

Lesson Plan - 2.4.1 Pyrotechnics

Date: 12/1/18
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AIM:

Trainer - Explain the types of flares used by crew; how to use them and when / where to use them

Crew - A full understand of safe usage of both lifejacket and ILB flares, disposal of used flares; handling misfired flares; notifying Coastguard of intention to fire flares.

Training Shoreside - Provide a walkthrough of the different types of flares (Use Powerpoint Slides)

- Types of flares used
- Where the flares are stored
- How to safely remove and prepare for firing
- How to notify relevant authorities
- How to firing Flares
- Handling misfired flares
- Disposal of flares
- Information required from flares
- How to ensure flares are in date for use
- Safety consideration

Training Afloat - No afloat training

Training Poole - Crew will experience live firing of flares on the crew course

Flare Types:

Parachute flares

These flares should only be removed at the instruction of the helm; all crew have been instructed / briefed of the firing and the boat made ready for the flare to be fired.

DO NOT FIRE WITH AIRCRAFT or HELICOPTER IN THE AREA

The crew member responsible for the firing should -

- 1) Kneel at the bow of the lifeboat with the wind coming from the stern, this ensures the flare if taken with the wind and not back towards the boat and crew. This also puts you furthest from the fuel.
- 2) Ensure all crew have visors down and positioned behind them
- 3) Flares should be fired in a downwind direction as the flare seeks the wind. As is stated on the flare.
- 4) Remove the cap
- 5) Hold signal firmly by ribbed handle. Unscrew RED bottom cap

- 6) Hold rocket vertically above head pointing away from body.
- 7) Ensure hands remain clear of top. To fire - pull red ball sharply down

FACTS -

Firing angle 45 degrees - distance 200m or 90 degrees 300m. this can be seen for up to 30 miles

Brightness - Red - 40 seconds 30,000 candela White 30 seconds 75,000 candela

Misfires - Hold the flare down wind for 1 to 3 minutes; once happy the flare is safe pierce the foil cap and throw overboard to allow it to sink (Flare will float otherwise). Prior to discarding, write down the date of manufacture / batch number / date of expiry . The manufacturer will recall the whole batch if it is notified of two or more misfires so its important to have this information.

Mishandling of flares and lead to serious injury or fatality

Red Parachute Flare Mk8a



2 flares are stored at the bow of the boat under the anchor line reel. To remove , lift the orange velcro sealed cover and pull out the flare.

As this flare is used in distress there is no need to notify coastguard of firing.

White Parachute flares



The white flare is used by the RNLI for searching as well as collision avoidance.

Day / Night Flare



handheld personal flares should be used when you are able to see your rescuers but they have not yet seen you. These flares are dual purpose, which means that they contain a bright red burn and orange smoke. Operating one end does not invalidate the other. You can identify which end of the flare does what by the ribs on the ends; the end with more ridges is for night and the other for day.

The procedure to follow when considering and preparing to fire a handheld personal flare are

- a) Wind Direction Flares should be fired in a downwind direction, to prevent heat and smoke in the operators face
- b) On removal discard the cap, unless on the boat.
- c) Visor - Lower the helmet visor and your head
- d) Hold well below the instructions at approx 45° angle
- e) Hold the flare in the left or right hand. The trigger should be between the index finger and the thumb.
- f) If you are to keep the flare then allow to cool before operating other end.

Warning - This flare is self oxygenating; if dropped while still firing and attached to the lifejacket by the 'o' ring, will sink to knee level and burn the crew member. Hold on to the flare until discharge is complete. If the flare is to be retained for a second use at the opposite end then the crew member should ensure the initial discharge is complete before restoring.

On the boat - The orange smoke flare can be used to indicate the direction of the wind when operating with the helicopter. At night this will still show a trace for helicopters operating with FLIR. However, only fire if requested by the pilot from the boat

Reference Material:

Video Clips for PPE maintenance

Red Parachute flare - <http://www.youtube.com/embed/v7KoBiUzk6E?rel=0&autoplay=1>

<http://www.youtube.com/embed/jynH5vXpnbl?rel=0&autoplay=1>

White Parachute flare - <http://www.youtube.com/embed/wOhnOM5OvwE?rel=0&autoplay=1>