

Time:

Distress Equipment – Marine Pyrotechnic Distress Signals

Key Concepts:

Main Teaching Points

- 1) Discuss the compulsory distress equipment required for vessels under 20 meters.**
 - a) water tight flashlight,
 - b) flares (A,B,C,D)
- 2) Review situations where prohibition/exemptions may apply.**
 - a) Vessels >6m up to 12 m are exempt from carrying pyrotechnic distress signals if:
 - operating in a river , canal or lake in which it can be at no time more than one mile from shore; or
 - engaged in an official competition or in final preparation for an official competition and have no sleeping arrangement.
- 3) Discuss the examination criteria for flares**
 - a) Approved by transport Canada
 - b) Valid for 4 years from the date of manufacture (stamped on each flare).
- 4) Discuss types of flares to be carried on board.**
 - a) TYPE A: Parachute—Single red star, reaches height of 300m and with aid of parachute comes down slowly. Easily observed from the surface or air. Burns for at least 40 sec. Range of visibility 38 miles.
 - b) TYPE B: Multi-star—two red stars when launch reach a height of 100m and burn for 4-5 seconds. Readily observed from surface or air. Range of visibility 12 miles. Note: some type B flares project only 1 star at a time. When using these star type, 2 flares must be fired within 15 sec of each other—double the number of cartridges to meet the regulations.
 - c) TYPE C: Hand held—Red flame torch held in your hand. Best for pin pointing location during an air search, burns for at least one minute. Range of visibility 7 miles. Note hold flare well clear of boat and down wind. Do not use road flares.
 - d) TYPE D: Smoke flare—Gives off a dense orange smoke for 3 minutes, used as a day signal only. Note: position smoke flare down wind.
- 5) Discuss the examination criteria for a flashlight.**

Almost every boat requires a watertight flashlight or flares. In the event of an electrical failure the water tight flashlight may be your only means to signal for help.

Notes

Quick Points

	Compulsory Equipment
	Prohibitions / exemptions
	Examination criteria for flares
	Types of flares
	Examination criteria for watertight flashlight

Instructor notes

All area flares should be fired at an angle into the wind. With a high wind velocity, lower the angle to a max of 45 degrees.

Flares should be stored in a cool dry location and in a watertight container.

Disposal—OBS see hand out policy

Use of flares, unless found in a situation of distress, is prohibited. Criminal Code violation / CSA.

Handouts—

Pyrotechnic Distress Signals
Flare Comparison Chart.
Pyrotechnic Distress Signals
Flare Visibility Range

Reference linked to LP

Safe Boating Guide Pg.50
PCCC manual Pg.68
Small Vessel Regulations
<http://www.tc.gc.ca/acts-regulations/GENERAL/C/CSA/regulations/070/csa076/csa76.html> Schedule III
The Essential on Pyrotechnic Signals
<http://www.tc.gc.ca/BoatingSafety/pubs/pyro/menu.htm>

Rationalization: *Unexpected happenings (limited visibility, nightfall) occur... be prepared in the event of an emergency.*

Suggested Activities:



<i>Method of Evaluation & Condition</i>	<i>Skill / Knowledge and Standard</i>
<u>Skill</u>	
Each candidate shall participate in a thorough examination of the required boat safety equipment demonstrating the inspection criteria for each or be evaluated for these points by written examination	<p>Each candidate shall participate in an examination of distress equipment. In the case of flares:</p> <ul style="list-style-type: none"> • type • approvals, • expiry date, • types required for various vessel size categories. • area of operation, and • proper storage <p>Each Candidate shall ID situations where prohibitions / exemptions may apply-</p> <ul style="list-style-type: none"> • river, canal or lake in which vessel can at no time be more than one mile from shore etc. • engaged in an official competition or in final preparation for a competition and have no sleeping accommodations <p>Each candidate shall simulate how to use each type of flare.</p> <ul style="list-style-type: none"> • Fired at an angle into the wind • High velocity winds, lower angle to 45 degrees
<u>Knowledge</u>	
Each candidate shall participate in a thorough examination of the required boat safety equipment demonstrating the inspection criteria for each or be evaluated for these points by written examination	<p>Each candidate shall state all compulsory distress equipment required for vessels under 20 meters.</p> <ul style="list-style-type: none"> • water tight flashlight • flares (A,B,C,D) <p>Each candidate shall ID situations where prohibition/exemptions may apply</p> <p>Each candidate shall explain the examination criteria for flares.</p> <ul style="list-style-type: none"> • use of flares, unless found in a situation of distress, is prohibited. <p>Each candidate shall explain the examination criteria for a flashlight</p>