



Safe Work Procedure

Document Details

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Title	Shark Shield Safe Working Procedure/Instructions	Approver	Rochelle Johnston
Locations	BEES Off campus Australia,KENC-D26-LG-LG10	Version Number	56

Hazards and Risks

Hazard Category	Plant & Equipment - Lack of training
Controls	Inductions to the Shark Shields are mandatory from the Diving Officer. Use of the Shark Shields are dictated by the Diving Safety Committee.
Hazard Category	Animal & insect - Bite/scratch/kick
Controls	Divers are required to abide by Shark Shield use policy as per the BEES Diving Operations Manual. This states in what circumstances no diving shall occur and when shark shield are compulsory. In all other instances, an assessment as to whether diving may be undertaken without a shark shield must be undertaken by the Dive Coordinator and should be done with the entire dive team.

Safe Work Procedure Instructions

Resources Required Shark Shields

Instructions

SAFE OPERATING PROCEDURES

1. Ensure the unit is charged prior to use. You can perform the battery check by switching unit on.
2. Always leave the unit on while in the water. It must not be switched off while snorkelling or diving.
3. The antenna **MUST** be fully extended at all times. The maximum field is generated when the antenna is fully extended and allowed to trail behind the user. **DO NOT** wind or coil the antenna during use as this will prevent a full field from being generated. Although a signal may still be present the field will be localised and will reduce the deterrent properties.
4. To confirm the unit is operational the user simply needs to pass a hand within 100mm of the electrode in the antenna. Most users will experience a mild electrical stimulation in the form of surface muscle activity.

5. The electrodes are a specific surface area and must not be covered with any conductive or non-conductive material.
6. Shark Shield has been designed and tested as a personal device. Do not attempt to join multiple Shark Shields together or wear multiple devices.
7. Continual operating time of approx. 6 hours (depending on water temperature).
8. Shark Shield is designed for sea water use only. Saltwater is the electrolyte for the electrical field; however, it will work in water of approx. 50% salinity of saltwater.
9. The deterrent field forms a protective field in the water. In normal ocean environments, sharks will actively avoid entering the field. The user **MUST** avoid situations where sharks are excited and aggressive, where feeding is taking place or where blood or offal is present in water.
10. Avoid using the Shark Shield next to any large metal objects as this could reduce the size of the protective field.
11. Anyone with a **pacemaker**, who is **pregnant**, or has a **health condition** which could be affected by the electric field, should not use the device. Some examples of health conditions include heart disease, a history of heart problems, peripheral vascular disease, stroke, a history of fainting or epilepsy, or lung disease.

Charging your Shark Shield

1. Do not charge shark shield when wet. Ensure pins are dry before connecting charger.
2. Ensure the Shark Shield device is turned OFF by turning the red ON/OFF KNOB in an anti-clockwise direction.
3. Connect the charger plug to the two charger pins on the Shark Shield. When the charger is inserted, and the charger switched on:
 - a. The older Freedom7 will flash RED.
 - b. The newer Freedom7 and SCUBA7 will have both RED and GREEN LED illuminated.
4. Full charging will be achieved in approximately 2-4 hours. When fully charged:
 - a. The older Freedom7 will change to a solid GREEN.
 - b. The newer Freedom7 and SCUBA7 will have a solid RED.
5. If any unit displays alternate RED and GREEN flashing LED's, remove the charger, ensure the unit is SWITCHED OFF, wait sixty seconds and re-insert the charger.
6. Charge after each use.

Essential Maintenance and Testing:

1. Shark Shield devices perform a self-check each time they are turned on. To confirm the device functions effectively when the device is submerged under water, place your hand close to the antenna/electrodes to feel the electric field pulsing.
2. **Thoroughly rinse** the Shark Shield in fresh water after each use. **Do not use any detergents.**
3. Leave your Shark Shield to dry before placing it in storage. Avoid direct sunlight when drying the unit.

4. **Thoroughly dry the charger pin area before connecting the charger.** This is important when charging immediately after it has been used in water.
5. We recommend each device is stored with some charge when stored for long periods of time to avoid the battery 'going to sleep'

LED Status Indications

Start Up Self Check and Battery check

Freedom7 (old model)

RED LED illuminates for 1 second and then blinks quickly twice. If it passes its self-check then the unit will beep and at the same time the **RED LED** will turn **Off** and the **GREEN LED** will illuminate.

Freedom7 (new model) and SCUBA7

RED LED illuminates for 1 second and then blinks quickly twice. If it passes its self-check then the unit will beep and at the same time the **RED LED** will turn **Off**. The device then displays the Battery Status Condition LED flashes below:

100% Battery: **GREEN LED** flashes 10 times

90% Battery: **GREEN LED** flashes 9 times

80% Battery: **GREEN LED** flashes 8 times

70% Battery: **GREEN LED** flashes 7 times

60% Battery: **GREEN LED** flashes 6 times

50% Battery: **GREEN LED** flashes 5 times

40% Battery: **GREEN LED** flashes 4 times

30% Battery: **GREEN LED** flashes 3 times

20% Battery: **RED LED** flashes twice with simultaneous beeps

10% Battery: **RED LED** flashes 10 times with simultaneous beeps

During Operation

State Indication

Not Submerged

Submerged

All models

GREEN LED will flash at roughly 4 times a second.

GREEN LED is illuminated.

Low Battery

The standard **GREEN LED** indication is interrupted every 3 seconds by a **RED LED** which turns on for less than 1 second. A beep occurs when the **RED LED** turns on. **GREEN** and **RED LED** will flash alternately with the **ALARM** sounding continuously. Charge will last for 10 more minutes.

Short Circuit Output

LED Charging Indications

State Indication	Freedom7 older model	Freedom7 (new) or SCUBA7
Charging	RED LED will flash.	RED and GREEN LED are illuminated.
Charged	GREEN LED is illuminated.	RED LED is illuminated.

Emergency Procedures

If the following low alarm is signaled, the diver has about 10 minutes battery life and should finish dive and get out of the water: **GREEN** and **RED LED** will flash alternately with the **ALARM** sounding .

Cleanup and Waste Disposal Instructions

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