RUTLAND SAILABILITY

RS VENTURE CONNECT & VENTURE ELECTRO

RIGGING GUIDE

Amendment 7 – Issued by John Deane 15 July 2019

Comments on this Guide should be forwarded to John Deane,
Fleet Captain Ventures  jkdsailing100@gmail.com
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GENERAL

1. Although both our boats appear identical they have different standards of masts and jib sails (the spinnakers are the same size). It is essential that the right sails are attached to the right boats. Check the Boat Number on the Sail Bag/Sail.

2. In addition the reefing lines on 233 are red while on 232 they are blue. The Cunningham cleat is also different on each boat.

3. **RS and RS** Do not get confused by;
   
   a. **RS (Sailing)** – the company that make the RS Venture Connect.
   
   b. **RS (Sailability)** – our organisation!

4. **CE Plate**

![RS Venture Keel CE Plate](image)

   a. **Cat C** - Inshore: Designed for voyages in coastal waters, large bays, estuaries, lakes and rivers where conditions up to, and including, wind force 6 (27kts) and significant wave heights up to, and including, 2m may be experienced – MAX 5 POB.

   b. **Cat D** - Sheltered: Designed for voyages on sheltered coastal waters, small bays, small lakes, rivers and canals where conditions up to, and including, wind force 4 (16kts) and significant wave heights up to, and including, 0.3m may be experienced, with occasional waves of 0.5m maximum height, for example from passing vessels – MAX 7 POB.

   c. **RS Operations** – At Rutland Water Rutland Sailability will operate to Cat C standards i.e MAX 5 POB.

   d. Unless previously agreed by the Fleet SI the crew must include at least 1 x able bodied RYA Level 2 sailor. In the event of the steering ‘locking-up’ it may be necessary for the able bodied crew to leave their seat and go to the rudders to untangle ropes and relieve the ‘lock-up’.

5. The Spinnaker is not to be used unless there is at least one crew member on-board who is RYA qualified to sail with the Asymmetric Spinnaker.
6. If you encounter a problem with the rigging or in sailing the boat and believe that changes are necessary/appropriate then please do let me know and I will see what can be done. Please do not modify the boat(s) without speaking with me first.

7. If something breaks or looks like it might soon break then do contact me and I will arrange a repair.
### BOOM COVERS AND RIGGED MAINSAILS

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<tr>
<td>1.</td>
<td>It is easier to rig the boat with the jockey wheel removed and the front eye of the trailer resting on the ground.</td>
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<tr>
<td>2.</td>
<td>When the boats are de-rigged the mainsails are lowered and rolled up against the boom. The main sail is then tied up with sail ties and a boom cover fitted over the boom.</td>
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<tr>
<td>3.</td>
<td>When rigging the boat, remove the boom cover and store it under the boat cover at the back of the boat.</td>
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<tr>
<td>4.</td>
<td>It is easiest to leave the sail ties attached until the boat is launched at which time the ties can be removed and stored in the Boat Bag (port forward under the deck).</td>
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<tr>
<td>5.</td>
<td>Fit the main sheet to the boom and the horse at the back of the boat.</td>
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<tr>
<td>6.</td>
<td>Lower the main halyard so that the boom fits between the seats (this will prevent it swinging during towing).</td>
</tr>
<tr>
<td>7.</td>
<td>Remove the main halyard and tie off on the GNAV.</td>
</tr>
<tr>
<td>8.</td>
<td>If the mainsail and reefing lines have not been rigged then rig in accordance with instructions below.</td>
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**WARNING:** DO NOT REMOVE THE FORESTAY UNTIL THE JIB HAS BEEN HOISTED AND TENSIONED (THE MAST WILL FALL DOWN!!)

**RIGGING THE JIB**

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<tr>
<td>1.</td>
<td>The furling unit should have been left fully charged after the last use. Unroll the jib and connect the tack of the sail direct to the lower furling unit via the pin and split ring. If you are going to rig the spinnaker then tape the tack split pin to avoid ripping the jib.</td>
</tr>
<tr>
<td>2.</td>
<td>Attach the head of the jib to the top furling unit checking that the jib halyard is not twisted around the forestay or the spinnaker halyard. If you are going to rig the spinnaker then tape the tack split pin to avoid ripping the spinnaker.</td>
</tr>
<tr>
<td>3.</td>
<td>Pull the rope end of the halyard from the mast exit (white cord), just above deck level to hoist the jib. When the jib halyard is pulled all the way up, a wire loop will emerge from the mast.</td>
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<tr>
<td>4.</td>
<td>Attach the jib rig tension hook to this wire loop, check that the string of the halyard is not snagged by the tension hook, then pull the jib rig tension line where it passes through the pulley at the port base of the mast (black flecked cord), ensuring that it is in the cleat properly (port side of mast). You should pull enough tension into the rig so that the jib luff feels firm (one inch of play either way). Note that tensioning the jib halyard will also rake the mast forward and tension the shrouds.</td>
</tr>
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</table>
5. Lead one end of the jib sheet along the side of the boat and then down to the jib fairlead pulley on the side of the boat. Thread it through the pulley and but not through the jib cleat. Repeat with the other end of the jib sheet, making sure that they pass either side of the mast. Tie a temporary figure-of-eight knot in the end of each sheet as these sheets will eventually be threaded through the pedestal.

6. The jib can now be furled by pulling on the thin red flecked cord on the starboard side of the mast just below the forward deck. Check that when furling the jib that the spinnaker halyard does not get caught at the top jib furler – pull the spinnaker halyard in towards the mast to keep it clear of the top of the jib. Check that furling system is working correctly by furling and unfurling then cleat off the furler.

7. The temporary forestay can now be stowed out of the way by attaching the forestay fastener to the shock cord and clip positioned at the rear base of the mast.

**MAST HEAD BUOYANCY**

1. 40 Litres of Mast Head Buoyancy is now fitted to both boats. The Buoyancy bag is stored under the forward decking and is it be rigged, using the red rigging lines on the starboard side of the mast, whenever the boat is sailed. It is easiest to rig the buoyancy while the boat is in the dinghy park.
### RIGGING THE SPINNAKER

1. **NB – if the spinnaker is to be raised from the starboard side (ie on port tack) then best to rig the spinnaker from the starboard side. If the opposite is true, better to rig from the port side.**

2. It essential that the spinnaker is rigged without any twists in the sail. In order to achieve this it is necessary to secure one point and then feel along all 3 edges to check that it isn’t twisted.

3. Lay the spinnaker out along the port bow of the boat and loosely tie the spinnaker clew around the port shroud.

4. Feel along the bottom of the sail until you get to the Tack while at the same time making sure that the 3 spinnaker downhaul patches are facing to the inside of the boat. Tie off the Tack on the end of the spinnaker pole with a bowline.
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<th>Instructions</th>
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<tbody>
<tr>
<td>5.</td>
<td>Feel along the luff of the sail until you get to the head, again ensuring that the 3 patches are facing inwards. Tie off the spinnaker head with a bowline.</td>
</tr>
<tr>
<td>6.</td>
<td>Take the spinnaker halyard out from the port side of the boat and then feed it through the bottom and the middle patches.</td>
</tr>
<tr>
<td>7.</td>
<td>If all 3 patches are used it appears to be impossible to fully retrieve the spinnaker into the chute and about 18 inches of the head is left protruding. If you miss out the bottom patch and only thread the halyard through the middle and top patches then the entire sail goes back down the chute with no apparent reduction in ability to raise and lower.</td>
</tr>
<tr>
<td>8.</td>
<td>Insert a bobble and then tie off the halyard through the top patch with a bowline with a 6 inch loop.</td>
</tr>
<tr>
<td>9.</td>
<td>Release the Clew from the port shroud and, while loosely holding onto the Clew pull the spinnaker into the chute using the spinnaker downhaul. Do make sure that the spinnaker is not wrapped around the trolley as this will cause the spinnaker to rip.</td>
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</table>
10. Take one of the spinnaker sheets (it doesn’t matter which) and feed it down the port side of the boat and through the spinnaker pulley in the direction of the arrow on the pulley. Tie a temporary stopper knot as the spinnaker sheets will have to be properly routed astern the pedestal when the pedestal is in place.

11. Take the other spinnaker sheet from the clew and feed it between the jib and the spinnaker halyard i.e. outside the jib but inside the spinnaker halyard. Run this sheet down the starboard side of the boat and through the spinnaker pulley as before. Tie a temporary stopper knot.

12. With due attention to the wind, hoist the spinnaker on the port side using the spinnaker uphaul inside the boat. While doing so check the spinnaker does not get trapped around the trailer.

13. Gybe the spinnaker by pulling on the starboard spinnaker sheet – again pay attention to the wind and make sure the sail is not trapped on the trailer.

14. Gybe again so the sail is on the port side and then lower the sail, retrieve it back into the chute again making sure that the sail does not get wrapped around the trailer.
1. Before partially rigging the mainsail the main sheet should be attached to the boom and the horse.

2. Take the mainsheet, feed it from the forward pulley under the boom, backwards through the pulleys and straps under the boom to the aft pulley. After going through the aft pulley feed the mainsheet through the pulley on the horse and then back up to the aft pulley. Feed the sheet through the hole in the centre of the aft pulley and tie a figure of eight stopper knot.

3. The reefing system must be set up whether or not it is going to be used. Within the boom are several pulleys and ropes and unless these are under tension (as occurs when the reefing system is set up) then there is a risk that the ropes will ‘jump-off’ the pulleys and they are very difficult to re-set.

4. Experience has shown that is easier to partially rig the mainsail, with the reefing lines, while the boat is in the dinghy park. Under no circumstances is the boat to be towed to the slipway with the sail raised any more than the absolute minimum necessary to fit the reefing lines.

5. At the luff (front) of the mainsail, find the tack and the tack slug (not the reefing slug above it and insert the tack slug into the mast mainsail track and push it down to the gooseneck.

6. Feel along the foot of the mainsail until you reach the stern, ensuring that the mainsail is not twisted. At the stern insert the clew slug into the track on the boom.
7. The outhaul (black or red cord) on the rear of the boom should be pushed through the eyelet at the clew (port through to starboard) and the cord secured in the hook on the starboard rear face of the boom. The knot in the cord should butt against the hook. NB – always use the first of the 2 knots, that way you will have a decent ‘tail’ to hold to remove the outhaul when de-rigging. The outhaul can now be tensioned using the black/red cord at the front of the boom.

8. **Front Reefing Line.** Take the red/blue reefing line from the starboard side of the boom, next to the gooseneck and pull out about 1 metre of flex. Do not mistake this line for the one coming out of the reefing cleat which is under the boom. The line in the reefing cleat needs to be released in order to generate the 1 metre of flex on the line.

9. The red/blue line that emerges from the starboard front of the boom is threaded through the top eyelet on the luff (starboard to port), the middle (port to starboard) and the lower (starboard to port). It should then be tied to the gooseneck with a short bowline loop.
10. **Rear Reefing Line.** The rear reefing line comes out of the starboard rear end of the boom. Ease the reefing jam cleat under the front of the boom, next to the gooseneck, and pull through at least 1 metre of flex.

11. The red/blue line that emerges from the rear of the boom is threaded through the top eyelet on the leach (back of the main sail), starboard to port, through the middle (port to starboard) and the lower (starboard to port). The end is now passed around the boom and secured back onto itself using a bowline. Do not wrap the reefing line around the main sheet.

12. Insert the Main Sail Halyard (which is normally secured around the rear end of the boom) through the head of the Main Sail with a loop and the bobble. Feed the head of the mainsail into the mast track (on the starboard side) and raise the Main Sail about 1 meter maximum.
# THE TOWING BRACKET AND TOWING

1. The Venture can be towed by either the tractor or the Green Buggy. Obviously the Green Buggy cannot enter the water so it will be necessary to use a system that either involves the Extension or a long rope and the Jockey Wheel. The boat would then be launched and recovered in a similar manner to that used for Challengers.

2. When the boat was de-rigged the keel should have been lowered 1-2 inches so that the weight of the keel was taken by the tray on the trailer.

3. Prior to towing raise the keel from the tray and check that the weight of the keel is being taken by the winch and that the winch is locked off.

**ON NO ACCOUNT RAISE THE KEEL MORE THAN 1-2 INCHES. IT IS QUITE POSSIBLE TO WINCH THE TORPEDO KEEL THROUGH THE BOTTOM OF THE BOAT!**

4. Prior to towing check that the rudders are locked up. To ensure that they remain locked up it may be necessary to loosen the string attached to the ends of the tillers. This string will be reset once the boat is on the water and the rudders are locked down.

5. The eye at the front of the launching trolley should have a padlock in place to prevent the attachment of a towing hitch. The key for the padlock is attached to the jib sail bag. The padlocks for both boats can be operated by the same key. Remove the padlock from the eye and attach the padlock to the Jib Sail bag to ensure it doesn’t get mislaid.

6. To attach the towing hitch, the jockey wheel may have to be cocked off 90 degrees to port if it hasn’t already been removed. The hitch then threads from below the launching trolley frame and, with the flat plate on top of the trolley frame, will slide towards the front of the trolley when the vertical circular pin will fit through the hole that originally contained the padlock. The hitch will then be secured using the pin that has the key attached to it.
7. For towing, remove the jockey wheel and store under the boat cover with the sail bags. Do not tow the boat with the jockey wheel attached as it will ground and adversely affect steering.

8. If you are going to use the Green Buggy for towing the jockey wheel will need to be attached for driving the trolley into the water.

**LAUNCHING**

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<tr>
<td>1.</td>
<td>Arrange fore and aft painters so that they are easily accessible. We normally use the Bosun’s jetty so the painters should be available from the starboard side of the boat. Deploy the fenders on both sides of the boat. Walk the boat down to the slipway.</td>
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<tr>
<td>2.</td>
<td>Untie the blue cord securing the bow to the trolley. The trolley should then be pushed into the water until the water level reaches just below the level of the towing hitch. The boat should now float clear.</td>
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**RIGGING ON THE WATER**

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<td>1.</td>
<td>Using the winch, lower the keel to its full extent. When the winch line is slack, unscrew the shackle attaching the winch line to the keel and the winch should lift easily from its housing. The winch is best stored ashore. When lowering the keel ensure that nothing is trapped under the black plastic top of the keel. Failure to fully lower the keel (even by 2-3mm) will result in a rhythmic knocking of the keel on the hull once the boat is underway.</td>
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<tr>
<td>2.</td>
<td>NB. Be careful when lowering the keel to keep the winding handle under control. Do not let it go, it will rotate at speed and could do damage (to you).</td>
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Keel Fully Lowered
3. The Velcro strap on the starboard side of the keel should be threaded through the eye on the top of the keel, through the ‘D’ ring on the port side of the keel and be secured on top of the keel with the other half of the Velcro.

4. In July 2019 a secondary securing device (a pin with a Drop Nose Head) for the keel was introduced by the manufacturer to provide additional security for the keel.

5. *It is essential that the Velcro strap and the Drop Nose Pin are correctly installed – there are stories about boats with a very similar keel set up of a boat being ‘blown-over’ without the properly securing the keel, the keel then retracted and the boat inverted.*

6. The centre pedestal should now be inserted in the hole vacated by the winch. If whoever put the boat away last did it correctly, the pedestal should lift from where it was placed and should not require any twisting or turning. However, before inserting the pedestal it is wise to check that all the holes in the collar are aligned by inserting the securing pin through the black collar and associated brackets.

7. A securing pin is now pushed through the base of the console to keep it secure. The pin is on a piece of shock cord attached to the ‘D’ ring on the port side of the keel. This can be a fiddly job and may require a little twisting of the pedestal and the pin before the pin goes right through. An agile sailor can get down on hands-and-knees and actually eyeball the hole!

8. The two jib sheets are now fed through the cleats on the pedestal. It can be useful to tie these together using a Double Fisherman’s Bend.

9. The mainsheet can now be fed through the pulley of the pedestal. NB do not route the main sheet through the cleat on the pedestal – if the boat is hit by a sudden gust the 1 second it may take to release that cleat may be enough to cause the boat to be blown over.
**HOISTING THE MAIN SAIL**

1. Ensure the boat is pointing into wind. If this cannot be achieved while tied alongside then the boat should be streamed from the bow.

2. To ease the passage of the main right to the top of the mast it can be helpful to ease the outhaul line (black/red) slightly. Check that the rear main sail slug is attached in the boom at the rear of the boom.

3. Ensure that the main sail is on the starboard side of the boat so that it will be hoisted on the starboard side of the GNAV.

4. The sail can now be raised using the other end of the halyard, which passes through a pulley on the lower starboard side of the mast. It is easier to either
   
   a. Hoist the mainsail by pulling down on the halyard at the side of the mast and then taking up the slack through the cleat and the pulley or.
   
   b. Leave the halyard clear of the cleat and pull the halyard from where it goes through the pulley at the base of the mast.

5. Once the main is fully up ensure that the halyard is properly secured through the main halyard cleat.

6. If there are problems getting the mainsail fully up check that the GNAV, outhaul and reefing lines are all fully eased.

7. The Cunningham (white or yellow cord, starboard rear of the mast) should now be threaded through the lower eyelet on the luff (starboard through to port) and secured by the jammer cleat on the port side of the mast.
8. The outhaul (black/red cord) on the rear of the boom should already be pushed through the eyelet at the clew (port through to starboard) and the cord secured in the hook on the starboard rear face of the boom. The knot in the cord should butt against the hook. NB – always use the first of the 2 knots, that way you will have a decent ‘tail’ to hold to remove the outhaul when de-rigging. The outhaul can now be tensioned using the black cord at the front of the boom.

![Outhaul](image)

LOWERING AND SETTING THE RUDDERS

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<td>1.</td>
<td>Lower the twin rudders and ensure they are locked down.</td>
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<tr>
<td>2.</td>
<td>Move the steering stick from side to check full and free movement. If movement is excessively tight or slack then contact and I will review the settings.</td>
</tr>
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</table>
FINAL CHECKS BEFORE CASTING OFF

Prior to cast-off carry out a set off final checks to ensure that all is ‘ship-shape’ before leaving the jetty.

Check whether a reef is necessary.

Check the keel securing Velcro and Drop Nose Pin are properly secured

Check the Mast Head Buoyancy is properly rigged

Tidy all of the loose lines into the pocket on top of the spinnaker sleeve.

Check both rudders are locked down

Check the steering for full and free movement.

Check the main sheet – pull fully in, let fully out, check for twists and for a stopper knot towards the end of the main sheet to prevent boom from smashing into the port and starboard shrouds.

Check the outhaul tension is correct for the conditions.

Check the Cunningham and GNAV (kicker) set for the conditions.

Ensure the jib cars are in the correct position.

Check jib sheets correctly routed for the configuration (mobile or seated crew) and check stopper knots in jib sheets.

Unfurl and re-furl the jib to check the furling system works properly

Unfurl the jib before casting off – the jib gives considerable assistance to steering away from the jetty.

Ensure the fenders are in a position where they will not cause an obstruction.

Check that you have a radio and that you have checked in.
TIPS ON SAILING THE VENTURE

Allocation of Duties

1. The allocation of duties is dependent on several things including the experience of each crew member and the physical abilities/disabilities of each crew member. There are several options available;

   a. **Helm Controls Steering and Mainsheet.** This traditional dinghy set up only works if the helm has sufficient strength in arms/hands to control both. It does, however, leave the other crew member with little to do.

   b. **Helm Controls Steering, Crew Controls Main and Jib.** This works if one of the crew has reduced arm/hand strength – that person is given the helm and the other controls the sails. This set up is also useful when the helm is inexperienced and the experienced member can then control power (and safety) with the main.

   c. **Switching Helms Following a Tack.** If one member constantly controls the helm they will change from being on the leeward side to the windward side depending on the tack. With the helm on the windward side his ability to monitor the jib tell-tales can be reduced. Assuming both crew members are capable it is quite acceptable to change helms immediately after a tack.

   d. **Mobile Crew Member.** If one of the crew is mobile around the cockpit (see below) then the mobile crew member will control some or all of the sails while the seated crew member will control the steering.

Broaching and Blown Over/Knock Down

2. The boat can broach and be blown over so that the mast is virtually horizontal in the water. Invariably this is caused by a failure to quickly release or ease the mainsheet when hit by a gust. In order to ensure that the main sheet can be quickly released it should not, in general, be cleated. Depending on the disabilities of the crew members and their allocated duties the main sheet may have to be cleated, in which case it should be held by a crew member at all times. The risk of broaching and being blow over can also be reduced by easing the GNAV to spill wind out of the top of the main sail.

3. If the boat is blown over then experience has shown that the crew member who is seated downwind will end up with their arm and the top of their shoulder immersed – there have been no problems reported with keeping the head above the water. Due to the substantial ‘wings’ on the seats, providing support to the shoulders and back, crew members have all reported that they felt ‘secure and snug’ even though they were leant over 90°.

4. To recover from being blown over recover and stow the spinnaker (if appropriate), release the main sheet and the jib. The boat will then self-right in 10-20 seconds. The boat will also self drain.

5. From previous experience with 2 POB, seated, following removal of power to the sails the boat will recover to upright from a Knock Down. With 3-4 POB and several crew members mobile, following a knock down, the mobile crew members may hang on to the boat while it is at 90 degrees and in effect pull the boat over on top of them – this is classic dinghy sailing problem. Obviously we do not want an invert with disabled sailors on board and the only practical advice I can give is that if the
boat is knocked down, with additional mobile crew aboard and if the boat shows the slightest inclination to invert then the mobile crew members must drop into the water – at this stage it is quite possible that the boat will right itself and potentially sail off. Crew members in the water should hold onto the boat where possible and carry a radio so that they can seek assistance from a rescue boat. Crew members in the boat should dump all available power and turn the boat into a lying too direction.

**Mobile Crew Member**

6. The boat can be sailed with an able-bodied crewmember moving around the cockpit as in a conventional dinghy/keelboat. To set this up;

   a. The seated member does the steering and may control some of the sheets.

   b. For the mobile member to be able to move from port to starboard the links for the Cunningham, GNAV, jib furler and spinnaker release, between the mast and the pedestal, should be left at the mast. Tidy these away at the mast using a sail tie.

   c. For the mobile crew member to control the jib the jib sheet must be rigged through the eyelet and jib cleat on the jib carr. The jib sheets can then be tied together for ease of use.

   d. To make it easy for the mobile member to return to their seat and to have some degree of emergency steering authority it is possible to remove and stow the top half of the mobile crew member’s steering stick.

   e. Great care must be taken by the mobile crew member when gybing with a spinnaker flying – it is very easy for the mobile crew member to stand on the spinlock spinnaker cleat and thus release the spinnaker downhaul during the gybe.

   f. A mobile crew member sitting on the gunwale can obscure the view forward for the seated (steering) crew member. When possible the mobile crew members should sit astern of the shrouds so that the seated crew member can see forward.
Reefing Afloat

1. Point the boat into wind.
2. Release GNAV (kicker) tension.
3. Pull on the red or blue reefing line at the forward lower end of the boom to take up any slack in the system.
4. Ease the Outhaul
5. Uncleat the main halyard at the starboard lower end of the mast.
6. Lower the sail slightly while pulling on the reefing line until the luff and leach reefing lines have reached the full reef position. While the luff is shortening, the free slug on the luff should be inserted in the slot on the rear face of the mast.
7. When the sail is reefed, ensure the reefing line is in the jammer cleat on the lower front boom and the main halyard is re-tensioned.
8. The Cunningham can be left attached, however, if the reefing lines are properly tensioned then the Cunningham serves no useful purpose.
9. Reset the GNAV (kicker).
10. Reset the Outhaul
11. At the mid-point of the sail along the boom length, an eyelet can be used with a spare piece of cord to secure the mid-point to the boom and tidy up the sail.
12. Continue Sailing.
13. It is worth noting that there is no need to reduce the sail area on the jib when reefing. Make sure that the jib car is at its rearmost position to flatten the jib if conditions dictate that a reef is necessary.
**Reefing Afloat – Shaking Out The Reef**

1. Point into wind.
2. Remove the tension from the GNAV (kicker), Outhaul and Cunningham.
3. Remove the cord attaching the mid-point of the sail to the boom (if fitted).
4. Remove the red reefing cord from the jammer cleat on the forward lower boom.
5. Remove the Reefing Slug from the track and ensure that the tack slug remains in the lower part of the main sail track.
6. Pull on the main halyard to raise the sail, at the same time ease both front and rear reefing lines, re-cleating the mainsail to finish.
7. Refit the Cunningham through the lower eyelet on the luff.
8. Reset the GNAV (kicker), Cunningham and Outhaul.

**Sailing the Boat - Upwind**

1. The Venture is a keel boat and as such can sail at considerable angles of heel – it is quite possible and not too uncomfortable to sail the boat upwind with water coming over the gunwales! However, while this may look impressive and cause a great adrenalin rush it is not an efficient way to sail the boat. Beating to windward, on the edge of the No-Go Zone, with a large amount of heal the boat is actually slipping sideways and advantage is lost.

2. The optimum method of beating to windward is to set the jib tight, sail a course to keep the jib telltales flying and then play the main sail to keep the boat reasonably flat. The balance and a flat boat can be assisted by a mobile crew member hiking out on the windward side.

**Sailing the Boat - Downwind**

3. Training Run.
   a. Bear away downwind to a very broad reach. NB it is essential that the main and the jib are both eased as the boat bears away. Unless they are eased at the same time as the course is changed it will be difficult to bear away.
   b. Ease the main until it is almost fully out against the shrouds/stopper knot.
   c. With the jib out fully keep bearing away onto a training run (approximately 160° relative to the wind). The training run is defined as the moment the jib clew drops. Once it has dropped, come back up wind by about 10° and then continue downwind on this course.
   d. Monitor the jib closely to ensure that the jib clew doesn’t drop – if it does, to avoid an inadvertent gybe, come back upwind slightly.
   e. Trim the main sail.
4. **Goose Winging.** Goose Winging is not taught on the RYA L2 syllabus as there is considerable potential for an inadvertent gybe. Experienced sailors who have as a minimum completed the L2 qualification may use this technique.

   a. Bear away as above, eventually, at 170°-180° to the wind the jib can be pulled across to the opposite side to the mainsail.

   b. At this point it is very easy to inadvertently gybe. The risk of the gybe can be reduced by a crew member putting their hand against the boom and soon as they feel any pressure that suggests the boom may want to gybe the boat must immediately be turned towards the wind by 10°-20°.

   c. Similarly the helm must closely monitor the jib and if the jib collapses the helm must steer (gently and slightly) further downwind by 10° or so.

**Sailing the Boat – Beam Reach**

5. Set the course across the wind.

6. While maintaining course ease the mainsail out until the luff just begins to flutter then bring it back in by 2-3 inches. The Boom should be out by about 45°.

7. With the course set, ease the jib so that both windward and leeward tell-tails are flying.

**Spinnaker**

8. If the Spinnaker is rigged from the starboard side of the boat then it is easiest to launch and recover it while on a port tack and the spinnaker is launched and recovered on the starboard side of the boat. The converse is equally true. This is caused by the fact that the Spinnaker halyard is to the rear of the jib halyard and if the spinnaker is launched on starboard tack the spinnaker has to travel around and forward of the jib halyard. For a triangular, a trapezoid or a windward/leeward race course it may be more appropriate to rig the spinnaker on the port side of the boat so that it can be more easily launched on starboard tack after rounding the windward mark.

9. Hoisting and lowering the spinnaker is made easier by getting the helm to provide gentle tension on the ‘live’ spinnaker sheet while the spinnaker is being launched and recovered. The helm then hands the spinnaker sheet back to the crew once the spinnaker is fully up.

10. While hoisting ensure that the halyard pulled through the spinlock cleat is given free passage through the pulley and back towards the sock – it can easily get wrapped around the pedestal/seating and cause problems with the launch.

11. Experience suggests that by furling the jib you may get a deeper downwind angle with little reduction in speed i.e CMG improves with only a small reduction in VMG.

12. Every few months the spinnaker chute and associated pulleys should be sprayed with silicon to ease launch and recover.
13. NB if you have a mobile crew member crossing the boat during a spinnaker gybe then ensure that they do not tread on the spinnaker spinlock cleat as the spinnaker will then drop!

**Steering and Rudders**

14. If the steering locks up, check that the mainsheet has not wrapped itself around the tiller – it does occasionally happen.

15. If the steering feels heavy:
   
   a. Check the tension on the steering ropes at the tiller extension. If it is very tight the steering becomes stiff – slacken off the tension by 1 knot.
   
   b. Check that the tiller/rudder blade assembly has not ‘lifted’ by a notch

16. To check that the rudders central position is correctly set put the pin in the starboard steering stick to centralise it and then adjust the knots/tension on the tillers to ensure that both rudder blades are straight/central.

**Support and Security**

17. The seats provide a good amount of support, particularly when the boat is heeling at fairly large angle. The support for the crew can be further enhanced by ensuring that the foot rests are properly adjusted to permit the occupant to further brace themselves against the footrest.

**DERIGGING THE VENTURE – ALONGSIDE THE JETTY**

1. Furl the jib and cleat the furling line.

2. Untie and remove the jib sheets from the pedestal

3. Ensure the tension is released from the GNAV (kicker), Cunningham, reefing cleat and the outhaul.

4. Remove the main halyard from the spinnaker pouch and ensure it is untangled.

5. The main halyard can now be removed from the jammer cleat on the starboard side of the mast and the main sail can be lowered.

6. Lower the mainsail, supporting the boom so that it does not clunk the boat or an occupant.

7. When the main sail is down untie the main halyard from the head of the sail and tie it to the GNAV to ensure it can be easily recovered.

8. Gather the main sail and roughly secure it around the boom with the mainsheet so that it will not take-off with the wind.
9. Remove the retaining pin from the base of the centre console and remove the console by lifting vertically upwards. The console should now be tilted forward and placed on the port side floor.

10. Position the winch in the hole vacated by the centre console.

11. Remove the Velcro strap from the keel.

12. Attach the shackle on the winch line to the eye in the top of the keel ensuring that there are no twists in the winch line.

13. Winch the keel up as far as it will go looking out for the marker on the keel and the marker on the winch both of which signify that the keel is fully up.


14. Stow the rudder by lifting both tiller arms and pulling them towards the front of the boat. In order to properly get the rudders up and keep them up it may be necessary to release the steering tensioning knots from the ends of the tillers.

15. The boat can now be walked down the jetty and recovered using the launching trolley.

16. Position the launching trolley in the water until the water level is just below the towing hitch.

17. The boat should slide easily onto the trolley.

18. Ensure the bow is pulled into the blue bumper. Attach the fixed line on the trolley through the eye on the bow of the boat and secure the boat to the trolley. One person will need to get their feet wet at this stage.

19. Tow the boat forward until it can be confirmed that the bulb on the keel is over the supporting plate on the centre of the trolley.

20. Once in the final parking position, remove the towing hitch and let the boat rest on the eye of the launching trolley.
DERIGGING THE VENTURE - ON THE SHORE

1. Attach the forestay to the eye in the middle of the forward deck that secures the forward painter line.
   
   **UNLESS THE FORESTAY IS ATTACHED BEFORE LOWERING THE JIB THE MAST WILL FALL DOWN!**

2. Unfurl the jib. It is important to unfurl the jib before lowering it as unfurling the sail charges the furling system ready for the jib to be re-attached at a future date.

3. Remove the jib tension line (black cord) from the jammer cleat on the port lower mast. This should allow the wire loop to be removed from the hook on the rear face of the mast.

4. Lower the jib by allowing the white cord attached to the wire loop to feed into the mast.

5. Remove the jib from the upper and lower furling units. The upper furling unit can be attached around the forestay where it can be found easily.

6. Remove the spinnaker (if fitted). If the spinnaker was fitted it is almost certainly wet. When returned to the main shed the sail must be draped over shelving/boats to allow it to dry before it is returned to the sail bag.

7. Remove the knot from the end of the mainsheet where it passes through the pulley at the rear of the boom. The mainsheet can then be unthreaded from all pulleys and straps to the front of the boom and then coiled on one of the seats.

8. Remove the mainsail from the mast track but leave the bottom slug in the track. Roll the mainsail until it is up against the boom and then tie off with the sail ties.

9. Release the tension in the keel winch to allow the trolley to take the weight of the keel.

10. Ease the outhaul to form a small loop at the rear end of the boom. Route the main halyard through this loop and tie it off so that the boom is raised to a horizontal position and secured.

11. Refit the boom cover and the boat cover.

12. Refit the padlock to the eye on the front of the launching trolley and secure the padlock key on the Jib Sail bag.

13. The towing hitch, jib and spinnaker are all stored in the big shed.
ELECTRO STEERING SYSTEM

General

1. Venture 233 is set up with the Electro Steering System. The full Electro System provides control over both the steering and the sheets. 233 is only modified for the control of steering, control of the sheets could be added at a later date.

2. The modifications to this boat include:

   Foam formers inside the rear hatch to hold the Black Box controller.

   A Black Box fitted inside the rear hatch that contains batteries and an electronic control system. It is also used to store the Power Switch.

   The control box includes electrical connectors (blue) for connecting to the Joy Stick, Power Switch and the power/control for the Motor.

   A new rear hatch cover which holds the Motor and ram to control the steering.

   A minor modification to the tillers that provides a ball joint to connect the rudders to the Motor via a control arm.
A Joystick to control the steering and associated articulated connectors so that the Joystick can be placed in a variety of positions.

Power Switch to remove all power to the Black Box.

1. It is quite possible to return the boat to either a Venture with the manual Sailability Connect kit or a normal dingy configuration. The conversion will take about 30 minutes.

2. With the Electro System added the manual stick steering system is disabled and has therefore been removed from the boat. Normal steering can only be carried out by the person in control of the Joystick. In an emergency the Power Switch can be operated to remove all electrical power from the Black Box, the Control Rods can then be disconnected from the tiller and the boat manually steered from the stern.

3. For these reasons, and in accordance with the manufacturers guidance, ….

*It is vital that all sailing sessions have an able bodied person onboard the boat to assist in the event of mechanical or electrical failure.*

*NB if the able bodied sailor is at the stern of the boat handling the steering then consideration must be given as to how the main sheet will be handled.*
4. RS Sailing estimate that the batteries will operate for at least 4-5 hours.

5. The experience to date at RS suggests that 10 hours on the water may be more realistic estimate.

6. Notwithstanding these estimates the batteries are to be re-charged after each days sailing.

7. The batteries are sealed and the manufacturers specification states that ‘they can be safely used in any orientation (excluding continuous inverted use) without loss of capacity, electrolyte or service life’

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**Rigging The Electro Steering System**

The boat is rigged in accordance with the procedures described above for the standard boat. In addition, the following points are relevant to rigging the Electro Venture

Great care must be taken when making the electrical connections to the Black Box; there is either a notch or a white dot which shows the orientation of the plug. The plastic on the connectors appears to be quite fragile so, GENTLY push the plug in and then GENTLY tighten up the securing screw collar connector.

**DO NOT ‘PULL THE PLUG IN’ BY TIGHTENING THE SCREW THREAD**
**DO NOT CROSS THE THREADS**
**DO NOT OVERTIGHTEN**

1. Retrieve the Black Box which is normally stored in the Small Shed, attached to a battery charger

2. Carefully remove the rear hatch cover from the back of the boat.

3. Place the Black Box onto the formers in the rear hatch with the blue electrical connectors facing to port.
4. Route the Joystick Cable through the cut out on the port side of the hatch and secure it to the electrical connector marked CONTROLLER.

5. Check the Power Switch is selected OFF then route the Power Switch through the cut out and connect it to POWER SWITCH.

6. Place the hatch cover adjacent to the hatch, on the starboard side of the boat. Route the cable attached to the motor through the cut out and connect to STEERING.

7. Ignore the 2 MAIN SHEET connectors.

8. While ensuring the cables are all routed through the cut out, secure the hatch cover to the hatch.

9. Route the Joystick to the seats and position as required using the suction cup. Depending on the requirements of a disabled user the Joystick can be placed on the Left or Right side of either the Port or the Starboard seat. Whenever possible, in order to provide an element of ‘dual control’, it is better to mount the Joystick between the Port and Starboard seats.

10. Route the Power Switch to the seats position as required (normally between the seats).
11. Ensure that the rudders are lifted – **DO NOT CONNECT THE CONTROL RODS TO THE TILLERS UNTIL THE BOAT IS IN THE WATER AND THE RUDDERS ARE VERTICAL**

12. The boat is now ready to be towed to the jetty and launched.

13. Once the rudders have been lowered the Control Rods from the motor can be connected to the ball joints underneath the tiller arms.

14. Select the Power Switch to ON and check the rudders for full and free movement.

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**Operating Procedures For The Electro Steering System**

1. **Departing From and Recovering To The Jetty.** Depending on the competence of the disabled helm it may be appropriate for the able bodied crewman to steer the boat towards an area with greater sea room. In some circumstances it may even be necessary for the boat to be towed to or from an area with greater sea room.

2. **Operation of the Joystick.** The joystick commands the motor to move and hence moves the rudders. The motor/rudders do not self-centre once the joystick is returned to the central position i.e if you move the joystick right for 2 seconds you will get 20-30°degrees of right rudder. If you return the joystick to centre the rudders will remain at 20-30° of right rudder. In order to get the rudders back to central you need to select left rudder for 2 seconds.

3. Is it all too easy to move the joystick left or right for 2-3 seconds which then results in a large change in heading. This is then followed by the operator moving the joystick in the opposite direction which then results in a large change of heading in the other direction. This rapidly results in a ‘zig-zag’ course oscillating through 40°-50°!
4. The optimum method for small changes of heading is;
   a. Nudge the Joystick for ½ second in the direction you want to go.
   b. See the effect this has on the boat turning.
   c. Nudge again for ½ second in either the same or opposite direction to achieve the required change in heading.

5. For tacking/gybing where a larger turn is required:
   a. Hold the joystick in the required direction for 2-3 seconds then release the joystick
   b. Monitor the change in heading.
   c. Predict the ‘roll-out’ and as it approaches apply 2-3 seconds of opposite turn on the joystick.

6. **Actions In The Event Of A Steering Failure.** If power is lost or switched off using Power Switch the rudders will freeze at their current setting. This may be straight or 20-30° of deflection. In the event of a loss of power;
   a. The able bodied crewman should quickly release jib and main sheets and make their way to the back of the boat.
   b. With the power failed or the Power Switch OFF the crew member can manually move the rudders and the screw motor – move the rudders to straight ahead.
   c. This crew member should then disconnect both the control rods that connect the motor to the rudders. NB that the boat may inadvertently tack or gybe so keep your head down!!
   d. Once the control rods have been disconnected manual control of steering is possible.
   e. The main sheet should then either be passed to the crew member at the back of the boat or controlled by the seated crew member.
   f. A radio call should be made to the rescue boat to facilitate recovery to the jetty.

7. **Blown Over.** If the boat is blown over it is quite possible that the Black Box will have moved from its mounting inside the rear hatch. In the event of being blown over, once recovered to level check the steering works.
   a. If it has failed then carry out the drill for Steering Failure.
   b. If it works then return to the jetty as soon as practicable, lift the rear hatch and confirm that all is well with the Black Box, the mounting and the electrical connectors.
**Derigging The Electro Steering System**

1. In addition to the actions previously described for de-rigging the standard boat and before the boat is towed out of the water;
   
   a. Select Power Switch to OFF
   
   b. Disconnect the 2 Control Rods connecting the motor to the tillers.
   
   c. Raise the rudders to horizontal

2. Once in the dinghy park, in addition to the actions previously described for de-rigging the standard boat;
   
   a. Carefully lift the hatch cover and move it one side.
   
   b. Release the 3 electrical connections (Joy Stick, Power Switch, Steering (to motor) and refit the blanking/protective covers onto the connectors.
   
   c. Remove the Black Box
   
   d. Replace the hatch cover over the hatch.
   
   e. Store the Power Switch in the Black Box
   
   f. Store the Joystick and mount in the lime green bag.
   
   g. Place the Joystick and mount and the Black Box in the small shed, open up the Black Box and then connect it to the charger.
   
   h. The charger is on a timer and is set to come on at 15:00 on a Thursday and a Saturday for 10 hours to recharge the batteries. Ensure that the lid to the Black Box is open while the batteries are being charged.