

NACRA 5.8 TUNING GUIDE.

by Steve Yarrington Skipper of Foreign Order 1591. - January 2008.

At the recent Nacra National Titles at Port Stephens, the top 3 places in the 5.8 fleet were dominated by N.S.W boats. As a result, I've decided to write a basic set up and tuning guide with the help of skippers and crews of Flat Chat (1644), Foreign Order (1591) and Yukka II (1639).

With many boats changing hands during and after the Nationals there is plenty of new and some old faces. I'd like to welcome everyone joining this friendly and very social but extremely competitive class of Nacra sailing. Hopefully this guide will assist the entire fleet to go faster which means greater competition.

At last year Nationals at Royal Queensland Yacht Squadron, Gary from Goosemarine produced some very helpful notes on tuning and setting up Nacra 5.8's. I recommend that anyone who owns a Nacra 5.8 read and print off a copy for future reference. Click the link below to read Goose's tips.

http://www.goosemarine.com.au/_content/documents/general/nacra%20tuning%20guide%202007.pdf

The notes below are the rig settings and tips from the top 3 N.S.W boats from this year's Nationals. Before I go in to the settings I'll give you the weather conditions for the 10 races we sailed.

Races 1 and 4. East 10 – 12 Knots. (lightest breeze for the series)

Races 2, 3, 5, 6, 7 and 8. East 14 -18 Knots.

Race 9. South East 18 -20 Knots.

Race 10. South East 20 – 22 Knots.

BOAT SETTINGS.

Please note.

Write down all your boat's existing settings before changing to new settings in case that you feel that these settings don't work for you.

Results

Series Place	Sail No	Boat	Owner	Handicap	Series Points	Race 1	Race 2	Race 3	Race 4	Race 5	Race 6	Race 7	Race 8	Race 9	Race 10
1	1644	Flat Chat	Ben Graham	72.00	12.8	2	3	2	1	1	2	2	1	RDG1.8	3
2	1591	Foreign Order	Steve Yarrington	72.00	13.5	1	1	3	2	3	1	3	2.5	2	1
3	1639	YUKKA II	Martin Horder	72.00	18	6	2	1	3	2	4	1	4	1	DNF17
4	1646	Hellbent	David Jergensen	72.00	25.5	3	8	4	5	4	3	4	2.5	3	2
5	1641	Rogue Elephant	Maurice Harland	72.00	46	8	5	5	6	5	5	7	5	DNF17	DNF17
6	1606	Sails Optional	Jonathon Lawless	72.00	49	4	4	6	4	10	6	DSQ17	9	6	DNF17
7	1635	Two-Up	Tim Hollingsworth	72.00	55	7	9	10	8	6	10	8	6	5	6
8	1559	Loose	Tony Davis	72.00	59	5	13	13	7	7	8	5	7	7	DNF17
9	1552	Street Sweepa	Michael Devereux	72.00	62	14	10	11	11	DNF17	7	6	8	4	5
10	1648	Kate	Robin Beemster	72.00	69	11	7	8	9	8	9	9	11	8	DNF17
11	1604	Spider	Les Neumann	72.00	77	12	11	9	13	9	11	12	13	9	4
12	1340	Rumaged	Henk Zeeman	72.00	77	10	6	7	10	12	12	DNF17	10	10	DNF17
13	1351	Sonic Boom	John Ford	72.00	94	9	15	12	12	11	13	10	12	DSQ17	DNF17
14	559	NacraPhelia	Joshua Miller	72.00	107	15	12	14	15	13	14	13	15	11	DNF17
15	1492	Catastrophic	Keith White	72.00	115	13	14	DNF17	14	DNF17	15	11	14	DNF17	DNC17
16	836	Fatal Attraction	Scott Lewis	72.00	120	DNF17	DNF17	15	16	14	16	14	16	12	DNF17

MAST RAKE.



1639 and 1644. Middle of inspection port. (All 10 races)

1591 Just on the inside edge of the front of the inspection port (All 10 races). For races 9 and 10 around 20 knots, I did consider raking the mast back 1 hole on the front chainplate but didn't. Instead, we trapezed further aft when necessary.

RIG TENSION.

All 3 boats were nearly identical in rig tension, 20 on a loos gauge or about 85kg hanging off a trapeze wire near the rear beam with a minimum amount of bouncing to fit clevis pin in to the side chainplate.

DIAMOND RAKE.



1639. 36mm aft rake all races.

1591. 31mm aft rake races 1 thru 8 and 39 mm aft rake for races 9 and 10.

1644. 40mm aft rake all races.

Diamond rake is measured by use a straight edge or string line across the back of diamond wires touching the spreaders and measuring the distance between the straight edge or string line and the back edge of the mast.

DIAMOND TENSION.

1639. The tightest out of the 3 boats, about 23 on the Loos gauge exempt when the wind was blowing races 9 and 10 and the tension was reduced to 5 on the Loos gauge.

1644. Firm approx 20 on the Loos gauge and not changed during the series .

1591. The loosest out of all the boats approx 17 on the Loos gauge for races 1 thru 5 and 7. Races 6, 8, 9 and 10 were sailed extremely loose at 3.5 on the Loos gauge. Diamond wire tension was changed between back to back races on the water.

BATTENS AND BATTEN TENSION.

1639. Firm tension on the battens and stiffer top 2 battens used for races 9 and 10.

1591. Firm to tight tension used for races 1 thru 8, then reduced the batten tension on all battens for races 9 and 10 to help flatten the sail.

I would have used some stiffer top 2 battens for races 9 and 10 but didn't have any.

1644. Firm tension on the battens, battens tension not changed during the series.

Definition of Firm.

Just enough tension to remove any wrinkles along the batten pockets of the main sail.

CLEW BOARD POSITION.

All 3 boats sailed the entire series in hole 3.

CREW WEIGHT.

1644 and 1591 had the exact skipper and crew weight of 84 kg for the skipper and 75kg for crew giving a total of 159kg.

1639. Skipper 83kg and crew 87kg giving a total combined crew weight of 170kg.

MAST ROTATION.

1644. Mast allowed to float free for the entire series.

1639. Mast allowed to float free upwind all races, only used for down wind sailing.

1591. Mast allowed to float free upwind up to 14knots of wind speed than pulled on to about 070. 18 knots plus pulled on hard at 090. Down wind settings is between 070 and 090 in all wind speeds.

BARBER HAULERS.

1644. Not used at all.

1639. Only used for down wind sailing.

1591. Totally removed from boat and never to be reinstalled. It is the crew's job to keep the head sail trimmed at all times.

JIB LUFF TENSION.

1644. Only adjustable on the beach.

1639. Adjustable from the front beam but was not adjusted during the race.

1591. Adjustable from the front beam and loosened at the windward mark and tightened at the leeward mark all races.

SAILING TIPS.

GENERAL.

Make sure that your boat is in tip top order, fill and fair any imperfections in the hull, centerboards and rudders and have the boat and fins polished. On 1591 I have sanded and faired the underneath centre seam along the bottom of both hulls to give the hulls a better finish. If your boat takes on more than 200ml of water per hull per race you need to find out where the water is entering the boat and repair it. Regular checks on internal bulkheads, the back of the centre board cases, prebend in the bridled foil and front beam, beam straps and beam bolts is also recommended. Check all fittings, hardware, rope and shock cord to make sure they are in sound and serviceable condition. Replace or fix anything which is not up to scratch.

Read your sailing instructions and ask questions at briefing if you are unsure of the courses, starts and finishes.

UPWIND SAILING.

Keep the mainsheet and headsail on hard, use the main downhaul and slowly pinch up a bit when the windward hull starts to fly a hull then ease the downhaul and slightly pull away on the helm when the windward hull touches the water. As the wind increases mast rotation can be used and easing the mainsheet and traveller a bit will help as well. Always keep looking at the mainsail and head sail tell tales to see if they are trimmed correctly. Dumping the mainsheet and pinching hard in to the wind are the last options and should only be used to save the boat from capsizing.

Boat trim is also extremely important. Crew weight needs to be shoulder to shoulder upwind and their weight should move together for fore and aft trim.

For upwind sailing on 1591 we sail with the windward rudder in the up position to reduce drag in all conditions.

DOWNWIND SAILING.

At the windward mark a lot settings need to be changed to power up the boat for the downwind leg. Release the main downhaul just before rounding. When rounding the top mark the mainsail, traveller and headsail needs to be eased and trimmed so you can accelerate quickly out of that area. Once the sails are flowing the crew needs to release the headsail downhaul, pull on the mast rotation to 070 to 090 and raise the centerboards, windward up with approximately 50mm below the hull and the leeward one approximately 1/3 to 1/2 down (mark the centerboards

with a permanent marker so you know how far to pull them up). The crew than should move to the leeward side of the boat and adjust the headsail to the tell tales on the jib and adjust the slot to the angle of the boat and mainsail. The centerboards and rotation will need to be readjusted when gybing. All downwind sailing is done with the windward rudder up.

When approaching the leeward mark all the setting need to be changed for upwind sailing. The jib luff downhaul needs tightening, the rotation let off and both centerboards have to be lowered before rounding the mark. Once you are around the mark and out on trapeze beating to windward the mainsail downhaul can be adjusted to suit the conditions.

REACHING.

Unfortunately the way the courses are set these days, getting a decent reach in while racing is pretty slim. However on occasions the wing mark is set in the wrong place giving an opportunity to wind up the 5.8 for an awesome ride.

When rounding the windward mark both skipper and crew should stay on trapeze and move aft, easing the headsail, mainsail, mainsail downhaul and traveller. Than trim the sails to the new angle. The 5.8 was designed to be pushed extremely hard on reaches due to the large amount of buoyancy in the bows so don't be scared to sheet on and enjoy one of the best rides you will ever get.

I would like to thank Ben and Graham (Flat Chat 1644); Martin and Gerald (Yukka II 1639) and Brett my crew on Foreign Order (1591) who helped me compile this information.

Sail #	Result	Crew Weight kgs
1644	1st	159
1591	2nd	159
1639	3rd	170

Race #	Wind Strength knots	Sail #	Result	Spreader Rake	Mast Rake	Rig Tension loos gauge	Diamond tension loos gauge	Batten Weight	Batten tension	Clew Board Position	Mast rotation Upwind	Mast rotation Downwind	Barber Haulers	Jib Luff Tension upwind	Jib Luff Tension Downwind
1	10 - 12	1644	2	40	Centre Insp. Port	20	20	medium	Firm	Mid hole	Free	?	Not used	Firm	Firm
		1591	1	31	Front Insp. Port	20	17	medium	Firm	Mid hole	Free	rotated	Removed	Firm	loose
		1639	6	36	Centre Insp. Port	20	20	medium	Firm	Mid hole	Free	rotated	Down Wind	Firm	Firm
2	14 - 18	1644	3	40	Centre Insp. Port	20	20	medium	Firm	Mid hole	Free	?	Not used	Firm	Firm
		1591	1	31	Front Insp. Port	20	17	medium	Firm	Mid hole	70 deg	rotated	Removed	Firm	loose
		1639	2	36	Centre Insp. Port	20	20	medium	Firm	Mid hole	Free	rotated	Down Wind	Firm	Firm
3	14 - 18	1644	2	40	Centre Insp. Port	20	20	medium	Firm	Mid hole	Free	?	Not used	Firm	Firm
		1591	3	31	Front Insp. Port	20	17	medium	Firm	Mid hole	70 deg	rotated	Removed	Firm	loose
		1639	1	36	Centre Insp. Port	20	20	medium	Firm	Mid hole	Free	rotated	Down Wind	Firm	Firm
4	10 - 12	1644	1	40	Centre Insp. Port	20	20	medium	Firm	Mid hole	Free	?	Not used	Firm	Firm
		1591	2	31	Front Insp. Port	20	17	medium	Firm	Mid hole	Free	rotated	Removed	Firm	loose
		1639	3	36	Centre Insp. Port	20	20	medium	Firm	Mid hole	Free	rotated	Down Wind	Firm	Firm
5	14 - 18	1644	1	40	Centre Insp. Port	20	20	medium	Firm	Mid hole	Free	?	Not used	Firm	Firm
		1591	3	31	Front Insp. Port	20	17	medium	Firm	Mid hole	70 deg	rotated	Removed	Firm	loose
		1639	2	36	Centre Insp. Port	20	20	medium	Firm	Mid hole	Free	rotated	Down Wind	Firm	Firm
6	14 - 18	1644	2	40	Centre Insp. Port	20	20	medium	Firm	Mid hole	Free	?	Not used	Firm	Firm
		1591	1	31	Front Insp. Port	20	3.5	medium	Firm	Mid hole	70 deg	rotated	Removed	Firm	loose
		1639	4	36	Centre Insp. Port	20	20	medium	Firm	Mid hole	Free	rotated	Down Wind	Firm	Firm
7	14 - 18	1644	2	40	Centre Insp. Port	20	20	medium	Firm	Mid hole	Free	?	Not used	Firm	Firm
		1591	3	31	Front Insp. Port	20	17	medium	Firm	Mid hole	70 deg	rotated	Removed	Firm	loose
		1639	1	36	Centre Insp. Port	20	20	medium	Firm	Mid hole	Free	rotated	Down Wind	Firm	Firm
8	14 - 18	1644	1	40	Centre Insp. Port	20	3.5	medium	Firm	Mid hole	Free	?	Not used	Firm	Firm
		1591	2.5	31	Front Insp. Port	20	17	medium	Firm	Mid hole	70 deg	rotated	Removed	Firm	loose
		1639	4	36	Centre Insp. Port	20	20	medium	Firm	Mid hole	Free	rotated	Down Wind	Firm	Firm
9	18 - 20	1644	1.8 red	40	Centre Insp. Port	20	20	medium	Firm	Mid hole	Free	?	Not used	Firm	Firm
		1591	2	39	Front Insp. Port	20	3.5	medium	Soft	Mid hole	90 deg	rotated	Removed	Firm	loose
		1639	1	36	Centre Insp. Port	20	5	Heavy	Firm	Mid hole	Free	rotated	Down Wind	Firm	Firm
10	20 - 22	1644	3	40	Centre Insp. Port	20	20	medium	Firm	Mid hole	Free	?	Not used	Firm	Firm
		1591	1	39	Front Insp. Port	20	3.5	medium	Soft	Mid hole	90 deg	rotated	Removed	Firm	loose
		1639	dnc	36	Centre Insp. Port	20	5	Heavy	Firm	Mid hole	Free	rotated	Down Wind	Firm	Firm

Notes Rig tension of 20 loos = approx 85 kg bouncing on the side stay on the beach.