

		OPERATION PROCEDURES
14	RBC Ref No. 57.5.4	SEARCH

SETTING UP AND OPERATING SEARCH PATTERNS

THE SEARCH

- HM Coastguard is responsible for co-ordinating searches.
- As the unit on scene the crew should contribute with local knowledge of tides, local sea conditions and visibility.
- The helm & navigator have responsibility for setting up and maintaining the search pattern.
- The crew are the searchers and must concentrate on searching their search sector at all times.
- If a crew member has to stop searching for any reason they must tell the helm immediately.

SEARCH PATTERN ELEMENTS

- **POD** - probability of detection
- **EDR** - estimated detection range.
- **TRACK SPACING** - The distance between each leg of the search - spacing depends on visibility.
- **SEARCH DATUM** - The point at which the search begins - sometimes marked with a Dan buoy
- **SEARCH PATTERN** - The pattern made by the search unit as the search is carried out.
- **SEARCH LEG** - Length covered by each part of the search.

TYPES OF SEARCH

- **SECTOR SEARCH** - Used for locating small objects (person in the water). **MUST** have an accurate search datum.
- **EXPANDING BOX** - Used for larger objects or to increase the search area following a **SECTOR SEARCH**. Again **MUST** have an accurate search datum
- **PARALLEL TRACK** - Used to search larger areas when the location of the casualty is vague. A simple pattern easily followed in a ILB.
- **CREEPING LINE** - Similar to a **PARALLEL TRACK** but legs are in the opposite direction. Used when the casualty is more likely to be at one end of the search pattern.

SECTOR SEARCH

- Used where the position of the casualty is known within close limits - e.g. MOB.
- All turns are made 120° to starboard.
- On completion of first search rotate pattern by 30°
- First leg in direction of tidal stream.
- **POD** at centre of pattern is 95%.
- The search is started by approaching the datum in the direction of the current.
- The first leg is 3x the **EDR**.
- If possible mark the search datum with a Dan buoy or similar marker.
- On completion of the first leg make a turn 120° Starboard

- Now complete second leg on this bearing.
- On completion of second leg make another turn 120° Starboard.
- On this leg of the search you should return to the search datum.
- If a marker has been used correct the pattern at this stage before beginning the next leg.
- This part of the pattern is now repeated.
- The first leg of the next sector is on the same bearing as the previous leg.
- One more sector and this part of the pattern is completed
- If this part of the search has failed to locate the casualty rotate the pattern by 30°.
- Now continue the whole pattern as before until three more sectors are complete.
- This pattern has now been followed twice and is therefore complete.
- Any further turns will return to ground already covered.
- If the casualty has not been located an expanding square pattern should be initiated.

IT IS IMPORTANT TO UNDERSTAND THE EFFECTS OF TIDAL CURRENTS ON THE SECTOR SEARCH

- The sector search will allow for the tidal current moving the casualty during the search.
- This is the start position.
- The first leg of the search misses the casualty.
- As the search progresses the casualty moves but we move with him.
- The search has now progressed to the second sector.
- At this point the casualty would not be located
- We are still searching but still moving with the casualty.
- The search has now progressed to the third sector.
- In this example at this point the casualty would be located
- Note the start position. If we had not moved with the tidal current we would never have found this casualty.
- This is **IMPORTANT TO REMEMBER** if using GPS.
- If we don't move with the current
- For example carry out the search from a transit on land
- Or carry out the search using GPS
- We will not locate the casualty

EXPANDING BOX

- Used where the position of the casualty is known within close limits - e.g. MOB.
- Used to continue search following unsuccessful completion of sector search.
- All turns are made 90° to starboard.
- First leg in direction of tidal stream.
- POD at centre of pattern is ??%.
- The search is started by approaching the datum in the direction of the current.
- The first leg 75% of the EDR.

- If possible mark the search datum with a Dan buoy or similar marker.
- On completion of the first leg make a turn 90° Starboard
- Now complete second leg on this bearing.
- On completion of second leg make another turn 90° to Starboard
- Complete next 2 legs at 2D (i.e. 2 x the length of the first 2 legs)
- All turns 90° Starboard
- Leg length is increased after each two legs.
- Next 2 legs are 3 x the length of the original leg.
- Continue increasing spacing in this manner.
- The search continues to expand away from the start point.

PARALLEL TRACK

- A more simple form of search used to cover a larger area is a parallel track.
- May be carried out using a number of vessels.
- The pattern is constructed as follows:

Typical use of parallel track search in ILB.

- Identify search area - begin first leg parallel to shore
- Note bearing - select a transit line in centre of search.
- Count the distance from the transit line to the end of the leg.
- Turn 90 (without changing speed and proceed to appropriate track spacing.
- Return along the reciprocal bearing of the first leg.
- Continue search in this way
- The search can also be maintained between 2 points at each end

CREEPING LINE

- Alternative when position of casualty is at one end of search area
- Can be used in conjunction with other vessel

THE SEARCH TURN

- 1 OSC asks the boat furthest from the new course (Boat "A") to turn 90° to STBD.
- 2 When boat "A" passes astern of boat "B" - Boat "B" then turns 90° STBD.
- 3 When boat "A" and "B" passes astern of Boat "C" - Boat "C" also turns 90° STBD.
- N.B. a/ The procedures are identical no matter how many boats are involved.
b/ All boats will then be parallel on each leg and proceed at the speed of the slowest boat.

FOR COMPLETE ILLUSTRATION REFER TO THE POWERPOINT PRESENTATION