NC to Bundaberg (Sail), 25 October 11:00

22.360S 166.243E to 24.729S 152.454E, leaving Sunday 25 October, 11:00 UTC+11. A forecast of each day at sea for Sabado, a 42 ft catamaran, built from ensemble and deterministic weather models.

Built 2026-10-18 18:09 UTC from the screening of 2026-10-18 17:35 UTC, 1 h earlier. Model cycles when it was built: ECMWF ENS 12 h old, GEFS 12 h old, ECMWF waves 18 h old, RTOFS currents 18 h old; Sereno's GFS 12 h old, ECMWF 12 h old.

Every time below is local: UTC+11.

CONTENTS

1. Trip estimates
2. Day by day
3. The sea
4. The weather story
5. Along the track
6. Official forecast
7. How this was made

> **Forecast and climatology.** Days 1 to 8 forecast. The slowest 20% of passages run on past the forecast's end at 11-02 00:00Z into climatology for November, a likelihood for the month, not a forecast. Past the forecast each ensemble member sails on the month's typical weather, so those days say how likely trouble is for the time of year.

Trip estimates

Every member of two weather ensembles (ECMWF, 51 runs, and NOAA GEFS, 31 runs) sailed the path from the departure time. Two boat speeds give a slow and a fast bound: 80% of the polar chosen in Settings, and the polar itself. Polar at 100% by day, 80% at night. The motor is off in Settings, so the boat sails throughout. The range is the 10th to 90th percentile of those 82 passages.

Conservative polar (80% of Sabado-polar at 100% by day, 80% at night)

212 h

184 to 259 h at sea

Median arrival	Tue 03 Nov 06:59
Early to late	Mon 02 03:03 to Thu 05 05:39
Distance	772 nm by the path
Average	3.6 kt
Point of sail	40% running, 39% broad reach, 12% beam reach, 9% upwind
Current	no net effect
Comfort	mostly Easy, worst 3 h Coffee
Fuel offshore	0 gal, up to 0 gal

Time at each level: 63% Easy, 29% Coffee, 8% Champagne. Worst 3 hours: Coffee, from the sea. Seas 25% on the forward quarter, 31% on the aft quarter, 44% from astern. Peak apparent wind 19 kt. Roughest motion 0.51 m/s², in the Coffee band.

Sabado-polar at 80% of the figures above (100% by day, 80% at night): a slow bound for a loaded boat, a foul bottom or seas that slow it.

Sabado-polar

172 h

149 to 216 h at sea

Median arrival	Sun 01 Nov 15:15
Early to late	Sat 31 15:43 to Tue 03 10:36
Distance	772 nm by the path
Average	4.5 kt
Point of sail	39% running, 37% broad reach, 13% beam reach, 11% upwind
Current	no net effect
Comfort	mostly Easy, worst 3 h Coffee
Fuel offshore	0 gal, up to 0 gal

Time at each level: 63% Easy, 27% Coffee, 9% Champagne. Worst 3 hours: Coffee, from the sea. Seas 21% on the forward quarter, 32% on the aft quarter, 46% from astern. Peak apparent wind 19 kt. Roughest motion 0.65 m/s², in the Rough band.

Sabado-polar, the route's polar, as the screening sails it, at 100% by day, 80% at night.

Arrival. Around arrival the models give ECMWF 14, GFS 10, AIFS 16 kt, ECMWF from the SE.

Sereno's own runs, each sailed as one passage with the chosen polar, for comparison; they don't vote: GFS 06z: 169 h, arriving Sun 01 Nov 11:39, NO; ECMWF 06z: 169 h, arriving Sun 01 Nov 12:19, NO.

Day by day

Each day runs 24 hours from departure. Figures are medians across the ensemble passages. Wind is true wind at 10 m. TWA is the true wind angle to the path. Waves are the higher of the two wave models. The feet rule is the swell's peak period in seconds per foot of wave height, shown as the median for the day and the steepest hour in it: 3:1 or better needs no thought, under 2:1 is worth thinking hard about, and 1:1 is a square sea. A 10 ft sea reads 3:1 at 30 s, 2:1 at 20 s and 1:1 at 10 s. Seas under 5 ft are left out of it. After the ratio comes the steepness forecasters use, wavelength over height as 1 in N: waves break near 1 in 7, 1 in 20 is the limit quoted for small craft, and 1 in 40 is a steep sea. Speed and distance are over the ground, with the current. Current is the day's mean along the path from RTOFS, + with the boat and - against it. Comfort shows the level for most of the day, then the worst level lasting 3 hours or more, with where the seas come from, the strongest apparent wind, the roughest motion and what caused the worst spell.

Conservative polar (80% of Sabado-polar at 100% by day, 80% at night)

DAY	WIND KT MEAN / MAX	GUST KT	FROM	TWA	WAVES MAX, PERIOD	BOAT KT	CURRENT KT + WITH YOU	DISTANCE NM 10TH TO 90TH	RUN NM	MOTOR H FUEL GAL	COMFORT
Day 1 to Mon 26 11:00	15 / 19	24	093° E	161°	6 ft, 6 s 1.1 : 1, steepest 1.0, 1 in 34	4.5	+0.2	107 79 to 121	107	0.0 0	Easy Easy seas on the aft quarter 63%, apparent 15 kt, motion 0.33 m/s² worst from wind and sea
Day 2 to Tue 27 11:00	10 / 13	16	085° E	162°	4 ft, 17 s 2.4 : 1, steepest 1.8, 1 in 114	3.4	+0.3	81 55 to 106	186	0.0 0	Easy Easy seas from astern 59%, apparent 10 kt, motion 0.31 m/s² worst from the sea
Day 3 to Wed 28 11:00	7 / 10	13	048° NE	137°	4 ft, 7 s 2.8 : 1, steepest 1.9, 1 in 129	2.8	+0.4	68 37 to 96	259	0.0 0	Champagne Easy seas from astern 88%, apparent 9 kt, motion 0.21 m/s² worst from the sea
Day 4 to Thu 29 11:00	9 / 12	15	038° NE	106°	4 ft, 8 s 2.5 : 1, steepest 2.3, 1 in 128	3.1	+0.2	73 43 to 99	332	0.0 0	Easy Easy seas on the forward quarter 66%, apparent 12 kt, motion 0.29 m/s² worst from the sea
Day 5 to Fri 30 11:00	11 / 15	19	143° SE	110°	4 ft, 10 s 2.4 : 1, steepest 2.3, 1 in 111	3.5	+0.1	83 43 to 125	410	0.0 0	Easy Coffee seas on the forward quarter 74%, apparent 15 kt, motion 0.36 m/s² worst from the sea
Day 6 to Sat 31 11:00	16 / 19	23	127° SE	130°	9 ft, 10 s 2.0 : 1, steepest 1.1, 1 in 106	4.6	-0.2	110 50 to 126	517	0.0 0	Coffee Coffee seas on the forward quarter 84%, apparent 16 kt, motion 0.50 m/s² worst from the sea
Day 7 to Sun 01 11:00	16 / 19	23	117° ESE	140°	11 ft, 9 s 0.9 : 1, steepest 0.8, 1 in 42	4.5	-0.5	107 54 to 122	596	0.0 0	Coffee Coffee seas on the aft quarter 90%, apparent 16 kt, motion 0.45 m/s² worst from the sea
Day 8 to Mon 02 11:00	15 / 17	21	113° ESE	148°	9 ft, 8 s 1.0 : 1, steepest 0.9, 1 in 39	4.0	-0.3	90 50 to 117	703	0.0 0	Easy Coffee seas from astern 76%, apparent 14 kt, motion 0.33 m/s² worst from the sea
Day 9 to Tue 03 11:00 climatology	12 / 15	19	105° ESE	148°	7 ft, 9 s 1.3 : 1, steepest 1.2, 1 in 50	3.4	-0.2	63 17 to 99 65 of 82 still sailing	772	0.0 0	Easy Easy seas from astern 98%, apparent 12 kt, motion 0.26 m/s² worst from the sea

Sabado-polar

DAY	WIND KT MEAN / MAX	GUST KT	FROM	TWA	WAVES MAX, PERIOD	BOAT KT	CURRENT KT + WITH YOU	DISTANCE NM 10TH TO 90TH	RUN NM	MOTOR H FUEL GAL	COMFORT
Day 1 to Mon 26 11:00	15 / 19	24	092° E	161°	6 ft, 6 s 1.1 : 1, steepest 1.0, 1 in 36	5.5	+0.2	131 103 to 151	131	0.0 0	Easy Easy seas on the aft quarter 50%, apparent 14 kt, motion 0.28 m/s² worst from wind and sea
Day 2 to Tue 27 11:00	10 / 12	15	080° E	164°	5 ft, 8 s 2.3 : 1, steepest 1.4, 1 in 105	3.9	+0.4	94 63 to 124	223	0.0 0	Easy Easy seas from astern 86%, apparent 9 kt, motion 0.30 m/s² worst from the sea
Day 3 to Wed 28 11:00	8 / 12	14	032° NNE	124°	4 ft, 7 s 2.3 : 1, steepest 1.7, 1 in 88	3.4	+0.3	83 47 to 124	313	0.0 0	Easy Easy seas from astern 79%, apparent 10 kt, motion 0.22 m/s² worst from the sea
Day 4 to Thu 29 11:00	9 / 13	16	006° N	99°	5 ft, 8 s 2.4 : 1, steepest 2.2, 1 in 125	3.8	+0.1	91 47 to 130	404	0.0 0	Easy Easy seas on the forward quarter 68%, apparent 15 kt, motion 0.35 m/s² worst from the sea
Day 5 to Fri 30 11:00	11 / 15	19	148° SSE	108°	4 ft, 11 s 2.4 : 1, steepest 2.3, 1 in 109	4.3	-0.2	102 47 to 152	501	0.0 0	Easy Coffee seas on the forward quarter 53%, apparent 15 kt, motion 0.40 m/s² worst from the sea
Day 6 to Sat 31 11:00	16 / 19	23	125° SE	132°	11 ft, 10 s 1.2 : 1, steepest 0.9, 1 in 62	5.4	-0.4	130 56 to 154	619	0.0 0	Coffee Coffee seas on the forward quarter 48%, apparent 15 kt, motion 0.65 m/s² worst from the sea
Day 7 to Sun 01 11:00	15 / 17	21	118° ESE	141°	11 ft, 9 s 0.9 : 1, steepest 0.8, 1 in 36	5.6	-0.3	102 31 to 148 80 of 82 still sailing	744	0.0 0	Coffee Coffee seas on the aft quarter 67%, apparent 13 kt, motion 0.41 m/s² worst from the sea
Day 8 to Mon 02 11:00	13 / 15	18	111° ESE	149°	8 ft, 8 s 1.0 : 1, steepest 0.9, 1 in 39	4.9	-0.2	72 21 to 116 50 of 82 still sailing	772	0.0 0	Easy Easy seas from astern 91%, apparent 11 kt, motion 0.33 m/s² worst from the sea

Champagne flat and steady

Easy sleeping fine

Coffee one hand to move, still cooking

Rough two hands, no cooking

Sick nobody is sleeping

Comfort is Sereno's five-level scale, the router's own rating, for the boat set in Settings (42 ft catamaran). Every 15 minutes gets the worse of two ratings. Wind over the deck uses apparent wind: Champagne under 12 kt, Easy under 18, Coffee under 23 (first reef on a reach), Rough under 33. Motion is judged on the roughest part of the sea, each wave train on its own, by how often the boat meets it, which depends on where it comes from: Champagne under 0.15 m/s², Easy under 0.315, Coffee under 0.63, Rough under 1.25. A multihull's beam seas and seas on the bow over 5 ft add extra for roll and slamming, and a sea steeper than 1 in 20 rates rough whichever way it comes. A first guess, not yet checked against a logged passage.

The sea

At the boat's median position with the chosen polar, every hour until the slow bound's median arrival, or the nearest point back along the path where a wave model stops short of the coast. Swell and wind sea from GFS-Wave, combined sea from ECMWF. Steepness: flatter than 1 in 30 is gentle, 1 in 12 is steep.

> **Whole passage.** Swell to 10 ft at 7-18 s from SE, astern; wind sea to 12 ft at 3-10 s from ESE, astern. Rolling, following wind sea; little speed lost. Cross sea about 9 h; models differ on height (ECMWF 9 ft, GFS 12 ft).

DAY	WAVE TRAIN	HEIGHT	PERIOD	FROM	SIDE	STEEPEST	ABOARD
Day 1 Sun 25	Combined	2 to 5 ft	7 s / 7	mixed	mixed	1 in 40	Following wind sea; little speed lost.
	Swell	1 ft	17 s	SSW	forward quarter	1 in 904	
	Wind sea	3 to 5 ft	6 s	ESE	from astern	1 in 31	
Day 2 Mon 26	Combined	3 to 4 ft	8 s / 9	mixed	mixed	1 in 72	Easy pitch, following wind sea; little speed lost.
	Swell	1 to 3 ft	15 s	SSE	forward quarter	1 in 72	
	Wind sea	3 to 4 ft	6 s	ESE	from astern	1 in 41	
Day 3 Tue 27	Combined	3 to 4 ft	7 s / 8	mixed	mixed	1 in 52	Regular rise and fall, beam sea; little speed lost.
	Swell	2 to 3 ft	7 s	E	from astern	1 in 85	
	Wind sea	1 ft	3 s	N	on the beam	1 in 53	
Day 4 Wed 28	Combined	4 ft	8 s / 10	mixed	mixed	1 in 66	Regular rise and fall, beam sea; little speed lost.
	Swell	2 ft	8 s	E	from astern	1 in 138	
	Wind sea	1 to 2 ft	5 s	N	on the beam	1 in 33	
Day 5 Thu 29	Combined	3 to 4 ft	8 s / 9	mixed	mixed	1 in 74	Rolling, pitching and slamming; little speed lost.
	Swell	2 to 3 ft	9 s	SSW	on the beam	1 in 156	
	Wind sea	1 to 2 ft	4 s	W	on the bow	1 in 34	
	Second swell	1 to 3 ft	8 s	SE	on the beam	1 in 59	
Day 6 Fri 30	Combined	4 to 8 ft	10 s / 14	S	on the beam	1 in 68	Rolling, beam sea; expect some speed lost. Cross sea about 5 h; models differ on height (ECMWF 8 ft, GFS 10 ft).
	Swell	2 to 9 ft	11 s	S	on the beam	1 in 58	
	Wind sea	2 to 8 ft	6 s	SSE	on the beam	1 in 29	
	Second swell	0 to 3 ft	9 s	ESE	from astern	1 in 194	
Day 7 Sat 31	Combined	3 to 8 ft	8 s / 8	SE	aft quarter	1 in 32	Rolling, some yaw from the quarter; little speed lost. Cross sea about 4 h; models differ on height (ECMWF 9 ft, GFS 12 ft).
	Swell	2 to 10 ft	11 s	SSE	on the beam	1 in 53	
	Wind sea	5 to 12 ft	9 s	SE	aft quarter	1 in 34	
Day 8 Sun 01	Combined	3 ft	5 s / 6	E	from astern	1 in 31	Regular rise and fall, following wind sea; little speed lost.
	Swell	0 to 3 ft	8 s	E	from astern	1 in 97	
	Wind sea	3 to 5 ft	5 s	ESE	from astern	1 in 32	
Day 9 Mon 02	Combined	3 ft	6 s / 7	ENE	from astern	1 in 53	Slow roll, following wind sea; little speed lost.
	Swell	0 to 3 ft	17 s	E	from astern	1 in 350	
	Wind sea	3 ft	8 s	E	from astern	1 in 90	

Combined is the swell and wind sea together; when they come from directions 60° or more apart it's marked mixed.

Combined period is ECMWF mean / peak.

The weather story

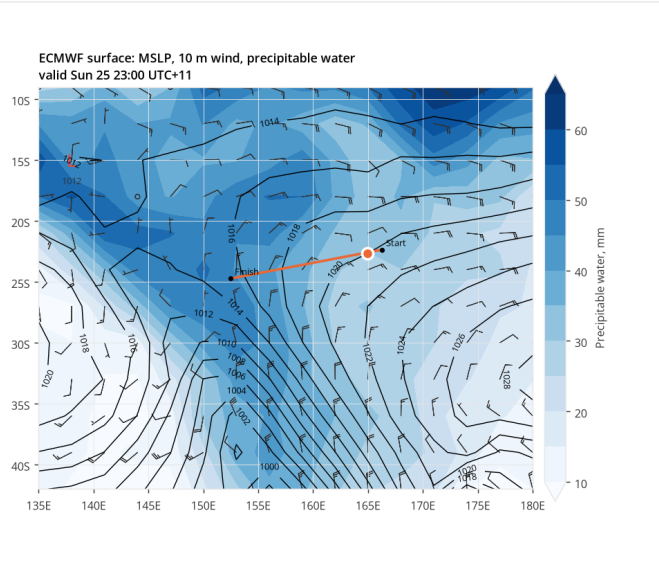
Deterministic runs from six models, read through the layers a forecaster works with: the surface pressure pattern, 850 hPa wind and temperature advection, dryness at 700 hPa above the trade inversion, troughs at 500 hPa and the jet at 250 hPa. Charts are ECMWF at the middle of each day, with the boat's median position marked. Runs: ECMWF 2026-10-18 00 UTC, GFS 2026-10-18 12 UTC, ICON 2026-10-18 12 UTC, UKMO 2026-10-18 00 UTC, AIFS 2026-10-18 12 UTC, GEM 2026-10-18 12 UTC.

No model covers the whole passage. Ending partway: ECMWF (to Mon 02 11:00), GFS (to Tue 03 23:00), ICON (to Mon 26 11:00), UKMO (to Sun 25 11:00), AIFS (to Mon 02 23:00), GEM (to Wed 28 23:00). The verdict, trip estimates and comfort come from the ECMWF and GEFS ensembles. These single-run models feed only the weather story, the charts and the model agreement check.

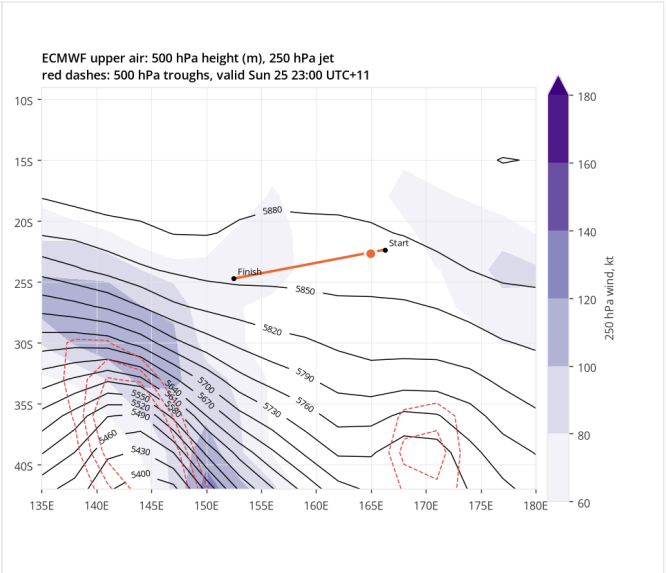
Day 1 Sun 25 11:00 to Mon 26 11:00 UTC+11

Squall risk low

Low 1012 hPa near 15S 138E. At the boat ECMWF has 12 to 18 kt from the E, GFS 19 to 23 kt. Precipitable water up to 32 mm, 700 hPa humidity up to 33%, K-index up to 16, CAPE up to 470 J/kg. Squall risk low. Jet at 250 hPa 85 kt near 42S 156E, well south of the route. The 6 models disagree by up to 15 kt at the boat, so treat the wind figures with caution.



Surface, Sun 25 23:00 UTC+11

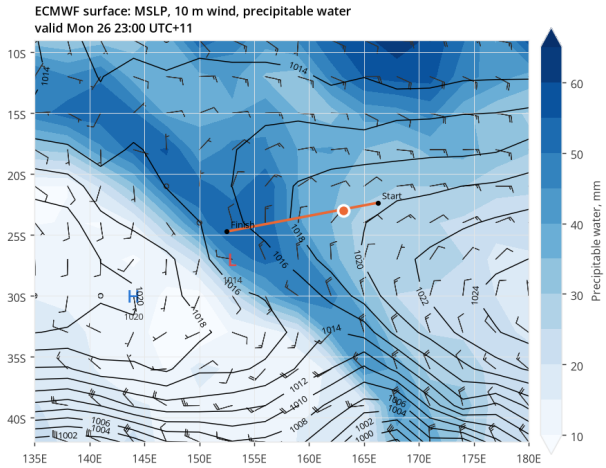


Upper air, same time

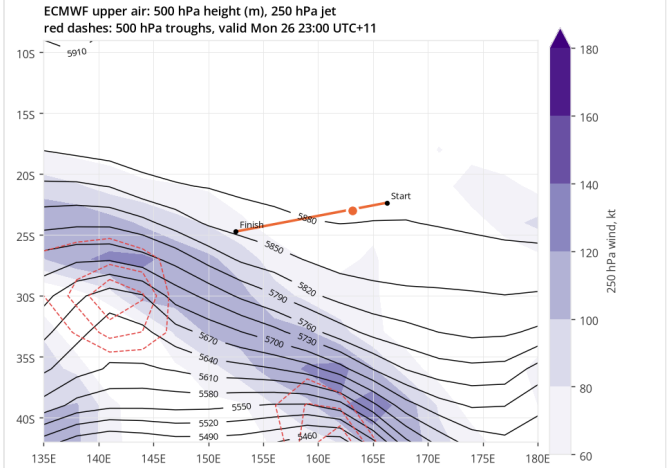
Day 2 Mon 26 11:00 to Tue 27 11:00 UTC+11

Squall risk low

High 1020 hPa near 30S 144E. At the boat ECMWF has 7 to 10 kt from the E, GFS 7 to 17 kt. Precipitable water up to 31 mm, 700 hPa humidity up to 30%, K-index up to 14, CAPE up to 181 J/kg. Squall risk low. Ridge aloft at 500 hPa over the boat, which means sinking air and settled weather. Jet at 250 hPa 132 kt near 39S 165E, well south of the route. The 5 models disagree by up to 12 kt at the boat, so treat the wind figures with caution.



Surface, Mon 26 23:00 UTC+11

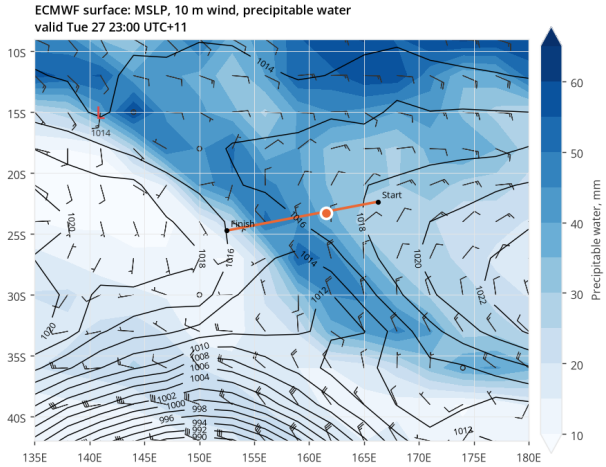


Upper air, same time

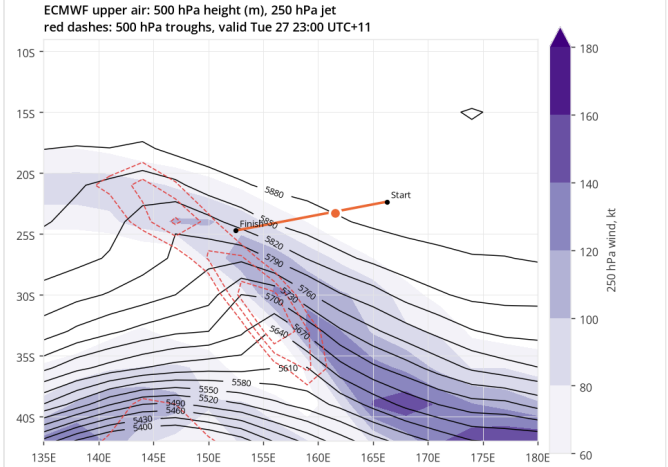
Day 3 Tue 27 11:00 to Wed 28 11:00 UTC+11

Squall risk isolated

At the boat ECMWF has 9 to 14 kt from the N, GFS 1 to 5 kt. Moister mid levels for a while: precipitable water up to 40 mm, 700 hPa humidity up to 70%, K-index up to 23, CAPE up to 52 J/kg. An isolated shower or squall is possible. The wind at 850 hPa reaches 19 kt, stronger than at the surface, and a squall downdraft can bring gusts near that speed down to the water. Ridge aloft at 500 hPa over the boat, which means sinking air and settled weather. Jet at 250 hPa 153 kt near 39S 168E, well south of the route. The 4 models disagree by up to 10 kt at the boat, so treat the wind figures with caution.



Surface, Tue 27 23:00 UTC+11

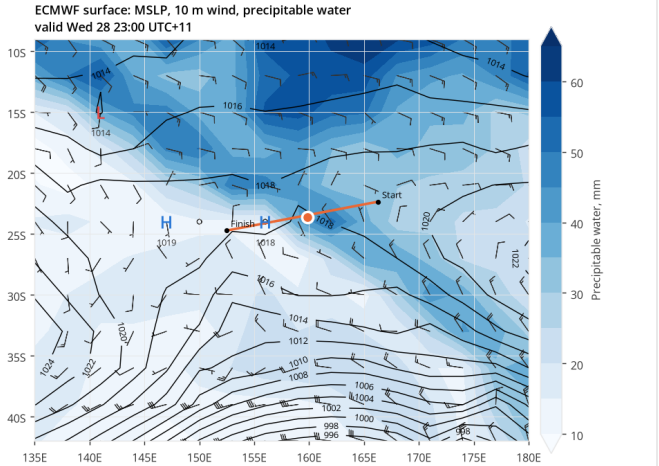


Upper air, same time

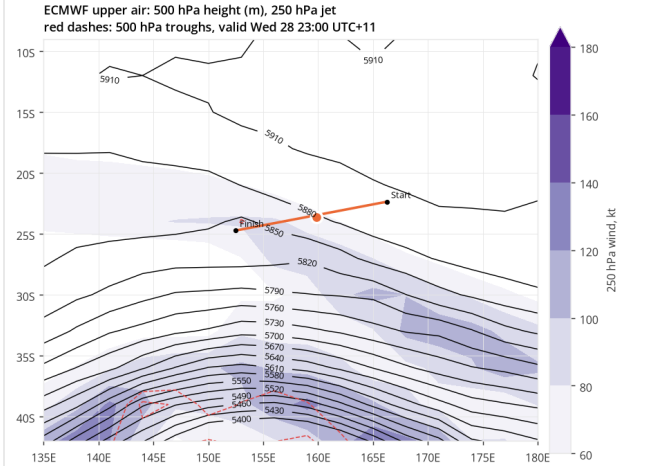
Day 4 Wed 28 11:00 to Thu 29 11:00 UTC+11

Squall risk moderate

High 1019 hPa near 24S 147E. At the boat ECMWF has 2 to 12 kt from the NNW, GFS 9 to 16 kt. Moist, unstable column: precipitable water up to 53 mm, 700 hPa humidity up to 78%, K-index up to 32, CAPE up to 251 J/kg. Squall risk moderate. The wind at 850 hPa reaches 16 kt, stronger than at the surface, and a squall downdraft can bring gusts near that speed down to the water. Ridge aloft at 500 hPa over the boat, which means sinking air and settled weather. Jet at 250 hPa 131 kt near 42S 165E, well south of the route. The 4 models disagree by up to 11 kt at the boat, so treat the wind figures with caution.



Surface, Wed 28 23:00 UTC+11

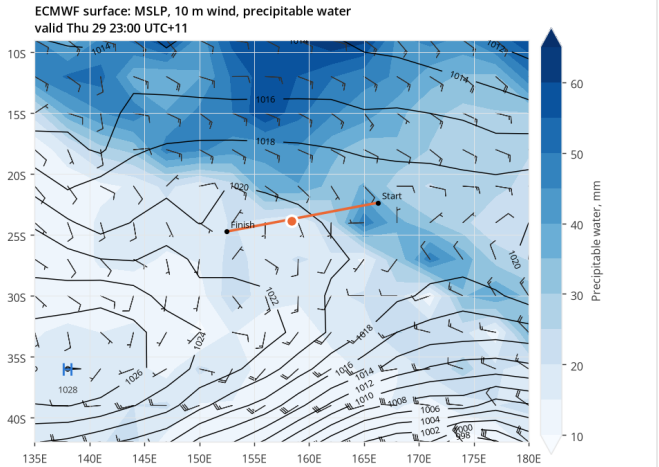


Upper air, same time

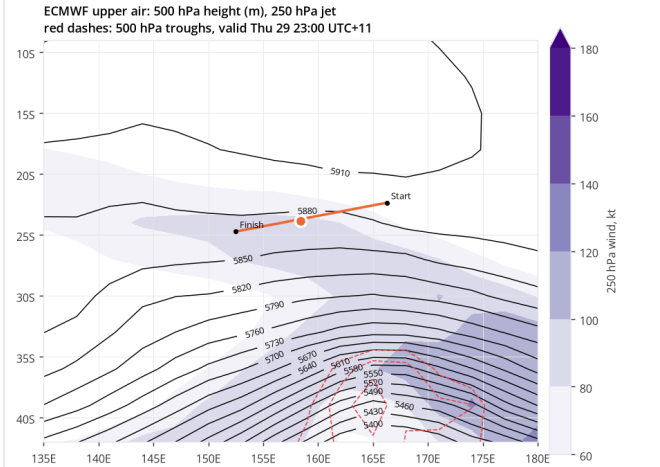
Day 5 Thu 29 11:00 to Fri 30 11:00 UTC+11

Squall risk low

High 1028 hPa near 36S 138E. At the boat ECMWF has 5 to 10 kt from the S, GFS 6 to 13 kt. Precipitable water up to 33 mm, 700 hPa humidity up to 63%, K-index up to 21, CAPE up to 36 J/kg. Squall risk low. Cold advection at 850 hPa (-4 K/day) with pressure up 2.5 hPa in 24 hours: a front or trough passing to the south and a high building behind it. Expect the trade wind to freshen and back toward the south. Jet at 250 hPa 109 kt near 36S 168E, well south of the route. The 3 models disagree by up to 15 kt at the boat, so treat the wind figures with caution.



Surface, Thu 29 23:00 UTC+11

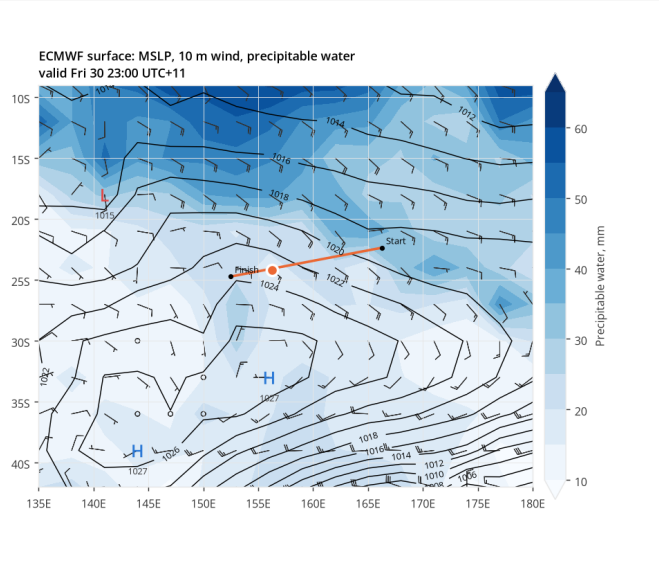


Upper air, same time

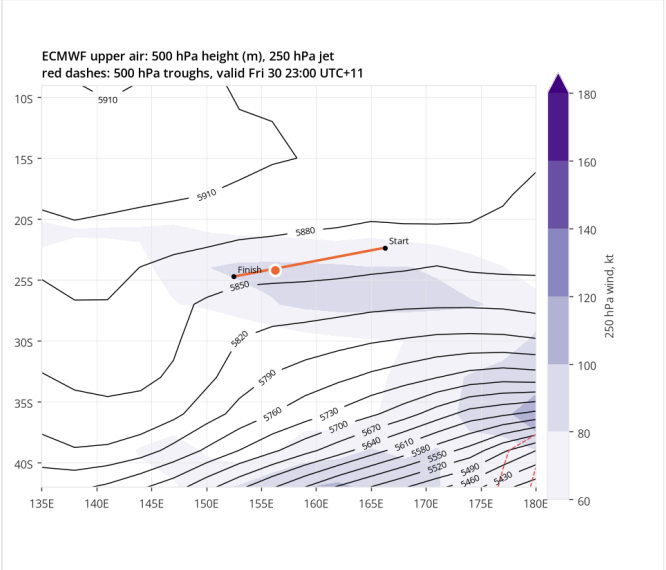
Day 6 Fri 30 11:00 to Sat 31 11:00 UTC+11

Squall risk low

High 1027 hPa near 39S 144E. At the boat ECMWF has 12 to 18 kt from the SE, GFS 14 to 22 kt. Dry above the trade inversion (700 hPa humidity up to 14%, precipitable water up to 20 mm, K-index up to -4). Showers stay shallow. Squall risk low. Cold advection at 850 hPa (-6 K/day) with pressure up 2.5 hPa in 24 hours: a front or trough passing to the south and a high building behind it. Expect the trade wind to freshen and back toward the south. Jet at 250 hPa 104 kt near 42S 162E, well south of the route. The 3 models disagree by up to 7 kt at the boat, so treat the wind figures with caution.



Surface, Fri 30 23:00 UTC+11

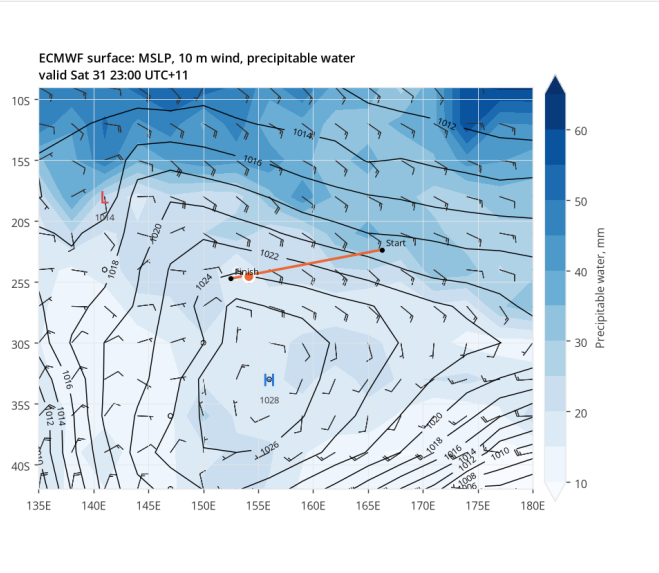


Upper air, same time

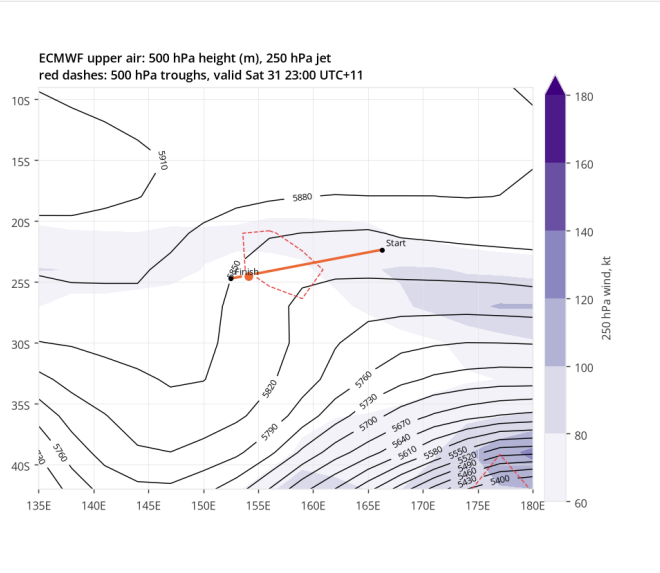
Day 7 Sat 31 11:00 to Sun 01 11:00 UTC+11

Squall risk low

High 1028 hPa near 33S 156E. At the boat ECMWF has 16 to 21 kt from the ESE, GFS 16 to 22 kt. Dry above the trade inversion (700 hPa humidity up to 15%, precipitable water up to 20 mm, K-index up to -3). Showers stay shallow. Squall risk low. Cold advection at 850 hPa (-4 K/day) with pressure up 1.7 hPa in 24 hours: a front or trough passing to the south and a high building behind it. Expect the trade wind to freshen and back toward the south. Upper trough near the boat (500 hPa cyclonic vorticity 2.2e-5/s), which lifts the column and helps showers grow. Jet at 250 hPa 96 kt near 42S 159E, well south of the route. The 3 models are within 5 kt of each other at the boat.



Surface, Sat 31 23:00 UTC+11

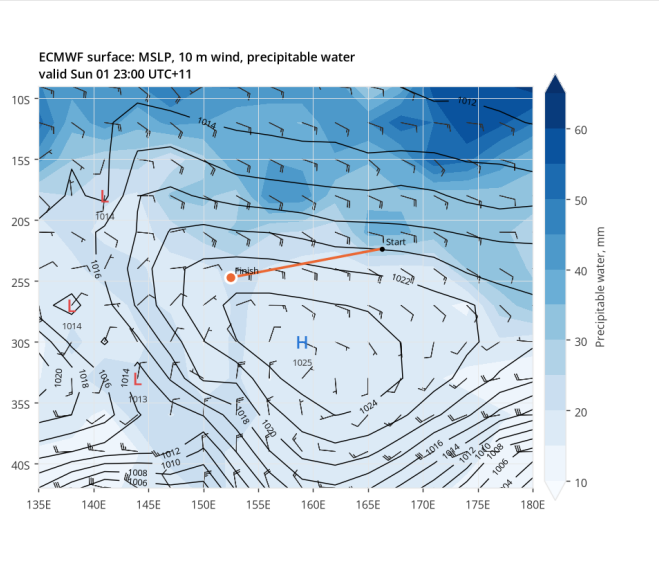


Upper air, same time

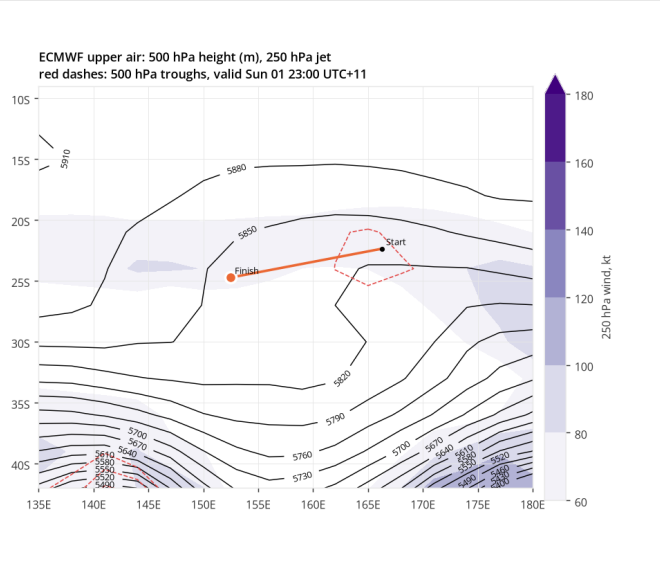
Day 8 Sun 01 11:00 to Mon 02 11:00 UTC+11

Squall risk low

High 1025 hPa near 30S 159E. At the boat ECMWF has 11 to 16 kt from the ESE, GFS 8 to 12 kt. Dry above the trade inversion (700 hPa humidity up to 9%, precipitable water up to 24 mm, K-index up to -4). Showers stay shallow. Squall risk low. Cold advection at 850 hPa (-6 K/day): cooler, drier air moving in from the south. Jet at 250 hPa 98 kt near 42S 147E, well south of the route. The 3 models are within 6 kt of each other at the boat.



Surface, Sun 01 23:00 UTC+11

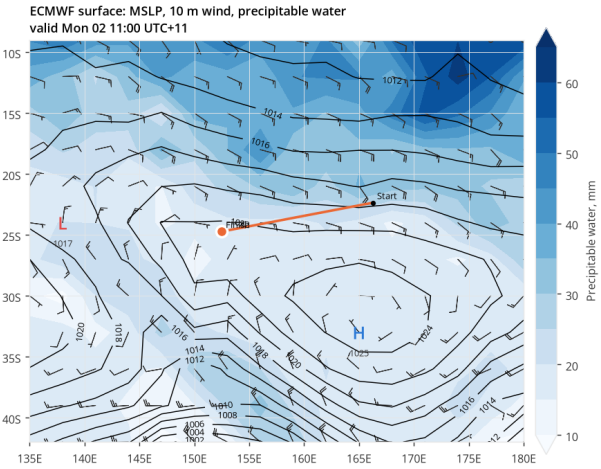


Upper air, same time

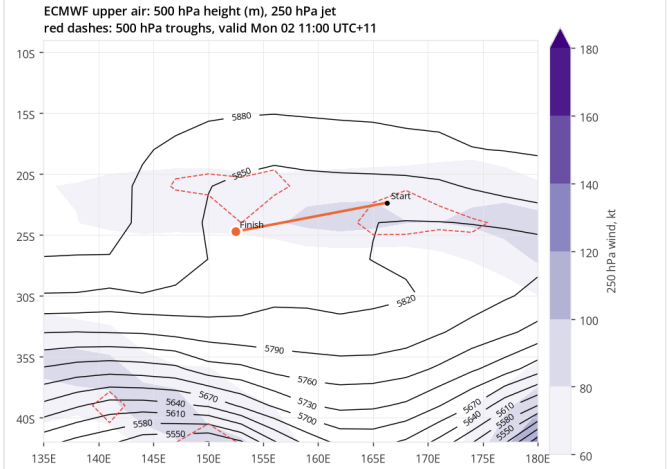
Day 9 Mon 02 11:00 to Tue 03 11:00 UTC+11

Squall risk low

High 1025 hPa near 33S 165E. At the boat ECMWF has 9 to 9 kt from the E, GFS 3 to 9 kt. Dry above the trade inversion (700 hPa humidity up to 7%, precipitable water up to 23 mm, K-index up to -4). Showers stay shallow. Squall risk low. Jet at 250 hPa 95 kt near 39S 144E, well south of the route. The 3 models are within 2 kt of each other at the boat.



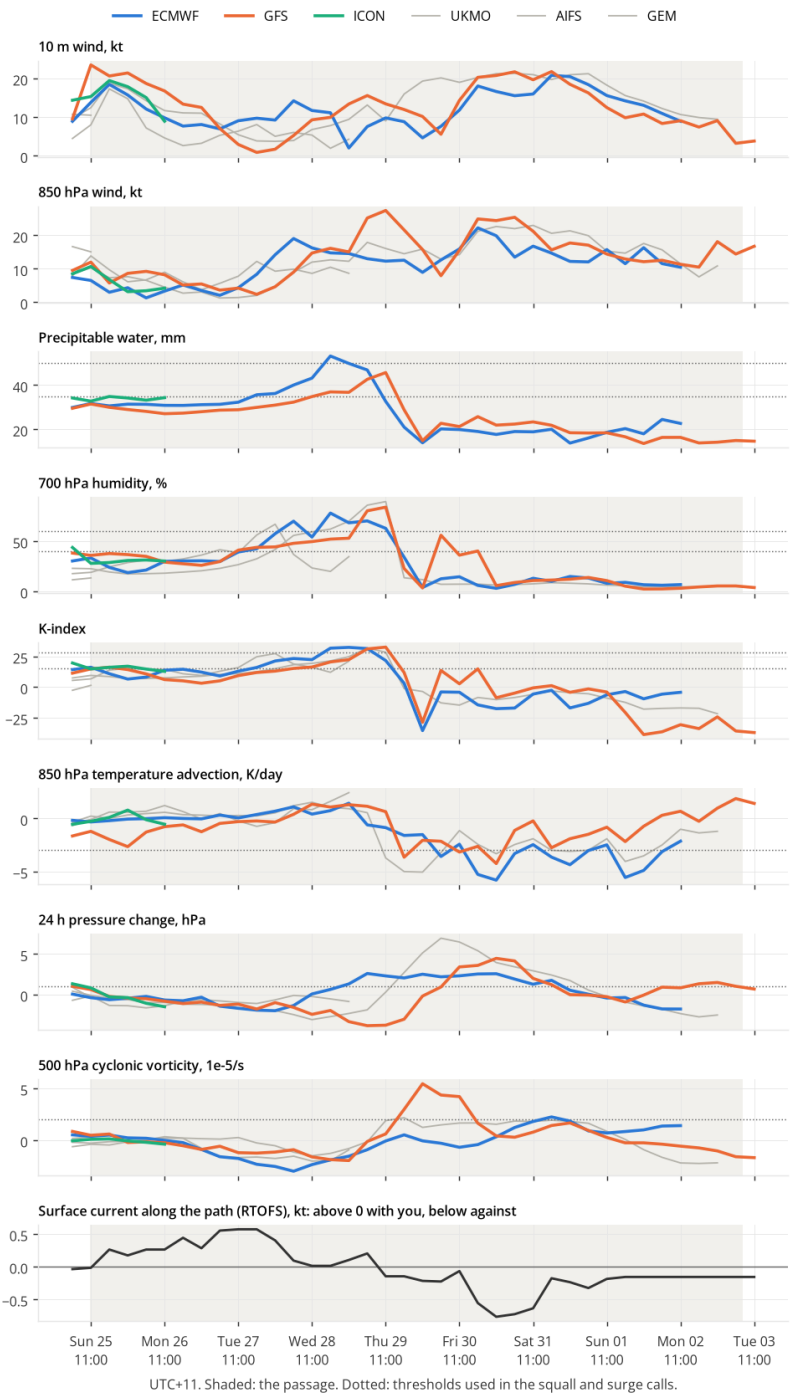
Surface, Mon 02 11:00 UTC+11



Upper air, same time

Along the track

The same diagnostics read at the boat's median position every 6 hours, one measure per panel. ECMWF, GFS and ICON are in color, the other models in gray. The 24 hour pressure change is used because tropical pressure rises and falls about 2 hPa twice a day with the atmospheric tide. The last panel is the surface current along the path from RTOFS, the same for every model: above zero it's with the boat, below zero against it.



UTC+11. Shaded: the passage. Dotted: thresholds used in the squall and surge calls.

850 hPa wind. About 1,500 m up. A squall downdraft can bring this speed to the surface.

700 hPa humidity. About 3,000 m up. Very dry air here means the trade inversion is capping showers.

Temperature advection. Negative means colder air arriving, usually behind a front passing to the south.

Precipitable water. Water in the whole column. Below 35 mm is dry for the tropics, 50 mm or more feeds heavy showers.

K-index. Warmth and moisture low down against cold aloft. Below 15 is stable; 28 or more supports thunderstorms.

500 hPa vorticity. Positive is an upper trough, which lifts the air. Negative is a ridge with sinking air.

Official forecast

No official high seas bulletin is set up for this area. Check the national met service for the waters you cross.

How this was made

Route

1. Start, 22.360S 166.243E 22°21.59'S 166°14.57'E
2. Finish, 24.729S 152.454E 24°43.71'S 152°27.25'E

772 nm on the shortest path by water round land, reefs and shallows, 2 points, read at 27 sample points no more than 30 nm apart.

Polar

Every ensemble member sailed the path with Sabado-polar, the polar this trip was screened with, and again at 80% of those figures for the conservative bound. Polar at 100% by day, 80% at night.

From the route: sail only; waves under 12 ft.

Weather data

- Wind ensembles: ECMWF ENS (51 members) and NOAA GEFS (31) from the router's own mirror of the publishers' GRIB files at 0.25°, the grid point nearest each sample point, put on the hour through the wind's vector (ECMWF open data, © European Centre for Medium-Range Weather Forecasts (ECMWF), CC BY 4.0, regridded by Sereno; NOAA NCEP GEFS, public domain). Runs: ECMWF ENS 2026-10-18 06 UTC, 12 h old, GEFS 2026-10-18 06 UTC, 12 h old.
- Waves: ECMWF's from the router's own mirror of ECMWF's open data wave stream (2026-10-18 00 UTC, 18 h old; ECMWF open data, © European Centre for Medium-Range Weather Forecasts (ECMWF), CC BY 4.0, regridded by Sereno); GFS-Wave's swell and wind sea from Sereno's own GFS run (2026-10-18 06 UTC, 12 h old), and its second swell from the router's own mirror of NOAA's GFS-Wave files (2026-10-18 12 UTC). Single runs: Open-Meteo's wave ensembles returned no data when they were checked.
- Surface currents: NOAA's RTOFS from the router's own copy, 1/12 degree, hourly to 72 h then 3-hourly to 8 days, without tides (2026-10-18 00 UTC, 18 h old; NOAA NCEP, Global RTOFS (Real-Time Ocean Forecast System)). The boat holds the line, so current along it changes speed over the ground and a cross current costs a little speed.
- Sereno's own runs, sailed as one passage each and shown only beside the ensembles: GFS 2026-10-18 06 UTC, 12 h old, ECMWF 2026-10-18 06 UTC, 12 h old, ECMWF 2026-10-18 00 UTC, 18 h old, GFS 2026-10-18 12 UTC, 6 h old, ICON 2026-10-18 12 UTC, 6 h old, UKMO 2026-10-18 00 UTC, 18 h old, AIFS 2026-10-18 12 UTC, 6 h old, GEM 2026-10-18 12 UTC, 6 h old.
- Upper air, every 6 hours: ECMWF and GFS and ICON and UKMO and AIFS and GEM from the router's own mirror (ECMWF open data, © European Centre for Medium-Range Weather Forecasts (ECMWF), CC BY 4.0, regridded by Sereno; NOAA NCEP GFS, public domain; Source: Deutscher Wetterdienst (DWD), ICON, CC BY 4.0, regridded by Sereno; British Crown copyright, the Met Office (global model), CC BY-SA 4.0, regridded by Sereno; Data Source: Environment and Climate Change Canada (GDPS), under ECCC's Data Server End-use Licence). Runs: ECMWF 2026-10-18 00 UTC, 18 h old, GFS 2026-10-18 12 UTC, 6 h old, ICON 2026-10-18 12 UTC, 6 h old, UKMO 2026-10-18 00 UTC, 18 h old, AIFS 2026-10-18 12 UTC, 6 h old, GEM 2026-10-18 12 UTC, 6 h old.
- Synoptic grid: 3° from 9.00S to 42.00S, 135.00E to 180.00E, for ECMWF; the other five models are read within 9° of the passage, which is all their gradients at the boat need. Values at the boat come from each model at 0.25° route points, because a coarse grid point near an island can sit on land.

Climatology

Days 1 to 8 forecast. The slowest 20% of passages run on past the forecast's end at 11-02 00:00Z into climatology for November, a likelihood for the month, not a forecast.

- Past the last step of an ensemble run, each member sails on the month's typical weather in place of a forecast. The split is that last step, so a newer run moves it later and fewer days of the passage are on climatology. Where the two ensembles' runs end at different times, the day count uses the earlier end.
- The climatology is ERA5, ECMWF's reanalysis for the Copernicus Climate Change Service, 1995 to 2024, read every 6 hours at sea points on its 0.25° grid and combined by calendar month into 1° cells: percentiles of the 10 m wind (10th to 95th) and how often it reaches 15, 20, 25, 30, 34 and 41 kt; the same for the significant wave height (reaching 5 to 16 ft); where the wind and the sea come from, in 16 sectors; and the median peak period.
- Each member keeps a percentile of the month's wind speed that wanders with a memory of about a day, which is how long ERA5's own wind speed remembers, so a member is windy or calm for a day at a time. Its wind speed is the month's speed at that percentile, read from a line through the percentiles and the shares over 15 to 41 kt. The month changes by the day, blending the two nearest. The draws are fixed by the model, the member and the clock hour, so the same inputs give the same passage.
- A member's last forecast speed fades into that over about a day, and its last forecast direction over a day too. Direction is drawn from the month's sector shares with a memory of about three days, apart from the speed.
- The sea follows the wind: its height is the month's height at the member's wind percentile, smoothed over about 18 hours; its peak period is the month's median scaled by the square root of the height over the median height; its direction is drawn from the month's sector shares. Gusts are 1.23 times the wind, as for the forecast days.
- Verdicts that rest on climatology are a likelihood for the month, not a forecast: they say how many passages of the month's typical weather reach a limit. Climatology doesn't know this year's pattern, and ERA5's 0.25° grid under-represents the strongest winds and the steepest seas.

Climatology: ERA5 reanalysis, 1995 to 2024, from ECMWF's Copernicus Climate Change Service (licence CC BY 4.0). Contains modified Copernicus Climate Change Service information 2026.

Upper air disturbance

An upper air disturbance is indicated where a model's fields show these together: spin (relative vorticity at 850 hPa, averaged over 150 km) of at least 8e-5 per second turning the hemisphere's way; a closed low of sea level pressure at least 2 hPa deep within 250 km; wind shear between 850 and 250 hPa of at most 25 m/s (ring means 200 to 800 km out); a warm core (500 hPa within 200 km at least as warm as the ring 400 to 700 km out); and convection: CAPE of at least 150 J/kg (the 90th percentile within 500 km) and 700 hPa humidity of at least 72% (within 200 km). The spin and the low mark the area at every step, and it lasts 36 hours or more; the rest hold at half or more of its steps between 30 degrees south and north. Where a model publishes no CAPE (AIFS), humidity is read alone. A weaker sign has everything but the convection; it's listed in the details and never in the headline. On ten years of ERA5 against the best tracks (2015 to 2024) the indication was within 300 km of 97.6% of best-track points with winds of 64 kt or more and 81.3% of those at 34 to 63 kt, and 21.7 a year worldwide were far from any listed system; weaker signs add 12 a year. Spin alone also marks troughs and fronts, and CAPE alone is the energy for showers and squalls, not their organization, so neither is an indication on its own. It's one indication among several, not a forecast, and the decision is the captain's. It doesn't change the route.

- ECMWF: Spin at 850 hPa is the model's own vorticity; at 10 m it's computed from the model's 10 m winds.
- GFS: Spin at 850 hPa is the model's own vorticity; at 10 m it's computed from the model's 10 m winds.
- ICON: Spin at 850 hPa is computed from the model's winds; at 10 m it's computed from the model's 10 m winds.
- UKMO: Spin at 850 hPa is computed from the model's winds; at 10 m it's computed from the model's 10 m winds.
- AIFS: Spin at 850 hPa is computed from the model's winds; at 10 m it's computed from the model's 10 m winds. The model publishes no CAPE, so its convection is read from humidity alone.
- GEM: Spin at 850 hPa is computed from the model's winds; at 10 m it's computed from the model's 10 m winds.

Spin is ECMWF's and GFS's own vorticity (ECMWF open data, CC BY 4.0, regridded by Sereno; NOAA's GFS, public domain), computed from winds for the other models; CAPE and humidity are each model's own.

The verdict

- The verdict is judged on the limits set for the route this trip was watched from and on the router's comfort levels, hour by hour along every ensemble passage. This screening used your 30 kt wind and 12 ft wave limit. A passage passes the wind limit when its strongest wind is over it, passes the wave limit when its highest sea is over it, and reaches Sick when it spends 3 h or more there.
- NO: 20% or more of passages pass a limit, or 10% or more reach Sick.
- WARNING: 10% or more pass a limit, or 5% or more reach Sick, or the median passage spends 6 h or more at Rough or Sick.
- GO: otherwise. The larger of the two ensembles' shares counts. The period to height and steepness of the seas are details, not rules.

The sea

Gentle is flatter than 1 in 30, moderate to 1 in 18, steep to 1 in 12, very steep beyond. A cross sea is wind sea and swell both 3 ft or more, 60° or more apart, with the swell shorter than 11 s. Speed lost to seas is a train of 5 ft or more, moderate or steeper, on the bow or forward quarter. Aboard, the swell's motion follows where it comes from. On the bow or forward quarter it's an easy pitch when gentle, pitching when moderate and hard pitching when steeper. On the beam, 60° to 120° off the bow as the comfort rating counts it, it's rolling, and heavy rolling when moderate or steeper and 7 ft or more. From the aft quarter or astern it's a slow roll at 11 s or longer and a regular rise and fall under that. The wind sea reads following wind sea from astern, some yaw from the quarter from the aft quarter, quick corkscrew from the forward quarter, pitching and slamming from the bow (slamming alone when the swell is already pitching) and beam sea on the beam. A swell under 2 ft gets no motion word. A train 60° to 120° off the bow is shown on the beam. Combined is the swell and wind sea together; when they come from directions 60° or more apart it's marked mixed.

What isn't in it

- Individual squalls. The squall call is a risk from the column, not a squall forecast.
- Speed lost to waves, and swell in the anchorage.
- Time to clear the harbor: the hours run from the start point.
- A fuel burn of your own: 1 US gallon an hour of motoring is assumed.
- Forecast skill fades past about 5 days. Build the brief again each day before departure.

Built by Sereno from the trip's screening. A guide for planning, not for navigating by. The captain develops the detailed route for every passage. Check official forecasts before sailing.