Doing It Easier

Again, along the theme of the new teams doing their 49er sailing a bit easier, I would like to offer the following basic tips for 49er racing and with an emphasis on medium+ winds but some tips apply in light or any wind strength.

Pre-start:
Crew be sure to keep boat balanced via correct jib+mainsheet trimming, or else you will fatigue your skipper's brain and body before the race even begins. Such effort will make your race (as crew) much easier.
Find top mark.
Observe number of laps.
Note bias of start and of the gate marks.
Get a start line transit (both) ends. Not always useful at the start, but sometimes a real blessing (eg. simply returning to the start line if OCS), and always good to keep brains + bodies occupied if a race is coming up.
Pick side of the course that simply looks "easier".
Have a drink of water and a snickers to keep yourself charged.
Keep brains "in-gear" in pre start because a capsize will zap huge amounts of energy.

Start:
Get start time exactly on your clock. Boom clock is nice option.
Do trial attempts to gauge time+distance if you are not sure.
Crew work jib sheet. Skipper on mainsheet.
Crew will have to do main+jib sheets if too much wind for skipper's comfort.
Pre-adjust trap heights + board + vang + cunno.
Crew keep body weight forward+low+near centreline.
But both keep an eye out for bad waves - keep spinnaker sock dry.
Use free space on the line: Don't hesitate to do two tacks or whatever to move into a less congested place.
In slow tacks the crew must briefly pull the jib sheet on hard to bear away, then ease again to avoid excess bearing away.
Beware jib is best tool to prevent going into irons.
If go into irons then push both tiller+boom to leeward and reverse out of it. Once bow comes away sheet both sails on and move weight out enough for a slight windward heel.
Start goals: 1) On time and with speed 2) Clear air. 3) Right tack.

Upwind:
Setup sails so the helm feels balanced when boat is upright. Or just a little weather helm feel. This way the boat can accelerate.
Be acutely aware when your 49er is not up to full speed.
Either crew or skipper must be keeping an eye on the oncoming wind, but then wasteful if you are both doing this.
Steer a simple upwind path: If boat moving nicely and if no good reason to tack, then do not tack.
Work at speed via steering+trim+weight. If both sailors keeping boat going fast then you also find it easy to see the better upwind path.
If overpowered then reduce power in this order:
1. ease mainsheet (crew).
2. ease jib sheet (skipper).
3. cunno on
4. board up (sensitive, and board up means keep a watch for lulls).
5. sheet jib out on track
6. sheet jib lower on clew
7. change wire settings: shrds+caps down 4mm and D1s off 4mm.
If underpowered then do the same 1 to 7, but in opposite directions.
The last 30% of vang travel is also a power control, assuming you are not severely under vanged in medium+ winds in which case it is a power control again. But all vang travel is always a twist and leech tension control. Permit more twist for lighter or gusty wind or for

waves.
Twist is essential in less than 6kts of wind. A moving leech is essential for variable wind or bad waves. 49ers like a moving leech, but they also generally like less twist, so learn thy vang, but do not get obsessed with it.
If cunno does not control power correctly, then your wire settings are not right for the conditions.
Beware that in v/light winds that power is about "flow", so often actions required are very different.

Tacking:
Get main+jibsheet tails cleaned up.
Trap up a little higher if you wish before tacking.
Stand up and onto feet on wing.
Allow shocky to unhook you. Never "waste" a hand unhooking.
Keep arse off the deck and wings.
Keep knees off deck and wings.
Skipper steer smooth and steady arc. Slower in and faster out, and never jerk the helm or you will disrupt everything.
Keep weight together.
Trust each other with steering + trim + weight. Assume the other wil do his/her job. Speak early if you think you cannot do your job.
Do not cross centreline until jib has backed.
Never turn facing aft.
Hook up with your front hand.
Crew acutely aware of boat heading and wind speed and heel and also movement of skipper's body weight, and trimming mainsheet correctly on exit of the tack. Thus trim is MUCH more important than trap hook up. Very difficult for either sailor to hook up on trap fast and staying balanced on feet if boat heel (via crew's main trim) is not correct.

Top mark:
Ease some vang+cunno early enough so you are not too rushed on the mark.
Skipper take mainsheet early - saying "got it" very clearly.
Crew take jib sheet and ease as little as necessary upon skipper's request. Then drop jib sheet entirely so you do not prevent the skipper from easing the mainsheet. Very important!
Bear away only if boat is flat.
Skipper tell crew when to go in (feel it on helm).
Crew go in smooth and at skipper's requested pace.
Skipper trim a little mainsheet to keep boat upright.
Crew+skipper observing bad waves ahead as boat bears away.
If crew feels like going around the f/stay then:
1. he went inboard to late.
2. skipper came away to fast and/or too much
3. skipper should sheet mainsheet on hard and at the same time (if possible) grab your crew and keep him with you.

Spinnaker Set:
Ensure halyard runs freely before you launch boat.
Hoist while boat still moving fast!
Easier to hoist if jib not eased too much.
Skipper steer low for just enough time for the hoist.
Crew go hard early so spinnaker stays out of the water.
Once spinnaker set, crew ensure stays set.
Ease spinnaker a lot to accelerate. Then pull on as boat shoots forward, Then sheet normally once up to speed.
Skipper steer up for power then down as boat accelerates.
Skipper ease jib sheet more as soon as crew's legs are clear of it.
Crew might ease a little more cunno after the shave more optionset before coming aft.

Downwind:
Know the direction of the on-coming apparent wind (just over your front shoulder). This being critically important. Eg. Skipper must always know what is coming from that wind sector and give crew occasional advice on what to expect.
Crew focused on spinnaker, his own body weight and advice from skipper.
If boat is at steady hull speed, then spinnaker sheet trimming need not be much. Instead skipper can steer up and down the lulls and gusts.
If sudden spinnaker luff collapse (in light or medium winds) then do NOT bear away because your boat is going faster than the wind so by bearing away you encounter even less wind strength! Instead steer higher, sheet on, and if necessary (eg. light winds or huge lull) move weight inboard.
Trim mainsheet constantly as spinnaker is trimmed. In/out at the same time. More trimming for bigger gusts and lulls. Ease for gusts, on for lulls. Try to steady trimming asap.
Skipper gentle on the helm! Steering by up/down 1cm on tiller at most times. Observe apparent wind. Know what wind is coming before it arrives so you can steer earlier with 80% less tiller movement.
If total and severe spinnaker collapse, then crew must move inboard because his back leg is holding skipper out. Failure to get weight off trap wires in sudden lulls can cause mast breakage and/or shorten the life of the mast, because the mast tip is pulled very hard to leeward and aft by both the spinnaker and mainsail, and the capstays can do little to support the mast.
If a nasty wave out front, then ease both spin+main, and steer higher to go across it rather than down it. Just before spinnaker collapses, pull both spin+main back on as you bear way to normal course.

Gybe:
Skipper gentle on the beginning of the turn. Generally smooth arc in and tighter arc out.
Crew moves in first to setup.
Skipper comes in next and as soon as possible.
If skipper feels high tiller load then body weight position and/or steering is not correct.
Both sailors keep boat heeled a little to the outside of the turn, for the whole turn. Even more outside heel in lighter winds. This permits a wider arc and gives more time for everything.
Pull boat flat on gybe exit as you accelerate away from the turn.
Crew never let spinnaker blow "inside-out". This means holding old sheet for longer in medium+ winds, or going very fast on new spin sheet in lighter winds.
Skipper ensure turn fast enough so spinnaker blows thru and not inside out. IE. The pole must "sweep" across the wind.
Crew ensure gives skipper enough weight on gybe exit so that the spinnaker will blow thru.
Skipper MUST know the mainsheet+trapeze+tiller "trick".
The gybe is very much a team effort! You can both make life easy for each other.
In survival gybes in strong winds there are some very basic tips:
A) Mainsail can capsize the boat not the spinnaker. So crew must think of the spinnaker as a mere tool to prevent the mainsail from loading up at any stage. This is crucial!
B) Crew must ease spinnaker sheet going into gybe! So that spinnaker tows hard before the boom comes across. this allows the skipper to:
C) Steer a wide+smooth arc on the gybe entry+exit. So the the boom "floats" thru easier. Avoiding a "Laser style" hard rudder pull gybe.
D) Skipper gybes at maximum speed and just on or before your bow glides down the face of a wave. Rudder control at speed requires both minimal rudder "slop".
E) Crew can hold onto old sheet on for as long as required until sure boat is stable and spinnaker heads blows thru without going inside out.
F) Board up 15 or 25cm can make life much easier.

Drop:
Skipper steer low for as long as possible during the drop. Try to put the bow "under" the falling spinnaker.
Halyard must run free so the spinnaker literally falls down.
Crew tries to suck spin in while boat still moving fast. Because with speed still on the skipper will find the boat most stable and controllable.
It helps to have tube on lower f/stay so spinnaker can pull around it if on port tack.

If you go "prawning" then you have to round up into irons and reverse off the spinnaker and pull it into the sock. No need to capsize.

Bottom mark:
If time still exists before the round up, then crew ensure spin sheets are onboard.
Crew listen for skipper's requests for weight shifting.
Skipper also use rudder and mainsheet to keep boat balanced.
Crew must come out with the jib sheet and trim it on enough to support his own weight. Since skipper cannot physically pull on lots of mainsheet in a short space of time on a sudden round-up.
If two-sail reaching to the mark, then crew MUST ensure boat is kept heeling to windward by 5 or 10 degrees, so that the skipper has full steering options, and also so the crew will not run out of mainsheet length.
If windy and need drop early to reach up to the mark, then if in doubt drop early rather than late.

Ask questions. Not just to me, but other 49er sailors. Help each other.

It's a lovely boat to sail, and not very difficult once a few handy tricks are learned. The 49er is nice and simple in layout, and lucky it is because there is plenty to think about all the time. However there are some tricks to getting equipment to function correctly. If not then the 49er can be hard to sail. For example sheet lengths, trap shocky type, jib cleat, halyard routing, deck grip, board packing, vang function, rope types, tiller extension flex, and so on.

Enjoy.

Emmett