

The Art of Search and the Practical Search Operations Class

I just took the first half of a very good “Practical Search Operations” class – a follow-on to the MSO or MSF class – by Dave Carter and Mark Eggeman of Search and Rescue Training Associates of Virginia (also members of the ASRC’s Tidewater SAR Group). This is a great course, sort of “everything about search you wanted to know, but never learned from MSO.” The course is specific to Virginia but we’re trying to adapt it to Pennsylvania. It’s sort of a dogmatic course, but consciously so – the point is not that this is the only way to do a search, but this is a very good way to run it, and there are advantages to having a “book way” to run the nitty-gritty details of the search.

As I was taking notes, I couldn’t help noting the parallel with Sun Tzu’s Art of War – dogmatic rules encapsulating expert experience. Now Sun Tzu also has some generic information on leadership, as well as specific tactical information – some of which seems to apply pretty well if you substitute “search” for “war.”

I happened to have an copy of the Art of War handy, So I thought I’d take some of the PSO rules, mix them up with a free translation of the relevant part of The Art of War, and below is what resulted: a pastiche of Sun Tzu with SARTA material. Since, during the time The Art of War was written, it was common to take the teachings of a wise master, add one’s own ideas, and attribute to the master, I’m in good company in what I did.

As this is an act of art, not science or technical writing, I will be happy to accept suggestions for improvement (kconover+@pitt.edu), and will post updates on my Web site (www.pitt.edu/~kconover) [now accessible from www.conovers.org] but reserve the right to scream “no, no, NO!”, drum my heels on the floor, and refuse to make changes without any other justification.

My apologies for modifications to both Sun Tzu and SARTA, and also my apologies for maybe starting a new religion. Hope you find it at least amusing.

The Art of Search

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Appalachian Search and Rescue Conference

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April 26, 1998

I. Initial Actions: Laying of Plans and Establishing a Base

Sun Tzu said: The Art of Search is of vital importance to the State. It is a matter of life and death, a road either to safety or to ruin. Hence it is a subject of inquiry which can on no account be neglected. The Art of Search, then, is governed by five constant factors, to be taken into account in one’s deliberations, when seeking to determine the conditions obtaining in the field.

These are:

- (1) The Moral Law
- (2) Heaven,
- (3) Earth,

(4) The Incident Commander, and

(5) Method and Discipline.

The Moral Law, which is the Objectives of the Incident Action Plan, causes people to be in complete accord with the RA (Responsible Agent) and the IC (Incident Commander) so that they will follow them regardless of their lives, undismayed by any danger.

Sun Tzu said: in Search, the IC receives his commands from the RA. Having procured searchers and assembled the Incident Staff, the IC must blend and harmonize the different elements thereof before setting up the Base.

The enlightened IC completes **The Four Essential Parts** of the Incident Action Plan (IAP), and receives the RA's signature on these four:

- The **Objectives**,
- The **Medical Plan**,
- The **Communications Plan**, and
- The **Organizational Assignment**.

Heaven signifies night and day, cold and heat, times and seasons, and shelter for the Base..

Earth comprises distances, great and small; danger and security; open ground and narrow passes; the chances of life or death, and the location of the Base.

The Base must first serve **The Four Base Functions**:

- **Shelter**,
- **Power**,
- **Communications**, and
- **Administration**.

During the first hours of a search, the critical **Administration** tasks are sixteen, grouped in four sets of four. The **Four Fours** are:

- The **Four TAF files** (Task Assignment Form files):
the **Tasks To Be Done**,
the **Tasks Being Done**,
the **Investigation**, and
the **Tasks Completed**;

- The **Four Maps**:
the **Master Map**,
the **Clue Map**,
the **Tasks Completed Map**, and
the set of copies from which to make individual **Task Maps**;
- The **Four Sign-ins**:
the **SAR Personnel** sign-in,
the **Local Volunteer** sign-in
the **Vehicle Register**; and
the **Equipment Log**;
- The **Four Parts** of the **Initial TAFs** (Task Assignment Forms):
Assignment,
Personnel,
Communications, and
the attached **Task Maps**.

To accomplish the purposes of the search, the IC must assure the presence of **The Four Kits**:

- The **Operations Kit**, which contains the essential forms and related equipment, and for which the IC must task a staff member to find or make operational a photocopier, and assure enough flat space on which to work;
- The **Communications Kit**, which includes the mast, the base radio, and associated equipment, and the IC must task a staff member with setting up the radio and mast, as well as securing a telephone;
- The **Technical Kit**, which includes rescue and related gear; and
- The **Medical Kit**, which provides for the subject's likely medical needs.

The Commander stands for the virtues of wisdom, sincerity, benevolence, courage and strictness.

By **method and discipline** are to be understood the marshalling of the searchers in the proper Field Teams, the ICS Divisions and Groups, the graduations of authority and responsibility among the Incident Staff, the maintenance of routes and methods by which supplies may reach the searchers, and the control of search expenditures.

These five subjects should be familiar to every IC; he who knows them will be successful; he who knows them not will fail.

The IC who hearkens to my counsel and acts upon it will succeed; let such a one be retained in command! The IC who hearkens not to my counsel nor acts upon it will suffer defeat; let such a one be dismissed!

II. The Incident Commander

While heeding the profit of my counsel, avail yourself also of any helpful circumstances over and beyond the ordinary rules. According as circumstances are helpful, one should modify one's plans.

Now the IC who succeeds in a search makes many plans in his Command Post as the search proceeds. The IC who fails at a search makes but few pre-plans beforehand. Thus do many plans lead to success, and few plans to failure; how much more no plans at all! It is by attention to this point that I can foresee who is likely to succeed or fail.

To see success only when it is within the ken of the common herd is not the acme of excellence. Neither is it the acme of excellence if you run a search and succeed and the entire SAR community says "well done." To lift an autumn hair is no sign of great strength; to see the sun and moon is no sign of sharp sight. What the old-timers call a clever IC is one who not only succeeds, but excels in succeeding with ease. Hence the IC's victories bring neither reputation for wisdom nor credit for courage. The IC succeeds at searches by making no mistakes. Making no mistakes is what establishes the certainty of success, for it means succeeding at a search that is already assured of success. Hence the skillful searcher puts himself into a position which makes failure impossible, and does not miss the moment for finding the subject. Thus it is in search that the victorious IC only searches after the initial search plan has been completed, whereas the IC who is destined to failure first searches and afterwards develops a plan. The consummate IC cultivates the moral law, and strictly adheres to method and discipline; thus it is in the IC's power to control success.

III. Energy, Command and Control

Sun Tzu said: The control of a large search is the same principle as the control of a small one; it is merely a question of dividing up the search staff to keep a proper span of control. An officer should control no more than five others.

Running a large search under your direction is nowise different than running a small one; it is merely a question of instituting proper communications, both in Base and in the field.

In all searching, active search may be used, but strategy and passive search methods will be needed in order to secure success. Passive search methods,

efficiently applied, are inexhaustible as Heaven and Earth, unending as the flow of rivers and streams; like the sun and moon, the end but to begin anew; like the four seasons, they pass away to return once more.

There are not more than five musical notes, yet the combinations of these five give rise to more melodies than can ever be heard. There are not more than five primary colors (blue, yellow, red, white, and black), yet in combination they produce more hues than can ever be seen. There are not more than five cardinal tastes (sour, acrid, salt, sweet, bitter), yet combinations of them yield more flavors than can ever be tasted. In search, there are not more than two methods of search – the active and the passive – yet these two in combination give rise to an endless series of task types. The active and passive lead on to each other in turn, it is like moving in a circle – you never come to an end. Who can exhaust the possibilities of their combinations?

Energy may be likened to the bending of a crossbow; decision, to the releasing of the trigger.

Amid the turmoil and tumult of the search, there may be a seeming disorder and yet no real disorder at all; amid confusion and chaos, your organization of the searches may be without head or tail, yet it will be proof against failure.

The clever Field Team Leader (FTL) looks to the effect of the team's combined energy, and does not require too much from individuals. Hence his or her ability to pick out the right team members and use combined energy. When the FTL uses combined energy, the team's searchers become, as it were, like rolling logs or stones. For it is the nature of a log or a stone to remain motionless on level ground, and to move when on a slope; if four-cornered, but come to a standstill, but if round-shaped, to go rolling down. Thus the energy of a good Field Team is as the momentum of a round stone rolled down a mountain thousands of feet in height. So much on the subject of energy.

IV. Tactics and Tasks

Search tactics are like unto water; for water in its natural course runs away from high places and hastens downwards. So in searching in the field, the way is to avoid what is hard and strike at what is easy. Water shapes its course according to the nature of the ground over which it flows; the searcher works out his success in relation to the task that he is facing. Therefore, just as water retains no constant shape, so in search tactics there are no constant conditions. The FTL who can modify his or her tactics in relation to his task and thereby accomplish that task, may be called a heaven-born FTL.

The five elements (water, fire, wood, metal, earth) are not always equally predominant; the four seasons make way for each other in turn. There are short days and long; the moon has its periods of waning and waxing.

The vital center of any search, the kernel of the operation, is the Task Assignment Form (TAF). The TAF listens to what we want searchers to do; the TAF listens to what the searchers actually did to; and the TAF tells the Incident Commander where to find success.

An Incident Staff officer briefing a searcher is a jeweler setting a jewel in its setting.

An Incident Staff officer debriefing a searcher after a task is a jeweler looking for something fallen on the ground – and must distinguish the shiny stone from the true jewel.

The Book of Search Management says: in the field, the spoken word does not carry far enough; hence the institution of radios. Radios are means whereby the ears and eyes of the assembled staff may be focused on one particular point.

The enlightened Incident Commander will listen courteously to SAR team members who wish to stay together in the field – and then distribute them among various Field Teams. Personnel with similar training may work well together, but share weaknesses.

The enlightened Incident Staff officer will write clear and detailed descriptions on the Task Assignment Form. Enlightened Staff will also provide segment-area boundaries that are easily found by the searcher in the field. A credible search area segment is created such that a Field Teams can search it in four hours. The **Rule of Thumbs** says this is the size of two thumbs applied to a 1:24000 map, or about 160 acres. The Incident Staff officers who relies on drawn maps without accurate prose descriptions, including grid coordinates, invites disaster; the Incident Staff officer who writes a legible, concise prose description on the TAF is worthy of great praise.

When selecting resources for a task, the enlightened Staff officer will consider **The Six Essential Factors:**

- **Safety,**
- **Task Size,**
- **Weather,**
- **Re-usability,**
- **Availability, and**
- **Support Requirements.**

V. Leadership

A whole search may be robbed of its spirit; an IC may be robbed of his or her presence of mind. Now a searcher's spirit is keenest in the morning; by noonday, it has begun to flag; and in the evening, the searcher's mind is bent only on returning to Base.

There are trails which must not be followed, peaks which must not be climbed, cliffs which must not be scaled, water passages and sumps which must not be entered, and commands of the RA which must not be obeyed.

There are five dangerous faults which may affect an IC or FTL: (1) recklessness, which leads to destruction; (2) cowardice, which leads to failure; (3) a hasty temper, which can be provoked by insults; (4) a delicacy of honor which is sensitive to shame; (5) oversolicitude for the searchers, which exposes the IC or FTL to worry and trouble. These are the five besetting sins of an IC or FTL, ruinous to the conduct of a search. When a search fails, the cause will surely be found among these five dangerous traits. Let these be a subject of meditation.

If in training searchers, commands are habitually enforced, the search will be well-disciplined; if not, its discipline will be bad. If an IC shows confidence in the staff and searchers, but always insists on his or her orders being obeyed, the gain will be mutual.

Now a search operation is exposed to six calamities, not arising from natural causes, but from faults for which the IC is responsible. These are (1) flight from the field, (2) insubordination, (3) collapse, (4) ruin; (5) disorganization; (6) rout. Other conditions being equal, if a set of Field Teams is hurled against a search situation far beyond its capabilities, the result will be the flight of the Field Teams back to Base. When the common searchers are too strong and their Incident Staff too weak, the result is insubordination. When the Incident Staff are too strong, and the common searchers too weak, the result is collapse. When the higher Incident Staff are angry and insubordinate, and give their own orders from a feeling of resentment, before the IC can make a reasoned decision, the result is ruin. When the IC is weak and without authority; when the IC's orders are not clear and distinct; when there are no fixed duties assigned to the Incident Staff and no clear tasks assigned to the searchers and the Field Teams are formed in a slovenly haphazard manner, the result is utter disorganization. When an IC, unable to estimate the difficulty of tasks, allows an inferior Field Team to engage a difficult task, and neglects to place picked searchers in the Field Teams that attack difficult tasks, the result must be rout. These are six ways of courting defeat, which must be carefully noted by the IC who has attained a responsible post.

If searching is sure to result in a save, then you must search, even though the RA forbid it; if searching will not result in a save, you must not search, even at the Responsible Agent's (RA's) bidding.

The IC who searches without coveting fame, and suspends a search without fearing disgrace, whose only thought is to protect the public and do good service to the RA, is the jewel of the kingdom.

No RA should put searchers in the field merely to gratify the RA's own spleen; no IC should continue or quit a search simply out of pique.

Anger may in time change to gladness; vexation may be succeeded by content. But a SAR team that has once been destroyed can never come again into being; nor can the dead ever be brought back to life.

Hence the enlightened RA is heedful, and the good IC full of caution. This is the way to keep an operation at peace and the searchers intact.

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