Navigation Seminar

By Julie Hodder

Wednesday 13th July 2022

Note: Times have changed (due to a footy game starting at 20:10) to

18:00 to 19:30

At MHYC

The seminar is all about why you want to and what it takes to be a navigator in particular the preparation beforehand.

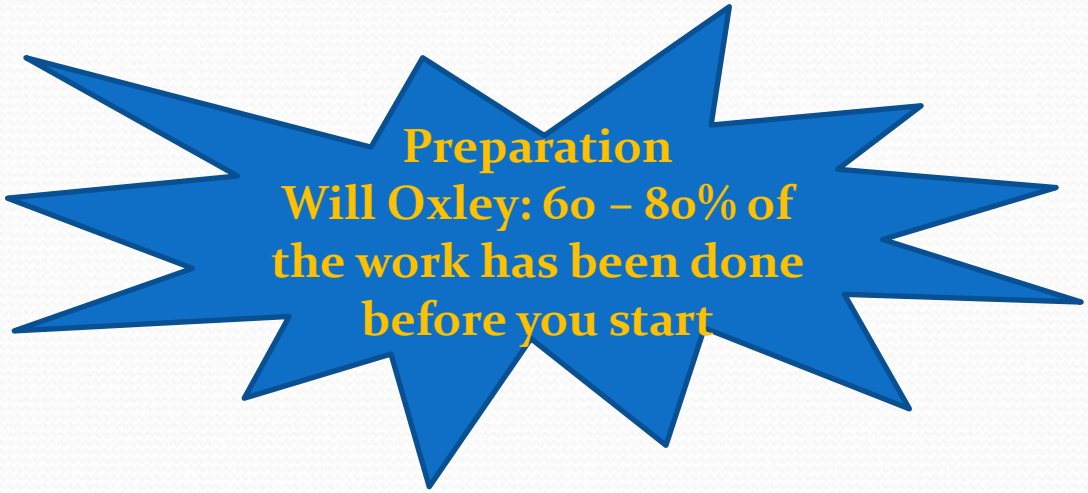
It focuses on the Expedition software package which most serious navigators now use.

Primary Responsibility

- Safe Navigation of the Yacht to keep and the crew safe.

Secondary Responsibility

- Which way should be go next?



Preparation Checklist

Things to bring	Check
WW Gear	x
Boots	x
shoes socks thermals	x
Epirb	x
MOB	x
GPS and backup	x
Torch	x
Pens pencils	x
Screwdriver	x
Independent Powerbank	
Handheld radio	x
Batteries	x
glasses	
wetnotes	x
gloves	x
watch on right time	x
USB cord	x
Radio skeds	x
Weather	x
Lunch	x

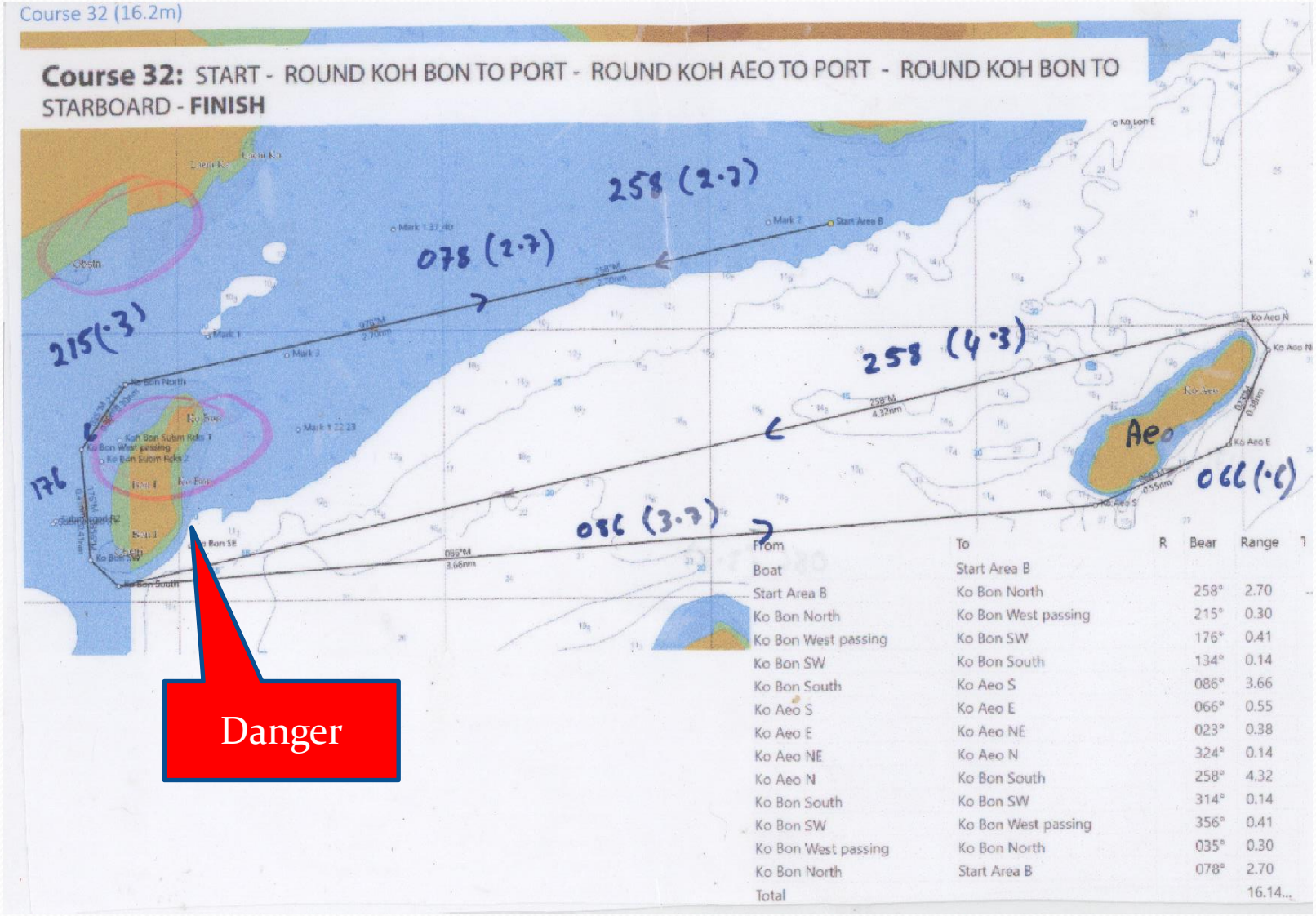
Popeye Presailing	Checked
Instruments	
House Batteries Charge	
VHF Operation and on Race	
Radio Charged	
ipad Charged and working	x
Windgear, compasses and speedos working	x
Download Navionic Charts	
Paper Charts	x
SSB Radio Check	
Media channels open	
Phone talks to boat system	
Watch on right time	x
Courses are on Handheld GPS	x
Tides	x

Post Race	
Log files saved	
Backup to icloud	
GRIBS saved for model	
Declaration	x

Reading NOR and SI's

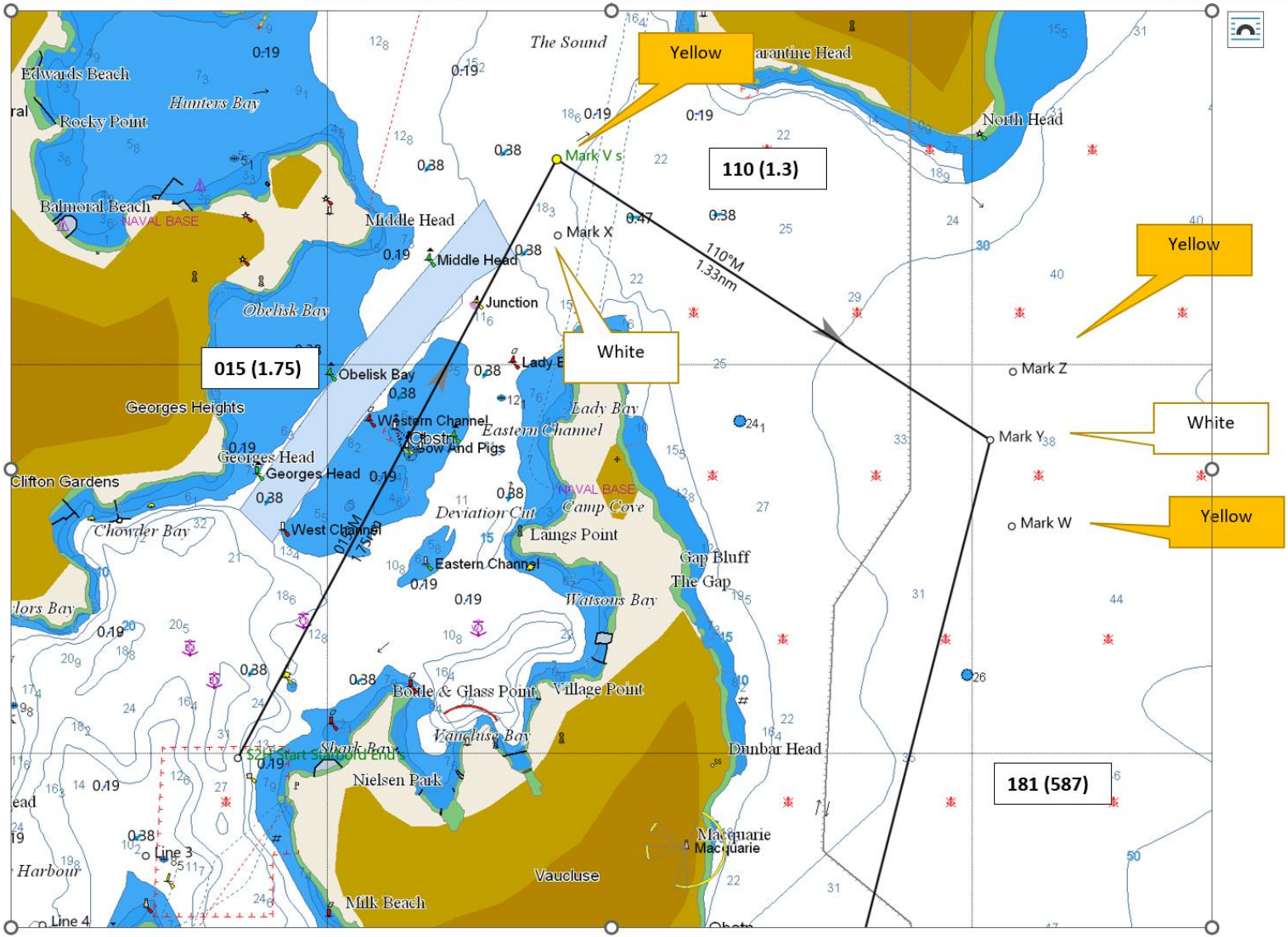
Jobs	Check
Course into Expedition	x
Which course?	x
Lastest grib files loaded	x
Latest Tidetech files loaded	x
Predict wind Model data	x
BOM Forecast	x
NOR and Saiing Instructions	x
Latest ammendments	x
Skipper/Tactician Sis	x
Handicaps	x
Timings	x
Log sail/rig changes	x
Setup start	
YB tracking	
Shipping movements	x
Sail past with storm sails	

Preparation: Regatta Courses



From	To	R	Bear	Range	T
Boat	Start Area B				
Start Area B	Ko Bon North		258°	2.70	
Ko Bon North	Ko Bon West passing		215°	0.30	
Ko Bon West passing	Ko Bon SW		176°	0.41	
Ko Bon SW	Ko Bon South		134°	0.14	
Ko Bon South	Ko Aeo S		086°	3.66	
Ko Aeo S	Ko Aeo E		066°	0.55	
Ko Aeo E	Ko Aeo NE		023°	0.38	
Ko Aeo NE	Ko Aeo N		324°	0.14	
Ko Aeo N	Ko Bon South		258°	4.32	
Ko Bon South	Ko Bon SW		314°	0.14	
Ko Bon SW	Ko Bon West passing		356°	0.41	
Ko Bon West passing	Ko Bon North		035°	0.30	
Ko Bon North	Start Area B		078°	2.70	
Total				16.14...	

Preparation: Courses Hobart



Preparation: Weather

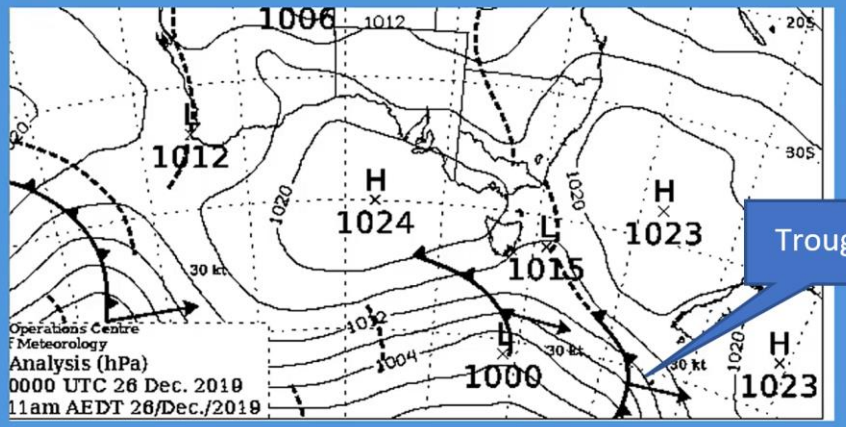
- Historical Analysis of the weather
- Local Knowledge is a big plus
- Big weather Picture
- Good Forecast and Current Data – which ones to use?

Site		
Windy	www.windy.com	Great for long distance, FREE
BOM	www.bom.gov.au	
Predict Wind	www.predictwind.com	Great app, easy to download GRIB files, Gribs are expensive
Sailflow	www.sailflow.com	Good observations, in Expedition
Expedition	Lots of models	GFS

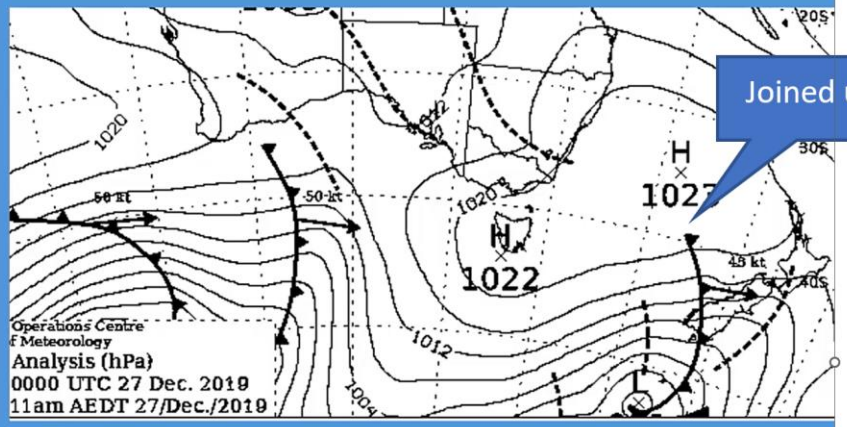
Preparation: The Big Picture

THE BIG PICTURE

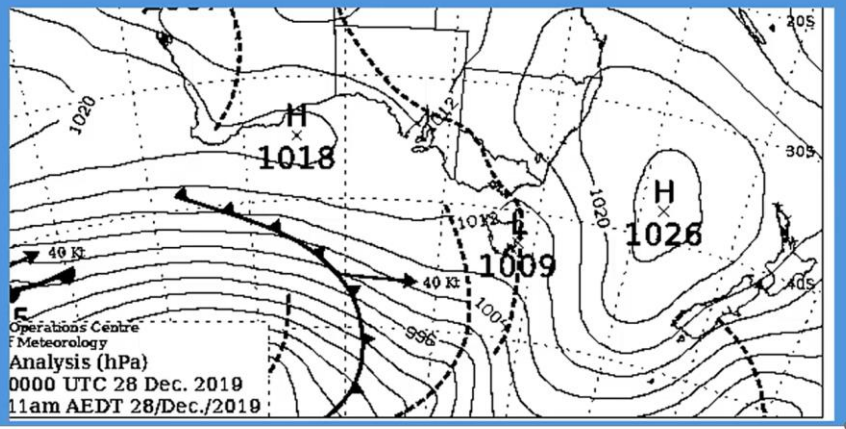
4 days of sfc charts: What are the key features to look at? Describe how the race might play out

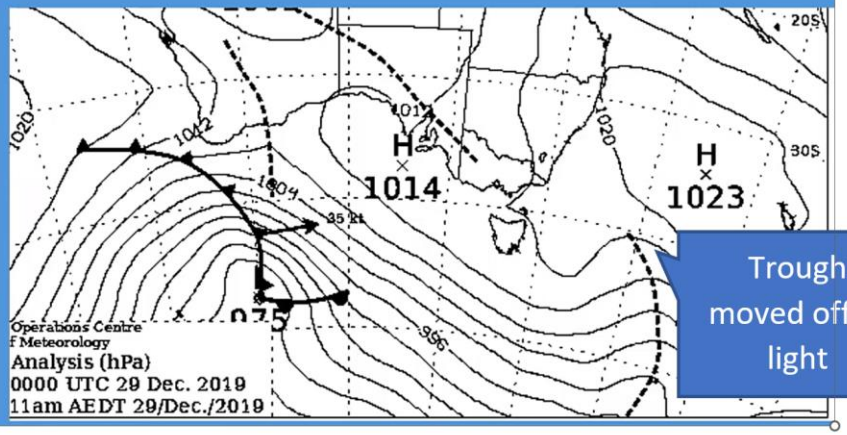


Trough



Joined up





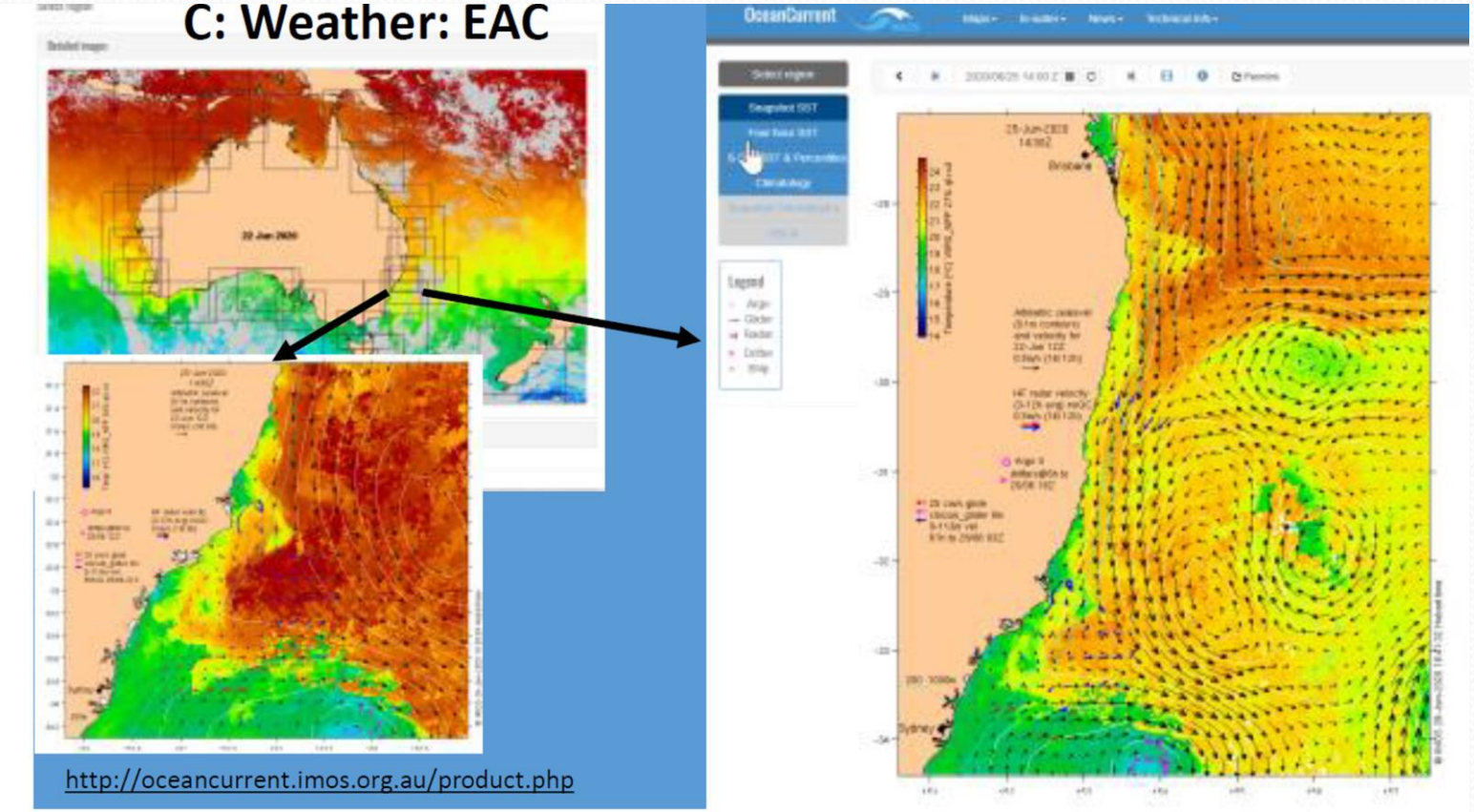
Trough moved off -> light

Preparation: Weather GRIBS

- Sites I use:
  - Access Model (BOM) – Very expensive - Clouds!
  - WRF Model from Nick (Expedition)
  - EC (European Model) – 10 days
  - GFS (US Model) .11 – can get from Expedition
  - PWE – Predict wind European model (often overcooking)
  - PWG - Predict wind US model (not bad)
  - Saildocs – Free

Preparation: Current and Tides

- CSIRO, Tidetech (expensive but good) & Predict Wind



Preparation: Optimising Courses

Weather 24_12

JH Julie Hodder <jghodder@bigpond.net.au>

Reply | Reply All | Forward

Cc Rockell

GFS 191224 About Time.xlsx 25 KB

GFS_ASX 191218 About Time.xlsx 25 KB

PWE 191224 About Time.xlsx 27 KB

HI,
I know you have been hanging out for a report. I was at briefing this morning, so a little late and it takes some time to digest it. Please note: Roger is sending more files and another report about 8 tonight. I have also subscribed to Tidetech's special Hobart report which I should get this afternoon. So will send another report later tonight. I will be in Newcastle with my family then. Will also send another report tomorrow.

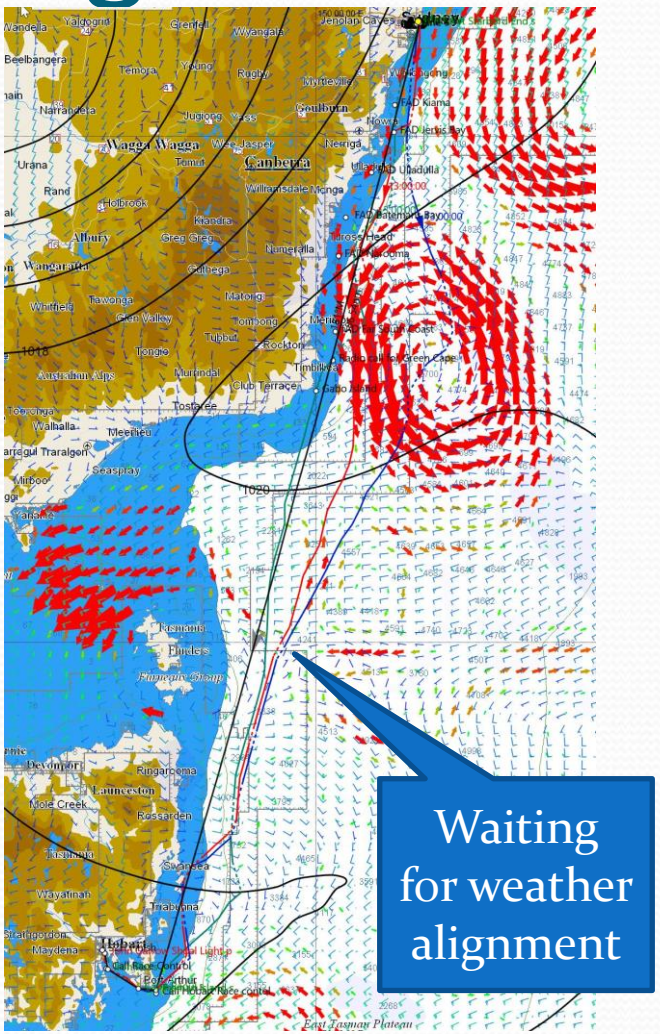
These are the 3 models I ran and the weather where they diverge at 2200 on the Thursday night.

Blue is the GFS - basically stays NE -NNW and then NE again.
Red is the GFS with a 3 day (from today) overlayed with a high resolution ASX (BOM) file. With high resolution ASX file showing SE Winds like the PWE (but at different times
Green is PWE (EC model) – has the SE coming in about 6am on Friday morning.

The GFS model has no wind inshore so it wants to go out in the adverse current where there is more wind. This all has to do with the weak SE change Roger talks about. It will be good when the high resolution 3 day files kick in as these can be more accurate.

Too early to predict wind as it depends on when we get there.

Draw	Name	Colour	Route nm	Optimal nm	Time	Delta	Finish	Created
G	13:00:00		628.33	677.92	2d 06h 55m 44s		28/12/2019 7:55:44 PM	24/12/2
G	13:00:00		628.33	691.73	2d 15h 35m 15s	08h 39m 31s	29/12/2019 4:35:15 AM	24/12/2
G	13:00:00		628.33	674.79	2d 16h 04m 03s	09h 08m 19s	29/12/2019 5:04:03 AM	24/12/2

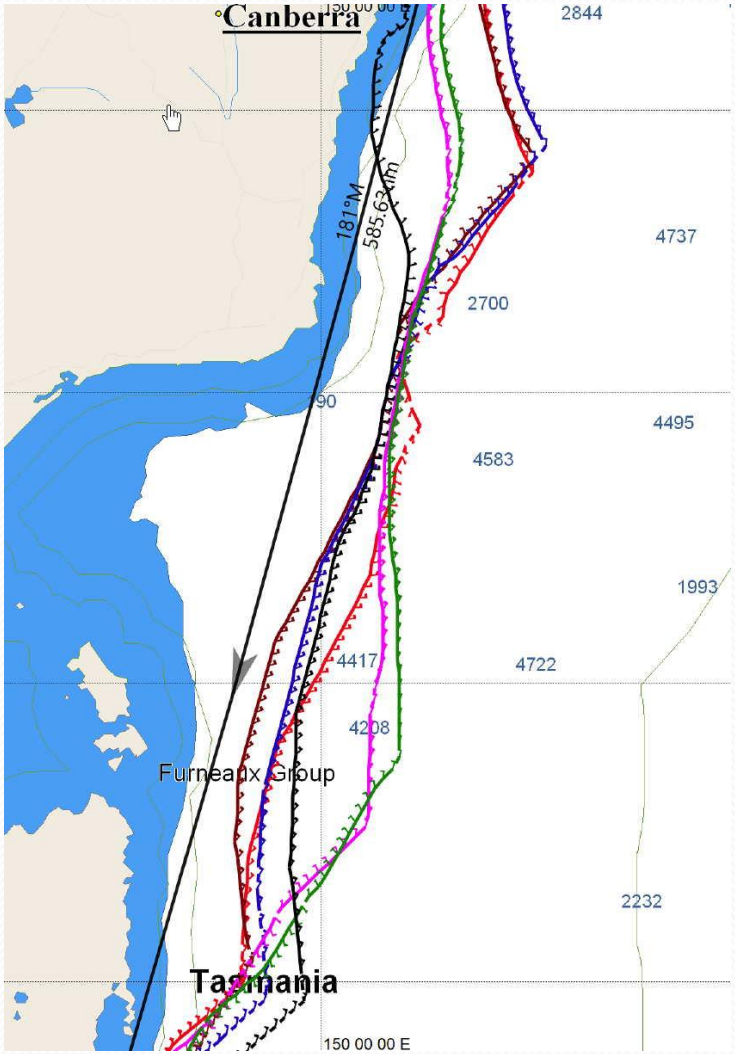


Preparation: Optimising Courses

AUS Eastern Dayli	Mark	Sail	Twd°N	Tws	Twa	Targ	Bsp	Set°M	Drift	Brg°M	Dist nr	Awa	Aws	Rain	AirT	SigWa	Wavet	Wave	Swell h	Cloud
26/12/2019 13:00	Mark V	J2	52	12.7	-59	39	9.4	356	0.1	110	0.33	-34	19.3	0	22.8	1.2	51	1	0.5	20.3
26/12/2019 13:02		J2	51	12.8	-59	39	9.5	356	0.1	110	0.33	-35	19.4	0	22.7	1.2	51	1	0.5	19.8
26/12/2019 13:04		J2	51	12.9	-60	39	9.5	356	0.1	110	0.33	-35	19.5	0	22.7	1.2	51	1	0.5	19.4
26/12/2019 13:06		J2	51	12.9	-60	39	9.5	355	0.1	110	0.33	-35	19.6	0	22.7	1.2	51	1	0.5	19
26/12/2019 13:08	Mark Y	A2	51	13	-137	152	11.5	355	0.1	188	9.89	-77	9.2	0	22.6	1.2	51	1	0.5	18.6
26/12/2019 13:59		A2	49	14.6	-138	150	11.7	284	0.1	188	9.89	-85	9.8	0	22.9	1.3	46	1.1	0.5	6.9
26/12/2019 14:47		A2	45	15.9	-142	144	13.4	291	0.2	187	9.89	-85	9.8	0	22.6	1.4	44	1.2	0.5	7.2
26/12/2019 15:32		A01	41	17.3	-135	156	13.7	275	0.2	177	10.41	-83	12.3	0	21.9	1.5	43	1.4	0.5	5.2
26/12/2019 16:14		A2	38	18.5	(-139°)	136	16.4	256	0.2	177	11.47	-77	13.1	0	21.1	1.6	41	1.5	0.4	3.1
26/12/2019 16:58		A4	34	19.9	-138	148	15	242	0.2	173	9.46	-89	13.2	0	20.8	1.7	38	1.6	0.4	0.1
26/12/2019 17:35		A4	28	20.5	(-141°)	138	17.8	210	0.2	169	10.87	-79	13.9	0	20.8	1.7	36	1.6	0.4	0
26/12/2019 18:13		A4	22	21.2	-145	148	16.9	100	0.2	166	11.09	-92	12.3	0	21	1.7	33	1.6	0.4	0
26/12/2019 18:53		A2	17	21.1	(-156°)	147	16.8	9	0.2	173	10.54	-94	11.6	0	21	1.6	32	1.5	0.4	0
26/12/2019 19:35		A4	13	20.7	(-160°)	140	17.7	3	0.5	172	10.6	-82	13.4	0	21.1	1.5	31	1.4	0.4	0.1
26/12/2019 20:20		A4	9	20.1	(-163°)	141	17	3	0.8	171	10.66	-84	12.8	0	21	1.5	30	1.4	0.5	2.5
26/12/2019 21:09		A2	3	18.8	(147°)	145	15.1	2	0.9	219	11.15	92	10.9	0	20.8	1.4	30	1.3	0.9	5.2
26/12/2019 21:54		A2	2	18.8	(154°)	143	15.4	359	0.9	210	10.96	87	11.4	0	20.9	1.3	35	1.2	1	9.4
26/12/2019 22:41		A2	357	19.7	(159°)	153	14.1	7	0.6	199	8.96	111	9.5	0	21.1	1.2	38	1.2	1.1	11.7
26/12/2019 23:21		A2	356	19.7	(-180°)	152	14.3	16	0.5	175	10.52	-109	9.7	0	21.3	1.2	31	1.1	1	10.4
27/12/2019 0:14		A2	360	16.9	(-162°)	146	13.5	24	0.6	160	12.16	-93	9.5	0	21	1.1	34	1	1	4.7
27/12/2019 1:19		A2	3	14.4	(-156°)	150	11.4	17	0.5	158	12.39	-98	7.3	0	20.8	1.1	27	0.9	1	0.6
27/12/2019 2:36			4	10.2	-146	153	9.2	354	0.2	150	13.75	-83	5.7	0	20.3	1	24	0.9	0.9	1.1
27/12/2019 4:42			351	2.2	(143°)	135	2.9	212	0.7	209	10.32	50	2	0	19.4	1	20	0.9	0.9	9.5
27/12/2019 6:39		J1	172	5.7	(-40°)	45	6.4	207	0.5	212	10.24	-21	11.2	0	18.6	1	47	0.8	0.8	40.5
27/12/2019 8:06		J1	165	7.6	(-36°)	43	7.4	302	0.2	203	9.8	-22	14	0.02	18	0.9	43	0.8	0.7	70.4
27/12/2019 9:21		J1	151	7.6	-50	43	8.1	346	1	204	9.73	-24	14.3	0.02	18	0.8	36	0.8	0.6	70.9
27/12/2019 10:29		J2	131	9	-50	41	8	352	1.3	182	10.06	-27	15.4	0.01	17.8	0.7	28	0.8	0.6	62.6
27/12/2019 11:35		J2	110	11.7	-72	39	10.3	6	1.4	182	10.06	-39	17.7	0	17.4	0.7	58	0.5	0.5	57.6
27/12/2019 12:32		JT	97	13.6	-87	39	10.9	19	1.2	182	10.06	-50	17.9	0	18	0.7	65	0.5	0.5	55.8
27/12/2019 13:26		JT	90	15.4	-93	151	11.6	35	0.7	182	10.06	-55	18.7	0	18.5	0.8	72	0.5	0.4	48.5
27/12/2019 14:19		JT	86	17	-97	151	12.1	119	0.2	182	10.06	-59	19.7	0	18.4	0.8	78	0.4	0.4	42.1
27/12/2019 15:08		JT	80	17.7	-101	151	12.6	192	0.5	182	10.06	-62	19.7	0	18.5	0.8	77	0.5	0.4	41.6
27/12/2019 15:55		JT	76	19	-105	149	13.3	190	0.6	182	10.06	-65	20.2	0	18.5	0.9	81	0.6	0.4	42.4
27/12/2019 16:38		JT	74	20.3	-107	138	15.2	194	0.7	182	10.06	-64	21.6	0	18.3	0.9	87	0.7	0.4	44.8
27/12/2019 17:17		JT	72	20.5	-94	139	14.3	195	0.8	167	11.68	-58	24.2	0	17.9	1.1	88	0.9	0.4	48.7
27/12/2019 18:06		JT	69	20.5	-112	138	15.5	188	0.9	181	10.07	-68	20.5	0	17.5	1.2	87	1	0.4	59.9
27/12/2019 18:45		JT	67	20.9	-114	143	15.3	176	0.9	181	10.07	-70	20.2	0	17.2	1.3	82	1.1	0.5	72.3
27/12/2019 19:24		JT	65	21.6	-118	148	15.5	159	0.8	181	10.07	-74	19.9	0	17	1.3	78	1.2	0.4	85.9
27/12/2019 20:02		JT	62	22.3	-111	143	15.6	145	0.7	172	10.73	-70	22.1	0	16.9	1.4	78	1.2	0.4	99.6
27/12/2019 20:43		JT	59	22.1	-111	145	15.5	133	0.6	169	11.29	-70	21.9	0	16.7	1.4	75	1.3	0.3	96.7
27/12/2019 21:27		JT	54	21.7	-115	148	15.4	118	0.4	169	11.34	-73	20.5	0	16.8	1.4	68	1.3	0.3	95.2
27/12/2019 22:10		JT	49	21.5	-120	149	15.5	79	0.2	168	11.39	-76	19.1	0	16.8	1.3	60	1.3	0.3	95.8
27/12/2019 22:54		A01	43	21.3	-126	149	15.5	353	0.2	168	11.43	-80	17.5	0.01	16.8	1.4	54	1.3	0.3	97.7
27/12/2019 23:38		A4	38	21.9	-142	147	16.9	335	0.3	181	10.22	-91	13.6	0	16.7	1.3	50	1.3	0.4	99.1
28/12/2019 0:13		A4	38	22.3	-142	143	17.4	331	0.3	181	10.22	-91	13.6	0	16.6	1.3	46	1.2	0.4	99.9
28/12/2019 0:49		A4	38	22.4	-142	144	17.4	334	0.2	181	10.22	-91	13.7	0	16.7	1.3	42	1.2	0.4	99.8
28/12/2019 1:24		A4	38	22.4	-142	144	17.4	2	0.1	181	10.22	-91	13.7	0	16.8	1.3	38	1.2	0.4	99.9
28/12/2019 2:00		A4	39	22.3	-142	143	17.3	54	0.1	181	10.22	-91	13.6	0	16.9	1.3	35	1.2	0.3	100
28/12/2019 2:35		A4	35	21.7	-147	148	17.3	63	0.1	181	10.22	-94	11.9	0	16.9	1.2	32	1.1	0.4	99.6
28/12/2019 3:11		A4	30	21.6	-140	148	16.2	57	0.2	169	11.62	-91	14	0	16.9	1.2	29	1.1	0.4	99.3
28/12/2019 3:51		A4	25	22.3	(-145°)	143	19.1	73	0.1	169	11.66	-85	13.3	0	16.7	1.2	26	1.1	0.4	99
28/12/2019 4:29		A4	22	22.4	(-148°)	144	19	156	0	169	11.7	-86	13.2	0	16.4	1.2	22	1.1	0.4	97.9
28/12/2019 5:09		A4	19	21.8	-141	147	16.6	248	0.3	161	13.54	-91	13.7	0	16.1	1.3	19	1.1	0.4	97.4
28/12/2019 6:01		A2	11	18.5	(-136°)	136	16.5	225	0.8	149	17.83	-76	13.3	0	15.8	1.4	15	1.2	0.5	98
28/12/2019 7:19		A2	352	13.8	140	150	11.7	213	1.5	212	9.43	82	9	0.03	15.6	1.5	10	1.2	0.8	99.7
28/12/2019 8:09		A2	338	11	143	153	9.7	205	1.3	196	9.5	83	6.6	0.05	15.6	1.5	10	1.2	0.8	98.3
28/12/2019 9:09		A2	346	11.3	132	152	10.1	192	1.2	212	9.1	73	8.9	0.04	15.4	1.5	10	1.2	0.8	85.1
28/12/2019 10:00		A2	353	12.5	140	154	10.4	180	0.3	212	8.91	84	8.1	0.02	15.3	1.5	12	1.2	0.8	68.5
28/12/2019 10:47		A2	355	13.4	145	151	11.3	12	0.5	212	8.72	87	7.8	0	15.2	1.5	13	1.2	0.8	48.7
28/12/2019 11:34		A2	358	13.1	150	151	10.5	4	1.2	211	8.53	97	6.6	0	15.2	1.5	16	1.1	0.9	28.8
28/12/2019 12:23		A2	4	12.4	(158°)	154	9.8	2	1.7	211	8.34	105	5.6	0	14.9	1.4	20	1	0.9	13.2
28/12/2019 13:20			12	10.6	(-170°)	153	8.9	10	1.5	181	10.11	-98	4.8	0	14.8	1.3	23	0.9	0.9	4.2
28/12/2019 14:37	Tasman Is	A01	10	8.6	111	148	10	25	1.6	267	5.71	49	10.6	0	14.6	1.5	24	0.9	1.1	6.2
28/12/2019 15:18		A1	87	7.8	(-149°)	144	7.9	26	1.5	243	4.2	-71	4.8	0	15.4	1.4	25	0.9	1	16
28/12/2019 15:50	Cape Raou	A1	116	7.7	(-171°)	144	7.7	60	0.6	292	9.77	-72	4.8	0	15.9	1.4	25	0.9	1.1	27.3
28/12/2019 17:14			130	9.1	(-155°)	148	8.6	89	0.4	286	10	-80	5	0	17.9	1.2	27	0.8	0.9	42.8
28/12/2019 18:26	Iron Pot		138	8.7	(151°)	148	8.7	122	0.3	349	4.66	73	4.8	0	20.6	1.4	125	0.7	1.2	30.5
28/12/2019 18:58			136	9.4	(169°)	148	8.7	149	0.3	327	4.72	83	5	0	20.9					22.2
28/12/2019 19:37	John Garr	A1	145	8.2	-141	147	9			286	1.26	-63	5.8	0	21.6					17.4
28/12/2019 19:46		A1	150	7.7	-136	144	8.2			286	1.23	-64	6	0	21.8					16
28/12/2019 19:55	S2H Finish	A1	155	7.3	-131					286				0	22					14.8

Name	13:00:00
Route distance	628.33nm
Optimal distance	677.92nm
Optimal route tim	2d 06h 55m 44s
Motoring time	00s
Motoring fuel	0 litres
Created	########
Sail chart	170929 About Time Crossover Chart V0.2
Polar	541_S5_1110_A_VPP_Expedition_10m
Polar %	100
Model	PWE
Current	NCEP 0 1
Wind %	100
Algorithm	Grid

Preparation: Optimising Courses



Clouds with models for different boat sizes

Preparation: Analysis

00 EC Run 23/12/2019: Sails and Hours. 12 AXS then 12 GFS shown next. Common usage to AXS by a sail is shown with * (*=some; **=lots)

Sails	Hours	%	
A3	6.61	13.54	**
A2	1.00	2.05	*
A1	7.30	14.97	**
FR0	8.33	17.08	*
J1.5	3.84	7.86	
J2.5	0.56	1.14	
A2+	1.00	2.05	*
J0	7.00	14.35	**
A4-H	6.00	12.3	
A1.5_H	5.00	10.25	
?	2.15	4.41	
Total hours	48.788		

HOURS

TWS/TWA	30-50	60-90	100-120	130-160
21-25	0.00	0.00	0.39	8.61
16-20	0.00	0.00	1.66	14.00
11-15	0.00	1.72	3.00	8.00
6-10	0.00	1.95	1.15	5.30
1-5	0.00	0.00	1.00	2.00

% time

TWS/TWA	30-50	60-90	100-120	130-160
21-25	0.00%	0.00%	0.80%	17.64%
16-20	0.00%	0.00%	3.41%	28.70%
11-15	0.00%	3.52%	6.15%	16.40%
6-10	0.00%	4.00%	2.36%	10.87%
1-5	0.00%	0.00%	2.05%	4.10%

Preparation: The Yacht

- All systems working and interfacing
- Calibration of Instruments
- Performance – Polars – reduce % for night time
- Good knowledge of Sail inventory and crossover sail charts
- Crew capabilities

Preparation Radio

From	To	Who/What	Freq.
		Individual Recalls	**VHF 72 (N)** VHF 71 (S)
0000	2400	JBW	6516 & 16 (4483)
0000 to 2400	From Tasman Is	Hobart Race Control has a continuous listening watch.	6516, 4484 16, 21 & 81
Green Cape	Green Cape (37 15)	Mandatory Reporting as per 45.1/2 **JBW, this is Pla Loma. We are in the vicinity of 37 15" South at (HOURS_MIN). The skipper declares that we comply with the requirements of SI 45.1 and elects to continue racing.** Note: If you cannot contact JBW, you may be able to contact Hobart Race Control.	6516
Tasman Is	Bears 000T	Hobart Race Control - advise rounding Time and ETA (48.2) 40.3nm	6516 or 81
Derwent River	**Entrance**	Hobart Race Control - advise rounding Time and ETA (48.3) 11nm	6516 or 81

DHL Postion (6516) MUST BE PRESENT FOR ALL

Thu 26th	**2005**	**Position Report**	**6516**
Fri 27th	**0735**	**Position Report**	**6516**
Onwards	**1205**	**Weather Schedule**	**6516**
	1705	**Position Report**	**6516**
	0005	**Listening Schedule**	**4483**

*Must report as Wind Strength and Wave Heights > 40 knots
* If problems then try to contact JBW on Ch 16

Note: The Tasmanian Police vessel MV Van Dieman may be stationed on the North Tasmanian

Stick on wall so crew can see

Used to do one for radio weather but now mostly get from internet

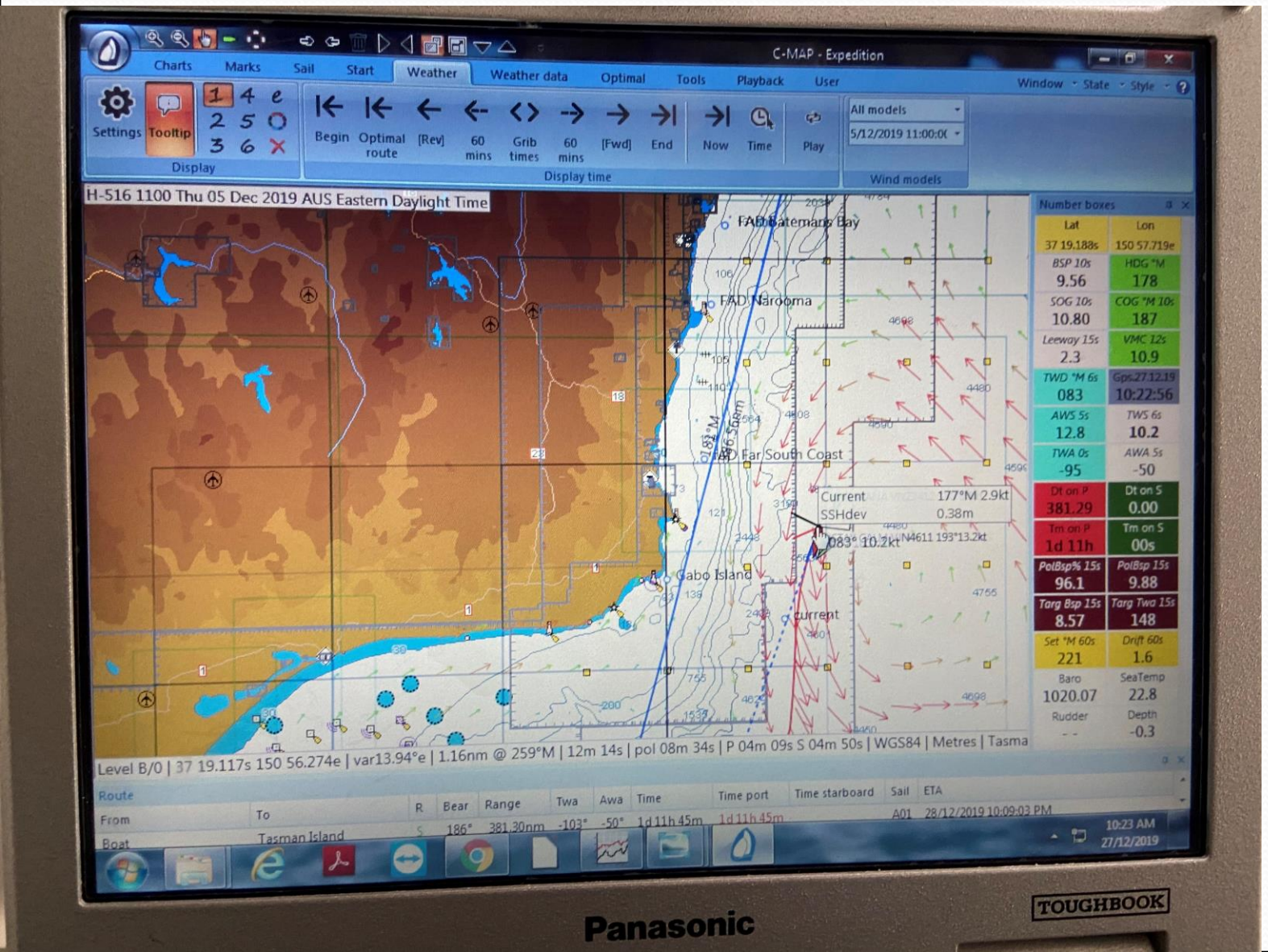
Preparation: Handicaps

Sail No	Boat Name	First Name	Last Name	From	EHCDIV1	Mins/Hr	1 min	2 min	10 min	15 min	30 min	45 min
5822	QUEST 3	Brendon	Gregg	RMYC	1.072	04:56	00:05	00:10	00:49	01:14	02:28	03:42
8886	SEA HAWK	Drew Van Ryn	Pete Van Ryn	CSC	1.073	04:52	00:05	00:10	00:49	01:13	02:26	03:39
N40	MAKO	Tim	Dodds	NCYC	1.1	03:16	00:03	00:07	00:33	00:49	01:38	02:27
MH46	KAYIMAI	Peter Byford	And Rob Aldis	MHYC	1.12	02:09	00:02	00:04	00:21	00:32	01:04	01:36
99	KD4	Joe	De Kock	NCYC	1.123	01:59	00:02	00:04	00:20	00:30	00:59	01:29
7109	51ST PROJECT	Julian	Bell	PSYC/NCYC	1.123	01:59	00:02	00:04	00:20	00:30	00:59	01:29
5491	SECOND TIME AROUND	John	McConaghy	RPAYC	1.131	01:32	00:02	00:03	00:15	00:23	00:46	01:09
64221	ZEN	Ian	Box	MHYC	1.15	00:31	00:01	00:01	00:05	00:08	00:16	00:23
8884	EXILE	Robert	Reynolds	MHYC	1.159	00:03	00:00	00:00	00:01	00:01	00:02	00:02
5802	AUSTMARK	Gunther	Schmidt L	MHYC	1.16	00:00	00:00	00:00	00:00	00:00	00:00	00:00
67	COLORTILE	Warren	Buchan	CSC	1.167	00:22	00:00	00:01	00:04	00:05	00:11	00:16
M3	THREE STOOGES	Liddell/Gardner	Cook	LMYC	1.17	00:31	00:01	00:01	00:05	00:08	00:16	00:23
MH22	TEMPO	Michael	Smith	MHYC	1.189	01:30	00:02	00:03	00:15	00:23	00:45	01:08
6953	MWF WOTEVA	Greg	Pugh	NCYC	1.206	02:23	00:02	00:05	00:24	00:36	01:11	01:47
211	INDIGO 2	Rob	Dawes	RMYCT	1.243	04:18	00:04	00:09	00:43	01:04	02:09	03:13
543	LITTLE NICO	Adrian	Walters	MHYC	1.277	06:03	00:06	00:12	01:01	01:31	03:02	04:32
883	VIRAGO	Robert	Kelly	CYCA	1.429	13:55	00:14	00:28	02:19	03:29	06:57	10:26

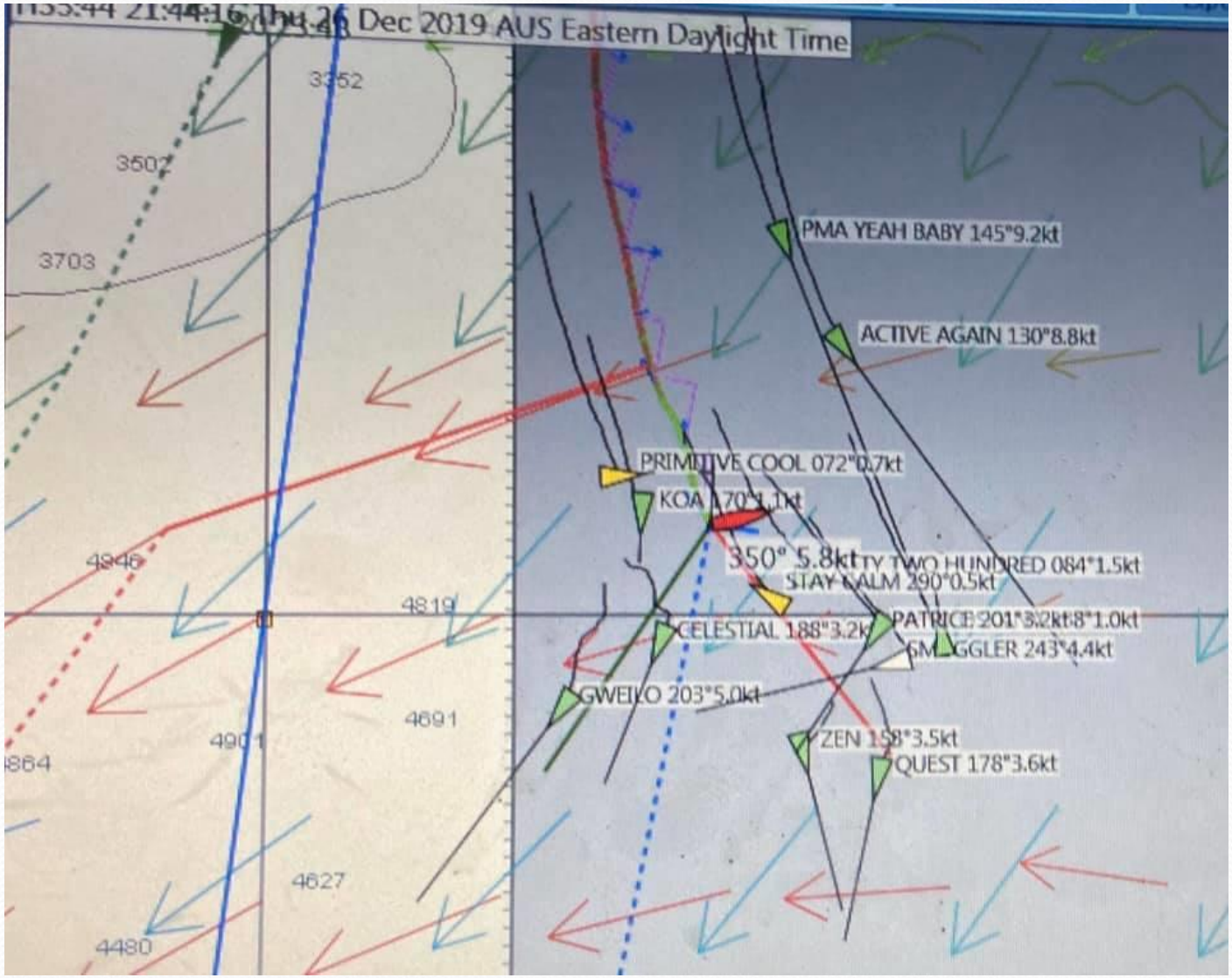
During the Race

- Regularly updating weather grib files
- Clearly communicating strategy
- ENSURE crew do not start making decision by themselves
- Keeping skeds times!
- Manage your time and ensure you get some sleep and eat and drink.
- Avoid getting wet☺
- Keep tools working, have backup systems and ensure boat stays shipshape

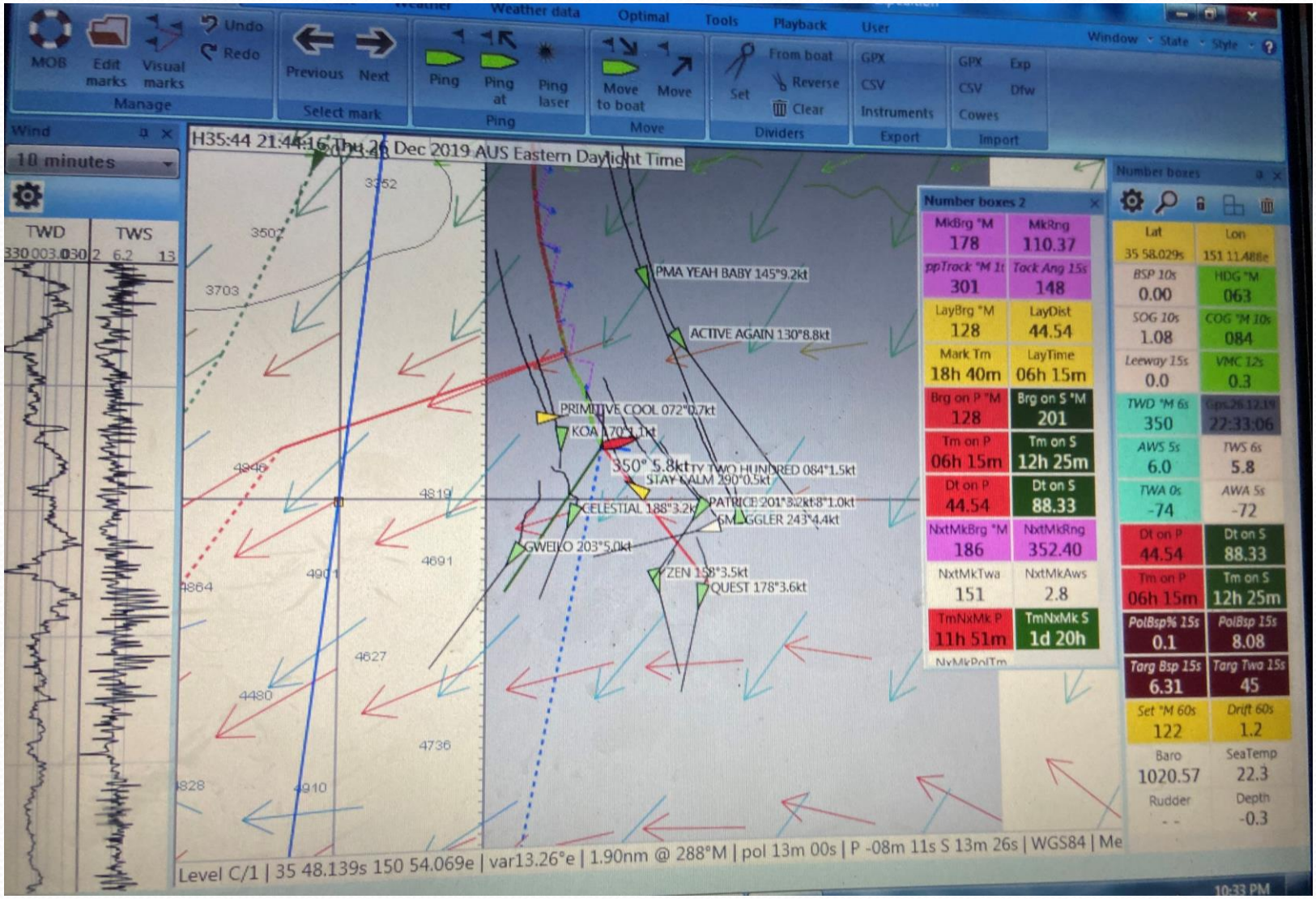
Hobart: The Hole



Hobart: The Hole



Hobart: The Hole



Navigation Systems

- Paper Charts – still like for big picture
- Navionics/iSailor on iphone and ipad!!!!!!!
- Expedition
- Garmen handheld
- Others – Deckman, Maxsea???

Costs

Computer	$600 to $6,000
Remote Screen	$1,000 to $2,700
Software	typically $1,650
C-Map Chart	Australia only – USD280
Modem	$300 to $1,000
Satellite	$7,000

Navionics

- Navionics charts are based on **True North. Magnetic North differs over time and with location and is not used in our app**.
- Is this what was happening when Race committee set the course 12 degrees off? Or those trying to navigate around “virtual” marks?
- Changing orientation eg Course up?
- Some islands/rocks are missing eg Kings Cup, Great Keppel Island!
- Hard to reuse waypoints!
- Interference to navigator by crew members!!!!!

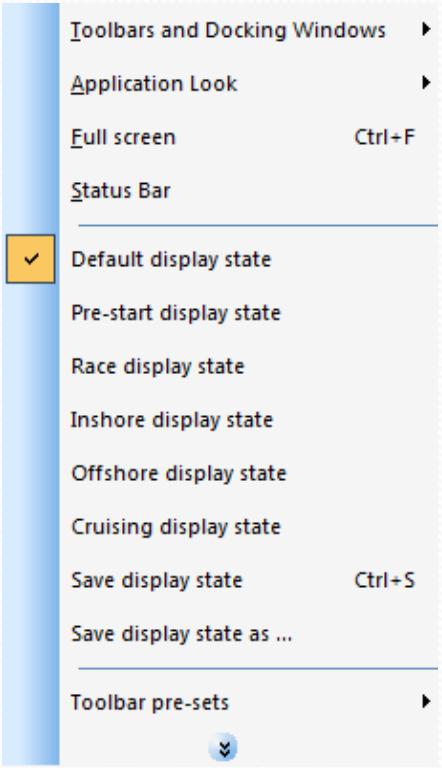
Expedition

- System automatically calculates magnetic
- C-maps (Raster) Vs AusENC(Vector) Govt Charts
- Once setup – far mor user friendly
- Expedition Base Software. Load
  - Charts and modify settings eg depth, objects
  - Polars
  - Sail charts
  - Download weather
  - Interface with both boat instruments and display on screen
  - Interface with AIS
- Run Optimal courses + Lots more

GENERAL DISPLAY

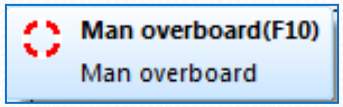
- Toolbars & Menus
- Zooming/Moving

  - Ensure any automatic features such as *Centre on Boat* is not selected.
- Display States
  - Examples -start/offshore/inshore etc.
  - Saving
- Configuring Number Boxes and Lists
- View Menu

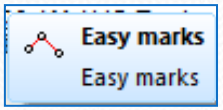


Route and Mark Management

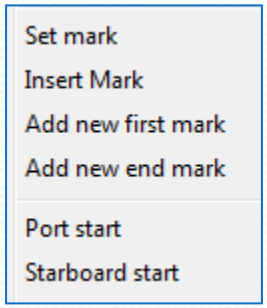
- MOB



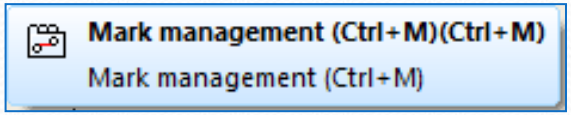
- Easy Marks



- Fine Tuning
  - Right click



- Mark Management

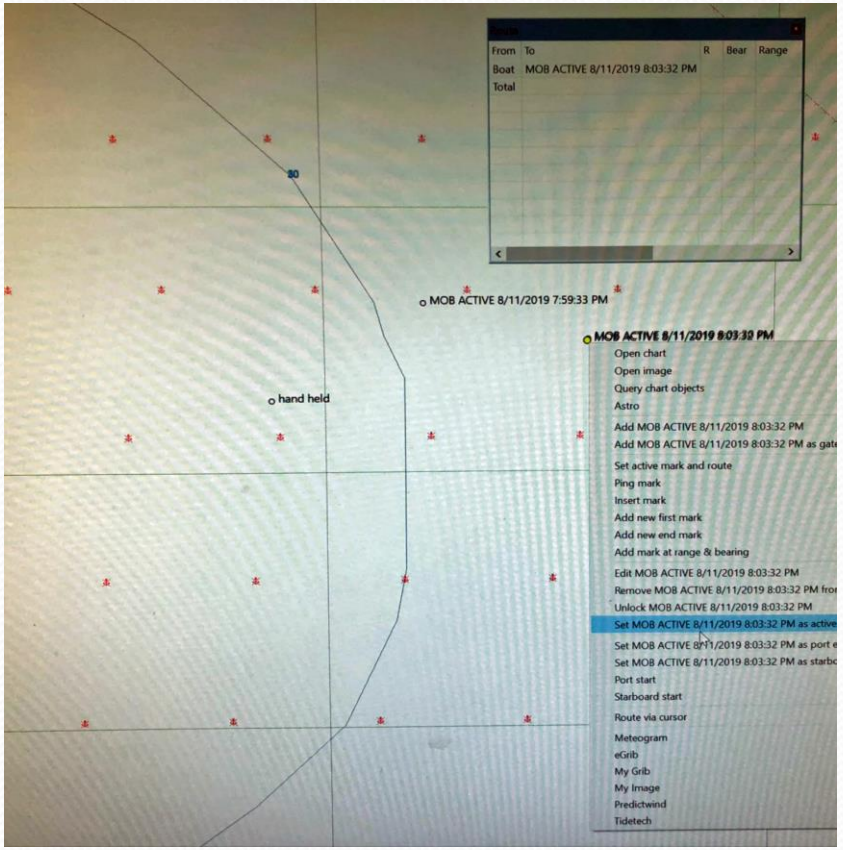


- Files – Mark DB

MOB and AIS MOB

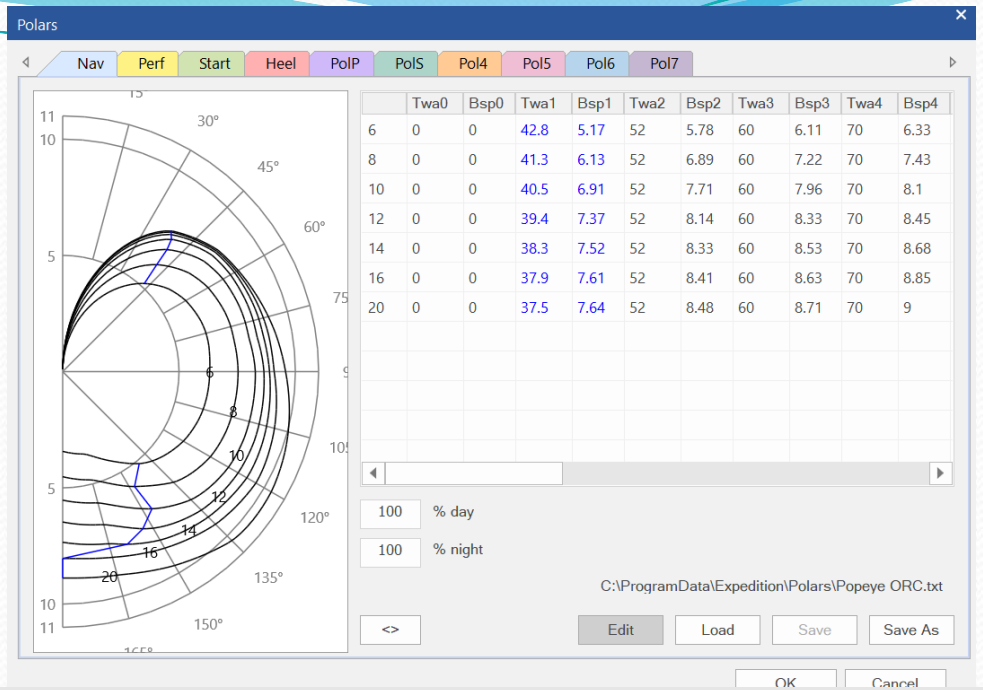
- Set off MOB button on Boat or in Expedition
  - B&G Instruments are automatically set to MOB waypoint

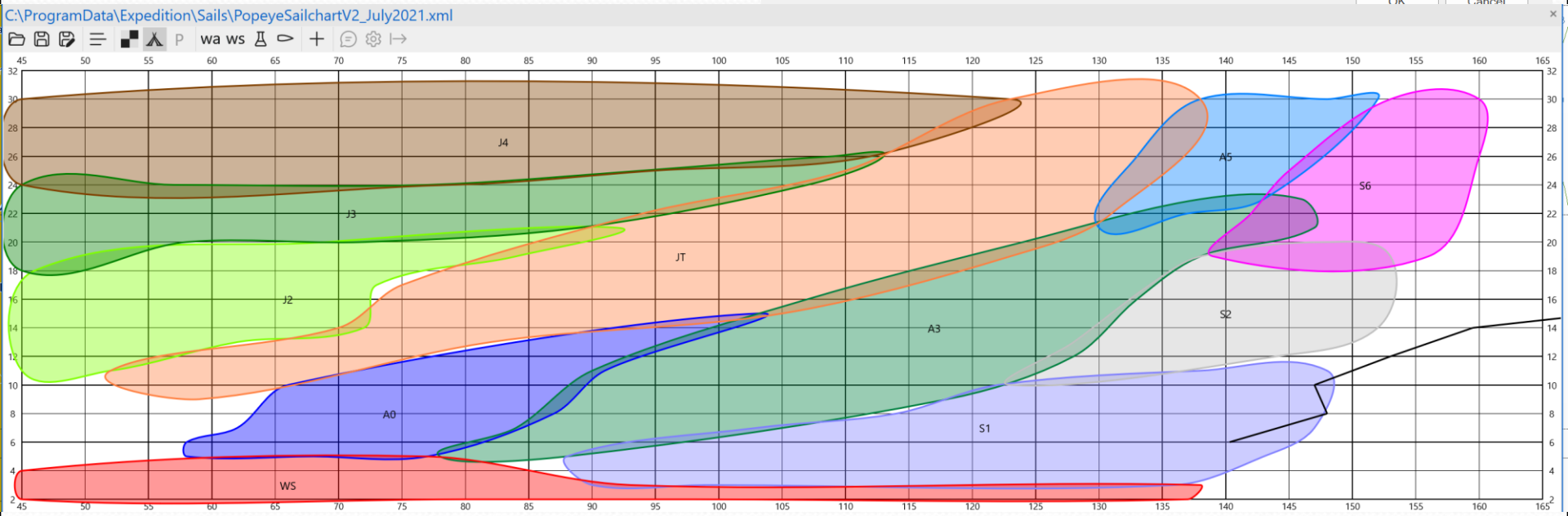
- MOB AIS
  - Uses AIS
  - Alarms go off on all boats!
  - Have to manually set course in Expedition to MOB Active (right click)
  - Change instruments to range and bearing,



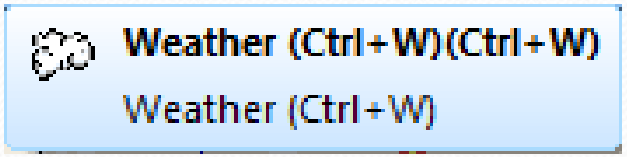
Setup

- Polars –Nav, Performance, Start
- Sail Charts



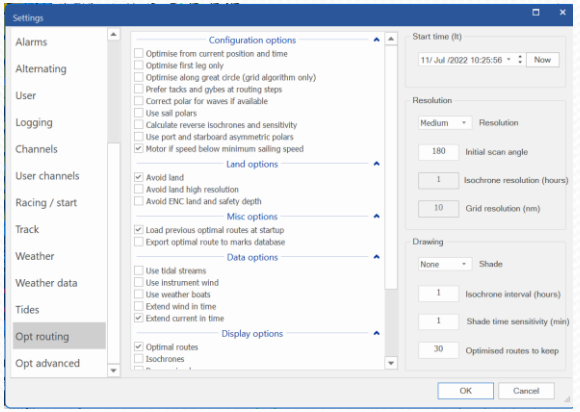


Weather



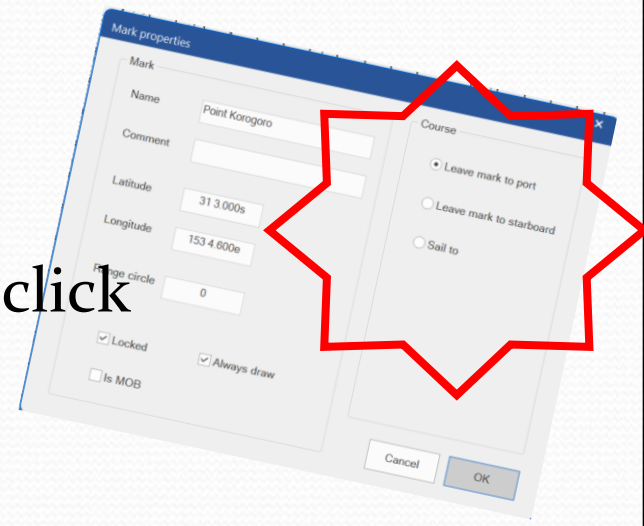
- Loading Grib Files
- Weather Settings
- Weather Animation
- Modelling Different Grib File Scenarios – Need Gribs to be in alignment!
- Ocean Current Grib files
- Overlaying current bmp files (from CSIRO or BOM) on top of Expedition

Routing



- Optimal Settings

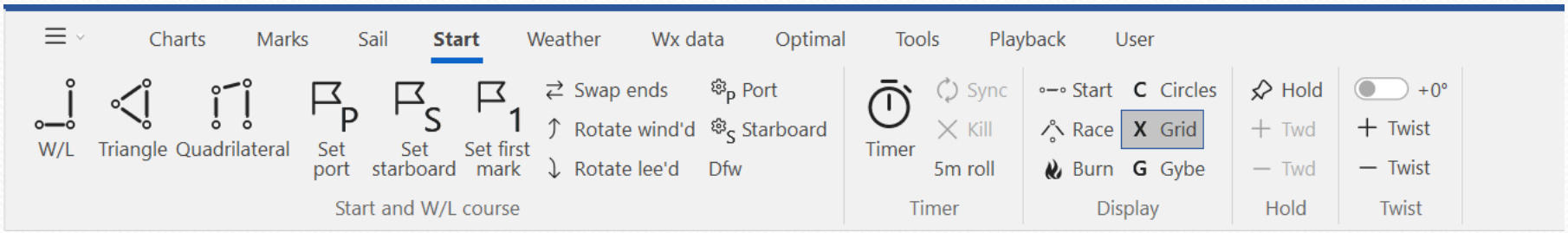
- Running Optimal Courses
  - Before and after race starts
  - With and without current
  - What-ifs
  - Adding intermediate waypoints – right click
  - Using different Grib files



- Reading & Downloading Optimal Course Table

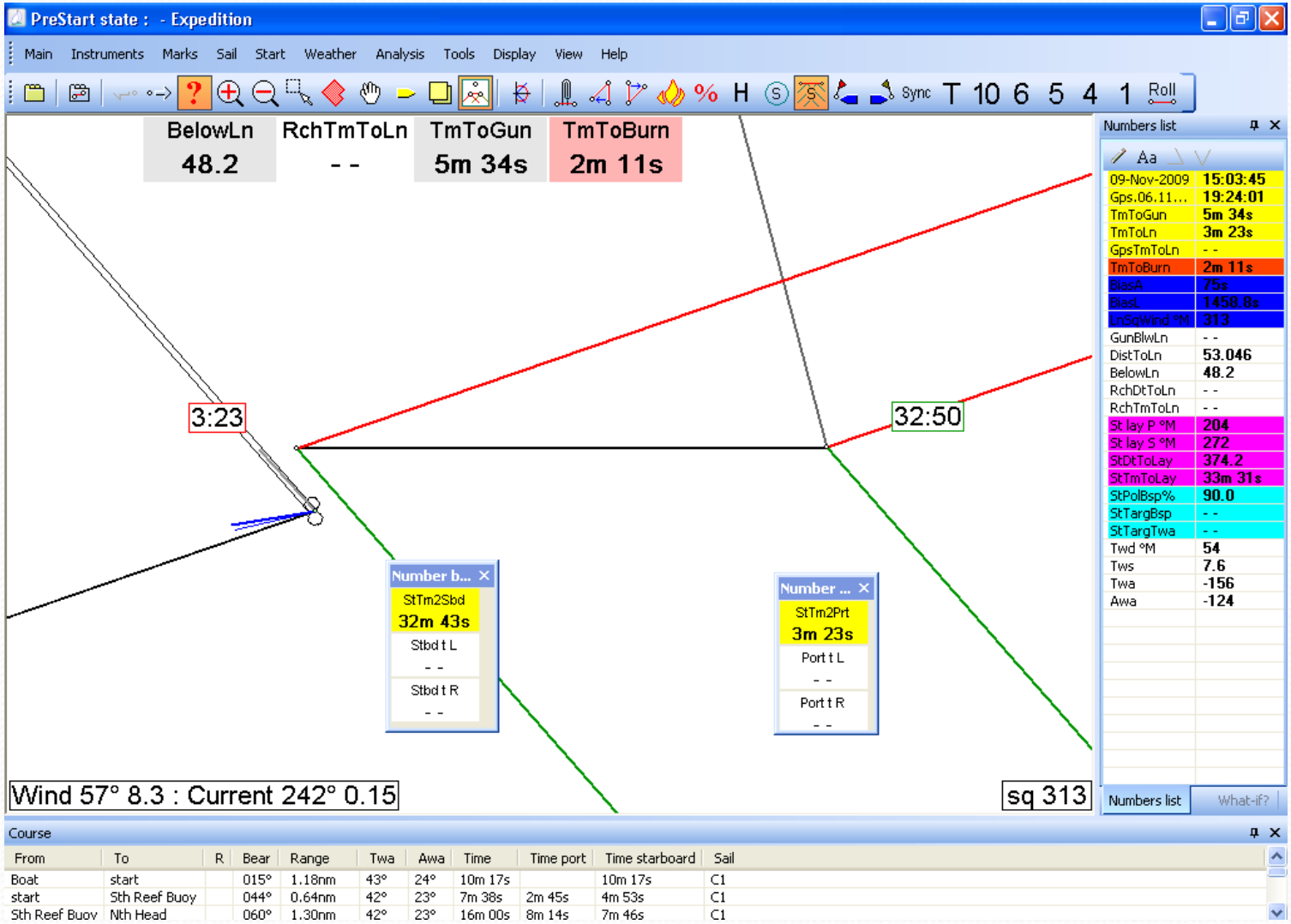
Starting Line

- Setup
  - Ensure “Start Line” is displayed - *Setup > Display*
  - Start Settings - *Setup > Start*
  - Starting Polars are entered
  - Acceleration & Rate of Turn - *Instruments > Expedition Calibration*
  - Display State is setup including Toolbar, boxes and lists



- Demonstration (slides)
  - Pining the Start Line - Set P & S ends
  - Windward/leeward Vs Chart Display
  - Time to Line Vs Time to Burn

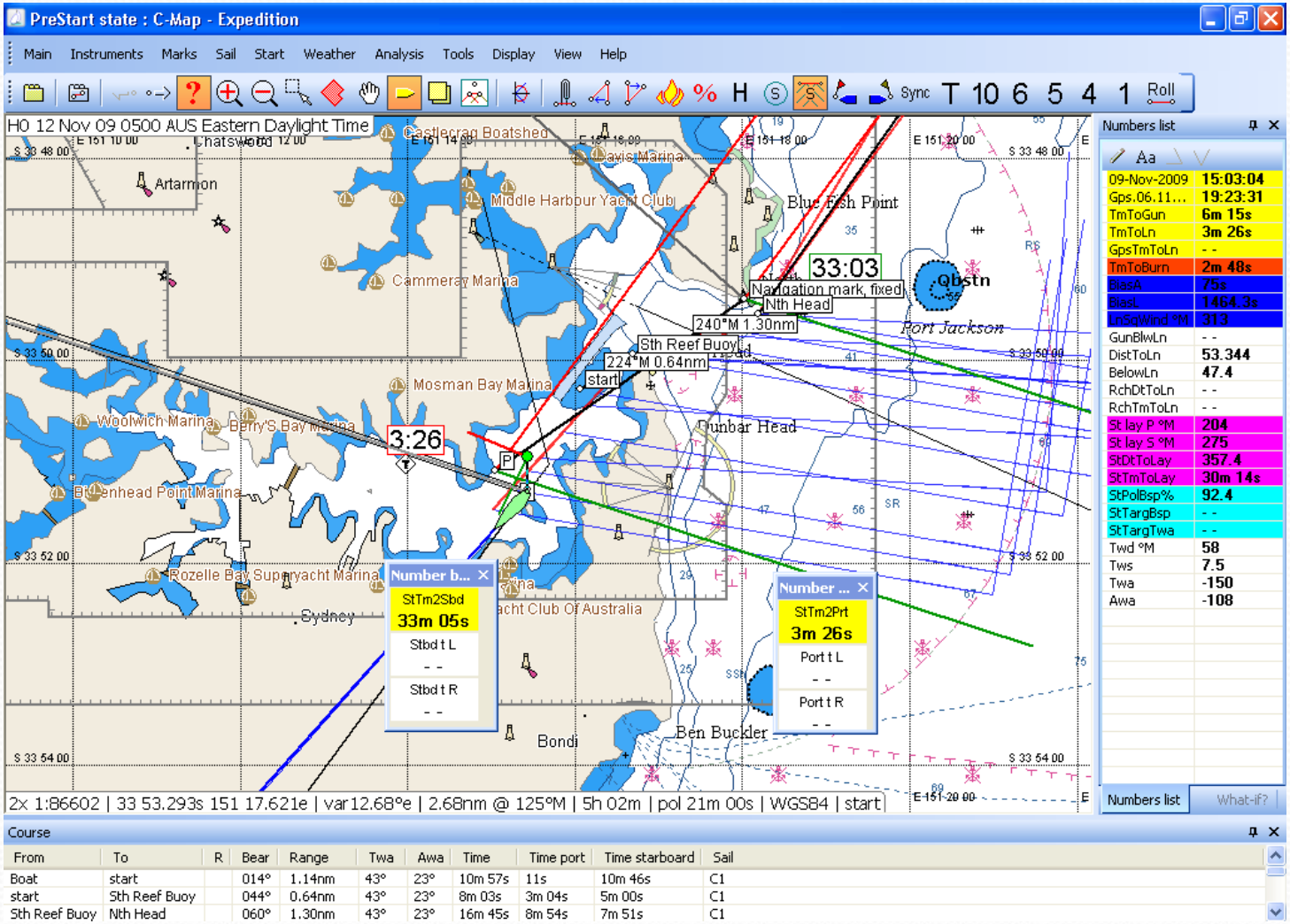
Starting Line



Course

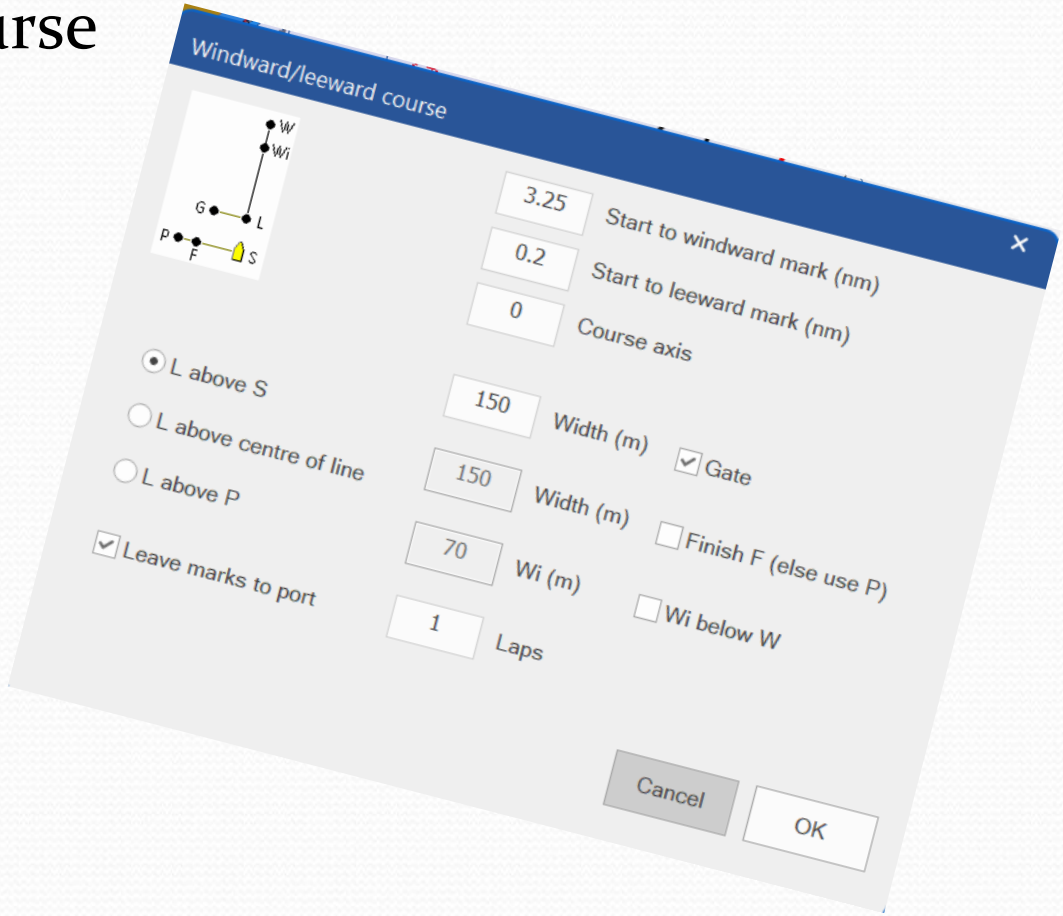
From	To	R	Bear	Range	Twa	Awa	Time	Time port	Time starboard	Sail
Boat	start		015°	1.18nm	43°	24°	10m 17s		10m 17s	C1
start	Sth Reef Buoy		044°	0.64nm	42°	23°	7m 38s	2m 45s	4m 53s	C1
Sth Reef Buoy	Nth Head		060°	1.30nm	42°	23°	16m 00s	8m 14s	7m 46s	C1

Starting Line



Windward/Leeward Courses

- Create W/L Course



Expedition Tools

- Stripcharts
- Log Player
  - Recording
  - Playing back log data
- Sail Chart
- Simulator
- What-if?
- Creating charts from .bmp files
- Schedules

Who can work the systems other than you!