



# MARITIME ACTIVITIES ENVIRONMENTAL MANAGEMENT PLAN

Procedure:  
S1

**Activity:** Operation of Spherion B, Spherion MFS, SQS-56 and Mulloka hull-mounted ASW sonars (active mode only).

**Potential environmental impacts:**

- Disturbance to cetaceans, particularly baleen and beaked whales.

Baleen whales most likely to be encountered in exercise areas are humpbacks, blues, southern rights and minke. The risk of acoustic disturbance is heightened when conditions support extended sonar propagation ranges, although only direct path transmissions are considered to represent any real risk; modeling suggests that the risk of adverse effects within convergence zones is unlikely.

**NB: The presence of dolphins, including any which may be riding in a ship's bow wave or wake, does not require implementation of environmental safeguard measures for ASW sonar.**

**Responsibility:** PWO

**Impact avoidance/mitigation measures:**

- To the greatest extent practicable, avoid sonar transmissions with source levels above 210 dB (re 1  $\mu$  Pa – 1 m):
  - within 30 nm of the coastline in both the WAXA and EAXA over the period May to November;
  - the Capricorn Channel, SWBTA and the NWXA over the period July to September; and
  - R119C1 and R119C4 of the WAXA over the period December to May.
- Before commencing sonar activities assess sonar propagation characteristics using TESS II. If the range prediction indicates that received levels will exceed 160 dB at ranges greater than 4,000 yds, especially if surface ducting is likely, consideration should be given to reducing transmitter source power levels by 3 dB to 6 dB, if system controls permit.
- Maintain effective lookout for whales in area of ship out to a range of 4,000 yds, beginning 30 minutes before commencing transmissions. Any whales sighted in this period are to be monitored.
- Ensure at least 4,000 yd separation between ship and nearest whale at time of serial commencement. Maintain required separation between ship and nearest whale during serial.
- Suspend sonar transmissions if whale is sighted at less than 4,000 yds from ship. Do not resume transmissions until range from ship to nearest whale has opened to required distance.
- In conditions of limited visibility (e.g. night, mist, haze), Command is to make reasoned decision based upon most recent observations and reports of whale activity in the operating area, and adopt reasonable risk mitigation measures based upon predicted whale presence. The use of other sensors, such as opto-electronic and infrared devices, should be considered and employed if practicable. Note that navigation radars may also provide a useful adjunct in some conditions.

**Alternatively (for systems capable of selectable sectoral transmission):**

Change transmission mode so that sector where whale/s occur within required stand-off range is blanked, for at least 45° either side of the bearing to the whale/s, ensuring whales in blanked area come no closer than 2,000 yds to ship. If whales come closer than 2,000 yds then all transmissions should cease until adequate separation distance is regained.

**NB: No restrictions apply to the use of sonar in passive mode.**

**Environmental safeguards:**

**General Safeguards**

If significant whale activity is noted in the immediate vicinity of the ship such that establishing and maintaining the required separation is difficult, discretion resides with the CO to decide how best to proceed with planned serial, or if serial should be rescheduled. In making any such determination, the CO is to consider species of whales involved, noting that baleen whales (eg. humpbacks, southern right and blue) and beaked whales are considered most susceptible to active ASW sonar.

**Beaked Whale Protection**

When operating in or near water less than 2000 m deep, the chart is to be checked to determine if the ship will be operating within 5 nm of any seamounts or within 5 nm to seaward of any steep rises (i.e. with a gradient of 1:10 or greater), undersea canyons or trenches.

If so, assess sonar propagation characteristics using TESS II. If the range prediction indicates that received levels will exceed 160 dB at ranges greater than 4,000 yds, then sonar transmissions in the direction of the seamount, steep gradient or other underwater terrain feature should be blanked (if practicable) or attenuated by 3 dB to 6 dB (if system controls permit) whenever ship is within 5 nm to seaward of the steep grade or other feature. These restrictions do not apply if the ship is on the upslope side of the steep grade.

Command should note that visual surveillance for beaked whales is largely ineffective, owing to their small size and extended dive profiles. This underscores the importance of other risk reduction measures, as outlined above.

**Shallow Marine Embayments**

When operating in shallow marine embayments (e.g. Jarvis Bay, Shoalwater Bay, Cockburn Sound):

- Reduce transmitter source power levels to the lowest practicable level. This is to reduce the risk of extended propagation ranges causing disturbance to marine biota or nearby recreational users (eg. SCUBA divers).
- If practicable, avoid transmission if civilian boats are within 2,000 yds of the ship (to minimise risk to public reputation, rather than any specific ecological risk).
- Hull-mounted ASW sonar transmissions should be kept to a minimum in shallow marine embayments. Avoid conducting DSOTS in these areas if not strictly necessary.

**Recording, monitoring & reporting:**

In the event of any incursion of a whale or dolphin within the designated exclusion zones while transmitting on ASW sonar, ships are to report incident by signal to AUSFLTSAFETY (SIC I2C/ESL), reporting date/time, position, nature of incident, avoidance action taken, type of marine animal involved (if known) and any observed response.

**Other references:**

**Related procedures:**

