

## Petrol has been used on boats for over one hundred years.

Many thousands of safe refuelling operations have been completed during this period, but all too easily things can go wrong with tragic consequences.



Treat petrol with respect. Every year, boat fires and explosions due to the ignition of petrol vapour cause injury and destruction. This leaflet explains how to reduce the risk to you, your family and your crew by using and storing petrol safely because...

### Petrol can be a hazard. Here's why...

... it's very volatile - that's to say petrol evaporates easily and quickly and gives rise to **highly flammable vapours**.

Significant amounts of petrol vapour will be produced and released whenever petrol is transferred from one container to another or poured into a petrol tank. Spills, splashes from the pouring action and any petrol leaks will produce further vapour.

Boats are designed to keep water out of their hulls - which means they also act as good containers for any leaks or overflows of petrol or for escapes of petrol vapour.

Be aware, petrol vapour is three to four times heavier than air. So it will spread rapidly in the still air of spaces, such as cabins, cockpits and bilges, building up from the lowest levels.

If this petrol vapour is ignited, the resulting flash burn may injure or kill anyone it catches. It could also start a fire that may flashback to the filler, the tank or the container with very serious consequences.

What's more, petrol floats on the surface of water, so spills on the water may cause fires some distance away from the source.

## Prevention is better than cure - Recommended practices that'll help keep you safe

Regular checks and timely maintenance will keep your boat and your crew safe. Seek advice from your local boatyard.

Operate and maintain petrol engines and all components in accordance with the manufacturer's recommendations. Particular attention should be given to the maintenance and servicing of carburettors and fuel pumps.

Make sure any changes to the engine and fuel system are in accordance with the most recent versions of relevant British Standards and are maintained to Boat Safety Scheme requirements.

Replacement outboard fuel tanks should be ones approved by the manufacturer for use with the make and model of your engine. This will provide the best guarantee that the tank will not fail as a result of the corrosive nature of the fuel or if it is dropped.

Check flexible hoses, tanks, cocks and vent terminals as well as filler caps, lids and their seals regularly for signs of deterioration and leaks. Replace where necessary.

Don't allow bodge jobs! Only use components that are suitable for use with petrol and always use a competent person to carry out work on your petrol system.

### Don't carry additional petrol on board unless it is completely unavoidable, but if you must, reduce the risk by...

... limiting the capacity! Don't forget that UK law allows you only to carry restricted amounts of spare petrol. Petrol deteriorates over time and stored fuel can upset carburation. It may affect your engine when it's most needed.

... using proper cans, specifically designed for petrol. Containers not designed to carry petrol could split and leak, especially if the container is dropped or subjected to rough treatment.

... keeping petrol containers, outboard motors and petrol generators secured in the open air or in a fire resistant drained locker outside the cabin space.

... and never use an open container to hold or transfer petrol. For the same reason, never use a bucket or open container to mix petrol and two-stroke oil, add the oil to the engine's tank before filling with petrol.

Please also read the other "Go Boating, Stay Safe" leaflets in this companion series to help you and your crew stay safe and avoid harming others. Copies are available from the BSS Office and partner organisations.



Boat Safety Scheme

## Go boating - Stay safe



## Avoiding Fire Afloat - Safe Use of Petrol

This leaflet contains important information concerning how to keep you, your family and friends safe from the risk of fire and explosion. Please read this leaflet, it could make a difference - it could save your life.



## Refuelling? Remember safety first



### Before refuelling your inboard fuel tank, outboard, generator, etc.

- Stop the engine.
- Turn off all cooking, heating and lighting appliances and extinguish all other naked flames.
- Turn off ignition systems on all appliances.
- Switch off your mobile phone.

### And whilst refuelling remember

- Do not smoke or allow anyone else to smoke anywhere nearby or anywhere that petrol vapour could reach.
- Don't touch electric switches.
- Never be tempted to use your mobile phone, keep it safe in your pocket or bag.
- Never allow children to handle petrol and keep them well away from refuelling activities.

### And then after refuelling...

... check for and wipe up any spills or overflows straightaway. Dispose of the wipe carefully - remember it will give off vapour for some time.

... if you smell petrol vapour, ventilate the boat. Open doors and windows and raise deck boards until the air is clear throughout the cabin space and bilges before you start the engine or use before naked lights again.

... if fitted, run the bilge blower system according to the manufacturer's instructions.

... tightly secure the filler cap.



### Stay safe when filling fixed, inboard fuel tanks

Routinely keep your family or crew off the boat during the refuelling activity.

Make sure you have closed the fuel cock between the petrol tank and the engine.

Introduce a physical barrier to vapour entering the hull by closing all hatches, doors and windows and raising the cockpit canopy.

Make sure you use the correct filler point and avoid overfilling by carefully checking the amount of fuel you need with a dipstick or gauge.

### Stay safe when refuelling portable fuel tanks, outboard engines, generators and spare fuel containers

Remove the outboard tank, generator or container ashore for filling, ideally at least four metres (13 feet) away from any opening into the boat, or any other enclosed space, including drains.

On hot sunny days or where the container is warmer than the surrounding air, more petrol vapour may be released under pressure when you undo the cap or seal. Consider protecting your boat from stray vapours as above.

Avoid spills by using the right size and design of funnel or pouring aid.

Stay safe  
when refuelling

## Petrol can be a hazard, but it's not the only one...

... you can also apply much of the advice in this leaflet to the use of other flammable liquids on board such as diesel, paraffin, paint, solvents etc.

### Caravan LPG refrigerators on boats with petrol engines...

... have caused numerous explosions when the low-level permanent flame of the fridge burner ignited stray vapours. So don't risk using one! Choose only room-sealed refrigerators, which are suitable for marine use.

### Further to the advice in this leaflet, we recommend

... reading more about keeping yourself safe and meeting the Boat Safety Scheme requirements in the BSS Guide or visiting [www.boatsafetyscheme.com](http://www.boatsafetyscheme.com).

... fitting specialist flammable gas and vapour detectors designed for boats. The Council of Gas Detection and Environmental Monitoring, CoGDEM, offers advice. Tel: 01462 434322 or visit [www.cogdem.co.uk](http://www.cogdem.co.uk)

... taking safety equipment advice from an RNLI Safety Equipment Adviser. Call 0800 328 0600 for further information or to arrange an appointment.

... RYA training for good advice, practical knowledge and to get more pleasure safely out of your boating experience. Call 02380 604100 or visit [www.rya.org.uk](http://www.rya.org.uk) for details.

... visiting the British Marine Federation website at [www.britishmarine.co.uk](http://www.britishmarine.co.uk) to find your local boatyard.

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