# **Gas Supplies Abroad**



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## Gas Supplies Abroad

More and more boat owners are using their yachts all year round and taking extended cruises. They need a gas system, which will give them sufficient gas for a long period, and are capable of replenishment with relative ease.

If you are planning a short cruise then usually there is no problem with gas supplies as you can carry enough to last the trip, but if you plan an extended cruise then replenishing your gas supply may cause some concern.

Calor Gas Ltd is an UK based company, which supplies exchange cylinders via a network of

supplies exchange cylinders via a network of dealers throughout the UK including the Channel Islands and the Isle of Man.

Calor Gas supplies in Northern Ireland are available in a range of sizes including 4.5Kg and 7Kg Butane cylinders and 3.9Kg and 6Kg Propane cylinders. All the large propane cylinders have fittings that are compatible with UK cylinders. For enquiries about cylinders in Northern Ireland please visit www.calorgas.ie.

It should be stressed that the policy of Calor Gas Ltd is not to allow their cylinders to be filled while abroad. The cylinders remain the property Calor Gas Ltd and should only be filled by them. Our advice on gas supplies away from the UK and Calor Gas outlets falls into two parts, firstly cruising within Europe and Secondly cruising across the Atlantic.

In general, European countries operate an exchange cylinder scheme, as we do in the UK, with individual companies supplying their cylinders in there own countries. Generally the cylinders are not exchangeable from company to company or country to country. The only exception to this is the Camping Gaz cylinders and these are readily exchangeable at most marinas and supermarkets.

Our advice on obtaining gas supplies on an extended cruise, depends on how your gas system is set up and what cylinders you carry. The easiest solution is to carry the Camping Gaz cylinders, as they are readily available. They may be small and they may be expensive, but they will be easier to get refilled and will save a lot of running around. If you carry Calor Gas Butane or Propane cylinders as your standard cylinders, then adapters are available to convert to UK cylinder fitting so you can use a Camping Gaz cylinder. These are available from the Marine Shop (click here)

If you are planning to keep your yacht in Europe on a more permanent basis, then you may be best to consider buying a local cylinder. Most Europe cylinder suppliers use a thread similar to the one used on Calor Gas 4.5kg butane cylinders. An adapter for use with a propane system is available from the marine shop.

A point that is worth making is that although most UK gas appliances are made to operate with Butane @28mb or Propane @37mb they will operate safely at either 37mb Butane or 28mb Propane. We do not recommended that this be done for extended periods, but it's useful to know in an emergency. With a cooker the only concern is that the simmer levels on the hotplate may be different.

When planning a Trans-Atlantic crossing the main consideration is how much gas to carry. This will vary depending on the number of crew and the number of cooked meals. Consideration should also be given to the number of days the crossing will take. Information on the gas consumption of each appliance can be found either on the appliance data plate or in the operating instructions.

For example, a Plastimo Neptune Hotplate burner has a heat input of 1.65kw, a grill burner 1.72kw and an oven 1.26kw. So if you were to use the oven and both hotplates for one hour a day then the sum would be:

Oven 1.26kw x 1 = 1.26 Hotplate 1.65kw x 2 = 3.30 Total 4.56kws per day

For the ease of the calculation both Butane and Propane has 14kw per 1kg so:

4.56 / 14 = 0.33kg per day

Say the crossing takes 30 days, that's  $30 \times 0.33$ kg = 9.9Kg. So you'll need to take 2 x 4.5kg Butane or  $3 \times 3.9$ kg Propane or  $4 \times 907$  (2.72kg) Camping Gaz.

In the Caribbean and North American the predominant form of LPG is Propane. The smart thing to do is to leave the UK with an installation that is set up for propane. Most yachts would have a stop over in

the Canary Islands were the cylinders could be refilled or exchanged. Try http://www.noonsite.com/Countries/CanaryIslands for more local details.

Once in the Caribbean, cylinders can be refilled locally. There is usually no shortage of local entrepreneurs only to willing to assist you.

It is extremely important to remember that LPG cylinders should never be filled to 100%capacity. If when abroad, a locally supplied cylinder is to be used in quite hot regions, it must not be filled more than 70% of its total capacity (this can be found on the cylinders data plate), rather than the usual 80% in temperate climates. The Camping Gaz cylinders do not contain a Safety Relief Valve, therefore in the presence of heat, the liquefied gas in the cylinder could expand and become what is termed "hydraulically Full" (totally full of liquid) and could burst with disastrous results so extra care should be

In line with other suppliers of LPG Calor Gas fully test and re valve all there cylinders every 15 years, this and other information regarding the tare weight and the water capacity can be found on the cylinders data plate located on the base ring or the cylinder shroud. In North America, where LPG suppliers are unfamiliar with our cylinders, they may refuse to fill scruffy cylinders or ones near their test date. My suggestion is to select the newest cylinders with the best paintwork before setting out and paint them with several coats of clear varnish. This will afford protection from the elements whilst not obscuring any of the cylinders information.

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## U.K. Yachtsmen Destined for Atlantic & All Points West

The following advice may be a little unorthodox but is intended to help the Skipper who starts off from the U.K. with a Calor Gas installation and who wants to get refills abroad. The advice falls under four categories:- Appliances (2.1), Installation (2.2), Gas Cylinders (2.3), Spares (2.4).

### 2.1 APPLIANCES

The Skipper should check each appliance in his boat to see if it is designed to operate on Butane or Propane and that the supply and pressure of the supply and pressure of the appliance matches that of the regulator, particularly if it is an older vessel, purchased second hand.

#### Sources:

- Data badge on back of appliance.
- Original appliance literature.
- Calor Gas Dealer (listed under 'Bottles Gas' in the Yellow Pages directory, or call the Calor Gas Customer Support Centre FREE on 0800 626 626.
- Appliance manufacturer.

New appliances should bear the "CE" mark and ideally be suitable for both Butane and Propane

### 2.2 INSTALLATION

The smart thing is to start as you intend to continue, i.e. since Propane is available in most countries it would be sensible to fit a Propane installation in the U.K. before departure.

- 2.2.1 Propane cylinders have what is called a 'POL' connection, i.e. female thread on the cylinder. Butane cylinders have a male thread on the cylinder so the two are not directly interchangeable Certainly a Butane regulator will not fit a Propane cylinder directly (and vice-versa).
- 2.2.2 However, contrary to popular belief, the gases may be interchanged with safety provided certain precautions are taken. Assuming the appliances are 'Certified' for Butane use only, the Butane regulator (28 m bar) may be changed for a Propane regulator (37 m bar) using the methods of connection described on page 5. The resulting performance on propane may not be perfect but will be satisfactory and safe. Similarly, if Butane appliances and a Butane regulator are supplied with Propane they will work safely but performance will be reduced by about 10% (kettle will take that much longer to boil) as the Calorific content by volume of Propane is less than that of Butane.
- 2.2.3. To overcome (a) the problem of Butane and Propane connections not being interchangeable and, (b) the problem of different cylinders in different countries have different connections, the Skipper should make sure that the regulator is fixed to a bulkhead with what is called a 'wall-block manifold' and is not fitted directly to the cylinder. Naturally if the intention is to use Propane, the best results will be obtained by fitting the appropriate Propane regulator (such as the Calor Gas 766P37) on the bulkhead with a Propane wall-block manifold. Smart skippers will fit a Propane bulkhead mounted regulator and take an equivalent Butane regulator and Butane manifold. Calor Gas Dealers will be pleased to advise on the regulator which will give the correct volume throughput of gas for the
- 2.2.4. The regulator on the bulkhead should be connected via a piece of high pressure LPG hose to a suitable male connector to Propane cylinders (female connector for Butane cylinders), and secure with a stainless steel hose clip at each end. It is vitally important that ordinary hose-pipe is not used as rubber or other like materials will be attacked by Butane or Propane. Only "Calor Gas Approved" hose to British Standard 3212/2 or equivalent should be used. Calor Gas Dealers will be pleased to advise on the correct type of hose to be used
- 2.2.5 Note: U.K. and U.S. 'POL' connections on Propane cylinders are different, the U.S. version being slightly smaller in overall diameter, and usually with a much smaller AF nut form. Whilst a U.S. 'POL' regulator will connect on to a U.K. 'POL' cylinder, it is not satisfactory and bad practice, but it is physically impossible to get a U.K. 'POL' regulator into a U.S. 'POL' cylinder hence the advice in paragraph 2.2.3

## 2.3 GAS CYLINDERS

Depending on the size of the boat, the British Skipper can choose from the following sizes of Calor Gas cylinder in the U.K.

Butane: 4.5kg. 7kg & 15kg (blue cylinders)

Propane: 3.9kg, 6kg, 13kg, 19kg & 47kg (red cylinders).
The cylinders may be connected either singly, in pairs, or manifolded together, i.e. 4, 6, etc. An automatic changeover valve may be fitted if required for Propane cylinders.

See 6.10 for cylinder dimensions as they may effect the size of gas locker suitable for your

boat/requirements, or determine the size of cylinder if a gas locker is already fitted.

#### 2 4 SPARES

Skippers are advised to take a 'Butane Hose Connector B1' and/or 'Propane Hose Connector P1' as appropriate (see p.15). These effectively provide a nozzle for Calor 4.5kg butane cylinders or any size of Calor propane cylinder to enable re-filling by foreign filling plants without adapters. Also take 3 metres of "Calor Approved" high pressure LPG tubing, together with 6 hose clips for same. The idea is that if the Calor Gas cylinder cannot be refilled then it can be replaced by the locally available brand of cylinder and connected to the yacht's system via the extra LPG tubing carried. Always tighten hose clips correctly to avoid leaks at joints, and avoid cutting the hose by overtightening. Consider taking an additional regulator and wall block manifold - see para 2.2.3.

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## **American Yachtsmen Visiting Europe**

4.1 American yachtsmen visiting the U.K., France, etc., frequently find it extremely difficult to get their American Propane cylinders refilled because either they are incompatible with U.K./European filling facilities (see UK Yachtsman) or they do not meet the necessary local 'Approved Standards'. Furthermore, many suppliers like Calor Gas Limited in the U.K. operate an exchange service rather than a 'refill on the spot' service.

4.2 In North American, Propane is the LPG normally supplied to fuel appliances manufactured to operate at a pressure of 30 millibars. In Western Europe, Butane tends to be the most popular fuel supplied in cylinders for use with appliances for marine use and operate at 28 millibars with this fuel.

It should be noted that although the operating pressures are similar, the two gases have different calorific valves and burning characteristics. Butane has a higher calorific value and will burn with a slightly hotter flame. In a situation where a yachtsman substitutes Butane fuel for this Propane, overheating of appliances could result. This may cause warping, buckling of oven shelves or doors and even melting of burners. Also, the burners may burn with a yellow tip to the flame leading to sooting of the pans.

Our advice would therefore be to obtain and use Propane where possible, in order to overcome the likely difficulties that can arise from using the higher calorific value Butane fuel.

4.3 Calor Gas suggests that when the American yachtsman arrives in the U.K. he should hire the appropriate Calor Gas cylinder and use it throughout his stay in the U.K. If he were to follow the advice in UK Yachtsman he could attach one end of the spare high pressure LPG tubing to the boat's system (via a spare US compatible nozzle/regulator) and other end to the Calor cylinder via the nozzle that fits any size of Calor Propane cylinder. The cylinder can then be returned with a partial refund of the original hire charge when he departs (70% if returned within one year).

4.4 When visiting France, he may find that Propane is not as readily available as in the U.K., so may be well advised to equip himself with Camping Gaz cylinders - mentioned earlier in Terms and Conditions- which are available in the U.K., France and most other European countries. But the warnings given in para 4.2 above should be heeded, when using Butane to power appliances manufactured for the North American market.

Alternatively he should acquire the appropriate brand of cylinder available locally, returning it when he leaves (and usually obtaining a partial refund of the hire charge). Terms and Conditions.

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