



NC Division of Environmental Quality

Safe Use of Marine Flares

rev. 03-2025



Objectives

1. Understand the purpose of marine flares
2. Understand the different types of marine flares
3. Understand USCG requirements for marine flares
4. Understand how to safely store and deploy each type of flare



Flares are Visual Distress Signals

- Visual Distress Signals include distress flags, signal lights, and pyrotechnic flares.
- Marine flares are pyrotechnic signaling devices used to communicate in emergency situations.
- Their purpose is to pinpoint the location of a vessel in distress.
- It is illegal to use flares outside of an emergency or training exercise



Legal Issues

- Igniting flares as a false distress call can be a class D felony.
- Igniting flares a false distress call can be considered a “hoax call”.
- For these reasons, we contact MHC PD, MHC FD, and the USCG before training exercises.
- Flares can contaminate water with the propellant (potassium perchlorate)
- Do not throw unused or used flares into the water.



USCG Requirements

- They apply to all vessels on coastal waters or passageways to the sea at least 2 miles wide
- You may use a distress flag (day) or a distress light (night)
- If you choose pyrotechnics, you must carry three-day rated flares and three-night rated flares, or three multi-purpose flares. These are minimum requirements. Rescue experts recommend carrying six flares of each type



Distress Flags

Can anyone describe a distress flag to the class?



Distress Flags

- This is what it looks like:



- Are you confident other boaters would see it from a distance or even recognize it?

Marine Signal Lights

- Flash the SOS sequence . . . - - - . . .
- Can last up to 60 hours
- Visible up to 10 nautical miles in good weather



Life Expectancy & Expiration

- All pyrotechnic flares must be under 42 months old
- Expiration dates are stamped on each device



Storage

- Store flares in a cool, dry place away from heat sources or direct sunlight so they meet their life expectancy
- Flare kits often come in waterproof cases to protect them from water and sunlight



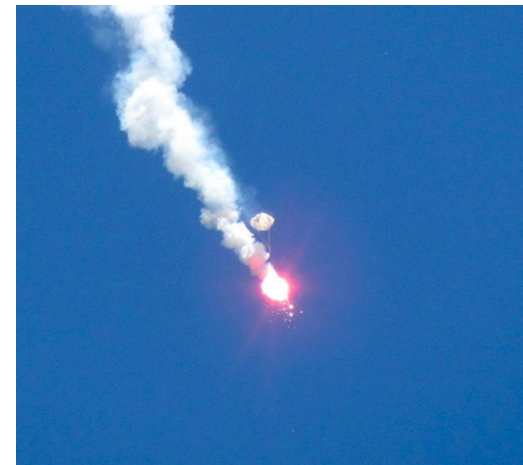
Types of Marine Flares

- Handheld Flares



- Smoke Flares

- Aerial Flares



- Parachute Flares

Handheld Flares

- Description: Hand activated portable flares
- Use: Used to signal distress or alert nearby vessels or aircraft
- Duration: 1-3 minutes
- Color: Red or Orange
- Rating: Day or Night



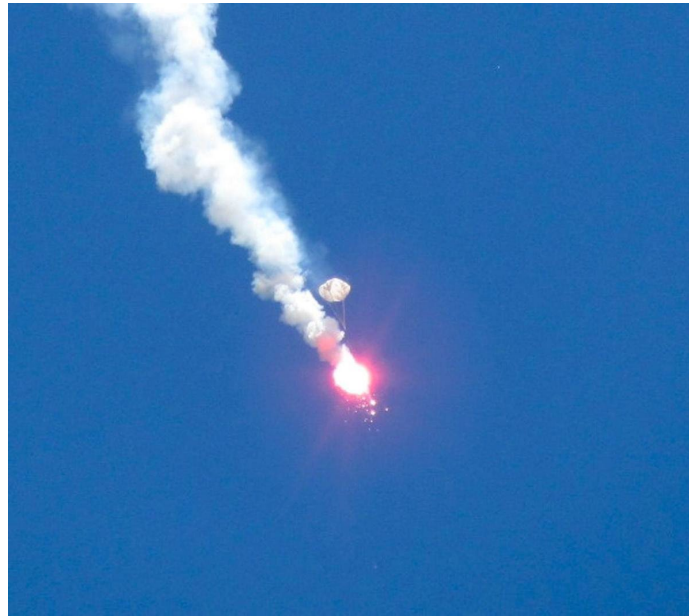
Smoke Flares

- Description: Produce thick, colored smoke
- Use: During daylight only
- Duration: 3-5 minutes
- Rating: Daytime use only



Aerial Flares

- Description: Bright, visible signals launched into the air
- Use: Ideal for signaling distress from a distance
- Duration: 30-60 seconds
- Color: Red or Orange
- Rating: Day or Night



Parachute Flares

- Description: Flares that deploy a parachute and burn while drifting slowly down
- Use: Best for signaling from a distance or in low visibility
- Duration: Up to 40 seconds
- Color: Red
- Rating: Day or Night



Potential Hazards with Flares

Hazards Associated with Marine Flares include:

- **Noise:** Flare pistols produce noise levels equal to gunshots
- **Slag:** Handheld flares produce molten slag which can ignite a fiberglass boat deck.
- **Smoke:** Marine flares often contain OSHA regulated substances



PPE (Personal Protective Equipment)

In an emergency you may not have this PPE, but for training today we have:

- **Safety Glasses**: Recommended for all types of flares
- **Hearing Protection**: Recommended for aerial flares
- **Leather Gloves**: Recommended for handheld and smoke flares



Flare Safety for DMF Training

- Before firing aerial flares, we will look both directions and make sure no boats are anywhere nearby. We will fire them one at a time.
- There will be water buckets on the dock. Place expired flares or duds in a water bucket.
- There will be safety officers on the dock. If you encounter or witness anything you unsafe, contact a safety officer immediately.



Flare Activation

Marine flares can be activated in several ways:

- Pulling a cord
- Striking a striker like a match
- Firing from a pistol

We receive donated flares from the MHC Fire Department, USCG, DMF, and DCM. If you are unsure of how to activate a flare during training today contact one of the instructors.



Handheld & Smoke Flare Safety

- Check wind direction: Have the wind at your back so that slag and smoke don't blow back towards you.
- Hold flares at arms length and parallel to the water: This method will keep the flame, smoke, and slag as far from your body and the boat deck as possible. During training hold them over the water to avoid damage to the dock.
- Check the windsock on the hangar: When activating a smoke flare, make sure you are completely downwind of all other employees.



Aerial & Parachute Flare Safety

Flare pistols must be treated as firearms:

- A flare pistol is a 12-gauge shotgun pistol.
- Point flare pistols away from yourself and others.
- We are shooting expired flares. There may be some duds. Always assume a dud may fire at any moment.



How to Fire a Flare Pistol

1. Go to the edge of the boat so the wind is at your back
2. Inspect the cartridge for damage and load it into the pistol
3. Extend your arm out and up to a 45-to-60-degree angle
4. Turn your head away, cock the pistol, and pull the trigger
5. When the cartridge has cooled remove and toss it in a water buck
6. Do not attempt to refire a dud. You may put the entire pistol in the water bucket



Flare Safety for DMF Training

We will watch the windsock and might stop training if the wind shifts towards the buildings.

