



## NOAA FISHERIES

### National Observer Program

#### National Observer Program Advisory Team's Safety Advisory Committee

The Safety Advisory Committee (SAC) advises the National Observer Program Advisory Team (NOPAT) on matters of observer safety, health, and welfare. It works to promote a safer and healthier environment for observers to work in and is responsible for developing and recommending the requirements necessary to fulfill NOPAT's national safety standards, including:

- Spearheading and reviewing proposals on observer safety initiatives, along with monitoring and advising on any safety policies and programs which may affect NOAA Fisheries observers.
- Addressing specific safety issues through seminars, workshops, forums, and panel discussions.
- Developing training classes and standards for Observer Programs' safety trainers.
- Creating and maintaining mechanisms to enforce safety-related policies for Observer Programs.

#### FOR MORE INFORMATION

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[www.fisheries.noaa.gov/topic/fishery-observers](http://www.fisheries.noaa.gov/topic/fishery-observers)



# Observer Know-How: Electrical and Fire Safety in a Marine Environment

## Safety First for Successful Monitoring

We depend on our observers and at-sea monitors—professionally trained biological technicians who gather crucial information about many U.S. commercial fisheries—to be our eyes and ears on the water. The work of observers is critical to effective fisheries management, and their safety on the job is of utmost importance. Navigating the marine environment can be challenging. Taking care to put safety first at every step ensures those challenges are met with success.

## Electrical Equipment and Water: A Potentially Volatile Mix

Operating electrical equipment onboard a vessel at-sea can pose unique dangers given the constant proximity to water. Electrical hazards are generally a result of shorts, faults, or the opening or closing of energized circuits. Most electrical problems happen when wire connections become loose or corroded, causing localized hot spots, reduced performance, and possible fire hazards. Additionally, chafed insulation can result in wires shorting, generating sparks and arcs.

Electrical shorts are a leading cause of boat fires. Taking the proper precautions to reduce the risk of electrical shock or fire can be lifesaving.

## Avoiding Electrical Hazards and Shock

- **Use your senses.** Be alert to smoke, overheating, and an “electrical smell,” which are signs of trouble.
- **Keep covers closed.** Covers to fuse panels, junction boxes, etc., should be closed at all times when not in use to keep moisture and debris out. Notify someone immediately if you see open covers.
- **Don't overload electrical receptacles.**
- **Always be cautious when working near electrical equipment in a marine environment.** Be particularly aware of extension cords, especially those that show signs of damage or repair (tape, etc.).
- **Be aware of batteries.** Batteries, if wet or old, can sometimes give off dangerous gasses in enclosed spaces. If you smell “rotten eggs” in a battery compartment, notify the vessel crew, and leave the area.
- **Exercise caution with lithium batteries.** Li-ion batteries used in many electronics can create challenges. If one overheats, hisses or bulges, immediately move it away from flammable materials and place it on a non-combustible surface, allowing it to burn out. A *Class D* extinguisher can be used.



*This wiring and scorched outlet may indicate potential electrical issues.*

## Responding to Electric Shocks and Fire

### Responding to Electric Shocks

Electric shock is injury caused by electricity flowing through the body, and can occur both with or without direct contact with live electrical parts. Should you or someone else on board the vessel experience a shock, take the following steps:

- Turn off the source of electricity, if possible.
- Separate the person (or yourself) from the current's source using a dry, nonconducting object made of cardboard, plastic, or wood—shock can be conducted from one person to another.
- Once safely away from danger, begin CPR if the person is not breathing, coughing, or moving. These can be signs that circulation is compromised.
- Keep the person from becoming chilled and check for any injuries. Treat any burns.
- Seek medical attention as soon as possible.

### Responding to Fires

**Class C**, or electrical, fires are fueled by energized electrical equipment, conductors, or appliances. To protect from shock, these kinds of fires require the use of nonconducting extinguishing agents such as CO<sub>2</sub>, halon, or dry chemicals to protect from shock. **Class K** fires, caused by cooking fats, greases, and oils, are a risk in the galley. **Class K** extinguishers use a process called saponification by releasing an alkaline agent to create a foam that traps vapors and puts the fire out.

Use the “**PASS**” acronym to remember the basic instructions for operating an extinguisher:

- **P**ull the **P**in, which can be found at the top of the extinguisher.
- **A**im at the **b**ase of the fire, not the flames.
- **S**queeze the **l**ever **s**lowly. This will release the extinguishing agent in the extinguisher.
- **S**weep **f**rom **s**ide to **s**ide. Use a sweeping motion, moving the fire extinguisher back and forth until the fire is completely out.



Class C Fire Extinguisher:  
Electrical Fires.



Class K Fire Extinguisher:  
Cooking Fats/Oils Fires.



Discharge the fire extinguisher at the base of the fire.