

B25 TRAILERABLE YACHT

The following steps in rigging up a B25 are the result of suggestions by owners and should be a good guide for people with new boats:

First free the running and standing rigging from the mast against which it is normally secured for travelling. Also undo the lashing attaching the mast itself to the front and back pulpit. If the spreader arms are not in their sockets, insert and bolt these in same.

The next step is to undo the rigging screws on the cap and lower shrouds and forestay to about the three quarter loosened off position. The cap shrouds are now attached to the aft hole in the chainplates. Have the cord on the backstay tensioning mechanism uncleated so that no tension will be applied by the backstay. Take the headsail halyard for'ard, wrap it around the anchor roller and attach it back on to itself with its snap shackle.

The next step is for two people to carry the mast aft, one person standing in the cockpit and the other on the foredeck. When the base of the mast is adjacent to the step position, the person on the foredeck can insert the pivot pin. It will be necessary for the person in the cockpit to hold the mast up in a level position when this is being done, otherwise it will foul the cabin moulding. The mast is now ready for raising, but before this is done the shrouds should be checked to see nothing will foul or be in the wrong place when the mast is up.

Normal procedure, if two men are doing the job, is for the man in the cockpit to walk for'ard, lifting the mast up as he goes, and then for him to stand on the rectangular platform adjacent to the sink, just inside the entrance. From this position he can push the mast most of the way up.

His companion on the foredeck during this period can stand facing aft with one leg each side of the mast and his hands pulling the mast upwards, assisting the cockpit man. It is now possible for the person standing on the rectangular platform to give the mast a push, the person on the deck to give it a heave, and it will snap into the upright position, held by the side shrouds. Although it may at first appear fairly difficult, it is really quite simple - there is very little danger of the mast getting out of control.

In the event of a man and his wife, or a man and a younger child, putting the mast up, it is advisable to take advantage of the headsail halyard shackled to the stem head roller and the headsail winch. With the stronger person raising the mast from the cockpit as previously described, the other person stands facing aft as previously, but instead of attempting to assist in manually pulling the mast up into its final position, the person on the cabin top takes the tail of the headsail halyard around the winch on the mast and, using the winch only, winds the mast to the upright position. Once the mast has reached the position where the person in the cockpit can no longer be of any assistance, he can quickly come around on the foredeck and help steady it while the mast is wound up with the winch the remainder of the way.

Whichever method of raising the mast is adopted, once the mast is in an upright position, the tail of the jib halyard around the winch must be used to apply final tension to the mast. It is important that considerable strain is applied with the winch, although bearing in mind that the winch is, in fact, very powerful. A little discretion needs to be used to ensure that the tail of the halyard is not snapped under the strain. I always feel safer standing facing for'ard with my shoulder against the back of the mast during this final winching operation, so that if anything should give way, my body will keep the mast up, avoiding any possible danger of it dropping.

While tension is on the halyard, the forestay rigging screw can be shackled on to the foremost of the holes in the stemhead fitting. Thus attached, the tension is released from the forestay.

After the mast has been raised for the first time, it is necessary to adjust the rigging screws. All this should be done with the backstay completely free. Before commencing any adjustment, stand back from your boat, ensure that it is chocked up so that the waterline on the boat is level, and then sight the mast. We recommend that there should be a light rake aft, somewhere between 4-6". If this is not the case, adjust either the forestay or the cap shrouds until this rake is obtained. the cap shrouds and forestay, when the mast is in the correct position, should be quite taught and the turnbuckle from the two cap shrouds should be done up evenly so that the mast will be upright in a sideways direction.

Now it is time to adjust the lower shrouds: these should not be nearly as tight as the cap shrouds and, in fact, one should be able to have a free sideways movement in the middle of them of about 2". This sideways movement allows the mast to bend forward automatically, flattening the mainsail, when heavy gusts hit the boat. Once this tension has been achieved on the lower shrouds and both rigging screws are approximately evenly done up, apply some pressure with a tackle to the backstay.

This will bend the mast forward in the middle and take up the slack in the lower shrouds. With this done, sight up the mast from the bottom and ensure that it is straight. If not, undo both lower shrouds and take up on one and simultaneously let up on the other until they are holding the mast in a vertical position.

This operation completed, slacken off the backstay again and have a look at the two adjusting bolts under the front of the mast step. There are a number of washers under these adjusting bolts and the number of washers used is very critical. With the mast in its normal position and no tension on the backstay, there should be a tiny bit of clearance beneath the two bolts and it will be necessary to remove or add washers until this is the case.

As soon as the backstay is applied, the mast will bend forward, the front end of the mast will come down and the bolts will bear firmly against the step. These bolts serve to control the forward bend in the mast. If there is too much clearance beneath the bolts, the mast will bend forward excessively. On the other hand, if there is no clearance when the mast is standing up without tension on the backstay, the mast will not bend forward as it should and it is, in fact, even possible to get a backwards bend in the lower part of the mast as a result. When you are happy all the adjustments are made to your satisfaction, lock all rigging screws securely.

With the boat set up in the manner outlined above, it would be normal to have only a very light backstay pressure in very light winds. The backstay pressure should be increased as the wind freshens and, in heavy conditions, a lot of pressure should be applied to the backstay tensioning cord in order to bend the top of the mast to free the leach of the mainsail. This will have the effect of greatly reducing weather helm which automatically increases as the breeze freshens.

It is important that the backstay although not tensioned is normally cleated when sailing downwind with the spinnaker up, as in these conditions the backstay takes up much of the forward thrust from the head of the spinnaker.

LOWERING THE MAST

The mast is lowered in exactly the reverse procedure from that of raising it. Initially the headsail halyard is shackled round the anchor roller and tension taken with the halyard winch on the mast so that the forestay can be undone from the stemhead fitting. Once this is done, it can be lowered once again purely manually or with the aid of the winch.

All the shroud attachments other than the forestay are left attached and once the rigging screws have been correctly set, there is no need to re-adjust them.

It is found that the adjustment of the forestay rigging screw can be left as enough additional tension can be applied with the headsail halyard to disconnect the forestay without loosening its rigging screw.

Care should be taken when the mast is in the nearly lowered position as the pin on the gooseneck will tend to drop down and all the weight of the mast can be suddenly taken by this pin, which will result in damage to the cabin top or damage to the gooseneck itself. Many people tie this pin in an upward position prior to lowering the mast to ensure that the above cannot happen. A ring of light shock cord around the mast is very handy for the above.

HYDRAULIC SYSTEM

HOW IT WORKS

The hydraulic system for raising the keel incorporates two major components: one is the hydraulic pump situated in a specially moulded recess in the port seat of the cockpit; the other is a hydraulic ram situated directly above the keel trunk. Two lines, a high pressure and low pressure line, connect the pump to the ram. Built into the hydraulic pump is a transmission fluid reservoir.

At the bottom of the pump is a small tap, which closes a valve thus preventing hydraulic fluid returning back from the pressure side of the ram. When one wishes to raise the keel, this tap should be closed and an up and down action on the pump handle will force oil through the line into the pressure side of the cylinder, thus pushing the piston and piston rod forward. The forward end of the piston rod is attached to a stainless steel tang projecting near the top of the keel. As the tang is forced forward, the keel pivots upwards into its housing. When the keel is right home in its housing, a resistance will be felt against the pump handle and pumping should cease immediately to prevent overstraining the system.

If the keel is to be lowered, the tap is gradually released. This allows oil to return back through the pressure line into the reservoir of the pump and thus the piston to move aft in the cylinder.

Where the low pressure line enters the front of the ram, there is another tap. If this tap is turned with its head in line with the low pressure line, that is in the open position (and it must be placed in this position whenever the hydraulic pump is being operated), then when the keel is lowered as described above, oil will automatically be sucked from the reservoir in the pump through the low pressure line and into the cylinder at the forward side of the piston.

Similarly when the keel is pumped up, oil from the for'ard side of the cylinder will be pushed back through the low pressure line into the pump reservoir. The purpose of filling the for'ard or low pressure side of the piston in the cylinder with oil in this manner is, firstly, to keep it lubricated, especially when the boat is not in use, and, secondly, it provides the safety feature that, if one is cruising offshore, the tap mentioned before at the front end of the cylinder can be closed, i.e. turned at right angles to the line. This locks oil in the for'ard end of the cylinder and, in the extremely unlikely occurrence of the boat being hove down by big waves in severe storm conditions, makes it impossible for the keel to drop back inside its housing. We recommend, as a safety precaution, that the tap be closed whenever one is cruising offshore.

PRIMING THE HYDRAULIC SYSTEM

The first time the boat is launched and the keel lowered, all air and oil will be expelled from the pressure side of the system as the piston moves aft. This action effectively bleeds the system of air and it should then be an easy matter to pump up. Prior to this first lowering of the keel, however, it is often difficult to generate pressure in the system due to a quantity of oil trapped in it which tends to compress as the pump is operated.

The correct amount of oil is placed in the hydraulic pump reservoir when the boat is built and this quantity will remain fairly constant during operation as oil pumped into the pressure side of the ram will be automatically replaced in the reservoir by oil returning from the low pressure side of the ram and vice versa.

We recommend, once this situation is reached, that the reservoir be kept filled to within about 1" of the top.

MAINTENANCE

Both the pump and the ram should be protected by spraying with WD40 at regular intervals and also wiped down with a clean rag regularly to remove dirt and salt crystallisation. The piston rod itself is made from marine grade stainless steel and is connected to the stainless steel tang on the keel by means of a bronze yoke. This part of the equipment, therefore, requires no maintenance, however the zinc plated ram itself and pump should be serviced regularly.

It is rarely necessary to top up the oil level in the reservoir, but we recommend that all owners carry a bottle of hydraulic transmission oil (never use hydraulic brake fluid) in their boat at all times. Should oil inadvertently be spilt or lost, it can then be replaced. Extreme care should be taken to see that no dirt enters the pump reservoir, as minute particles mixed with oil can prevent the valves in the pump from seating properly and thus prevent the pump from operating at anywhere near its normal efficiency. An indication that a valve is not seating properly is when a stroke of the pump handle only produces pressure for a short length of the stroke. Should this occur, it is worthwhile persevering for a little while attempting to pump as if a small quantity of oil is getting through the seat may be cleared. If, however, this does not happen, the hexagonal nut at the top of the pump should be removed. If the pump is then activated, a small weight below the hexagon will be lifted out with the oil and, once removed, a short piece of metal rod, say about $\frac{1}{4}$ " in diameter, can be inserted in the hole and gently tapped with a hammer. This will have the effect of re-seating the valve, which consists of a large ball bearing fitting over the hole. Once done, replace the weight and the hexagonal nut.

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TRAILING AND LAUNCHING

In order that the towing of your B25 be smooth and safe, the placement of weight in the craft is very important. Basically it is best to tow with a weight of between 200 and 250 lbs. on the drawbar of your car. It is this weight that you should aim for before setting out on any trip.

Obviously whether or not the water tank is filled, whether you put a lot of gear in the cockpit locker, and whether the outboard motor is on its stern bracket, are factors which will considerably affect the balance and hence the towing qualities of the boat. Adjustments in the stowing of gear should be made to compensate for these factors.

In order to reduce the weight as much as possible, we would suggest that you fill with water and fuel when you reach or are near your destination, rather than before embarking on a long journey.

Before starting your trip, ensure that the hydraulic lock on the keel pump is released so that the keel will set on the trailer rollers. When you have reached your destination and have raised the mast in accordance with the following instructions, tighten the hydraulic lock and pump the keel up until it is clear of the trailer rollers. Remove the trailer number plate and lights (if the trailer is fitted with the removable type), reverse on to the ramp until the hubs of the rear trailer wheels are just clear of the water.

At this point, put a marker on the ramp level with the back end of the driver's side door, then drive forward 5'. Disconnect the winch wire and tie downs from the front of the trailer and remove the tilt locking mechanism (if your trailer is of the tilt type). Use the anchor warp or another length of line (minimum length 30') to act as a painter from the bow which can be held by a person on shore.

When all is ready, drive the vehicle in reverse fairly rapidly until level with the marker again, then smartly apply the brakes. The inertia of the boat travelling backwards will cause it to roll off the trailer when the car's brakes are applied. If after the first attempt the boat does not completely leave the trailer, drive the unit forward a few feet again and repeat the procedure.

If the above procedure is adopted, launching will be quick and easy, and you will never be troubled with rust in the wheel bearings.

RETRIEVING PROCEDURE

When retrieving the boat on to the trailer, apply the reverse procedure, backing the trailer into the water until the back hubs are still just clear of the water, unwind and attach the winch hook to the bow eye and take up a little tension to keep the bow snugly against the last roller. If there is a cross breeze blowing, attach a line to the stern windward quarter of the boat and run this line diagonally ashore so one person can pull on this line until the boat is lined up with the trailer. It is then merely a matter of winching the boat on. However, if the ramp is steep or slippery, it may be advisable to chock behind the car wheels before doing so.

Next drive away to level ground at the top of the ramp. There the mast can be lowered in the reverse procedure to raising it, tie downs applied, and the keel hydraulic mechanism released to allow the keel to sit on the trailer rollers.

BALANCING THE BOAT

The B25, when correctly trimmed, is a beautifully balanced boat with no undue weight on the helm. The helm, in fact, should feel light and responsive with just a little pressure caused by the boat wishing to come up to weather. One common cause of a heavy and rather sluggish helm is the rudder blade being too far aft. It is essential at all times that the rudder blade be in the hard down position with the trailing edge almost vertical.

The balance of the B25, like the balance of all modern, narrow-finned yachts, is easily upset with incorrect sail trimming or incorrect shortening of sail when sailing to windward. The long, straight hull lines of the B25, however, give it a lot of directional stability sailing downwind and you will find it very much easier to handle than most modern yachts on this point of sailing.

The way you sail and trim the boat will vary considerably depending on whether you are cruising with the family or out racing with a few of the boys. Several principles, however, remain unaltered:

SAILING TO WINDWARD

The boat should not be allowed to heel at a greater angle than that which will keep the leeward gunwale a couple of inches above the water. There are several means of achieving this:

- (a) Reduce sail as the wind speed increases.
- (b) Put the crew weight along the windward rail.
- (c) Flatten the sails by means of bending the mast with the backstay, halyard tension on both the genoa and mainsail, and foot and Cunningham eye tension on the mainsail.
- (d) Ease the mainsheet traveller and/or the mainsheet.

When cruising you will probably only wish to adopt the first method and perhaps the last if occasional strong puffs of wind should come through. When racing, however, you will want to keep as much sail up as possible, and therefore will employ the latter 3 techniques before the first.

The second vitally important point is to keep the helm balanced. There are two ways of doing this:

- (a) Shifting the draught in the sail and hence the centre of effort by means of halyard tension on both mainsail and genoa; Cunningham and outhaul tension on the mainsail; and the sheeting position of the genoa.
- (b) Shortening the sail: on a boat such as the B25, one must shorten sail through the range of headsails before starting to reef the mainsail.

Correct application of the above two principles will ensure that the boat remains light and lively on the helm in all weather conditions.