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# The Canadian Coast Guard

## Overview of Marine Disaster Scene Management

Reference prepared by:  
Canadian Coast Guard  
Maritime Services  
Search and Rescue



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Cover Photo – CCG French Creek 1 alongside BC Ferries life-raft, while CCGA and other small vessels begin transport of survivors to landing site during Nanaimo SAREX, April 2010.

## **MARINE DISASTER SCENE MANAGEMENT**

### **Introduction**

What is a disaster? **An event, either natural or man-made, that causes great distress or destruction or that requires a response beyond the normal capacities of the agencies involved.**

In the marine context this will often be a **multi-casualty incident (MCI)** or **mass rescue operation (MRO)** that requires a multi-agency response.

An important consideration is that the major marine disaster is **a relatively low probability but high consequence event**. This speaks to the need for training and preparation in anticipation of such an event, as infrequent as it may be. Normal operational methods are less likely to be successful and the consequences of mistakes can be catastrophic.

The principles of marine disaster scene management can also be applied to incidents that may not fit most people's definition of a disaster. It does not take a very large number of distressed or injured individuals to overwhelm a single Coast Guard resource.

Disasters at sea cannot usually be completely resolved by applying disaster plans evolved on land and as such **this section presents information that will help you manage a marine disaster**. It deals specifically with the responsible agencies and interagency operations, the key Coast Guard roles and the keys to success during a disaster response.

Remember that no plan can ever fully apply to all situations. **No disaster plan should ever be cut in stone**. One of the biggest challenges in dealing with such an incident is the need to be flexible and to adapt easily to an unfamiliar situation. Knowledge of the principles of marine disaster scene management along with common sense, communication skills and good seamanship will be very important if and when you encounter a multi-casualty situation.



CCGS "Cape Kuper" with life-raft from SAREX  
Ship to Shore, October 2006

## Disaster Requiring a Coast Guard Response

Though relatively infrequent, these high impact and potentially high consequence events do take place. Incidents that have or may occur include, but are certainly not limited to the following:

- Accidents involving large passenger vessels incidents including groundings, collisions, capsized or sinking, fire at sea or in port, chemical spill, etc.
- Emergencies involving offshore exploration exploitation platforms
- Terrorism or piracy
- Aircraft emergency landing or crash at sea or tidal area
- Infectious disease outbreaks
- Extreme weather events affecting multiple vessels
- Vessels stranded or crushed in ice
- Migrant vessels or smuggling of human cargo
- Land disaster requiring maritime evacuation



Survival craft from BCF “Queen of the North” alongside CCGS “Sir Wilfrid Laurier”, March 2006

Consider also that Coast Guard resources may well be the first assistance available to a small, isolated community afflicted by some form of disaster. It is conceivable that this assistance may need to be provided with no help from other agencies for some time.

The marine environment may in general make response more difficult since an emergency at sea often involves continued hazards and complications that must be dealt with in addition to the need to care for and evacuate survivors.

## Jurisdiction and Responsibility

Jurisdiction and responsibility is dependant on the location and nature of the incident. With respect to the marine disaster the Victoria Search and Rescue Region, Major Maritime Disaster Contingency Plan (MMDCP) describes responsibilities for the Owner/Agent, for the Master of the Distressed Vessel, for the SAR Authorities and the Provincial Authorities. The following applies to SAR Authorities... “In accordance with Canadian and International laws and conventions.....SAR authorities (DND, CCG) are responsible for:

- Incorporating a Incident Command Centre (ICC) with incorporates the JRCC;
- **Developing a SAR plan of action...;**
- **Accounting for all persons on board and searching for missing persons;**
- **Rescuing, stabilizing and transporting casualties for treatment;**
- **Rescuing and evacuating survivors to reception centres;**
- Notifying collateral authorities;
- Addressing all media enquiries regarding the SAR operation.

In a marine disaster, **after safety of responders, SAR of survivors is the first priority.** Once the SAR is resolved then environmental and investigation take over – these not be in

conflict. Also, as the incident moves from the marine environment to shore, the responsibility will be handed from the JRCC to the civil authority.

**The Master** of the distressed vessel is ultimately responsible for the welfare of his passengers and crew. This includes timely evacuation if required, developing an action plan in conjunction with SAR authorities and the owner/agent, and sharing information on all significant developments with SAR authorities. In short the CG is not in charge of evacuation but should assist the Master as appropriate; while the Master is not in charge of the SAR response but consults as appropriate.



Passenger evacuation as part of SAREX Ocean Guardian III, Sept 2007

### **Responsible Agencies**

As noted, responsibility for control of the incident will depend on location and jurisdiction. Effective incident management depends in part on having a clearly established command that is well communicated to all participating resources / agencies. Communications between agencies is frequently a challenge during a multi-agency response; pre-planning and additional effort in this area during incidents is critical.

### **Joint Rescue Co-ordination Centre**

The Joint Rescue Co-ordination Centre, or **JRCC**, is a DND operation staffed by Canadian Armed Forces and Coast Guard personnel. The JRCC receives reports of an emergency situation and tasks Coast Guard and Canadian Forces resources as required. During a marine or air incident, JRCC is the responsible authority and provides executive control of the operation. JRCC may provide an interface or liaison function with the provincial emergency program, ambulance authorities, police, any non-aligned resource or service and the involved owner / agent (e.g. cruise line).

### **Canadian Coast Guard**

The Coast Guard and the Coast Guard Auxiliary (CCGA) provide the two largest marine elements of the search and rescue organization, and are tasked by the JRCC.

The role of the Coast Guard in a multi-casualty situation will depend on where it occurs. If at sea, then triage, patient care and evacuation with tracking are likely to be carried out by Coast Guard personnel. If the disaster occurs on a shoreline with other responsible agencies responding, then Coast Guard resources may be tasked as requested to assist those civil authorities.

MCTS (Coast Guard Radio) provides communication services and connects the various SAR units with the JRCC as required.

### Canadian Armed Forces

In a disaster, the Canadian Forces response may include Transport and Rescue squadrons. How these resources are deployed will depend on the JRCC, based on the advice of the On-Scene Commander (OSC). If Search and Rescue Technicians (**SAR Techs**) are deployed, they can provide rescue, triage or advanced care at the casualty collection area, and will accompany patients to the hospital when military aircraft are used for this purpose.



DND SAR Techs work from CH-149 Cormorant during SAREX Ship to Shore. October 2006

### US Coast Guard

There is a history of cooperation between US and Canadian Coast Guards, both during exercises and on incidents. This includes the sharing of marine and air resources, as well as mutual support related to incident coordination and communications, particularly in border areas. The USCG uses the Incident Command System (ICS) as its model for command and control during a major incident.



USCGC Cutter "Liberty" attends to M/V "Empress of the North" after grounding and evacuation in Icy Strait, Alaska, May 2007

### Police

According to jurisdiction, the RCMP or provincial or municipal police will attend all multi-casualty situations. The role of the police in such cases is to secure the incident scene, provide control of vehicles and the movement of people, gather evidence and conduct an investigation.

### **Provincial Emergency Program**

Provincial Emergency Programs include a large network of trained volunteers who provide services such as land SAR, communications, housing, and field kitchens in the event of a disaster.

### **Fire Department**

The local fire department's role in a disaster varies considerably from community to community. Apart from fire combat or precautionary actions where there is a risk of fire or explosion, firefighters would be able to carry out most technical rescues of persons who are trapped and would assist in patient care, as first responders and stretcher bearers.

### **Ambulance Service**

The fundamental role of the ambulance service is to remove the injured to hospital. In addition, ambulance services are integrated into community disaster plans and, provided there are sufficient ambulance personnel at the scene, will be responsible for triage.

Ambulance personnel may be trained at the Primary Care (PCP) or Advanced Care (ACP) level. ACP, if present at the disaster scene will be a substantial asset and may provide medical care and interventions at the casualty collection area.

### **Hospitals**

A hospital disaster plan is put into effect when major casualties exceed a predetermined number. Some hospital disaster plans include sending an emergency physician and medical package to the disaster scene. The role of hospitals in a disaster is to carry out triage at their admitting department and provide definitive care.

### **Coroner**

The role of the Coroner is to take charge of the deceased, provide temporary morgue facilities, positively identify bodies, and carry out forensic pathology. If normal morgue facilities are unavailable, the Coroner will arrange temporary facilities. The Coroner is responsible for removal of the deceased from the field triage site. Later, the Coroner will conduct either an inquest or enquiry into the event.

The Coroner's jurisdiction begins at the scene of death, but his interests must always be secondary to the rescue of survivors from the scene. Coroner's staff will not hinder the rescuers in their task of removing living victims.

### **Media**

Media can assist by alerting the public to the situation in order to mobilize volunteers and to warn non-participants to stay away. Responsible media will not interfere with rescue operations and will give reasonable consideration to the privacy of those involved.



BCF "Queen of Oak Bay" after she lost power and drifted into Horseshoe Bay, crushing 22 vessels, June 2005

## Key Coast Guard Personnel

### JRCC Coordinator

The JRCC coordinator will be either a Coast Guard officer in a marine situation or a DND officer for an air incident. Air and marine will support each other in a major incident.

The coordinator initially receives indication of a problem and assigns appropriate resources. During the incident, the coordinator gives direction to the OSC and provides a communications interface between agencies.



JRCC Victoria with Air (foreground) and Maritime Coordinators

### On-Scene Commander (OSC)

The OSC will be designated by and represents JRCC at the scene. JRCC will usually select the largest available SAR vessel with the biggest executive structure and superior communications capabilities.

Depending on circumstances, the OSC may delegate the actual operation of the vessel to subordinates in order to be able to concentrate on managing the incident. The OSC must **be prepared to step back from active involvement so as not to be overtaxed**. It is also appropriate to periodically re-evaluate the status of OSC and reassign this role if in the best interests of managing or resolving the incident.

The OSC should appoint Transport and Triage Officers in anticipation that these functions may be required. These roles may be combined, dependant on resources and situation. As soon as trained rescue personnel are on scene, the OSC or Transport Officer will determine if the scene is **STABLE or UNSTABLE**, and convey this information to the triage officer and rescue personnel who may approach the scene or board the distressed vessel.

As the incident progresses the OSC serves as the eyes and ears of the JRCC, provides on scene decision making (including stability, coordination of resources, and rescue plan), requests additional resources as required and serves as a vital communications link between JRCC and resources on scene.

### Transport Officer

If the OSC is the eyes and ears of the JRCC then the Transport Officer may be thought of as the eyes and ears of the OSC. The Transport Officer role may best be filled by a ship's officer and is required in a major incident or mass rescue operation or if the situation is such that a number of trips need to be made to accommodate all survivors. If resources are limited this role may need to be filled by the Triage Officer or another RS at scene.

The **Transport Officer** carries out the following duties:

- As appropriate, **serves as leader of the rescue party** at the incident scene (e.g. on board the stricken vessel, on shore, etc.)
- On behalf of the OSC makes contact with the vessel master, provides an ongoing assessment of scene stability and numbers of POB
- Aids in selecting casualty collection areas and most suitable evacuation point(s)
- With Triage Officer assign survivors to the transport in a logical sequence, as determined by triage and scene stability
- Coordinates marshalling of the transport units and requests additional resources if required
- Is **responsible for casualty tracking** - keeps accurate tally of evacuees, with as much detail as possible
- Periodically updates the OSC as to on scene and transport status.



Transport Officer gives Situation Report during training exercise

### **Triage Officer**

The Triage Officer should be appointed prior to reaching the disaster scene. He or she must be familiar with the principles of marine disaster scene management and triage. A senior Rescue Specialist on a CG vessel is a good candidate for this role.

Once on scene, the Triage Officer carries out the following duties:

- Reports to the OSC via the Transport Officer (if assigned)
- Aids in determining scene stability, casualty collection area and evacuation points
- Quickly **estimates the number and severity of casualties** and formulates a triage plan appropriate to the situation (recruit assistance as required)
- Conducts a rapid triage (as with **START Triage**) and tags each patient to indicate the priority for care or evacuation, as determined by scene stability
- After initial triage, re-evaluates and conducts secondary triage as appropriate.



Triage Officer tags survivors during training exercise

**The triage officer must resist the temptation to become involved in the first aid until triage is complete.**

### **Coast Guard Rescue Specialist**

The Rescue Specialist (RS) will not in all cases be the triage officer. The RS should, in concert with the Triage Officer, carry out the following duties:

- With regard to scene stability and priorities at scene, assist Triage Officer
- Set up first aid and resuscitation equipment at the casualty collection area

- Provide emergency care to patients who are brought to the casualty collection area, in the order of priority
- Provide direction to first aiders on scene
- Assist the Triage Officer by reassessing each patient as to evacuation priority and re-tag the patients as necessary
- As time permits, keeps a record of patient names and aids with casualty tracking

### **Rescue Party**

The members of a Coast Guard rescue party will, after determination of scene stability and hazards, assist the Transport and Triage Officers as required. The specific duties of the rescue party may include:

- Assist with damage control if deemed appropriate
- Accompany Triage Officer and perform critical interventions as directed
- Gather and set up rescue or first aid equipment
- Locate patients and perform basic first aid (urgent first or as directed by Triage Officer) and carry them, by stretcher if necessary to the casualty collection area
- Locate able bodied survivors or bystanders and enlist their help as stretcher bearers or in otherwise assisting with the rescue effort
- Assist Transport Officer with casualty tracking



CG Rescue Party carries stretcher during training exercise

### **Bystanders**

Whether a multi-casualty incident occurs on land or on the water, there are usually bystanders. Depending on the actions of the trained rescuers, these people will either hinder or help the operation. Bystanders may be assigned jobs that are within their capability by the rescuers on scene. Such jobs could include:

- Providing pleasure craft as transport from the rescue scene to shore
- Assisting with stretcher handling and basic first aid
- Running errands and providing food and clothing
- Caring for children and offering psychological support

### **Survivors**

Uninjured survivors of a disaster often show amazing resilience and can sometimes be extremely useful in the rescue effort. Be sure that any survivors who offer to help are uninjured and that they are accounted for. These people can assist by:

- Assisting with stretcher handling and basic first aid
- Comforting other survivors; and

Try to ensure that uninjured survivors are eventually evacuated along with the others for purposes of proper debriefing, processing and accounting.

## Rescue Scene Stability

As noted earlier, no specific plan can apply to every event, especially in the marine environment. Many on scene actions will depend on the **rescue scene stability**.

Rescue scene stability relates to the safety of the disaster scene. Entering the scene without an assessment of, and due consideration to, the hazards and risks puts the success of the mission and the lives of rescuers at risk. Stability will need to be continually re-evaluated as conditions change.

Possible hazards or constraints of the marine disaster scene include the following:

- Often a remote location
- Difficult access to or egress from vessel
- Environmental factors – e.g. reduced visibility, cold, tides, currents and severe sea states
- Unstable scene – e.g. risk of fire or explosion, smoke or toxic gases, ice accumulation, shifting cargo, risk of flooding, sinking or sudden capsize, etc.
- Confined or cluttered work areas with risk of entrapment or entanglement
- Mass casualties – with risk of panic

The individual who undertakes to assess scene stability should be competent to judge all these factors. If the vessel or situation is complex, this person should be a Ships Officer. Not to be overlooked in assessing stability is the opinion or information regarding damage, stability and hazards that may be provided by responsible persons on the stricken vessel.

Once the initial assessment of scene stability is made, the OSC shall be advised and will direct the rescue effort accordingly. In general, this Situation Report (SitRep) should over rather than under-estimate the severity or degree of hazard. If additional or specialized resources may be required these should be requested early.

### Scene Stable

If the scene is stable with hazards not imminent then triage, first aid and evacuation can take place in the traditional manner. Urgent-category patients are evacuated first.

### Scene Unstable

An unstable scene may necessitate a reversal of the aforementioned procedure; that is, the uninjured and walking wounded may need to go before the injured, with the most severely injured or most difficult to move evacuated last.



Lifeboat departs scene during SAREX Ocean Guardian III, Sept 2007

**Evacuation Priority is determined by scene stability**

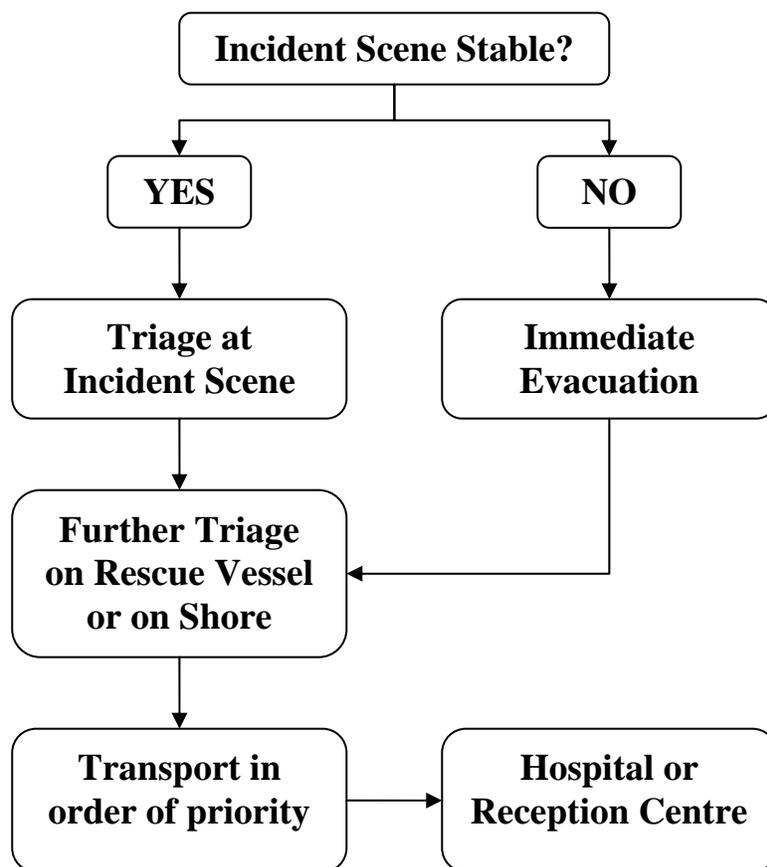
**Order if scene stable:**

- Urgent – red
- Delayed – yellow
- Minor – green
- Uninjured – white
- Deceased – black

**If scene is unstable:**

- Uninjured – white (except those helping)
- Minor – green (except those helping)
- Delayed – yellow
- Urgent – red
- Deceased are not evacuated

It must be noted that, particularly with a marine disaster, scene stability can change suddenly, requiring a re-evaluation of evacuation priorities.



## Disaster Communications

Communications are consistently identified as a challenge during marine disaster incidents and exercises. Some of the practices below can increase the effectiveness of disaster communications.

- Provide Sit Reps early and often. JRCC and other coordinating centers need up to date information to aid in decision making.
- Sharing information with all responders will reduce the chances of misunderstanding or misdirected effort.
- Expect the unexpected. Systems (e.g. overloaded) or equipment (e.g. batteries) may fail – have a back up plan.
- Ensure clarity regarding authority. If you are in charge – let it be known! If not, find out who is. Arriving resources must check in with the OSC.
- The OSC or his designate (e.g. Transport Officer) should serve as the sole on scene communicator with the vessel master
- Have a plan for effective communications. Determine who you need to talk to and set up these essential communications pathways.
- Be proactive in establishing communications with other participating agencies. This may be done by sharing people, as with a liaison officer, or simply by sharing portable radios in the case of incompatible frequencies.
- Use common language or lay terminology that all can understand. Avoid jargon and code-speak.
- Avoid overloading key frequencies. Separate channels for separate functions.
- Keep a good log of communications, resource tasking, activity, and transportation (numbers and destinations).

## Disaster Scene Logistics

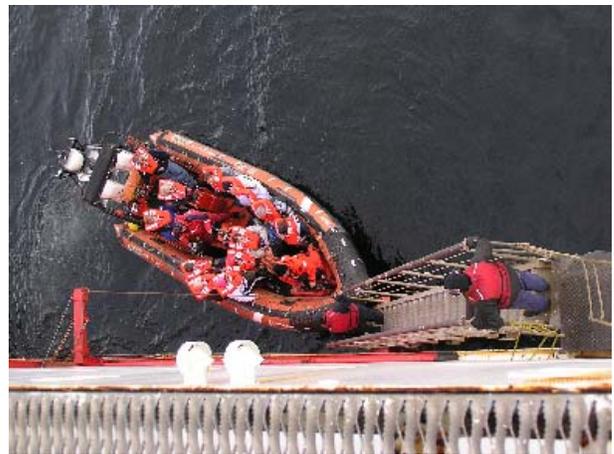
### The Disaster Scene

The disaster scene is the area or place where the incident and injuries have occurred. Though some casualties may be found elsewhere (they may have walked or drifted from the area), this will generally be the area in which the urgent, most delayed-category and of course the deceased will be found.

Patients found at the disaster scene shall be assessed by the Triage Officer, tagged (as with coloured tape) and removed to the casualty collection area in the order established by the triage, (again considering stability).

### The Casualty Collection Area

Is a safe area that may be on the stricken vessel (if stable), on another vessel or ashore. The collection area should be located between the disaster area and the evacuation point from



Survivors from BCF “Queen of the North” prepare to board CCGS “Sir Wilfrid Laurier”, March 2006

which survivors can be transported to a medical Casualty Collection Point (CCP) or Reception Centre (RC). Ideally, the collection area / treatment area will be private and:

- Free of hazard
- Close to the disaster area
- Allow for the gathering of survivors into triage categories (e.g. reds together for the provision of necessary emergency care)
- Quiet, dry and well illuminated

### The Evacuation Point(s)

The evacuation point(s) will be selected by the Transport Officer / OSC and ideally will be:

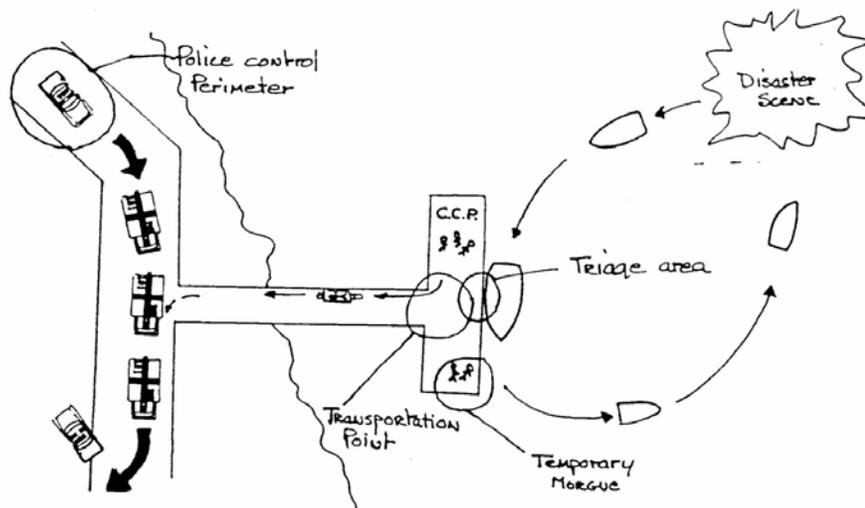
- Free of undue hazard and with the characteristics that allow safe transfer to transport vessels (e.g. suitable freeboard)
- Situated to afford one way (circuit) access by vessels/vehicles (boat, aircraft, ambulance, etc.)
- Easily identified by operators
- Close to the CA but not so close that patient care is disrupted by factors such as rotor wash or vessel/vehicle noise.



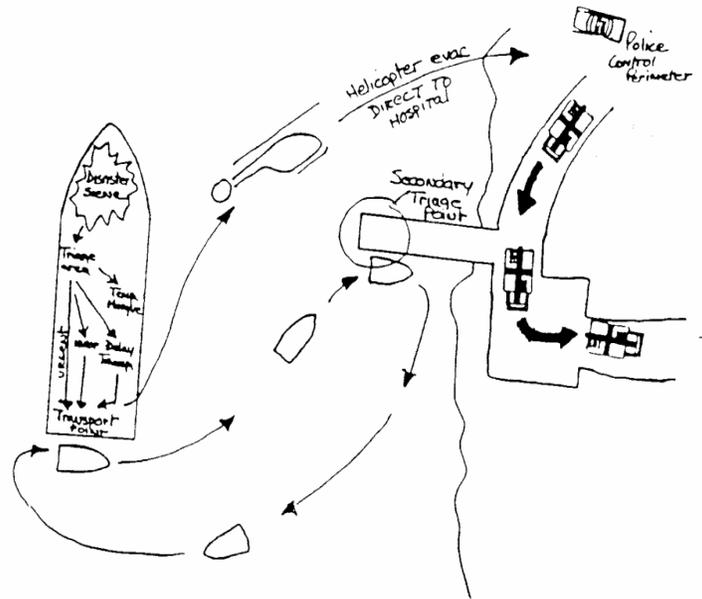
Evacuation slide from BCF “Queen of Nanaimo” during SAREX Ship to Shore, October 2006

### Rescue Scene Layout

The following illustrations show examples of different scene layouts that may be relevant to marine disaster scene management.



The illustration above depicts small vessels engaged in rescuing and transporting victims from the scene to a dock where they can be triaged and organized for transportation.



The illustration above depicts a large vessel on which an emergency has occurred and the scene is now stable. The casualty collection point and evacuation points are set up on the stricken vessel.

### **The Casualty Collection Point (CPP)**

Is an Emergency Health Services (EHS) facility up that can offer a higher level of medical care than can be provided by Rescue Specialist. The CPP(s) will receive injured or ill casualties from the scene and may be set up adjacent to the casualty reception centre on shore or at designated medical facilities.

### **Reception Centre (RC)**

A designated facility staffed by Emergency Social Services (ESS) that will perform a registration and enquiry for survivors and may arrange for temporary housing and feeding of survivors until they are repatriated.



ESS personnel conduct registration of survivors during SAREX Ship to Shore, October 2006

## Multi Casualty Assessment - Triage

The first real effort at systematic handling of multi-casualty situations was made in the 1800s when improving surgical capability made it easier to deal with individuals wounded in combat. For the first time, battlefield commanders could rely on patient triage (from the French trier “to sort”), to ensure that the soldiers who stood the best chance of survival would get surgical attention first.

The definition of triage is: **The sorting and allocation of treatment to patients, and especially battle and disaster victims, according to a system of priorities designed to maximize the number of survivors.**

If there are abundant rescuers and resources on scene then every casualty will get the same effort as would be given in a single casualty incident. Unfortunately in a disaster this is not the case. Consider that some people will survive no matter what care they receive, while some will die despite every effort. The key goal of triage is to identify those whose survival depends on early intervention and treatment. If we can do that and provide life saving interventions with transport we are maximizing the number of survivors.

### Pre-Planning and Triage Kit

Rescue units should pre-plan for high-risk or high impact incidents in their area of response. These could include major passenger or commercial traffic, coastal airports or other infrastructure with marine access or specific high risk activities. Consider the likely hazards, potential number of casualties, access and egress, and probable staging areas. Consider also the other agencies or resources that will respond, their responsibilities and capabilities and how you will work together.

An important component of preparedness is having equipment suited to the anticipated task. A triage kit should carry minimum basic triage material including markers, water-proof notepaper and triage tapes (in red, yellow, green, white and black) or tags and should ideally be hands free so as not to be misplaced in a chaotic scene. Chem-lights (glow sticks) in red and yellow that can help identify survivors during triage in a low light environment and a reliable flashlight are great additions to a triage kit. A higher level kit would include vests for Triage Officer and coloured tarps with tie downs for identifying casualty collection areas.



Triage Kit provided with CasTrack Kit, including quick reference sheets

## **Triage Approach and Plan**

The time to start thinking about triage is when first notification of the incident is received. Even on route, the Triage Officer must develop an idea of the overall seriousness of the situation. This is best done by considering the history of the event (e.g., speed of impact, severity of the fire, the length of immersion etc.), as well as the probable number of casualties. Based on this pre-arrival information rescuers may start to formulate a triage plan, however they must take a few moments and adjust this plan as required by what they find on arrival.

It has been said that incidents are won or lost in the first 10 minutes after arrival, when the most important decisions are made. After confirming scene stability, triage is the first task to be completed at the disaster scene. Because casualty condition can change, triage must be a continuous process, with casualties re-triaged throughout the course of the incident.

The size of the subject vessel or the number of probable casualties may affect how triage is conducted. For example, for a large number of passengers it will be most useful to separate by voice (e.g. as with the START Triage method “Everyone who can walk come over here”).

If the casualties are relatively close together, the Triage Officer should rapidly move into the area and try to estimate the number of casualties. This preliminary assessment should be passed on to the OSC as early as possible, in case of need for additional resources.

If casualties are widespread (e.g. multiple decks or major passenger vessel), it may be necessary to assign more than one Triage Officer (or if you will, triage assistants). Ensure, however, that patients are tagged only once in the initial round. Take the time to formulate and communicate a plan and if resources allow it each Triage Officer should bring a along a small first aid team. After initial triage is complete, the Triage team must communicate with each other and summarize the situation in a report to the OSC.

## **General Rules of Triage**

A multi-casualty event is a very challenging incident. There are some basic rules of triage that will help to keep rescuers on track.

- Injuries threatening life take priority over injuries threatening limbs. Interventions are limited to immediate life-saving maneuvers.
- Airways in the unresponsive casualty may obstruct at any time. If the casualty is unresponsive and will be unattended, he must be repositioned for drainage.
- Patients in shock or with reduced blood volume tolerate transportation poorly: treat shock before and during transport.
- Resuscitation attempts with AR and CPR will consume limited rescuer resources. Consider the cost of such attempts (refer also to AED Protocol for multi casualty).
- Urgent treatment must never be delayed by documentation.
- Casualty condition may warrant change in category at any time. Reassess periodically and reassign category as required.

## **START Triage**

START stands for **Simple Triage and Rapid Treatment** and is designed for rapid assessment and categorization of multiple patients in minimal time.

START does not require diagnosis of specific injuries, but rather allows rescuers to find and triage the most urgent patients based on four primary observations; can they walk; the quality of respiration; the presence of radial pulse; and mental status. The categories are as follows;

**Red (Urgent)** – critically injured, requiring immediate intervention (obvious signs of shock including breathing rate  $\leq 30$ , absent radial pulses, or inability to follow simple commands).

**Yellow (Delayed)** – require medical attention and stretcher transport but life is not at risk.

**Green (Minor)** – injured but can walk and care for them-selves.

**White (Uninjured)** – involved in incident but not injured.

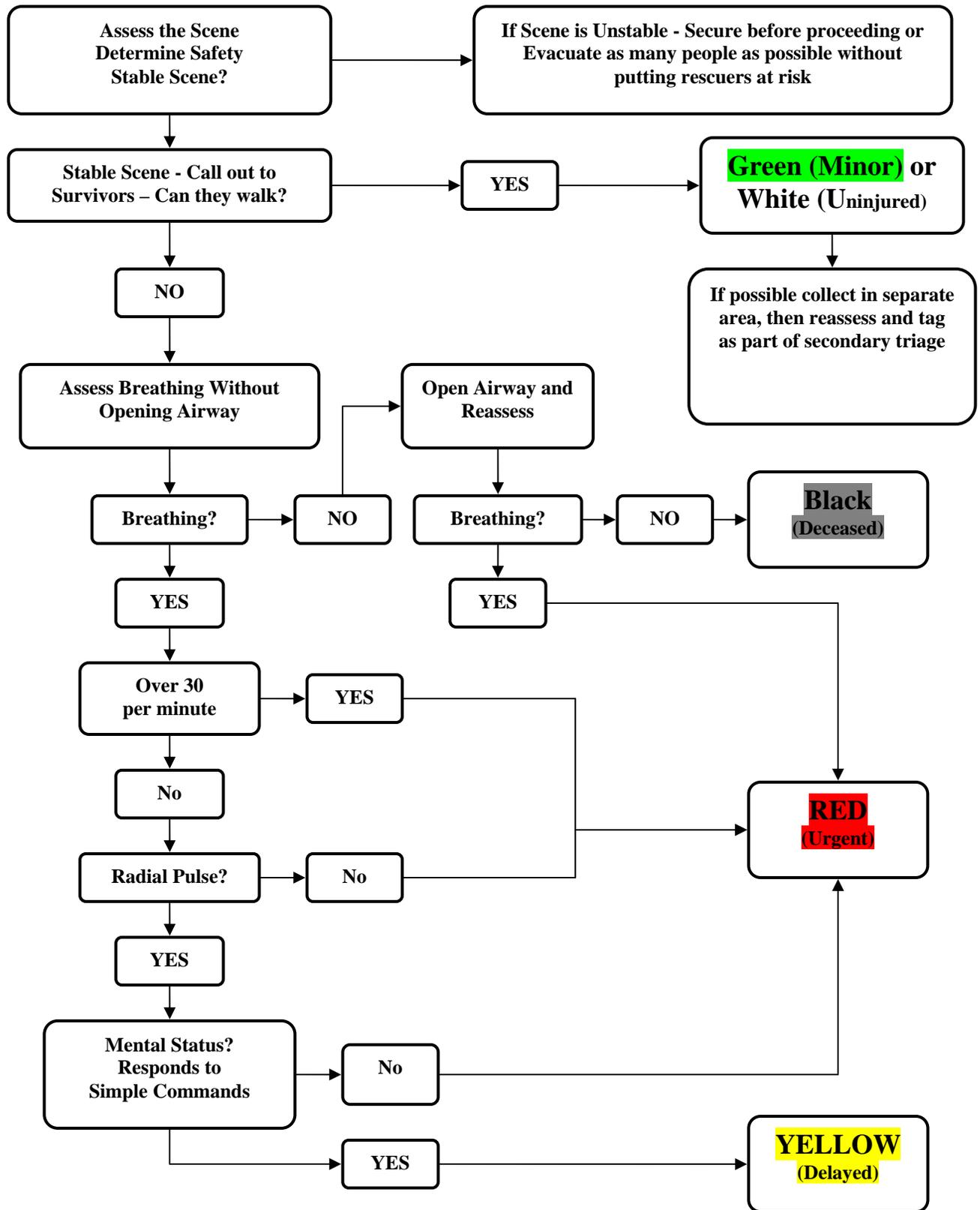
**Black (Deceased)** – deceased or such catastrophic injuries they will not survive to transport.

## **START Triage – Casualty Evaluation**

Always keep in mind the goal of maximizing survivors by quickly finding the casualties who will most benefit from early treatment and transport. Given a stable scene the following triage actions in sequence will suit most circumstances.

1. **Call out to survivors**, instruct all who can walk to move to a specific area. These do not need immediate attention, and are considered Green but will be held for secondary triage.
2. **Move in an orderly manner** through remaining casualties, observing and assessing each in turn and assigning priorities. No more than 30 seconds per person. Only immediate lifesaving interventions (e.g. position for drainage, stop deadly bleed) are performed.
3. **Check Breathing**. If not breathing, open the airway. If he does not start breathing tag him as Black. If he starts breathing when airway opened, roll for drainage and tag as Red. If breathing spontaneously but the rate is over 30 per minute tag him as Red.
4. **If not tagged as Black or Red check the radial pulse**. If no radial pulse or if pulse is notably irregular or if cap refill is notably delayed ( $> 2$  seconds) tag as Red. (Keep in mind that a cold environment may make these pulses very hard to find.)
5. **If not tagged as Red check mental status**. If unresponsive or cannot follow simple commands tag as Red. If responds appropriately to simple commands (e.g. squeeze my hand) tag him as Yellow.
6. **Re-evaluate overall incident status**. Is incident scene still stable? Have all spaces been searched and are all casualties accounted for? Any specialized equipment or additional resources required? Provide situation report to OSC / Transport Officer.
7. **Secondary Triage**. Begin moving casualties to designated casualty collection area or central triage area. Secondary triage (which can include a more detailed assessment as time allows) is performed as casualties arrive. Don't overlook those earlier tagged as Green or Black (surprises are possible). Reassign priorities as indicated by findings.

**START Triage Model**



### **Order of Transport**

Once initial triage is done, casualties are to be transported in order of priority. Given a large number of Urgent (Red) casualties a decision must be made on who will go first – which will most benefit from early transport. Personnel from other agencies with advanced medical training will be useful in this process.

The concept of the “cheap save” may be helpful here. The cheap save is the life-threatening problem that can be corrected relatively easily in a hospital surgical setting (e.g. tension pneumothorax, blunt abdominal trauma with suspected hemorrhage, etc.). Remember that an average hospital will be able to provide surgical care to only a few patients at one time and some conditions (e.g. extensive crush injuries) will require a major surgical or post surgical effort.

### **The Tagging System**

Part of an effective interagency response to disaster is a common tagging system. This is essential as patients will probably be handed from one agency to another during the evacuation phase, and each agency must be able to “read” the tagging system in use. The common language requirement is met by the colours Red (urgent), Yellow (delayed), Green (minor), White (uninjured) and Black (deceased).

**Note:** Not all agencies use the white category.



Triage Officer (white vest) conducts triage in raft, Nanaimo SAREX April 2010

In many instances **the initial triage may be best done using coloured survey tape** (as included with CasTrack Kit). Tape is durable and allows the quick tagging of large numbers of people. The **Medical Emergency Triage Tagging (METTAG)** is another option and a good one for secondary triage as may be done in a casualty collection area. METTAGs may be limited in number and may not hold up in a wet environment.

**Note: The METTAG tagging system, as carried by CCG, also does not include the White category (involved but uninjured).**

### **The Tagging of Casualties**

If there is sufficient resources a member of the first aid party accompanying the triage officer may assist with the tagging function.

When using tape the Triage Officer should tear off a length and tie it off firmly and visibly around the casualty’s right arm or leg (or other suitably visible spot). He should then tear off a piece of that coloured tape and pocket that piece to aid in casualty count at the end of triage. If the scene is complex or confusing it will also be helpful during the initial triage, to keep track of casualty location or special circumstances with use of notebook.

### **Multi-Casualty First Aid**

The cardinal rules of first aid undergo some changes when many badly injured patients require triage and treatment. The ABCDs of first aid still apply, but some variation may be necessary to accommodate the best interests of the majority of the patients:

**Airways:** As it will be necessary to leave patients unattended, unconscious patients must be placed in the recovery position to assist drainage and maintain a patent airway. Do this with consideration for potential cervical injury however protection of the airway takes priority.

**Breathing:** In a multi-casualty situation where a number of patients are seriously injured and need immediate care, you must judge whether rescue breathing is appropriate. Remember that this requires the undivided attention of a trained person who may be better utilized elsewhere.

The presence of devastating head or chest injuries resulting in respiratory arrest may be an indicator of an unsalvageable patient.

**Circulation:** As with respiratory arrest, the absence of pulse in an unconscious non-breathing patient presents a need to decide if a resuscitation attempt is appropriate in the face of other patients urgently needing care. If the cardiac arrest is the result of trauma, successful resuscitation is unlikely. If resources are adequate consider use of AED (see AED protocols).

Remember that, if the patient is breathing, his heart is beating and there is circulation even if pulses are not detectable. This could certainly be the case in severe hypothermia or in shock.

**Deadly bleeding:** Almost all severe external bleeding can be either slowed or stopped by continuously applied direct pressure. If the hemorrhage is from a limb, and cannot be controlled by direct pressure, or you are unable to stay with the patient or get the patient to apply pressure himself, a tourniquet is an option to save life. Remember, though, that a tourniquet is to be used as a last resort, when the life of the patient is at stake. Once applied, do not loosen or remove a tourniquet unless directed by physician.

Be sure to document if a tourniquet is applied, and write the letter “T” on the forehead of the patient.

**Hypothermia:** Always consider hypothermia to be a potential factor in disaster management. Even when the patients have remained dry, heat loss will occur if the injuries preclude the production of heat through physical activity. Remember that the ground is a great conductor of heat and also that, if clothing is removed to treat injuries, insulation will need to be replaced.

**Shock:** **Hypovolemic** shock is often the cause of death in trauma. This is treacherous because the body will compensate for blood loss by shunting blood to critical organs. Even though there is continued bleeding, the patients may exhibit minimal signs of severe shock, particularly if they remain at rest and lying down.

If bleeding is not stopped, at some point the body can no longer compensate and signs of severe shock will appear. This is an extremely serious situation with a poor prognosis.

The best field management of progressive hypovolemic shock is to prevent it in the first place by stopping external bleeding, and by recognizing the potential for severe internal bleeding such that patients suspected of severe internal (invisible) bleeding get early evacuation.

The three areas where critical amounts of blood can be lost internally are the chest, abdomen and thighs. A history of blunt abdominal trauma is all you will have initially to lead you to suspect hidden hemorrhage. Do not rely on abdominal muscle guarding as the sole indicator of intra-abdominal hemorrhage. Massive blood loss into the thighs may accompany femur fractures, and you can monitor blood loss by noting the circumference of the thigh.

**Long bone fractures:** The splinting of fractures or dislocations of the arms and legs can be a time-consuming activity. The supply of splinting material may also be exhausted quickly, forcing the use of alternative procedures. In most cases, adequate immobilization of the upper limbs can be achieved quickly by securing the injured limb (with proper padding) to the torso. A fractured leg can be immobilized by securing it to the opposite leg.

**Burns:** Remember that the first action in first aid for thermal burns is to quickly cool the burned area to normal temperature. You may encounter patients who have jumped into the water to put out the fire. In these cases, the burns will be adequately cooled, but you must now watch for signs of hypothermia.

Do not attempt to remove clothing that adheres to the wound. Cover the patient with clean, lint-free sheets. Respiratory tract burns are indicated by soot and blisters in the airways, burned nose hairs and difficult breathing. These are serious signs, and may progressively worsen. These patients are not cheap saves.

**Spinal injuries:** While a disaster means that textbook spinal care is often impractical or impossible, this is not an excuse to be reckless. Assume the possibility of cervical injury when unconsciousness is caused by trauma and exercise reasonable precautions where spinal injury cannot be ruled out. Any flat surface that will support the patient can be used as a backboard. Ensure that adequate padding is used, and that the patient is adequately secured. Cervical collars can be applied quickly. If any of the “walking wounded” are complaining of stiff or sore necks, apply a cervical collar as a matter of course.

## **The Deceased**

### **Legal aspects**

While only a medical doctor may pronounce a person dead, a lay person may assume death.

The pronouncement of death is a legal act carried out by a physician. There is a practical requirement for lay persons to be able to set the deceased aside in order to deal with others who are living. This assumption of death should, in the context of multi-patient assessment, be made by the triage officer.

Persons assumed deceased are the responsibility of the Coroner or, in his absence, the RCMP or municipal police. If possible, the deceased should not be removed from the disaster scene until without permission of the coroner or police.

### **Handling the Deceased**

A cardinal rule of disaster management is: **the living before the dead**. Leave the deceased untouched until all living patients have been cared for and evacuated.

If investigative elements of the Coroner's office or other authority are present at the disaster site, the deceased may not be moved until preliminary investigation is complete. In the event of a major event onboard a ship, the investigation may not even begin until the ship is secured at a dock and authorities can go on board.

If representatives of the Coroner or investigative authority are not present, the OSC may be delegated by the Coroner to exercise authority over the handling of the deceased.

If the bodies must be removed from the disaster scene, but cannot be transported directly to a morgue, a temporary morgue will need to be established. Ideally, the bodies should be held in the temporary morgue only long enough to arrange transportation from the evacuation point to a proper morgue. The temporary morgue should be located at a point between the disaster scene and transportation point that affords a degree of privacy. The bodies should be tagged (as with CasTrack tags), but at this stage positive identification by relatives or friends would not be appropriate and should not be attempted.

The identification of bodies is the responsibility of the Coroner, his delegate, the RCMP or municipal police. If bodies must be accommodated for an extended period of greater than eight or ten hours, refrigeration is necessary unless the ambient air temperature is below freezing. Refrigerated tractor-trailers have been used successfully as an on-site temporary morgue and later as a means of transportation to a proper morgue.

If the disaster scene is catastrophic, as might be the case if an aircraft accident or intense fire, sorting the deceased may become difficult. Try to use one body bag for each body. Count one skull as one body.

### **Sanitation**

The use of disposable personnel protective equipment, including thick rubber gloves during the handling of decomposing bodies is strongly recommended.



## Triage Officer Quick Reference

YOU ARE THE EYES AND EARS OF THE TRANSPORT OFFICER.  
 DETERMINE THE NUMBER CASUALTIES IN EACH TRIAGE  
 CATEGORY.  
 DETERMINE THE TRANSPORT PRIORITIES.  
 MAKE REGULAR REPORTS.

<b>COMMUNICATE</b>	Establish communications with the Transport Officer. Establish communications with the vessel's Medical officer (if present).
<b>IDENTIFY AND SEPARATE</b>	Take control and Identify yourself loudly. Direct everyone who can walk to move to safe location for evacuation.
<b>SEARCH AND TRIAGE</b>	Search for immobile casualties. Triage all immobile casualties first. Triage should take 30 sec per casualty.
<b>PROVIDE FIRST AID</b>	First aid party should follow Triage Officer. Provide life saving interventions and stabilize injuries.
<b>REPORT AND RELOCATE</b>	Report triage numbers and transport priorities to Transport Officer. Move casualties to the best site for evacuation based on transport method.
<b>RE-TRIAGE</b>	Re-triage all casualties. Ensure all areas have been searched for survivors.
<b>CASTRACK</b>	Deploy CasTrack system. Identify responsible persons in the minor and uninjured categories to help distribute tags.
<b>TRANSPORT SURVIVORS</b>	STABLE SCENE: Red – Yellow – Green – White. UNSTABLE SCENE: White – Green – Yellow - Red. Blacks stay on-board and are only recovered from a stable scene upon instructions from the Coroner.
<b>REPORT</b>	Give regular reports to the Transport Officer Verify the number of each category transported.

## **INCIDENT COMMAND SYSTEM (ICS) - OVERVIEW**

This section has been developed to provide an overview of the Incident Command System, but should not be considered as a replacement for ICS training, if that is required. Since ICS, or in some cases a version of it, is used by many emergency response organizations, a basic understanding of ICS is important to all who may form part of a multi agency response to an incident or a disaster.

### **Introduction**

The ICS is a management system and a model for command, control and coordination of emergency response at the site level. It was developed in the 1970's in response to a series of major wildfires in southern California. The various responding agencies faced a series of problems including different terminology, communications and action plans. Some even lacked the structure to work with other agencies.

ICS creates a common organizational structure and applies its key management principles in a standardized way. By design it has the flexibility and adaptability to be applied to a wide variety of incidents or events both large and small.

The goals of the ICS include; provide for the safety and health of all responders; save lives and reduce suffering and protect public health; protect government infrastructure; protect property; protect the environment; and reduce economic and social losses

The command structure within the JRCC, DND, and the Canadian Coast Guard (and the marine industry in general) shares some key similarities to the ICS. In many respects a primary difference is the terminology and the degree of definition within ICS. Some agencies, especially in the smaller communities, will have little exposure to this type of work structure.

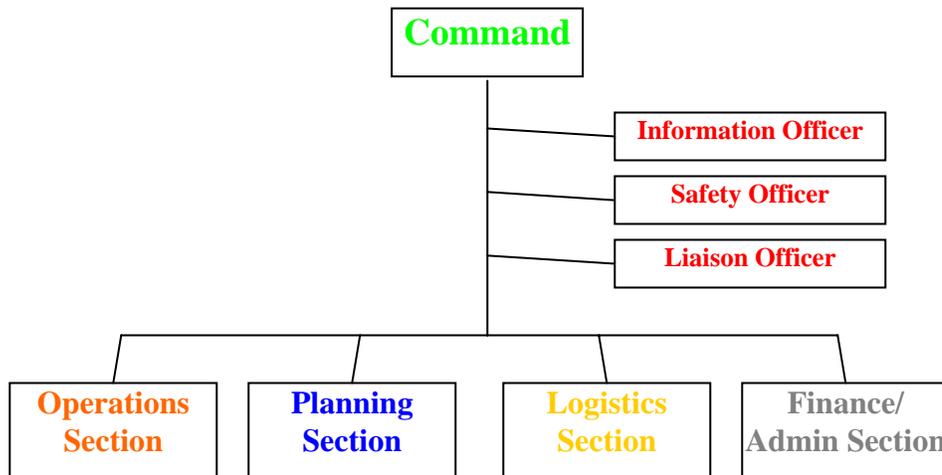
### **ICS Structure**

The ICS model and structure has evolved over time, with certain concepts and principles recognized as key to its effectiveness. These principles include;

**The Five Management Functions** that make up the ICS are:

- a) Command
- b) Operations
- c) Planning
- d) Logistics
- e) Finance/Administration.

In a small scale response these management functions might be handled by a small group of people or even 1 person. In a large scale each function might be handled by a group of people.



### **Command**

Every incident requires an Incident Commander (IC). This role is initially taken by the first responder arriving at scene and may then be transferred as the incident grows in size and/or additional resources arrive at scene.

In a major or complex incident the IC may delegate some authorities to a command staff;

- Information Officer serves as the point of contact for media or organizations seeking information from the incident
- Safety Officer monitors safety conditions and develops measures to ensure safety of all personnel
- Liaison Officer serves as primary point of contact for other agency representatives

The IC may activate additional staff functions, by section, as necessary to meet the needs of the incident. In charge of each section, which may expand or contract as required, is a Chief.

### **Operations Section**

Operations Section is responsible for directing the tactical actions to meet incident objectives. Development should be from the bottom up. As more resources arrive supervision is needed. As it grows the supervision might need to expand too. The section also develops in stages. It starts with a single resource, then to task forces/strike teams, divisions/groups and can branch out from there. However, a unity of command is always maintained and each person reports to only one supervisor.

In an ICS, as resources respond they are managed as either a Single Resource, a Strike Team or as Task Force. A Single Resource includes both personal and equipment (e.g. a Coast Guard FRC with a coxswain and R/S, or an Ambulance with 2 paramedics). A Strike Team is a number of single resources of the same type grouped together. The number of resources will depend on the need, but the Strike Team will have one supervisor, who receives and gives orders. A Task Force is any combination of single resources that may be of different type. It has a particular tactical need and a supervisor. Span of control concepts generally apply (maximum ratio is 7 reporting resources to 1 supervisor).

### **Planning Section**

In a small incident the IC will be responsible for planning but in a larger incident the planning section will be established and responsible for; the collection, evaluation and display of incident information; developing incident action plans and long-range planning; maintaining status of resources; and maintaining incident documentation.

### **Logistics Section**

Logistics Section is responsible for providing the services and support to meet incident needs. It is geared to the needs of incident responders and includes obtaining essential personnel, facilities, equipment and supplies.

### **Finance/Administration Section**

Finance/Admin Section is responsible for tracking incident related costs, tracking personnel and equipment records (time), and for procurement, contracts and compensation.

### **ICS Principles**

#### **Management by Objectives**

The concept of management by objective includes four essential and related steps; understand agency policy and direction; establish incident objectives; select appropriate strategy; and perform tactical direction to achieve the goal.

#### **Incident Action Plans**

The response to every incident must be based on an action plan, to provide all supervisory personnel with appropriate direction. The plan may be oral or written. The decision to prepare a written plan is made by the IC but would generally be required if the incident is large or complex or extends beyond the first operational period. An operational period should not be longer than 24 hours, with 12 hours being common and shorter times such as 2 or 4 hours not unusual.

#### **Establishing and Transferring Command**

Command is initially established by the highest ranking authority at the scene that has jurisdiction for the incident. Transfer of this command may take place when a more a qualified person assumes command or the incident changes over time requiring command by a different agency of jurisdiction or it makes good sense to transfer command. Of course a turnover of personnel will normally occur over long or extended incidents.

#### **Unity and Chain of Command**

Unity of command means that each individual has a designated supervisor and reports only to that person. Chain of command means there is an orderly line of authority with lower levels subordinate to, and connected to higher levels.

### **Span of Control**

Span of control pertains to the number of individuals that one supervisor can effectively manage and is critical on incidents where safety and accountability have top priority. In ICS if a supervisor has fewer than 3 or more than 7 reporting some adjustment to the organization should be considered.

### **Resources Management**

As noted under the Operations Section, resources assigned to an incident are managed as either a single resource, as strike teams or as task forces. The use of task forces or strike teams can maximize the effective use of resources, reduce the span of control and reduce communications traffic.

### **Organizational Flexibility**

The ICS organization should at any given time reflect what is required to meet planned tactical objectives, and therefore should be expected to expand and contract as the incident progresses or evolves. This philosophy has been described as “form follows function”.

### **Unified Command**

Command at an incident may be either single or unified in structure. Establishment of a unified command allows all agencies with legitimate responsibility for an incident to contribute to the command process and to jointly develop a common set of incident objectives and strategies. Under a unified command, incident response functions under a single coordinated incident action plan. One incident command post is established and one of the unified commanders will act as spokesperson.

### **Common Terminology**

Common terminology is essential in any emergency management system, even more so when multiple agencies are involved. Using clear text, in plain English (e.g. no “ten” codes) will help minimize confusion.

### **Integrated Communications**

In areas when an ICS is used frequently a radio frequency is establish and each agency can turn to it at any time to communicate with each other. However in areas with smaller scale responses this might not be an option.

If you do not have the ability to use another agencies frequency try giving one of your radios to them or taking one of theirs. If the personal on scene are available try to take on one of them, with a radio. This type of protocol should be prearranged to make things flow better. In a large scale response a communications centre is established with at least one staff member from each agency present.

### **Personal Accountability**

There are procedures within the ICS that ensure personnel accountability. Each person, as they arrive on scene, must check in. Check in can be done at the command post or anywhere in the field but you must check in and check out. At time of check in relay your resource

capabilities and limitations. If established, a Resource Status Unit keeps track of all assigned resources.

The log books that each resource keeps, as well as the unity and chain of command, also help ensure personal accountability.

After checking in and after you receive any briefing be sure you understand your assignment. Acquire the necessary work materials then locate and set up your work area. Be sure to brief and organize any subordinates you've been assigned. Whenever necessary brief your relief at the end of each operational period. Ensure all required documentation is submitted to your supervisor and demobilize according to plan.

**Incident facilities**, each with a unique purpose, will be established depending on the kind and complexity of the incident or event.

- 1 The **Incident Command Post** is the location from which the IC oversees all incident operations. The IC stays at the Incident Command Post.
- 2 **Staging Areas** are locations (there may be several) where resources are kept while awaiting assignments.
- 3 A **Base** is where primary service and support activities are performed. Not all incidents will have a base.
- 4 **Camps** are used in incidents where areas are need for such things as feeding, sleeping, CIS debriefing, etc. Again not all incidents will need a Camp.
- 5 A **Helibase** is a base for helicopters to land, fuel, load/unload and have maintenance preformed.
- 6 **Helispots** are Temporary locations for loading/unloading of equipment and personal
- 7 Most jurisdictions have an **Emergency Operations Centre (EOC)**. This is a location for Department heads, government officials and volunteer agencies gather to coordinate their support.



# The Canadian Coast Guard Casualty Tracking System

## CasTrack



CCGS "Tanu" Transport Officer checks out survivors with CasTrack, during USCG Ketchikan SAREX, April 2009

## The Need for a Casualty Tracking System

Multiple casualty incidents present a number of challenges to responders. One of the significant challenges encountered is in accurately tracking and accounting for casualties as they are moved from the rescue scene through to authorities on shore.

Reviews of major incidents and SAR exercises show that casualty tracking and accountability is consistently problematic;

- Lack of accurate passenger manifests, or no manifest at all
- Difficulty in counting large numbers of survivors in a chaotic scene
- Unreliable or inaccurate reports delivered from scene to coordinating agencies
- To this point there has been a lack of training or systematic approach

The benefits of adopting a passenger tracking and accountability system should include;

- Reduced time wasted in counting and recounting survivors at various stages during rescue and transport
- Avoid unnecessary or extended searches due to difficulties in confirming numbers
- Increased accuracy and confidence as to the transport status of mass survivors
- Allow more accurate reconciliation with the passenger manifest (if available)
- Coast Guard can minimize the burden to other agencies of survivors coming ashore with minimal accounting
- Provide additional valuable information to other agencies (Company, Customs, Medical, Emergency Social Services, etc.) at an earlier stage of the incident
- Reduced stress and anguish to family or next of kin
- The Canadian Coast Guard delivers a more professional, higher level of service



CCGS "Tanu" receives evacuees during USCG Ketchikan SAREX, April 2009

## CasTrack

The CasTrack prototype was developed following debriefs into response to the sinking of the BC Ferry ‘Queen of the North’, that highlighted again the difficulties in counting and tracking large numbers of survivors.

Positive feedback to this prototype led to a New Initiatives Fund (NIF) application to the National SAR Secretariat (NSS), and CCG was granted a two year NIF that ends in March 2010.

The project has included review and research into current and best practices at home and abroad, including electronic and paper based systems followed by testing and evaluation at minor and major exercises.

**The objective of the CasTrack project is – a passenger accountability system, supported by a training curriculum, resulting in improved CCG response to marine disasters.**

## Features

CasTrack is designed to be intuitive, portable, highly visible, and easily deployed. It is easy to use with minimal training and is readily transferable between responding units. It is our intent that other agencies may also interpret and benefit from the information provided.

## CasTrack Kit

- The CasTrack Initial Response Kit, containing Transport Officer Kit, Triage Officer Kit and 200 tags and accessories.
- An additional Supplies Kit, containing 300 tags plus accessories.



CasTrack Initial Response Kit (blue top), and open showing Transport and Triage Kit with 200 tags in bundles of 20



CasTrack Additional Supplies Kit (yellow top), and open showing 300 tags in bundles of 20

### **Triage Kit**

A hands free kit with Triage supplies including, identification vest, coloured triage tape, red and yellow glow-sticks, waterproof notepads, markers, pens, etc.

### **Transport Officers Kit**

A hands free kit including, identification vest, clipboard, markers, pens, CasTrack sheets, etc.

Each of these small kits is stored within the CasTrack Initial Response Kit.



Coast Guard FRC with Triage Officer (white vest and red triage kit) and Transport Officer (yellow vest and yellow transport kit) alongside life-raft during Nanaimo SAREX, April 2010

### **CasTrack Tag**

CasTrack tags are printed on tear resistant, waterproof paper and are contained within a plastic sleeve attached to a lanyard for easy application. In addition to allowing easy counting and numbering of survivors, the bilingual tags also capture basic but important information including name, date of birth and contact info, medical considerations and triage category, and others in family group or party. Basic instructions are included for self completion and checking out of system.

The tags are packaged in sequentially numbered bundles of twenty. Each region and vessel will receive its own specific allotment of tags to reduce risk of confusion. If tags are used on incident or otherwise require replacement, those specific bundles will be replaced to ensure each unit is starting from a complete batch.

Station mode and small patrol vessels will be issued the initial response kit with 200 tags, while large patrol vessels will also receive the additional supplies kit with an extra 300 tags.

**Regional tag allotment as follows;**

- Pacific – 1 to 8900
- Central and Arctic – 10001 to 17000
- Quebec – 20001 to 27300
- Maritimes – 30001 to 37300
- Newfoundland – 40001 to 48000

The regional allotments are based upon numbers of vessels per region, and include an additional 2000 tags for potential expansion. Each region is also issued a batch of training tags that are numbered 1 – 500.

Canadian Coast Guard Garde côtière canadienne		CasTrack
00001		
<div style="display: flex; justify-content: center; gap: 5px; font-size: 8pt;"> <span>C</span><span>G</span><span>0</span><span>0</span><span>0</span><span>0</span><span>1</span> </div>		
<b>Name   Nom</b> <hr/>		
<b>Injury and/or illness   Blessure et/ou maladie</b> <hr/>		
<b>Triage Category</b>	Black   Noir	Red   Rouge
	Yellow   Jaune	Green   Vert
	White   Blanc	
<b>DO NOT REMOVE TAG NE PAS ENLEVER CETTE ÉTIQUETTE</b>		
JOINT RESCUE COORDINATION CENTRE   CENTRE CONJOINT DE COORDINATION DE SAUVETAGE JRCC VICTORIA 1 800 567 5111 or 1 250 363 2934		

Canadian Coast Guard Garde côtière canadienne		CasTrack
FULL NAME   NOM AU COMPLET		
DATE OF BIRTH   DATE DE NAISSANCE	DAY   JOUR	MONTH   MOIS
HOME ADDRESS   ADRESSE DU DOMICILE	YEAR   ANNÉE	
OTHERS IN YOUR PARTY OR FAMILY   AUTRES MEMBRES DE MON GROUPE OU DE MA FAMILLE	PHONE NUMBER   NUMÉRO DE TÉLÉPHONE	TAG NUMBER   NUMÉRO D'étiquette
EMERGENCY CONTACT ON SHORE   CONTACT À TERRE EN CAS D'URGENCE		
<b>DO NOT REMOVE TAG NE PAS ENLEVER CETTE ÉTIQUETTE</b>		
You and your family are now part of the Canadian Coast Guard survivor tracking system.  <b>How to Use this Tag</b>  1. Write your name on the front and fill in the sections on the back. 2. DO NOT REMOVE this tag until instructed to do so. 3. If you have left on your own, and are still wearing this tag, please call the JRCC number below.	Vous et les membres de votre famille faites maintenant partie du système de suivi des survivants de la Garde côtière canadienne.  <b>Comment utiliser cette étiquette</b>  1. Écrivez votre nom sur le devant de l'étiquette et indiquez les renseignements demandés au verso. 2. N'ENLEVEZ PAS CETTE ÉTIQUETTE tant qu'on ne vous a pas donné l'instruction de l'enlever. 3. Si vous êtes parti seul en conservant cette étiquette, appelez le JRCC numéro indiqué.	
JOINT RESCUE COORDINATION CENTRE   CENTRE CONJOINT DE COORDINATION DE SAUVETAGE JRCC VICTORIA 1 800 567 5111 or 1 250 363 2934		

The tags are to be placed around the neck or otherwise attached to casualties after triage is complete either; as they are moved from the scene; as they board the transport vessel; or once in a casualty collection area. At any rate each involved person is tagged just once.

### CasTrack Record

CasTrack Record sheets are issued to correspond by number to the issued batch of CasTrack tags. After tags have been attached to casualties, the Coast Guard Transport Officer will, as time allows, use these sheets to record important available information (name, DOB, and triage status). As the casualty is transported it is noted on the record to who the casualty is delivered and / or how transported.

Un-numbered sheets will also be provided in each kit, to allow accounting of passengers outside a given batch.

As casualties are delivered to the next responsible authority the CasTrack Record sheet is also handed over. The Transport Officer should make a copy or take a digital photo of each sheet as part of the record and in case of need to reconcile names and numbers. These records would also be forwarded (e.g. by fax or email) to JRCC.

CCG Unit   Unité de la GCC		Transport Officer   Officier de transport		Date	
CasTrack No.   N°	Survivor's name   Nom de survivant/survivante	DOB   Date de naissance	Transported by or de livré(e) à   Transporté par ou à	Triage	
00001					
00002					
00003					
00004					
00005					
00006					
00007					
00008					
00009					
00010					
00011					
00012					
00013					
00014					
00015					

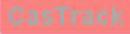
### CasTrack Deployment Sheet

The CasTrack Deployment sheet is provided to allow quick and easy counting of tags as they are issued. As each batch or sequence of tags is issued the Transport Officer simply circles the corresponding blocks of numbers of the deployment sheet. A few tips for maximum effectiveness;

- Circle by blocks and if done at the time of transport, note the vessel transporting each block. If a given vessel may make return trips for more survivors make note of each successive trip on this sheet.
- As each block of numbers is marked write a tally on the sheet to make for easy addition later or as required for Situation Reports.
- Include the triage category for each number if applicable (R for Red, etc.)



Canadian Coast Guard  
Garde côtière canadienne

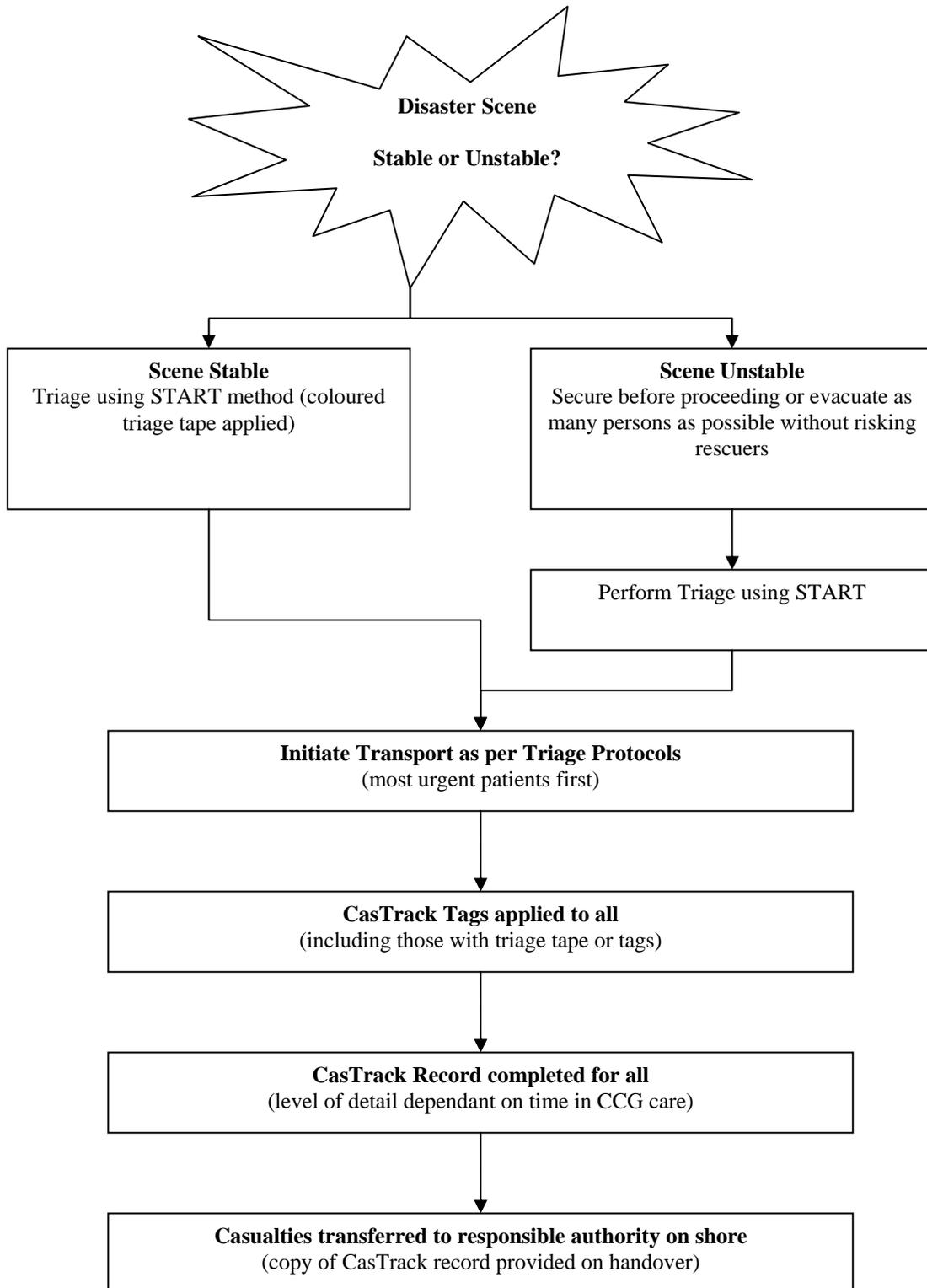


**CasTrack Deployment Sheet | Feuille de déploiement CasTrack**

CCG Unit   <u>Unité de la GCC</u>			Transport Officer   <u>Officier de transport</u>				Date		
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120



### CasTrack Flow



## Maintenance

CasTrack kits are issued to Canadian Coast Guard vessels and are to be carried as per CGFO 207.00 – SAR Equipment on Board Canadian Coast Guard Vessels (addition of CasTrack to CGFO 207.00 is pending).

Canadian Coast Guard, Maritime Services, Search and Rescue will be responsible for ensuring maintenance and replenishment of the material on board as and if it is used on incident.

Training in the use of this material is the responsibility of the SAR training personnel.

A current record of the numbered batches issued to each vessel will be held at the appropriate JRCC or MRSC, for reference as need be during incidents.



Survivors with CasTrack Tags gathered on aft deck of CCGS "Tanu" during Ketchikan SAREX, April 2009

## Transport Officer Quick Reference

**YOU ARE THE EYES AND EARS OF THE ON-SCENE COORDINATOR.  
 DETERMINE THE NUMBER OF PEOPLE ON BOARD.  
 DETERMINE VESSEL STABILITY.  
 MAKE REGULAR REPORTS.**

<b>COMMUNICATE</b>	Establish communications with the OSC once on scene or on-board the distressed vessel.
<b>STABILITY</b>	Establish a direct line of communication with the Master. Determine stability. (Go to the bridge and identify yourself to the Master).
<b>REPORT ESTIMATED NUMBERS</b>	Get an early estimation of persons on-board (injured, uninjured, and crew). Report numbers to OSC.
<b>SEPARATE AND SORT</b>	Determine survivor collection areas: Urgent (red - unstable), Delayed (yellow - stable), Walking wounded (green – minor, and white - uninjured), and Morgue (black - deceased). Determine locations for helicopter hoist and stretcher off-load.
<b>REPORT ACTUAL NUMBERS</b>	Meet with Triage Officer: determine accurate numbers of injured persons and transport priorities based on initial Triage. Move injured to the best site for evacuation based on transport method.
<b>CASTRACK</b>	Deploy CasTrack system. Identify responsible persons in the minor and uninjured categories to help distribute tags. Use tracking sheets to record information and track survivors.
<b>TRANSPORT SURVIVORS</b>	STABLE SCENE: Red – Yellow – Green – White. UNSTABLE SCENE: White – Green – Yellow – Red. Blacks stay on-board and are only recovered from a stable scene upon instructions from the Coroner.
<b>REPORT</b>	Give regular reports to the OSC and vessel Master. Verify the count of survivors being transported with the total number of survivors to ensure all are evacuated. Keep survivors informed.

## **Frequently Asked CasTrack Questions**

### **1. When should the CasTrack system be used?**

Casualty tracking is required anytime there are multiple survivors and the possibility for confusion exists. This will especially be the case with multiple responding and transporting units or when the numbers of persons involved is high. Difficulties in tracking and accounting for survivors have arisen in incidents with as few as 8 persons involved.

### **2. Who should apply the CasTrack tags?**

Responsibility for casualty tracking will normally be delegated from the On Scene Coordinator (OSC) to the Transport Officer. The Transport Officer may recruit assistants to aid in the tagging process but does need to keep track of tags issued. The bundle record sheet is provided to aid in this.

### **3. Who should be the Transport Officer?**

The Transport Officer will be assigned by the Commanding Officer / On Scene Coordinator and will normally be a ships officer or senior Rescue Specialist.

### **4. At what point in an incident should the CasTrack tags be applied?**

The CasTrack tags would normally be applied after the triage is complete, although in some cases triage and CasTrack tagging could take place concurrently. It is most effective to apply the CasTrack tags at logical choke points such as when embarking or disembarking a vessel, etc.

### **5. If attending to a large passenger vessel should we apply tags to both passengers and crew?**

Yes, anyone who is not a rescuer / responder should be accounted for using CasTrack.

### **6. The CasTrack kit only has 200 tags with another 300 in the additional supplies kit. Given that a cruise ship may have more than 3000 people on board, how can we possibly account for such a large number?**

Given such a large number we should use the CasTrack tags on the people we are responsible for transporting, either on our own or other vessels under our direction. If the cruise ship does not evacuate we would not attempt to tag everyone. If the passengers are evacuated into survival craft, each of those craft has crew onboard who are responsible for confirming a manifest – we should gather the number of POB from each craft and add that to our total count. The Transport Tracking Sheet could be useful in such a case.

### **7. Why is there a barcode number on the CasTrack tag and Record Sheet?**

The barcode (code type 39) is there in the event that a receiving agency has a system that utilizes barcode readers. Also by having a common format barcode we allow the possibility of a future upgrade to an electronic tracking element.

### **8. What about the tagging of infants or small children, who may not reliably or safely wear a tag?**

In the case of infants or small children, the CasTrack tag would best be provided to the parent or guardian with instruction to complete the tag and keep possession of the child's tag along with their own.

**9. To whom do we deliver a copy of the CasTrack Record sheet?**

The CasTrack Record sheet should be provided to the responsible authority on shore who receives the passengers. On a CCG ship with an office this sheet should be scanned or copied prior to handover or a digital photo of sheet taken. Copies of sheets can then also be transmitted electronically to the JRCC.

**10. How do we attach the CasTrack tag to a person wearing bulky survival or floatation gear?**

While the tag will normally be applied via the lanyard around the neck, if this is seen to be problematic then the tag should be affixed via the best available option such as hitching the lanyard around an arm or using the lanyard clip to secure the tag where it won't be removed.

**11. Additional questions to be added.**

**12.**

## **Glossary of Marine Disaster Terms**

**Aeronautical (or Air) SAR Coordinator** – In JRCC the Canadian Forces Officer (pilot or navigator) responsible for the coordination of aeronautical SAR incidents.

**CasTrack** – The Canadian Coast Guard casualty tracking system.

**CasTrack Tag** – The sequentially numbered CCG casualty tracking tag.

**CasTrack Deployment Sheet** – A sheet provided to allow quick and easy counting of tags as they are issued. As each batch or sequence of tags is issued the Transport Officer simply circles the corresponding blocks of numbers of the deployment sheet.

**CasTrack Record Sheet** – A record sheet that corresponds by number to each issued batch of CasTrack tags and allows the recording of important available information regarding the casualty and transportation.

**Casualty** – Traditional usage is one who is injured or killed as a result of incident or accident. Also used in reference to all those involved in an incident or accident.

**Casualty Collection Area (CCA)** – Is a safe area that may be on the stricken vessel (if stable), on another vessel or ashore. The collection area should be located between the disaster area and the evacuation point from which survivors can be transported to a medical Casualty Collection Point (CCP) or Reception Centre (RC). Ideally, the collection area / treatment area will be private, free of hazard, close to the disaster area, quiet, dry and well illuminated.

**Casualty Collection Point (CCP) (Casualty Reception Point)** – Is an emergency health services (EHS) facility up that can offer a higher level of medical care than can be provided by Rescue Specialists or SAR Techs. The CPP(s) will receive injured or ill casualties from the scene and may be set up adjacent to the casualty reception centre on shore or at designated medical facilities.

**Casualty Tracking** – The process of tracking and accounting for those involved in an incident or accident, especially during the transportation phase.

**Cheap Save** – A patient whose life may be saved in an E.R. or O.R. using simple medical procedures.

**Check-in** – The process whereby resources first report to an incident.

**Company** – The owner of the ship or the organization that has assumed responsibility for operation of the ship.

**Delayed Category (Yellow)** – A triage category assigned to those with problems that require medical attention and stretcher transport but whose life is not at risk.

**Disaster** – An event, either natural or man-made, that causes great distress or destruction or that requires a response beyond the normal capacities of the agencies involved. Often a multi-casualty incident (MCI) or mass rescue operation (MRO) that requires a multi-agency response. A low probability but high consequence event.

**Emergency Operations Centre (EOC)** – A designated facility established by an agency or jurisdiction to coordinate the overall agency or jurisdictional response and support to an emergency response.

**Evacuation** – The act of evacuating or moving persons from the scene of an accident, as from a passenger vessel by slide to survival craft.

**Evacuation Point** – An area from which survivors can be transported. Will normally be selected by the Transport Officer and will ideally be; free of hazard; situated to afford a one way (circuit) access by transport vessels, vehicles or aircraft.

**Extrication** – The release and/or rescue of a person from an area of difficulty or entanglement.

**IAMSAR** – International Aeronautical and Maritime Search and Rescue Manual

**Incident Command Post (ICP)** – Under the ICS structure the location at which primary incident command functions are carried out.

**Incident Command System (ICS)** – An incident management system and model for command, control and coordination of emergency response at the site level.

**Incident Commander (IC)** – Under the ICS structure the IC is the person responsible for the overall management, including decisions, objectives, strategies and priorities related to an incident response.

**Joint Rescue Coordination Centre (JRCC)** – A facility established to coordinate response to both aeronautical and marine search and rescue incidents

**Jurisdiction** – The range or sphere of authority.

**Landing Site** – A site or facility within a community selected to receive the survivors of an incident or accident; a location where rescue craft disembark evacuated passengers and crew ashore.

**Landing Site Supervisor** – The person responsible for the landing site.

**Liaison Officer** – An agency representative, usually assigned to a command post or coordination centre, able to facilitate communications between agencies.

**MAJAID** – Major Air Disaster – Canadian Forces Canada Command maintains a MAJAID plan that outlines the resources and measures to respond to a MAJAID incident.

**MAJAID Kit** – An air drop-able kit of survival equipment and provision to support up to 80 people. 4 MAJAID Kits are stored at CFB Trenton, Ontario and may be utilized as required for other mass casualty incidents.

**MAJMAR** – Major Marine Incident – a marine incident which, because of its location or number of passengers and crew involved, is beyond the response capability of the normal SAR system.

**Major Marine Disaster (Contingency) Plan** – A document held within the JRCC, intended to supplement the IAMSAR Manual and SOPs and to provide a sound decision-making process in the response to a major marine disaster.

**Manifest** – A complete list of passengers and crew on a commercial passenger vessel.

**Marine Rescue Sub-Centre (MRSC)** – A facility established to coordinate response to marine search and rescue incidents in a Marine Rescue Sub-Region of a Search and Rescue Region.

**Maritime (or Marine) SAR Coordinator** – In JRCC the CCG Navigation Officer responsible for the coordination of Marine SAR incidents.

**Mass Rescue Operation (MRO)** – A search and rescue activity characterized by the need for immediate response to large numbers of persons in distress, such that the capabilities normally available to SAR authorities are inadequate.

**Master** – The Captain of the ship in distress. The master will not normally lead the SAR response but remains in command of his own ship. Cooperation with the SAR operation is assumed.

**Medevac** – The medical evacuation of an ill or injured person from a vessel at sea or isolated location.

**METTAG** – Medical Emergency Triage Tag

**Minor Category (Green)** – A triage category assigned to those who are injured but ambulatory (can walk) and care for themselves.

**Multi-Agency Incident** – An incident where one or more agencies assist a jurisdictional agency or agencies.

**Multi-Casualty Incident (MCI)** – An incident involving 3 or more injured persons.

**On-Scene Coordinator (OSC)** – The OSC is the person in command of the SAR unit designated by JRCC as OSC. The OSC provides on scene decision making, including those related to scene stability, coordination of resources, communications, requests for additional resources, and rescue plan.

**Operations Section** – Within ICS, the section responsible for all tactical operations at the incident.

**Passenger Accountability** – The process of ensuring, usually via casualty tracking methods, that all survivors are accounted for through all stages of an incident.

**Place of Refuge** – A place where a ship in need of assistance can take action to stabilize its condition and reduce hazards to navigation, and to protect human life and the environment.

**Public Safety Canada** – Coordinates the Government of Canada response to emergencies and disasters.

**Reception Centre** – A designated facility staffed by Emergency Social Services (ESS) that can temporarily house and feed survivors until they are repatriated.

**Regional Supervisor/Maritime Search and Rescue (RSMS)** – The senior Canadian Coast Guard officer at a Joint Rescue Coordination Centre or Maritime Rescue Sub-Centre.

**Rescue** – Refers to operations that usually involve the saving of life, or the prevention of injury.

**Rescue Specialist** – A Canadian Coast Guard crewmember with training in advanced first aid and rescue techniques.

**Safety Officer** – Within ICS, reports to the Incident Commander and is responsible for monitoring and assessing safety hazards or unsafe situations and for developing measures for ensuring personnel safety.

**SAR Tech** – A member of a Canadian Forces SAR Squadron with specialized training in accessing the rescue scene, providing medical treatment, sustaining and evacuating survivors.

**Search and Rescue (SAR)** – SAR comprises the search for, and provision of aid to, persons, ships or other craft which are, or are feared to be, in distress or imminent danger.

**Search and Rescue Mission Coordinator (SMC)** – The official temporarily assigned to coordinate a response to an actual or apparent distress situation.

**SITREP (Situation Report)** – Reports, typically from the OSC to the JRCC, to inform of on-scene conditions and mission progress.

**Span of Control** – An ICS concept that describes that any one supervisor should have not less than 3 and not more than 7 persons reporting, with the ideal being 5.

**START** – A triage method. Simple Triage and Rapid Treatment

**Triage** – The sorting and allocation of treatments to patients, and especially battle and disaster victims, according to a system of priorities designed to maximize the number of survivors.

**Triage Kit** – A purpose specific kit provided for use by the Triage Officer. This kit should include at minimum, triage tagging material, markers, waterproof note pad, etc.

**Transport Officer** – The Transport Officer is appointed by the OSC and serves as the eyes and ears of the OSC at the rescue scene as well as aiding in decision making, including ongoing assessments of scene stability, marshalling of transport units and casualty tracking.

**Triage Officer** – The Triage Officer is appointed by the OSC, reports to the OSC via the Transport Officer and is responsible for conducting and/or coordinating triage.

**Unified Command** – An ICS structure that allows agencies with legitimate responsibility at the incident to contribute to the command process and to jointly develop a common set of incident objectives and strategies.

**Uninjured Category (White)** – A triage category assigned to those who are involved in the incident but injured.

**Urgent Category (Red)** – A triage category assigned to those with problems that require immediate intervention, including obvious signs of shock such as breathing rate over 30, absent radial pulses or the inability to follow simple commands.

**Vessel of Opportunity** – Any vessel capable of assisting a distressed vessel or having capabilities that are required by the SAR Mission Coordinator.