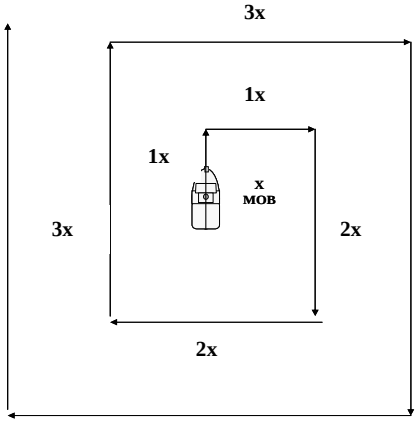
## RIB EX 11 - RIB SKIPPER- SEARCH PATTERNS:

**Purpose:** To practice use of sweep width tables & search patterns, navigating by:

**a. Use of GPS map plotter.**

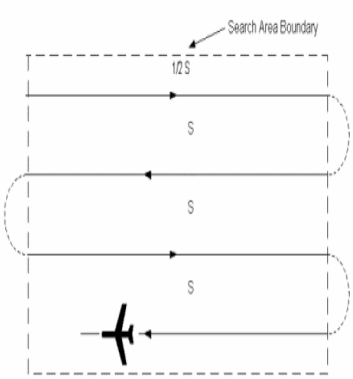
**b. Use of course, speed and leg times**

A search vessel's track is spaced so that it will not exceed the visual detection distance of the casualty taking into account the meteorological visibility, the size of the object and the sea state. This information is supplied overleaf and in the NATSAR 2003 Manual.



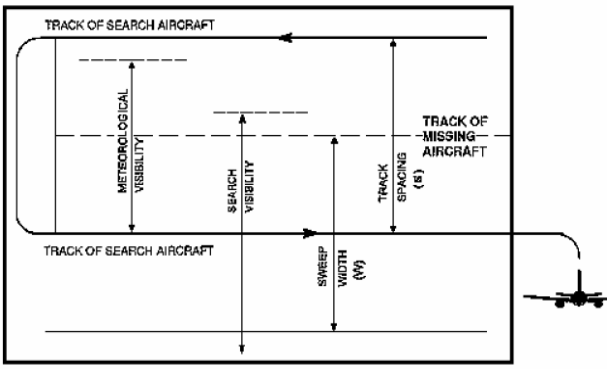

### Expanding square

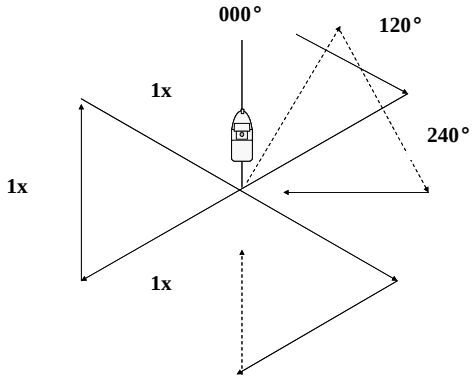
The Rib approaches the search datum into the drift, passes on by twice the sweep width (twice the detection range), then works around the compass, increasing lengths of subsequent pairs of legs by another initial run distance. This is navigated by driving with the GPS plotter or timing the RV runs while maintaining a constant speed.




### Parallel track

Most commonly used by planes or in situations of assumed drift.




### Sector search pattern

The Rib approaches the wreckage into the drift & drops a Dan buoy. Then it departs to a sweep width distant, then works around the compass with turns of120° relative to each heading to returning to the Dan buoy & wreckage. This capitalises on repeated investigation of the datum.

| **SEACH PLOTTING TASKS: Using the tables overleaf, make a search vessel for each of the three scenarios below. Trainers should use the manikin or a Dan buoy as the search object.** | | |
|---|---|---|
| Crashed plane 1 Pob LKP<br>**31° 25´.50 S 152° 55´.60 E** | 17Kt winds, no seas<br>5 Kilometres visibility | Motorboat Simulator Port Fantasy<br>Pob @31° 25´.73 S 152° 55´.60 E 0.1 |
| Swamped boat 2 Pob missing at calculated search datum:<br>**31° 22´.28 S 152° 56´.00 E** | Current South, 1.6mtr seas.<br>1.5NM visibility | Motorboat Simulator Port Fantasy<br>Pob1 @31° 22´.43 S 152° 55´.80 E<br>Pob2 @31° 22´.38 S 152° 55´.09 E 0.05 |
| Sailing dinghy missing LKP<br>**31° 26´.63 S 152° 56´.18 E**<br>Note –1 Pob missing | No wind, 2 mtr seas.<br>2 Kilometres visibility | Motorboat Simulator Port Fantasy<br>Sail @ 31° 26´.76 S 152° 55´.97E 0.2<br>Pob @ 31° 26´.76 S 152° 56´.17 E 0.05 |

**See the associated Exercises CC11 Drift Test and SARCC 6 Search patterns**

## Sweep Width Tables For Visual Search Over Water

**Table I-3. Uncorrected visual sweep width for vessels and small boats (NM)**

| SEARCH OBJECT | Height of eye 8' Visibility in kilometres | | | | | | Height of eye 14' Visibility in kilometres | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 5 | 10 | 15 | 20 | >25 | 2 | 5 | 10 | 15 | 20 | >25 |
| Person in water | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.5 | 0.6 | 0.6 | 0.6 |
| Raft 1 Person | 0.7 | 1.2 | 1.8 | 2.1 | 2.4 | 2.5 | 1.0 | 1.6 | 2.5 | 2.9 | 3.2 | 3.3 |
| Raft 4 Person | 0.8 | 1.5 | 2.3 | 2.9 | 3.2 | 3.4 | 1.1 | 2.0 | 3.1 | 3.8 | 4.2 | 4.4 |
| Raft 6 Person | 0.9 | 1.7 | 2.7 | 3.4 | 3.8 | 4.1 | 1.2 | 2.2 | 3.5 | 4.4 | 5.0 | 5.3 |
| Raft 8 Person | 0.9 | 1.7 | 2.8 | 3.5 | 4.0 | 4.2 | 1.2 | 2.3 | 3.6 | 4.5 | 5.1 | 5.4 |
| Raft 10 person | 0.9 | 1.8 | 2.9 | 3.7 | 4.2 | 4.6 | 1.2 | 2.3 | 3.7 | 4.7 | 5.4 | 5.8 |
| Raft 15 Person | 1.0 | 2.0 | 3.2 | 4.0 | 4.5 | 4.9 | 1.2 | 2.5 | 4.0 | 5.1 | 5.7 | 6.2 |
| Raft 20 Person | 1.0 | 2.1 | 3.5 | 4.4 | 5.1 | 5.6 | 1.3 | 2.6 | 4.3 | 5.7 | 6.4 | 6.9 |
| Raft 25 Person | 1.0 | 2.2 | 3.7 | 4.7 | 5.5 | 6.0 | 1.3 | 2.7 | 4.3 | 5.8 | 6.7 | 7.5 |
| Power Boat <5m (15 ft) | 0.5 | 0.7 | 1.0 | 1.2 | 1.3 | 1.4 | 0.5 | 1.0 | 1.5 | 1.8 | 1.9 | 2.0 |
| Power Boat 5-8m (15-25 ft) | 0.8 | 1.4 | 2.3 | 2.9 | 3.4 | 3.8 | 1.0 | 1.9 | 3.0 | 3.9 | 4.5 | 5.0 |
| Power Boat 8-12m (25-40 ft) | 0.8 | 1.8 | 3.1 | 4.1 | 4.9 | 5.6 | 1.2 | 2.3 | 4.0 | 5.3 | 6.4 | 7.3 |
| Power Boat 12-20m (40-65 ft) | 0.9 | 2.2 | 4.2 | 5.9 | 7.4 | 8.7 | 1.2 | 3.0 | 5.4 | 7.6 | 9.6 | 11.3 |
| Power Boat 20-27m (65-90 ft) | 0.9 | 2.3 | 4.6 | 6.8 | 8.8 | 10.6 | 1.2 | 3.0 | 6.0 | 8.7 | 11.3 | 13.6 |
| Sail Boat 5m (15 ft) | 0.8 | 1.4 | 2.2 | 2.7 | 3.1 | 3.4 | 1.0 | 1.8 | 2.8 | 3.5 | 4.1 | 4.5 |
| Sail Boat 6m (20 ft) | 0.8 | 1.6 | 2.6 | 3.3 | 3.9 | 4.4 | 1.1 | 2.0 | 3.3 | 4.3 | 5.0 | 5.6 |
| Sail Boat 8m (25 ft) | 0.9 | 1.8 | 2.9 | 3.9 | 4.6 | 5.1 | 1.1 | 2.2 | 3.8 | 5.0 | 5.9 | 6.7 |
| Sail Boat 9m (30 ft) | 0.9 | 2.0 | 3.4 | 4.6 | 5.5 | 6.3 | 1.2 | 2.5 | 4.4 | 5.9 | 7.1 | 8.1 |
| Sail Boat 12m (40 ft) | 0.9 | 2.2 | 4.1 | 5.7 | 7.0 | 8.1 | 1.3 | 2.8 | 5.2 | 7.2 | 9.0 | 10.5 |
| Sail Boat 15m (50 ft) | 0.9 | 2.2 | 4.3 | 6.1 | 7.7 | 9.1 | 1.2 | 2.9 | 5.2 | 7.9 | 9.9 | 11.7 |
| Sail Boat 20-23m (65-75 ft) | 0.9 | 2.3 | 4.5 | 6.5 | 8.3 | 9.9 | 1.2 | 3.0 | 5.8 | 8.4 | 10.8 | 12.9 |
| Sail Boat 23-17m (75-90 ft) | 0.9 | 2.4 | 4.7 | 6.8 | 8.9 | 10.7 | 1.2 | 3.1 | 6.1 | 8.9 | 11.5 | 13.8 |

Note: A sailboat is only a sailboat if the sails are up. If the sails are down, the craft should be classed as a powerboat.

**Table I-4. Visual sweep widths for merchant ships (NM)**

| Height of eye correlates to bridge of a merchant ship | Meteorological visibility [km] | | | | |
|---|---|---|---|---|---|
| Search Object | 5 km | 10 km | 20 km | 30 km | 40 km |
| Person in water | 0.4 | 0.5 | 0.6 | 0.7 | 0.7 |
| 4-person liferaft | 2.3 | 3.2 | 4.2 | 4.9 | 5.5 |
| 6-person liferaft | 2.5 | 3.6 | 5.0 | 6.2 | 6.9 |
| 15-person liferaft | 2.6 | 4.0 | 5.1 | 6.4 | 7.3 |
| 25-person liferaft | 2.7 | 4.2 | 5.2 | 6.5 | 7.5 |
| Boat <5m (17ft) | 1.1 | 1.4 | 1.9 | 2.1 | 2.3 |
| Boat <7m (23ft) | 2.0 | 2.9 | 4.3 | 5.2 | 5.8 |
| Boat <12m (40ft) | 2.8 | 4.5 | 7.6 | 9.4 | 11.6 |
| Boat <24m (79ft) | 3.2 | 5.6 | 10.7 | 14.7 | 18.1 |

**Table I-7. Weather correction factors for all types of search facilities**

| | Search Object | |
|---|---|---|
| Weather: winds km/h (kt) or seas m (ft) | Person in water, raft or boat < 10m (33ft) | Other search objects |
| Winds <28 km/h (<15 kt) or seas 0-1 m (0-3ft) | 1.0 | 1.0 |
| Winds 28-46 km/h (15-25 kt) or seas 1-1.5 m (3-5ft) | 0.5 | 0.8 |
| Winds >46 km/h (> 25 kt) or seas > 1.5 m (> 5ft) | 0.25 | 0.5 |

Note: Table I-7 differs from IAMSAR for other search objects in winds above 15 kts. The correction factors are based on a combination of the values previously used by AusSAR and observations of the reported effect of high winds on sweep width values in actual SAR incidents.

## Training resources:

Workbook- "Basic facts of SAR".
Presentation- CD Index>Rad Op.. Lessons> Supervise response >"SAR practice"
Presentation- PMSRG Coastal orientation.
Motorboat Sim.- Port Fantasy Scenery