APPENDIX 5A - COACHING CATAMARAN SAILORS

INTRODUCTION

Sailing Catamarans:

Is it their speed? Is it their power? Is it their shape? Is it their size?

Catamarans are one of the fastest and most exciting sailing boats on the water. Whether you are sailing off the beach for fun, regatta racing or setting new world sailing records the skills and knowledge related to the discipline of catamaran sailing are unique and best acquired through informative catamaran instruction.

CATAMARAN COACH TRAINING

Catamaran Coach courses are open to candidates with the appropriate standard of catamaran sailing knowledge and ability. This is confirmed by a practical test identical to the Personal Sailing Assessment with the exception that rudderless sailing would be omitted.

The coach course would have a similar format to that for dinghy coaches with the exception that many of the boat handling techniques are different. Candidates will be assessed by a specialist catamaran coach developer and qualified as a “Catamaran Coach” at the appropriate level.

Existing qualified Dinghy Coaches with the relevant catamaran experience who wish to gain a Catamaran Endorsement may take a suitable two/three-day endorsement course that would just deal with catamaran specific issues. It is recommended that this includes a Personal sailing assessment and a assessment in practical catamaran teaching techniques.

It is recommended that training takes place using suitable teaching catamaran craft, however consideration should be made for the type of catamaran most commonly used in the region. The information which follows is generic to catamaran sailing. Coaches may need to modify the techniques as appropriate to the catamarans being used.

Outline teaching methods for Catamarans

Clothing / gear collection

- As for dinghies, with special attention to potential wind chill factors when sailing faster moving craft, and abrasion to knees.

Rigging / Launching

- Show students where to sit
- Demonstrate which items may be used as handholds, and which may not be used
- Hoist battened mainsail first (Take care to control the sail when unrolling and hoisting in strong winds)
- Boat must be head to wind to ease raising of mainsail and allow the halyard lock (if fitted) to operate.
- Mainsail tack downhaul connected but not tensioned, mainsheet system NOT attached
- Hoist jib, set jib luff tension and connect jib sheets
- Attach rudders, connecting bar and tiller extension. Position rudder blades in the locked-up position.
- Lift bow and slide trolley under keel line to balance point.
- Show students how to manoeuvre the boat, with one hand on the forestay bridle, the other holding bow
- Trolley boat into water and float off
- Stow trolley ashore
- Warn students of danger in placing feet under hulls in shallow water
- Crew holds boat head to wind as outlined above
- Helmsman attaches mainsheet and carries out boat check
- **Leaving a crosswind** / **lee-shore**: Sail gently off the beach, lowering windward rudder first.
- When in clear water, slow to fully lower leeward rudder and tension mainsail tack downhaul. Take care to maintain forward boat speed until in safe water.

- **Leave a windward shore:** Sail/ Drift backwards - position sailing crew on the fore deck of each hull well forward of the main beam to keep sterns and rudders clear of the water, traveller un-cleated and free to travel across the rear beam.
- Crew holds jib to fill with wind - rate and direction of sternway can be adjusted by holding the jib out by hand on either side as appropriate and releasing to slow down

Coming ashore

- Lift the leeward rudder to floating position.
- Ease mainsail tack downhaul
- Sail in slowly with the traveller eased off
- Crew positioned on windward hull near main beam and chooses right moment to slide off the hull into the water to prevent boat from grounding on the beach.
- Helmsman lifts windward rudder to floating position when close to shore
- **With an onshore wind, take care!** the crew can slow the boat by dragging their legs in the water on the windward side, forward of the shroud to slow the boat down. Returning to a leeward shore should be carried out with caution.
- In strong winds or restricted access, it is recommended the mainsail is lowered on the water upwind and the boat sailed towards the shore under jib alone.

Coming ashore on sandy beaches with an onshore wind and large waves, the technique is:

- De-power the mainsail
- Select a suitable wave period, both helmsman and crew sit aft to lift the bows, keeping stern square to the waves

- On nearing the beach trip the rudders whilst maintaining the stern square to the waves and sail the boat onto the beach. (Other advanced techniques are available but should be advised by a catamaran training expert – for further details contact ISAF Training Department)
- Take care when alighting from the boat (getting off) and turning it head to wind
- Training for inexperienced students from beaches with a surf wave environment is not recommended.

First Experience

- The basic programme is the same as for dinghies
- Take care! Sailing enjoyment is relative to an individual's confidence so avoid excessive boat speed or performance that might create anxiety to a student.

Orientation and basic boat controls:

This is the same in Multihulls as for dinghies but there are important differences in the basic boat controls session:

- Demonstrate the effect of excessive rudder movement acting as a break on a catamaran.
- Explain and demonstrate the effect of correct sail setting on a fully battened mainsail and jib angle slot effect to aid performance.
- Introduce three traveller positions: upwind/reaching and downwind
- The centreboard demonstration may not be appropriate depending on catamaran type. For catamarans with centreboards explain the basic principle of balancing the feel in the steering by raising the centreboard for downwind sailing and reducing "tripping" risks in heavier wind conditions,
- Instructor teaching position such you can assist with steering and mainsheet release if required.

Tacking:

The teaching of successful tacking relies on two essential and related teaching points – maintaining sufficient boat speed and sailing an efficient course to windward prior to tacking i.e. neither sailing inside the no-go-zone (too close to the wind) nor close-reaching (too far away from the wind). It follows that it is not practical to tack from reach to reach, so the existence of the "N0-Go-Zone" must be introduced earlier in catamaran teaching.

The use of colour coded sheets and traveller control line can be an advantage for beginners to avoid confusion. The tacking drill below includes the use of trapeze although this would not be appropriate for the very early stages of instruction. It is essential that proper boat speed and course be maintained into the tack.

The basic tacking manoeuvre:

- Helmsman checks turning area to ensure that the tack will not interfere with other craft
- Crew comes in off trapeze (if used) and unhooks harness and calls "Ready"
- Helmsman pushes tiller extension slowly and firmly until the rudders are at about 45 degrees to their normal position and maintains that angle.
- Crew and helmsman both wait until the jib just starts to fill with wind on the new tack side.
- Helmsman then moves to a kneeling position, crosses centreline of the boat facing aft moving to the new windward side passing the tiller extension behind the mainsheet, changing hands and sitting on the new side facing forward.
- Crew moves at the same time as helmsman crossing to new side with jib sheet to hand and releases jib sheet when mainsail battens are set on new tack
- Helmsman eases the mainsheet to allow mainsail batten tension to reverse the batten camber into the new tack.
- Helmsman maintains turn until battens are set on new tack to sheet in and accelerate away.
- Crew balances the boat as appropriate and trims the jib on the new tack

The main teaching points for tacking a catamaran are:

- The timing, of body movement across the boat is very important
- Avoiding the temptation to slow down or sail inside the no-go-zone immediately before tacking
- Overcoming any tendency to centralise the rudders in the turn too soon during the tack
- Ensuring that the helms person does not let go of the tiller extension
- Emphasise the importance of trimming the mainsheet correctly both before and during the tack. This means keeping the power on when starting a tack and remembering to ease the sheet during the tack as outlined above. In light winds, it may be necessary for the helmsman to manually reverse the camber of the mainsail battens onto the new tack by a combination of holding the clew area of the mainsail and applying pressure to the middle of the lower sail panels. On some rigs this can also be achieved by grabbing all the parts of the mainsheet and pulling them sharply to windward

Tacking practice/sailing to windward:

- As for dinghies, except that it is not practical to tack from reach to reach.

"Apparent wind sailing" An important aspect of catamaran sailing is to understand that changes in the speed of the catamaran will effect the wind angle relative to the sails. When the craft is stopped the true wind direction is indicated by the bridle wire streamer or mast head burgee.
At speed, the true wind direction is changed to become "apparent" wind. The faster a catamaran sails the more this apparent wind moves forward requiring sails to be sheeted in or the course steered to be changed. As the catamaran slows the apparent wind moves back towards the true wind position requiring sails to be eased out. This is particularly evident during high speed reaching and down wind sailing.
When sailing down-wind this apparent wind effect allows catamarans to sail at lower angles. This is best indicated by using the down-wind streamer to maintain the apparent wind angle at 90deg. For further information refer to "The Catamaran Book".

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The Core essentials:

1. **Sail setting –** The use of telltales nearest the head of each sail is introduced earlier than in dinghy teaching because of the fully battened mainsail. Also, introduce the use of the streamer on the forestay bridle as an aid to down-wind sailing (the streamer should be at 90 degrees to the boat centreline for optimum downwind sailing).

2. **Balance** – Emphasise the different helmsman/crew positions for light and medium winds. Catamarans sail best on most points of sailing when the windward hull is just out of the water. In lighter winds the team look to sit on the trampoline or a combination of leeward hull and trampoline. As the wind increases and the windward hull starts to lift they move towards the windward hull. In stronger wind the team lean out over the side using toe straps and may well progress to single or double trapezing according to their skill level.

3. **Trim** – Be aware that the trim of the boat is level by comparing waterline forward and aft. The trim position will change depending on the wind strength and the downward pressure created on the bow area from the sails. This is most noticeable when reaching and running in medium and strong winds. Trim should be adjusted by the fore and aft position of the crew.

4. **Centreboard** – Catamarans with centreboards operate in the same way as dinghies although there are two boards to adjust. Downwind sailing only requires a small amount of centreboard for steering balance.

5. **Course sailed –** As for dinghies but emphasise the amount of time lost through inefficient tacking, the benefits of a good technique for downwind sailing and the effect of apparent wind on all points of sailing.

Think 'C.A.T' In addition to the **Core Essentials** emphasise also these 3 key teaching points for catamaran sailing that apply to all points of sailing:

Crew weight: Where the helmsman and crew are positioned on the boat for balance and trim.
Air flow: Sail setting, adjustment of mainsail, jib and traveller
Technique: Best course to sail, managing waves, reacting to gusts etc.

Gybing and downwind sailing:

Whilst a catamaran can sail straight down wind, a broad downwind sailing angle connected by a series of gybes gives better performance and makes greater use of the apparent wind created. The skill of using apparent wind to sail down-wind efficiently is a key skill of catamaran sailing.

Downwind sailing

- Traveller out to end of track
- Mainsail eased until it rests against shroud wire
- Jib trimmed to the angle of the leeward telltale flow
- Downwind streamer 90deg.
- Steer to "apparent wind" changes

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The basic gybing manoeuvre:

- Helmsman steers the optimum downwind course (streamer at 90 degrees to boat) and checks turning area.
- Helm calls 'stand by to gybe'
- Crew checks area, replies 'ready' faces forward and moves to centreline of boat, picking up new jib sheet
- Helmsman calls 'gybe oh', pulling tiller extension steadily to windward until rudders are at 45 degrees to centreline.
- As the boat turns downwind the helm moves to a kneeling position facing aft, close to the new windward hull.
- Helmsman maintains rudder angle and swings the tiller extension to new side aft of the mainsheet and changes hands before the mainsail is blown across the boat
- The helm controls the mainsheet by hand as the traveller crosses, straightening the rudders at the same time
- Crew and helm reposition on new downwind course, reset sails and adjusting sailing angle to 90deg angle downwind using the wind indicator/streamer.

The main teaching points regarding gybing a catamaran are:

- Participants need to be made aware of the large area needed to gybe a catamaran, particularly by beginners
- The helmsman should not centralise the rudder angle in the middle of the gybe.
- Beginners should be encouraged to use the tiller extension, rather than the tiller connecting bar.
- Ensure that the lazy ends of mainsheet and traveller control lines are kept clear to avoid restricting the mainsails movement across the boat.
- The helmsman's steering hands should be re-positioned before the mainsail crosses to the new gybe.

Further sessions:

The ability to sail around a triangle and then square course marks an important stage in basic training, as it shows that the student can manage all points of sailing.

Teaching of man overboard recovery differs fundamentally from dinghy teaching. Having regained control, the person on aboard should consider the option to gybe rather than tack when returning to the overboard person in the water - gybing is more practical offering success throughout the manoeuvre. In addition, when recovering a MOB, the option of recovering the person from between the hulls and over the beam, rather than at the windward shroud should be considered and practised.

Capsize recovery drill:

The golden rule to stay in contact with the boat is critical with catamarans due to their high speed of drift when capsized in strong winds.

The basic routine for a 90 degree recovery:

- Helmsman and crew whilst in the water make their way to bow area of the floating hull.
- Helmsman and Crew 'anchor' the bow in the water until the boat has turned and the bow or mast is pointing into the wind.
- The team position themselves on the floating hull and the helmsman moves aft to free the mainsheet, traveller line and position tiller extension over the stern.
- Crew releases jib sheet and positions righting line over the top hull
- Helmsman and crew lean out on righting line to right boat. (amount of leverage required will depend on weight of team and wind strength)
- As boat comes upright, one crew member holds the beam close to the hull in the water to prevent the boat being blown over into a second capsize
- Helmsman and crew board via front or rear beam in the case of total inversion
- Helmsman and crew move to beam area and board the underside of trampoline.
- Helmsman ensures that mainsheet and traveller have been released
- Crew releases jib sheet and feeds righting line around hull nearest to the wind direction.

- Helmsman and crew position themselves on the leeward hull stern quarter to sink the transom and start the righting manoeuvre

The main teaching points are:

- For training purposes consider the most controlled way to capsize the catamaran with participants on-board. This is best done by tacking the boat without the team moving from the windward hull allowing all participants to slide into the water as the boat settles on its side.
- Emphasise the importance of keeping in contact with the boat, especially as catamarans are quickly blown down wind.
- Encourage beginners to use their full righting leverage when using the righting line.
- Take care both helm and crew end up between the hulls once the boat is righted and that they are not exposed to the uppermost hull during it travel into the water.
- The stronger the wind the easier it is for catamarans to be righted.
- Entrapment of sailors or students is similar to dinghies however special attention should be made to keeping clear of the trampoline area during a full inversion, the possibility of a trapeze harness hook becoming entangled and restricted body movement by ropes or toe-straps. In all cases sailors should have access to a safety knife which can be used to cut ropes or provide access through a trampoline to aid other sailors.

Teaching further skills:

Once basic techniques have been covered in Level 1, 2 and 3 further advanced and additional skills can be developed. Catamaran training, technical advice, coach training and advanced training is available from ISAF Nominated Experts. Contact the ISAF Training Department for further details: training@isaf.com