	Helensburgh Sailing Club
	STANDARD OPERATING PROCEDURE

Safe Storage & Handling of Fuels

Procedure No	03 – Rev 03	Prepared By	Donald McLaren
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Contents

1. Purpose

1.1. To ensure anyone using, storing or handling fuel while at the club does so in a safe and knowledgeable manner

2. References

2.1. The following information has been derived from: -

- The UK HSE Website
- RYA CARRIAGE AND STORAGE OF PETROL (updated) (2014)

3. Introduction

3.1. Under UK Legislation, no one under 16 is allowed to handle petrol

3.2. Petrol is a highly flammable liquid and must be stored, transported and handled

3.3. with extreme care. The risk of injury, environmental damage, fire or explosion can be significantly reduced by becoming aware of the dangers associated with petrol

3.4. Petrol is a flammable colourless liquid with a very low flash point. This means that at temperatures above -40°C, petrol produces a colourless, heavier than air vapour that is capable of being ignited by a flame, spark or heat source. In practice, this means petrol vapour is capable of being ignited at any time, resulting in a fire and/or explosion. Petrol vapour is heavier than air and can build up in low lying areas such as drainage systems, sumps or inspection pits. Care must be taken to avoid handling petrol in or near these areas and must not be handled near a source of ignition, e.g. naked light, smoking, heaters, hot engines etc.

3.5. Vapour from petrol can affect a large area around the source and is known as the "hazard zone". This area may extend to at least 4.5m in all directions and up to 1m above the source. Take account of local conditions such as wind and sloping ground as the potentially flammable area around petrol may be extended significantly.

3.6. Petrol vapour will travel down slopes and can be carried by the wind.

4. Filling Containers

4.1. Persons under the age of 16 may not handle or dispense petrol.

4.2. ALWAYS avoid all sources of ignition, e.g. naked light, smoking, heaters, hot

4.3. engines/exhaust, mobile phones etc.

4.4. When filling RIB/Avon fuel tanks they must be placed on the ground. Tanks must NEVER be filled in a RIB or boat as this will contain the flammable vapour given off while filling and may explode.

4.5. Always use the water separator funnel to ensure minimal water ingress to the tanks.

5. Leaks or spills - Treatment of small leaks or spills

5.1. Ensure it is safe to approach the area and there is no source of ignition present

5.2. Control the spill or leak by identifying the source and treating appropriately, e.g. secure the lid on an overturned container.

5.3. revent the spread of the spill by using a suitable absorbent material, e.g. sand/earth and apply directly to the petrol and/or use as a barrier. Beware of using stones as when hit together these may spark and cause ignition.

5.4. Small spills (less than 100ml) may be left to evaporate naturally if safe to do so, i.e. the petrol / petrol vapour is not likely to enter drains or manholes, is away from sources of ignition and is away from other people who may be affected by it

5.5. Dispose of used absorbent material safely. Contaminated material may be placed in to a suitable container for safe disposal e.g. plastic container or heavy plastic bag securely sealed. Take the same precautions with contaminated material as you must with petrol. The hazard remains while petrol vapour is present.

5.6. If in doubt, call the emergency services. Tel. number: 999

6. Transporting Petrol

6.1. See RYA CARRIAGE AND STORAGE OF PETROL - Attachment

CARRIAGE OF PETROL & DIESEL FOR PRIVATE USE:

The carriage of petrol or diesel by private individuals in a vehicle where the fuel is intended for their personal or domestic use, including their leisure or sporting activities, is exempt from the general restrictions on the carriage of dangerous goods by road.

However, where fuel is carried in refillable containers filled by or for a private individual, the total quantity transported must not exceed 240 litres at a time and each individual container must not contain more than 60 litres. In addition, the individual must take measures to prevent the containers from leaking.

Notwithstanding the general limit of 60 litres per container, it is worth noting that the individual local authority petroleum licence under which a filling station operates may impose a limit on the capacity of individual containers that may be filled with fuel at that filling station. In addition, filling station operators can apply their own limits on the capacity of individual containers that may be filled with fuel.

CARRIAGE OF PETROL & DIESEL IN A WORK CONTEXT:

The carriage of petrol or diesel by individuals in a vehicle in the course of a work-related activity is exempt from the general restrictions on the carriage of dangerous goods by road provided that the following provisions are complied with:-

- The total quantity of fuel transported must not exceed 333 litres (petrol) or 1,000 litres (diesel);
- The fuel must be transported in individual containers that comply with the relevant United Nations Economic Commission for Europe (“UNECE”) specifications and are marked with the UN number for petrol (UN1203) or diesel (UN1202), as appropriate;
- The containers must be stowed in the vehicle so as to avoid damage or loss from the vehicle;
- The vehicle driver must be given “general training” in accordance with UNECE specifications, which include how to respond in the event of an emergency;
- The vehicle must carry a 2kg fire extinguisher designed for tackling flammable liquid fires.

STORAGE OF DIESEL

There are no specific legal requirements on how to store diesel or the quantity allowed either in workplaces or domestic premises.

STORAGE OF PETROL

STORAGE CONTAINERS

Current regulations provide that petrol must be stored in “suitable portable containers”, a “demountable fuel tank” or a fuel tank connected to an internal combustion engine in the way it would ordinarily be connected when the engine is running.

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Suitable Portable Containers

"Suitable portable containers" are containers that are designed and constructed so that:

- they are made of metal or plastic that is suitable and safe for the purpose and will not significantly degrade due to exposure to petrol or naturally-occurring ultra-violet radiation;
- they are reasonably robust;
- they are not liable to break under normal conditions of use;
- the escape of liquid or vapour is prevented;
- petrol can be poured safely from them; and
- they are not unsteady when placed on a level surface.

Such containers must be:

- in a good state of repair;
- secure from leaking;
- not degraded from exposure to chemicals or light; and
- marked or labelled in a legible and indelible form with:-
    - the words "petrol" and "highly flammable";
    - an appropriate hazard warning sign, e.g.:

    - the nominal capacity in litres;
    - manufacturer's name; and
    - date and month of manufacture.

The nominal capacity of suitable portable containers must be no greater than:

- 10 litres, if made of plastic; or
- 20 litres, if made of metal,

although the total capacity may exceed the nominal capacity by between 10% and 15%.

Demountable Fuel Tank

"Demountable Fuel Tanks" are fuel tanks for the internal combustion engines of motor boats or similar vessels that are designed so that they can be safely removed from and re-affixed to the engine without leaking fuel.

The maximum quantity of petrol that may be kept in a demountable fuel tank is 30 litres.

STORING PETROL IN A VEHICLE:

30 litres of petrol may be stored permanently in a vehicle. This storage must be in a single demountable fuel tank or no more than two suitable portable containers. Petrol contained in the normal fuel tank of a vehicle does not count towards this total.

STORING PETROL IN A BOAT:

30 litres of petrol may be stored permanently in a motor boat. This storage must be in a single demountable fuel tank or no more than two suitable portable containers.

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Petrol contained in the normal fuel tank of a motor boat does not count towards this total. If the normal fuel tank is a demountable fuel tank, it must be properly connected to the engine in order for the amount of fuel contained within it not to count towards this total.

STORING PETROL IN DOMESTIC AND NON-DOMESTIC PREMISES:

The following amounts may be stored at domestic premises (e.g. at home) and at non-domestic premises (e.g. club-houses) that are not workplaces (see below):

- **Up to 30 litres** of petrol may be kept in one storage place, without having to notify the local authority.

  Petrol may be stored in a single demountable fuel tank, one or more suitable containers or a combination of both, provided that no more than 30 litres is kept.

- **Between 30 and 275 litres** may be kept in one storage place, provided that the local authority (in its capacity as the Petroleum Enforcement Authority) is notified in writing of the name of the occupier of the storage place and the address of the premises where the petrol is kept. This notification must be renewed annually.

  Petrol may be stored in one or more demountable fuel tanks, one or more suitable containers or a combination of both, provided that no more than 275 litres is kept.

  Petrol stored in quantities of between 30 and 275 litres must be kept in a storage location that is a detached building or is attached to a building (other than domestic premises).

  Fire extinguishing and spillage containment apparatus must be available either within the storage place or as close as is reasonably practicable to the storage place.

- **More than 275 litres** may be stored in one storage place provided that the local Petroleum Enforcement Authority has issued a licence to the occupier of the premises.

Note: Any quantity of petrol stored in a fuel tank in a vehicle or motor boat will not be included in the volume of petrol kept in a storage place, provided that the fuel tank is connected to an internal combustion engine in the way it would ordinarily be connected when the engine is running. Otherwise, petrol stored in a vehicle or a boat counts towards these totals.

Common Storage Requirements
The following requirements must be observed for the storage of petrol in quantities of up to 275 litres:

- A storage location within a building must be separated from the rest of the building (and any exit route) by a fire-resistant partition.
- A storage location attached to a building must be separated from the building by a fire-resistant partition.
- Petrol may not be stored in living accommodation.
- Petrol may not be dispensed at the storage location.
- If the storage place is not in the open air then it must have a direct exit to the open air and be ventilated to it.

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- All reasonable precautions must be taken in the storage place to prevent any sources of ignition or heat that would be liable to ignite petrol or its vapour.
- Petrol must not be used in the storage place other than in:
    - the fuel tank of an internal combustion engine;
    - small quantities (not exceeding 500ml) for cleaning or as a solvent for repair purposes.

STORING PETROL IN A WORKPLACE:

Storage of petrol in a workplace is subject to the Dangerous Substances and Explosive Atmospheres Regulations 2002. These Regulations apply to all workplaces where dangerous substances are present, used, or produced.

"Workplaces" are defined in the Regulations as being any premises or part of premises used for or in connection with work, including any place within the premises to which an employee has access while at work and any room, lobby, corridor, staircase, road or other place used as a means of access to or egress from that place of work (other than a public road). Workplaces therefore potentially include domestic premises such as private houses and non-domestic premises such as private members' clubs, if used for or in connection with a person's work.

The 2002 Regulations place duties on employers (and the self-employed, who are considered employers for the purposes of the Regulations) to assess and eliminate or reduce risks from dangerous substances. Complying with the 2002 Regulations involves the following matters.

Assessing risks

Before work is carried out, employers must assess the fire and explosion risks that may be caused by dangerous substances, in this case petrol, and the ways in which the use of petrol in a work context could cause harm.

The purpose is to help employers to decide what they need to do to eliminate or reduce the risks from dangerous substances. If there is no risk to safety from fires and explosions, or the risk is trivial, no further action is needed. If there are risks then employers must consider what else needs to be done to comply fully with the requirements of the 2002 Regulations.

If an employer has five or more employees, the employer must record the significant findings of the risk assessment.

Preventing or controlling risks

Employers must put control measures in place to eliminate risks from dangerous substances, or reduce them as far as is reasonably practicable. Where it is not possible to eliminate the risk completely employers must take measures to control those risks and mitigate the effects of any fire or explosion.

The 2002 Regulations provide that the preferred measure is to replace the dangerous substance with an alternative substance that eliminates the risk. This is clearly impossible, however, when the dangerous substance concerned is petrol to be used in an internal combustion engine.

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Control measures
Where the risk cannot be eliminated, such as in the case of petrol to be used in internal combustion engines, the 2002 Regulations require the following control measures to be applied, in order of priority:

- reduce the quantity of dangerous substances to a minimum;
- avoid or minimise releases of dangerous substances;
- control releases of dangerous substances at source;
- prevent the formation of a dangerous atmosphere;
- ensure that any release of dangerous substances is collected, contained and removed to a safe place (e.g. through ventilation);
- avoid ignition sources;
- avoid adverse conditions (extreme temperatures) that could lead to danger;
- keep incompatible substances apart.

These control measures should be consistent with the risk assessment and appropriate to the nature of the activity or operation.

Mitigation
In addition to control measures, the 2002 Regulations require employers to put mitigation measures in place. These measures should be consistent with the risk assessment and appropriate to the nature of the activity or operation and include:

- reducing the number of employees exposed to the risk;
- providing plant that is explosion resistant;
- providing explosion suppression or explosion relief equipment;
- taking measures to control or minimise the spread of fires or explosions;
- providing suitable personal protective equipment.

Preparing emergency plans and procedures
Arrangements must be made to deal with emergencies. These plans and procedures should cover first aid facilities, safety drills and suitable communication and warning systems and should be in proportion to the risks.

RYA Responsibility Statement:

The RYA Legal Team provides generic legal advice for RYA members, affiliated clubs, class associations and Recognised Training Centres. The information contained in this Guidance represents the RYA's interpretation of the law as at the date of this edition. The RYA takes all reasonable care to ensure that the information contained in this Guidance is accurate and that any opinions, interpretations and guidance expressed have been carefully considered in the context in which they are expressed. However, before taking any action based on the contents of this Guidance, readers are advised to confirm the up to date position and to take appropriate professional advice specific to their individual circumstances.

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