

# CHAFFERS MARINA HAZARD IDENTIFICATION



Hazard to be managed. **Electric Shock Drowning**

Is the hazard significant? **YES**

Date: **28 July 2020**

Person who identified hazard. **Stephen Jay, CML Director**

Control method: 1. Eliminate                      2. **Isolate**                      3. Minimise

**Reasons for control strategy**

A hazard has been identified that is caused by leakage current (electrical) for anyone in the water around boats in the marina. Most often, electricity enters the water when an electrical fault occurs aboard a boat and can also occur with a fault originating from the wiring of the marina.

Under Action	Actioned
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**A. LOCAL CONTROLS**

CML carries out an annual Certificate of Electrical Compliance plus monthly checks.		<b>Y</b>
Any vessel that is using shore power is required to follow the CML Shore Power Connections Advisory which is as per AS/NZS 3004.1:2014 Electrical Installations – Marinas and Boats.		<b>Y</b>
CML is monitoring the electrical supply system. Cable failures have been occurring due to abrasion and deterioration of the cables running through the pier electrical conduits		<b>Y</b>
All electrical appliances, tools and leads should undergo regular testing - what we all know as 'test and tag'. The frequency of testing a device is determined by where it is used	<b>Y</b>	
Contractors working at Chaffers Marina are required to have all electrical tools and leads tagged and tested.	<b>Y</b>	
Under no conditions is swimming, diving, or snorkelling to be carried out in Chaffers Marina without permission from the CML Office.		<b>Y</b>

**B. MANAGEMENT CONTROLS**

CML has an ongoing programme with its electrical contractor to identify and replace faulty electrical equipment associated with the supply of electricity to vessels (including all cables, RCD's, plugs and power bollards)		<b>Y</b>
No unauthorised swimming, snorkelling, or diving in Chaffers Marina	<b>Y</b>	

**C. LONGER TERM STRATEGIES**

Ongoing replacement and upgrade of CML Marina Electrical infrastructure	<b>Y</b>	
Ongoing checks and monitoring of vessel EWOFF's and Shore Leads	<b>Y</b>	
Ongoing restrictions on swimming, snorkelling, or diving in Chaffers Marina		<b>Y</b>

Person responsible to monitor effectiveness of controls: **Andrew Welsh CML GM**

Frequency these controls will be reviewed: **Ongoing**

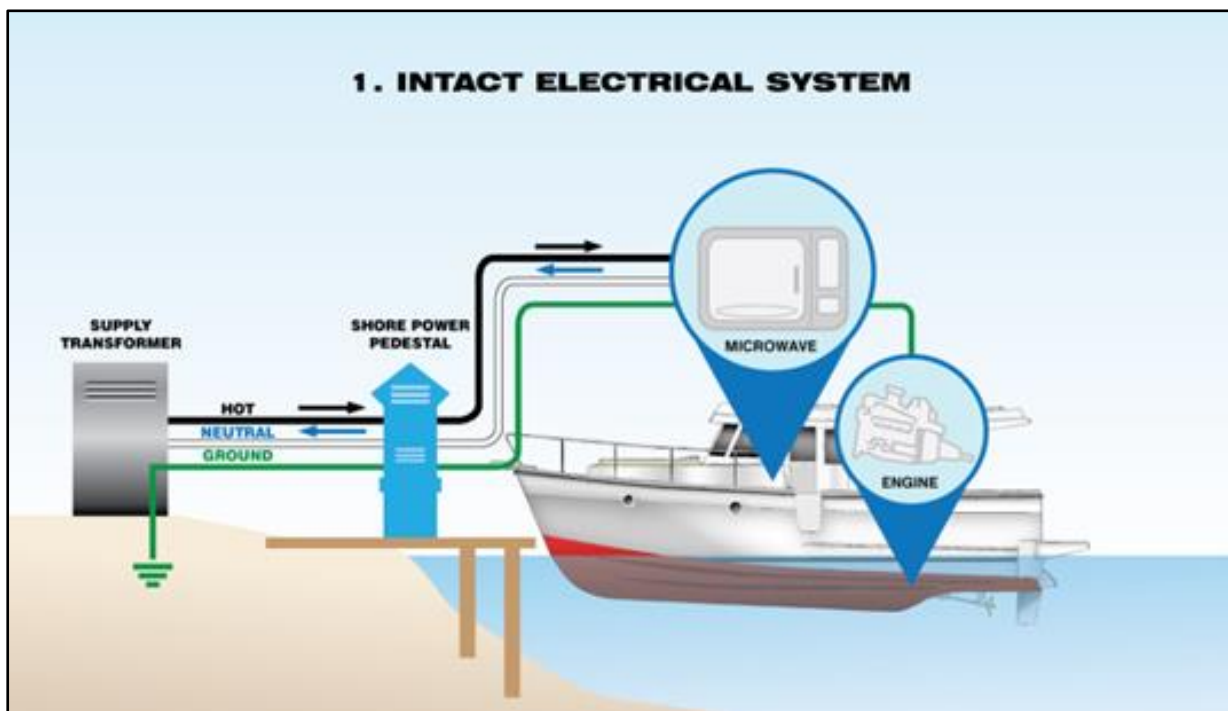
## HAZARD – ELECTRIC SHOCK DROWNING

### What Is Electric Shock Drowning?

Electric Shock Drowning (ESD) is the result of the passage of a typically low level AC current through the body with sufficient force to cause skeletal muscular paralysis, rendering the victim unable to help himself / herself, while immersed in fresh water, eventually resulting in drowning of the victim. Higher levels of AC current in the water will also result in electrocution. Electric Shock Drowning (ESD) has become the catch all phrase that encompasses all in-water shock casualties and fatalities.

Although Electric Shock Drowning can occur virtually in any location where electricity is provided near water, most Electric Shock Drowning deaths have occurred in public and private marinas and docks (in the USA). The typical victim of Electric Shock Drowning is a child swimming in or around a marina or dock where electricity is present. The electricity that enters the water and causes Electric Shock Drowning originates from the wiring of the dock or marina, or from boats that are connected to the marina's or dock's power supply.

Would you consider stepping into a bathtub or swimming pool with a hair dryer? Think of the boat as the hairdryer. If an electric fault occurs on a boat while it is connected to a marina's or dock's shore power and the boat or marina is not properly wired to meet current AS/NZ standards, the water surrounding the boat will become electrified.



### Electric Shock Drowning Is A Silent Killer.

- There is no visible warning or way to tell if water surrounding a boat, marina or dock is energized or within seconds will become energized with fatal levels of electricity.
- In most circumstances' victims do not immediately feel electrical current when they enter or swim in the water around a marina or dock, thus giving the victims the false impression that it is "safe" to swim. Most often, electricity enters the water when an electrical fault occurs aboard a boat. Often, the electric fault occurring aboard the boat is intermittent. For example, the fault that places deadly current into the water may only occur when a light switch is turned on, or when a hot water heater, battery charger, A/C unit or other electrical device cycles on. Water can appear and feel "safe" and in a split second become energized with deadly electricity.

- Under the typical scenario, the victim's muscles become paralyzed by the electrical current, he or she is unable to swim, and ultimately drowns. Unless there is a witness nearby to experience and report the sensation of electric shock in the water, the victim's death is typically labelled a common drowning. In the vast majority of Electric Shock Drownings, the victim's autopsy shows no signs of electrical injury and investigators often never learn that electricity was the cause of the drowning.
- Until very recently, there has been very little public awareness about the danger of Electric Shock Drowning. As a result, Electric Shock Drowning continues to kill, and new families are devastated on a yearly basis with very little public awareness.

