have enjoyed a supportive and cooperative working relationship with the Search and Rescue Branch of the Arizona Division of Emergency Management. This excellent relationship is due to the leadership, personality and work ethic of the State SAR Coordinator, James Langston who served in that position for many years. His role was to provide guidance, assistance, and support to the Sheriffs in Arizona who are statutorily required to conduct Search and Rescue operations within the state.*
>
> *James Langston is the first person called by sheriff's offices in a number of emergencies involving search and rescue where state or federal support is needed. When evacuations are necessary during a flood or wild fire, James is [the] person called to obtain state support. His commitment and availability is ever present. At 2:00 am in the morning, you know you can count on him to answer his phone and receive that call from a county sheriff's office needing additional support. It is not only these agencies who benefit from his work ethic, but all of the communities and people across Arizona. He is no doubt responsible for indirectly saving many lives throughout his career with the Arizona Division of Emergency Management.*
>
> *The Memorandum of Understanding and Memorandum of Agreement between the State of Arizona and the Air Force Rescue Coordination Center (AFRCC) provide that the point of contact for the State of Arizona is the State SAR Coordinator. The AFRCC routinely calls the State SAR Coordinator with alerts about overdue or missing aircraft and emergency locater transmitter or personal locator beacon activations. Sheriff's office search and rescue personnel often need the support of the AFRCC Cell Phone Forensics Team and that resource is requested through the State SAR Coordinator to the AFRCC at all hours of the day and night. In many cases when an overdue aircraft is reported the potential search area covers more than one county and a strong coordinating entity at the state level is vital to ensure that the response is efficient, effective, and well-coordinated.*
>
> *James Langston is retiring from the Arizona Division of Emergency Management in May 2015. This will indeed be a huge loss to all search and rescue divisions across the state.*"

We could not have said it better. To have the four of us agreeing is surprising. To have all fifteen sheriffs in the State of Arizona agreeing is amazing, and attests to Langston's devotion to SAR.

It is appropriate to end with a direct quotation from Langston that exemplifies his commitment to saving lives.

> "*I have been blessed to have had a job I enjoyed so much, and able to make a living at doing something as important as saving LIVES.* "

Thank you, Langston.

Paul Anderson
Aaron Dick
David Lovelock
Chuck McHugh

[1] Dated April 1, 2015 (`http://www.azcounties.org/DocumentCenter/View/914`).

Table of Contents

Part I
Overview

CHAPTER 1

Introduction

This chapter introduces the new or inexperienced Incident Commander (IC), to six important questions that underpin the rest of the book. These questions are

- Who do we search for?
- What types of searches are there?
- What do we search with?
- How do we plan for a search?
- When do we search?
- How do we manage a search?

Section 1.1

Who Do We Search For?

Who do we search for? Missing subjects—these are people (or objects) that are not where they are supposed to be. Most SAR incidents involve searching for people.[1] Occasionally an incident involves searching for an object, such as an airplane or evidence. Knowing the category of a missing subject often dictates the search tactics used, so we divide the subjects into the following categories.

- **The Lost**
  - They usually self report by cell phone.
  - They are lost because they missed the trail or tried to take a short cut.
  - They want to be found.
  - Trained volunteers are used on these searches.
- **The Overdue**
  - They are usually reported missing by family or friends.
  - Most leave an itinerary or the reporting party gives a starting point for the search.
  - They want to be found.
  - Trained volunteers are used on these searches.
- **The Endangered**
  - Memory impaired.
  - Children—either lost or abducted.
  - Subjects who are unable to care for themselves.
  - They may not know or understand that they are the subject of a search.

[1] In SAR, we do not call a missing person a "victim".

- Trained volunteers are used on these searches.

- **The Suicidal**
  - Despondents.
  - They may not want to be found.
  - There needs to be a good risk assessment before deploying trained volunteers to search for a suicidal subject.

- **Aircraft**
  - If they do not make their flight-plan destination, then a search is started immediately.[2]
  - If an electronic locating device (for example, an ELT or Emergency Locator Transmitter) hit is received, then a response is initiated immediately.
  - This always involves a large search area.
  - Aircraft are particularly difficult to locate because the size of the search object is unknown. It could range from an aircraft fuselage fully intact to a small burn site containing a completely destroyed aircraft. Also white aircraft are difficult to detect in snow. See Figure 1.1 on page 12.

Figure 1.1: Aircraft crash site. Where is the plane?

  - Trained volunteers are used on these searches.

- **Criminals**
  - Escapees.
  - Fleeing suspects.
  - Anyone who poses a danger to the public.
  - They do not want to be found.
  - Volunteers are not used on these searches.

However, SAR resources are not normally used to search for missing dogs, cats, horses, ostriches, parrots, ferrets, weasels, keys, ...

A missing subject may be thought of as in one of four states during the search. See Table 1.1 on page 13.

- **Mobile and responsive.** Mobile means that the subject can move around, although they may not be moving at the present time. Responsive means that the subject has the ability and the willingness to signal the searchers in some way (voice, whistle, waving arms, mirror, etc.). An example of this is a healthy person who has merely lost the trail.

[2] However, there can still be a significant delay in a search being initiated. Part of this depends on whether the aircraft had a flight plan on file or not. And if a flight plan was on file, it depends on whether it was using VFR (Visual Flight Rules) or IFR (Instrument Flight Rules).

- **Mobile and unresponsive.** Unresponsive means that the subject cannot or will not signal the searchers in any way. An example of this is a healthy child who has been taught not to talk to strangers.
- **Immobile and responsive.** Immobile means that the subject cannot move around. They are stationary (standing still, not moving). An example of this is a person who has broken an ankle, but is conscious and able to communicate.
- **Immobile and unresponsive.** An example of this is a person who is in a coma or deceased.

The subject may be in one of these states permanently or temporarily. Permanently could be if the subject is in a coma or is deceased. Temporarily could be if the subject is sitting down or is asleep one moment and awake the next. However, in SAR, the temporary situations are discounted, and the search strategy is based on the predominant state the subject is most likely to be in (bearing in mind that, as the search progresses a subject may transition from "Mobile and responsive" to "Immobile and unresponsive".)

Table 1.1: Missing Subject State

	Responsive	Unresponsive
Mobile		
Immobile		

A subject could be intentionally unresponsive, that is evasive, or unintentionally unresponsive. Examples of intentionally unresponsive subjects are

- A child who does not to talk to strangers.
- A despondent who wants to get away from people and does not want to be found.
- A criminal who is fleeing.

An example of an unintentionally unresponsive subject is someone who is unaware that they are the subject of a search, such as a dementia patient.

Knowing whether a subject is mobile or immobile, and responsive or unresponsive, impacts the tactics used during the search.

For example, if, on the one hand, it is believed that the subject is mobile, then rapidly placing resources at strategic locations to contain the subject is a high priority because it restricts the size of the subsequent search area. If, on the other hand, it is believed that the subject is immobile, then that priority is lower, and now the mission of these resources is to talk to passers-by to see whether they have important information.

In the same way, if a subject is mobile, then laying down "traps" that capture evidence of the subject passing is an excellent tactic, which is not sensible if the subject is immobile.

If the subject is responsive, then shouting, lighting flares, etc., is good practice, whereas that is not the case if the subject is unresponsive. An unresponsive subject requires more searchers closer together.

More Than One Subject

This book is written assuming that there is only one subject missing. However, there might be more than one, which can compound the problem because different possibilities need to be considered—either the group has kept together or has split into separate groups. For example, if two people are missing, they could remain together or separate. If they separate, then one might be immobile and unresponsive and the other mobile and responsive, which could happen if one has an accident

and the other goes for help. The possibility that a group has split should always be considered and investigated.

> *The possibility that a group has split should always be considered and investigated.*

Section 1.2

What Types of Searches Are There?

Generally, there are two types of searches.

1. **Route and Location Searches**. These are searches where routes[3] and specific locations are the primary focus of the search resources.
   A Route and Location Search search is usually characterized by the following.
   - There are no identified search segments. Routes and locations are searched, rather than areas.
   - The subject has been missing for a short time.
   - Only a few local resources are used (ridge runners, trail runners, etc.) and only a few agencies are involved (one sheriff's department, SAR volunteers, etc.)
   - The subject may be moving or stationary (mobile or immobile).
   - The subject may be responsive or unresponsive.
   - There is a quick resolution—one way or the other.
   - The press might get involved, but usually not on the front page.

   A Route and Location Search is usually the first type of search used during the initial response phase of a search. Such searches are called **Hasty Searches**. The purpose of the hasty search is to cover the most obvious places a subject might be in the least time possible. The term "Hasty" is used to stress the urgency and immediacy of the search—it indicates that the search is being conducted in a thoughtful, skilled, and professional manner.

   > *The term "Hasty" is used to stress the urgency of the search—it indicates that the search is being conducted in a thoughtful, skilled, and professional manner.*

   About 85% of such searches are over within the first 12 hours.[4] About 97% of all searches fall into the Route and Location Searches category, and they are over within 24 hours.

   Generally, the remaining 12% (97% − 85% = 12%) of Route and Location searches, which are over between 12 and 24 hours, go into another operational period, and are called **Extended Searches**. If after 24-hours the subject is not found, but there is evidence that the subject is mobile, then the extended search continues where routes and locations are still the primary focus of the search. However, if there is no evidence that the subject is mobile, then Route and Location Searches generally transition into Area Searches.

[3] The term "route" used in this context includes all forms of travel aids, such as pathways, roads, game trails, railroad tracks, ridges, valleys, dry washes, drainages, streams, shorelines, clearcuts, power lines, vegetation lines, or any area that provides a sense of direction and a path of little resistance.

[4] This time is measured from when the initial report is made until the time the last searcher arrives home, so the actual search is considerably shorter than this.

2. **Area Searches**. These are searches where segments (areas) are searched, rather than routes and locations. These searches are preceded by a consensus, where it is assumed that, if the subject is in the search area, then the subject is immobile. Only about 3% of searches reach this stage, but those that do are memorable and instructive!

   An Area Search is usually characterized by the following.

   - It covers many operational periods.
   - Multiple resources, not all local, are used (ground teams, canine, helicopters, fixed-wing aircraft, horses, 4WD, ATV, climbers, infrared, etc.).
   - Multiple agencies are involved (Sheriff/Police/Highway Patrol, National Park Service, Forest Service, FBI, military, SAR volunteers).
   - There are many search segments. The emphasis is on searching areas rather than searching routes and locations.
   - Search Theory is used.
   - The subject is assumed to be immobile (stationary).
   - There is lots of press coverage, both good and bad, with some on the front page.
   - There is pressure, anxiety, and criticism.
   - Lots of untrained volunteers, second-guessers, and "experts" come out of the woodwork.

   In this type of search, the primary search tactic used is some form of a grid search,[5] in the widest sense. This would include a helicopter using a creeping line search, a ground team using critical separation, or a handler using an air scent dog. Hasty tactics might also be used in Area Searches. For example, if a search team discovers tracks then a tracking team might follow those to allow the search team to complete its assignment.

> *There are two types of searches: Route and Location Searches and Area Searches.*

This book is devoted to Route and Location Searches.

A search that goes beyond the Initial Response is also called a **Multi-Operational Period Search**. Depending on the status of the search, a Multi-Operational Period Search could either remain as a Route and Location Search or transition to an Area Search.

There is another type of search, called a **Bogus Search**.[6] This occurs when, unknown to the searchers, the subject is not missing at all, or if the subject is missing, has left the search area and is now safe, at home, at the movies, in a tavern, ...

Section 1.3

What Resources Do We Search With?

Resources are the people and equipment used to help locate the lost subject.

The people come in various categories: paid or unpaid, trained or untrained. When authorized to do so, paid resources are guaranteed to respond to an incident. Because of prior and job-related commitments, unpaid resources (trained volunteers) cannot guarantee to respond.

Depending on the tactics employed, the following resources may be used.

[5] Grid searchers form a line, with trained team members at a specified distance apart, and progress through the assigned area together.

[6] This is the current terminology. Previously it was given another name, also starting with the letter 'B', which suggested that it was an illegitimate search. That terminology is still prevalent.

- Ground Searchers.
- Canines.
- Horses.
- Aircraft.
- Ground Vehicles.
- Specialized Units.

Ground Searchers

Ground searchers come in various categories, but they all refer to a resource that searches on foot. See Figure 1.2.

Figure 1.2: Ground searchers

- **Human Trackers—Sign Cutters.** These highly-trained resources follow the route of the subject step-by-step from the place the subject was last known to be, by identifying tracks and signs left by the subject. They can also be used to reduce the search area by binary searching.[7]
  - **Usage**. Usually they are among the first responders requested for a hasty search. Also, if tracks are discovered during an Area Search, then they are used while the regular searchers continue searching their segment.
  - **Advantages**. They can give the subject's direction of travel, follow the subject's path, locate clues, and reduce the size of the search area.
  - **Limitations**. Time consuming. Skill levels vary. Less effective if not used immediately or if clues have been destroyed by other resources or the environment. Difficult to have available and their skills require frequent updating.
  - **Sources**. Trained volunteer units, National Park Service, U.S. Customs and Border Protection, law-enforcement tracking units.
- **Hasty Teams.** These trained resources are clue-conscious and very mobile searchers. They are independent and can work without supervision.
  - **Usage**. Usually used during a hasty search.
  - **Advantages**. They can search the high probability routes and locations quickly. They can also locate clues.
  - **Limitations**. May miss or destroy clues in their haste.
  - **Sources**. Trained volunteer units.
- **Grid Search Teams** (AKA Line Searchers or Sweep Searchers). These generally search areas by forming a line, with trained team members at a specified distance apart, and progressing through the assigned area together.
  - **Usage**. Usually used during an Area Search.
  - **Advantages**. They can search areas thoroughly, depending on the spacing between searchers. They can also locate clues.

[7] A Binary Search is a strategy that involves sending sign cutters in a direction that is perpendicular to the subject's assumed direction of travel, in an effort to reduce the size of the search area.

Figure 1.3: Briefing untrained volunteers

- **Limitations**. Time consuming. Low efficiency. Require a lot of man-power. May destroy clues, if not detected.
- **Sources**. Trained volunteer units.

- **Untrained Volunteers** (AKA Spontaneous Searchers). These are untrained personnel who offer to help with the search effort. See Figure 1.3. There is no consensus in the SAR community as to whether their offer should be accepted or declined. That decision is made by the IC. Expect pressure from the family and the community if these volunteers are not used, especially if there are insufficient trained resources available. There have been situations where untrained volunteers were used who then worked against the agency, even trying to convince the family that a terrible job is being done.
  - **Usage**. Whether to use them or not is determined on a case-by-case basis. Only used in the field if they are trained and supervised. Could be used in non-search capacities.
    - It requires some tact to explain to untrained volunteers why they cannot be used on a search.
    - If they are told to go away they may search on their own. Those days where control of a situation can be achieved with road blocks and crime scene tape are over. With social networks today, search groups of hundreds of people can be organized by amateurs in a very short time.
    - Possibly get them involved, suggesting feasible assignments, but stress that the agency is not responsible for their actions or safety and they must not interfere with the official search.
    - Discouragement is the best method but experience in recent years suggests this may not work. Encourage them to join regulated groups and get trained to participate in the next operation.
    - If agency, family, and public pressure force the IC to use untrained volunteers that show up to help, train them quickly, put them with experienced trained searchers, and provide a means of communication. Give them assignments—do not let them go off on their own.
  - **Limitations**. Untrained. Unprepared for environment. Unfamiliar with command structure. Might destroy authentic clues and create unauthentic ones. Require constant supervision. May be available only for a short time. Background checks required, especially in the case of a missing child. Unknown health or physical conditions. Not covered under Workman's Compensation. If used, the agency in charge of the search may be legally liable for their actions and welfare.

Figure 1.4: Dog team

Canines—K9

A canine unit consists of a dog and its handler, and sometimes an additional person to manage communications, navigation, and note-taking. Generally canines used in searches fall into two categories, Trailing Dogs (also called Tracking or Ground Scent Dogs) and Air Scent Dogs. See Figure 1.4.[8]

- **Trailing Dogs.** These dogs are typified by the Bloodhound, although other breeds are said to be as effective. Like human trackers, trailing dogs follow the route of the subject from the place the subject was last known to be, by identifying scent left by the subject on the ground and nearby vegetation. Typically trailing dogs require a scent article belonging to the subject, which has been protected from contamination. Ideally this should be clothing the subject has recently worn, or bedding recently slept in. Such an article should be placed, without touching it, into a Ziploc© type bag. Some handlers prefer to collect these articles themselves, although that is not always practical.
  - **Usage**. Usually they are among the first responders requested for a hasty search.
  - **Advantages**. They can give the subject's direction of travel, follow the subject's path, locate clues, work day or night, and work independently of other resources searching the same region.
  - **Limitations**. Require a scent article. Skill levels vary widely. Effectiveness adversely affected by the weather (high temperatures, low humidity, any wind). In Area Searches they are unable to search segments.
  - **Sources**. Trained volunteer units, U.S. Customs and Border Protection, law-enforcement dog units (but not "piranhas on a leash").
- **Air Scent Dogs.** These dogs typically work off-lead. They detect scent from a human as it is carried by air drifting from the source to the dog. The dog searches and samples the air currents by ranging/quartering back and forth through the area that is assigned to the team. Usually they are unable to discriminate between the subject's scent and that of any other human.
  - **Usage**. Can be used in any type of search.
  - **Advantages**. They can search large areas effectively and quickly, during the day or at night. No scent article is required. They can be assigned segments to search. If the search segment has been "aired" of previous search teams' scents, air scent dogs can still search that segment effectively. They can search areas that are more difficult for ground searchers to search. They can reduce the size of the search area by determining areas where no human scent exists.

[8] Photo courtesy of Vi Brown, Southwest Rescue Dogs, Inc, Tucson, AZ.

- **Limitations**. Skill levels vary widely. Less effective if not used immediately. Effectiveness adversely affected by the weather (high temperatures, low humidity, low wind, clear sky) and possible contamination by other humans within the dog's range of detection.
- **Sources**. Trained volunteer units, U.S. Customs and Border Protection, law-enforcement dog units (but not "piranhas on a leash").

Other types of dog teams that might be used in a more general search environment are Cadaver/Human Remains Detection (HRD) dogs (searching for the scent of human decomposition), Evidence dogs (searching for weapons, drugs, or explosives), Disaster dogs, Avalanche dogs, and Water-search dogs.

Horses—Posse—Mounted

These are trained searchers mounted on horses or mules. See Figure 1.5.

Figure 1.5: Horse team

- **Usage**. Can be used in any type of search.
- **Advantages**. They can travel faster than ground teams, and carry more equipment. The rider, being higher than a ground searcher, has a different perspective and an elevated view. A horse may alert its rider to the presence of the lost subject. If the subject is found and needs transporting out of the field, a horse may do that more easily than ground searchers.
- **Limitations**. Require considerable logistical support (trailers, corral, food). Being higher off the ground, clues such as footprints may be missed. The horse's hooves can destroy clues, such as footprints. Less effective in areas of thick vegetation or terrain where the horse has difficulty holding its footing.
- **Sources**. Trained volunteer units, law-enforcement posses or auxiliary units.

Aircraft

Aircraft are divided into three categories, helicopters, fixed-wing, and unmanned.

- **Helicopters.** Helicopters come in many shapes and sizes, each with their own capabilities. Generally the smaller the helicopter the better it is for searching, and the larger the helicopter the better it is for transporting payloads.

- **Usage**. Can be used in any type of search. They can be used as a search platform. They can also be used for transporting searchers/gear into the search area, or for extracting an injured subject from the search area. If used for transporting resources they might land to offload searchers, or the searchers may have to rappel out of the helicopter. See Figure 1.6. They can be used by the command staff to overfly and evaluate the search area.
- **Advantages**. They can search large areas quickly. Their noise can alert the lost subject that a search is in progress. Some helicopter crews can fly at night, and are particularly effective using night vision goggles, especially if the subject has been instructed to use their cell phone's LCD screen to point at the helicopter. Spotting campfires, signal fires, or any other light source with night vision goggles is very effective. Some have Direction Finding equipment on board and can be a good asset in locating ELTs[9] and PLBs[10] providing the weather is favorable. Can use the PA system to call the subject. Can be a platform for FLIR.[11] See Figure 1.7. Can usually land near the Incident Command Post (ICP).
- **Limitations**. Ineffective in searching forested areas. Some do not fly at night. Weather and altitude may prevent them flying or severely limit loads. Not always available because they are in use elsewhere, or are down for maintenance, or refueling. Expensive to use. Require safety training for searchers. Usually require helispots near the ICP.
- **Sources**. U.S. Customs and Border Protection, law-enforcement, military, and EMS agencies.

- **Fixed-Wing Aircraft.** In searches, these are usually small, single engine aircraft.
  - **Usage**. Can be used in any type of search for searching large open areas or for locating large search subjects, such as vehicles or planes. They can also be used by the command staff to overfly and evaluate the search area.
  - **Advantages**. Can be a platform for FLIR. Can be a platform for ARCHER.[12] Can search large areas quickly. Can be used for radio communication relays.
  - **Limitations**. Ineffective in confined or wooded areas. Weather may prevent them flying. Usually cannot land near the ICP.
  - **Sources**. U.S. Customs and Border Protection, law-enforcement, Civil Air Patrol (CAP).
- **Unmanned Aerial System.** An unmanned aerial system (UAS) is an unmanned aircraft with a ground operator (pilot). The UAS's used for SAR may have[13] "*a sophisticated all-weather sensor capable of providing photographic-like images through clouds, rain or fog, and in daytime or nighttime conditions; all in real-time*". See Figure 1.8, taken from Reference [UAV2].
  - **Usage**. Can be used in any type of search.

[9] Emergency Locator Transmitter is a transmitter installed on most aircraft that emits a signal which can be picked up by satellites or other aircraft to determine the location of a downed aircraft An ELT is activated by the impact of a crash.

[10] Personal Locator Beacon is the personal version of an ELT that is designed to be carried by a person on foot. It is manually activated.

[11] Quoting from Reference [FLIR], "*Forward looking infrared (FLIR) is an imaging technology that senses infrared radiation. Since FLIRs use detection of thermal energy to create the 'picture' assembled for the video output, they can be used to help pilots and drivers steer their vehicles at night, and in fog, or detect warm objects against a cold background when it is completely dark (such as a cloudy, moonless night).*"

[12] Quoting from Reference [ARCHER], Airborne Real-time Cueing Hyperspectral Enhanced Reconnaissance (ARCHER) "*is an aerial imaging system that produces ground images far more detailed than plain sight or ordinary aerial photography can. It is the most sophisticated unclassified hyperspectral imaging system available, according to U.S. Government officials. ARCHER can automatically scan detailed imaging for a given signature of the object being sought (such as a missing aircraft), for abnormalities in the surrounding area, or for changes from previous recorded spectral signatures.*"

[13] Quoted from Reference [UAV1].

Figure 1.6: Rappeling from a helicopter

Figure 1.7: FLIR image

- **Advantages**. Can see great details from high altitudes. Can remain airborne for up to 24 hours.
- **Limitations**. Availability. Cannot land to help subject. Limited by weather and wind. Uncertain regulatory environment hampers deployment.
- **Sources**. Military, U.S. Customs and Border Protection, some Law Enforcement Agencies, hobbyists.

Figure 1.8: A Falcon UAS[14]

[14] Reproduced with permission from `http://www.falcon-uav.com/`.

Boats

- **Types** Small human powered boats such as canoes, kayaks, and small inflatables are suitable for small bodies of water and where motor boats are prohibited. These boats with their low free-board are better suited for search platforms for K9s.
  Personal watercraft can carry one or two people and operate in shallow water.
  Boats in the 16–22 foot range can cover more distance and open water. Boats without a cabin provide good visibility.
  Larger boats with cabins can handle rougher waters.
- **Usage** Boats can be useful for searching open water and also along coastlines and river banks. Ground searchers and K9 teams can search from and be deployed by boat. Boats can be stationed at visible sites and used as attraction devices.
- **Advantages** Can carry loads of people and cargo. Good platform for K9s trained in water search. Boats provide a different perspective of a search area.
- **Limitations** Must have a trained operator, who may not know SAR tactics. Might have to be transported to the search area by trailer. Safety concern with personnel operating over water. Personal Flotation Devices (PFDs) required for all occupants including subject if found. Can be expensive and might be damaged when operating in shallow areas.

Ground Vehicles

Vehicles come in various forms, ranging from mountain bikes and 4WDs to ATVs, snowmobiles, and snow cats. They can be used for transportation and searching. In addition to searching, they are used for containment and as magnets, using their horns and lights to attract attention.

Specialized Units

These include Divers, Climbers, Mine Rescue Units, and Cavers. Sometimes outside agencies with special skills, such as searching a landfill or a trash dump, are needed. See Figure 1.9.

Figure 1.9: Searching a trash dump

Organizing Resources on a Search

Under the Incident Command System (ICS), there are three ways to temporarily organize resources: as single resources, as strike teams, or as task forces.

- **Single Resources**. As the name implies, a single resource is an individual piece of equipment, or group of individuals, with an identified supervisor. Examples of a single resource are: a helicopter with pilot, an air scent dog with handler, a UAV with "pilot", an ATV with driver, or a hasty search team with leader.
- **Strike Teams**. A strike team consists of resources of the same kind. Examples of a strike team are: an 8-man team created from four 2-man hasty teams to search a segment, or two horses and their riders.
- **Task Forces**. A task force consists of resources of different kinds deployed under a single leader with common communications. An example of a task force is an air scenting dog teamed with a hasty search team to search a given segment into the wind.

Section 1.4

How Do We Plan For a Search?

The question is "How do we plan for a search?" The answer is simple, "Create a preplan". But, it takes effort to write a good preplan.

It takes effort to write a good preplan.

According to Tim Setnicka,[15] a "*preplan is an operational guide that, if designed and implemented correctly, will help introduce order to the chaos and furor accompanying the initial notification for help . . . The preplan is a combination of search technique, management guidelines, and policies integrated for use in resolving field SAR situations.*"

The preplan need neither be long nor complicated, but it must be realistic, down-to-earth, clear, and up-to-date. It should be written so the new kid on the block can initiate a search as effectively as the "local expert". It should help ensure that the initial search response is swift and apt. In fact, "preplanning" is usually planning for the hasty search phase of the incident, and during that phase, plans need to be made for the next operational period, and so on.

The preplan should be a group effort, involving representatives and input from all resources. It should be a checklist that is reviewed annually or even more frequently. In fact, creating a preplan is sometimes more informative than the end result.

The preplan should be reviewed annually or even more frequently.

Although a preplan depends on the specific agencies and groups involved, some questions to be answered in the preplan are:

1. What is the objective/purpose of the preplan?
2. Which agency is responsible for the management of the search?
3. Who should be advised of the incident?
4. Which forms, papers, procedures, manuals, etc., should be available for reference purposes, to ensure that the initial response runs smoothly?

[15] See Reference [Setnicka, page 51]

5. What is the environment like, including hazards, past incidents, weather, maps?
6. How is the urgency of the search determined, and what type of response is justified for that urgency?
7. Which resources are typically available, including qualifications, response times, contact information?
8. What equipment is typically available, including response times, contact information?
9. Who is responsible for the initial callout of these resources and equipment?
10. Does the incident have a robust and reliable incident support system? A highly functional support system that supplies the Initial Response Incident Commander (IRIC) with the management staff, the personnel, and the resources they need is important. "One riot, one deputy" is unacceptable on a SAR incident.
11. Who is in charge of investigations, completing the Lost Person Questionnaire?
12. Who is in charge of keeping track of clues?
13. What are the communication options?
14. What documents should be completed during the initial response and by whom?
15. How are the arrival, briefing, tracking, and debriefing of the search resources managed?
16. How is the care and feeding of the search resources managed?
17. How are the family, media, stake-holders, handled?
18. What are the plans if a resource is injured?
19. What are the options if the subject is found: healthy, injured, deceased?
20. What are the guidelines for suspending a search if the subject is not found?
21. What are the demobilization plans?

Section 1.5

When Do We Search?

When do we search? Day and night. However, for night searches, it is the duty of the IC to balance the search urgency against the safety of the searchers.

The tactics used for night searches may differ from day searches. For example, if the search is in unfamiliar or dangerous territory, or the weather is bad, then the emphasis at night might be on passive search tactics such as placing resources at safe locations to contain the subject, thereby restricting the size of the subsequent search area. These resources can shout the subject's name to attract their attention. They can also interview non-SAR personnel in the search area who might have valuable information about the subject.

Advantages of Night Searching

- Some resources search well at night, for example, canines, resources using night vision goggles, FLIR, and thermal-imaging devices.
- Because it is quieter at night than during the day, human voices and sounds carry farther. This increases the effectiveness of any search tactics involving sound.
- Light signals from the subject are more easily detected by searchers.
- The subject is usually immobile at night. There are two advantages to this. Subjects are more likely to hear searcher sounds, and searchers on trails can overtake them.
- Searchers have the ability to control the angle of light from flashlights to best illuminate tracks and cast shadows.

Disadvantages of Night Searching

- Even with a full moon, visibility is not as good as in daylight.

- There is an increased risk to searchers. Aside from a hazard like the terrain, deer and other prey move at night, which attracts predators such as mountain lions and bears.
- A missing person could be injured while attempting to move towards searchers.
- Clues can be missed or destroyed.

Section 1.6

How Do We Manage a Search Incident?

The Incident Command System (ICS) is the national standard for managing All-Hazard Incidents. This includes the management of searches for lost persons. It is important for the IRIC to have a firm understanding of the ICS and the application of ICS principles to a lost person incident.

Most lost person incidents are resolved within one 12 to 24 hour operational period. This tendency toward short-term incidents may lull the IRIC into a false assumption that any given search will be short-term and of moderate complexity.

Successful incident management is largely dependent upon the timely recognition of increasing incident complexity and the timely mobilization of incident management personnel. Under the principles of ICS, the IRIC is responsible for all Command and General Staff (C&G) positions until other qualified incident managers are mobilized. These C&G positions are Incident Command, Plans, Operations, Logistics, Finance, Public Information, Safety, and Liaison.

Mastery of incident management requires a commitment to formal training, practical incident management experience, and the ongoing guidance of skilled mentors. The wildland fire community provides an excellent environment to learn incident management. A motivated incident manager should consider shadowing opportunities or active assignment to wildland fire Incident Management Teams (IMTs).

CHAPTER 2

Initial Response Overview

Section 2.1

Investigate, Contain, Search

The Initial Response phase of a search is the period between the time the Initial Response Incident Commander (IRIC) receives the initial report that someone is missing, and the start of the first full operational period.

Initial Response → OP 1 (first full Operational Period)

The Initial Response period is usually characterized by use of a few, highly skilled, independent resources searching likely routes and locations. Records are kept on the Initial Response Organizer Note, discussed in Section 4.1 on page 36, or the ICS 201, discussed in Section 4.2 on page 54. The first Operational Period begins when the IRIC transitions the incident to a new IC and/or Incident Management Team (IMT), and a written Incident Action Plan (IAP) is developed and implemented. The Initial Response phase of a search should last no longer than 16 hours, preferably less, because the IRIC's decision making ability deteriorates with fatigue.

In any search and rescue incident the initial actions set the stage for the rest of the incident. Although around 97% of all SAR incidents are resolved in the first 24 hours, good quality initial actions are extremely important to optimize the final result. Actions taken during the first few hours often dictate the outcome of the incident.

Once the IRIC for the incident has been identified, the initial missing person report must be evaluated appropriately to determine the type of response that is needed. Actions taken during the Initial Response include investigation, scenarios, containment, and searching.

A useful acronym that dictates the order of initial actions is "ICS". In addition to standing for Incident Command System, ICS stands for **I**nvestigate, **C**ontain, **S**earch.

*ICS is an acronym that dictates the order of initial actions—**I**nvestigate, **C**ontain, **S**earch.*

Investigation is a critical component to search management and should never be overlooked in the effort to get searchers out the door to conduct a response. The order SCI is a recipe for disaster.

A search is an unknown emergency at an unknown location and as such the more information that can be gathered at the outset and during the operation aids in the successful resolution of

the incident. The investigation can have a significant impact on the search tactics used. While not a common occurrence some incidents of overdue or missing persons are either bogus reports or criminal activity. Good investigation at the outset may reveal that the search is a bogus search (a search that is not necessary) and resources do not need to be deployed. Other times the initial investigation reveals that there may be criminal activity involved and that can prompt a different response.

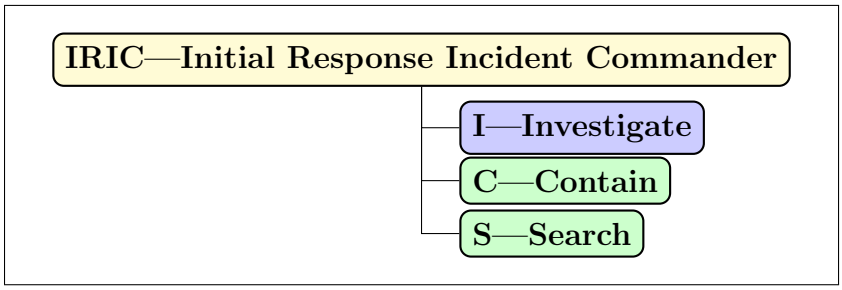
Section 2.2

Anatomy of an Initial Response

The following is a sequence of steps designed to manage the Initial Response phase of a search, together with links to relevant parts of the book. The IRIC Job Action Sheet in Appendix A on page 152 is a useful document to print.

1. Identify the IRIC.
2. Take the initial report. See Chapter 3 on page 29.
3. Check in with Agency Dispatcher and on IRO Note or on ICS 201. See Chapter 4 on page 36.
4. Take command of the incident, designate an Incident Command Post (ICP), and announce this to all participants.
5. Document everything using the IRO Note or the ICS 201 form. See Chapter 4 on page 36.
6. Gather additional information using a Lost Person Questionnaire, (LPQ). See Chapter 3 on page 29.
7. Appoint an investigator to continue the investigation. See Chapter 6 on page 68.
8. Determine Search Urgency. See Chapter 5 on page 65.
9. Review Lost Person Behavior. See Chapter 7 on page 78.
10. Size up the situation from all the information.
11. Develop an appropriate response, including
    a) Create Initial Incident Objectives. See Chapter 8 on page 95.
    b) Develop Initial Response Strategy. Identify alternative scenarios. Be sure to include appropriate containment, as well as locating and protecting the PLS/IPP, and determining a direction of travel. See Chapter 9 on page 98.
12. Identify Likely Spots and Routes the subject might have taken.
13. Designate Staging Areas. Notify all responders of location and mark ICP and Staging Areas on the map. Use the symbols described in Appendix E on page 178.
14. Order the necessary resources, and begin tracking them.
15. Prepare and distribute a Missing Person Flyer. Put out BOLO and/or ATL.
16. Brief and assign the resources. See Chapter 12 on page 107.
17. Communicate incident actions to the agency dispatcher as appropriate.
18. Monitor and direct tactical operations.
19. Deal with the family and media as needed. See Chapter 16 on page 132.
20. Begin planning for the next operational period (OP) and the required transition to an expanded IMT.
21. Debrief tactical resources, and document significant events and actions. See Chapter 17 on page 134.
22. Evaluate the success of the Initial Response efforts.
23. Brief the incoming IC and/or IMT. See Chapter 20 on page 143.

Part II
Investigate



CHAPTER 3

Initial Report

A search normally begins when the IRIC is notified, either directly or by agency dispatch, of a potential missing person incident through an Initial Report. This report may come from different sources in different ways.

- By telephone/cell phone from the reporting party.
- By cell phone from the missing subject—self-reporting.
- By radio.
- In person.
- By finding unattended vehicle or equipment.
- Through an alert from a Satellite Emergency Notification Device (SEND)—such as SPOT and InReach—or a Personal Locator Beacon (PLB).

The Initial Report should contain answers to the following questions: Who? What? When? Where? and How?

- Who?
  - Who is missing? Physical description: Name, height, weight, age, build, hair color, length, eye color, complexion, distinguishing marks, clothing worn, ...
  - Who is the reporting party? Name, relationship, location of Reporting Party. Re-contact information.
- What?
  - What happened?
  - What is going on now?
  - What were their trip plans?
- When? When was the person last seen?
- Where? Where, exactly, was the person last seen?
- How? How did they go missing?

Search Demonstration #1: Background

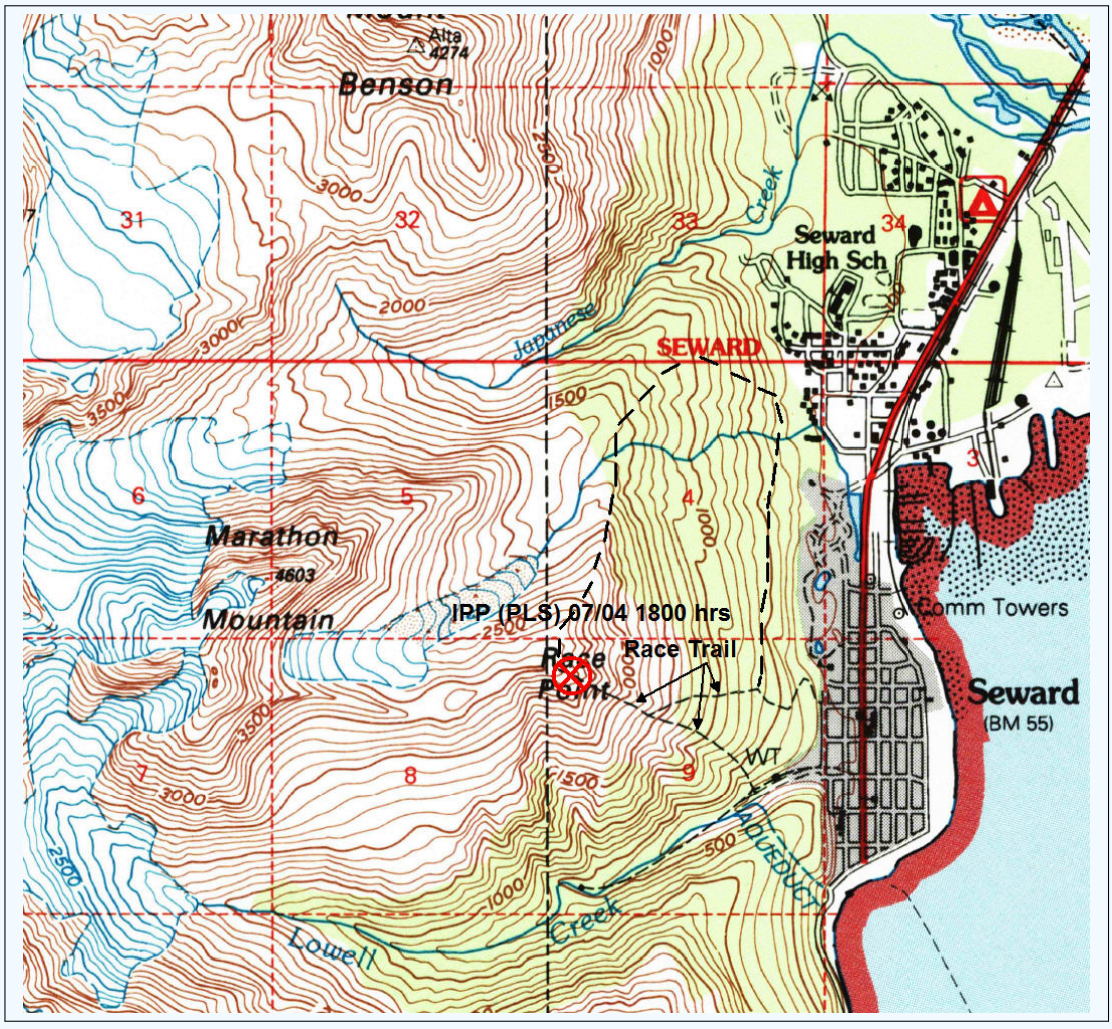
The Search Demonstrations deal with the search for a subject who went missing during the Mt. Marathon Race near Seward, Alaska.

- *Race begins and ends in downtown Seward. Total race course distance: About 3.1 miles.*
- *Halfway point of the race: Race Point—a false summit marked by a large rock. Where race course turns around. 3022 feet above sea level. 1.5 miles from finish line.*
- *Leading racers typically reach the Race Point from the starting line in 33–40 minutes. Reach the finish line from the Race Point in 10–15 minutes.*
- *Common for the racers to cross the finish line injured, bleeding, and covered in mud.*

Search Demonstration #2: An Initial Report

Reporting party: *Peggy LeMaitre, wife, lives in Anchorage. Phone XXX-XXX-XXXX.* ***Missing subject:*** *Michael LeMaitre. Male, 65, 6' 2", 212 lbs, short brown hair, blue eyes. In good health. Black running shorts, black T-shirt.*

LeMaitre started race about 1500. He was last seen 200 feet below Race Point heading up the race trail at about 1800 hours by T. Walsh, race timer at Race Point as Walsh was descending the Mountain. LeMaitre was in last place, but seemed in good condition and wanted to continue to Race Point before turning around. He did not return to the trailhead, and was reported overdue by his wife Peggy LeMaitre at 2000 hrs on 07-04.



The actions of the IRIC during the early hours of the search are crucial to resolving the incident quickly. These actions include:

- Initiating an effective investigation to gather information about the missing person and the time and location they were last seen.
- Identifying the Last Known Position (LKP) or the Place Last Seen (PLS).

> ***LKP***—*Last Known Position. The last known location of the missing subject determined by physical evidence such as a vehicle, a discarded object, or a footprint.*
> ***PLS***—*Place Last Seen. The location where the missing subject was actually seen by another person.*
> ***IPP***—*Initial Planning Point. The first LKP or PLS.*
> ***If there is no IPP there is no reason to put resources into the field.***

- Accurately establishing and protecting the Initial Planning Point (IPP). Once established, the IPP does not change during the search, but the LKP and PLS may, and often do.
- Determining the search urgency.
- Identifying the routes and locations that the missing person might have taken from the IPP.
- Acquiring trained resources and applying them properly to contain and then locate the missing person or clues left by the missing person.
- Documenting all important information for the record, and briefing a new IC or incoming staff should one be assigned to take over the incident.

> *The actions of the IRIC during the early hours of the search are crucial to resolving the incident quickly.*

The first thing the IRIC must do is gather information that helps answer the following questions:

1. Should a search be initiated, or should the investigation be continued before assigning searchers to the field?
2. How urgent is this search?
3. Where should searchers look for the missing person or clues, including likely spots and routes?
4. What should searchers be looking for (description of the person, clothing, equipment, physical and mental condition)?

Several tools are available to the IRIC to help answer these questions, and to ensure that no critical information is overlooked or forgotten. An initial report Lost Person Questionnaire (LPQ), sometimes known as a "Thumbnail Sketch" or a "Missing Person Questionnaire", is used by most agencies and organizations to gather and organize the initial report information. It is usually no more than one or two pages long, and focuses on that information critical to answering the searching and planning questions. See Figure 3.1 on page 32 and Figure 3.2 on page 33 for an example.

The LPQ is completed early in the incident while interviewing the reporting party. The investigator should develop a rapport with the reporting party and maintain that contact throughout the incident. The LPQ likely prompts more questions and areas to investigate. One of the goals in the initial investigation is to determine the nature of the incident. Not every missing person report requires a SAR response. Some cases can be resolved through the initial investigation. For example, there have been cases where a hiker is reported overdue by a third party. During the initial

Search and Rescue Report

Investigator

Date	Time	Department Report Number	Incident Number	Reporting Officer

Source of Information

Name	Address	Town	St

D.O.B.	Social Security Number	Age	Sex	Height	Weight	Hair	Eyes

Relationship to Subject	Phone Number	Second Phone

How / Where to Contact Now	How / Where to Contact Later

What Reporting Party Believes to Have Happened

Subject Information

Name	Age	Sex	Nickname(s)

Home Address	Town	St	Zip

Local Address	Town	St	Zip

Home Phone	Local Phone	D.O.B.	Social Security Number

Cell Phone	**Cell Phone Carrier**	**Email Address:**

Physical Description

Identification	Clothing / Style	Color	Size	Health
Height:	Shirt / Sweater:			Overall Health:
Weight::	Pants:			Physical Condition:
Age:	Outer Wear:			Medical Problems:
Build:	Inner Wear:			Psychological Problems:
Complexion:	Head Wear:			Medication:
Distinguishing Marks:	Rain Wear:			Amounts:
Eyes:	Gloves:			Consequences of Loss:
Hair Color:	Extra Clothing:			Eyesight w/o Glasses:
Hair Style:	Footwear:			Medic-Alert:

☐ Beard ☐ Jewelry
☐ Mustache ☐ Photo Available?
☐ Sideburns ☐ Return Photo?
☐ Glasses ☐

☐ Sole Sample Available
☐ Scent Articles Available
☐ Scent Articles Secured
☐ Clothing Visible from Air?

☐ Smoker ☐ Hitchhiker
☐ Alcohol ☐ Religious
☐ Drugs ☐ Educated
☐ Gum ☐ Local Hero
☐ Candy ☐ Extravert
☐ A Leader ☐ Introvert
☐ A Survivor ☐ Loner
☐ Legal Problems ☐ Depressed
☐ Personal ☐

Youth / Child	Equipment			
☐ Afraid of Dark	☐ Pack	☐ Stove	☐ Skis	☐ PLB
☐ Afraid of Animals	☐ Tent	☐ Fuel	☐ Snowshoes	☐ GPS
☐ Afraid of Strangers	☐ Sleeping Bag	☐ Compass	☐ Money	
☐ Cry When Hurt	☐ Ground Cloth	☐ Map	☐ Credit Cards	
☐ Cry When Scared	☐ Fishing Gear	☐ Food	☐ Other Documents	
☐ Hides When Afraid	☐ Climbing Gear	☐ Knife	☐ Rope	
☐ HUG-A-TREE Trained	☐ Liquid Container	☐ Camera	☐ Camp Tools	
☐ Has a Safety Word	☐ Fire Starter	☐ Light Source	☐ Sat Phone	

Continue ➡

Figure 3.1: An example of a Lost Person Questionnaire—Page 1

ICS SAR 201B CCSO Version ICS Form 3/2008

Place Last Seen

Date	Time	Common Name / Description

Description	Additional Comments
Subject Last Seen by:	
Talked to Subject About::	
Weather Since:	
Subject's Direction of Travel:	
Subject's Attitude:	
Subject's Condition:	

Subject's Trip Plans

Itinerary	Transportation	Additional Comments
Started At:	Transported By:	
Date:	Vehicle Location:	
Time:	Make / Model:	
Destination:	License:	
By Way of:	Vehicle Location Confirmed By:	
Purpose:	Time Confirmed:	
Length of Stay:	Additional Vehicles at Scene:	
Size of Group:	Alternate Plans / Routes:	
Has Subject Made This Trip Before:	Discussed With:	

Subject's Outdoor Experience

General Experience		Additional Comments
☐ Familiar With Area	☐ Travels Alone	
☐ In Area Recently	☐ Stays on Route	
☐ Formal Outdoor Training	☐ Travels X-C	
☐ Medical Training	☐ Lost Before	
☐ Scouting	☐ Will Stay Put	
☐ Military	☐ Keeps on Move	
☐ Overnight	☐ Climber	
☐	☐ Athletic	

Contacts Upon Reaching Civilization

Name of Person That Subject Would Contact	Relationship	Phone	Who Is There Now

Overdue Groups

Description	Group Characteristics
Kind of Group:	Personality Clashes:
Leader:	Actions if Separated:
Experience of Group / Leader:	Competitive Spirit:
Local Point of Contact:	Intragroup Dynamics:

Actions Taken So Far

By Family / Friends	By Others

ICS SAR 201B CCSO Version ICS Form 10/04/01

Figure 3.2: An example of a Lost Person Questionnaire—Page 2

investigation local hospitals were checked for the subject or any unidentified persons matching the description and as a result of those inquiries missing/overdue persons have been located in the hospital suffering from a medical condition.

> *Not every missing person report requires a SAR response. Some cases can be resolved through the initial investigation.*

Later, a more detailed form of the LPQ can help the IRIC or investigator guide the follow-up or continuing investigation and focus on that information most helpful in resolving the search. There are numerous versions of LPQ's in use across the country. Initial Response Organizer has examples of both short and long form LPQ's that are quite complete and useful. See Section 4.1 on page 36. This initial information can be input into Initial Response Organizer as a part of the IRO Note.

As soon as possible after the report of a lost or overdue person is taken the subject of the search should be entered into the National Crime Information Center computer (NCIC) as a missing/endangered person as required by law.

Law enforcement investigators often have access to investigative databases, such as NCIC, Off-Line Local and FBI searches, and TLOxp®—a database for background research on people, assets, and businesses—among others, which can aid in developing background information about the lost or overdue person. The objective is to develop an accurate profile of the subject of the search and what may have happened.

There are many valuable sources of investigative material available to the investigator. Staying abreast of new investigative tools allows the Investigator to gather important information about the search subject that can inform strategy and tactics that aid in locating the subject. Interviews are often the most valuable source of information and can be used to confirm clues as well as generate additional leads to follow-up on. There are a variety of electronic clues available for investigators to utilize. These include, but are not limited to,

- Cell Phone Location Information.
- Vehicle Based Satellite Services (OnStar, mbrace2, SYNC®).
- License Plate Readers.
- Surveillance Camera Footage.
- Social Media accounts.
- Internet Search Engines (which can aid in locating additional contact information or images).
- Credit card/debit card transactions.

Questions to ask the lost subject[1]

With the increased usage of cell phones, more and more subjects are reporting themselves lost via a cell phone. Interviewing these subject requires a different mind set from interviewing a typical reporting party.

1. Location
   a) Where did you start from? How long ago?
   b) Where is your vehicle?
   c) What does your vehicle look like (make/model/color/plate)?
   d) What was your destination?
   e) What does the terrain around you look like? Are you in pines, cactus, wash, landmarks?

[1] These questions were compiled by Eric E. Johnson of the Pima County Sheriff's Department, Tucson, AZ.

   f) Can you take a photo of your current view plus any shots of your route, and then send by cell phone?
   g) Can you see the city or lights?
   h) Can you tell where North is?
   i) What is the weather like where you are?
   j) What time did you start hiking?
   k) How long have you been hiking?
   l) Describe the route you took to where you are?
   m) Did you follow a trail or go cross country?
   n) Were there any significant points along the way?
   o) Can you hear anything (traffic/waterfall)?
   p) Is there anyone we can contact to inform and reassure them of your circumstances? (This will enable you to find out more about the lost subject.)
2. Preparedness
   a) How much food and water do you have?
   b) How much food and water have you consumed?
   c) How long were you planning to be out?
   d) How much experience do you have?
   e) What gear do you have, foot wear?
   f) Do you have a light source? Can you signal aircraft or searcher?
   g) Can you make fire or shelter?
   h) Cell Phone number, send text if no answer.
   i) What kind of cell phone (model)?
   j) Carrier?
   k) Tracking capability?
   l) GPS/PLB/SPOT? ID/Provider?
   m) Cell phone battery life?
3. Medical
   a) What is your chief complaint (mechanism of injury, nature of illness)?
   b) What is your current condition? Can you walk? Can you move? Self help? Treat?
   c) What is your level of pain 1—10, 1 being no pain.
   d) Do you have any allergies?
   e) What is your medical history?
   f) What medications are you taking?
4. Detectability
   a) What is your description?
   b) Clothing description? Shoes and prints?
   c) Can you take a cell phone photograph of your shoe print and send it to us?
   d) Will we be able to see you?
   e) Can you signal aircraft or searcher? Do you have a smart phone or camera?
   f) Can your phone give GPS coordinates?

CHAPTER 4

Documenting the Initial Response

The initial hours of any incident are often stressful and confusing. The initial information about the subject and the incident is often vague, incomplete, and sometimes contradictory. Many things happen at once, and there are numerous competing demands for the IRIC's time and attention. Decisions made and actions taken in these initial hours determine the outcome and length of the incident.

If the missing person is not found in the first few hours, it is imperative that the IRIC plans for the expansion of the incident complexity, and orders additional trained resources and management assistance. Recording the early decisions and actions helps keep important information from getting lost, and facilitates information sharing when the IRIC transitions the incident to another Incident Commander (IC) or to an Incident Management Team (IMT).

> *"The 'acid test' for the adequacy of documentation is whether the search managers, after the search is over, can describe all significant events that occurred during the incident from the documentation."* Quoted from Reference [Armstrong].

Normally if the Initial Response Organizer and IRO Note are used to document the search, the ICS 201 is not used, and vice versa.

Section 4.1

Using Initial Response Organizer During an Initial Response

Initial Response Organizer is a free Windows software program geared towards Search and Rescue. It is an IRIC's multi-purpose tool, and can be downloaded from `www.saraz.org`.

Figure 4.1 shows the top of the opening screen of IRO.

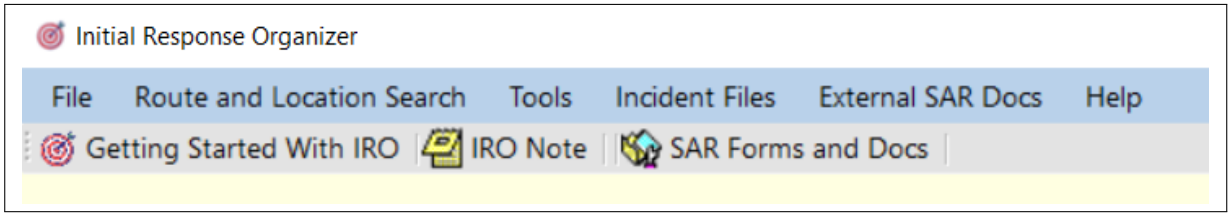


Figure 4.1: IRO Menus

The first line contains the name of the program, *Initial Response Organizer*. The second line is the Main Menu and the third the Toolbar.

Clicking on the menu item Route and Location Search displays Figure 4.2.

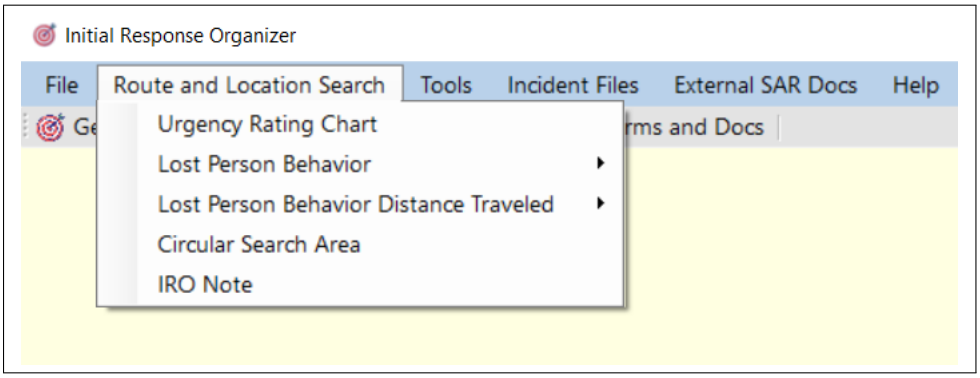


Figure 4.2: Route and Location Search menu

These are the more useful menu items that can be used by the IRIC during an Initial Response.

- Urgency Rating Chart allows the user to complete an Urgency Rating Chart, described in Table 5.1 on page 66, and then copy it to the clipboard for pasting into the IRO Note.
- Lost Person Behavior allows the user to read about the typical behavior of a lost person, based on various characteristics for subjects in the UK, and in the USA/Canada. The latter is reproduced in Appendix C.1 on page 160.
- Lost Person Behavior Distance Traveled shows the distances traveled for various categories of lost persons in Arizona and Nova Scotia. This is reproduced in Appendix C.2 on page 167.
- Circular Search Areas calculates the area between two concentric circles and then copies it to the clipboard for pasting into the IRO Note.
- IRO Note, which can also be accessed from the Toolbar, allows the user to create a text file that contains information about the Route and Location Search. An IRO Note is created using a very simple text editor, built into Initial Response Organizer, which is specifically tailored to SAR incidents. This editor is used at the beginning of a search incident and contains a number of templates ready to be completed, accessed with a click of a mouse.

Starting to Fill an IRO Note

Pressing the menu item IRO Note under Route and Location Search in Figure 4.2, or by selecting IRO Note from the Toolbar in Figure 4.1, shows Figure 4.3, a blank IRO Note.

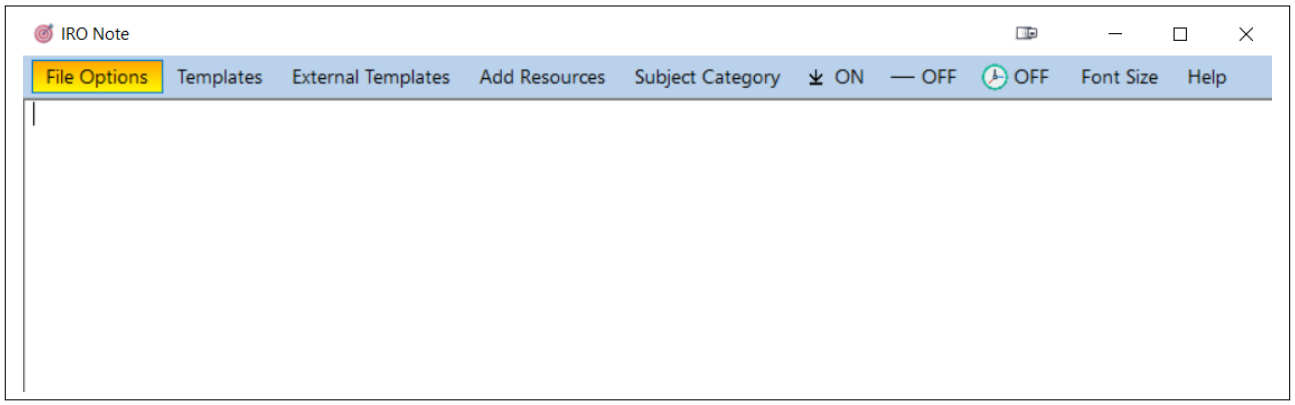


Figure 4.3: A blank IRO Note

At this stage the most important menu item is Templates.

Templates

Templates are SAR-oriented texts that you can insert and complete. They are the heart and backbone of the IRO Note. Without these the IRO Note is just a poor-man's text editor.

Figure 4.4 shows a list of the current templates.

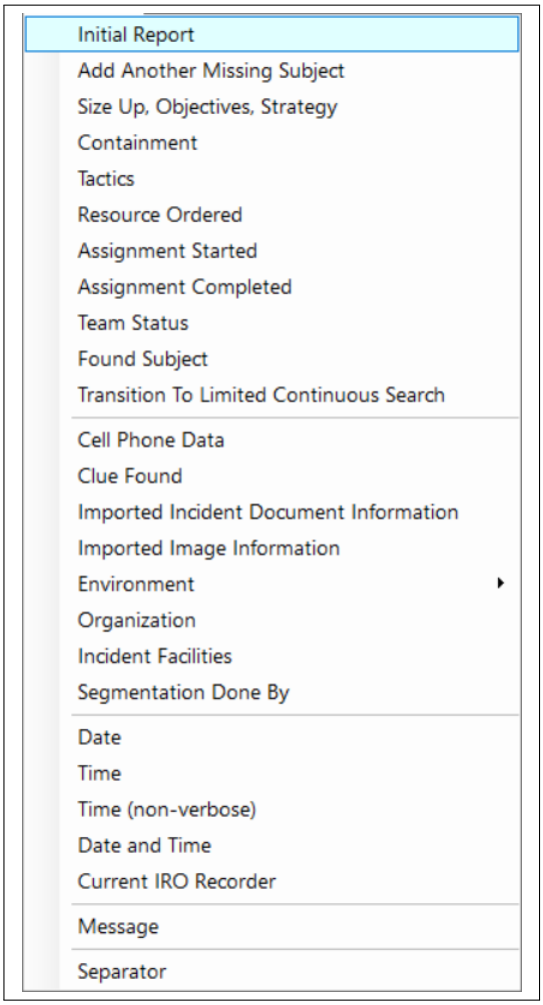


Figure 4.4: The Template choices

At this stage the IRIC should have some information from the reporting party about the missing subject.

Initial Report

To enter this information into the IRO Note select the first item under Templates, Initial Report, which opens the template shown in Figure 4.5.

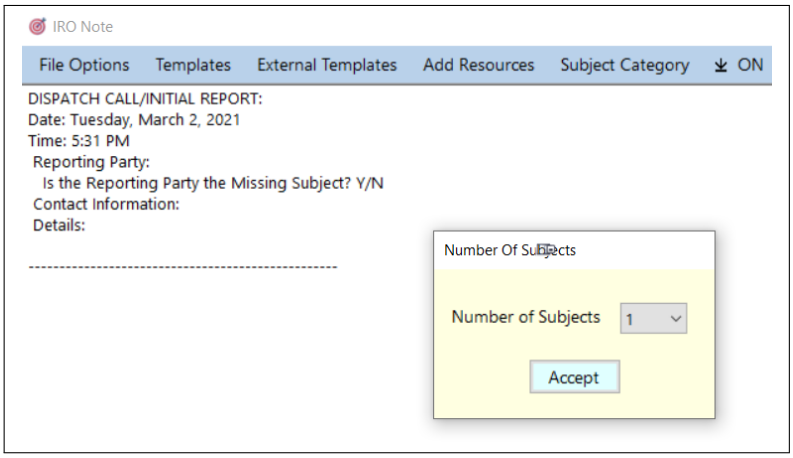


Figure 4.5: Dispatch Call/Initial Report template

In the background is that part of the template dealing with the Reporting Party. Typical things to be entered here are name and phone number. This is followed by a horizontal line, called a Separator.

In the foreground is a window where we enter the number of missing subjects—we will stick with one—and press Accept. Figure 4.6 shows the contents of the Initial Report template, split into three panels for easy viewing.

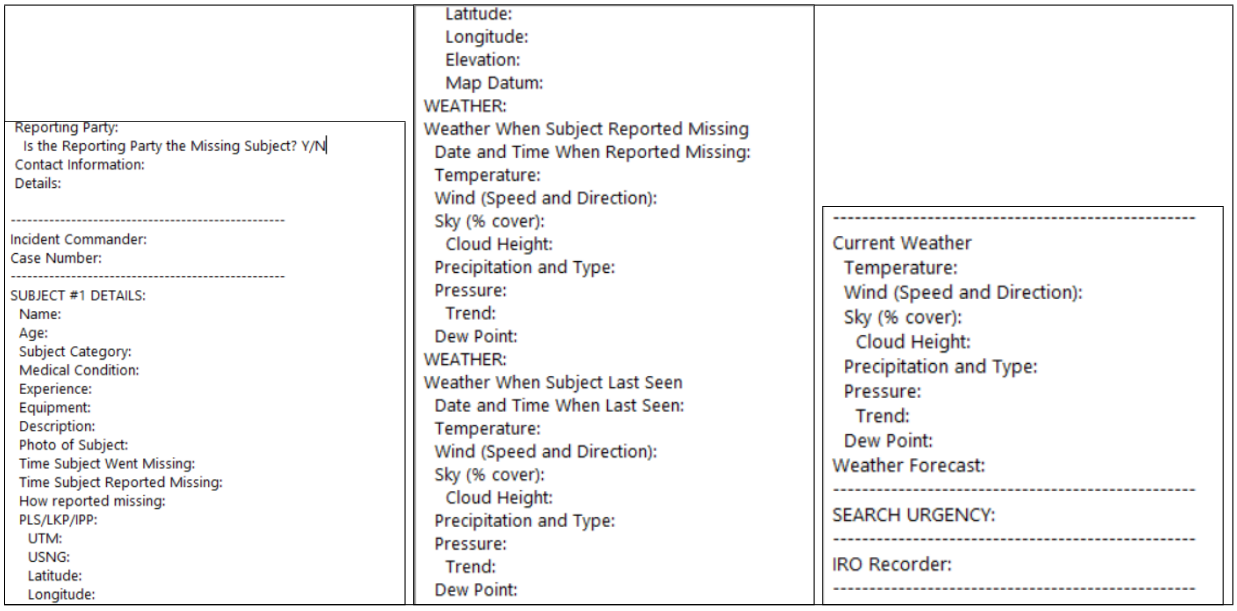


Figure 4.6: Initial Report template, split into three

Look at Figure 4.6 carefully, in particular, the headings that are capitalized: the Subject Details, the Weather, the Search Urgency, and the IRO Recorder—the name of the person entering the information.

- Starting at the top add as much information as you have, until you select Subject Category.
- To select the Category, place the cursor next to the word Category, and selects Subject Category in the IRO Note toolbar seen in Figure 4.7.

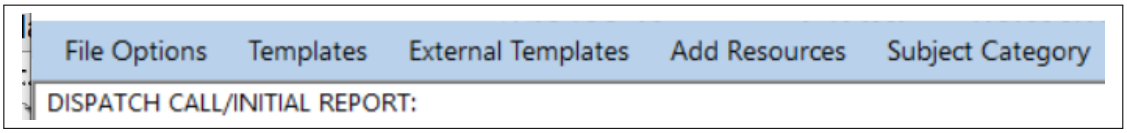


Figure 4.7: IRO Note Toolbar

This shows Figure 4.8.

Figure 4.8: Subject Category Choices

If the missing subject is a child between 7 and 12 years old, the item Children (7 to 12 years) is chosen. The information is then pasted into the IRO Note, part of which is shown in Figure 4.9.

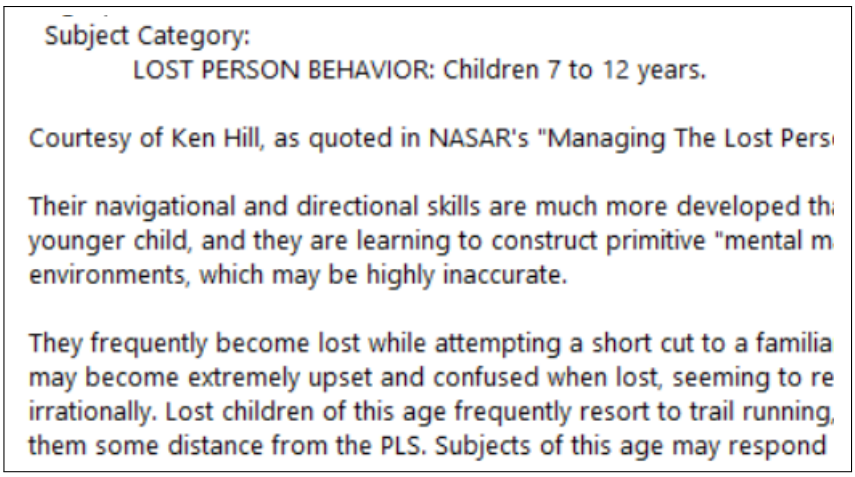


Figure 4.9: Children (7 to 12 years) in IRO Note

If you pasted it in the wrong place, either right click to open the context menu and select Undo, or use the keyboard combination Ctrl Z. Then try again!

Search Urgency

Continue adding as much information as you have into Figure 4.6 on page 39, until you reach Search Urgency, near the end of the third panel.

To determine the Search Urgency, place the cursor next to the words Search Urgency in the IRO Note. Select External Templates in the IRO Note toolbar shown in Figure 4.7 on page 40. This brings up Figure 4.10.

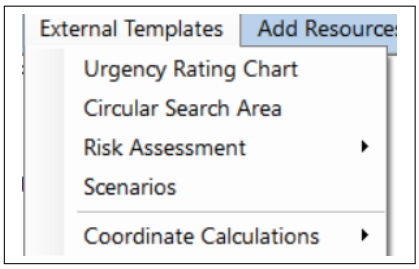


Figure 4.10: External Templates

Then choose Urgency Rating Chart. This allows the IRIC to complete Figure 4.11. (The Search Urgency Rating Chart is discussed in detail in Chapter 5 on page 65.)

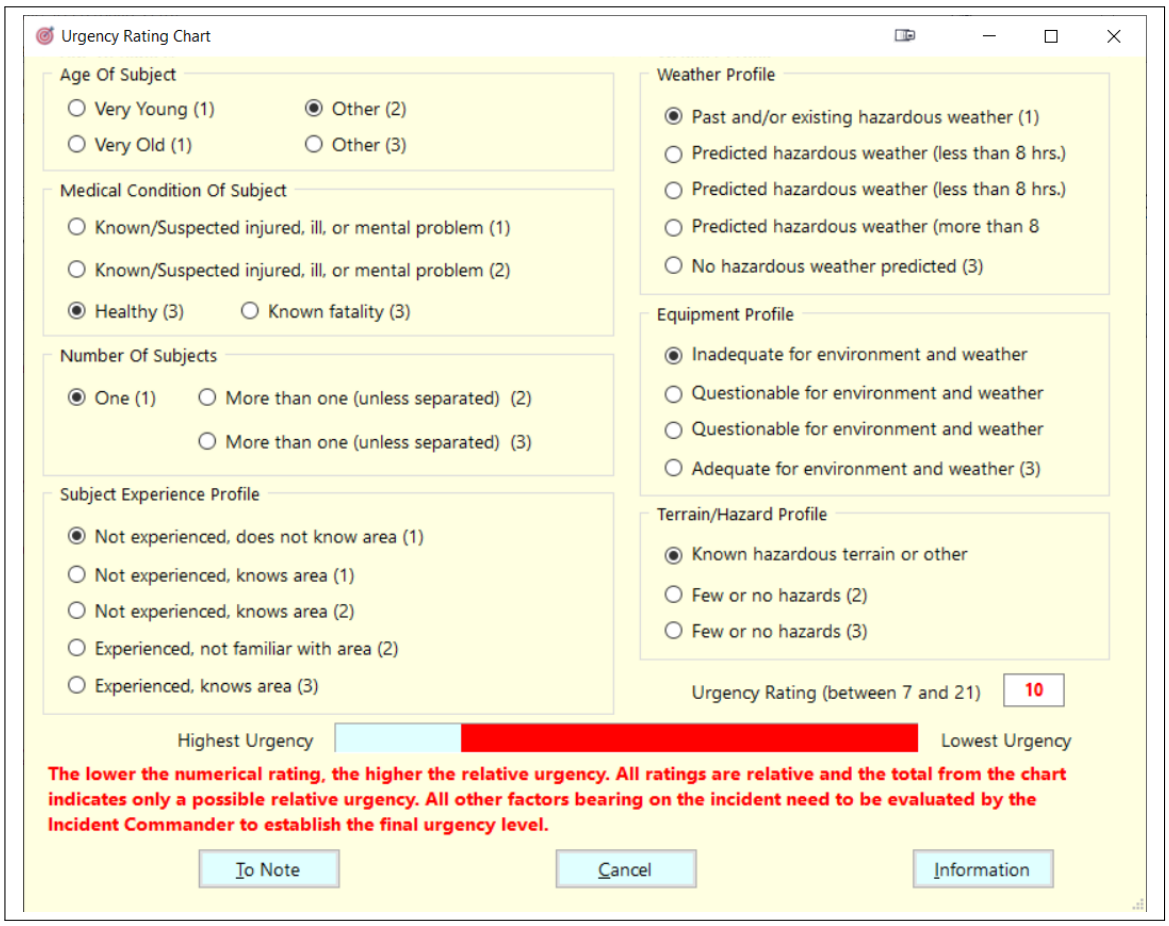


Figure 4.11: Urgency Rating Chart

Having completed the Urgency Rating Chart, the IRIC selects To Note, which transfers the information directly to the IRO Note, as seen in Figure 4.12.

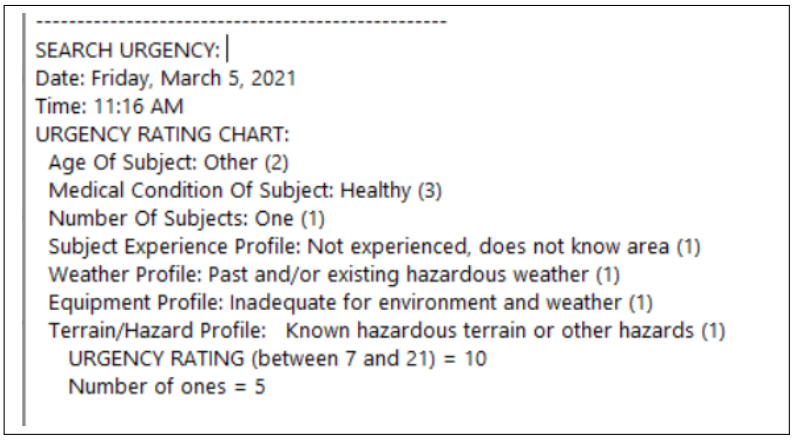


Figure 4.12: Search Urgency in IRO Note

Resource Documentation

In the early stages of a search, the IRIC needs to document the resources that are requested, available, and deployed. This can be done using either the Resource Ordered template, shown in Figure 4.13, or the Tactics template. In this section the Resource Ordered is used. In the "Example of a Completed IRO Note" on page 46 the Tactics template is shown in action.

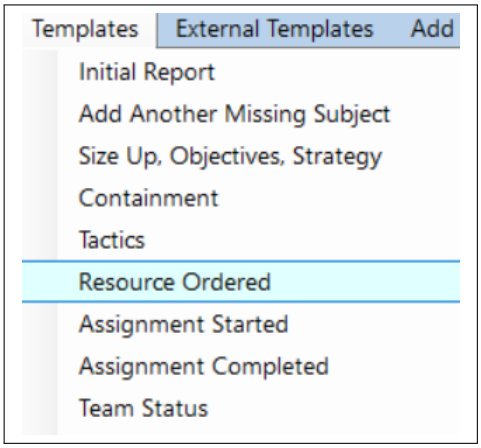


Figure 4.13: Resource Ordered

Usually templates and other imported materials, are placed at the position of the cursor, so before using the Resource Ordered template, it is wise to move the cursor to the end of the IRO Note. The Resource Ordered template then adds Figure 4.14 at the current cursor location—the end of the IRO Note.

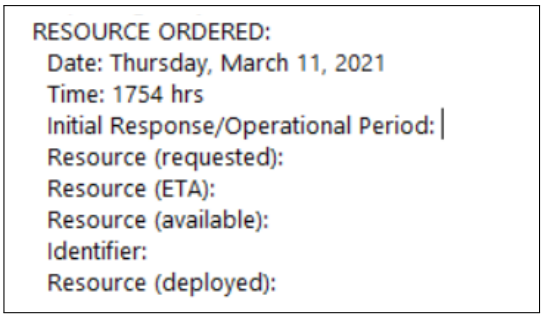


Figure 4.14: Resource Ordered

To add a resource, either add it by hand or place the cursor where we want to enter the resource's name, perhaps at the end of the Resource (requested): line, and select Add Resources in the IRO Note toolbar. See Figure 4.15.

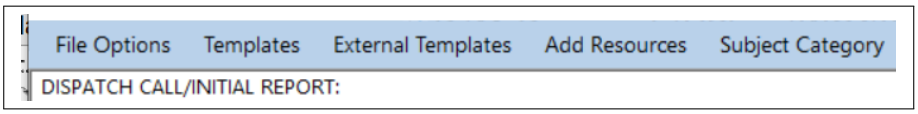


Figure 4.15: IRO Note toolbar

This brings up the choices in Figure 4.16. Click on the appropriate resource to insert it into the IRO Note at the position of the cursor.

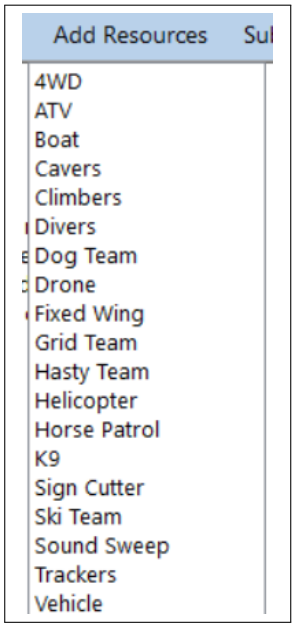


Figure 4.16: Add Resources

Placing Templates in IRO Note

Usually we want templates and other imported materials to be placed at the end of the IRO Note. To do this select ⇓ OFF in the IRO Note toolbar shown in Figure 4.7.

Figure 4.17: IRO Note toolbar

Then ⇓ OFF becomes ⇓ ON, which indicates the current status.

To place a Separator before all inserted templates, select — OFF in the IRO Note toolbar (Figure 4.17), which becomes — ON, indicating the current status.

Other Templates

At this stage, other Templates (see Figure 4.4) that might be useful are:

- Assignment Started— Resource, Identifier, Assignment, Start Date, Start Time, Comments.

- Team Status—Date, Time, Team Name, Status, Location.
- Cell Phone Data—Phone Number, Coordinates, Confidence/Accuracy, Tower Location, Sector, Distance From Tower, Time Phone Reached, Provider.
- Clue Found—Clue Number, Date, Time, Description of Clue, Location of Clue, Team That Found Clue, Individual That Found Clue.
- Environment—Sunrise, Tides, Weather.
- Separator—Inserts line at current cursor location.

Importing Incident Files

By now there may be a number of incident documents and images created. For example, a completed LPQ document, and images of the missing subject, the missing person flyer, and maps of the search area. These can be imported into the IRO Note by selecting Incident Files from the Main Menu, which displays Figure 4.18.

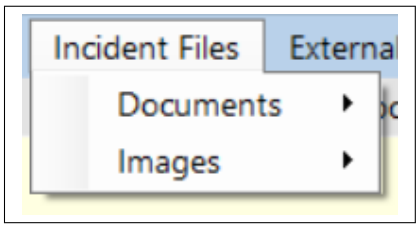


Figure 4.18: Incident Files Menu

There are two menu items, Documents and Images, which each contain submenus. See Figure 4.21 and Figure 4.22.

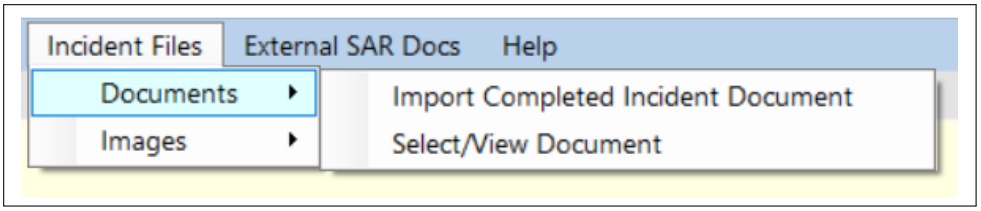


Figure 4.19: Documents Menu

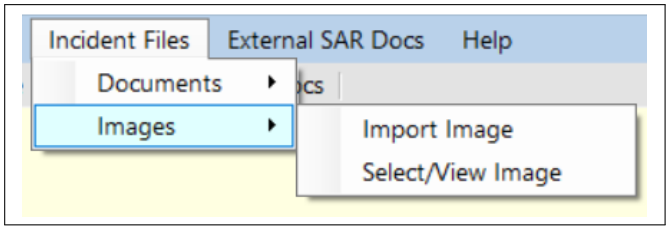


Figure 4.20: Images Menu

Having imported incident files, their information can be added to the IRO Note by using the templates Imported Incident Document Information (see Figure 4.21), and Imported Image Information, (see Figure 4.22).

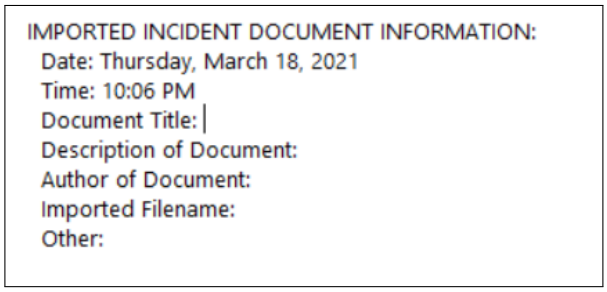


Figure 4.21: Imported Incident Document Information

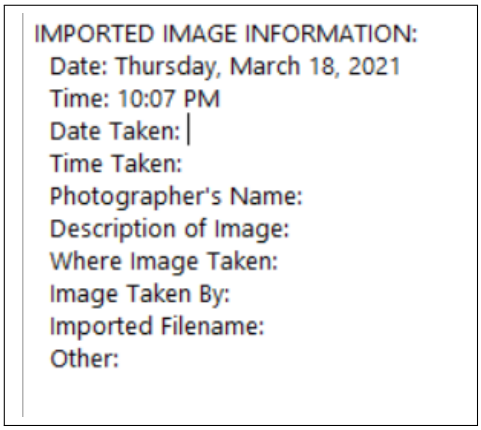


Figure 4.22: Imported Image Information

Subject Found

Eventually the IRIC hopes the subject is found. In this case the Found Subject template can be used. See Figure 4.23.

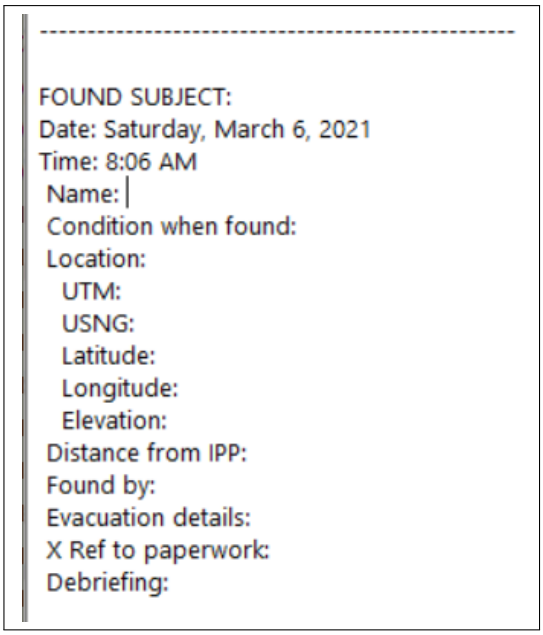


Figure 4.23: Found Subject template

Save and Close IRO Note

To close the IRO Note, select File Options in the IRO Note toolbar, Figure 4.24.

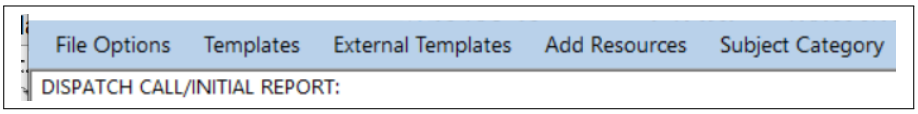


Figure 4.24: IRO Note toolbar

This brings up the choices in Figure 4.25. Click on Save and Close IRO Note.

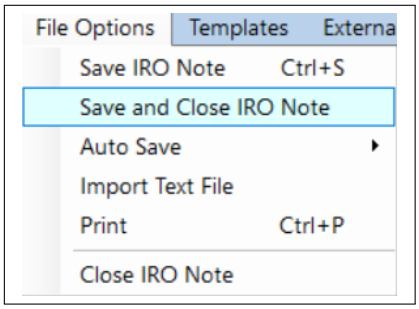


Figure 4.25: File Options

By default, the IRO Note is not saved automatically. However, in Figure 4.25, there is an Auto Save menu item, which if selected, shows Figure 4.26. This allows you to select how often you want the IRO Note to be saved automatically.

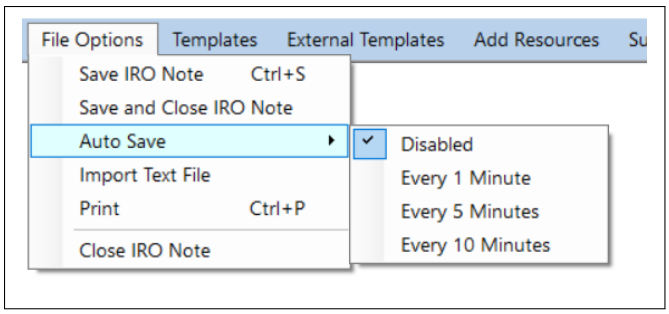


Figure 4.26: Auto Save options

Finally

If the subject is found during a Route and Location Search, then the IRO Note file documents everything that has been done. If the search progresses to an Area Search, then the IRO Note could be imported into WinCASIE III.

Example of a Completed IRO Note

The next few pages show an abridged version of a completed IRO Note. The templates were inserted in the following order: Initial Report, Size Up, Objectives, Strategy, Containment, and then Tactics for each resource ordered. Notice that the Tactics templates were updated as additional information arrived about the associated resource. Also notice that the supporting documents, such as the Lost Person Questionnaire, the Missing Person Flyer, and the Clue Log, were not included in the example, as they are addressed elsewhere in this book.

Completed IRO Note

DISPATCH CALL/INITIAL REPORT:
Date: July 15, 2021
Time: 1:49 PM
Person Taking Initial Report: Mary Hartwell, Lead Dispatcher, Absaroka County Dispatch Center

Reporting Party:
Is the Reporting Party the Missing Subject? Y/N NO
Contact Information: April Massey, 4572 N. Cameron, Absaroka, cell phone: 320−222−3333, friend of the subject.
Details: R/P stated that subject Jack Andrews went hiking to Bluebird Lake on the Bluebird Lake Trail yesterday morning. He planned to eat lunch at Bluebird Lake and then return to the Bluebird Lake Trailhead where his car was supposed to be parked. Car is a 2020 Blue Ford F150 pickup, UT license #: 456 THA. He has not returned home as of 1300 today (7/15/21). Lost Person Questionnaire started at Dispatch.

Incident Commander: John Smith
Case Number: 210025

SUBJECT #1 DETAILS:
Name: Jack Andrews
Age: 21
Subject Category: Hiker

LOST PERSON BEHAVIOR: Hikers

Courtesy of Ken Hill, as quoted in NASAR's "Managing The Lost Person Incident".

Hikers are trail−oriented and often become lost when their trail is obscured for some reason, or when they encounter a confusing junction of intersecting paths. Because of their reliance on trails, hikers tend to travel farther than other lost person categories, although extreme distances are less frequent than for hunters.
They are often less prepared and "woods−wise" than hunters and fishermen.

Statistical data: an analysis of 501 cases of lost or overdue hikers (Mitchell, 1985) revealed the following characteristics:
Only about 40% were considered to be adequately equipped.
92% did not travel after the first 24 hours.
Between 30% and 40% traveled at night.
About 40% were located by a "hasty search".

An analysis of 24 cases of missing hikers (adults only) by Hill (1996) revealed that:
29% found their own way back to safety.
92% survived.
42% of the cases involved two or more subjects.

Implications for search planning: confinement is a top priority, especially trail blocks. Clue−aware searchers should be tasked to run all likely trails, paths, roads, and similar travel aids.

Medical Condition: Good
Experience: Experienced hiker, but first time on this trail.

Equipment: Daypack, water, raingear, map, compass, matches, lunch, Voyageur Boots size 11.
Description: 21 y/o white male, 6'1" tall, 160 pounds, average build, brown hair, brown eyes, no beard, tattoo on left arm of a compass rose.
Photo of Subject: Not available at this time. R/P says they will try to find a photo and call dispatch.
Time Subject Went Missing: Left for Bluebird TH 7.14.21 at 0700 hrs. Hasn't been seen since.
Time Subject Reported Missing: 1349 hrs. on 7.15.21
How reported missing: Telephone to agency dispatch.
PLS/LKP/IPP: LKP/IPP at Bluebird Lake TH. Car belonging to Andrews (2020 Blue Ford F150 pickup, UT license #: 456 THA) found parked in the parking lot at 1425 hrs by R. Jones, Unit 571.
UTM: 12T 343396mE, 5122775mN
USNG:
Latitude:
Longitude:
Elevation: 4000 feet
Map Datum: WGS 84

Date: July 15, 2021
Time: 1601 hrs

WEATHER:
Weather When Subject Reported Missing: Sunny
Date and Time When Reported Missing: 1349 hours 7/15/21
Temperature: 70 degrees F
Wind (Speed and Direction): WSW at 5 mph
Sky (% cover): None
Cloud Height:
Precipitation and Type: None
Pressure:
Trend:
Dew Point:

WEATHER:
Weather When Subject Last Seen: Clear and sunny
Date and Time When Last Seen: 7.14.21, 0700 hrs.
Temperature: 50 degrees F
Wind (Speed and Direction): None
Sky (% cover):
Cloud Height:
Date: July 15, 2021
Time: 2:07 PM
Precipitation and Type: None
Pressure:
Trend:
Dew Point:

Current Weather
Temperature: 70 degrees F
Wind (Speed and Direction): WSW at 5 mph
Sky (% cover): None
Cloud Height:
Precipitation and Type: None
Pressure:
Trend:
Dew Point:

Weather Forecast: Clear and warm with scattered afternoon showers possible through 7.20.21

SEARCH URGENCY:
URGENCY RATING CHART:
Age Of Subject: Other (3)
Medical Condition Of Subject: Healthy (3)
Number Of Subjects: One (1)
Subject Experience Profile: Experienced, not familiar with area (2)
Weather Profile: No hazardous weather predicted (3)
Equipment Profile: Questionable for environment and weather (1)
Terrain/Hazard Profile: Few or no hazards (2)
URGENCY RATING (between 7 and 21) = 15
Number of ones = 2

IRO Recorder: John Smith

SIZE UP, OBJECTIVES, STRATEGY:
Date: July 15, 2021
Time: 2:12 PM
Size Up: Overdue hiker likely on trail to Bluebird Lake, failed to return. Missing 28+ hours
Objectives:

1. Find John NLT 2400 7.15.21.
2. Provide for the safety of all searchers throughout the incident.
3. Contain the search area by 1600 hours on 7.15.21 and maintain throughout the incident.
4. Search all likely routes and locations by 2400 hours on 7.15.21

Strategy:

1. Determine location of John's vehicle, protect it, and investigate for clues.
2. Confirm direction of travel from the vehicle (LKP/IPP)
3. Contain the search area using trail blocks on main trails at the Bluebird TH, Bluebird Lake, and junction of Bluebird Lake Trail with the Black Lake Trail
4. Identify the hazards and attractions within the search area.
5. Use trained ground and air resources to search likely routes, hazards and attraction spots quickly.

CONTAINMENT:
Date: July 15, 2021
Time: 2:32 PM
Source of Data: IRIC Manual, AZ Distance Traveled database
Category: Hiker
Number of Cases: 943
Range Rings:
25%: 0.83 mile
50%: 1.60 miles
75%: 3.30 miles
100%: 47,20 miles
Containment Radius Chosen: 3.39 miles

TACTICS:
Resource: Investigator
Identifier: Robert Janes, Unit 571
Date/Time Ordered: 7.15.21 1400 hrs.
ETA: 1420 hrs.
Date/Time Arrived: 1420 hrs.
Assignment: Check for Andrews pickup in Bluebird Lake TH Parking Lot. If found check for clues/direction of travel, both outside and inside vehicle.
Date/Time Assignment Started: 1420 hrs
Comments: At 1425 R. Janes reports that he located Andrews' pickup in Bluebird Lake TH Parking Lot, and discovered tracks from the driver's side door through parking lot and onto the Bluebird Lake Trail. See Clue #1. Tracks are a vibram soleprint 11 inches long and 3 inches wide. No further identifying marks. No clues found in cab or truckbed.
Date/Time Assignment Completed: 1500 hrs.
Comments: Janes will provide Containment at the TH until Containment Team 3 arrives, then continue to complete the LPQ for Andrews. Initiall LPQ is at Absaroka Dispatch.

TACTICS:
Resource: Containment Team (2 persons)
Identifier: Containment Team 1 (J. Legend, Leader)
Date/Time Ordered: 7.15.21, 1435 hrs
ETA: 1515 hrs
Date/Time Arrived: 1515 hrs.
Assignment: Hike Bluebird Lake Trail from Bluebird Lake TH searching for Andrews and any possible tracks and other clues. Set up trail block on the Trail at the farthest end of Bluebird Lake. Make sure to call for Andrews, stop and listen periodically.
Date/Time Assignment Started: 1520 hrs.
Comments: Call in all clues located to ICP.
Date/Time Assignment Completed: 7.15.21, 2145
Comments: Subject found at 2145. Team 1 will return down Bluebird Lake Trail to TH, meeting the carryout teams on the trail and assist in carryout to TH. Arrived at TH at 0015

TACTICS:
Resource: Containment Team (2 persons)
Identifier: Containment Team 2 (B. Howard, Leader)
Date/Time Ordered: 7.15.21, 1435 hrs.
ETA: 1515 hrs.
Date/Time Arrived: 1530 hrs.
Assignment: Hike Bluebird Lake Trail to Black Lake Trail Junction searching for subject and any clues. Signcut, carefully, the Black Lake Trail to identify whether Andrews might have traveled up the Black Lake Trail. Report positive or negative findings to ICP, and set up a trail block on the Black Lake Trail at the junction with the Bluebird Lake Trail.
Date/Time Assignment Started: 7.15.21, 1535 hours.
Comments:
Date/Time Assignment Completed: 7.15.21, at 2145
Comments: Subject found at 2145. Team 2 will meet the carryout teams on the trail and assisting in carryout to TH. Arrived at TH at 0015 on 7/16/21

TACTICS:

Resource: Containment Team (2 persons)
Identifier: Containment Team 3 (L. Savage, Leader)
Date/Time Ordered: July 15, 2021,1435 hrs
ETA: 1520 hrs.
Date/Time Arrived: 7.15.21, 1520 hrs
Assignment: Provide Containment at Bluebird Lake TH for subject returning to parked car. Question all hikers coming down the Bluebird Lake Trail about seeing Andrews, and brief all hikers starting on the trail to look out for him.
Date/Time Assignment Started: 7.15.21, 1530 hrs.
Comments: Coordinate your assignment with the Investigator checking the vehicle. 2020 Blue Ford F150 pickup, UT license #: 456 THA
Date/Time Assignment Completed: 7.15.21, 2145
Comments: Subject Found at 2145. Team 3 assigned to carry litter from TH to meet Team 2 at Subject's location and assist in evacuation and carryout. Arrived at Bluebird TH at 0015, 7.16.21.

TACTICS:
Resource: Helicopter, Type 3 with Pilot and Observer
Identifier: Sheriff 911 (Pilot: Phil Brackett)
Date/Time Ordered: 7.15.21, 1435 hrs
ETA: 1500 hrs.
Date/Time Arrived: 1455 hrs.
Assignment: Search Bluebird Lake Trail from TH to Bluebird Lake, then search 1/4 mile radius of Bluebird Lake with expanding circular search pattern.
Date/Time Assignment Started: 7.15.21, 1500 hrs.
Comments: Will call in when assignment is completed and available for reassignment. Consider flying the Black Lake Trail to Black Lake.
Date/Time Assignment Completed: 7.15.21 at 2200 hrs.
Comments: No clues located.

TACTICS:
Resource: Hasty Team
Identifier: Andrews Hasty Team 4 (P. Smith, Leader)
Date/Time Ordered: 1435 hrs
ETA: 1530 hrs
Date/Time Arrived: 1530
Assignment: Hasty Search Bluebird Lake Trail from TH to Bluebird Lake, looking for tracks, clues, and stopping every 5 minutes to call for Andrews and listen for a response for at least 1 minute. Upon reaching Bluebird Lake, cut for sign around complete Lakeshore. Report back to ICP for further assignment. Report all clues immediately to ICP.
Date/Time Assignment Started: 1535 hrs
Comments: Found Jack Andrews at 2145 in Bluebird Creek 3.2 miles uptrail from TH. Team 4 will coordinate rescue and transport to TH.
Date/Time Assignment Completed: Arrived at Bluebird Lake TH at 7.16.21, 0015 hrs.

INCIDENT FACILITIES:
Date: July 15, 2021
Time: 1517 hrs
Location and Directions:
ICP: Bluebird Ranger Station, MP 23 Absaroka Highway
Staging Area: Bluebird Lake TH, MP 28 Absaroka Highway
Incident Base: Bluebird Ranger Station, MP 23 Absaroka Highway
Helibase: Bluebird Ranger Station, MP 23 Absaroka Highway
Helispot:
Camp:

IMPORTED INCIDENT DOCUMENT INFORMATION:
Date: July 15, 2021
Time: 1520 hrs
Document Title: Lost Person Questionnaire
Description of Document: Jack Andrews, Long Form LPQ
Author of Document: Robert Janes, Unit 571
Imported Filename: Andrews_LPQ

CLUE FOUND:
Clue: Track at drivers door of Blue Ford Pickup in Bluebird Lake TH Parking
Clue Number: 1
Date: July 15, 2021
Time: 1425 hrs
Description of Clue: Tracks are a vibram soleprint 11 inches long and 3 inches wide. No further identifying marks.
Location Clue Found: Bluebird Lake TH Parking Lot
Team That Found Clue: R. Janes, Investigator, Unit 571
Individual That Found Clue: R. Janes
Disposition of Clue: Photographed and sent by text to IRIC
Image of Clue: Clue 1 Track
Clue Validated: Yes, by 571. Matches Vibram sole pattern of Voyageur Boots size 11 that subject is reported to have been wearing by R/P.

IMPORTED IMAGE INFORMATION:
Date: July 15, 2021
Time: 1430 hrs
Date Taken: 7.15.21
Time Taken: 1522 hrs.
Photographer's Name: R. Janes
Description of Image: Vibram sole pattern in Parking Lot
Where Image Taken: Bluebird Lake TH Parking lot next to drivers door of Blue Ford F150 pickup.
Image Taken By: R. Janes
Imported Filename: Clue1track.jpg
Other: Image sent to IRIC by Janes via text.

CELL PHONE DATA: Subject did not have a cell phone.
Date: July 15, 2021
Time: 1528 hrs

ORGANIZATION:
Date: July 15, 2021
Time: 1533 hrs
Incident Commander: John Smith
Planning Section Chief:
Operations Section Chief:
Finance/Administration Section Chief:
Logistics Section Chief:
Liaison Officer:
Safety Officer:
Public Information Officer:
Investigator: R. Janes

CLUE FOUND:
Clue: Yell for help
Clue Number: Clue 2
Date: 7.15.21 15, 2021
Time: 2145 hrs
Description of Clue: Voice from near Bluebird Creek yelling for help when Hasty Team 4 called out for Jack Andrews
Location Clue Found: 3.56 mi up Bluebird Lake Trail from TH and about 100 yards SW of trail along Bluebird Creek. (Latitude: 46 degrees 24' 05" N Longitude: 113 degrees 03'13" W)

Team That Found Clue: Hasty Team 4
Individual That Found Clue: P. Smith
Disposition of Clue:
Image of Clue:
Clue Validated: It was determined to be the missing subject, see below under "Subject Found."

FOUND SUBJECT:
Date: July 15, 2021
Time: 2145 hrs
Name: Jack Andrews
Condition when found: Injured – fell while scrambling in rocks along Bluebird Creek, possible broken tibia and fibula, left leg, possible shock.
Location: Bluebird Creek, about 100 yards from Bluebird Lake Trail, and 1/2 mile below Bluebird Lake.
UTM:
USNG:
Latitude: 46 degrees 24' 05" N
Longitude: 113 degrees 03'13" W
Elevation: 4800 feet
Distance from IPP: 3.2 miles
Found by: Hasty Team 4
Evacuation details: Containment Team 3 responded from TH with wheeled litter. Containment Teams 1 and 2, and Hasty Team 4, along with Containment Team 3 loaded subject into litter and transported to Bluebird Lake TH, arriving at 0015 on 7.16.21. Met Absaroka Station Ambulance 311 there. Subject transported to Absaroka County Hospital by Absaroka County 311.
X Ref to paperwork: Debriefing report IR–Hasty Team 4
Debriefing: All resources reported out of field and accounted for at 0100, on 7.16.21.

MESSAGE 1:
Date: July 16, 2021
Time: 0800 hrs
Type: EMail
From: John Smith, IRIC
To: Agency Administrator, Hannah Barnes
Subject: Andrews Search After Action Review Date
Contents: The Incident participants have determined that a formal After Action Review will be held at the Absaroka Armory room 223 on Thursday, July 18, 2021 at 0900 hours. You are invited to attend. If you cannot attend, you are invited to send a representative from the County.

Section 4.2

ICS 201

The ICS 201, Incident Briefing form, see Figures 4.27 to 4.30, provides an organized, convenient tool for the IRIC to record this important information for the incident record. It is also used to brief the incoming IC and IMT. Generally the ICS 201 is used only if the IRO Note (which is the preferred documentation) is not completed. It is not necessary to complete both the IRO Note and the ICS 201.

The ICS 201 consists of four pages. Detailed instructions for completing it can be found in Appendix B on page 156.

Page 1—Figure 4.27 on page 55. The first page contains an incident map or a sketch of the major features of the incident. It also contains the initial situation summary and the important aspects of health and safety that need to be considered and communicated to oncoming incident personnel.

Page 2—Figure 4.28 on page 56. The second page contains the initial incident objectives, both current and planned, and the current and planned actions, strategies, and tactics for resolving the incident during the initial response period.

Page 3—Figure 4.29 on page 57. The third page contains a current Organization Chart showing all of the positions filled at the time the ICS 201 is completed.

Page 4—Figure 4.30 on page 58. The fourth page contains a list of all of the resources ordered, en route, on scene, and their incident assignments. This is the log-in sheet for an Initial Response. It also serves as a record of the tactical assignments for each resource during the Initial Response phase of the search.

If the ICS 201 is used instead of the IRO Note, it becomes the official documentation for the Initial Response to an incident. It should be supplemented by other information, including the

- The Lost Person Questionnaire (LPQ). See Chapter 3 on page 29.
- Investigative notes. See Chapter 6 on page 68.
- The Missing Person Flyer. See Chapter 6 on page 68.
- A copy of the incident map, using the map symbols identified in Appendix E on page 178, showing
  - The PLS, LKP, and/or the IPP,  .
  - The ICP, .
  - Resource assignments.
  - Routes and places searched or planned to be searched during the Initial Response phase of the incident.

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Time:

4. Map/Sketch (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depicting situational status and resource assignment):

5. Situation Summary and Health and Safety Briefing (for briefings or transfer of command): Recognize potential incident Health and Safety Hazards and develop necessary measures (remove hazard, provide personal protective equipment, warn people of the hazard) to protect responders from those hazards.

6. Prepared by: Name: _____ Position/Title: _____ Signature: _____

ICS 201, Page 1 Date/Time: _____

Figure 4.27: ICS 201—Page 1

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Time:

7. Current and Planned Objectives:

8. Current and Planned Actions, Strategies, and Tactics:

Time:	Actions:

6. Prepared by: Name: _____ Position/Title: _____ Signature: _____

ICS 201, Page 2 Date/Time: _____

Figure 4.28: ICS 201—Page 2

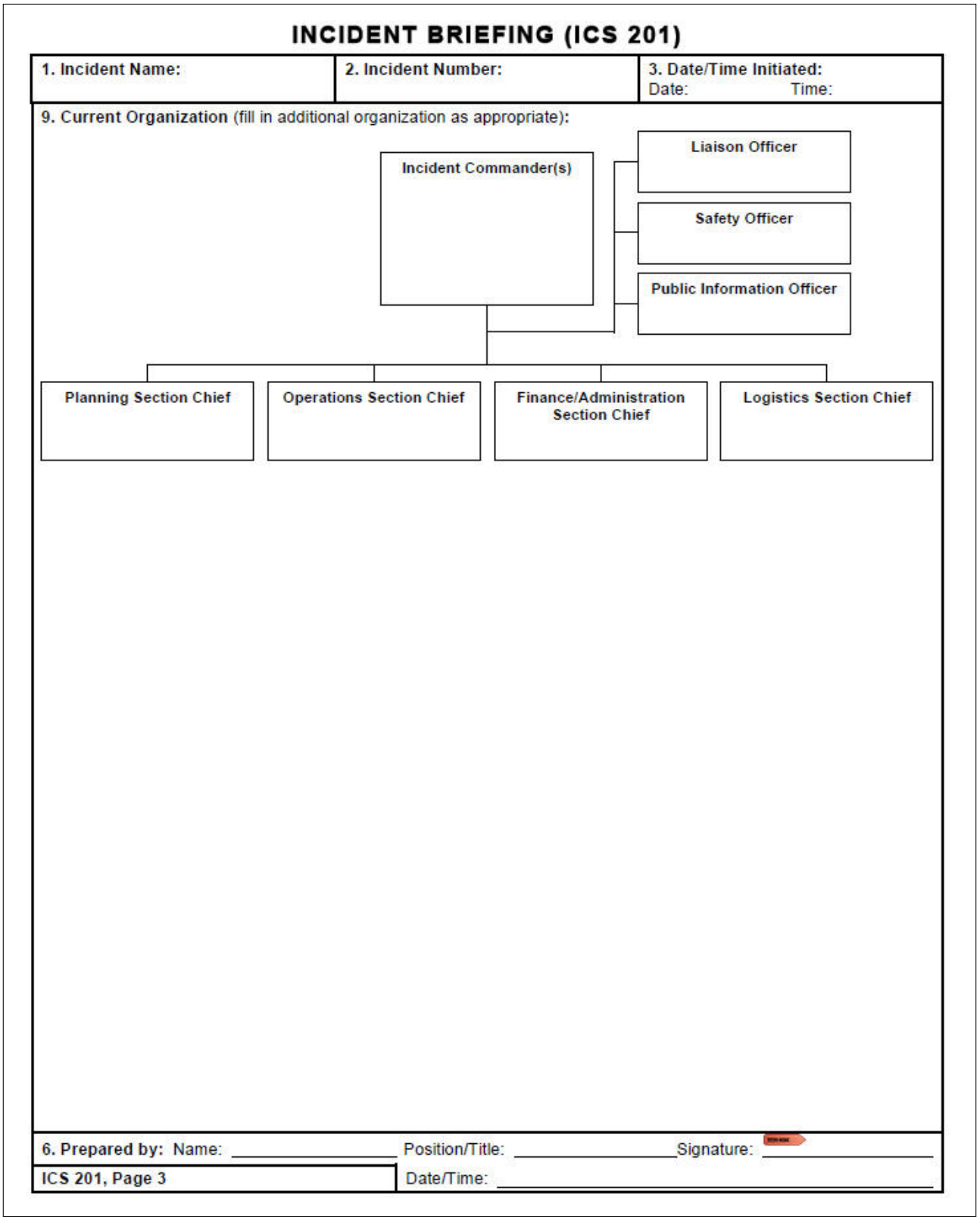


Figure 4.29: ICS 201—Page 3

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Time:

10. Resource Summary:

Resource	Resource Identifier	Date/Time Ordered	ETA	Arrived	Notes (location/assignment/status)
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
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				☐	
				☐	
				☐	
				☐	
				☐	
				☐	

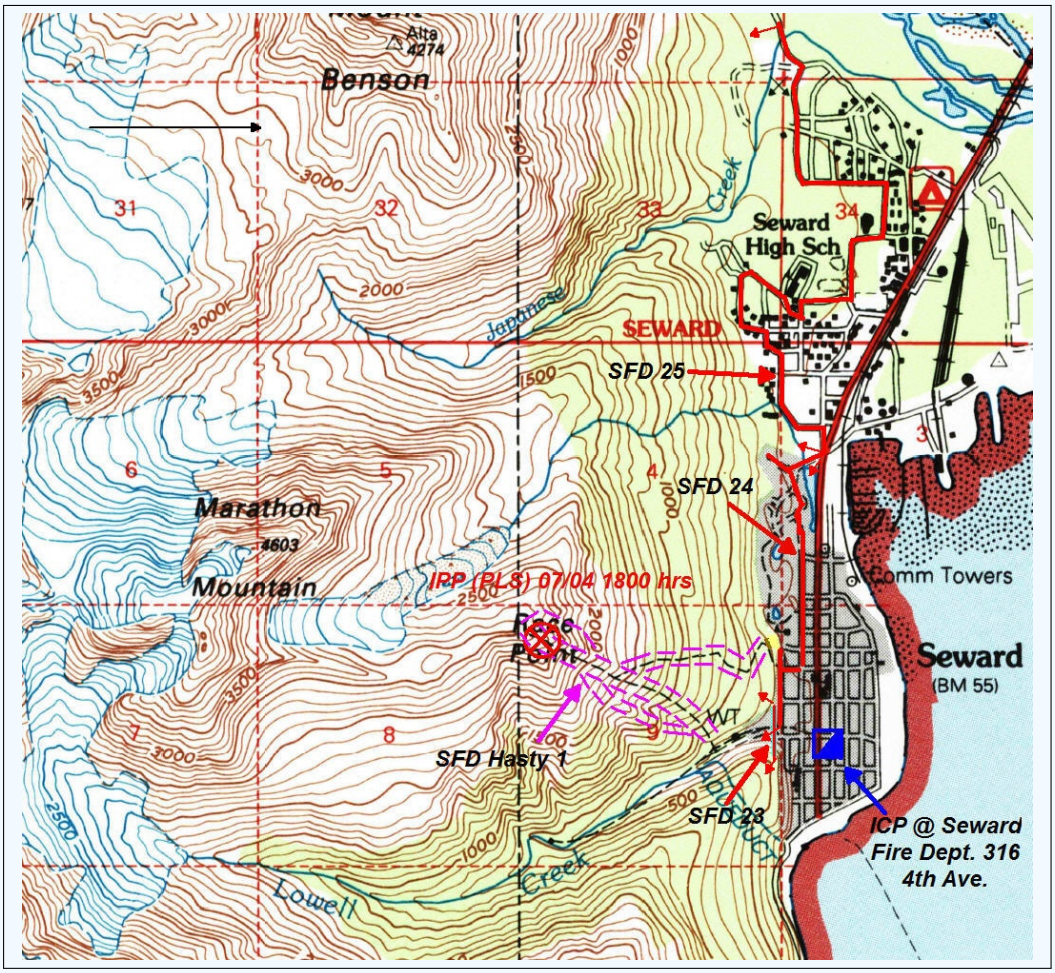
6. Prepared by: Name: _____ Position/Title: _____ Signature: _____

ICS 201, Page 4 Date/Time: _____

Figure 4.30: ICS 201—Page 4

Search Demonstration #3: An Incident Map

The figure is an example of an incident map. It shows the IPP, the ICP, and the resource assignments from Search Demonstration #1 on page 30.



The ICS 201 or the IRO Note is the official documentation for the Initial Response to an incident.

Example of a Completed ICS 201

INCIDENT BRIEFING (ICS 201)

1. Incident Name: Andrews Search	2. Incident Number: 210025	3. Date/Time Initiated: Date: 7.15.21 Time: 1349 hrs.

4. Map/Sketch (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depicting situational status and resource assignment):

See SARTopo Map.

5. Situation Summary and Health and Safety Briefing (for briefings or transfer of command):

Jack Andrews went hiking to Bluebird Lake on the Bluebird Lake Trail yesterday morning. He planned to eat lunch at Bluebird Lake and then return to the Bluebird Lake TH where his car was parked. It is a blue 2020 Ford F150 p/u, UT Lic. # 456THA. He has not returned home as of the present time.

Hazards in the search area include steep, rocky slopes, swift water and large boulders in Bluebird Creek, Bluebird Lake water depth is 50 feet and surface temp is about 46 degrees. Responders need to have sturdy footwear, warm, waterproof clothing, and 24 hour ready packs.

Weather: Clear and sunny from time subject went missing through 7.17.21. Scattered afternoon showers possible. High temps: 70's Lows: 50

6. Prepared by: Name: John Smith_____ Position/Title: IRIC_____Signature: _____

ICS 201, Page 1 Date/Time: 7.15.21 1600 hrs._____

Figure 4.31: ICS 201—Page 1—Completed

INCIDENT BRIEFING (ICS 201)

1. Incident Name: Andrews Search	2. Incident Number: 210025	3. Date/Time Initiated: Date: 7.15.21 Time: 1349 hrs

7. Current and Planned Objectives:

1. Find John NLT 2400 hrs. 7.15.21.
2. Provide for the safety of all searchers throughout the incident.
3. Contain the search area by 1600 hrs. 7.15.21, and maintain throughout incident.
4. Search all likely routes and locations by 2400 hrs. 7.15.21

Strategy:

1. Determine/confirm location of Andrew's vehicle, protect it and investigate for clues.
2. Confirm direction of travel from the vehicle (LKP/IPP).
3. Contain the search area using trail blocks on main trails at Bluebird Lake TH, Bluebird Lake, and jct. of Bluebird Lake Trail and Black Lake Trail.
4. Identify the hazards and attractions within the search area.
5. Use trained ground and air resources to search likely routes, hazards and attraction spots quickly.

8. Current and Planned Actions, Strategies, and Tactics:

Time:	Actions:
1350	Absaroka Dispatch Initiated a LPQ for Andrews. See LPQ for additional details about R/P and Subject
1400	Subject category: Hiker
1400	Search Urgency: 15 (moderate) but one subject alone and questionable equipment for overnight are 1's. Thus Urgency is high to moderate.
1400	Containment is at the 75% ring for hikers. Distance from IPP is 3.56 miles.
	TACTICS:
	See ICS 201 Page 4.
1425	Clue 1 found: R. Janes found tracks with Vibram sole pattern in parking lot next to driver's door of the blue Ford F150 pickup. Track is 11" long and 3" wide. Photographed by Janes and texted to IRIC.
1517	Established ICP @ Bluebird RS, MP 23 Absaroka Hwy Established Staging Area at Bluebird LK TH, MP 28 Absaroka Hwy Established Incident Base at Bluebird RS Established Helibase at Bluebird RS
1528	Confirmed that Andrews did not have a cell phone.
2145	Clue 2 found: Yell for help. Found by Team 4, P. Smith. Latitude: 46.24'05"N, Longitude: 113.03'13" W, elevation 4800 feet.
	3.56 miles up Bluebird LK Trail and about 100 yards SW of trail along Bluebird CK. P. Smith confirmed that it was John Andrews.
2145	Found Subject: Andrews found next to Bluebird CK. Injured – Fell while scrambling in rocks along Bluebird CK ½ mile below Bluebird LK. Possible fractured tibia and fibula, left leg, possible shock.
2200	Sheriff 311 completed assignment. No clues discovered. Sheriff 311 out of service.
2200	Evacuation plan: Hasty Team 4 assess, stabilize and treat subject. Prepare for transport by litter. Containment Team 3 respond from TH to the scene with litter. Containment Teams 1 and 2 respond to scene to assist with litter evacuation to TH.
7/16 0015	Evacuation group arrived at Bluebird LK TH with Andrews. Met Absaroka Station Ambulance 311 there. Andrews transported to Absaroka County Hospital. See debriefing report from Team 4 for details.

Figure 4.32: ICS 201—Page 2 (part 1 of 2)—Completed

1. Incident Name: Andrews Search	2. Incident Number: 210025	3. Date/Time Initiated: Date: 7.15.21 Time: 1349 hrs
0100	All teams out of the field and accounted for at Rescue cache.	
6. Prepared by: Name: John Smith_____ Position/Title: IRIC_____Signature: _____		
ICS 201, Page 2	Date/Time: 7.15.21, 1600 hrs._____	

Figure 4.33: ICS 201—Page 2 (part 2 of 2)—Completed

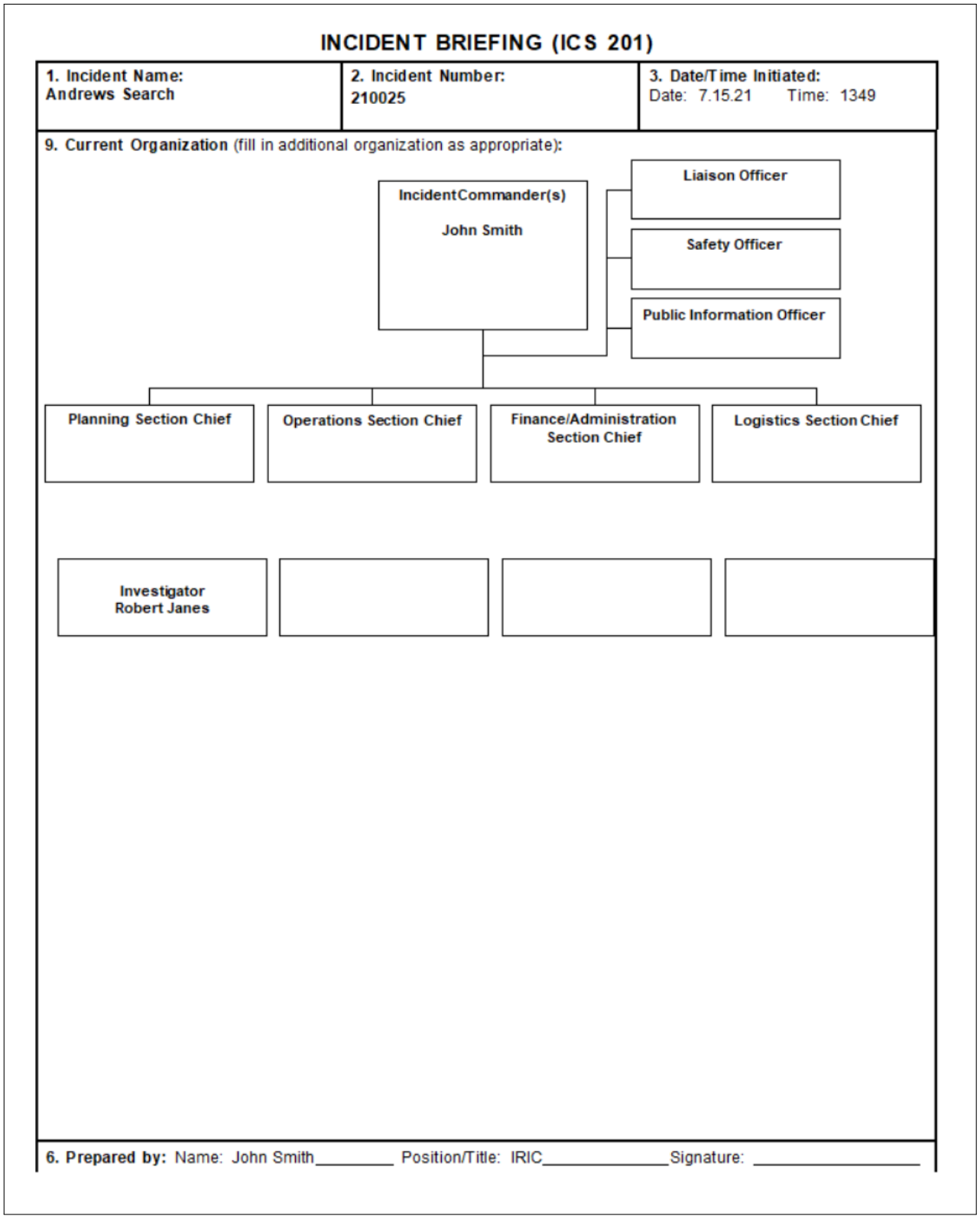


Figure 4.34: ICS 201—Page 3—Completed

INCIDENT BRIEFING (ICS 201)

1. Incident Name: Andrews Search	2. Incident Number: 210025	3. Date/Time Initiated: Date: 7.15.21 Time: 1349 hrs.

10. Resource Summary:

Resource	Resource Identifier	Date/Time Ordered	ETA	Arrived	Notes (location/assignment/status)
Investigator	Janes	7.15.21 1400	1420	X	Confirm Andrews P/U at TH. Determine direction of travel; Identify clues; protect scene. Provide Containment at vehicle until relieved by Team 3. Then complete remainder of LPQ.
Containment Team	Team 1 (J. Legend)	7.15.21 1435	1515	X	Hike Bluebird LK Trail from TH searching for Andrews and tracks/clues. Trail Block at farthest end of Bluebird LK. Call for Andrews, stop and listen for response along the trail.
Containment Team	Team 2 (B. Howard)	7.15.21 1435	1515	X	Hike Bluebird LK trail to Black LK Trail jct. Set up Trail Block at jct, and signcut Black Lake Trail at that point.
Containment Team	Team 3 (L. Savage)	7.15.21 1435	1530	X	Containment at Bluebird LK TH. Coordinate assignment with R. Janes. Question all hikers coming down trail about Andrews. Brief all hikers going up trail to look for him.
Hasty Team	Team 4 (P.Smith)	7.15.21 1435	1520	X	Hasty Search Bluebird LK Trail from TH to Bluebird Lake. Look for tracks, clues. Stop every 5 minutes and listen for 1 minute. Upon reaching Bluebird LK, cut for sign around complete Lakeshore. Report back to ICP for further assignment Report all clues immediately to ICP.
Helicopter	Sheriff 911 (Pilot: P. Brackett)	7.15.21 1435	1500	X	Search Bluebird LK Trail from TH to Bluebird LK. Then search ¼ mile radius of Bluebird LK with expanding circular search pattern. Then fly Black Lake Trail from Bluebird LK Trail to Black Lake.
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	

6. Prepared by: Name: John Smith_____ Position/Title: IRIC_____Signature: _____

ICS 201, Page 4 Date/Time: 7.15.21 2400 hrs._____

Figure 4.35: ICS 201—Page 4—Completed

CHAPTER 5

Search Urgency

Once the initial report details are collected, the information analysis phase begins. From this initial report information, together with the weather and terrain profiles, the IRIC determines the Search Urgency by completing the Search Urgency Rating Chart shown in Figure 5.1 on page 66. (This chart can also be found in Initial Response Organizer, completed there, and imported into the incident documentation. See Figure 4.11 on page 41.)

One number in each category (row) is selected. In some categories there is a choice of numbers, for example, under "AGE OF SUBJECT:", "Other", either a "2" or a "3" can be selected. After selection, the numbers are totaled giving the numerical rating. The lower the numerical rating, the higher the relative emergency. See Figure 5.1. All ratings are relative and their total indicates a possible relative urgency.

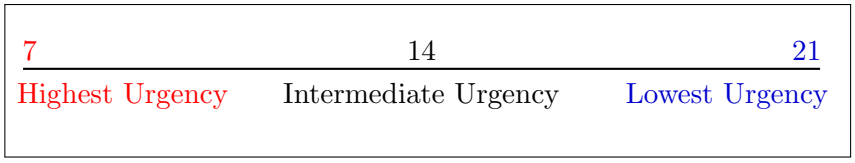


Figure 5.1: Relative urgency and numerical rating

Before determining the final Search Urgency, the IRIC must also take into account any other factors bearing on the incident but not listed on the urgency chart. However, if any of the categories in Table 5.1 on page 66 is rated a "1", then consider responding immediately with high priority. Otherwise, the preponderance of checked categories provides an indication of the urgency level. It is a good idea to document the ratings.

Before determining the final Search Urgency, the IRIC must also take into account any other factors bearing on the incident but not listed on the urgency chart.

Remember, search is an emergency. Every incident requires an immediate response to save lives and minimize suffering. An immediate response reduces the size and complexity of the search. For a highly urgent search this immediate response may be applying well-trained, experienced resources to the search area. For a search of low urgency the immediate response may be to continue the

[1] This chart is based on the work of Bill Wade. See Reference [Setnicka, pages 60–62].

Table 5.1: Search Urgency Rating Chart[1]

Factors	**Rating**
AGE OF SUBJECT:	
Very Young	1
Very Old	1
Other	2 – 3
MEDICAL CONDITION OF SUBJECT:	
Known/Suspected injured, ill, or mental problem	1 – 2
Healthy	3
Known fatality	3
NUMBER OF SUBJECTS:	
One alone	1
More than one (unless separated)	2 – 3
SUBJECT EXPERIENCE PROFILE:	
Not experienced, does not know area	1
Not experienced, knows area	1 – 2
Experienced, not familiar with area	2
Experienced, knows area	3
WEATHER PROFILE:	
Past and/or existing hazardous weather	1
Predicted hazardous weather (less than 8 hrs.)	1 – 2
Predicted hazardous weather (more than 8 hrs.)	2
No hazardous weather predicted	3
EQUIPMENT PROFILE	
Inadequate for environment and weather	1
Questionable for environment and weather	1 – 2
Adequate for environment and weather	3
TERRAIN/HAZARDS PROFILE	
Known hazardous terrain or other hazards	1
Few or no hazards	2 – 3
TOTAL: (between 7 and 21)	

investigation and gather more information before committing additional search resources to the field.

Search Urgency

A young child missing in a remote area with fast-moving streams, cliffs, and thunder storms moving into the area within a few hours requires sending searchers into the field immediately. Conversely, a well-equipped hiker who is on a marked and maintained trail, with proper equipment for the weather and terrain, and who is two hours overdue at the trailhead in good weather, may lead the IRIC to continue gathering information about the subject, and to wait at the trailhead for them to hike out on their own.

In the event that there is more than one missing subject, a single search urgency rating chart is completed based on the worst case situation for each person in the group. This errs on the side of caution and generates a higher urgency rating compared to any individual in the group. The possibility that a group has split should always be considered and investigated.

Search Demonstration #4: Search Urgency Rating Chart

This urgency chart is based on Search Demonstration #1 on page 30, and the weather and terrain profiles.

Weather Profile: *Weather was rain, temp high 40's, wind up to 15 mph from west. Forecast is same for the next few days.*

Terrain Profile: *The area is extremely steep with vertical cliffs, loose scree, steep snowfields, mud; and below treeline, Devils Club, Cow Parsnip, alder and other thick vegetation prevails. The grass and shrubs are more than 5 feet high, and hide numerous vertical drops creating extreme hazards for the missing person as well as searchers. Record snowfall has left crumbling snow bridges above icy creeks.*

Factors	Rating
AGE OF SUBJECT:	
Very Young	1
Very Old	1
Other	(2) – 3
MEDICAL CONDITION OF SUBJECT:	
Known/Suspected injured, ill, or mental problem	1 – (2)
Healthy	3
Known fatality	3
NUMBER OF SUBJECTS:	
One alone	(1)
More than one (unless separated)	2 – 3
SUBJECT EXPERIENCE PROFILE:	
Not experienced, does not know area	(1)
Not experienced, knows area	1 – 2
Experienced, not familiar with area	2
Experienced, knows area	3
WEATHER PROFILE:	
Past and/or existing hazardous weather	(1)
Predicted hazardous weather (less than 8 hrs.)	1 – 2
Predicted hazardous weather (more than 8 hrs.)	2
No hazardous weather predicted	3
EQUIPMENT PROFILE	
Inadequate for environment and weather	(1)
Questionable for environment and weather	1 – 2
Adequate for environment and weather	3
TERRAIN/HAZARDS PROFILE	
Known hazardous terrain or other hazards	(1)
Few or no hazards	2 – 3
TOTAL: (between 7 and 21)	**9**

CHAPTER 6

Investigation: Gathering Searching and Planning Data

As soon as the IRIC has enough information to determine Search Urgency, their focus turns to more "Operations oriented" functions.

Now is the time to consider appointing a dedicated Investigator who continues the investigation throughout the search.

The purpose of the investigation is to gather as much information about the lost or overdue person as possible and what may have happened to cause the incident. It is helpful for the Investigator to be familiar with SAR and search management in order to develop information that is the most useful to searchers and planners. If a detective is assigned as an investigator and that detective does not have a SAR background, then assigning an assistant—who may not be a law enforcement officer but has significant SAR experience—to that detective is wise.[1]

The Investigator is a critical position in search management. Search strategy and tactics are influenced by the information that is generated through the investigation. Clues found by searchers and authenticated by the Investigator and clues discovered by the Investigator have significant impacts on the focus and direction of the search.

The Investigator is expected to

- Complete the LPQ.
- Maintain contact with the Reporting Party to
  - Validate any clues that are found.
  - Answer any questions that arise related to the missing person.
  - Notify the reporting party of the outcome of the search efforts.
- Maintain continuity in the investigation from beginning to end. This is a crucial part of managing a search incident.
  - Continuity prevents losing important information during transitions.
  - Continuity helps provide a more complete and accurate picture of the situation.
- Gather
  - Planning Data—helps decide where to look.
  - Searching Data—helps searchers identify the missing person or clues found.

[1] A useful document explaining the role of the interview in SAR can be found at `http://www.1srg.org/Contributed-Materials/InvestigationandInterviewingpaperv3.08-2005.pdf`.

LPQ

One of the first tasks of the investigator is to complete the remaining information on the LPQ.

Search Demonstration #5: LPQ—Page 1

This LPQ is based on Search Demonstration #1 on page 30.

LOST PERSON QUESTIONNAIRE	CASE # 12342012	DATE PREPARED: 7/4/2012 TIME PREPARED: 2100	Prepared by: Buttery

REPORTING PARTY IDENTIFICATION

FIRST NAME: Peggy	STREET ADDRESS: 18637 Seaside Beach Dr.	
LAST NAME: LeMaitre	CITY: Anchorage	
RELATIONSHIP TO SUBJECT: Wife	STATE/COUNTRY: AK	ZIP: 99516
HOME PHONE #: (907) xxx-xxxx	CELL PHONE #	

SEPARATED PARTY INFORMATION

FIRST NAME: Michael		STREET ADDRESS: 18637 Seaside Beach Dr.		
MIDDLE NAME:		CITY: Anchorage		
LAST NAME: LeMaitre		STATE/COUNTRY: AK		ZIP: 99516
HOME PHONE #: (907) xxx-xxxx		CELL PHONE #: (907) xxx-xxxx		
DATE OF BIRTH: 1/25/46	AGE: 66	SEX: M	HEIGHT: 6'2"	WEIGHT: 212 lbs
HAIR COLOR: Brown EYES:	Blue	HAIR STYLE / LENGTH: Short		
COMPLEXION:		LANGUAGE: English		

DISTINGUISHING MARKS: None

DISABILITIES/ ILLNESS/ INJURY: None. In good health.

MEDICATIONS & ALLERGIES: None

MENTAL ATTITUDE: Good. Friendly. Outgoing. Leader. Does not give up easily. Religious.

CLOTHING/EQUIPMENT

TOP (TYPE & COLOR): Black T Shirt, white under arms	PANTS (TYPE & COLOR): Black running shorts
OUTER WEAR / JACKET / SWEATER (TYPE & COLOR): None	
HAT (TYPE & COLOR): None	OTHER: Red and black lightweight gloves, light grey and white running shoes, socks, black head band, bib 548.

POINT LAST SEEN

TIME LAST SEEN: 1800	DATE LAST SEEN: 7/4/2012

Figure 6.1: An example of an LPQ—page 1

Search Demonstration #6: LPQ—Page 2

VEHICLES: (LOCATION, DESCRIPTION, PLATES, KEYS): None

INTENDED ROUTE: To Race Point and back to Seward.

CURRENT / PREDICTED WEATHER / HAZARDS: 40 degrees, rain, fog. Cliffs.

COMMENTS/ NOTES: (DISPOSITION/PERSONALITY, RELATIONSHIP WITH SPOUSE/FAMILY/FRIENDS):

Does not smoke or take drugs.
Drinks wine.
Has medical training.
Has military experience.
No climbing experience.
Unfamiliar with area.
Has not been lost before.

AVAILABILITY OF PHOTOGRAPH(S) & LOCATION Yes.

Figure 6.2: An example of an LPQ—page 2

Gather Planning Data

Planning Data is information that helps the IRIC decide where to look for the missing person. Numerous questions in the LPQ provide useful planning data. For example, the person's place and time last seen is a critical piece of planning data upon which many of the initial response actions are based. Human trackers, air-scenting and tracking dogs, and hasty search teams often start their search at or near the PLS. In addition, the PLS or the LKP becomes the IPP for the remainder of the search, and is the location upon which statistical data for potential distance and direction traveled is based.

Other kinds of planning data include:

- Missing person's trip plans, including intended purpose, routes and destinations.
- Subject(s) outdoor experience or training.
- Barriers to travel, such as rivers, cliffs, fence lines, a dramatic change in vegetation type or impenetrable vegetation.
- Locations within the area that might attract a missing person, such as waterfalls, overlooks, scenic vistas, lakes, and rivers.
- Weather—past, current, and predicted.
- Hazards that might exist within the area such as mine shafts, swift stream or river currents, cliffs and steep terrain.
- Terrain.
- History of prior incidents in the area.
- Other contacts the subject(s) might make.
- Actions undertaken by friends/family or others.
- Search history in the area.
- Effective search techniques for the area.
- Lost Person Behavior information including distance traveled.
- Permits issued by land management or game management agencies.

When investigating permits issued by land management or game management agencies it is important to not only seek out the permit issued to the lost person but also seek out permits for others that would have been in the area at the same time as the lost person. Those other permit holders should be contacted and interviewed to determine if they have any information that would be useful for the search or investigation. All efforts should be made to interview the employee that issued the permit to determine if any advice was given or if any of the conversation between the permittee and the permit issuer would provide clues about the subject's whereabouts.

All of this planning data is analyzed and used to determine the likely spots that might contain the subject or the likely routes the subject might have taken from the IPP. Looking in these places early in the search gives the IRIC the best chance of finding the missing person quickly.

Lost Person Behavior data provide general characteristics and distance traveled for many different categories of lost persons. See Chapter 7 on page 78.

Gather Searching Data

Searching Data is information that helps the searchers in the field find the missing person or identify clues that the missing person may have left as they traveled through the area. Searching data includes such information as:

- Name, age, physical description of the missing person.
- Nickname or name they respond to when called.

- Clothing the missing person was wearing and carrying at the time they were last seen.
- Footwear—make, model and size are critical to identifying the missing person's track among all of the other footprints in the search area.
- Medical and mental condition.
- Items they were carrying such as special equipment (tent, sleeping bag, stove), food, cell phone (get number and cellular carrier), Satellite Emergency Notification Device (SEND) or Personal Locator Beacon (PLB), satellite phone (get number).
- Other items that could become clues during the search.

All searching data should include enough descriptive detail (size, color, brand, quantity) to enable searchers and investigators to confirm whether or not items located in the search area belong to the missing person. Throughout the search, the Investigator should refine the descriptions and the amount of detail about the searching data. This information is provided to all of the search resources.

The initial information collected is often from the reporting party. The Investigator should seek out other persons to interview that have knowledge of the lost person. It is not uncommon for family members to be reluctant to divulge potentially sensitive embarrassing information about the lost person. Other sources such as co-workers, friends, and hiking companions may provide different perspectives about the lost person that are valuable for searching and planning.

It is not uncommon for family members to be reluctant to divulge potentially sensitive embarrassing information about the lost person.

Missing Person Flyer

In addition, searching data is used to develop a "Missing Person Flyer" that is distributed to the searchers, the media, the public in the area of the search, and posted in public places in and around the search area to ensure that everyone is aware that the search is going on, who the missing person is, and what to do if they see or hear anything that might be pertinent to resolving the incident.

Ideally the Missing Person Flyer should contain:

- Pictures of the subject—more than one, in various settings, especially engaged in activities similar to when went missing.
- Physical description of the subject.
- Clothing worn by the subject when they went missing.
- Equipment carried by the subject when they went missing.
- Synopsis of where and how the incident occurred.
- Instructions to the public as to what to do and who to contact if they have pertinent information.

Once a Missing Person Flyer is released there may be many tips that come in from the public. If that is the case adding staff may be necessary to parse through and prioritize the information for follow-up to determine what is relevant and what is not.

Search Demonstration #7: Missing Person Flyer

This Missing Person Flyer is based on Search Demonstration #5 on page 70.

INFORMATION WANTED
MISSING PERSON

Michael LeMaitre


DOB:	**September 25, 1946**
Missing	**July 4, 2012**
Age Now:	**65**
Sex:	**Male**
Race:	**White**
Hair:	**Black**
Eyes:	**Blue**
Height:	**6' 2"**
Weight	**212 lbs**
Missing From:	**Seward, Alaska United States**

Last seen at: 7/4/12 at 6:00 pm in Seward, AK on Mt. Marathon Race Trail, 200 feet downhill from Race Point, headed up.
Last seen wearing:

- **Black short sleeve shirt**
- **Black running shorts**
- **Red and black lightweight gloves, and black headband**

ANYONE HAVING INFORMATION SHOULD CONTACT
Seward Fire Department
(907) 224-3445
OR
The Alaska State Troopers
(907) 269-5511
OR
The Federal Bureau of Investigation
1-800-225-5324 (1-800-CALL-FBI)

Investigative Tasks

The Investigator should be creative in developing sources of information that aid in providing background information about the subject as well as information that assists in locating the subject.

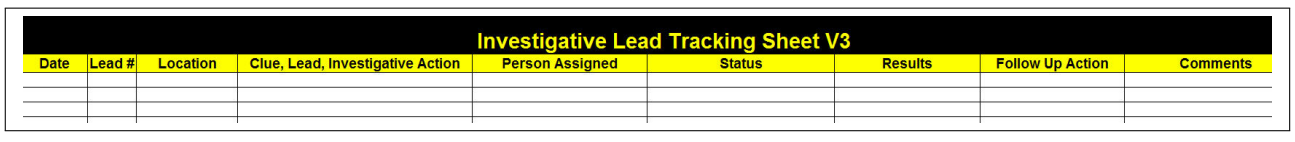
A list of investigative tasks was developed by some experienced SAR personnel in Arizona. It is included in Initial Response Organizer and is reproduced here.

- *Complete LPQ*
  - *Photo*
  - *DMV/Motor Vehicle Photo and Physical Identifiers/Registered Vehicles*
  - *Local photographic studios and cameras for images*
  - *Internet (Social Sites, GOOGLE™ search engine)*
  - *Footwear Investigation*
  - *Missing in the past/circumstances*
  - *Cash/credit cards on person?*
  - *On medication? If so, name of doctor.*
  - *Leave note/keep diary?*
  - *English speaking?*
  - *Afraid of someone in a uniform?*
  - *Afraid of water?*
- *Complete Missing Person Flyer*
  - *Release to Public*
- *Cell Phone*
  - *Which one?*
  - *Carrier?*
  - *Tracking capability?*
  - *Know how to call home?*
- *GPS/PLB/SEND?*
  - *ID/Provider*
- *Email*
- *Check Public Transportation*
  - *Road: Buses, Coaches, Taxis, Car rental centers*
  - *Rail: Trains*
  - *Air: Aircraft*
  - *Water: Ferries*
  - *Interchanges*
- *Access to a vehicle, bicycle, horse, boat, airplane, ATV, snowmobile?*
- *Notify Adjacent Agencies*
- *Background/Criminal History of subject*
- *Background/Criminal History of reporting party*
- *NCIC/State Crime Information Center Entry*
- *Offline Search*
- *Financial records*
  - *ATM*
  - *Credit/Debit Cards*
  - *Tax liens*
  - *Video surveillance footage from business*
- *Computer: Home/Work/Library/School*
- *Reverse 911*
- *If subject is child*
  - *Issue Amber alert*
  - *Check SORT (Sex Offender Registration & Tracking System)*

    - *Contact* `http://www.achildismissing.org`
    - *Stop trash pick-up in area so receptacles can be checked easily*
        - *Have landfill separate recently picked up trash from rest of landfill*
        - *If assistance is needed in landfill search, contact National Center for Missing & Exploited Children® (NCMEC)—1-800-THE-LOST®*
    - *The school they attend and the names of teacher and school administrator.*
- *If subject is elderly*
    - *Check for nametag, ankle bracelet transmitter*
    - *Contact* `http://www.achildismissing.org`
- *If subject is disabled, or college student, contact* `http://www.achildismissing.org`
- *If subject is 21 or younger call National Center for Missing & Exploited Children® (NCMEC)*
- *If foul-play is suspected, stop trash pick-up in area so receptacles can be checked easily*
- *Contact Friends/Family/School teachers/Classmates/Business associates/Family physician/Recreation associates*
- *Check Subscription Database, such as Autotrack*
- *Check whether at Facility (if not there leave description of subject, in case admitted later)*
    - *Hospitals*
    - *Mortuaries*
    - *Jails*
    - *Lodgings*
    - *Care centers*
    - *Mental health facilities*
    - *Detox centers*
    - *Battered women's shelters. These facilities may or may not be able to provide information.*
    - *Homeless shelters*
    - *County Protective Services*
    - *Photos/security camera footage of subject at facility*
- *All family pets accounted for?*
    - *What type of pet is missing? Pet's name?*
    - *Could pet pose a threat to searchers?*

Investigative Lead Tracking List

As investigative leads are uncovered, it is important to keep track of them. One way to do this is to use a spreadsheet. See Figure 6.3 for a possible layout.



Investigative Lead Tracking Sheet V3								
Date	Lead #	Location	Clue, Lead, Investigative Action	Person Assigned	Status	Results	Follow Up Action	Comments

Figure 6.3: Possible Investigative Lead Tracking List

The columns are completed as follows.

- **Date**. The current date.
- **Lead #.** Use this column to number the leads. Numbers should not be repeated. This number is used to identify the lead. Typically numbers are sequential, starting from "1".
- **Location.** The location or origin of the lead. For example, "32.1161° N, 110.9411° W" or "Subject's mother".
- **Clue, Lead, Investigative Action.** If the item is a Clue, for example, a note left in the subject's vehicle, then it should be described briefly, with a cross-reference to the appropriate clue log sheet, where full details are found. If the item is a Lead, for example, the mother stated that the subject has a cell phone, then full details should be entered in this column. If the item is an Investigative Action, for example "Re-interview mother reference Lead #1.", then details need to be supplied.
- **Person Assigned.** The person assigned to follow up on the lead.
- **Status.** The current status of the lead. For example, "Being investigated" or "Resolved".
- **Results.** The result of the lead. For example "Unrelated" or "Cell phone not answered".
- **Follow Up Action.** The recommended action to be taken, For example, "None", or "Re-interview mother".
- **Comments.** Any additional information.

Clues

Clues are discussed in Chapter 18 on page 139. Investigation receives, authenticates, accounts for, and protects all clues

- Physical.
- Electronic.
- Witness Reports.
- Investigative Information.

It is the responsibility of the Investigator to

- Maintain a complete, accurate clue log and mark every clue location on a map.
- Ensure that all clues become part of the investigative plan for authentication and/or follow up.
- Secure and protect all clues, because they may become evidence in a criminal proceeding.

CHAPTER 7

Understanding Lost Person Behavior

Missing Persons often behave in predictable ways, and what they are likely to do can be predicted by analyzing the behavior of others who were missing under similar circumstances. Lost Person Behavior (LPB) is data organized by category of previously lost persons including how they behaved while they were missing.

Section 7.1
Using LPB Data

Determining the LPB category is an important outcome from the investigation. There are a variety of lost person behavior sources available to be consulted. The best source is local data if available. If local information is not available, there are sources of lost person behavior information included in Initial Response Organizer and reproduced in Appendix C.1 on page 160. Regardless of which source is used it is a good practice to document the source of the data consulted.[1]

Typically lost subjects are divided into different categories, such as

- Children (1–3)
- Children (4–6)
- Children (7–12)
- Youths (13–15)
- Climbers
- Despondents
- Elderly
- Hikers
- Hunters
- Miscellaneous
- Fishermen
- Skiers
- Walkaways

Then within each category there is data that can be very useful, such as how the subject behaved when lost, how far they were found from the IPP (as the crow flies), and so on.

The LPB category of the subject is an important piece of searching and planning information. LPB provides general characteristics and distance traveled for many different categories of lost persons. This information is valuable for considering

- The distance that someone like this can travel from the IPP.
- The size of the search area.
- Where to place containment.
- The kind of clues to look for.

[1] Other sources of data are "The U.K. Missing Person Behaviour Study, March 2011" by Dave Perkins, Pete Roberts, and Ged Feeney available from `http://www.searchresearch.org.uk/www/ukmpbs/report_archive`; and "Lost Person Behavior" by Robert Koester, dbS Publications, 2008, `http://www.dbs-sar.com/LPB/lpb.htm`. A comparison of these data sets can be found in "The ISRID statistics and UK missing person incidents" by Dave Perkins, available from `http://www.saraz.org/documents/ISRID_and_UK_incidents.pdf`.

- How difficult it will be to detect this person.

LPB data can also inform search strategy and tactics based upon previously observed and documented behaviors for the lost person categories. The strategy and tactics for searching for an Autistic child is likely to be different from searching for a hiker. Reviewing the LPB is important with the caveat that the person being searched for is not part of the statistical data set yet and may do something entirely different than would have been predicted by the LPB data. Caution should also be exercised when using LPB data that has a small sample size.

> *The person being searched for is not part of the statistical data set yet and may do something entirely different than would have been predicted by the LPB data.*

Collecting Local LPB Data

Local LPB data is the best source if it is available. If not already in place local or state agencies should develop a method for collecting and analyzing lost person data from area response agencies.

LPB data that should be collected at a minimum includes:

- *Lost Person category.*
- *Initial Planning Point (IPP) location and elevation.*
- *Location found and elevation.*
- *Distance between IPP and location found ("As the crow flies").*
- *Individual or group?*
- *If a group, did they stay together or separate?*
- *Successful search tactics used (route/location search, K9, trackers, aircraft, etc).*
- *Detectability. (Did the subject(s) respond to searchers?)*
- *Subject actions (signal for help, build a shelter, no self-help).*
- *Subject preparedness (equipment and training).*
- *Medical condition when found.*
- *Subject residency. (Where were they from?)*

The accurate collection of this information provides useful searching and planning information and its importance to future efforts should be stressed to agencies that are engaged in SAR in the area. If the quality of the information collected is poor then the resulting statistics generated from the data is poor, which recalls the old adage of "Garbage In, Garbage Out". If a piece of data was not collected do not manufacture something to complete the form.

Factors Influencing LPB

When looking at LPB data, it is important to recognize that other factors may impact the behavior of the missing subject. These include:

- The subject's general state of health.
- The subject's past experience.
- The circumstances under which the subject went missing.
- The effects of the environment.

The initial reaction when someone realizes they are lost can express itself through:

- Shock and disbelief.
- Irrational or fearful thoughts.
- Embarrassment.
- A heightened sense of urgency.

These factors might influence their behavior, although finally they may overcome their panic and become more purposeful.

Often, after realizing they are lost, they behave in ways that do not help their situation. For example

- They fail to make a shelter or fire.
- They discard equipment.
- They disrobe.
- They fail to respond to searchers.

Sometimes lost and disoriented subjects appear to behave in bizarre and illogical ways, so it is useful to know how subjects try to reorient themselves. Ken Hill, see Reference [Hill 2], has identified nine techniques that lost subjects might use, and generally they "*will use at least one of these methods, some of which are considerably more effective than others, and most lost people will try more than one.*" What follows is a brief summary of these common strategies. For more details see Reference [Hill 2].

1. **Random Traveling** is where the subject moves in a random fashion with no apparent reason.
2. **Route Traveling** is where the subject decides to follow an unfamiliar trail, path, drainage, or other travel aid.
3. **Direction Traveling** is where the subject decides to follow a specific direction cross country, often ignoring trails and paths leading in the "wrong" direction.
4. **Route Sampling** is where the subject uses an intersection of trails as a "base", proceeding to travel some distance down each trail.
5. **Direction Sampling** is similar to route sampling, except that the subject does not have an intersection of trails as a "base", but instead selects some identifiable landmark as the "base".
6. **View Enhancing** is where the subject decides to gain height in order to view landmarks in the distance.
7. **Backtracking** is where the subject reverses direction and tries to backtrack on the route initially followed.
8. **Using Folk Wisdom** refers to an attempt by the subject to reorient themselves by using any of the numerous adages on how to find their way to safety.
9. **Staying Put** is where the subject follows the advice "stay where you are".

Section 7.2

Searching For Subjects with Autism

The National Autism Association has compiled a SAR checklist when the missing subject is autistic (`http://www.awaare.org/docs/NAA_AWAARE_LEASHEETCHECKLIST.pdf`), as has the Autism Safety Project (`http://www.autismsafetyproject.org/site/c.kuIVKgMZIxF/b.5058459/k.987A/Search_and_Rescue.htm`). Their suggestions are summarized here.

Searching For Subjects with Autism Checklist

- Treat each case as **CRITICAL**. Children with autism generally have an impaired sense of danger and often die very quickly.
- Interview and listen to caregivers, they know best the areas their subject may be seeking.

- Ask if the subject wears a personal tracking device—if so, immediately initiate tracking measures.
- **SEARCH WATER FIRST**. Immediately dispatch personnel to nearby bodies of water. Ask about any pools, rivers, ponds, . . . , in the area that the child may be especially drawn to.
- Ask about other dangers that the subject may be attracted to: busy roads/highways/-construction sites, . . . , and immediately dispatch personnel to secure those areas.
- Find out if there has been anything that has attracted the attention of the subject within the past 24 hours. Have they been obsessed with a location or object, at a location, within that time?
- Ask about the subject's likes that may assist in search efforts. Are they drawn to certain music, favorite characters, fire trucks, . . . ?
- Ask about subject's dislikes and fears or sensory issues that may hinder search efforts. (Dogs, Sirens, Aircraft, Lights, Shouting.).
- Ask if the subject responds to his/her name when called.
- On many searches the autistic person has hidden from searchers.
- Remember that someone with Autism most likely does not experience fear. Do not discount searching any location that a reasonable person would not enter.
- Immediately implement Reverse 9-1-1 (A Child is Missing).
- Issue an Endangered Missing Alert.
- Make sure that the IC understands the degree of Autism they are dealing with. It makes a difference in the way they treat the subject when located.

Once the subject is found:

- Maintain a calm and relaxed environment.
- Speak in a normal tone of voice using simple phrases.
- Bring caregiver to the recovery site as quickly as possible.
- Avoid the use of restraints.

Section 7.3

Searching For Subjects with Alzheimer's Disease

Subjects who have Alzheimer's Disease (AD) and are missing, should not be referred to as "missing persons" but as "endangered individuals". Because 50% of those not found within 24 hours perished and because the behaviors of lost persons with AD are so unusual, it is critical to begin the search as soon as possible. These incidents are true emergencies.[2]

Unusual Behaviors When Lost

Individuals with AD behave very differently after they become lost. The most striking differences are

- They do not ask for help, often not even realizing that they are lost.
- They do not respond to searchers, even those who are in very close proximity and calling their names.

[2] This material is extracted, with permission, from "*Missing Incidents in Persons with Alzheimer's Disease: Current Research and Search Strategies*" by M. Rowe, C. Greenblum, G. Pulyak, G. Saunders, and T. L'Herrou, *The Police Chief 78* (November 2011): 66–70. `http://www.policechiefmagazine.org/magazine/index.cfm?fuseaction=display_arch&article_id=2536&issue_id=112011` accessed on November 2, 2012.

- Some seclude or hide themselves and remain secluded until they are found or they die of exposure.
- There is an inability to problem solve even in the most familiar environments. When found, they often act as if nothing is wrong and attempt to hide the fact that they are lost or confused.

Locations Most Often Found

Among those who leave on foot, the large majority will continue to walk in the community close to the IPP. About 40% are found within 1 mile of the IPP, and almost 90% are found within a 5-mile radius. The locations the individuals are most often found, in descending frequency, are

- Their own neighborhoods.
- Standing, sitting, or walking down streets or highways.
- In businesses.
- In health-care institutions.

These results highlight the importance of both a community notification system, such as Reverse 9-l-1, and of driving patrols within a 5-mile radius of the IPP. While most of the individuals were found during daylight hours, about 1/4 were found during the night, underscoring the importance of continuing the search during the nighttime hours, particularly with driving patrols.

Seclusion in Natural and Difficult-to-Find Areas

There is a tendency for some individuals to seclude themselves in unpredictable and dangerous ways. A small subset of those who are missing decide to hide or seclude themselves in areas that would be unusual for an older adult to go. Most often, for just under 90% of the individuals this was in natural areas such as the woods, fields, ditches, ravines, or parks. In urban settings, locations included abandoned structures, roofs, and closets. Once in these locations, individuals often further conceal themselves by covering themselves or crawling into tight spaces of cover such as bushes in natural areas or vents in building structures. Generally they remain secluded until found or until they die of exposure. This behavior is associated with a high death rate; more than 2/3's of these individuals died, usually as a result of exposure or drowning. Those dying by exposure can potentially be saved if found earlier. It is critical to include these areas in a comprehensive search strategy.

Rapid Submitting to Drowning and Exposure

As mentioned earlier 50% of those not found within 24 hours were found dead. After 5 to 6 days, almost all were found dead unless they received some help, for instance as a John or Jane Doe in a hospital. The most effective search strategy is searching on foot; research has repeatedly demonstrated that the large majority of these individuals are found either by a walking Good Samaritan or searcher. Although helicopters and search dogs are frequently used, they are rarely responsible for a discovery. Because an older adult cools quickly, helicopters are most successful immediately after the person is missing and is still discoverable with heat-seeking technology. Most typically helicopter searchers find individuals who have drowned in a body of water.

Good Samaritans: An Important Adjunct to the Search

Good Samaritans are critical in assisting persons with AD who are lost in the community; they find about 40% of these missing individuals. These include passersby who are concerned, as well as businessmen and postal workers. A community notification alert can facilitate the activity in this important group.

Dispelling Search Myths

Two suggestions that are commonly heard regarding searches for persons with dementia are to search in the direction of the handedness of the lost individual (that is, toward the right for right handers) and to identity barriers as persons with AD will stop when they reach a barrier and have to turn. Two of the authors recently conducted a study to test these two hypotheses. In the case of the "direction of handiness" suggestion, they found there was no such pattern. In the case of the "barrier" suggestion, they concluded that "identifying barriers where individuals would get stuck as a locating strategy likely would not be effective".

What Does This Mean for the Responding Officer?

Search efforts for the lost person with AD should be initiated immediately. It is critical to find individuals before they enter secluded areas where it is difficult to search and death is likely. In particular while interviewing and investigative tasks are important, as is a search of the subject's current residence, these should not delay the initial search efforts.

The initial search should extend 1 mile from the IPP. In particular all accessible areas within a 1-mile radius should be searched, with most areas requiring a rapid foot search. This includes around nearby houses; inside easily accessible buildings; and a quick search of streets, highways, and footpaths.

Ensure that a familiar person is in the residence in the event of a successful find or return and that the primary caregiver is reachable by phone during the search. A community notification bulletin should be considered early in the search rather than later.

If the search efforts in the 1-mile radius are not productive, quick search activities should be expanded out to a maximum 5-mile radius from the IPP. These efforts should continue to include driving and walking patrols in nearby neighborhoods, roadways, and walkways. Community notification alerts and media involvement should be considered, because almost 40% of lost persons with AD are found by Good Samaritans.

During this extended search, a more intensive search of natural areas within a 1-mile radius of the IPP should be conducted. Almost 90% of the time, persons with AD who died while lost were found within 1 mile of the IPP. Trained ground-sweep teams can begin to search these areas as soon as they arrive and can include trained dog teams (both air scent and tracking when possible), if rapidly available. Ensure that teams search the woods, brush, fields, the water; and abandoned spaces such as cars and buildings, taking into account the unusual behaviors of lost persons with AD. Search teams cannot assume that an older person would not go into an area because it is dense or difficult. There have been many searches that have located a person in just such unreasonable areas.

Plan the search so that every inch of natural area has been inspected visually or on foot because these individuals are known to hide effectively. In the authors' research and search experience, when the body of a lost AD person was eventually discovered, it was almost always in an area where searchers had been but had not found the individual.

Section 7.4
Searching For Children

Searching for a lost child is very emotional—for the relatives, for the search management team, and for the searchers. Although managing a search for a child is, in many ways, no different from that for an adult, there are different issues that need to be considered.

In addition to categorizing lost children by age, they also need to be categorized by whether or not they have Special Needs. To quote from `https://en.wikipedia.org/wiki/Special_needs`,

> "*In the United States, special needs is a term used in clinical diagnostic and functional development to describe individuals who require assistance for disabilities that may be medical, mental, or psychological. . . . Types of special needs vary in severity. People with autism, Down syndrome, dyslexia, blindness, ADHD, or cystic fibrosis, for example, may be considered to have special needs.*"

Investigative Checklists

Figures 7.1 through 7.4 constitute an Investigative Checklist, created by the National Center for Missing & Exploited Children® (NCMEC), that can be used in a traditional missing child incident. This checklist can be downloaded from `https://www.missingkids.org/content/dam/missingkids/pdfs/publications/nc88.pdf`.

Figures 7.5 and 7.6 constitute an Investigative Checklist, created by NCMEC, that can be used in a search for a missing child with special needs. This checklist can be downloaded from `https://www.missingkids.org/content/dam/missingkids/pdfs/NCMEC%20Investigative%20Checklist%20Special%20Needs%202016.pdf`.

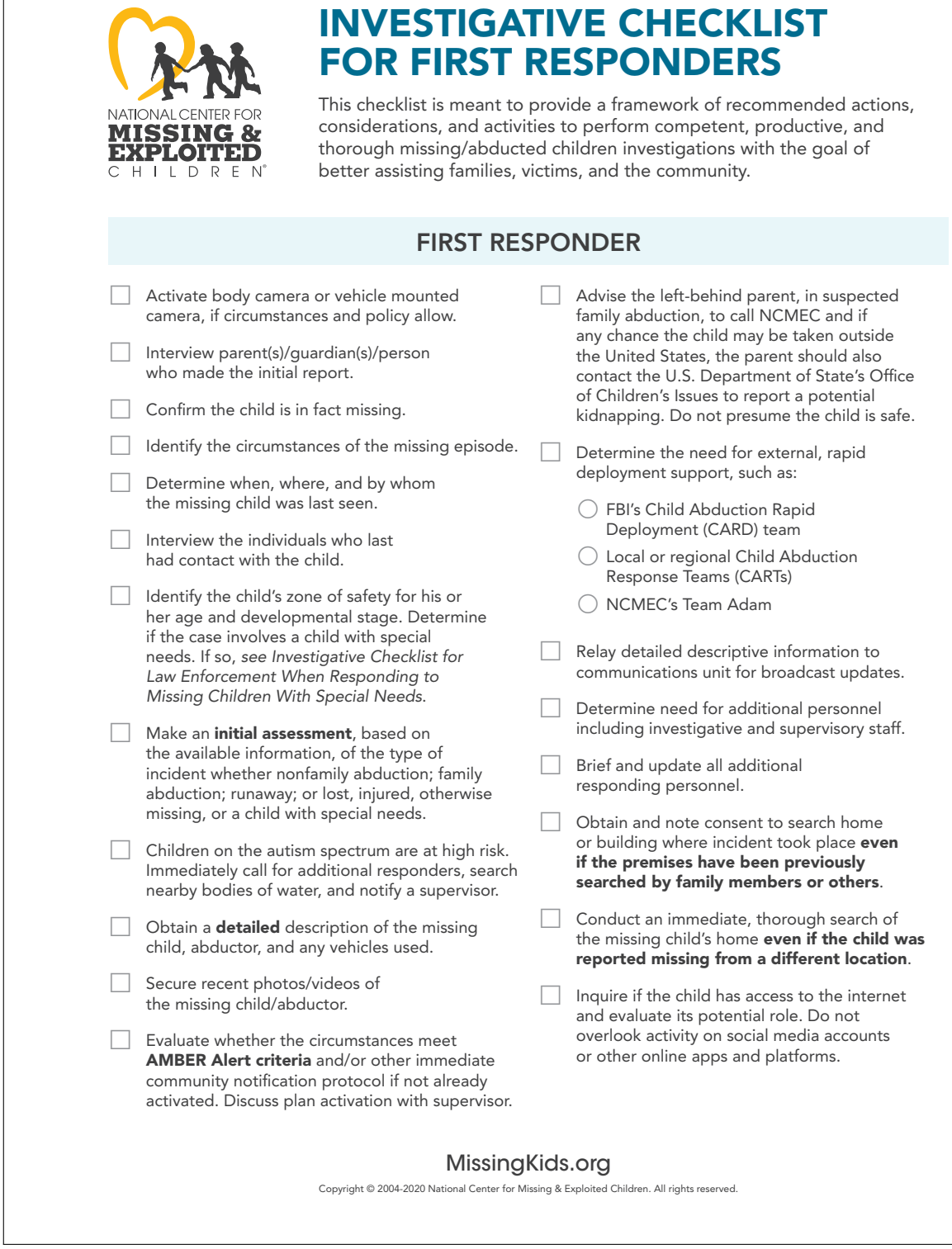
LPQ for Missing Children with Special Needs

Figures 7.7 through 7.10 constitute an LPQ for Missing Children with Special Needs, created by NCMEC, that can be used in a search for a missing child with special needs. The LPQ can be downloaded from `https://www.bismarcknd.gov/DocumentCenter/View/20934/Special-Needs-Questionnaire`.

National Center for Missing & Exploited Children®

When the subject of a search is a child, then requesting resources from NCMEC should be considered. The NCMEC website is `http://www.missingkids.com/` and their phone number is 1-800-THE-HELP® (1-800-843-5678). There is no charge for their services, which, through Team Adam, range from reproducing and distributing missing person flyers to searching landfills. See `http://www.missingkids.com/en_US/publications/NC170.pdf` for more details.

The NCMEC manual "Missing and Abducted Children: A Law-Enforcement Guide to Case Investigation and Program Management", mentioned in these documents, can be downloaded from `https://www.missingkids.org/content/dam/missingkids/pdfs/publications/nc74.pdf`.



NATIONAL CENTER FOR MISSING & EXPLOITED CHILDREN®

INVESTIGATIVE CHECKLIST FOR FIRST RESPONDERS

This checklist is meant to provide a framework of recommended actions, considerations, and activities to perform competent, productive, and thorough missing/abducted children investigations with the goal of better assisting families, victims, and the community.

FIRST RESPONDER

- ☐ Activate body camera or vehicle mounted camera, if circumstances and policy allow.
- ☐ Interview parent(s)/guardian(s)/person who made the initial report.
- ☐ Confirm the child is in fact missing.
- ☐ Identify the circumstances of the missing episode.
- ☐ Determine when, where, and by whom the missing child was last seen.
- ☐ Interview the individuals who last had contact with the child.
- ☐ Identify the child's zone of safety for his or her age and developmental stage. Determine if the case involves a child with special needs. If so, *see Investigative Checklist for Law Enforcement When Responding to Missing Children With Special Needs.*
- ☐ Make an **initial assessment**, based on the available information, of the type of incident whether nonfamily abduction; family abduction; runaway; or lost, injured, otherwise missing, or a child with special needs.
- ☐ Children on the autism spectrum are at high risk. Immediately call for additional responders, search nearby bodies of water, and notify a supervisor.
- ☐ Obtain a **detailed** description of the missing child, abductor, and any vehicles used.
- ☐ Secure recent photos/videos of the missing child/abductor.
- ☐ Evaluate whether the circumstances meet **AMBER Alert criteria** and/or other immediate community notification protocol if not already activated. Discuss plan activation with supervisor.
- ☐ Advise the left-behind parent, in suspected family abduction, to call NCMEC and if any chance the child may be taken outside the United States, the parent should also contact the U.S. Department of State's Office of Children's Issues to report a potential kidnapping. Do not presume the child is safe.
- ☐ Determine the need for external, rapid deployment support, such as:
  - ◯ FBI's Child Abduction Rapid Deployment (CARD) team
  - ◯ Local or regional Child Abduction Response Teams (CARTs)
  - ◯ NCMEC's Team Adam
- ☐ Relay detailed descriptive information to communications unit for broadcast updates.
- ☐ Determine need for additional personnel including investigative and supervisory staff.
- ☐ Brief and update all additional responding personnel.
- ☐ Obtain and note consent to search home or building where incident took place **even if the premises have been previously searched by family members or others**.
- ☐ Conduct an immediate, thorough search of the missing child's home **even if the child was reported missing from a different location**.
- ☐ Inquire if the child has access to the internet and evaluate its potential role. Do not overlook activity on social media accounts or other online apps and platforms.

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Figure 7.1: Investigative Checklist—Page 1

☐ Identify and separately interview everyone at the scene. Make sure their interview and identifying information is properly recorded. To aid in this process, if possible, take pictures or record video images of everyone present. Vehicle mounted or body cameras may be helpful with this task.

- ◯ Note name, address, home/business phone numbers of each person.
- ◯ Determine each person's relationship to the missing child.
- ◯ Note information each person may have about the circumstances surrounding the missing episode.
- ◯ Determine when/where each person last saw the child.
- ◯ Ask each one, "What do you think happened to the child?"
- ◯ Obtain names/addresses/phone numbers of the child's friends/associates and other relatives and friends of the family.
- ◯ Determine if any suspicious activity or people were seen in the area.
- ◯ Determine if any people were seen who seemed unusual, strange, or out-of-place.
- ◯ Continue to keep communications unit apprised of all appropriate developing information for broadcast updates.

☐ Seal/protect scene and area of the child's home, including the child's personal articles such as hairbrush, diary, photos, and items with the child's fingerprints/footprints/teeth impressions. Determine if any of the child's personal items are missing. If possible, photograph/take videos of these areas.

☐ Evaluate the contents and appearance of the child's room/residence.

☐ Ascertain if the child has a cellphone or other electronic communication device and obtain the most recent records of their use.

☐ Extend search to surrounding areas and vehicles, including those abandoned, and other places of concealment such as abandoned appliances, pools, wells, sheds, or other areas considered to be "attractive nuisances."

☐ Treat areas of interest as potential crime scenes including all areas where the child may have been or was going to be located.

☐ Determine if surveillance or security cameras in the vicinity may have captured relevant information.

☐ Review sex offender registries to determine if registered individuals live/work in the area or might otherwise be associated with the case. Call NCMEC at 1-800-THE-LOST® (1-800-843-5678) to request assistance with this step.

☐ Interview other family members, friends/associates of the child, and friends of the family to determine:

- ◯ when each last saw the child.
- ◯ what they think happened to the child.
- ◯ if the child had complained about being approached by anyone.
- ◯ child's social networking accounts and usernames.
- ◯ if the child utilizes chat apps on their cellphone.
- ◯ if the child has mentioned meeting anyone online.

☐ Ensure information regarding the missing child is entered into the National Crime Information Center's (NCIC) Missing Person File **no more than two hours after receipt of the report** and any information about a suspected abductor is entered into the NCIC Wanted Person File. Ensure the entry includes a Child Abduction (CA) flag if appropriate.

☐ Prepare missing child poster/flier with the child/abductor's photo and descriptive information. Distribute in appropriate geographic regions. Call NCMEC at 1-800-THE-LOST® (1-800-843-5678) for assistance with this step.

☐ Prepare reports/make all required notifications.

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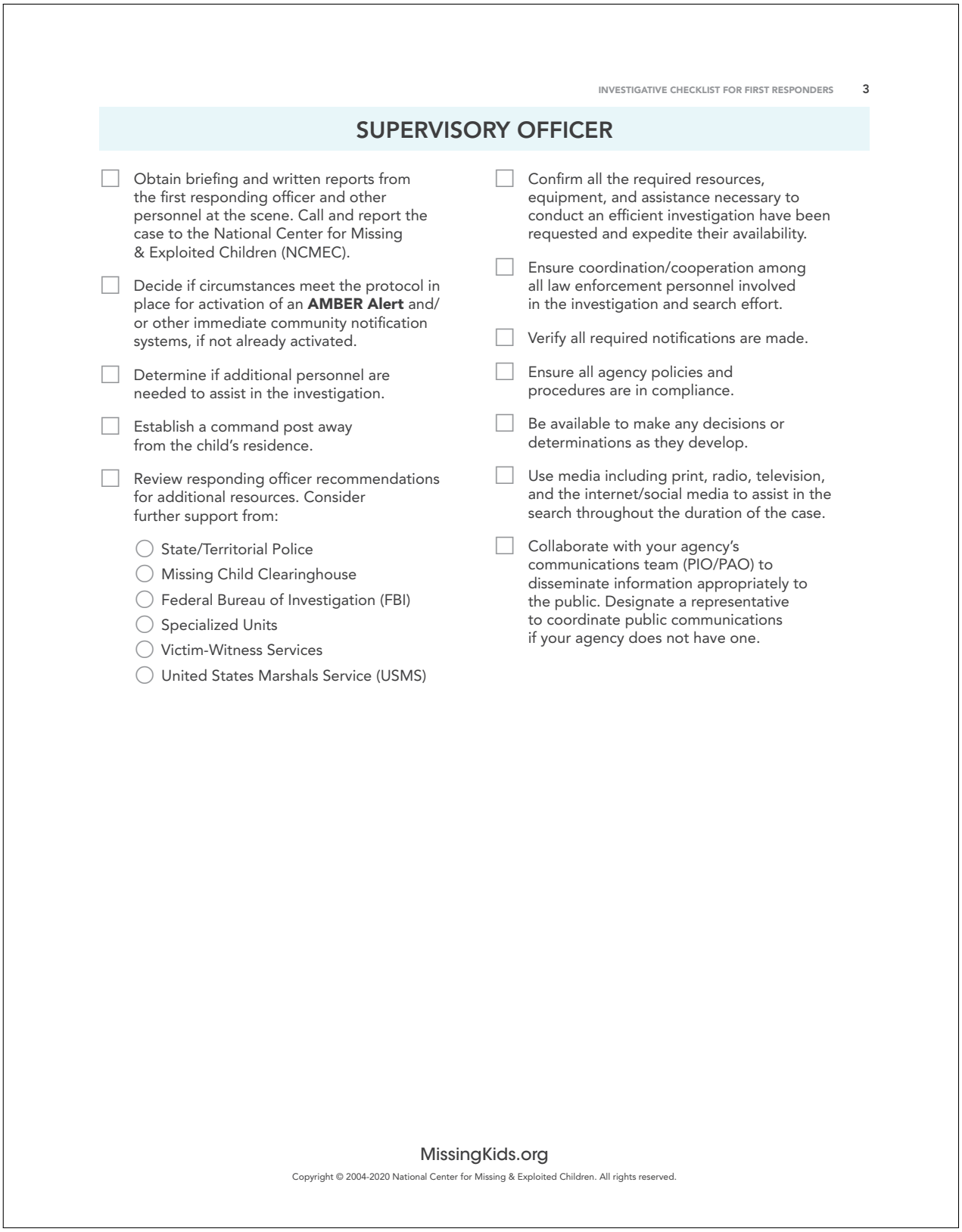
Figure 7.2: Investigative Checklist—Page 2



INVESTIGATIVE CHECKLIST FOR FIRST RESPONDERS 3

SUPERVISORY OFFICER

- ☐ Obtain briefing and written reports from the first responding officer and other personnel at the scene. Call and report the case to the National Center for Missing & Exploited Children (NCMEC).
- ☐ Decide if circumstances meet the protocol in place for activation of an **AMBER Alert** and/or other immediate community notification systems, if not already activated.
- ☐ Determine if additional personnel are needed to assist in the investigation.
- ☐ Establish a command post away from the child's residence.
- ☐ Review responding officer recommendations for additional resources. Consider further support from:
  - ◯ State/Territorial Police
  - ◯ Missing Child Clearinghouse
  - ◯ Federal Bureau of Investigation (FBI)
  - ◯ Specialized Units
  - ◯ Victim-Witness Services
  - ◯ United States Marshals Service (USMS)
- ☐ Confirm all the required resources, equipment, and assistance necessary to conduct an efficient investigation have been requested and expedite their availability.
- ☐ Ensure coordination/cooperation among all law enforcement personnel involved in the investigation and search effort.
- ☐ Verify all required notifications are made.
- ☐ Ensure all agency policies and procedures are in compliance.
- ☐ Be available to make any decisions or determinations as they develop.
- ☐ Use media including print, radio, television, and the internet/social media to assist in the search throughout the duration of the case.
- ☐ Collaborate with your agency's communications team (PIO/PAO) to disseminate information appropriately to the public. Designate a representative to coordinate public communications if your agency does not have one.

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Figure 7.3: Investigative Checklist—Page 3

INVESTIGATIVE OFFICER

- ☐ Obtain briefing from the first responding officer and other on-scene personnel.
- ☐ Verify the accuracy of all descriptive information and other details developed during the preliminary investigation.
- ☐ Initiate a neighborhood canvass using a standardized questionnaire.
- ☐ Obtain a brief, recent history of family dynamics.
- ☐ Determine if social services or child protective services have been or are currently involved with the family.
- ☐ Correct and investigate the reasons for conflicting information offered by witnesses and other individuals.
- ☐ Provide relevant items and materials secured from the scene(s) to specialized units and external support agencies as need to aid in searches.
- ☐ Review and evaluate all available information and evidence collected.
- ☐ Secure the child's latest medical and dental records and items suitable for DNA collection.
- ☐ Contact landfill management and request they delay or at least segregate garbage and dumping containers from key investigative areas in cases where it is suspected there may be imminent danger to the missing child.
- ☐ Develop and execute an investigative plan.
- ☐ Conduct a criminal history background check on all principal suspects, witnesses, and participants in the investigation.
- ☐ Determine what additional resources and specialized services are required.
- ☐ Ensure details of the case have been reported to NCMEC. If the child is missing from placement, NCMEC is to be notified within 24 hours. The investigating agency, child welfare agency, and NCMEC are to maintain close liaison for the exchange of information and technical assistance.
- ☐ Prepare and update bulletins for local law enforcement agencies, missing child clearinghouse, FBI, and other appropriate agencies.
- ☐ Establish a phone hotline for receipt of tips and leads. Consider establishing an email address and other methods of electronically receiving leads as well.
- ☐ Establish a leads management system to prioritize leads and help ensure each one is reviewed and followed-up. Request support with this from NCMEC if needed.

This checklist is adapted from and to be used as a supplement to *Missing and Abducted Children: A Law-Enforcement Guide to Case Investigation and Program Management*. That guide contains additional recommended checklists and materials and may be downloaded free of charge at MissingKids.org/ourwork/publications. To request a free copy or assistance for specific cases, call **NCMEC at 1-800-THE-LOST® (1-800-843-5678)**. This project was supported by Grant No. 2019-MU-MU-K012 awarded by the Office of Juvenile Justice and Delinquency Prevention, Office of Justice Programs, U.S. Department of Justice. This document is provided for informational purposes only in support of NCMEC's mission to serve as a resource center for law enforcement, families, and the public to help find missing children, reduce child sexual exploitation, and prevent child victimization and does not constitute legal advice or professional opinion about specific facts. Information provided in this document may not remain current or accurate, so recipients should use this document only as a starting point for their own independent research and analysis. If legal advice or other expert assistance is required, the services of a competent professional should be sought. The opinions, findings, and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect those of the Department of Justice.

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AMBER ALERT®

OJJDP Office of Juvenile Justice and Delinquency Prevention
Office of Justice Programs ♦ U.S. Department of Justice

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Figure 7.4: Investigative Checklist—Page 4

Investigative Checklist for Law Enforcement When Responding to Missing Children With Special Needs

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This Checklist is meant to enhance the response measures taken by law enforcement to safely recover missing children with special needs and is to be used in conjunction with the *Missing Children With Special Needs* addendum and *Missing Children With Special Needs Lost-Person Questionnaire*.

Call-Intake Questions

Public-safety telecommunicators are encouraged to **immediately** obtain the information listed below and provide it to all first responders. Additionally they are encouraged to **immediately** contact the National Center for Missing & Exploited Children® at 1-800-THE-LOST® (1-800-843-5678) to ensure resources, including search-and-rescue experts, are immediately deployed at the onset of the incident.

[ ] Is the child wearing or carrying any tracking technology device? If so, which one and how is location information accessed?
[ ] Is the child attracted to water? If so, can the child swim?
[ ] Is the child attracted to active roadways/highways?
[ ] Does the child have a fascination with vehicles such as trains, heavy equipment, airplanes, or fire trucks?
[ ] Has the child wandered away before? If so, where was he or she found?
[ ] Does the child have a sibling with special needs? If so, has that sibling wandered away before? If so, where was the sibling found?
[ ] Where does the child like to go? Does the child have a favorite place?
[ ] Is the child nonverbal? How will the child likely react to his or her name being called?
[ ] Will the child respond to a particular voice such as that of his or her mother, father, other relative, caregiver, or family friend?
[ ] Does the child have a favorite song, toy, or character? If so, what or who is it?
[ ] Does the verbal child know his or her parents' names, home address, and phone number?
[ ] Does the child have any specific dislikes, fears, or behavioral triggers?
[ ] How might the child react to sirens, helicopters, airplanes, search dogs, people in uniform, or those participating in a search team?
[ ] How does the child respond to pain or injury?
[ ] What is the child's response to being touched?
[ ] Does the child wear a medical ID tag?
[ ] Does the child have any sensory, medical, or dietary issues and requirements?
[ ] Does the child rely on any life-sustaining medication?
[ ] Does the child become upset easily? If so, what methods are used to calm him or her?

The Initial Response

[ ] Identify hazards in the area where the child was last seen and dispatch personnel to those locations to search for the child, paying special attention to any bodies of water and specific locations of interest to the child such as his or her favorite places.
[ ] Secure identified hazardous areas near where the child was last seen to prevent the child from entering those areas.
[ ] Determine if the child was wearing/carrying a tracking device and, if so, immediately initiate tracking measures to locate the child.
[ ] Determine if the child is frightened by aircraft, dogs, ATVs, or any other resources used to assist in searches. Remember using search dogs at the onset of the initial response will better ensure successful tracking.
[ ] Determine if the child is sensitive to or frightened by noise and how he or she will typically react to that type of noise.
[ ] Establish containment measures of the child's known routes to prevent him or her from wandering further away from the place last seen using all appropriate means such as road, bike, and air patrol.
[ ] Contact the National Center for Missing & Exploited Children without delay to request assistance from their search-and-rescue and search-management experts.
[ ] Ensure the lead agency is using the services of a reverse 911 system, such as A Child Is Missing Alert at www.achildismissing.org. This service helps alert the local community via a rapid-response, neighborhood-alert program using high-tech phone systems.
[ ] Determine if an Endangered Missing Child Alert has been issued.

Investigative Measures

[ ] Contact the child's parent/guardian to further assess the child's special-needs condition.
[ ] Determine if the child has any history of wandering or eloping and, if so, where and what physical features associated with those episodes may have attracted the child.
[ ] Identify additional physical features the child may be attracted to such as roadways/highways, trains, heavy equipment, fire trucks, park swings, and road signs.
[ ] Determine if the child has any favorite places.
[ ] Determine if the child has a favorite song, toy, or character.

Figure 7.5: Investigative Checklist for Children with Special Needs—Page 1

[ ] Determine if the child has any dislikes, fears, or behavioral triggers and, if so, how he or she will typically react to negative stimuli.
[ ] Determine how the child reacts to sirens, dogs, vehicles used in searches, and people of authority/in uniform. Children with autism will sometimes avoid search teams or attempt to hide in small places.
[ ] Determine the communication abilities of the child regarding verbal versus nonverbal skills.
[ ] Determine if the child will respond to his or her name when being called.
[ ] Determine if the child knows his or her parents' names, home address, and phone numbers.
[ ] Determine if the child has any other mental or physical conditions.
[ ] Determine if the child has any dietary issues or requirements.
[ ] Determine if the child is taking any medications, and, if so, the type of medications, risks involved with delayed or missed doses, and potential side effects if the medication is not taken as prescribed.
[ ] Determine if the child wears a medical identification bracelet or tag.
[ ] Determine how the child responds to pain or injury.
[ ] Determine the child's response to being touched.
[ ] Determine what methods are used to calm the child.

Search and Rescue Measures

[ ] Preserve the place the child was last seen.
[ ] Use search-and-rescue personnel accustomed to the existing geography whether urban, suburban, or rural.
[ ] Provide a detailed briefing to search-and-rescue personnel arriving on scene about the behaviors of the missing child.
[ ] Consider using the National Center for Missing & Exploited Children's *Missing Children With Special Needs Lost-Person Questionnaire*.
[ ] Initiate search-and-rescue efforts with an emphasis on bodies of water, high-hazard areas, travel corridors, routes to favorite places, previous locations visited, and any other areas of interest suggested by those who know the child.
[ ] Attempt to attract the child by using his or her favorite things such as playing a favorite song or driving a favorite type of vehicle into the search area.
[ ] Use night-search techniques, if appropriate, such as projected lights and patterns, especially spinning patterns, or other types of favorite visuals to attract the missing child. **Note**: Be aware night searches could be hazardous to the child if the terrain includes dangers such as cliffs, drop offs, mine shafts, or bodies of water. Attempting to draw a child into these areas could lead to tragic consequences if these are not identified by searchers and secured prior to using attraction devices.
[ ] Extend search duration because the unique behaviors of some children with special needs may have a protective effect allowing the child to survive longer than what is considered to be a normal survival rate for a child.
[ ] Evaluate the overall effectiveness of the search operations, in the event of a prolonged search, and adjust as necessary for the next operational phase to include immediate and long-range resources and logistical requirements for deployment of those resources.
[ ] Determine if there are any gaps in the original search area and make arrangements to search those areas again.
[ ] Consider using trained search-and-rescue personnel with volunteer searchers to enhance the search capabilities.

Recovery and Reunification Measures

The considerations noted below are recommended to deescalate and/or minimize any heightened emotions or anxieties the child may experience at the time of recovery.

- Maintain a calm and relaxed environment.
- Contain the child in a passive way to keep him or her from running or bolting and avoid use of restraints.
- Bring a parent or guardian immediately to the recovery site, whenever possible, and tell the child that person is on the way.
- Approach the child at his or her level, kneeling if necessary, and speak in a normal tone of voice using simple phrases.
- Use a task-and-reward process to ease anxiety and enhance compliance using phrases such as, "First we are going to stay here, and then your father is going to come here."
- Avoid assuming the child understands everything being said and done at the recovery scene.
- Use communication aids, written instructions, drawings, or prompts if possible.
- Use humor and familiar topics when possible. For instance if the child is wearing a shirt with a cartoon character on it, talk to the child about the character to help lessen any anxiety the child may be feeling and calm the child if upset.
- Check for any identification such as a medical bracelet or tracking device.
- Contact the National Autism Association for further reunification assistance at 1-877-622-2884.

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Figure 7.6: Investigative Checklist for Children with Special Needs—Page 2

Missing Children With Special Needs Lost-Person Questionnaire

This questionnaire should be used in conjunction with the National Center for Missing & Exploited Children®'s *Missing Children With Special Needs* addendum and *Investigative Checklist for Law Enforcement When Responding to Missing Children With Special Needs* available at the Resources for Law Enforcement section of www.missingkids.com.

For immediate assistance with the search for a missing child call the National Center for Missing & Exploited Children at 1-800-THE-LOST® (1-800-843-5678).

Incident Name		Today's Date		Time
Interviewed By		Case Number		
Lost Person				
Full Name		DOB		Sex
Home Address				Zip + 4
Home Phone		Cell Phone		
Physical Description				
Height	Weight	Age	Build	Eye Color
Hair		Glasses		
Distinguishing Marks (scars/moles/tattoos/piercings)				
Overall Appearance				
Photo Available Y ☐ N ☐		Where?		
Next of Kin				
Name				
Address				
Home Phone		Cell Phone		
Relationship to Subject				
Close Friend				
Name				
Address				
Home Phone		Cell Phone		
Name				
Address				
Home Phone		Cell Phone		
Place Last Seen				
Time	Where	How		
Seen by Whom				
Weather Conditions at Time Last Seen				
Current Weather Conditions				
Direction of Travel Last Seen				

Figure 7.7: LPQ for Children with Special Needs—Page 1

Reason for Leaving				
Mood (confident, confused, other)				
Comments				
Clothing/Equipment				
	Style	**Color**	**Size**	**Other**
Shirt/Sweater				
Pants (Belt)				
Hat				
Rain Gear				
Gloves				
Shoes				
Sole Pattern				
Jacket				
Additional Clothing				
Tracking Device				
Family Doctor/Pediatrician				
Name				
Office Address				
Office Phone		Cell Phone		
Other Contact Information				
Caregiver				
Name				
Address				
Home Phone		Cell Phone		
School				
Name				
Address				
Teacher´s Name				
Phone Number				
Outdoor Experience				
Familiar With Area				
Ever Lost Before Y ☐ N ☐		When		
Where				
Health/General Condition				
Overall Health				
Overall Physical Condition				
Known Medical/Dental Problems				
Handicaps/Deformities/Prosthetics				
Known Psychological Problems				

Figure 7.8: LPQ for Children with Special Needs—Page 2

Medication		
Dosages		
Medication Side Effects		
Witness Information		
Name		
Home Address		
Home Phone	Cell Phone	Relationship
Witness Comments		
Actions Taken		
By Family/Friends		
Results		
Others		
Results		
Comments		

Additional Information For Children With Autism
To Address Immediate Life Saving Efforts

Tracking Technology Device Worn/Carried Y ☐ N ☐	
If So, How Are Tracking Measures Initiated	
Child Attracted to Water Y ☐ N ☐	If Specific Body of Water, Which One
Child Able to Swim Y ☐ N ☐	
Child Attracted to Roadways/Highways Y ☐ N ☐	If Specific, Which One(s)
Child Attracted to Trains ☐ Heavy Equipment ☐ Airplanes ☐ Fire Trucks ☐	
Other Vehicles, Specify	
Child Wandered Before Y ☐ N ☐	
Where Found	
Child Have Siblings With Special Needs Y ☐ N ☐	
Sibling Wandered Before Y ☐ N ☐	
Where Found	
Favorite Places/Locations	
Child Verbal ☐ Nonverbal ☐	
Reaction When Name Called	
Responds to Voice of Mother ☐ Father ☐ Other, Specify	
Favorite Song	
Favorite Toy	
Favorite Character	
Knows Parents´ Names ☐ Home Address ☐ Phone Number ☐	
Other Contact Information, Specify	
Dislikes	

Figure 7.9: LPQ for Children with Special Needs—Page 3

Fears	
Behavioral Triggers	
Reaction to	Sirens
	Aircraft
	Canines/Search Dogs
	People in Uniform/Searchers
Response to Pain/Injury	
Response to Being Touched	
Wears Medical ID Tag Y ☐ N ☐	
Sensory, Medical, Dietary Issues/Requirements	
Methods Used to Calm Child Once Upset	
Special-Needs Conditions	

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Figure 7.10: LPQ for Children with Special Needs—Page 4

CHAPTER 8

Initial Response Objectives

Size Up

Size up is a term used to describe the Incident Commander's process for analyzing the readily available searching and planning data gathered in the initial stages of an incident. The purpose of size up is to determine what might have happened, how complex the incident is now and how much more complex it may become. It is the basis for deciding what should be done to resolve the incident. This information includes the LPQ data, Search Urgency, Lost Person Behavior, weather, terrain, hazards, time since the subject went missing, physical, mental and medical condition, clothing and equipment, activity subject was engaged in, trip plans, experience, familiarity with the terrain, and any other factors the IC determines are applicable. Scenario analysis may be a part of size up, or it may immediately follow based upon the size up. Size up always occurs before determining the Incident Objectives and developing the Strategy and Tactics.

Size up always occurs before determining the Incident Objectives and developing the Strategy and Tactics.

Incident Objectives

In the Incident Command System, incidents are managed under "Management by Objectives". Management by Objectives was developed for managing businesses many years ago, and is commonly used by many corporate, governmental, and other entities. The concept requires that the manager/leader develops specific objectives to achieve their preferred outcome, and provides and explains these objectives to their subordinates. The subordinates, understanding the objectives that need to be accomplished, use their background and expertise to identify and execute the actions/tasks necessary to accomplish those objectives.

Thus it is with search management under the ICS. The Incident Commander sets the Incident Objectives and determines the Strategy that will be used to accomplish them. They delegate the responsibility for developing and implementing the tactics to accomplish those objectives, and hold their subordinate Operations, Planning, and Logistics Section Chiefs (if they exist) accountable. Of course, if the IRIC has not yet delegated Operations, Planning, or Logistics to Section Chiefs,

then the IRIC must develop the objectives, strategy, and tactics. It is important that the IRIC understands the difference between Incident Objectives, Strategy, and Tactics.

- **Incident Objectives** are the goals that must be accomplished to successfully resolve the incident.
- **Strategies** are the big picture plans that outline how the Objectives are to be accomplished.
- **Tactics** are the physical and mental tasks that are performed by the incident resources to carry out the Strategies and accomplish the Objectives.

An Example of an Objective, Strategy, and Tactic

An Initial Response Incident Objective: Establish and maintain containment by 1500 hours.

An Initial Response Strategy to accomplish this Objective: Establish containment at the intersection of the Tank 1 and Tank 2 trails by 1500 hours.

An Initial Response Tactic to carry out this Strategy to accomplish this Objective: Team 1 to proceed on foot up Tank 1 trail to intersection of Tank 2 trail by 1500 hours, looking for sign all the way. Set up trail block at junction. Be prepared to maintain for 24 hours.

This chapter deals with Initial Response Objectives, Chapter 9 on page 98 deals with the Initial Response Strategy, and then Chapter 10 on page 103 deals with Tactics.[1]

Characteristics of Good Incident Objectives

Good incident objectives should have the following SMART characteristics.

1. **S**pecific to the Situation. The wording of the objectives must be precise and unambiguous—clear, concise, action oriented.
2. **M**easurable. The objectives should make it possible to verify that the objectives were achieved.
3. **A**ssignable. The objectives can be assigned to a specific resource or resources.
4. **R**easonable. The objectives must be achievable with the resources that the agency (and assisting agencies) can allocate to the incident.
5. **T**ime Limited. Specify a time by when the objective will be accomplished.

Incident Objectives are not limited to a single Operational Period, but cover the entire incident. However, the Initial Response Incident Objectives should focus on the goals for that phase of the search. They can be modified as needed if the search continues beyond the Initial Response phase.

An objective does not contain search tactics or specific resources. If a statement contains specific tactics or resources such as "Assign the ASARD Dog Team to search segment 1 by 2100 hours", it is a tactic, not an objective.

Objectives should be flexible, allowing for the use of broad discretion in achieving that objective. They should be written so that when each of the objectives has been accomplished, the missing person will have been located, or it is time to transition to a limited continuous search.[2]

[1] For an in depth discussion of the difference between Objectives, Strategies, and Tactics, see the document "Objectives, Strategies, and Tactics in Search and Rescue", which can be downloaded from `www.saraz.org` under the Documents menu.

[2] A limited continuous search is the state of the incident where there is no active searching but if clues are discovered they are investigated and, if warranted, active searching is resumed.

Common Initial Response Objectives

The IRIC need not reinvent the wheel—the following are common Initial Response incident objectives:

1. Provide for the safety of all involved personnel throughout the incident.
2. Find the missing person within 12 hours.
3. Establish and maintain containment by [time and date].
4. Search all high probability routes and likely spots with a high coverage by [time and date].

It is the Incident Objectives upon which all search strategy and tactics are based, and upon which the search efforts are organized. All incident actions should be focused on accomplishing the Incident Objectives.

> *Incident Objectives drive the Strategy, and the Strategy drives the Tactics.*

Written Incident Objectives

Ultimately the Initial Response Incident Objectives should be entered in the IRO Note under the template Initial Response Incident Objectives—see Section 4.1 on page 36—or in box 7 on page 2 of the ICS 201 form—see Figure 4.28 on page 56.

Search Demonstration #8: Initial Response Incident Objectives

An example of Initial Response Incident Objectives (associated with the incident shown in Search Demonstration #1 on page 30 and Search Demonstration #5 on page 70), can be seen in Figure 20.2 on page 146, which are repeated here.

1. *Provide for searcher safety throughout the incident.*
2. *Find Mr. LeMaitre no later than 0600 hrs on 7/5.*
3. *Hasty Search the Race Trail from the start line to the finish line with high coverage by 0600 on 7/5.*
4. *Contain the area both north and south of the race trail, as well as in Seward, by 2330 on 7/4.*
5. *When located, treat and evacuate by the most judicious method.*

Unwritten Incident Objectives

There are two reasons why resources may not be put into the field. Such incidents still have objectives, but they may not be written.

1. There is not enough information to decide where to start the search. In that case the objective would be to continue the investigation to determine whether or not this is a bona fide search, and, if so, where to begin looking (that is, determine the IPP).
2. There is enough information to think that, by waiting, the subject will come back on their own. In this case the objective is to ensure when they reach civilization, the IRIC knows about it. This is a containment/passive search.

CHAPTER 9

Initial Response Strategy

Developing the Initial Response Strategy

First the IRIC and any other informed and experienced search resources available should conduct a "Scenario Analysis". This is a structured way of brainstorming the "What if?" scenarios.

Scenario Analysis

Scenario Analysis is an attempt at analyzing what the missing person might have done after leaving the IPP.[1] The analysis starts with developing several plausible scenarios and ends with analyzing and prioritizing each of the them.

Scenario Analysis, like investigation, begins during the Initial Response and ends when the subject is found.

> *Scenario Analysis begins during the Initial Response and ends when the subject is found.*

Scenario Analysis is not a one-time exercise—it is an ongoing activity that must be conducted throughout the incident. For example,

- In the Initial Response phase of a search.
- In the transition to an Area Search.
- Every time a new clue is located.
- After searching for some time without locating any clues.

A timeline can be helpful including the subject's activities, the weather, the subject's itinerary if known, and any other significant events such as any communications made by the subject (cell phone, social media, . . .).

Developing and Analyzing Scenarios

There are three components to good scenario construction.

[1] Scenario Analysis is based on the work of Dave Perkins and Pete Roberts, see Reference [Perkins 3].

1. Get the facts.
2. Make reasonable assumptions.
3. Fit the facts and assumptions together.

These components are considered in turn.

1 Get the facts

a) The missing person's profile. Who is the subject of the search? What kind of person are they, their age, background, and health? This information is contained in the LPQ.

b) The incident history. What did the missing person set out to do and what were they doing when last seen? This is contained in the investigative report.

c) Map analysis. What kind of terrain is the subject in? Where are the hazards and what are they? What might act as a barrier or a likely spot (magnet)? Are there any well-defined routes that they might have followed? This involves local knowledge (so if possible involve someone who knows the area) and understanding and interpreting topographic maps.

d) LPB information. Having decided on the category of the missing person then LPB information provides the following:

- The type of behavior that people in this category have exhibited.
- The location in which they were found. Most categories of missing person tend to favor certain types of locations. By matching these with the map, likely places for the missing person can be identified.
- The "as the crow flies" (straight line) distance they were found from the IPP. This gives an idea of the possible size of the search area.

2 Make reasonable assumptions

a) To paraphrase Syrotuck in Reference [Syrotuck, page 21]: "*Put yourself in the subject's shoes*". "*If you were that age, that height, that frame of mind, and in that situation, what might you do?*"

b) Activity or purpose. What might the missing person have done to take them away from the IPP?

c) Direction of travel. Which direction would that activity take them from the IPP, bearing in mind any barriers, likely spots (magnets), and routes identified on the map?

d) Destination. This could be a place that they set out to travel to, or a location from LPB information that is consistent with their direction of travel.

3 Fit the facts and assumptions together

a) The scenario should be consistent with the known facts—these are contained in the missing person's profile, the incident history, and features on the map.

b) The scenario should be realistic. It should be consistent with the LPB information for this kind of person and this type of terrain rather than involving external agencies and chance events.

c) It is perfectly acceptable to have scenarios that take the missing person out of the immediate vicinity, for example they might have gone home or they might have had an accident and be in the hospital.

d) Routes and Locations: Visualize the scope of the problem by drawing the scenarios on a map.

i. Mark any travel aids such as trails, streams, ridges or gullies, that the scenarios suggest the missing person might have followed. Remember that there may be more than one route to get from the IPP to a possible destination.

ii. Mark any locations and hazards suggested by these scenarios. These can be specific, for example a particular building, a well-known viewpoint; or they may be general,

for example the edge of a wood, a dry wash, a cliff face, or the shore of a lake.

The preferred Scenario Analysis method is to generate a number of scenarios rather than relying on one. At least three scenarios should be generated. With fewer scenarios, some perfectly reasonable possibilities may be missed.

Good scenarios include a direction of travel, a route, and a likely location. It may be that a number of scenarios cover a range of possibilities that appear to contradict each other, but this is perfectly possible—discount nothing, accept anything that is "reasonable", and avoid fantasy.

Having constructed reasonable scenarios, two things need to be done.

1. Record the details of each scenario.
2. Assign a priority to each scenario. Deciding where to search, what tactics to use, and where to assign resources is based on where the missing person is most likely to be. "Where the missing person is most likely to be" comes from these scenario priorities.

Scenarios constitute an important part of the incident and must be documented. See the following table for a suggested Scenario Record Sheet.

Scenario Record Sheet
Incident Name:

Scenario Details	Priority
A.	
B.	
C.	
D.	
E.	
F.	
Prepared by: Name: _____ Position: _____ Signature: _____ Date: _____ Time: _____	

Instructions for completing Scenario Record Sheet

1. Scenario Details. Write down any scenarios that may describe what happened to the missing person. Write them in any order. Include the assumed state of the subject: mobile, immobile, responsive, unresponsive.
2. Priority. Give each scenario some indication of the likelihood that it describes what actually happened. Base the priorities on what is known about the missing person, information obtained

from the map, local knowledge, and information from LPB characteristics. Use numbers to indicate priority (1 for the highest, 2 for next highest, and so on, although the numbers need not be consecutive). Equally likely scenarios are given the same priority number.

3. For the most likely scenario (or scenarios), develop the strategy to accomplish each Incident Objective given that the preferred scenario is true.

All of these mental gymnastics must be done quickly and thoroughly based upon the information available at that time. By this point, the IRIC should be able to answer the following questions:

- What are the best containment locations?
- Will the person respond to searchers calling?
- How detectable might the missing person be?
- What kinds of search tactics might be appropriate?
- Where are the most likely spots to search immediately?

Once the Scenario Analysis is done and the Strategies are developed, the IRIC immediately determines the initial response tactics, and orders those resources needed to carry them out, if they are not already available on scene.

Some thoughts about Scenario Analysis

- Without scenarios the IRIC is doing little more than guessing where the missing person might be.
- All four information sources needed to create scenarios must be used—missing person profile, incident history, map analysis, and LPB information. If one is omitted the picture is incomplete.
- Generating scenarios needs to be an established and ongoing part of the incident management procedure.

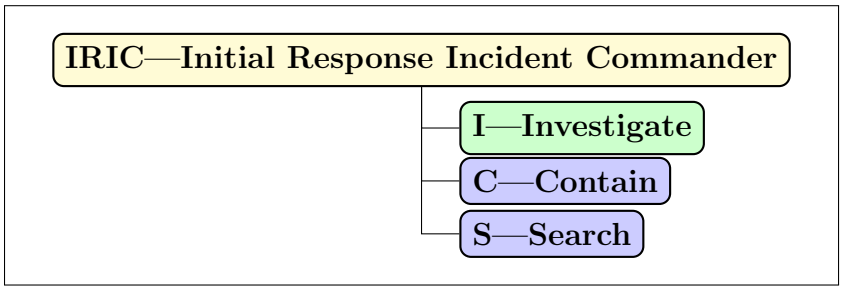
Common Strategy Components

Strategies are usually concise and direct. Some examples are:

1. Locate the PLS or LKP and protect it.
2. Determine the missing person's direction of travel from the PLS.
3. Determine the initial search area and routes.
4. Establish containment in a location that will effectively contain the person within the search area.
5. Quickly and efficiently search the high probability routes and locations.
6. Gather more information about the subject and situation to use in additional planning.

Each component lends itself to specific tactical assignments for the initial response resources.

Part III
Contain And Search



CHAPTER 10

Implementing the Initial Response: Tactics and Resources

Tactics are the physical and mental tasks assigned to specific incident resources to accomplish the strategy and objectives on the ground.

Initial Response Tactics are usually carried out by highly trained and experienced resources who can operate independently in the field.

The overall purpose of this part of a search is to find the subject alive, as quickly as possible. Thus the focus of the search must be on those places where, if the subject is found there, they will be alive.

Initial Response Tactics include:

- Sending trained searchers to appropriate locations to establish containment using trail blocks, camp-ins, track traps, attraction. See Chapter 13 on page 112 for full details.
- Continuing the Investigation.
- Sending Tracking teams to the PLS to identify any clues/tracks, and determine the direction of travel from the tracks.
- Sending a trained tracking or trailing dog to the PLS to determine the direction of travel using scent.
- Sending a trained hasty team to the PLS to physically protect it and any clues that exist at that location.
- Sending trained hasty teams to search likely routes from the PLS and calling the subject's name periodically.
- Sending trained hasty teams to search likely spots for the subject or clues, and calling the subject's name periodically.
- Sending a helicopter to overfly the likely routes and likely spots to search for the subject.
- Sending a tracking or trailing dog team to search likely spots or likely routes for the subject or clues, and calling the subject's name periodically.

Thus, initial response resources are usually well-trained, highly-skilled, self-sufficient teams of two or more individuals. These resources include:

- Hasty teams of trained, experience, clue-aware searchers
- Dog teams with clue-aware handlers that are certified, trained, and experienced.
- Tracking teams.
- Helicopters with observers that are trained to search from the air.
- Mounted Patrols, clue aware.

- ATV/4WD Patrols, clue aware.

Ordering Additional Resources

As soon as the IRIC makes the decision to respond to the missing person incident, they should order the resources needed to contain the search area, identify and protect the PLS or LKP, determine the direction of travel, and search the likely routes and locations.

This will help ensure that there is a group of resources ready to go in a timely fashion when the tactical plan is completed.

Once the initial response tactics are developed, the IRIC must determine what resources are available to implement them.

The IRIC then assigns the available resources to accomplish the tactical plan.

If there are inadequate resources to carry out the initial response, the IRIC must contact the dispatcher and get them ordered and on their way.

It is a good idea to keep a few key resources available at the ICP/Base for contingencies, such as providing medical treatment and evacuation, following up on clues in the search area, or handling spontaneous volunteers.

The IRIC should write down the resources they have ordered in the IRO Note or on the ICS 201. The IRIC must track those resources from the time they are dispatched until they arrive home at the end of their assignments using the IRO Note or the ICS 201. Page 4 of the ICS 201 offers a simple form that allows the IRIC to track the resources and their assignments efficiently and effectively. If there are more resources than there is space on the form, add another page 4.

CHAPTER 11

Call Out

Once the incident has been reported and the initial investigation indicates the need for a SAR response, the next issues facing the IRIC is requesting resources for containment, attraction, and searching, and then deploying them. For many operations this call out entails notifying local search and rescue teams, which are primarily composed of dedicated volunteers. There are a variety of call-out systems in place from the phone tree, to pagers, to cell phone based notification systems utilizing text messaging, and to email messaging. Whichever call-out system is used it must be understood by those needing to make the notification. A back-up system should also be in place in the event that the primary system fails. The call-out message should include information about

- The nature of the incident.
- The staging area location.
- The preferred time of arrival.
- Any special equipment or expertise needed.

It is often sensible to have the resources arrive at staggered times to avoid chaotic congestion at check-in and the staging area. This may be more crucial during the initial response than on a multi-operational period incident.

When resources are en route to the staging area, it is important that they can be contacted in case the incident ends before they arrive, so they can be canceled.

In some cases the travel time to an incident may be lengthy. In this case, it is prudent to plan to respond to the staging area and then have a rest period before those resources are deployed into the field. This issue is important to consider when ordering replacement personnel for subsequent operations.

Certain resources, such as SAR K9s and FLIR units, are better used at specific times of the day or night to maximize their effectiveness. It is important to identify these resources and plan for their use appropriately ensuring they have adequate travel time and rest if needed.

Once the resources have been requested, the next issue facing the IRIC is the deployment of resources. This sounds easier than it actually is. Having a strategy in place for deploying resources helps maintain and/or improve the morale of the searchers.

Having a strategy in place for deploying resources helps maintain and/or improve the morale of the searchers.

One issue that degrades searcher morale quickly is being called out to participate in a SAR operation and then having to wait long periods of time at the staging area for an assignment. It is

best to avoid this by having strategy and tactics in mind so that assignments can be made fairly quickly.

> *One issue that degrades searcher morale quickly is being called out to participate in a SAR operation and then having to wait long periods of time at the staging area for an assignment.*

In the same vein, the IRIC needs to think about how the resources are to be transported from the staging area into the field to avoid a situation like "*We had a lot of waiting to do when we got to the staging area. There was only one helicopter to insert the teams, and it could only take 2 passengers at a time. With each trip taking 20–25 minutes, and refueling after every 3 trips, it took quite a while. We sit here and think about how little sleep we got in order to make our 2 a.m. rendezvous to be here by 5 a.m.*"

While not often the case, having too many personnel arrive may unnecessarily complicate the initial response and may limit the options for successive operational periods. If there are enough personnel to complete the initial objectives then the excess personnel should be surveyed for their availability and prepare for a later operation. Some excess field personnel might be used effectively to help with the search management as a computer operator, a radio operator, or some other position. The IRIC might be able to delegate some tasks so that they can stay focused on the big picture.

If there are not enough personnel to accomplish the initial response objectives then it may be necessary to contact neighboring jurisdictions or other resources suitable for a search and rescue assignment to help conduct the operation. When using outside resources it is essential to conduct a quality briefing so that those personnel are aware of critical issues like the objectives of the operation, agency policy, communications, navigation information (coordinate format and map datum), and any special hazards that may be present.

Prior to deploying personnel in the field from the staging area it is important to assess the personnel and their equipment to ensure that they can complete the task assigned. Deploying poorly equipped searchers can degrade overall mission performance and create a safety problem.

CHAPTER 12

Briefing Resources

At this stage the IRIC has a plan that needs to be executed. The plan is executed by the available search personnel on scene. As such, those personnel need to be adequately briefed about the plan and how it is to be implemented. A quality briefing sets the tone for the operation and instills confidence in the IRIC on the part of the searchers.

> *A quality briefing sets the tone for the operation and instills confidence in the IRIC on the part of the searchers.*

The briefing should generally follow the *Briefing Format for Emergencies* that was developed by Karl Weick following his review of the South Canyon wildfire.[1]

Briefing Format for Emergencies

1. Here's what I think we face.
   - Situation Summary/Description of the Problem/Incident Objectives.
2. Here's what I think we should do.
   - Strategy and Tactics/Assignments.
   - Communications Plan.
3. Here's why.
   - Thoughts behind the development of the plan (Lost Person Behavior, Influencing Factors).
4. Here's what we should keep our eye on.
   - Safety Statement (Communications, Weather, Aviation, Hazards).
5. Now, talk to me.
   - Solicit input from the searchers to make sure there are not better ideas or something missed.
   - Clear up any ambiguities.

In the Initial Response, the IRIC conducts the briefing. See Figure 12.1 on page 108.

When the plan is briefed the distractions to the participants in the briefing should be minimized, and should take place in a relatively quiet location mostly free of distractions, out of sight and earshot of media and family.

[1] See Reference [Weick].

Figure 12.1: IC briefing during small incident

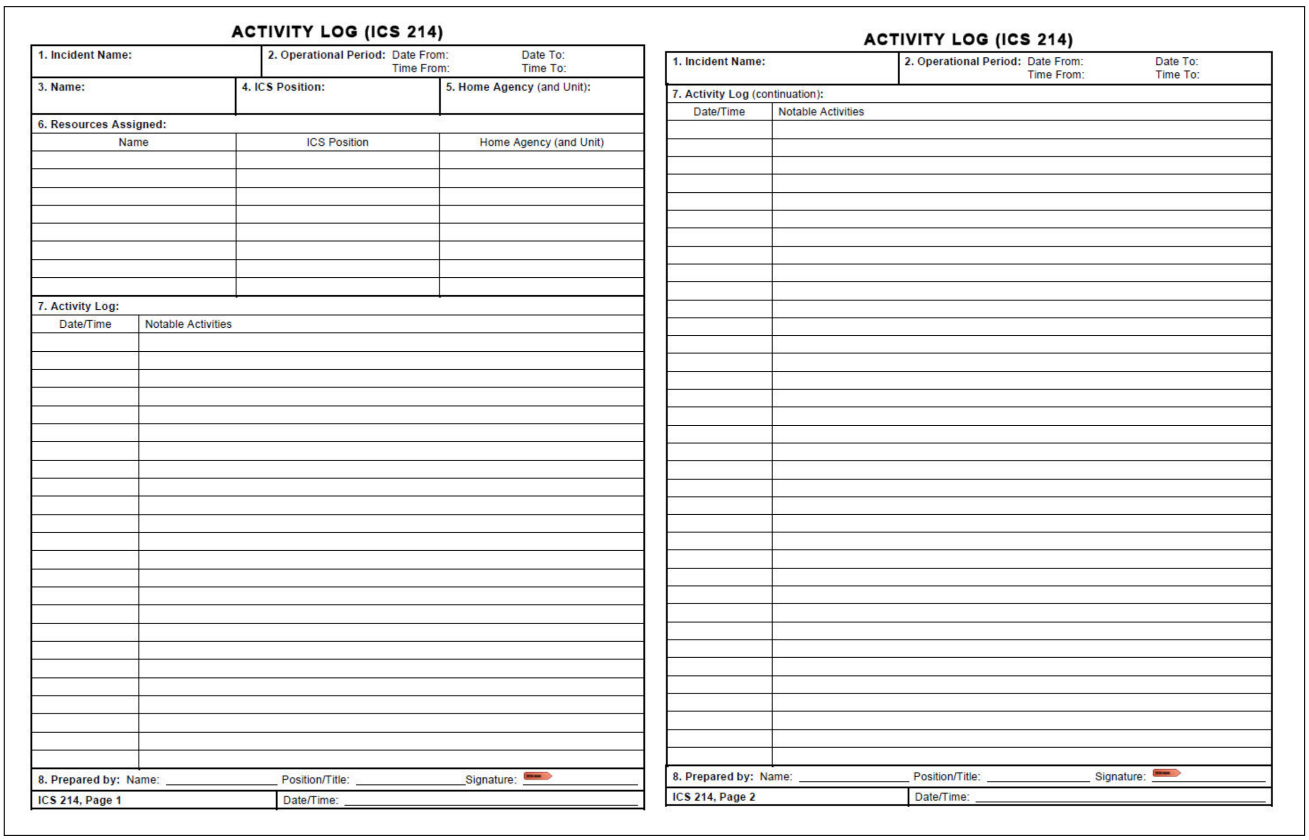
- The IRIC should request that all participants turn off or turn down radios and turn off or silence cell phones.
- The IRIC describes the incident and the objectives.
- Some of the subject information provided during the briefing is confidential and may be protected by law, so it must remain within the personnel that need to know.
- It is also important to ensure that neither media nor family are present for the briefing so that a candid conversation about the tactics and strategy can be conducted.[2]
- The strategy and tactics and assignments should then be briefed. It is critical that the team leaders understand their assignments and how they are to carry out the specific tactics.
- The plan for communications and what to do if a searcher gets hurt should be covered.
- Often it is important to brief the team leaders on the reasoning and thought behind the development of the plan so that issues and situations that arise in the field, that may not have been thought about during the development of the plan, can be dealt with in the spirit of the plan.
- A discussion about safety and risk management is important to have with all of the team leaders and search personnel. Searchers must temper their desire to help someone in a dangerous situation with appropriate risk management.
- The IRIC should solicit feedback from the searchers and team leaders. This should not be a long discussion or debate but rather a chance to make sure everyone feels comfortable with the plan and can complete the plan as briefed.
- At the end of the briefing the participants should be reminded to turn on their radios and cell phones.

If only team leaders are briefed by the IRIC then the same briefing format should be used when they brief their teams. The team leaders may not need to go into specifics about the overall operation but may choose to focus on their particular assignment.

It is important to remind search personnel to document their activities and to be prepared to debrief once the assignment is complete. This can include completing an ICS 214 Activity Log (see Figure 12.2 on page 109 and Figure 12.3 on page 109), keeping a GPS on to develop a track log for download, or making notations and shading on the map so that accurate information about what has been searched and how well it has been searched can be verified.

[2] In fact, whenever candid discussions take place, everyone should be cautious that they are not overheard.

Figure 12.2: Completing an Activity Log



ACTIVITY LOG (ICS 214)

1. Incident Name:
2. Operational Period: Date From: Date To: Time From: Time To:
3. Name:
4. ICS Position:
5. Home Agency (and Unit):
6. Resources Assigned:

Name	ICS Position	Home Agency (and Unit)

7. Activity Log:

Date/Time	Notable Activities

8. Prepared by: Name: Position/Title: Signature:
ICS 214, Page 1 Date/Time:

ACTIVITY LOG (ICS 214)

1. Incident Name:
2. Operational Period: Date From: Date To: Time From: Time To:
7. Activity Log (continuation):

Date/Time	Notable Activities

8. Prepared by: Name: Position/Title: Signature:
ICS 214, Page 2 Date/Time:

Figure 12.3: ICS 214

Briefing Resources Checklist

1. Incident summary, including:

   a) Incident history.
   b) Missing person profile and photo.
   c) Map showing IPP and current assignment.
   d) Navigation information (map datum, coordinates, true or magnetic north).
   e) Actions to date.
   f) Clues found.
   g) Terrain.
   h) Weather.
   i) Hazards and safety, including possible illegal activity discussed on page 111.
   j) Possible media presence.

   k) Possible family presence.
   l) Actions to take if the subject is found.
   m) Language to use if the subject is found.
   n) Rescue and medical plans.

2. Assignment details.[3]
   a) Where to go, what to do, and what to document.
   b) Type of clues to look for. Review protocol for handling evidence.
   c) Document everything on an ICS 214 Activity Log form.
   d) On the mission, photos taken of the subject—that can identify that subject—should not be distributed without the approval of the IRIC and/or the subject.
   e) Direction to the searchers not to use social media during the search for any reason is a good idea.
3. Interviewing people in the field.
4. Type of subject to base tactics on.
   a) Mobile or immobile.
   b) Responsive or unresponsive.
5. Transport to and from their assignment.
6. Personal equipment to take.
7. Team equipment to take.
8. Communications.
9. Debriefing.
   a) Where to return to.
   b) Who to talk to.
   c) What questions will be asked.

Figure 12.4: Not all hazards are stationary

Briefing When Subject Has Dementia

Typically there is no need to brief resources on how to approach and converse with a lost subject who has just been found. However, if the subject suffers from dementia, then, additional briefing is required. The following suggestions were made by Teepa Snow at the 2009 Arizona SAR Conference in Heber, AZ.

1. Approach within visual range from the front, and stop 6 feet from the subject. Approaching from the back can produce anxiety.
2. Look friendly and make a "Hi!" sign with the hand.

[3] During the initial response phase assignments are often given verbally and recorded by the IRIC on ICS 201 or in IRO Note.

3. Offer the hand making eye contact.
4. Approach from the front—moving slowly. Allow time for the subject to take in that someone is approaching.
5. Call the person by name and introduce self.
6. Keep shoulders and face out of their personal space.
7. Use a supportive stance—stand to the side to communicate. Standing right in front of the subject may feel confrontational.
8. Crouch down if they are seated or lying down. This helps them feel less threatened.
9. Wait for their response before continuing.
10. Make positive statements like
    - "Let's try . . . ".
    - "Do this . . . ".
    - "Could you please help me . . . ".
11. Keep your voice calm, low, and slow.
12. Keep it short and simple.
13. Give simple choices—"this or that".
14. Use objects—show them—don't just say it!
15. Break task/movement down—one step at a time.
16. Ask to 'try' or to 'help'.
17. Use empathetic statements like
    - "You look busy."
    - "It looks like you are tired."
    - "It sounds like you are upset."

    and wait for their response.

Illegal Activities

Many times during the course of their duties, SAR professionals encounter illegal or suspicious activities. Each situation presents its own hazard. Illegal marijuana growing operations are known to be occupied by armed individuals and/or booby trapped. Chemicals from clandestine meth labs are often dumped in remote areas. They are known to contain dangerous chemicals that are hazardous if inhaled or explosive if handled inappropriately. Some remote areas are often transited by individuals illegally entering the country or smuggling illegal drugs. These individuals are commonly known to be armed. SAR professionals may also encounter persons acting suspiciously or deceptively about their activities. Caution should be exercised and personal safety is of the utmost importance. Any suspicious or suspected activity must be immediately reported to the IC and handled following team policies and procedures.

CHAPTER 13

Containment and Attraction

There are two different modes of searching, Passive and Active.[1] **Passive Searching** is where the searchers let the lost person come to them, for example a road block, or a resource placed at a high point with good visibility to constantly scan the terrain (a lookout). **Active Searching** is where the lost person is actively sought by resources committed by the incident management team, for example a hasty team. Both modes can be used simultaneously. This chapter deals with Passive Searching of which there are two main tactics, Containment and Attraction.

The purpose of **Containment** is to keep the lost subject within a specific area, and, if that fails, to know whether they have left the area. It assumes that the subject is Mobile.

The purpose of **Attraction** is to catch the attention of the lost subject causing them to either respond or walk out on their own. This is done by searchers producing some form of visible or audible signal. It assumes that the subject is Responsive.

If it is assumed that the subject is Immobile and Unresponsive then these techniques are not necessary,[2] although, if there are sufficient personnel for containment assignments, valuable witness information may still be captured from non-SAR personnel, such as campers, hikers, hunters, etc.

At this stage in the incident the IPP is known, the urgency of the incident has been assessed, and various scenarios, partially based on LPB, have been developed. Assuming the urgency dictates that a search occurs, then Containment and Attraction techniques are immediately put into play. However, whether a hasty search is initiated simultaneously depends on the incident. For example, if overdue persons in a canyon are reported at nighttime and the IRIC suspects that they are not in trouble but are delayed by weather conditions in the canyon, then containment teams are deployed (which then continue into the daytime), but hasty teams might be held back until the following morning to reduce the risk (for example, hazards). However, and this is more common, if the same incident is reported in the morning, then containment and hasty teams might be deployed almost simultaneously.

Section 13.1
Containment

The size of the potential search area can be estimated by making an educated guess as to how fast the person is traveling away from the IPP (their speed), and how long it has been since they left the IPP (their time). From these two numbers it is possible to find the distance that the subject

[1] Sometimes these are referred to as Indirect and Direct modes of searching.

[2] However, there are searches where the subject has been immobile for days, and then suddenly becomes mobile, in which case containment and attraction become critical again.

has traveled (distance = speed × time) away from the IPP. If the direction of travel of the subject is not known, then the potential search area is a circle with the IPP as center and with radius the distance the subject has traveled.

Figure 13.1 shows the potential search area in terms of the "as the crow flies" distance the subject has traveled from the IPP. This shows that, if nothing is done to contain the subject, the potential search area can get very large very quickly. Containment immediately limits how far the subject can travel without being detected.

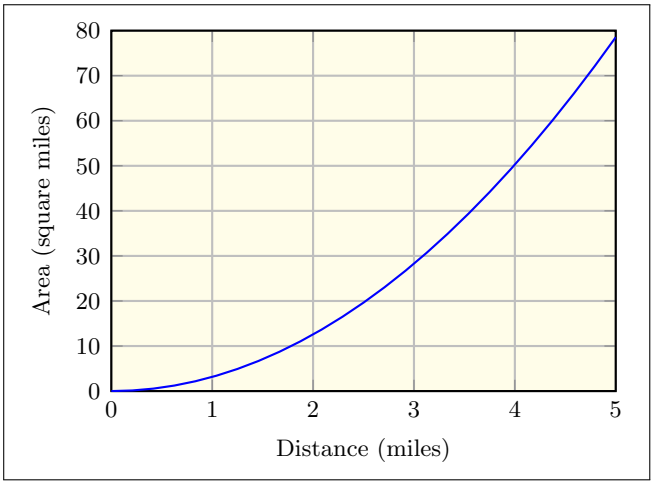


Figure 13.1: Potential search area versus distance from IPP

Thus, the IRIC tries to create a ring of searchers around the area containing the subject, so that the subject cannot leave that area without being detected, thereby lessening the chances that the search area needs enlarging. However, creating a ring of searchers is not always possible for various reasons: lack of resources, difficult terrain, and problems transporting searchers to their assigned spots. Nevertheless, even containment on one or two sides limits the area that needs to be searched. Also, some containment techniques might be used within the search area, not just on the perimeter.

According to Tim Setnicka,[3] containment "*requires an emergency response rushing some rescuers off while the data gathering and planning phases commence and continue.*"

Physical Containment includes the use of

- **Trail Blocks**. These are resources placed at trail junctions or choke points (narrow routes from one region to another, such as a bridge or a mountain pass), and are staffed constantly. Trail blocks serve several purposes.
  - To locate the subject if they find and follow the trail to the trail block.
  - To interview possible witnesses and to gather information on conditions in the search area. The fact that someone hiking in the search area did not see anything is important information for search planners to know—knowing where the subject is not is a step to finding where the subject is. It is common to try to record the names of people both entering and leaving the search area. Also people entering the area are made aware of the missing subject and can become an asset to the search effort.
- **Road Blocks**. Road blocks are established and staffed by law enforcement. They intercept all traffic entering and leaving the search area. It is common to record the license numbers of all vehicles. Road blocks serve several purposes.
  - To prevent the missing person from emerging on a road and leaving the search area without realizing they are the subject of a search.
  - To inform those entering the area of the missing subject so they can then become assets to the search effort.

[3] See Reference [Setnicka, page 109]

- Road blocks might include voluntary vehicle searches, especially in the case of a missing child.

- **Road Patrols**. A road patrol usually consists of a single- or two-person vehicle driving back and forth between two points on an established road. A road patrol has elements of both containment and search.
- **Track Traps**. These are natural or man-made traps that are used in areas of constricted passage, typically on trails or roads. They are designed to capture evidence of the lost person passing through the area. They can be made in dry washes, sand, mud, snow, plowed fields, power line areas, etc., by smoothing the area so that it is clear of tracks. Track traps are not staffed, but are checked periodically.
- **String Lines**. String lines are often used in dense woods or brushy areas. This string is marked with tags, each placed frequently enough to be visible to the lost person who locates the string. These tags give directions and distances to safety. String lines are not staffed, but are checked periodically. Broken string lines may indicate the subject's presence and direction of travel. Although effective, this technique is seldom used in Arizona. It requires much manpower, equipment, and time.
- **Lookouts**. A lookout is an elevated place giving a wide view for observation.
- **Camp-ins**. A camp-in refers to any of the containment techniques where searchers are stationed on a full-time basis.

Ideally all physical containments are carried out by a team of two persons, although, if resources are scarce, a single person might be assigned to do containment at a trailhead or to act as a radio relay.

Some examples of Physical Containment are shown in Figure 13.2.

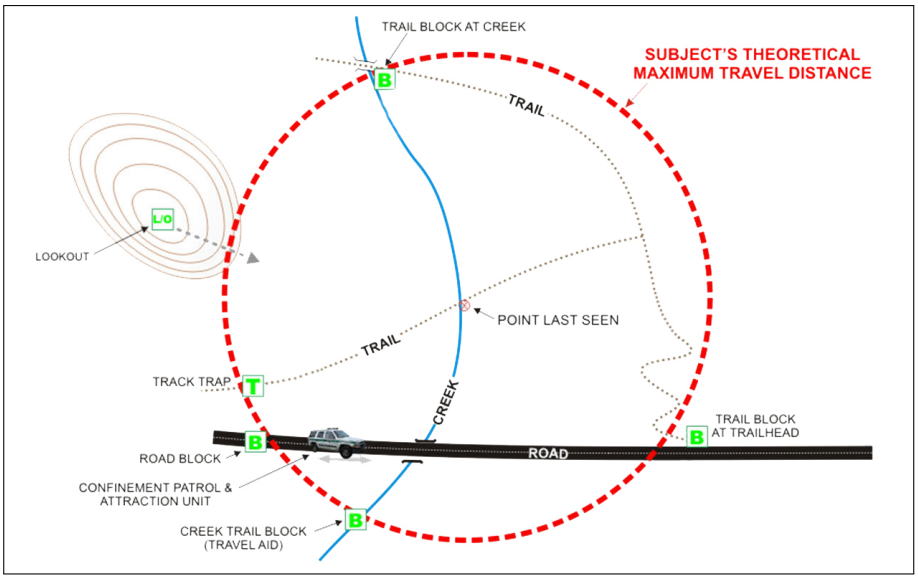


Figure 13.2: Physical Containment

Physical Containment is vital in searches involving subjects on foot, but may be impractical in searches for subjects on motorized vehicles, such as snowmobiles and ATVs, due to the enormous size of the possible search area.

Containment is a simple task that most people can do. However, teams need to be certain that the subject does not pass them without being detected. So they must stay focused even though they may experience many hours of boredom.

Some personnel dislike a containment assignment so it is important to stress its importance, and to point out that many times it is containment that "catches" the subject. Even so, it is wise to try to match tasks with an individual's capabilities.

If there are insufficient personnel to do the containment then consider tapping into non-SAR resources, such as Sheriff's Office Patrol Volunteers or volunteer Community Emergency Response Teams (CERT). They require specific briefings detailing what to do and what information to collect. Although these personnel are generally not SAR trained and SAR does not fall within their normal duties, they are organized and recognized.

People assigned to a containment team are sometimes given additional tasks such as communication relay, weather spotter, and search team transportation.

While these physical containments are being deployed, virtual containments should also be considered. These are designed to eliminate the possibility that the subject was able to leave the search area. Virtual Containment includes

- Placing posters or signs at strategic locations such as trail heads, convenience centers, and other identified areas specific to the search.
- Periodically calling or texting the subject's cell phone, home phone, and voice mail to leave directions on what actions to take upon receipt.
- Leaving notes on cars or residences. If the subject lives alone, leave a note at their home saying that there is a search in progress for them.
- Checking with transportation companies.[4]
- Checking with hospitals or jails, etc.[4]
- Advising the media.

Section 13.2

Attraction

Attraction—a tactic used by search teams to help locate the subject by drawing attention to themselves—goes hand-in-hand with containment. Whereas containment usually deals with putting resources on the boundary of the search area, attraction does not necessarily do that.

Attraction includes the use of

- **Calling the subject's name**. Silence must be kept for 10–30 seconds between calls in order to listen for a response. Previously identified "holler points" can be used. However, there are situations where one member of a team heard the subject responding while the other did not. Some searchers may be unaware that they have hearing loss.
- **Loud Sounds**. Whistles, horns, sirens, gunshots, public address (PA), etc. These may be heard over a considerable distance. Lost subjects may proceed to the sound if it is repeated or they may simply respond. Stationary sound attraction should be used in conjunction with a visual homing signal (for example, a flare) to give the lost subject a better sense of direction. Also the loud sound attraction points need to be stationary for long periods of time. It is frustrating for a subject to hear sounds being used for attraction and then start walking to it only for it to move every 15 minutes or so.

  However, sounds should not be used to attract subjects across dangerous terrain, especially at night. Also loud sounds may be frightening to children and mentally-challenged individuals.
- **Visual Beacons (Daylight)**. Smoke, signal panels, reflectors, etc.
- **Visual Beacons (Night)**. Lights, fires, flares, etc.
- **Aerial Attractions**. Helicopters, fixed-wing aircraft, balloons, search lights/emergency lights.

[4] See Chapter 6 on page 68 for detailed suggestions.

CHAPTER 14

Hasty Search

The hasty search is sometimes thought of as "Hood of the Truck" management (see Figure 14.1 on page 116). The hasty search is one of the initial actions following the preliminary report, the investigation and consequences of that report, and the containment of the search area. During the hasty search, trained SAR personnel are deployed to search routes and locations that are deemed high probability areas in which to locate the lost person or clues. It is important to note that **the term 'hasty' does not denote a search that is thoughtless or careless**, rather it is meant to denote a search that is initiated with highly qualified personnel relatively quickly after the initial report is made.

Figure 14.1: ICP during a hasty search

There are often "SAR hotspots" where searches are commonplace. For those hotspots it is wise to develop specific search pre-plans based on search history at that location. These pre-plans might include items such as area maps, information about confusing trail junctions, historical find locations, likely attraction points, effective resources and techniques for that area, combinations for locked gates in the area, contact information for land managers, and a list of technical experts that may be of assistance in those areas.

During the hasty search it is assumed that the subject may be mobile in the search area, however the subject may or may not be responsive. Appropriate tactics for the hasty search should be selected based on a review of the initial investigation, lost person behavior data, and an analysis of the terrain, weather, and any other environmental conditions.

There may be cases where a hasty search is appropriate but SAR volunteer resources should not be used or used with caution such as situations involving suicidal subjects, subjects with active warrants, criminal suspects including those where a second party is involved who is not involved in the criminal activity (kidnapping, AMBER alert, etc.). Hasty search strategy and tactics can be used in these cases but careful selection of the appropriate resource is critical after evaluating the nature of the incident.

Ideally hasty search teams

- Consist of 2 or 3 trained search personnel.
- Have an identified team leader.
- Have a knowledge of the search area.
- Are self-sufficient and well-equipped.
- Have a member with EMS training.

Focus on High Probability Areas

Hasty search teams often are assigned to search those routes and locations with a high probability of containing the subject or clues, such as

- Initial Planning Point (PLS or LKP).
- Known or suspected route of the subject.
- Travel aids such as
  - Roads.
  - Trails (paying attention to trail sign-in registers both for the search subject and for potential witnesses that need to be interviewed).
  - Ridge lines.
  - Drainages, river banks, lake shores, dry washes.
  - Utility corridors.
  - Fence lines.
  - Railroad tracks.
- Known attractions such as
  - Buildings.
  - Cultural or natural features.
- Areas of known hazard such as
  - Abandoned mines.
  - Wells.
  - Caves.
  - Cliffs.
  - Construction areas.
  - Open drains.
  - Exposed septic tanks/systems.

While conducting searches in these high probability areas, the hasty search teams should consider utilizing the appropriate search tactics based upon an evaluation of the conditions and the lost person behavior data.

- Some subjects, while legitimately lost, may not recognize that they are lost and therefore may not be considered cooperative subjects, such as small children and dementia patients.
- Some subjects may not want to be found by searchers but use searchers as a way to reorient themselves and self-rescue.
- Some subjects may be wary of contact with authorities as they may believe they are in trouble or will be billed for the cost of the search.

- Some subjects may have impairment of some senses such as hearing or sight.

All of these issues affect the tactics used to locate the subject.

Hasty Search Tactics

Several common search tactics used in a hasty search are

- Verbal attraction (calling the subject's name and using whistles).
- Visual attraction (wearing bright colored clothing, using light sources).
- Sign cutting along travel aids, routes, and the perimeter of the initial search area.
- The use of SAR K9s.
- The use of Mounted SAR units.
- The knowledge and use of a Safety Code Word[1] for children.
- The use of specialized vehicles (ATVs, UTVs, Boats, Mountain Bikes, 4WD vehicles).
- The use of search aircraft. See Figure 14.2 on page 118.
- The use of specialized optics (spotting scopes, night vision optics, thermal imaging, FLIR).

Figure 14.2: Hasty search from a helicopter

[1] A code word system designed to protect children from being lured into an unsafe situation by a stranger.

CHAPTER 15

Risk Management

Section 15.1

Risk Assessment

Do you accurately understand the risks that rescuers are exposed to during a search operation?

Tragically, many accidents in search and rescue operations are the result of a failure to adequately identify and manage risk. This chapter will provide some tools to assess and manage risk during SAR operations. Applying these concepts may very well save a life.

Risk management is a process that should be ongoing. The key steps in the process are shown in Figure 15.1 starting with Situational Awareness.

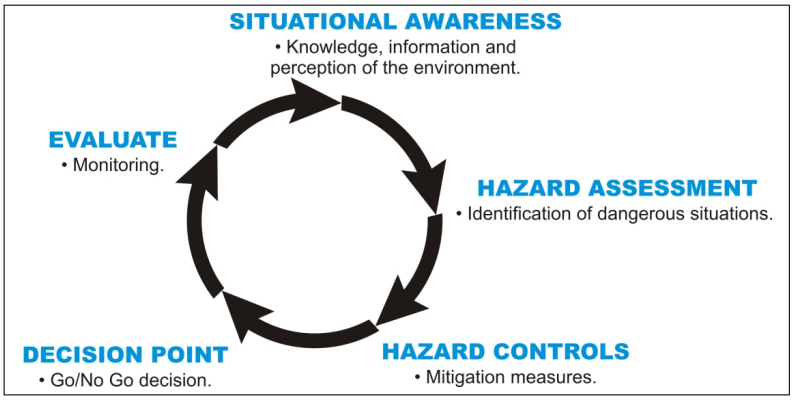


Figure 15.1: The Cyclic Process

Once a Risk Management Cycle is completed the cycle should start again to ensure that personnel are maintaining their situational awareness with updated information.

Human Error

Human performance in critical situations involves effective decision making and completing error-free tasks. During SAR operations emotions can be high and the adrenalin flowing that creates an environment ripe for human error. Human error is repeatedly cited in accidents and incidents across a wide variety of disciplines.

Gordon Dupont, a Canadian aviation accident investigator, has complied the "Dirty Dozen of Human Errors" based upon his experiences.[1] These factors can set up anyone to make an error no matter what the task or occupation.

1. **Lack Of Communication**—A failure to exchange information.
2. **Complacency**—Loss of awareness and the development of overconfidence.
3. **Lack Of Knowledge**—Lack of experience or training in the task.
4. **Distraction**—Anything that takes your mind off the job.
5. **Lack Of Teamwork**—Without teamwork, we are only a group of individuals involved in a similar task.
6. **Fatigue**—Considered to be the number one contributor to human error.
7. **Lack Of Resources**—Insufficient or not fully operational equipment and manpower to safely perform a task.
8. **Pressure**—External as well as self imposed psychological pressure.
9. **Lack Of Assertiveness**—Failing to speak up when things do not seem right.
10. **Stress**—Overwhelmed by stress leads to human error.
11. **Lack Of Awareness**—A lack of alertness and vigilance in observing. Failing to ask the "what if?" question.
12. **Norms**—The "normal" accepted way things actually are done in an organization, regardless of whether their practices are valid and safe.

These common errors are good points to review with personnel during an operational briefing as well as incorporating them into the IAP..

Section 15.2

Situational Awareness

Situational Awareness is the ability to continuously analyze information coming in and constantly update your mental model of the situation. This is a critical skill for emergency responders. Many times responders get initial incident information from Dispatch and begin to formulate a plan to deal with the incident based on that information only to find a different situation when responders arrive on scene. It is crucial that responders are able to recognize that the conditions have changed from the initial impression and compensate for those changes.

A lack of situational awareness has been cited in many accidents as a contributing factor. Under stress it is sometimes hard to take in new information, analyze it, and update the mental image of the conditions. The following are some actions that prevent the loss of situational awareness.

- Actively question and evaluate the mission progress.
- Analyze the situation.
- Update and revise the image of the mission.
- Use assertive behaviors when necessary:
  - Make suggestions.
  - Provide relevant information without being asked.
  - Ask questions as necessary.
  - Confront ambiguities.
  - State opinion on decisions/procedures.
  - Refuse unreasonable requests. IT'S OKAY TO SAY NO!

[1] See Reference [Dupont].

Section 15.3

Communications

Communications are essential during a SAR mission. Personnel rely on both their communications equipment and their personal communications skills to convey important information. Without good communications the mission can rapidly degrade and responder safety can be jeopardized.

SAR personnel have the following communications responsibilities:[2]

1. Brief others as needed.
2. Debrief your actions.
3. Communicate hazards to others.
4. Acknowledge messages.
5. If you don't know, Ask. Clarify ambiguities before proceeding.

Radio/Phone Communications

Effective incident communications must be established before operations get underway. There are several issues that should be considered when establishing incident communications.

- Pre-plan communications in response areas especially areas that are known to cause communications difficulty.
- Brief incident personnel on established communications plans and protocols.
- Use adjacent agency radio frequencies to expand incident coverage.
- Use long range (high gain) portable radio antennas.
- Use ground-to-air radios.
- Use amateur radio to supplement agency radio communications ability (requires properly licensed personnel)
- Deploy human relays or portable repeaters.
- Use satellite phones.
- Use satellite tracking/messaging devices.

Section 15.4

Personal Preparedness

It is a fact that some people do not belong in SAR operations. SAR personnel must be evaluated for fitness and readiness to respond to SAR incidents. Capabilities must be matched with appropriate tasks.

When evaluating personnel for assignment on a SAR mission the following items should be considered.

- Physical fitness.
- Mental fitness.
- Equipment and Clothing.

The Incident Commander must be ready to demobilize personnel who are not fit for the mission.

[2] See Reference [NIFC-IRPG, page ix].

Section 15.5

Fatigue

Combating fatigue during a SAR incident requires vigilance. Incident Management Team members must make an effort to monitor and manage personnel fatigue. Personnel who are fatigued are prone to making poor decisions.

Factors increasing fatigue[3]

- Sleep loss (7–8 hours of sleep is optimal).
- Disrupted sleep from alcohol, medications, caffeine.
- Disruption of circadian rhythm—working between 10 p.m. and 6 a.m.
- Long and multiple work shifts.
- Low activity and repetitive tasks as well as high intensity workload.
- Decision-makers are more prone than those doing hard physical work.
- Environment (altitude, heat stress, carbon monoxide exposure, etc.).
- Dehydration.
- Age or poor fitness level.

Signs and symptoms of fatigue

- Poor decision making.
- Slowed reaction time.
- Difficulty communicating.
- Forgetfulness.
- Fixation.
- Lethargy.
- Bad mood.

Fatigue has been equated to being intoxicated. In some studies a 19-hour work day equates to the mental performance of someone with a 0.08 blood alcohol concentration, which is legally impaired in most states.

Rest periods, including naps of about 30 minutes, and good nutrition are important to combat fatigue.

The natural circadian rhythm is also a factor in fatigue. Humans naturally have low points in the circadian rhythm in the early afternoon (1500–1700 hours) and in the early morning (0300–0500 hours).

Case Study—People Just Aren't At Their Peak At 4 a.m.

Before the March 28, 1979, Three-Mile Island Nuclear Generating Station Accident near Harrisburg, Pennsylvania began, the reactor was operating at full power, and there did not appear to be any cause for concern. But unbeknownst to the operators, a valve that was supposed to be open had been left closed by a maintenance worker who was no longer on shift. And it was four o'clock in the morning, the lowest point in the human circadian cycle.[4] No matter how well-intentioned they are, how attentive they try to be, how much coffee they have had, people are not at their best at 4 a.m.—not even people whose job it is to control a nuclear power plant.[5]

[3] See Reference [USDA].
[4] The human circadian cycle is about 24 hours.
[5] See Reference [Vicente, page 127].

People are not at their best at 4 a.m.

During wildland firefighting activities the U.S. Forest Service and the Department of Interior adhere to a 2-to-1 work-rest ratio (for every two hours of work or travel, one hour of sleep is provided). This translates into a work shift of 16 hours in a given 24 hour period. Additionally drivers are limited to 10 hours of behind the wheel driving. A driver is permitted to drive only if they have had at least 8 consecutive hours off duty before beginning a shift. However, if this is not possible during critical response situations, fatigue mitigation measures must be documented.

The IRIC should be thinking about and planning for demobilization and relief almost as soon as the incident starts. Prior to releasing personnel from an incident consideration should be given to fatigue issues and responder safety. A rest period may be needed after a responder leaves the field and before they are allowed to drive home from the incident.

Case Study—Death of an Incident Commander, Virginia

Five-year-old boy Victor Shoemaker was reported missing and lost after wandering away from kids he was playing with in the mountains of Hampshire Country near the town of Kirby, WV. At 8 o'clock on the morning of May 3, 1994, 24-year-old Lisa Hannon had just been relieved as Incident Commander by fellow Appalachian Search and Rescue Conference (VA) members. Lisa had worked tirelessly through the night to organize the massive search operation that would eventually involve over 1,000 personnel. She had not slept in 23 hours. Twenty minutes after sliding in behind the wheel of her truck, Lisa fell asleep while driving and struck a tree on U.S. Route 50 at full speed, killing her instantly. Lisa's death was the first line-of-duty death for the State of Virginia Search & Rescue Program.[6]

Section 15.6

Aviation Operations

Within the limits of safety, weather, and performance capability, the helicopter and fixed wing aircraft can be a valuable resources in SAR operations. It is vital that these resources be applied appropriately. Discipline is required of rescuers to not let the urgency of the situation overwhelm their judgement. Flight operations must be conducted in accordance with applicable FAA Regulations and agency policy. The nature of search incidents requires a higher degree of vigilance of SAR personnel during responses to unimproved helispots.

Case Study—Navy Helicopter Crash, Granite Dome, California

A military helicopter crashed on July 8, 2001, during a search for 28-year-old Eric Tucker in the Emigrant Wilderness of the Stanislaus National Forrest. See Figure 15.2. "Longhorn 1", an HH-1N Huey from Fallon NAS (NV), was in the process of transporting personnel and equipment to a radio relay site on Granite Dome. All six persons on board escaped with light to moderate injuries. There was a "loss of control" as the aircrew attempted to land on the 10,322 foot summit of Granite Dome.[7] The accident was a result of the aircraft being over its allowable gross weight for the altitude of the mission.

[6] See Reference [Dixon].
[7] See Reference [Scharper].

Figure 15.2: Navy helicopter crash, Granite Dome, CA

Twelve standard aviation questions that could save your life

1. Is this flight necessary?
2. Who is in charge?
3. Are all hazards identified and have you made them known?
4. Should you stop the operation or flight due to:
   - Communications?
   - Weather?
   - Turbulence?
   - Personnel?
   - Conflicting Priorities?
5. Is there a better way to do it?
6. Are you driven by an overwhelming sense of urgency?
7. Can you justify your actions?
8. Are there other aircraft in the area?
9. Do you have an escape route?
10. Are any rules being broken?
11. Are communications getting tense?
12. Are you deviating from the assigned operation or flight?

WHEN IN DOUBT—DON'T!

Case Study—State Police Helicopter Crash, Santa Fe, New Mexico

On June 9, 2009, a New Mexico State Police Agusta A109E crashed during the attempted rescue of an uninjured hiker near Santa Fe Baldy Peak 12,632 feet, which is northeast of Santa Fe, New Mexico. Instrument meteorological conditions prevailed

> when the helicopter impacted terrain, killing the 46-year-old pilot and female subject. The pilot and police spotter had landed after locating the search subject just before dark. Dispatchers had directed the helicopter crew to the missing hiker, as they spoke with her by cell phone. While the pilot hiked off from the landing zone to reach the subject, the weather deteriorated and began sleeting. The pilot returned carrying the hiker on his back. After becoming airborne, storm clouds closed in around the helicopter. Based on radio transmissions, the pilot reported "*we hit a mountain*", and continued to fly for at least one minute. The helicopter impacted terrain and rolled 800 feet down a steep talus slope. The deteriorating weather conditions were known in advance and the helicopter response lacked a formal mission briefing between all personnel involved. The incident commander had not dispatched and was not in operational control of the helicopter during the mission. The flight crew was not prepared with adequate survival equipment to remain at the landing zone overnight. A late season snowstorm hampered rescue efforts and the spotter, who was the sole survivor, was not located until the following day.[8]

During an escalating SAR operation, responders may be tempted by the urgency and mission tempo to take shortcuts with personal safety. A lack of "operational control" of aviation assets on a SAR can allow this dangerous condition to develop. It requires professional discipline to not allow turning rotors to let poor decision-making occur. Some common hazards associated with helicopter missions include crew fitness, distraction, mission focus, communication, weather, takeoff or landing weights, landing areas, other aircraft, wires and other obstructions.

Aviation user checklist[9]

- Pilot is qualified and current for aircraft type and mission?
- Aircraft approved for mission?
- "Flight Following" in place or Flight Plan filed?
- Personal Protective Equipment-available and worn by all passengers and pilot?
- Pilot briefed on mission objectives, flight parameters, known hazards, and aerial hazard map?
- Pilot has provided a briefing to passengers?

Flight Following

"Flight Following" is the task of maintaining contact with specified aircraft for the purpose of determining en route progress and/or flight termination. It involves positive control and position reporting of deployed aviation assets. This is a key component in aircraft mission safety and, regardless of whether it is performed by a dispatch facility or at a remote location in the field, it must be given a high priority.

Identification of Flight Following requirements.[10]

- When the flight is planned, Flight Following requirements should be clearly identified.
- Requirements should identify check-in procedures, including time and locations, dispatch office(s) or other flight following facilities involved, individuals responsible for flight following, frequencies to be used, and any special circumstances requiring check-ins (for example, to military facilities within Special Use Airspace).

[8] See Reference [Ledwidge, page 3].
[9] See Reference [NIFC-IRPG, page 51].
[10] See Reference [NIFC-IRPG, page 56].

- Check-ins must be documented and provide enough information so the aircraft can be easily located if it is overdue or missing.
- Identify that the Flight Following facility shall implement response procedures for overdue or missing aircraft.

The four M's of aviation risk assessment

- Method—Appropriate method for the task?
- Medium—Safe working environment for the aircraft?
- Man—Adequate trained personnel to manage the aircraft? Pilot carded?
- Machine—Aircraft carded? Task within performance limitations of the aircraft?

The concept of Crew Resource Management (CRM), where each member of the aviation operation assumes a pro-active and responsible role in the safety of the mission, needs to be promoted and adhered to. Team members must be encouraged to speak up and provide relevant information without being asked.

When employing Department of Interior and USDA-Forest Service carded aircraft, all personnel are required by national policy to wear personal protective equipment (PPE) including flight helmet, Nomex® clothing, leather boots and leather or Nomex® gloves. See Figure 15.3. The Interagency Helicopter Operations Guide (IHOG) is an excellent reference for employing federal land management agency helicopter assets as well as non-federal rotorcraft during SAR operations. The complete Guide is available on the internet.[11]

It is important to note that the PPE policies of the federal land management agencies may not be practiced by other entities such as the U.S. military, law enforcement agencies, and commercial medical evacuation aircraft. Thus, no one can fly on a federal land management agency's carded aircraft unless they have the required PPE, and, conversely, federal land management agency personnel cannot fly on "non-carded" aircraft.

Figure 15.3: Nomex® flight suit and gloves

The single most important management action that an incident commander can take when they have aviation assets assigned to an incident is to dedicate a properly trained individual to manage air operations. This dedicated oversight will be worth the effort and peace of mind.

[11] See Reference [NIFC-IHOG].

Section 15.7

Vehicle Operations

Motor vehicles are operated on a near constant basis, providing recurring exposure to a hazard that can easily be normalized. According to NIOSH, "*roadway crashes are the leading cause of occupational fatalities in the U.S.*"[12]

Case Study—Outside Joshua Tree National Park, California

On Saturday July 17, 2004, two volunteer members of the San Gorgonio (CA) Search and Rescue Team died in a motor vehicle accident, while traveling to a search assignment at Joshua Tree National Park (CA). As five team members drove through the town of Morongo Valley at 5 a.m., a Ford Ranger pick-up truck heading west on State Highway 62, a four-lane highway, veered into oncoming traffic and struck the marked suburban carrying them. As a result of the collision, Mr. Scott Johnston, age 30, SAR Tech. II, team member for five years, was pronounced dead at the scene. Philip Calvert, age 58, SAR Tech. II, team member for 12 years, sustained major injuries and subsequently died of those injuries. Three additional SAR members were in the vehicle and they received minor to moderate injuries. The driver of the other vehicle was arrested for driving under the influence. The search subject, 17-year-old, Eric Sears was found deceased one week later.[13]

While this type of accident may not immediately appear preventable, it truly underscores the personal risk involved with an activity that is performed on a routine basis. Additionally any vehicle operation conducted in an emergency response (lights and siren) mode dramatically increases personal risk.

Case Study—Oceano Dunes State Vehicular Recreation Area, California

A SAR volunteer was killed on May 24, 2009 during an emergency response at Oceano Dunes State Vehicular Recreation Area in San Luis Obispo County. Christopher Meadows, 24, was part of a team responding to an accident at the state park south of Pismo Beach. The Honda ATV quad he was operating flipped due to the "*unsafe speed for descending a sand dune*" and landed on top of him after an almost sheer drop of about 30 feet. According to the California Highway Patrol, which investigated the accident, a 4-wheel-drive ambulance behind Meadows wasn't able to stop completely before hitting the downed ATV and Meadows. Meadows had been a SAR volunteer for one year and was employed as a full-time EMT with the ambulance company, whose vehicle struck him.[14]

To operate an emergency vehicle in the emergency response mode, a responder must have completed a formal Emergency Vehicle Operations Course (EVOC) or agency accepted equivalent. All emergency vehicle responses must be carried out in accordance with agency policy and applicable state laws.

Emergency vehicle response

- In emergency response mode both lights and siren are activated.
- Drive with due regard for the safety of others.

[12] See Reference [NIOSH].
[13] See References [Lehman] and [Ohlfs].
[14] See Reference [Wenner].

- Seatbelts in use by all occupants.
- Proceed past a stop sign only after slowing as necessary for safe operation.
- Emergency lights activated and spotter employed when backing large apparatus.
- SLOW DOWN—arrive safely!

Recurring incident safety briefings and tailgate training sessions are an effective means to promote safe vehicle operations.

Section 15.8

Risk Management Models

The job of risk management on an incident cannot become over-shadowed by the objective of the SAR operation. Keep in mind that accountability for operational safety ultimately rests with the IRIC. Slow down, and be proactive about safety from the beginning of the incident.

SAR personnel are continually exposed to varying levels of risk during operational deployments. Risk management involves quantifying risk and then mitigating it through control measures. One way to quantify risk is to use models.

The SPE Model

In this model risk is assessed by multiplying three numbers together: the **S**everity of a hazard resulting in adverse event, the **P**robability of an event occurring, and the degree of **E**xposure, which is expressed in the following formula.

$$\textbf{Risk Assessment} = \textbf{Severity} \times \textbf{Probability} \times \textbf{Exposure}.$$

The numbers to use in this formula are determined as follows.

- **Severity.** A measure of the event's potential consequences.
  1 = Negligible
  2 = Minimal
  3 = Significant
  4 = Major
  5 = Catastrophic
- **Probability.** A measure of the likelihood of the threat or hazard occurring.
  1 = Impossible or remote under any conditions
  2 = Unlikely under normal conditions
  3 = About 50/50
  4 = Greater than 50%
  5 = Very likely to happen
- **Exposure.** A measure of the amount of time, number of occurrences, number of people, and/or the amount of equipment involved in an event, expressed in time, proximity, volume, or repetition.
  1 = None or below average
  2 = Average
  3 = Above average
  4 = Great

The value for Risk Assessment derived from this formula should be compared to the SPE Guidance Table, Table 15.1, to determine a recommended action.

Table 15.1: SPE Guidance Table

VALUE	DEGREE OF RISK	GUIDANCE
80–100	Very High	Discontinue, Stop
60–79	High	Correct Immediately
40–59	Substantial	Correction Required
20–39	Possible	Attention Needed
1–19	Slight	Probably Acceptable

GAR Risk Assessment Model

The GAR (Green, Amber, Red) Risk Assessment Model is a powerful "Go"-"No Go" decision tool. The primary difference between this model and the SPE model is that the GAR model incorporates the opinions of several personnel involved and the SPE model is performed by one person.

Using the GAR model the respondents independently assign a risk score between 1 (no risk) and 10 (maximum risk) to eight different elements.

1. **Supervision.** The presence of qualified, accessible and effective supervision on the incident. A clear chain of command is in place.
2. **Planning.** Adequate incident information is available and clear. There is sufficient time to plan, operational guidelines are current, briefing of personnel is being conducted, and team input solicited.
3. **Contingency Resources.** Backup resources that can assist if needed. Evaluate shared communications plan and frequencies. Has an alternative plan been evaluated?
4. **Communication.** Evaluate how well personnel are briefed and communicating. How effective is communication system and is there is an established communication plan? Does the operational environment value input?
5. **Team Selection.** Team selection should consider the qualifications and experience level of the individuals. Consider the experience for the mission being performed.
6. **Team Fitness.** Consider physical and mental state of the crew. Evaluate team morale and any distractions.
7. **Environment.** Consider factors affecting performance of personnel and equipment such as time, temperature, precipitation, topography, and altitude. Evaluate site factors such as narrow canyons, forest canopy, technical terrain, snow, swiftwater, etc.
8. **Incident Complexity.** Evaluate severity, exposure time, and probability of mishap. Assess difficulty of the mission and proficiency of personnel.

The scores are summed and then compared to the GAR Risk Assessment Table. A comparison of each individual's GAR score should be conducted to see where the majority of the scores fall in the GAR Risk Assessment Table, Table 15.2.

Table 15.2: GAR Risk Assessment Table

1–35	36–60	61–80
GREEN Go—Proceed With Mission	AMBER Caution—Mitigate Hazards Before Proceeding	RED NO GO—Stop. Do Not Proceed With Mission

Complacency Model

Complacency is defined by dictionary.com as "a feeling of quiet pleasure or security, often while unaware of some potential danger, defect, or the like".[15] This model examines the factors of **R**epetition, **C**onfidence, and **E**xperience as they relate to risk using the formula developed by Craig E. Geis, California Training Institute, `www.cti-home.com`.[16]

$$\textbf{Risk} = \textbf{Repetition} \times \textbf{Confidence} \times \textbf{Experience}.$$

- **Repetition**
  - 1 = I Rarely Do It.
  - 2 = I Seldom Do It.
  - 3 = I Do It Occassionaly.
  - 4 = I Do It Often.
  - 5 = I Do It All The Time.
- **Confidence**
  - 1 = I Am Very Concerned.
  - 2 = I Am Nervous About The Task.
  - 3 = So, So. I've Had Close Calls Before.
  - 4 = I'm Pretty Sure It Won't Be A Problem.
  - 5 = Positive, Never Had A Problem Before.
- **Experience**
  - 1 = Less Than 3 Years.
  - 2 = From 3 To 5 Years.
  - 3 = From 6 To 15 Years.
  - 4 = Greater Than 15 Years.

The Risk calculated with the formula is then compared to Table 15.3 to determine what type of error may result and the corrective actions.

Table 15.3: Risk Values

Value	Recommendation
1—19	Low Skill: Stop and Get Help
20—39	Moderate Skill: Review Procedures
40—59	Safety Zone: Proceed
60—79	Moderate Complacency: Review Procedures
80—100	High Complacency: Stop and Think

Why do the models work?

The ability to assign numerical scores or color codes in the GAR Model, SPE Model, and Complacency Model is not the key ingredient in how this process performs effective risk assessment. Rather, the key ingredient occurs when team members discuss their post-scoring results together, because it generates valuable discussion toward understanding the risks and how the team will manage them. The models should also raise the level of awareness for the incident management team and prompt discussions of appropriate strategies and tactics.

[15] `www.dictionary.com`.
[16] See Reference [Geis].

An Example

Case Study—DPS Air Rescue

On October 13, 2008 Sedona Fire District received a report of lost hikers outside of Sedona, AZ, on Bear Mountain. During the call the hikers indicated that they were tired and dehydrated. Sedona Fire District responded and requested the assistance of DPS Northern Air Rescue to locate the hikers. DPS Air Rescue accepted the mission and flew to the area for an aerial search. Prior to DPS Air Rescue arrival Sedona Fire believed that they had spotted the hikers through binoculars. That information was passed to DPS Air Rescue and Air Rescue was going to fly over the area and try to confirm the location of the hikers. Discretion was given to Air Rescue as to whether they would land and make contact or just report the location and best access for ground-based rescuers.

Risk Assessment of the Sedona Mission—SPE Model

Severity = 4
Probability = 2
Exposure = 3

$$\textbf{Risk Assessment} = 4 \times 2 \times 3 = 24.$$

Assessment: Condition Yellow—**Attention Needed**.

Risk Assessment of the Sedona Mission—GAR Model—one individual's assessment

Supervision = 3
Planning = 6
Contingency Resources = 5
Communication = 5
Team Selection = 2
Team Fitness = 1
Environment = 7
Incident Complexity = 7

$$\textbf{Risk} = 3 + 6 + 5 + 5 + 2 + 1 + 7 + 7 = 36.$$

Assessment: AMBER—**Caution: Mitigate Hazards Before Proceeding**.

Risk Assessment of the Sedona Mission—Complacency Model

Repetition = 5
Confidence = 4
Experience = 3

$$\textbf{Risk} = 5 \times 4 \times 3 = 60.$$

Assessment: Moderate Complacency—**Review Procedures**.

FINALLY, BEFORE YOU HEAD OUT...

It is the subject's emergency—not yours! Be a professional and do not sacrifice personal safety. There are folks at home who want everyone to return. This is a job—no one needs to die doing it.

CHAPTER 16

Dealing With The Family And Media

Dealing with the Family

Working with the family of the subject to identify their needs—whether it be a joyous reunion with a loved one, providing information about the investigation, providing emotional support if the subject is found deceased, or preparing them for the suspension of active search efforts—is vital.

> *Working with the family of the subject to identify their needs is vital.*

Dealing with the Media

Most agencies in this modern age have a designated Public Information Officer (PIO) who is available to respond to critical incidents (including SAR missions) to deal with and control the actions of the Media.

It takes time for the Public Information Officer to arrive at the scene of the incident, which puts the initial burden of dealing with the Media on the IRIC. It is always advisable to give the Media explicit directions as to what is allowed and what is not, and it is essential to control the movements of the Media otherwise microphones and television cameras may appear in the ICP. Media personnel are trained to get the "Real Story" and do not take "No" for an answer. New IRICs should remember that the Media will make up a story if they are not given one, and just because they have been referred to the Public Information Officer does not mean that they will wait for them to arrive. Some agencies have strict policies regarding communication with the Media and those policies should be strictly adhered to. The IRIC should not ignore the Media and should always be clear and concise in instructions and information given to the Media. Stick to the facts and blame will be lessened.

Sometimes the hasty search garners significant media attention especially if it involves interesting search subjects or unusual conditions. It is easy to overlook the public information function during the Initial Response phase but the IRIC should be prepared for the media and be ready to use media interviews as opportunities to get the word out about the operation in a manner that the agency is comfortable with. Early media attention can be helpful in generating clues.

For more details on dealing with the Media, see Reference [Shimanski 2].

Social Media

The increasing popularity of social media such as Facebook, Twitter, MySpace, and others as well as blog and comment sites on media outlets has implications for public safety agencies. Traditionally information about an incident was released to the public by an agency's public information staff. That still is the preferred method but with many paid and volunteer personnel having social media accounts some information about an incident is getting out to the public via these modes.

It is very important for all SAR personnel to realize that they are viewed as a representative of the agency for which they volunteer and are generally not authorized to release information on behalf of the agency. As a result it is critical that SAR personnel be aware of what information they choose to share on social media or blog sites. Information that is not released in the agency's official media release probably should not be shared in a social media post. If a search is ongoing there is generally an investigation ongoing as well. Releasing information that is not approved by the IRIC and released outside of the public information office may hamper the investigation. Some information is protected by law and posting photographs that can identify the subject of a SAR operation, especially if the subject was ill or injured, may violate the law and expose the individual and agency to legal action.

Often when reading a media report about a SAR incident someone involved in the incident may notice errors or omissions that present the operation in a negative light. It may be tempting to log into the comment section attached to the story on-line and post information that may correct or clarify the situation but that really is the job of the PIO and not the individual SAR member. Often the PIO will have a relationship with the reporter and can make contact to correct the record.

SAR personnel must remain professional and be a good representative of their agency and the profession. Refraining from posting comments or photos that could disparage the image of search and rescue or an agency is critical in that regard.

All personnel should familiarize themselves with their individual agency's policies about the use of social media and release of information to the media.

CHAPTER 17

Debriefing Resources

Just as important as telling the searchers what they need to do with a briefing, is knowing what they have done. The process of gleaning the information from the searchers after their assignment has been completed is called Debriefing. During the debriefing process many critical items are learned such as the area covered and how well it was covered, the hazards in the area, the communications difficulties, and suggestions for future efforts in that area.

> *During the debriefing process many critical items are learned.*

Debriefing resources allows for the evaluation of the strategy and tactics. The weather, vegetation, and topography significantly impact searchers. When using aviation resources the penetration of the vegetation canopy to the ground is a very important consideration and should be covered in the debriefing. If during an assignment the weather was poor with low visibility then that should be addressed in the debriefing with a note that the area may need to be searched again under different weather conditions. Sometimes the actual topography is more complex that it appears from a topographic map. The ground searchers should be asked about the actual conditions to determine if they match what was envisioned by the IRIC when the assignments were made.

In the Initial Response phase of most searches, debriefing will be done by the IRIC, often by radio while other tactical assignments are ongoing. All debriefing information should be recorded on an ICS 214, and turned in to the IRIC before the resource leaves the incident. Pertinent parts of the oral debriefing might be captured on the ICS 201 page 2 by the IRIC.

What follows is an in depth discussion of debriefing methods and important information to capture. If the IRIC finds that they cannot adequately debrief all of the resources while carrying out their other duties, they should consider delegating that task to another person who can focus their attention on obtaining and documenting thorough debriefing information.

Debriefing is a task that is carried out by an experienced searcher so that the critical information is collected. It should take place in a relatively quiet location mostly free of distractions, out of sight and earshot of media and family. The debriefer sits down with the team leader and discusses the assignment that was just completed. This debriefing should be documented and any relevant materials collected from the team leader such as the team's map with all notations, and any ICS 214 Activity Logs (see Figure 12.3 on page 109). If the team was using GPS in a tracking capacity, then the track log should be downloaded, discussed on page 136. If possible, witnesses were interviewed during their assignment then this should be reviewed. If clues were located during the search then those should be discussed and if collected they should be turned in during the debriefing. If relevant

photographs were taken then those should also be shared with the debriefer. It is good practice to log the clues located. See Chapter 18 on page 139.

Debriefing Resources Checklist

1. Who was involved in the debriefing?
2. What was their assignment?
3. What time did they begin?
4. What did they accomplish?
5. How likely were they to have seen the missing person?
6. What time did they finish?
7. Any difficulties or areas they could not search adequately?
8. Any clues found?
   a) Where?
   b) What?
   c) What did they do?
   d) Where is it now?
9. Any hazards observed in the area?
10. Any communications problems?
11. Any comments? For example, what would the team suggest if this task was done again: type of resource, how to search.

A useful form for recording debriefing information is the ICS 204B SAR Debriefing Form[1] shown in Figure 17.1 on page 136.[2] Once completed this needs to be included as part of the incident documentation.

The results of the debriefing shapes future search efforts and may alter tactics. The searchers in the field are really the eyes and ears of the IRIC. While the IRIC can look at the map, at GOOGLE Earth™, and other imagery there is no substitute for actual close-up and on-the-ground observations about the search area. The potential for the search area to retain foot tracks and other search clues cannot be determined by looking at maps or imagery. Searchers should take the debriefing session seriously as it has tremendous potential to enhance search operations and provide a better understanding of what is happening on the ground.

Searchers should take the debriefing session seriously.

Caution should be exercised when debriefing a relatively inexperienced team leader as there is the tendency to not want to disappoint the incident management staff. An inexperienced team leader may be reluctant to state that the assignment was not fully completed or address any other problems encountered during the search. It is important that the debriefer set the proper tone and explain that the point of the debriefing is to gather the information that resulted from the assignment and that this is not a competition. Honest appraisals of what the team was able to accomplish are most important. After all, the goal of the operation is to locate a lost person not to see who can cover the most assignments in the shortest period of time.

[1] This form is contained in the program ICS-SAR. Similar debriefing forms in ICS-SAR are the *Task Assignment Form* and the *ICS 204A* form.

[2] All sections of this form that request "POD" information do not apply to the Initial Response so can be ignored at this stage.

SEARCH AND RESCUE DEBRIEFING FORM
(ICS 204 SAR Supplement B)

INCIDENT NAME: _____

DATE:	**TEAM #**	**ASSIGNMENT #**	**OP. PERIOD**

STATE RESOURCE TYPE AND TACTICS UTILIZED:

STATE EXPLICIT COVERAGE OF THE AREA SEARCHED:

STATE CLUES LOCATED, EVENTS, HAZARDS AND IDENTIFY ALL ON AN ATTACHED MAP:

COMMUNICATIONS ISSUES:

RECOMMENDATION FOR FUTURE EFFORT:

SEGMENT SPLITTING

IDENTIFY AREAS THAT WERE NOT THOROUGHLY SEARCHED OR SEARCHED WITH DIFFERENT POD'S THAT NEED TO BE SPLIT.

THE PLANS SECTION WILL ASSIGN A NUMBER TO THE SPLIT SEGMENTS. AS THE TACTICAL TEAM LEADER YOU MUST ACCURATELY DEPICT BOUDARIES.

ARE YOU SPLITTING YOUR SEGMENT? _____
HAVE YOU IDENTIFIED SEGMENT BOUNDARIES TO THE PLANS SECTION? _____
HAVE YOU DRAWN YOUR COVERAGE ON AN ATTACHED MAP? _____

STATE ESTIMATED COVERAGE OR POD FOR EACH SEGMENT SEARCHED DURING THE ASSIGNMENT. BE SURE TO IDENTIFY THE SEGMENT BY NUMBER.

SEGMENT NUMBER	LIVE RESPONSIVE	NON-RESPONSIVE	CLANDESTINE GRAVE SITE	FOOTPRINT	_____	_____

SIGNED TEAM LEADER: _____ **DATE:** _____

Figure 17.1: ICS 204B SAR Debriefing Form

Track Logs

During the debriefing of resources as they complete assignments an effort should be made to collect GPS track logs for those resources. See Figure 17.3 on page 137. Most searchers have their own GPS and instructions can be given at the beginning of an assignment to clear the track log in the GPS units and collect a track log for their assignment. If a resource does not have a GPS some agencies may have a cache of GPS units that can be issued out for this purpose. Search dogs often wear a GPS as well, so their tracks can be downloaded. Aircraft may carry a GPS for this purpose or they may have other tracking equipment such as Spidertracks, for flight following and the track log made by that equipment may be available for an overlay on a map.

The value of downloading the track log data is that it allows for confirmation that the resource searched the area that they were assigned to search and may identify gaps in the search area (Figure 17.3 on page 137). If the resource was also marking locations on their GPS such as the location of clues, hazards, or attractions, those waypoints can also be downloaded.

There are a variety of mapping software and Geographic Information System (GIS) packages

Figure 17.2: Not all hazards are visible

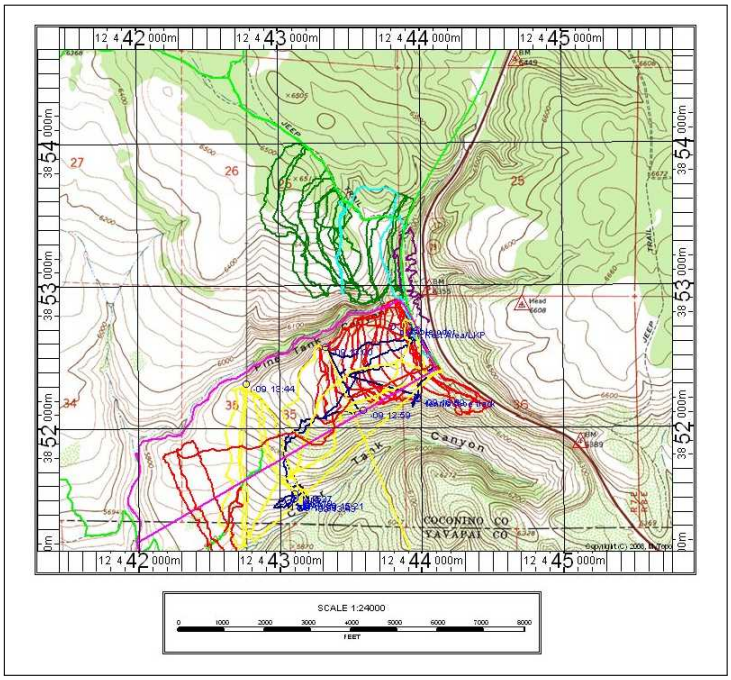


Figure 17.3: An example of GPS track logs collected and displayed on Terrain Navigator Pro

available. These range from the relatively less complicated but powerful consumer grade mapping software (MyTopo Terrain Navigator Pro, DeLorme Topo, National Geographic Topo! and iGage All Topo Maps) to the more complicated and more powerful professional grade GIS applications (ArcGIS, Global Mapper).

Mapping software allows for a connection to a GPS to download tracks and waypoints from the GPS for display on a map in the software. Conversely information can be uploaded from the software to a GPS if assignments or locations are prepared on the software prior to a resource being deployed. The tracks and waypoints can be edited in the software to identify who made them and what the assignment was.

A freely available software package from the Minnesota Department of Natural Resources[3] called DNRGPS allows for collection and manipulation of GPS information including converting between points, lines, and areas, and exporting information in a variety of file types including the popular

[3] `http://www.dnr.state.mn.us/mis/gis/DNRGPS/DNRGPS.html`

`.gpx`, `.shp`, `.kml`, and `.gml` files. DNRGPS can also be used with ArcMAP from Esri to do realtime tracking when a GPS is connected to a laptop computer.

Collecting the GPS information is not a terribly hard task but it is preferable to have someone familiar with the software and an assortment of GPS units to conduct this task. That person needs a variety of GPS cables to connect to GPS units. Searchers may be asked to supply their own cables when they report for debriefing.

CHAPTER 18

Clues

Clues come in a variety of forms:

- **Physical** clues include foot tracks, a blood trail, an abandoned vehicle, a campsite, dropped clothing or equipment, a candy wrapper, a note, a dog alert, a trailhead register, ...
- **Electronic** clues include cell phone data (see Appendix D on page 172), email, web site visits, other computer forensic information, satellite emergency notification devices (SEND) information, other emergency beacons, permit information, ...
- **Witness reports** are also very important clues and should be evaluated by a trained interviewer. If the family or witnesses do not speak English as a first language, it is important to use an interpreter to prevent misunderstandings and miscommunication of critical information.
- **Investigative information** can also be considered clues and include use-permit information from a land management agency, financial information, criminal history, law enforcement database information, medical history, ...

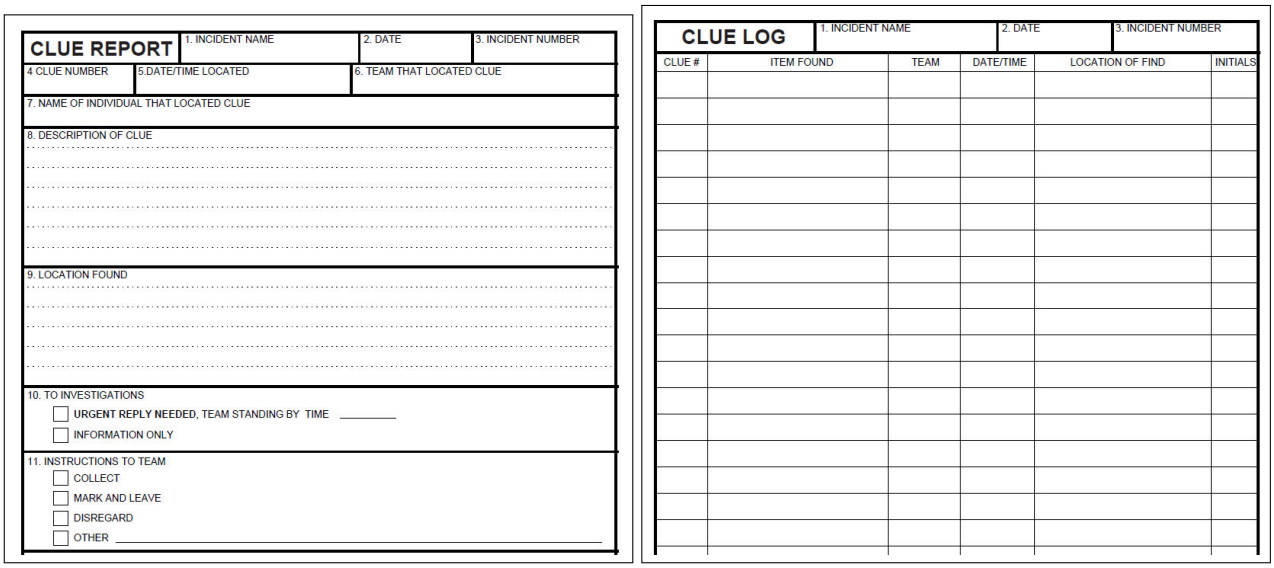
A clue is usually found either by a resource in the field or by an investigator. A clue's details should be immediately transmitted to the IRIC who usually decide how to process the clue. In some cases it may be acceptable for the searcher to document a physical clue with a photograph and the exact location and leave the clue in place. Other times it may be prudent to have an Investigator or other law enforcement official respond to the location to process the clue. In still other cases it might be acceptable to have the searcher collect the clue and bring it into the ICP when they complete their assignment.

During the Initial Response, unless an investigator or clue specialist is appointed, all clues are the responsibility of the IRIC who

1. Stores all clues.
2. Documents all clues.
3. Authenticates all clues.
4. Checks for unresolved clues.
5. Analyzes the clue for its impact on the search.
6. Understands the clue status.
7. As appropriate—either at the end of search or if needed as evidence in court—passes on clues to the agency of jurisdiction (law enforcement) for final storage.

Clues, once reported, are generally documented individually on a Clue Report form and then entered collectively on a Clue Log form. See Figure 18.1.[1]

[1] These forms, available in Initial Response Organizer, were designed by the Bay Area Search and Rescue Council (`http://www.basarc.org`).



CLUE REPORT

1. INCIDENT NAME | 2. DATE | 3. INCIDENT NUMBER

4 CLUE NUMBER | 5.DATE/TIME LOCATED | 6. TEAM THAT LOCATED CLUE

7. NAME OF INDIVIDUAL THAT LOCATED CLUE

8. DESCRIPTION OF CLUE

9. LOCATION FOUND

10. TO INVESTIGATIONS

- ☐ URGENT REPLY NEEDED, TEAM STANDING BY TIME _____
- ☐ INFORMATION ONLY

11. INSTRUCTIONS TO TEAM

- ☐ COLLECT
- ☐ MARK AND LEAVE
- ☐ DISREGARD
- ☐ OTHER _____

CLUE LOG

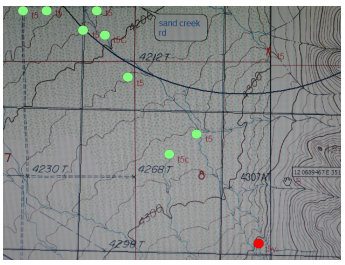
1. INCIDENT NAME | 2. DATE | 3. INCIDENT NUMBER

CLUE #	ITEM FOUND	TEAM	DATE/TIME	LOCATION OF FIND	INITIALS

Figure 18.1: Clue Report and Clue Log forms

The IRIC should mark the location of all clues on the incident map. This map may help in illustrating a pattern or direction of travel that can guide future search efforts.

Pattern of Clues



The image on the left shows the location (in green) of clues that were found while searching for a missing person in rural New Mexico. In the Clue Log these clues gave little indication of the direction of travel, but they clearly did when plotted on a map. The red dot indicates the location of the subject, who was found alive by following the direction of travel.

One concern with clue forms is that there may be many clues developed and, if there is no good accounting system in place, then a clue may be overlooked or lost. Each clue could be the clue that cracks the case, so investigating every clue is important. Large searches, such as the Fossett Aircraft search,[2] generated thousands of clues and it was a challenge to manage all that information.

> *Each clue could be the clue that cracks the case, so investigating every clue is important.*

Don't be misled! Maintain a healthy suspicion about a clue until the validity of that clue is verified. Confirm the validity before taking irreversible actions based upon that clue. In search operations, expect many 'false clues'.

> *Maintain a healthy suspicion about a clue until the validity of that clue is verified.*

[2] See Reference [Fossett].

As the search progresses the strategy and tactics being employed should constantly be evaluated for their effectiveness. If clues are being located by searchers that may be an indication that the tactics are working. If no clues are being located that may indicate a need for a change in tactics or for further investigation to ensure that the search is being conducted in the right location. It is important to remember that the absence of clues is also a significant clue.

> *It is important to remember that the absence of clues is also a significant clue.*

CHAPTER 19

Subject Found

If the subject is found during the Initial Response, the work of the search and rescue team is not necessarily over.

If the subject is found alive an evacuation plan must be formulated and executed. Ideally a rudimentary evacuation plan has been established during the initial planning process including knowing where the evacuation equipment is and which personnel are available to support the evacuation. Some subjects are able to walk out under their own power after receiving support from the SAR team. Other subjects need medical care and assistance to be removed from their situation.

Unfortunately some subjects are located deceased. In this case the SAR team should protect the scene and defer to the agency with jurisdiction to determine the next course of action. Finding the subject deceased dramatically reduces the urgency of the incident, so the operation can slow down. Involving a Family Liaison and Crisis Intervention Counselors is often very beneficial when dealing with family members who have just lost a loved one.

The team that located the subject should report their location, an assessment of the subject's condition, and the most appropriate evacuation method. A careful examination of maps of the area should be made to determine the best evacuation route.

Care should be taken to make a risk assessment of the evacuation plan. While the use of a helicopter may speed things up and make the work much easier, the additional risk may not be justified. Conversely, if there are relatively few personnel to do a litter-carry in rugged terrain then it may be worth the risk of using a helicopter to minimize the exposure of the rescuers and the patient to potentially dangerous situations.

The coordinates of the found subject need to be documented.

CHAPTER 20

The Transition from the IRIC to an IMT

After the initial response resources have been deployed to the field, the IRIC must begin to think about what needs to be done to expand the number of resources if the missing person is not found during the Initial Response.

Incident complexity grows exponentially during the initial response as additional search resources arrive, support needs increase, clues are found, and the available information increases. To "keep ahead of the power curve", the IRIC must also consider the need for, and plan for additional incident management resources. These resources may include individuals to fill Command and General Staff positions, or may be a full IMT. They should arrive at the incident sometime during the Initial Response (if possible), get appropriate briefings from the IRIC and the Agency Administrator,[1] and finally assume management of the incident.

The process of the incident management team getting briefings and assuming management of the incident from the IRIC is called the "Transition". It is a crucial time during the incident. A well thought out Transition ensures continuity of leadership. A good Transition ensures that no crucial information is lost, and incident operations are neither disrupted nor delayed.

Indicators that it is Time to Transition to a Higher Qualified IC or IMT[2]

- *The IRIC's span of control is exceeded.*
- *Due to the number of resources assigned to the incident, there is a need for tactical supervisors (Division or Group Supervisor, etc.).*
- *The IRIC is experiencing tunnel vision.*
- *It is clear that the incident is going into another operational period.*
- *The IRIC is unable to step back from ongoing operations to plan for the next operational period or order resources.*
- *Most of the local resources are committed to the incident.*
- *Experience indicates that the nature of the incident or the hazard involved has required a higher qualified IMT in the past.*
- *Multiple incidents are occurring in the same jurisdiction.*
- *The IRIC is unable to provide logistical support for operational personnel.*
- *The IRIC is continually feeling overwhelmed.*
- *Incident communications are having an extended impact on regular operations.*
- *The IRIC recognizes that several kinds of resources are needed.*
- *Resources are not sure of their assignments due to inadequate briefings.*
- *There is a temptation to take shortcuts or ignore standard operation procedures, especially concerning safety.*

[1] The "Agency Administrator" is an ICS term for the person with the legal authority to manage the incident.

The Transition process includes:

1. Identifying the need for a new IC and/or IMT.
2. Briefing the Agency Administrator on this need and getting concurrence on bringing in an IMT. If the IMT is from the agency of jurisdiction for the incident, the incoming IC is already familiar with agency policy and SOP's, thus the Agency Administrator briefing is usually unnecessary.
3. Ordering the single resources/teams and providing a date, time, and location for them to arrive at the incident.
4. If requested, helping the Agency Administrator identify the crucial information that a new IC and IMT require from them as needed or requested.
5. If requested, setting a time and location for the Agency Administrator to meet and brief the incoming IC and the IMT.
6. Setting a time and location for the incoming IC and IMT to brief with the IRIC.
7. Updating the IRO Note or completing the ICS 201 form.
8. Conduct a thorough, accurate briefing for the IMT or oncoming IC.
9. Setting a time that the incoming IC and IMT assume command of the incident.
10. Announcing that time and the names of the various personnel to the incident resources.
11. The new IC and IMT assuming command of the incident, and the formal Planning Process beginning, if it has not already been implemented.

A sample completed ICS 201, based on the LPQ in Figure 6.1 on page 70, is shown in Figure 20.1 on page 145 to Figure 20.6 on page 150.

To quote from `http://www.ecy.wa.gov/programs/spills/hottopics/ics/ICS_WDOE_v6.docx`, the ICS 201 is "*The End*, or just *The End of the Beginning*".

Transition between teams is one of the most dangerous times on an incident because of lack of understanding of the situation and hazards, the potential for confusion about operations underway, confusion regarding the command structure, and mis-communications.

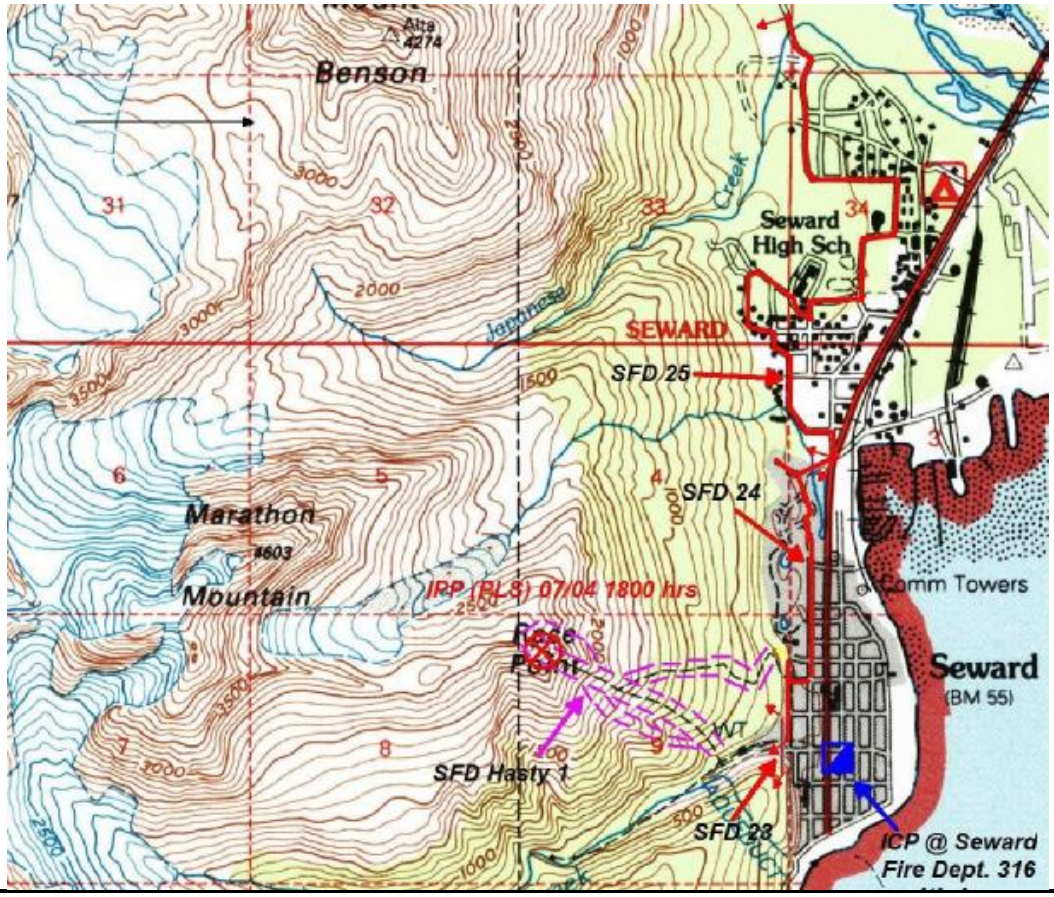
> *Transition between teams is one of the most dangerous times on an incident.*

[2] Courtesy of David Lattimore, Yosemite National Park.

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated:
Lemaitre Search	12342012	Date: 7/4/2012 Time: 2100

4. Map/Sketch (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depicting situational status and resource assignment)**:**



5. Situation Summary and Health and Safety Briefing (for briefings or transfer of command)**:** Recognize potential incident Health and Safety Hazards and develop necessary measures (remove hazard, provide personal protective equipment, warn people of the hazard) to protect responders from those hazards.

LeMaitre last seen 200 feet below Race Point heading up the race trail at about 1800 hours by T. Walsh, race timer at Race Point as Walsh was descending the Mountain. LeMaitre seemed in good condition and wanted to continue to Race Point before turning around. He did not return to the trailhead, and was reported overdue by his wife Peggy LeMaitre at 2000 hrs on 07-04.

The area is extremely steep with vertical cliffs, loose scree, steep snowfields, mud; and below treeline, Devils Club, Cow Parsnip, alder and other thick vegetation prevails. The grass and shrubs are more than 5 feet high, and hide numerous vertical drops creating extreme hazards for the missing person as well as searchers. Record snowfall has left crumbling snow bridges above icy creeks.

Weather was rain, temp high 40's, wind up to 15 mph from west. Forecast is same for the next few days.

See attached LPQ, and photo.

6. Prepared by: Name: B. Smith Position/Title:IRIC Signature:

Figure 20.1: An example of a completed ICS 201—page 1

1. Incident Name: Lemaitre Search	2. Incident Number: 12342012	3. Date/Time Initiated: Date: 7/4/2012 Time: 2100
ICS 201, Page 1	Date/Time: Date	

INCIDENT BRIEFING (ICS 201)

1. Incident Name: LeMaitre Search	2. Incident Number: 12342012	3. Date/Time Initiated: Date: 7/4/2012 Time: 2100

7. Current and Planned Objectives:

Current Objectives:

1. Provide for searcher safety throughout the incident.
2. Find Mr. LeMaitre by 0600 hrs on 7/5.
3. Hasty Search the Race Trail from the start line to the finish line with high coverage by 0600 on 7/5.
4. Contain the area both north and south of the race trail, as well as in Seward.
5. When located, treat and evacuate by the most judicious method.

Planned Objectives for 7/5/12:

1. Search all likely routes and locations with trained, experienced resources.
2. Contain the search area in Japanese Creek and Lowell Creek, as well as the two major trailheads in town.
3. Rule out the possibility that LeMaitre continued on toward the summit of Mt. Marathon from Race Point.
4. Rule out the possibility that LeMaitre is outside the general search area.
5.Provide for Searcher safety throughout the incident.

8. Current and Planned Actions, Strategies, and Tactics:

Time:	Actions:
2100	Notified AST of missing person from Mt. Marathon Race. Initiated Hasty Search.
HHMM	Seward FD Hasty Team 1 mobilized and starting hasty search of Race Trail from start line to finish line. Looking for LeMaitre shoe prints on trail, calling his name and listening (sound search).
HHMM	SFD Unit 23 is parked at end of Jefferson St. at Trailhead to provide containment. SFD Unit 24 is patrolling First and Second Avenues, Chamberlain Rd. and Dairy Hill Lane from Jefferson St. to the Seward Highway, notifying residents to watch for LeMaitre, and checking Jeep Road Trailhead for containment. SFD 25 is patrolling Phoenix Rd, Dora Way, and Olympia Rd from the Seward Highway to Japanese Creek for containment.
HHMM	
2230	SFD Hasty Team 1 is about 200 feet below Race Point on the Up Trail. They haven't found any clues, and have not received any answers to their calls. Will mark the area with red flagging, and try to discern any track that might be LeMaitre's. Will cut for sign around Race Point, especially the uphill trail leading toward Mt. Marathon summit, then return on the Down Trail.
HHMM	
2400	Trooper B. Jones enroute from Moose Pass. Is familiar with the Race Trail. Will lead a second Hasty Search to the PLS, ID and mark it, and try to determine a direction of travel from the Race Point. AST Helo 2 will arrive by 0300 with FLIR to search the Race Trail and surrounding areas for heat sources. SPD Officer P. Bringham and Officer J. Schultz will fly with Helo 2 as spotters.
HHMM	
2400	Ordered additional resources for OP1 to begin at 0600 on 7/5/12.
HHMM	
0200	7/5/12 AST Trooper B. Jones + L. Markey heading up Race Trail to PLS/IPP to ID, mark, and try to determine direction of travel.

Figure 20.2: An example of a completed ICS 201—page 2

1. Incident Name: LeMaitre Search	2. Incident Number: 12342012	3. Date/Time Initiated: Date: 7/4/2012 Time: 2100

7. Current and Planned Objectives:	
0230	SFD Hasty Team 1 back at Race Trailhead. Did not find any clues. Could not determine PLS exactly, but preserved all prints from about 200 feet below Race Point to top. Marked with red flagging and labeled.
HHMM	
0230	Strategy for 7/5/12
HHMM	1. Investigators continue gathering planning and searching data, and investigating any leads that might indicate LeMaitre left the immediate area of Mt. Marathon. 2. Research all trails with multiple resources. 3. Physically contain the search area along Japanese Creek and along Lowell Creek from town to the upper end of those drainages. Maintain containment at Trailheads and along First Avenue all the way to Japanese Creek. 4. Use air search to search highly likely locations not on trails, including cliffs, bases of cliffs, and snowfields. 5. Use technical rescue personnel to cover likely cliff areas and technical routes from Race Point to the bottom of the mountain. 6. Use most appropriate specialized resources to rule out LeMaitre going beyond Race Point to Mt. Marathon Ridge and/or summit. 7.Identify and assign trained technical rescue and EMS resources to standby for treatment and evacuation when LeMaitre is found. Use Helo 1 to transport if possible. 8. Use spontaneous volunteers to contact residents in town to be on the lookout for LeMaitre; provide support services in Incident Base/ICP; if qualified and equipped, assign them to a qualified team leader to search in non-technical terrain.
HHMM	
0400	Tactics for OP1 7/5/12 0600-1800
0600	Containment:
HHMM	USFS 15: Patrol Lowell Creek from TH to end of Canyon SFD 26: Block TH @ end of Jefferson St. SFD 27: Block TH @ Jeep Road SFD 28: Block Mouth of Japanese Creek SFD 29: Block No name Creek at 1st Ave. SPD 30: Patrol 1st and 2nd Ave., Chamberlain Rd, Dairy Hills Lane from Jefferson St. to Seward Highway SPD 31: Patrol Phoenix Rd. Dora Way and Olympia Rd from Seward Highway to Japanese Creek
0600	Route and Location Search:
HHMM	ASARD 17: Search Up Race Trail from Race TH to PLS and try to determine direction of travel. If found, follow. If not, continue on to cut for sign around Race Point, then return searching the Down Trail. NPS 13: Search both sides of Down Race Trail and ID points of confusion, then search both sides of Up Race Trail and do the same. Explore any points of confusion to ensure LeMaitre hasn't gotten off trail at those points. AMRG 4: Search trail above Race Point to summit of Mt. Marathon, focusing on points of confusion, egress from the ridge, and hazard areas along the way.

Figure 20.3: An example of a completed ICS 201—page 3

1. Incident Name: LeMaitre Search	2. Incident Number: 12342012	3. Date/Time Initiated: Date: 7/4/2012 Time: 2100

7. Current and Planned Objectives:

0600	SFD Hasty Team 1 Completed assignment. No clues. Could not determine the exact PLS. Too many scuffs and tracks in the area to be sure they have LeMaitre's tracks. Many social trails leading into vegetation off the main trails. All should be searched as time and resources allow. Helo 1 Completed assignment. No FLIR results. No other clues located. Searched all areas above treeline, and all cliffs and cliff bases as well as snowfields. No clues found. Visibility in vegetated areas is almost zero. Troopers B. Jones and L. Markey Completed assignment. Possible PLS marked about 200 vertical feet below Race Point on Up Trail. Scuffs and partial prints not conclusive. No other clues located. Numerous faint trails leading off of main trail all the way down should be investigated.

6. Prepared by: Name: B. Smith Position/Title: IRIC Signature: _____

ICS 201, Page 2 Date/Time: 7/5/2012 10:00 AM

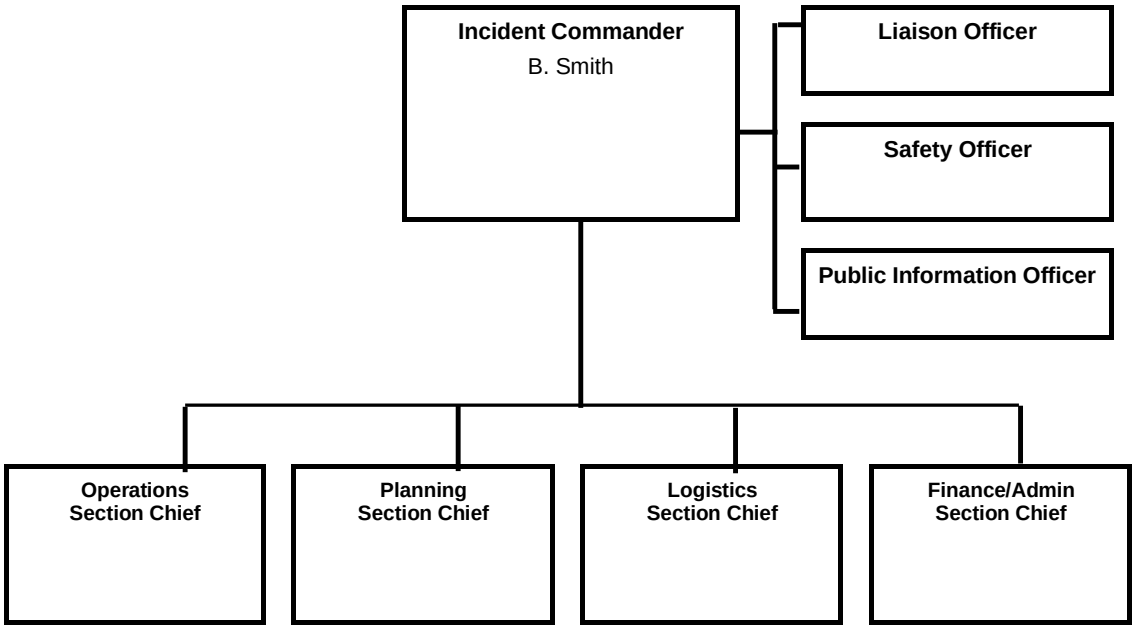
INCIDENT BRIEFING (ICS 201)

1. Incident Name: LeMaitre Search	2. Incident Number: 12342012	3. Date/Time Initiated: Date: 7/4/2012 Time: 2100

Figure 20.4: An example of a completed ICS 201—page 4

1. Incident Name: LeMaitre Search	2. Incident Number: 12342012	3. Date/Time Initiated: Date: 7/4/2012 Time: 2100

9. Current Organization (fill in additional organization as appropriate):



6. Prepared by: Name: B. Smith	Position/Title: IRIC	Signature:
ICS 201, Page 3	Date/Time: 7/5/2012 10:00 AM	

Figure 20.5: An example of a completed ICS 201—page 5

INCIDENT BRIEFING (ICS 201)

1. Incident Name: LeMaitre Search	2. Incident Number: 12342012	3. Date/Time Initiated: Date: 7/4/2012Time: 2100

10. Resource Summary:

Resource	Resource Identifier	Date/Time Ordered	ETA	Arrived	Notes (location/assignment/status)
Hasty Team	SFD Hasty Team 1			x	Race Trail, bottom to top and return
Containment Team	SFD 23			x	End of Jefferson St. at Race Trailhead
Containment Team	SFD 24			x	Patrolling 1st & 2nd Ave, Chamberlain Rd, Dairy Hills Ln to Seward Highway. Checking Jeep Road Trailhead.
Containment Team	SFD 25			x	Patrolling Phoenix Rd, Dora Way, Olympia Rd from Seward Highway to Japanese Creek.
AST Trooper	B. Jones L. Markey	2400	0200	x	Hasty Search Race Trail to Race Rock. ID and mark PLS, determine direction of travel.
Helicopter	AST Helo 1	2400	0300	x	FLIR search Race Trail and surrounding areas.
Spotters	SPD P. Brigham, J. Schultz	2400	0300	x	On Helo 1 as spotters.
IMT	AIMT-SAR	2400	1000	☐	Assume Unified Command with Seward Fire Department Chief D. Bryerly.
3 Mountain Rescue/Searchers	AMRG	2400	0500	x	SAR Tech II, equipped to search technical terrain.
1 Search Dog	ASARD	2400	0500	x	1 Dog, 1 handler. SAR Tech II, cross trained air scenting and tracking
12 Ground Searchers	ANSP	2400	1730	☐	SAR Tech II
3 Ground Searchers	NPS	2400	0500	x	Rangers, SAR Tech II
3 Ground Searchers	USFS	2400	0500	x	Trail Crew, SAR Tech III
Investigator	AST P. Brown	2100		x	At ICP managing the investigation.

6. Prepared by: Name: B. Smith	Position/Title: IRIC	Signature: _____
ICS 201, Page 4	Date/Time: 7/5/2012 10:00 AM	

Figure 20.6: An example of a completed ICS 201—page 6

Part IV
Appendices

APPENDIX A

IRIC Job Action Sheet

A Job Action Sheet, or JAS, is a tool for defining and performing a specific emergency response functional role. A JAS is designed to clarify responsibilities.

Table A.1: Initial Response Incident Commander Job Action Sheet ©2014

Initial Response Incident Commander (IC) Job Action Sheet

Reports to:	Agency Administrator
Mission:	• Responsible for all incident activities during the initial response period including development and implementation of strategic decisions and for ordering and releasing all resources. • Ensure welfare and safety of incident personnel. • Supervises all responding resources. • Determine whether incident can be managed with personnel on scene/en route or if higher level incident management is needed.
Qualifications:	• Leadership ability. • Experience in responding to Search incidents as a supervisor of single resources, Task Forces or Strike Teams. • Ability to see "the big picture" and focus on those actions most important to achieving the desired outcomes. • Knowledge of local resources and geography. • Investigative experience.
Oversees:	• All initial response resources, including single resources, Task Forces, Strike Teams. • If appointed, supervises Investigators or Investigative Unit Leader. • If appointed, supervises Command and General Staff.
Immediate Actions:	• Focus on Investigation, Containment, and Search in that order. • Take the initial report, either from the Agency Dispatcher or from the Reporting Party and write it down, either on a Lost Person Questionnaire, the IRO Note, or the ICS 201. ◦ Name and contact information of reporting party. ◦ How the report was received (telephone, person, etc.). ◦ Name of missing person. ◦ Thumbnail sketch of missing person. ◦ Circumstances of loss. ◦ Date and time last seen. ◦ Place Last Seen or Last Known Point (as precisely and accurately as possible). ◦ What does the reporting party think happened? ◦ What does the reporting party want you to do? ◦ What Instructions did you give to the reporting party (stay put, call back in an hour, use text messages only to communicate with cell phone, etc.)? • Check in with Agency Dispatcher, and the IRO Note or on ICS 201, page 4. • When appointed as IRIC, communicate this to dispatcher and incident-related personnel. • Read this entire Job Action Sheet. • Mark the Initial Planning Point on your map. • Initiate further investigation using the Lost Person Questionnaire as a guide, and consider delegating these duties to an Investigator.

Initial Response Incident Commander Job Action Sheet continued on next page . . .

. . . Initial Response Incident Commander Job Action Sheet continued from previous page

- Assess Current Situation:
  - Determine Search Urgency.
  - Review Lost Person Behavior.
  - Review topography within the area defined by "distance traveled" in LPB and mark on map:
    - Hazards.
    - Barriers to travel.
    - Trails, and other travel aids.
    - Likely spots that might attract or hold the missing person.
  - Identify those resources immediately available to respond.
  - Conduct and record a scenario analysis. (Use Scenario Analysis worksheet.)
  - Consider the possibility of a criminal act.
  - Identify the potential "risks" to the missing person and to the searchers.
  - Consider history of other missing persons in the same area.
- Designate an Incident Command Post and notify all personnel of the location. Mark location on the map, and make sure you don't leave it!
- Put on position identification vest.
- Write 3–5 Initial Response Incident Objectives on the IRO Note or the ICS 201.
  - Continue investigation.
  - Contain the subject.
  - Search likely routes and locations.
  - Provide for responder safety!
- Choose a strategy or strategies to accomplish each objective.
  - Assign a full time investigator.
  - Use both passive containment at likely search area exit points and attraction in appropriate locations for containment.
  - Identify and protect the PLS/LKP/IPP, and determine a direction of travel.
  - Prioritize likely routes and locations, and assign most capable resources based on these priorities.
- Define the Tasks to carry out the strategy(ies).
- Determine what kind and how many resources will be required to implement the Tactics.
- Identify any needed reporting locations/staging areas. Mark on the map.
- Order the required resources and begin tracking them on the IRO Note or the ICS 201, page 4.
- Confirm dispatch and arrival times of activated resources.
- Brief and assign the initial response search resources.

Intermediate Actions:

- Keep the agency administrator and agency dispatcher informed of incident and response status regularly.
- Evaluate the initial response plan and track the resources' progress in achieving the Incident Objectives.
- Review the Investigative Task checklist (described on page 75) to ensure that all investigative tasks are being accomplished.
- Consider appointing and delegating work as necessary to Command and General Staff positions.
- Debrief the initial response resources as they complete their assignments. Reassign to additional tasks as appropriate.
- If it appears that the initial response resources will not be able to locate the missing person quickly, consider ordering additional resources.
  - Ensure IRO Note or ICS 201 is complete and accurate.
  - Set time and location for the Transition Briefing.
  - Conduct the Initial Briefing using the IRO Note or ICS 201, and other pertinent documents:
    - Lost Person Questionnaire.
    - Missing Person Flyer.
    - Clue Log.
    - Investigative information.

Initial Response Incident Commander Job Action Sheet continued on next page . . .

. . . Initial Response Incident Commander Job Action Sheet continued from previous page	
Demobilization:	• If needed, develop a Demobilization Plan based upon the needs of the incident. • If needed, determine Release Priorities. • If needed, implement the Demobilization Plan. • Participate in the After Action Review.
Forms Prepared:	IRO Note or ICS 201
Forms Approved:	IRO Note or ICS 201
Meetings:	Initial Incident Briefing, After Action Review.

APPENDIX B

Instructions for Completing ICS 201 and ICS 214

Instructions for Completing ICS Form 201—Incident Briefing

ICS 201
Incident Briefing

Purpose. The Incident Briefing (ICS 201) provides the Incident Commander (and the Command and General Staffs) with basic information regarding the incident situation and the resources allocated to the incident. In addition to a briefing document, the ICS 201 also serves as an initial action worksheet. It serves as a permanent record of the initial response to the incident.

Preparation. The briefing form is prepared by the Incident Commander for presentation to the incoming Incident Commander along with a more detailed oral briefing.

Distribution. Ideally, the ICS 201 is duplicated and distributed before the initial briefing of the Command and General Staffs or other responders as appropriate. The "Map/Sketch" and "Current and Planned Actions, Strategies, and Tactics" sections (pages 1–2) of the briefing form are given to the Situation Unit, while the "Current Organization" and "Resource Summary" sections (pages 3–4) are given to the Resources Unit.

Notes:

- The ICS 201 can serve as part of the initial Incident Action Plan (IAP).
- If additional pages are needed for any form page, use a blank ICS 201 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Incident Number**	Enter the number assigned to the incident.
3	**Date/Time Initiated** • Date, Time	Enter date initiated (month/day/year) and time initiated (using the 24-hour clock).
4	**Map/Sketch** (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depicting situational status and resource assignment)	Show perimeter and other graphics depicting situational status, resource assignments, incident facilities, and other special information on a map/sketch or with attached maps. Utilize commonly accepted ICS map symbology. If specific geospatial reference points are needed about the incident's location or area outside the ICS organization at the incident, that information should be submitted on the Incident Status Summary (ICS 209). North should be at the top of page unless noted otherwise.
5	**Situation Summary and Health and Safety Briefing** (for briefings or transfer of command): Recognize potential incident Health and Safety Hazards and develop necessary measures (remove hazard, provide personal protective equipment, warn people of the hazard) to protect responders from those hazards.	Self-explanatory.
6	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).
7	**Current and Planned Objectives**	Enter the objectives used on the incident and note any specific problem areas.

Figure B.1: ICS 201 Instructions Page 1

Block Number	Block Title	Instructions
8	**Current and Planned Actions, Strategies, and Tactics** • Time • Actions	Enter the current and planned actions, strategies, and tactics and time they may or did occur to attain the objectives. If additional pages are needed, use a blank sheet or another ICS 201 (Page 2), and adjust page numbers accordingly.
9	**Current Organization** (fill in additional organization as appropriate) • Incident Commander(s) • Liaison Officer • Safety Officer • Public Information Officer • Planning Section Chief • Operations Section Chief • Finance/Administration Section Chief • Logistics Section Chief	• Enter on the organization chart the names of the individuals assigned to each position. • Modify the chart as necessary, and add any lines/spaces needed for Command Staff Assistants, Agency Representatives, and the organization of each of the General Staff Sections. • If Unified Command is being used, split the Incident Commander box. • Indicate agency for each of the Incident Commanders listed if Unified Command is being used.
10	**Resource Summary**	Enter the following information about the resources allocated to the incident. If additional pages are needed, use a blank sheet or another ICS 201 (Page 4), and adjust page numbers accordingly.
	• Resource	Enter the number and appropriate category, kind, or type of resource ordered.
	• Resource Identifier	Enter the relevant agency designator and/or resource designator (if any).
	• Date/Time Ordered	Enter the date (month/day/year) and time (24-hour clock) the resource was ordered.
	• ETA	Enter the estimated time of arrival (ETA) to the incident (use 24-hour clock).
	• Arrived	Enter an "X" or a checkmark upon arrival to the incident.
	• Notes (location/ assignment/status)	Enter notes such as the assigned location of the resource and/or the actual assignment and status.

Figure B.2: ICS 201 Instructions Page 2

Instructions for Completing ICS Form 214—Activity Log

ICS 214
Activity Log

Purpose. The Activity Log (ICS 214) records details of notable activities at any ICS level, including single resources, equipment, Task Forces, etc. These logs provide basic incident activity documentation, and a reference for any after-action report.

Preparation. An ICS 214 can be initiated and maintained by personnel in various ICS positions as it is needed or appropriate. Personnel should document how relevant incident activities are occurring and progressing, or any notable events or communications.

Distribution. Completed ICS 214s are submitted to supervisors, who forward them to the Documentation Unit. All completed original forms must be given to the Documentation Unit, which maintains a file of all ICS 214s. It is recommended that individuals retain a copy for their own records.

Notes:

- The ICS 214 can be printed as a two-sided form.
- Use additional copies as continuation sheets as needed, and indicate pagination as used.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Name**	Enter the title of the organizational unit or resource designator (e.g., Facilities Unit, Safety Officer, Strike Team).
4	**ICS Position**	Enter the name and ICS position of the individual in charge of the Unit.
5	**Home Agency** (and Unit)	Enter the home agency of the individual completing the ICS 214. Enter a unit designator if utilized by the jurisdiction or discipline.
6	**Resources Assigned**	Enter the following information for resources assigned:
	• Name	Use this section to enter the resource's name. For all individuals, use at least the first initial and last name. Cell phone number for the individual can be added as an option.
	• ICS Position	Use this section to enter the resource's ICS position (e.g., Finance Section Chief).
	• Home Agency (and Unit)	Use this section to enter the resource's home agency and/or unit (e.g., Des Moines Public Works Department, Water Management Unit).
7	**Activity Log** • Date/Time • Notable Activities	• Enter the time (24-hour clock) and briefly describe individual notable activities. Note the date as well if the operational period covers more than one day. • Activities described may include notable occurrences or events such as task assignments, task completions, injuries, difficulties encountered, etc. • This block can also be used to track personal work habits by adding columns such as "Action Required," "Delegated To," "Status," etc.
8	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

Figure B.3: ICS 214 Instructions

APPENDIX C

Lost Person Data

Section C.1

Lost Person Behavior

Table C.1: Lost Person Behavior[1]

Children 1–3	They are unaware of the concept of being "lost". Navigational skills and sense of direction are almost nonexistent. They tend to wander aimlessly. They often seek out the most convenient location to lie down and go to sleep: • Inside a log. • Under a thick bush. • Under an overhanging rock. • Under a picnic table. • Inside an automobile trunk. • Inside an abandoned appliance. They are almost always very difficult to detect, as they are frequently out of sight and will rarely answer searchers' calls. Because they tend to seek shelter in poor weather, their chances of survival are often quite good. However, their temperature coping mechanisms are not as strong as older children so their urgency factor rating is high. Children (all ages) are rarely able to find their own way out of the woods. **Implications for search planning:** a highly thorough search may be necessary. As small children rarely travel far, containment is not usually a high priority when search resources are scarce.
Children 4–6	They are capable of traveling farther than younger children. They have a concept of being lost and will generally try to return home or go back to someplace familiar. They are frequently drawn away from homes or campsites by animals, following older children, or just exploring. Similar to younger children, they will usually seek shelter when tired, at nightfall, or when the weather becomes bad. Having been taught to avoid strangers, few children of this age will answer searchers calling their name, nor will they show themselves when searchers are near. Children (all ages) are rarely able to find their own way out of the woods. **Implications for search planning:** a highly thorough search may be required, with searchers focusing on visual clues.

Children 7–12	Their navigational and directional skills are much more developed than those of the younger child, and they are learning to construct primitive "mental maps" of their environments, which may be highly inaccurate. They frequently become lost while attempting a short cut to a familiar location. They may become extremely upset and confused when lost, seeming to react very irrationally. Lost children of this age frequently resort to trail running, which may take them some distance from the PLS. Subjects of this age may respond more maturely if accompanied by a friend or sibling. Children (all ages) are rarely able to find their own way out of the woods. **Statistical data:** an analysis of 9 cases of missing children (7-12 yrs) by Hill (1996) revealed that: • 89% (8 out of 9) survived. • 55% (5 out of 9) of the cases involved 2 or more subjects. • No child of this category found his/her own way out of the woods. **Implications for search planning:** because of the distance they tend to travel, combined with their panicky state, the search for a child of this age can be particularly difficult. Containment of trails, roadways, and other travel aids is a top priority.
Climbers	They are usually well equipped and self sufficient. They tend to remain on or near designated routes. A common factor for missing climbers is weather or hazardous conditions which limit their capabilities. Other important factors are falling debris and avalanches. **Implications for search planning:** technical expertise is usually needed for both search and rescue (or recovery) of climbers.
Despondents	These are individuals with a history of depression or suicide attempts, or who are explicitly described by family or friends as having been severely depressed or suicidal just before the incident. It is not usually their intention to travel very far, but to find a place where they can be alone and possibly contemplate suicide. Despondent individuals are frequently located at the interface between two types of terrain (for example, forest and meadow), and sometimes in a "scenic location" where they can sit and meditate, such as on a hill overlooking a lake or city. Despondents will rarely answer searchers' calls, and will sometimes avoid or even hide from search teams. There is an extremely high fatality rate for this category, as despondents rarely take steps to protect themselves from the weather, and, in addition, drugs or alcohol may be involved. **Statistical data:** an analysis of 16 cases of missing despondents by Hill (1996) revealed that: • None walked out to safety on their own. • None of the cases involved two or more subjects. • Only 35% survived (the remainder died from exposure or suicide). **Implications for search planning:** the search for a despondent individual, even in moderate weather, should be considered highly urgent, likely requiring medical treatment and rescue. Containment is not normally a high priority. While the search area may not be particularly large, the search should be thorough, as these subjects are often hard to detect and may not respond to sounds. Focus on likely spots and visual search methods.
Elderly	It is important not to underestimate the older subject merely because he or she is over the age of 65. Studies of elderly outdoor sportsmen, such as hunters, hikers, and fishermen, reveal that they are capable of traveling just as far when lost as younger subjects (Hill, 1992). More importantly, the elderly subject often behaves more rationally when lost than does his/her younger counterpart. The elderly subject may be more willing to build a shelter and prepare to be rescued by searchers. However, if the older person has Alzheimer's disease or some other form of dementia, then the incident should be treated as a walkaway situation. Therefore, for adult subjects, it is the Lost Person's Category, not his or her age as such, that is significant for search planning.

Fishermen	Shore fishermen often become lost while traveling on a trail to or from their fishing site. Boat fishermen sometimes become disoriented while trying to find the spot from which they launched their boat. They may become overcome by darkness and forced to land in some unfamiliar location. There is a somewhat higher possibility of drowning for boat fishermen than for shore fishermen, especially if there is alcohol involved. **Statistical data:** an analysis of 25 cases of missing fishermen by Hill (1996) revealed that: • 88% of subjects survived (the remainder died of drowning or exposure). • 25% found their own way back to safety. • 32% of the cases involved 2 or more subjects. **Implications for search planning:** a thorough investigation is imperative. For shore fishermen, identify the subject's favorite fishing sites, and whether he/she liked to move around a lot. Direction of wind and current may be important for locating the landing sites of lost boaters.
Hikers	Hikers are trail-oriented and often become lost when their trail is obscured for some reason, or when they encounter a confusing junction of intersecting paths. Because of their reliance on trails, hikers tend to travel farther than other lost person categories, although extreme distances are less frequent than for hunters. They are often less prepared and "woods-wise" than hunters and fishermen. **Statistical data:** an analysis of 501 cases of lost or overdue hikers (Mitchell, 1985) revealed the following characteristics: • Only about 40% were considered to be adequately equipped. • 92% did not travel after the first 24 hours. • Between 30% and 40% traveled at night. • About 40% were located by a "hasty search". An analysis of 24 cases of missing hikers (adults only) by Hill (1996) revealed that: • 29% found their own way back to safety. • 92% survived. • 42% of the cases involved two or more subjects. **Implications for search planning:** containment is a top priority, especially trail blocks. Clue-aware searchers should be tasked to run all likely trails, paths, roads, and similar travel aids.

Hunters	Their concentration on game often distracts them from navigation. Hunters frequently become disoriented while chasing wounded game into thick areas of trees or brush. They tend to overextend themselves in darkness and push beyond their physical abilities. When game laws prescribe the wearing of "hunter orange", these subjects can be easily detected from a distance or from a helicopter. Many hunters will fire shots if they believe searchers are looking for them, and will respond to sounds if they are able. Due to ego or game laws, many hunters will go to great lengths to walk out unassisted by search teams. The "typical" hunter will attempt to build a shelter at night, then walk out of the woods at daybreak. On average, about one in three lost hunters will manage to find their own way out. **Statistical data:** an analysis of 167 cases of lost or overdue hunters by Mitchell (1985) revealed the following characteristics: • One in three missing hunters was overtaken by nightfall. • 39% followed a natural drainage. • Between 45% and 80% traveled at night. • 90% did not travel after the first 24 hours. • Between 25% and 45% found their own way out of the woods. An analysis of 100 cases of lost or overdue hunters by Hill (1996) revealed that: • 16% of the cases involved 2 or more subjects. • 93% survived. • 24% found their own way out of the woods. **Implications for search planning:** containment is a priority, as some hunters travel long distances on trails or woods roads. Attraction methods (sirens, whistles, gunshots) may also be effective. Also look for clues off the trails, such as in drainages or along river banks.
Miscellaneous	This category includes gatherers (for example, mushrooms, berries, other fruit), nature photographers, rock hounds, and people engaged in some outdoor occupational activity, such as surveyors, forestry employees, conservation officers, and park rangers. Many are inadequately equipped or clothed for an extended duration outdoors. Many subjects in this category are found away from trails, depending on the nature of the activity in which they had been involved. They are frequently located near natural boundaries, such as rivers and lake shores. **Statistical data**: an analysis of 26 cases of lost persons engaging in miscellaneous outdoor activity by Hill (1996) revealed that: • 96% survived. • 23% of the cases involved two or more subjects. • 31% of subjects found their own way back to safety. **Implications for search planning:** investigation is especially important for a subject of this "mixed bag" category. Effort should be made to identify the relevant locations which may have attracted the person, as these may be the most likely to contain clues.

Skiers	Most are young and in fairly good physical condition. They are usually well equipped and dressed for the weather. Most become lost because they took the wrong route, or misjudged time and/or distance. Some skiers are made immobile by injury and may be vulnerable to hypothermia. They are usually wearing brightly colored clothing, which makes them highly detectable against the snow. With the advent of ski areas charging the lost person for search and rescue services, more skiers may use searchers as "offset aiming points" so they may find their own way out and avoid costs. **Statistical data**: an analysis of 26 cases of lost persons engaging in miscellaneous outdoor activity by Hill (1996) revealed that: • 50% found their own way back to safety. • When found by search teams, only 50% were mobile. • 83% stopped moving within the first 24 hours. • Between 30% and 45% traveled at night. **Implications for search planning:** visual trackers should be especially effective for locating missing skiers.
Walkaways	These are individuals who "walk away" from a constant-care situation, whether a hospital or a residence. This includes people with senile dementia (for example, Alzheimer's disease), mentally retarded individuals, as well as person suffering from some debilitating form of mental illness (for example, psychosis). They rarely understand they are lost, and their wanderings may seem non-purposeful or at least non-predictable. They are almost never dressed appropriately for wet or severe weather conditions. They rarely respond to callers, and in some instances, such as with mentally retarded subjects, they may hide or even run from searchers. Persons suffering from Alzheimer's disease (or related illnesses) may be attempting to return to some former home or place where they once enjoyed being (however far away that place may be). They often walk in a straight line until running into a barrier, then turn and continue in another directions (the so-called "pinball effect"). Eventually, they become entangled in brush or mired in mud, unable to continue. Some have even walked straight into a lake and drowned. Walkaways who are allowed some independence by an institution (or a person managing home care) with respect to going outside unsupervised, may travel farther than persons requiring more supervision. The fatality rate for subjects in this category is extremely high. **Statistical data on Walkaways.** An analysis of 22 cases of missing walkaways (general category) by Hill (1996) revealed that: • 45% were found dead (from exposure or drowning). • None walked out to safety on their own. • None called for help or answered searchers' calls. **Statistical data on Alzheimer's patients in particular:** An analysis of 25 incidents involving missing Alzheimer's patients revealed the following characteristics: • Average age was 73 years (59% male). • Not one Alzheimer's subject called for help from searchers. • 28% were found dead. • They were found a median distance of 1/2 mile from the PLS. **Implications for search planning:** the search for a walkaway should be considered highly urgent. Man-trackers and trailing dogs may be especially effective, with air scent dog teams employed in high probability areas with dense vegetation. Because walkaways are usually very difficult to detect, often hidden under brush or in thickly treed areas, a highly thorough search may be necessary. Alzheimer's patients, mentally retarded individuals, and other institutionalized walkaways are often found somewhere on the grounds of their respective institutions, so a thorough search should begin there. Containment of Alzheimer's patients is not normally a high priority, compared to other lost person categories, as these walkaways seldom travel great distances. However, be warned that some allegedly "frail" Alzheimer's patients have traveled much farther than their caretakers had expected. As well, mentally retarded subjects have been known to hide from searchers and to flee when spotted. Recurring discrete patrols focusing on visual searching may be helpful.

Youths 13–15	Frequently become lost in groups of two or more people, while engaged in exploring or some other "adventuring" activity. When in groups, they will rarely travel very far. They will usually respond to searchers' calls. They often resort to direction sampling, looking for some familiar place or landmark. **Statistical data:** an analysis of 20 cases of missing youths by Hill (1996) revealed that: • 60% of the cases involved 2 or more missing subjects. • All subjects survived. • Only 10% found their own way out of the woods. **Implications for search planning:** containment is not usually a high priority unless the subject is alone.

[1] Courtesy of Ken Hill, as quoted in NASAR's "Managing The Lost Person Incident".

Table C.2: Overview Lost Person Behavior

Overview: Lost Adults	• Will bushwhack when they are "positive" they know the right direction. • Will usually stay on a trail if not absolutely certain of the correct direction. • May climb a hill to improve their view. • Rarely move around randomly. • Rarely attempt to travel in an arbitrary straight line. • Will rarely reverse direction on a trail unless absolutely certain they have been going the wrong way. • May attempt to apply "woods wisdom", such as traveling downstream. • May "regress" to less effective methods when panicky.
Overview: Lost Children	• Have relatively poor "mental maps" of their environment. • Will usually search for familiar places rather than for routes (travel aids). • Are rarely good at judging direction or distance. • Often become lost when taking a "short cut" (ages 7 to 12). • Will often try "trail running" (ages 7 to 12). • May move randomly or unsystematically (ages 1 to 6). • May be extremely panicky. • Are rarely able to find their own way out of the woods. • Rarely answer searchers calling their name.

Section C.2

Lost Person Behavior Distance Traveled

Arizona

Be cautious when using data with only a few cases. All distances in miles.

Table C.2: Distances Traveled by Lost Persons in Arizona, USA

Mission	Category	Cases	Min	25%	50%	75%	100%	Mean
Aircraft	Crashed	12	0.00	0.46	3.43	12.24	36.48	8.09
Aircraft	Missing	1	66.07	66.07	66.07	66.07	66.07	66.07
Aircraft	Overdue	0	0.00	0.00	0.00	0.00	0.00	0.00
ELT	ELT	3	2.88	3.93	4.98	21.52	38.05	15.30
PLB	PLB	7	0.01	0.06	2.07	4.98	17.47	4.20
Search	Alzheimer	99	0.01	0.41	1.58	3.16	74.22	3.10
Search	Camper	19	0.14	0.62	2.10	3.13	18.15	3.03
Search	Canyoning	1	0.83	0.83	0.83	0.83	0.83	0.83
Search	Child (1-3)	11	0.09	0.21	0.50	0.98	1.53	0.56
Search	Child (4-6)	13	0.18	0.51	1.05	2.14	3.79	1.47
Search	Child (7-12)	39	0.05	0.34	1.39	3.72	16.40	2.48
Search	Despondent	46	0.06	0.38	0.84	3.32	23.96	2.96
Search	Elderly	48	0.10	0.52	1.34	5.90	63.77	7.50
Search	Hiker	943	0.01	0.83	1.60	3.30	47.20	2.97
Search	Hunter	80	0.01	0.86	2.44	5.42	69.09	4.60
Search	Mental	70	0.02	0.42	1.63	2.93	64.31	4.04
Search	Other	75	0.05	0.79	2.02	4.38	43.44	5.58
Search	Overdue	35	0.06	1.63	4.51	13.07	25.73	7.10
Search	Runner	4	0.02	0.47	1.69	10.71	18.96	5.59
Search	Snow ski & board	16	0.41	1.01	1.39	2.12	2.55	1.44
Search	Suspended	2	0.75	1.87	2.98	4.10	5.21	2.98
Search	UDA	8	0.15	0.25	3.00	7.22	15.24	4.54
Search	Walkaway	91	0.03	0.58	1.34	4.19	56.44	4.76
Search	Youth (13-15)	27	0.10	0.36	0.99	3.20	18.66	2.68
Vehicle	2-wheel	43	0.02	2.78	8.94	20.48	157.85	21.39
Vehicle	4-wheel	65	0.06	3.67	9.16	17.53	99.25	12.77
Vehicle	ATV	21	0.15	1.64	6.31	10.45	21.07	6.51
Vehicle	Bike	9	0.83	1.19	2.99	7.11	16.73	5.02
Vehicle	Horseback	4	0.21	0.23	0.32	1.05	1.84	0.67
Vehicle	Motorcycle	13	1.65	3.38	11.08	17.34	40.84	12.18
Vehicle	Tractor	1	1.69	1.69	1.69	1.69	1.69	1.69
Vehicle	UTV	9	1.33	1.42	7.18	11.66	15.33	6.84
Water	Boater/Kayak	5	0.01	0.16	3.46	4.22	18.72	5.31
Water	Bystander	1	1.12	1.12	1.12	1.12	1.12	1.12
Water	Canoer	1	0.06	0.06	0.06	0.06	0.06	0.06
Water	Fisherman	1	0.05	0.05	0.05	0.05	0.05	0.05
Water	Rafter	3	1.11	3.48	5.84	8.14	10.44	5.80
Water	Swimmer	3	0.02	0.09	0.15	12.13	24.10	8.09
Water	Tuber	2	0.09	0.28	0.47	0.66	0.85	0.47

Collected by Arizona Division of Emergency Management, 2009–June 2020. Compiled by Robert Stuckenschneider, PhD.

The compiler's musings, data update, and notes regarding Table C.2:

- We have eliminated the outlier grouping in the Hunter category, As more data has been gathered, the large value for the maximum isn't as unusual as it first appeared,
- We have eliminated the Not Necessary category. Although Not Necessary still exists, it does not provide any useful information regarding search distances.
- The latest data is still having issues. There are far too many distances equal to zero. Although that can certainly happen, there were far too many zeroes to be statistically probable. I know Sgt. Aaron Dick has some thoughts about how to rectify those pesky zeroes.
- In a search for a group of individuals, the data presented to us showed multiple, separate searches, but not different mission numbers, for each individual in the group. To minimize skewing of the data, we made every effort to sort through the data and condense the data into a single search only. If the single search found individuals from the same group at different locations, with a separation distance of greater than or equal to 0.1 mile, then we treated it as a multiple search.
- I took the time to do some further statistical analyses, hoping to find some positive trends. Unfortunately, there was nothing worth sharing. Although, some categories seemed to show the distances to the subject were declining, others showed an increase. None, were statistically significant.

Explanation of Table C.2. Look at the row for Hikers. There were 646 people in this category. 25% of them were found within a circle of radius 0.98 mi centered at the IPP. 50% were found within a 1.73 mi radius, 75% within a 3.59 mi radius, and 100% within a 47.20 mi radius. None were found within 0.02 mi of the IPP.

Nova Scotia

Table C.3: Distances Traveled by Lost Persons in Nova Scotia, Canada

Category	Cases	25%	50%	75%	90%	Range	Survived
Children (1–6)	16	0.50 km	1.03 km	1.81 km	2.02 km	0.10–2.65 km	100%
		0.31 mi	0.64 mi	1.12 mi	1.26 mi	0.06–1.65 mi	
Children (7–12)	15	0.80 km	1.48 km	2.50 km	3.20 km	0.14–8.00 km	96%
		0.50 mi	0.92 mi	1.55 mi	1.99 mi	0.09–4.97 mi	
Youths (13–15)	23	0.86 km	1.49 km	3.00 km	4.18 km	0.40–7.00 km	100%
		0.53 mi	0.93 mi	1.86 mi	2.60 mi	0.25–4.35 mi	
Misc. Adults	49	0.75 km	1.70 km	3.57 km	7.82 km	0.10–19.00 km	98%
		0.47 mi	1.06 mi	2.22 mi	4.86 mi	0.06–11.81 mi	
Despondents	26	0.40 km	0.81 km	1.28 km	1.60 km	0.10–3.38 km	54%
		0.25 mi	0.50 mi	0.80 mi	0.99 mi	0.06–2.10 mi	
Dementia	41	0.40 km	1.00 km	1.46 km	2.40 km	0.10–5.43 km	73%
		0.25 mi	0.62 mi	0.91 mi	1.49 mi	0.06–3.37 mi	
Fishermen	38	0.92 km	1.77 km	4.15 km	6.01 km	0.45–17.70 km	91%
		0.57 mi	1.10 mi	2.58 mi	3.73 mi	0.28–11.00 mi	
Hikers	53	1.35 km	2.23 km	4.80 km	7.52 km	0.22–24.00 km	94%
		0.84 mi	1.39 mi	2.98 mi	4.67 mi	0.14–14.91 mi	
Hunters	127	1.30 km	2.39 km	3.83 km	8.00 km	0.10–19.31 km	94%
		0.81 mi	1.49 mi	2.38 mi	4.97 mi	0.06–12.00 mi	

Compiled by Ken Hill, Halifax Regional SAR, August, 2006.

Explanation of Table C.3. Look at the row for Children (1–6). There were 16 children in this category. 25% of them were found within a circle of radius 0.31 mi centered at the IPP. 50% were

found within a 0.64 mi radius, 75% within a 1.12 mi radius, 90% within a 1.26 mi radius, and 100% within a 1.65 mi radius. None were found within 0.06 mi of the IPP.

Forested Wilderness Areas in U.S.

Table C.4: Distances Traveled for Lost Persons in Forested Wilderness Areas in U.S.

Category	Cases	Hilly or Mountainous Terrain					Flat Terrain				
		Median	25%	50%	75%	Max	Median	25%	50%	75%	Max
Children (1—6 yrs)	22	0.3 ⇓	0.1 ⇑ 0.5 ⇓	0.5 ⇑ 0.5 ⇓	1.5 ⇑ 1.4 ⇓	89% 1.6 ⇑ 2.6 ⇓	1.1	1.0—1.6	0.6—1.7	0.5—2.1	92% 0.0—2.2
Children (6—12 yrs)	24	1.6 ⇓	1.0 ⇓ 2.0 ⇓	0.5 ⇑ 2.1 ⇓	2.0 ⇑ 4.0 ⇓	92% 2.6 ⇑ 4.1 ⇓	1.2	0.8—1.2	0.7—2.0	0.2—2.2	92% 0.0—3.0
Elderly	24	1.2 ⇓	0.5 ⇓ 1.8 ⇓	0.0 2.4 ⇓	0.4 ⇑ 2.6 ⇓		1.0	0.8—1.0	0.7—1.2	0.1—1.3	93% 0.0—3.0
Hikers	44	2.5 ⇓	2.0 ⇓ 3.0 ⇓	0.6 ⇓ 2.0 ⇓	0.4 ⇑ 6.1 ⇓		2.0	1.4—2.4	1.0—3.2	0.2—3.3	94% 0.0—4.0
Hunters	100	2.0 ⇓	1.8 ⇓ 2.8 ⇓	0.7 ⇓ 3.1 ⇓	0.8 ⇑ 4.0 ⇓	93% 3.0 ⇑ 6.0 ⇓	1.6	1.0—1.6	0.9—2.2	0.1—2.3	89% 0.0—3.0
Misc.	15	1.6 ⇓	0.6 ⇓ 1.6 ⇓	0.0 3.0 ⇓	1.4 ⇑ 3.1 ⇓	84% 2.5 ⇑ 3.2 ⇓	1.6	1.1—1.6	0.5—1.8	0.1—2.8	89% 0.0—4.0

Table C.4 is a summary of some of the work of Syrotuck, see Reference [Syrotuck].

Explanation of Table C.4. Look at the row for Children (1–6). There were 22 children in this category. The median distance from the IPP for this category in Hilly or Mountainous Terrain was 0.3 miles downwards, and in flat terrain was 1.1 miles. 25% of the subjects in Hilly or Mountainous Terrain were found between 0.1 miles upwards and 0.5 miles downwards from the IPP, whereas in flat terrain they were found between 1.0 and 1.6 miles from the IPP.

Section C.3

Survivability

To quote Syrotuck (see Reference [Syrotuck, page 57]): *"It is difficult to predict who will and who will not survive under a given set of circumstances."*

By analyzing data from New York and Washington State, Syrotuck found that, **of those subjects who died**,

- 45% were dead within 1 day.
- 74% were dead within 2 days.
- 83% were dead within 3 days.
- 92% were dead within 4 days.
- The remaining 8% took longer than 4 days to die.

He also found that

- 4% of children died in good weather, whereas 66.6% died in bad weather.[2]
- 11% of adults died in good weather, whereas 53.3% died in bad weather.
- 35% of the elderly died in good weather, whereas 67% died in bad weather.

Kelley (see Reference [Kelley, pages 20–33]) also studied survivability and concluded that subjects[3] who died from hypothermia survived for a maximum of

[2] Bad weather is defined as temperatures below 45°F at any time while the subject is lost combined with some rain or snow, or temperatures above 45°F with extensive rain.

[3] Kelley defines a subject as being a 25-year-old male wearing clothing similar to a suit.

- 3 days when the temperature[4] was 0°F.
- 4 days when the temperature was 10°F.
- 6 days when the temperature was 20°F.
- 8 days when the temperature was 30°F.

However, at all these temperatures some subjects died from hypothermia on the first day—some within hours of being lost.

Adolph (see Reference [Adolph]) studied the days of expected survival of immobile, responsive subjects (these were military personnel who were not lost) in a desert environment in terms of the amount of water available. See Table C.5.

Table C.5: Days of Expected Survival in Terms of Available Quarts of Water and Temperature in Shade

Max. Temp °F	0	1	2	4	10	20
120	2	2	2	2.5	3	4.5
110	3	3	3.5	4	5	7
100	5	5.5	6	7	9.5	13.5
90	7	8	9	10.5	15	23
80	9	10	11	13	19	29

Explanation of Table C.5. Look at the row for 120°F. Subjects who had 0, 1, or 2 quarts of water available, had a life expectancy of 2 days. Those who had 4, 10, or 20 quarts of water available, had a life expectancy of 2.5, 3, or 4.5 days respectively.

Amazing Survival Story

Having said all this, be aware that there are some amazing survival stories. For example, on May 8, 2011, 56-year-old Rita Chretien of Penticton, B.C., was found after being lost for 48 days in the Nevada backcountry. The Chretiens were en route from their Penticton home to a Las Vegas trade show on March 19, 2011, when their 2000 Chevrolet Astro van became stuck on a muddy U.S. Forest Service road in a cold, untamed, mountainous, remote region near where Oregon, Idaho and Nevada meet. They got lost because they were "foolishly following a GPS without a lot of experience". Her husband went searching for help on March 22, but did not return. Rita survived for more than seven weeks by staying put, eating snow and granola bars. On May 16, 2011, the search for her husband, Albert, was suspended until weather and snow conditions improved.

In August 2011, Elko County sheriff's deputies ended their efforts to locate Albert Chretien after attempts continued to offer no clues to the missing man's whereabouts. "We're assuming that he is deceased and that his remains have been scattered," said Elko County Sheriff's Lt. Marvin Morton. On September 29, 2012, his remains were found in a secluded area about 7 miles west of the vehicle by a pair of local hunters. The remains were intact and had not been scattered by animals. Chretien had been heading in the right direction and was not too far from a road, but his journey was likely hampered by deep snow.

[4] This temperature includes the effects of wind chill.

APPENDIX D

Using Cell Phone Information

The cell phone has dramatically changed SAR.

1. First and foremost the change is seen in how incidents are reported. While it used to be that SAR incidents, particularly overdue people, were reported by a third party, more and more the incidents are being reported by the individual involved via cell phone.
2. Secondly and as important is the ability to use cell phone data to aid in the location of a subject.
3. Finally the cell phone has added another communication tool for SAR personnel and many cell phones now have integrated cameras so photos of evidence or conditions can be sent between field teams and the ICP almost in real time.

This section focuses on the use of cell phones to locate a person. In some areas the 911 center may be Phase II compliant which means that a cell phone GPS location can be transmitted from the phone to the 911 center or PSAP (Public Safety Answering Point). In other areas that information may not be available and other techniques may need to be used to aid in locating the cell phone. This generally involves determining the cell phone provider and the target cell phone number for the search subject. The cell phone carrier can be usually be determined by checking the number on the website `http://www.fonefinder.net`. A check can also be made to determine if the phone number has been ported to a new carrier by checking the number with NeuStar (an officer must apply for a NeuStar account at `http://www.npac.com`). A law enforcement agency can call the cell phone carrier's law enforcement assistance unit and request some information that can aid in the location of the cell phone.

> A Public Safety Answering Point is a call center responsible for answering calls to an emergency telephone number for police, firefighting, and ambulance services.

Cell phone service may be needed by the IRIC in areas were there is limited service. Most major cellular service providers have portable cellular towers called Cell on Wheels (COW) or Cell on Light Truck (COLT) that can be requested by the IRIC to be brought to the area of an incident. It is worthwhile to develop relationships with local representatives of these companies to see the available types of equipment and services.

Obtaining Data from Cellular Providers

The Communications Assistance for Law Enforcement Act of 1994 (CALEA) defined the statutory obligation of telecommunications carriers to assist law enforcement in executing electronic surveil-

lance pursuant to court order or lawful authorization. As a result of this act the ASKCALEA website `http://www.askcalea.net` was established and upon approval of an officer's application for access to the site, provides useful information on cell phone investigations including cell site databases and contacts for cellular providers. Cellular providers can disclose communications information to law enforcement without a warrant or subpoena "*. . . if the provider, in good faith, believes that an emergency involving danger of death or serious physical injury to any person requires the disclosure without delay of communications relating to the emergency.*" (18USC2702). The provider may disclose customer records "*to a governmental entity, if the provider reasonably believes that an emergency involving the immediate danger of death or serious physical injury to any person justifies the disclosure of the information.*" (18USC2702).

In the case of a missing person in a SAR event it can often be assumed that the person is in danger as the nature of the problem and the location of the problem is unknown. When the cellular carrier is contacted the technician asks for the nature of the incident and the target phone number. The carrier often faxes an Emergency Information Request form that needs to be completed and asks for the type of information requested.

The major cell phone carriers are used to receiving these requests and are generally very helpful. There are some smaller carriers that do not receive these requests as often and it may take some time to find the right person to talk to in order to receive the information. It is useful to know what cell phone carriers have towers in each jurisdiction and establish a relationship with them before an emergency so that the 24-hour contact information is confirmed prior to an emergency.

Cell phones from one carrier may roam onto another carrier's network through agreements between the companies. This may create complications generating location information. If it is known that a cell phone call was made by a search subject but the call transaction is not appearing on the subject's cell phone carriers logs it may be that the phone roamed onto a different network. The home carrier may be able to provide information about roaming agreements so that those other carriers can be contacted.

Useful Information From Cellular Carriers

- *Cell phone status (on or off).*
- *Time of last activity.*
- *Last cell tower used (street address and Lat/Long).*
- *Sector on tower (many towers are tri-sector towers).*
- *Azimuth of the center of the tower sector (if a tri-sector tower, the azimuth is the center of the sector and the boundaries of the sector are 60 degrees on either side of that azimuth).*
- *Distance from the tower (this can often be determined by the signal strength).*
- *Any other location information related to the cell phone (this is a good statement to add to the Emergency Information Request form).*

Using Cellular Data

The information received can be plotted on a topographic map to help determine an area to search for the subject. It should be noted that the preferred Lat/Long format for most cellular carriers is decimal degrees (hddd.ddddd). As with any information it should not be relied upon solely especially if it conflicts with other investigative information.

At the outset of a search it is a good practice to call the cell phone number of the search subject as well as sending a text message to the phone to initiate some activity with the phone. Following

that activity the query of the cellular carrier may provide some important information. Periodically checking with the cellular carrier about any updates to location information is also a good practice.

Cellular Forensic Analysis

More sophisticated cell phone forensic analysis is available through the Civil Air Patrol (CAP) and some other law enforcement agencies such as the U.S. Marshals Service. The Civil Air Patrol's cellular forensic team can be activated through the Air Force Rescue Coordination Center. The analysis provided by the CAP includes more sophisticated interpretation of signal strength and what area can be "seen" by the cell tower to determine high probability areas to search. The U.S. Marshals Service and other law enforcement agencies may have cell phone locating equipment that allows the tracking of a particular cell phone and the ability to communicate with that phone.

Cell Phone Data Analysis

On June 28th, 2013 the Coconino County Sheriff's Office received a cell phone call to 911 from a subject who indicated he had rolled his UTV and was seriously injured. He was not able to provide his exact location and some of his description of where he thought he was located was contradictory. The general location was near Tusayan just south of the Grand Canyon South Rim.

Sheriff's Office patrol deputies and Fire and EMS personnel responded to the general area and began to search forest roads for the accident. A Department of Public Safety helicopter was also dispatched to aid in the search, as was the Sheriff's Office SAR Unit.

The SAR Coordinator identified the cell phone carrier for the caller's cell phone and initiated contact with that carrier to start to determine the location of the phone. The cell phone had utilized a cell phone tower that was located approximately 40 miles to the southeast. With that distance the arc created by the boundaries of the sector was very large.

The SAR Coordinator determined that a more sophisticated cell phone data analysis would be of use to narrow down the locations that the cell phone could be communicating with the cell phone tower. A request was made through the Arizona Division of Emergency Management's State SAR Coordinator for assistance from the CAP Cellular Forensics Specialist.

The CAP Cellular Forensics Specialist was provided with the cell phone number and the case number from the carrier that was generated from the first contact between the carrier and the SAR coordinator. In a short period of time several Google Earth maps were prepared and emailed to the SAR coordinator by the CAP with likely locations for the cell phone.

Search efforts were adjusted based on that new data and shortly after the adjustments a NPS Ranger assisting on the search located the accident scene and the subject alive but in need of medical treatment. EMS resources were routed to the scene and the patient was flown by helicopter to the hospital.

Without the cell phone data analysis the search may very well have been prolonged.

Documentation

It is important to document the cell phone investigation including any case numbers assigned by the cell phone company. This provides some continuity in the investigation and minimizes confusion if the investigation is passed off to CAP or some other agency or personnel for follow-up.

An IRIC who intends to use these techniques should keep a copy of a contact list for the various cellular carriers such as the Law Enforcement Telephone Investigations Resource Guide which is a Law Enforcement Sensitive document published by the U.S. Department of Justice.

If the incident which started out as a search becomes a criminal matter it is important to involve a law enforcement investigator and seek search warrants for the cell phone records as these may be important in court proceedings. A preservation letter may be sent to the cell phone carriers while a search warrant or subpoena is being obtained.

Smart Phone Apps

The proliferation of smart phones has made locating some subjects who are self-reporting by cell phone easier since no interaction with the cell phone carrier is needed. Most smart phones have some location services available which can display the coordinates from an internal GPS. For example on the Apple iPhone, if location services are activated, the compass page in the Utilities shows the latitude and longitude of the cell phone. There are many other GPS applications that can be downloaded to smart phones that can also display location information. Additionally there are programs that allow cell phone users to share their location with other users. It is helpful to know a little about the common smart phone platforms (Apple and Android) so that a lost subject can be talked through finding the location information.

Cell Phone Pinging

Early one morning, an inexperienced hiker went on a solo hike in the Santa Catalina Mountains, north of Tucson, Arizona. She called her husband around 1030, reporting being lost and off trail. He gave her some directions and tips and she continued. At 1140 she called her husband again reporting that she had fallen in very rugged terrain and was seriously injured—depressed skull fracture, compression fracture of T–11, tibia fracture, onset of rhabdomyolysis, and multiple soft-tissue injuries.

Authorities worked with the subject's cell phone provider and obtained a number of possible coordinates, which ultimately led to her being found alive by a search helicopter. Following a number of surgical procedures, her prognosis is excellent. Had she not been found when she was, the outcome would have been vastly different.

Text Messaging

Text messaging is often a good way to communicate with a search subject who is using a cell phone because it takes less bandwidth and often goes through when voice calls do not. Currently only very few 911 centers can receive 911 text messages but this capability is beginning to expand. SAR personnel should become familiar with the capabilities of the their 911 call centers.

Cell Phone Pinging

In Tucson, Arizona, on a Monday in 2013, a person reported that a co-worker had not come in to work that morning. According to the reporting party, the missing subject is an avid rock climber and certainly went out this weekend, possibly to Mt. Lemmon (30 miles north of Tucson), to the Homestead (near Winkelman, 70 miles north of Tucson), to the Dragoons (60 miles east of Tucson), or to the Chiricahuas (120 miles east of Tucson). The reporting party had checked the subject's house and regional hospitals, with no success. The subject did not answer his cell phone. The reporting party then contacted the authorities.

The authorities contacted the subject's cell-phone provider who pinged his cell phone. The GPS coordinates placed the phone near Mt. Hopkins (60 miles south of Tucson), where the subject was found, on rope, midface, deceased, covered in bee stings. Although the ending could have been better, it does illustrate the power of the cell phone in a search incident.

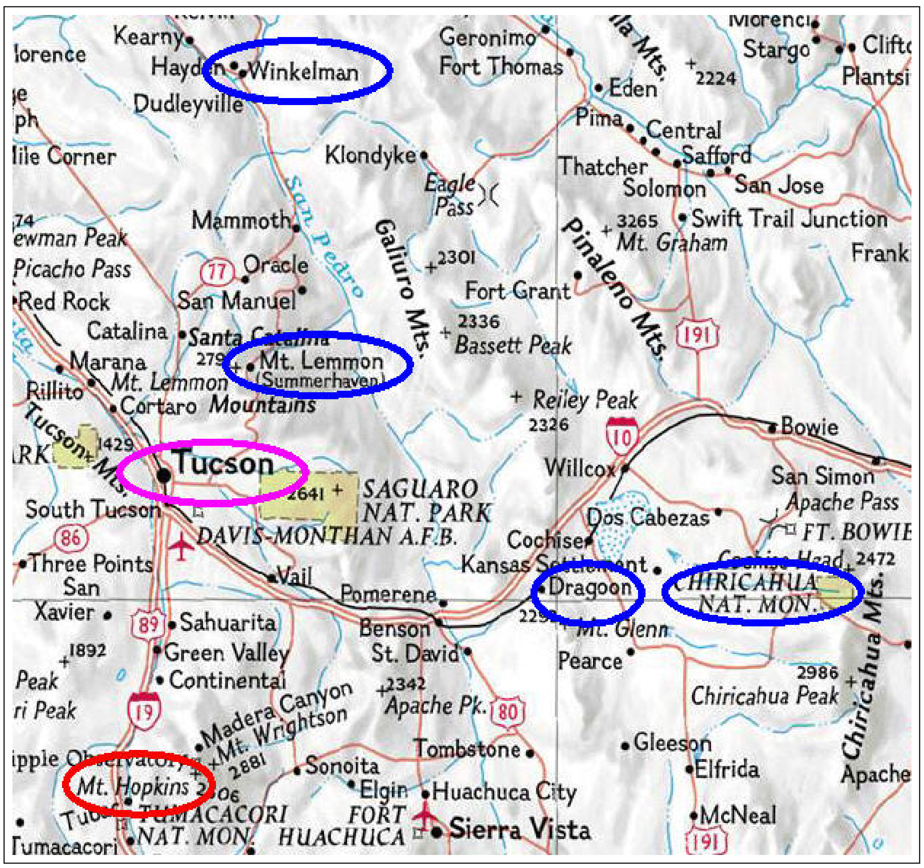


Figure D.1: Blue—possible subject locations. Red—actual subject location.

Caution

Smartphone users can opt to turn on or off their locations services on the phone, and that is often done to enhance battery life or enhance privacy. That is the GPS. When someone dials 911 the GPS is automatically activated even if location services are turned off. A potential problem is that when the location services are off the GPS almanac data is not updated and becomes out of date. If there is almanac data that is more than a few days old or the phone/GPS have moved more than several

hundred miles the initial location provided when the GPS is activated may have significant error. It takes about 12.5 minutes for the new almanac data to be downloaded to the phone/GPS each day. This may be the source of location errors when a person calls 911 for help and they are not found at the location indicated on the ANI/ALI (Automatic Number Identification/Automatic Location Identification) screen in a communications center or their verbal description does not match the coordinates provided on the ANI/ALI screen.

When a "ping" is requested by emergency services some companies rely on the phone GPS while most use some form of tower triangulation and/or time on arrival (TOA). Some cell companies give GPS based coordinates from the phone while the others use the triangulation or TOA method. If the phone is within view of several towers the confidence in the triangulated location is better, with fewer towers it is worse. Even with poor confidence in the location of the handset from the GPS or triangulation/TOA method the tower/sector/distance from the tower, if provided, is fairly reliable.

APPENDIX E

SAR Map Symbols

Figures E.1 and E.2 show the "Incident Command System Map Display Symbology For Land SAR Missions" (suggested for placement on a base map), which were developed by Mark Pennington, VA DE; revised by Paul Anderson, Jim Stumpf, and Steve Foster; adopted by NASAR; and approved in *ASTM F1846 Standard Practice for Symbols and Markings for Use With Land Search Maps.*

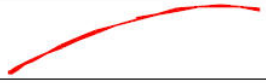
Color used (RED)		PLS, LKP OR IPP (Indicate which and include date and time)
Color used (RED)		CLUE FOUND (Indicate number and location with UTM coordinates)
Color used (BLUE)		INCIDENT COMMAND POST
Color used (BLUE)		INCIDENT BASE
Color used (BLUE)		STAGING
Color used (BLUE)		CAMPS (Identify by name)
Color used (BLUE)		REPEATER OR MOBILE RADIO RELAY (Identify by number)
Color used (BLUE)		HELIBASE
Color used (BLUE)		HELISPOT (Indicate number and location with UTM Coordinates)
Color used (RED)		PLANNED SEARCH AREA BOUNDRY

Figure E.1: Standard Search and Rescue map symbols, Part 1

Color used (BLUE)		THEORETICAL SEARCH AREA
Color used (BLUE)	23%	STATISTICAL SEARCH AREA WITH POA
Color used (BLACK)		TRAVEL BARRIER
Color used (BLACK)	A B	DIVISION BOUNDARY (Indicate by letter)
Color used (BLACK)	6	SEGMENT BOUNDARY (Indicate by number)

SUGGESTED FOR PLACEMENT ON OVERLAYS

COLOR BASED ON TYPE OF RESOURCE MARKINGS BUILD ON EACH PREVIOUS LAYER		FIRST SEARCH COVERAGE
		SECOND SEARCH COVERAGE
		THIRD SEARCH COVERAGE
		FOURTH SEARCH COVERAGE
Colors used for above searches	DOG - BROWN GROUND CREW - GREEN AIR SEARCHES - BLUE	BOAT – ORANGE
Color used (RED)		CONFINEMENT BOUNDRY OR SEARCH PATROL
Color used (BLACK)	DOG # 2, CREW # 3, TF # 4, ST # 1, PATROL # 5	RESOURCE DESIGNATOR

Figure E.2: Standard Search and Rescue map symbols, Part 2

APPENDIX F

Glossary

AA	Agency Administrator.
AAR	After Action Review. An AAR is a mechanism designed to evaluate an incident in order to improve performance by encouraging strengths and correcting weaknesses.
AFRCC	Air Force Rescue Coordination Center
Agency Administrator	Chief executive officer (or designee) of the agency or jurisdiction that has responsibility for the incident. The designee might be the person to whom the IC reports. Usually the Agency Administrator is not on scene.
ATL	Attempt to Locate.
Bogus Search	A search in which, unknown to the searchers, the subject is not missing.
BOLO	Be on the lookout. All-points bulletin.
C&G	Command and General Staff.
CALEA	Communications Assistance for Law Enforcement Act.
COA	Certificate of Authorization. Currently for a public safety agency to operate a UAS the agency needs to apply for and receive a Certificate of Authorization from the Federal Aviation Administration (FAA).
CODIS	Combined DNA Index System.
COML	Communications Unit Leader is responsible for developing plans for the effective use of incident communications equipment and facilities.
Command Staff	Under ICS, this consists of the PIO, the LOFR, and the SO.
CPOD	Cumulative Probability of Detection. The probability of multiple independent resources detecting the subject in a segment, assuming the subject is in that segment. It is a measure of how well the segment has been searched.
Division	Under ICS, a division is an operational unit established using geographical boundaries.
DIVS	Division/Group Supervisor.

DMOB Demobilization Unit Leader.

DOA Delegation Of Authority. A set of written guidelines from the agency of jurisdiction to the Incident Commander establishing extent of authority, operational and fiscal constraints, and other important information.

DOCL Documentation Unit Leader.

DRPO Display Processor.

FOBS Field Observer.

FSC Finance Section Chief.

General Staff Under ICS, this consists of the OSC, the PSC, the LSC, and the FSC.

GIS Geographic Information System. A GIS integrates hardware, software, and data for capturing, managing, analyzing, and displaying all forms of geographically referenced information.

GISS Geographic Information System Specialist.

GPS Global Positioning System. Based upon satellites, this device gives exact locations using latitude and longitude.

Group Under ICS, a group is a collection of resources in the Operations Section established by function, that is, what it does, such as "Rescue Group", "EMS Group", "Investigations Group".

Hasty Search A search whose purpose is to cover the most obvious places a subject might be in the least time possible. Usually the first kind of search tactic to be utilized.

Helibase The main location for parking, fueling, maintaining, servicing, and loading of helicopters operating in support of an incident.

Helispot A location where a helicopter can safely take off and land.

IAP Incident Action Plan. An oral or written plan containing general objectives reflecting the overall strategy for managing an incident. There is only one IAP for each operational period.

IC Incident Commander. The individual responsible for all incident activities, including the development of strategies and tactics and the ordering and the release of resources.

ICP Incident Command Post. The field location at which the primary tactical-level, on-scene incident command functions are performed.

ICS Incident Command System. A standardized on-scene emergency management system. Also, Investigate, Contain, Search—which dictates the order of initial actions.

I/I Intelligence/Investigations.

IMT Incident Management Team. Under ICS, the IMT consists of the IC, the Command Staff, and the General Staff.

IPP Initial Planning Point. The first LKP or PLS.

IRIC Initial Response Incident Commander.

IRO Incident Response Organizer, a free software program, available at ??? that is used to document the Route and Location Search effort, including all actions taken during the Initial Response to a search incident.

JAS Job Action Sheet.

LE Law Enforcement.

Limited Continuous Mode This is the state of an incident where no active searching is done but if clues are discovered they are investigated and, if warranted, active searching resumes.

LKP Last Known Position. The last known location of the missing subject determined by physical evidence such as a vehicle, a discarded object, or a footprint.

LOFR Liaison Officer. Sometimes abbreviated LNO.

LPB Lost Person Behavior. An analysis of how lost subjects behave by putting them into different categories.

LPQ Lost Person Questionnaire. A written document that describes all available physical and mental characteristics of a lost person.

LSC Logistics Section Chief.

MEDL Medical Unit Leader.

NCIC National Crime Information Center.

OP Operational Period.

OSC Operations Section Chief.

PIO Public Information Officer.

Planning Meeting Part of the planning process. A meeting that provides the opportunity to review and validate the Operational Plan for the next OP.

PLB Personal Locator Beacon.

PLS Place Last Seen. The location where the missing subject was actually seen by another person.

POA Probability of Area. POA applies to every segment and the ROW. The POA of a segment is the probability that the subject is in that segment taking into account all the searches that have taken place within the search area.

POD Probability of Detection. The probability of a resource detecting the subject in a segment, assuming the subject is in that segment and is immobile. It is a measure of how well the segment has been searched by that resource.

PPE Personal protective equipment. Equipment worn to minimize exposure to serious workplace injuries and illnesses.

PSAP A Public Safety Answering Point is a call center responsible for answering calls to an emergency telephone number for police, firefighting, and ambulance services.

PSC Planning Section Chief.

PTB Position Task Book.

RESL Resources Unit Leader. Sometimes abbreviated RUL.

ROW Rest of the World. The ROW is the probability that the subject is outside the search area taking into account all searches that have taken place inside the search area.

SAR Search and Rescue.

Segment A uniform region within the search area with well-defined boundaries, recognizable to resources in the field. The size of this region should be searchable by a resource in one operational period.

Single Resource A single resource is an individual piece of equipment, or group of individuals, with an identified supervisor, that can be used in a tactical assignment.

SITL Situation Unit Leader. Sometimes abbreviated SUL.

SO Safety Officer. Sometimes abbreviated SOFR.

Span of Control The number of people that a manager can supervise effectively. ICS recommends that the number is between 3 and 7, with 5 suggested as an optimum.

Staging Area A staging area is where resources are kept while waiting to be assigned.

Strategy Strategy involves the "big picture"—the overall plan, and how those plans will achieve the goals and objectives.

STL Strike Team Leader.

Strike Team A strike team consists of resources of the same kind with common communications and a leader.

Tactic Tactic is an action that leads to the execution of the strategy. For example, a strategy might be to search particular segments. The search technique used to search a particular segment is a tactic.

Tactics Meeting Part of the planning process. A brief, informal meeting to review the tactics developed by the Operations Section Chief for the next OP.

Task Force A task force consists of resources of different kinds with common communications and a leader.

TFL Task Force Leader.

UAS Unmanned Aerial System.

UC Unified Command is an element in multi-jurisdictional or multi-agency domestic incident management. It provides guidelines to enable agencies with different legal, geographic, and functional responsibilities to coordinate, plan, and interact effectively without giving up their statutory or jurisdictional authority and obligations.

WOBS Weather Observer.

YABI Yet Another Brilliant Idea.

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