ARC+ AT SEA

Contents

Rally Communications

Position Reporting

At the start of the rally, each yacht will be provided with a YB3 satellite tracking device. These compact self-contained units are easy to fit and do not require any external power. YB3 devices must be located on deck and able to 'see' the sky. Once activated, the units send an automated position report at regular intervals. Boat positions are then displayed on the rally website.

YB3 Satellite Tracking Device

The tracker hire and position polling data costs are included in the entry fee. Owners should ensure that their boat insurance covers the replacement cost of the tracker units (£780) in the event of a tracker being lost or damaged at sea.

If a boat makes landfall other than at the rally destination, the owner will be liable for the safe return of the unit.

Contacting Rally Control

Communication with Rally Control is via email. It is a requirement that boats are capable of sending and receiving email at sea.

If you have restricted access on your email accounts (e.g. Winlink) ensure you add the Rally Control email address to the approved senders list. The Rally Control email address will be provided at rally check-in.

Skippers must register their boat at-sea email address(es) on the Members Area.

Automatic Email Service

The automatic email service allows skippers to request up-to-date information about the rally (positions, weather, communications lists etc.) 24/7, via an automated responder email address. Full instructions are provided at rally check-in.

The service is activated approximately one week before the start of the rally. Users can opt in or out of receiving daily weather and fleet positions.

Daily Communication Nets

The are two intra-yacht communications nets which operate each day while the fleet is at sea, enabling yachts to stay in contact during the crossing, pass on news, position reports and co-ordinate emergency assistance. It also enables intra-yacht social contact, with various fun activities developed each year.

The main net is on WhatsApp, which allows boats with suitable satcoms systems to have a 'roll call', swap weather information, chat and share photos.

There is also an SSB (HF) radio net co-ordinated within the fleet by volunteers who act as host, switch frequencies as the fleet spreads out, run the roll-call, invite relays and rebroadcast the daily weather forecast.

Each year, the great advantage of the fleet communications net is shown when co-ordinating the fleet response to emergencies at sea, making it easy to speak to a large group simultaneously.

Volunteer Radio Net Controllers

We need volunteer radio net controllers for the rally. The job is fun and rewarding. Although not essential, it is expected that volunteer radio net controllers will have some experience operating SSB transceivers. Please let the rally check-in team know if you are interested in being involved.

Passage Notes

See the Local Information section of this handbook for recommended pilot books and charts, and the Preparations section for ocean pilots and passage planning books. These will provide more detailed ocean observations and landfall information.

Our Meteorologist will present a seminar in Las Palmas about the expected weather during the crossing, and how best to make use of the weather information available. A full weather forecast is provided as part of the pre-departure Skippers' Briefing, and all boats will be sent daily weather forecasts by email.

Departing Gran Canaria

The prevailing wind through the Canary Islands is north east, at around 15-20 knots. The mountainous islands cause the wind to accelerate in specific areas, known as acceleration zones. In these zones the wind speed can double, and 30 knots is not unusual.

The main acceleration zones encountered at the start of the ARC are the area off Punta da Gando by the airport, about 10NM after the start. The second acceleration zone is to the south west of the island, with most boats reaching this area around dark on the first night. In between the acceleration zones is a wind shadow area caused by the mountains of Gran Canaria, and lighter winds may be experienced.

The fleet depart Las Palmas de Gran Canaria

Tradewind sailing on Ari Alegra Credit Carol Wu

The Tradewinds

The north east tradewinds usually extend in a belt from the west coast of Africa to the Caribbean Sea. The southern limit is the ITCZ (Inter Tropical Convergence Zone or Doldrums) north of the equator, and they rarely extend north of 25°. In the trades, the average wind strength is Force 3-4 (Beaufort), but Force 6 is not unusual. The wind direction is generally north east.

The location of the tradewinds cannot be guaranteed, and the classic advice is to sail south until you are sure that you're in the trades before turning west. A weather router or weather forecast will help you to make an informed decision!

The north east tradewinds are part of the global circulation of winds and weather. They are caused by a gradient squeeze between the Azores high and the ITCZ, and anything affecting the Azores high will also affect the trades. This means that some years the trades can be very light and located far south, while other years they can be blowing strongly.

Squalls

Tropical squalls should not be underestimated. Squalls bring heavy rain, strong, gusty winds (up to 40-50 knots) and a big shift in wind direction. The duration can be from less than an hour to several hours, and while squalls are more common at night, they can also be experienced during the day.

Atlantic squall on the horizon. Credit Hannah Burden

Squalls are isolated weather features of the tropical convergence zones. They are localised and short lived, and as such are not usually included in weather forecasts. Visual identification by eye or radar is key. They tend to increase in frequency as you head west across the Atlantic. Large areas of squalls or squall lines are visible to forecasters and can be predicted, although the location and intensity of the squalls will be uncertain.

Identification

During the day, a squall is clearly identified as a tall white cloud with a flat dark base, and at night they can usually be seen on radar because of the high level of moisture content in the cloud. Squalls usually travel with the prevailing wind, so keep a lookout to windward.

Atlantic squalls on the radar. Credit Jonas Edlund

The strongest wind is on the squall front, and heavy rain indicates strong winds. As a rule - the higher the clouds, the stronger the wind.

Once into the areas where squalls are more common, crew should be on 'squall lookout', taking a close interest in all clouds.

Action

If you see a squall forming, alter course to avoid it – treat it as if avoiding collision with a moving ship. Don't sail through a squall if you don't have to.

Sensible precautions include reefing the mainsail early, rolling away the foresail and dropping spinnakers and coloured downwind sails in good time. Dropping a spinnaker during a squall can be dangerous, so plan and execute early. Don't forget to close hatches and vents as you will likely experience heavy rain. Some boats choose to reef at night to be prepared should any squalls materialise.

In the midst of an Atlantic squall. Credit Pierre Lefort

Sailing in a squall can be an exhilarating experience for a well-prepared boat and crew, or it can lead to shredded nerves and sails, broken spars and even dismasting. Don't underestimate the power of the weather.

The crew of Beneteau First 44.7 *Another Brick* were caught out by a squall in ARC 2024: "At 0815 we were hit by a 40knot squall. The boat, on autopilot, broached, and I manually overcorrected, resulting in an unplanned gybe. The preventer snapped, but not before breaking the boom in half. No personal injuries and no other damage to the boat." Another Brick continued for eight days under foresail alone, becoming the 43rd boat to finish.

Weather

Rally Weather Forecasts

During the rally a daily weather forecast is sent to the fleet via email. A professional meteorologist produces the forecast specifically for the fleet and gives a 24 hour forecast with a further 24 hours outlook. It is written based on a map defining the rally zones (sea areas) along the route, and uses a number of abbreviations.

Further details regarding the daily weather report and map with sea areas will be given at the skippers briefing prior to the start. The weather forecast is sent via email. Please ensure the Rally Control email address (issued at check-in) is added to your list of contacts.

The weather forecast will also be read over the daily SSB radio net.

> Skippers are reminded that the rally weather forecast is not the only weather forecast available for the route, and should not be relied upon as such.

The forecast should be read alongside other sources of weather information including weatherfax, Navtex, radio nets, Inmarsat, and subscription forecasting/routing, to build a picture of the likely weather to be experienced.

A useful practice before the start of the rally is to begin to understand the general weather patterns on the route, how they form and the likely conditions that can be expected.

We recommend you have a sound understanding of meteorology and gather as much information as possible on the general weather patterns on the route, how they form and the conditions that can be expected.

An up to date weather forecast plus further information, including details of the daily radio net, weather forecast times and departure/ arrival details, is distributed at the Skippers' Briefing prior to the start of the rally.

Rally Times

Rally times will be given in UTC.

Abbreviations used in email rally weather forecasts	
N	North
E	East
S	South
W	West
altho	although
&	and
becmng	becoming
bkn	broken
cntrl	central
cld	cloud
30/11	date in day/month
elswhr	elsewhere
FX	forecast
frnt	front
hvy	heavy
isold	isolated
ltr	later
posn	position
pos	possible
sct	scattered
shwrs	showers
squls	squalls
sqly	squally
synop	synopsis
thru	through
tom	tomorrow
tsms	thunderstorms
tndry	thundery
0000	time in hours/minutes
tonit	tonight
UTC	universal time (GMT)
vrb	variable
w/	with
wkng	weakening
WX	weather

A typical report, with abbreviations explained, is detailed in the example on the next page.

Synopsis

From: ARC Weather
Subject: ARC Weather 02/12 0600Z

Synopsis: Weak ridge xtends SW from coast Morocco into Canaries. Will break down thru 02/12 as trough of low pressure that currently xtends from gale near 40N/38W SSE to near 25N/33W moves NE over next few days. The gale will be centered near Azores on 02/12, with the trough extending SE into Canaries. Gale will move SE into the coast of Morocco thru 05/12, and weaken.

A cold front xtends 38N/34W SE thru 22N/38W will move NE toward Azores thru 02/12. High pressure centered E of Bermuda will move SE to near 25N/50W thru 02/12, then drift E. The next cold front will extend from 35N/40W SW thru 27N/65W on 03/12PM and will move E to xtend from 40N/30W SW thru 25N/50W on 05/12AM. An area of squalls xtends between 05N-10N, and 20W - 50W. These will move W then NW to extend from 05N - 15N, and 35W - 50W by 03/12. Tropical development is not expected within these squalls.

See Weather Forecast Zones Map on next page

Outlook: Mainly gentle winds expected in Grids II, HH, EE and FF thru next few days. Strongest gusts expected in Grids BB, CC and DD. These fresh gusts xpected to build from middle of each of grids N to the N edge of the grids thru next few days. Will ease starting with Grid DD on morning of 03/12. Fresh ENE winds expected across Grids PP, QQ and RR starting on morning of 02/12 thru 03rd. Moderate winds will persist across the rest of grids during next few days.

Date & Time of issue

T=01 DEC 0600 UTC

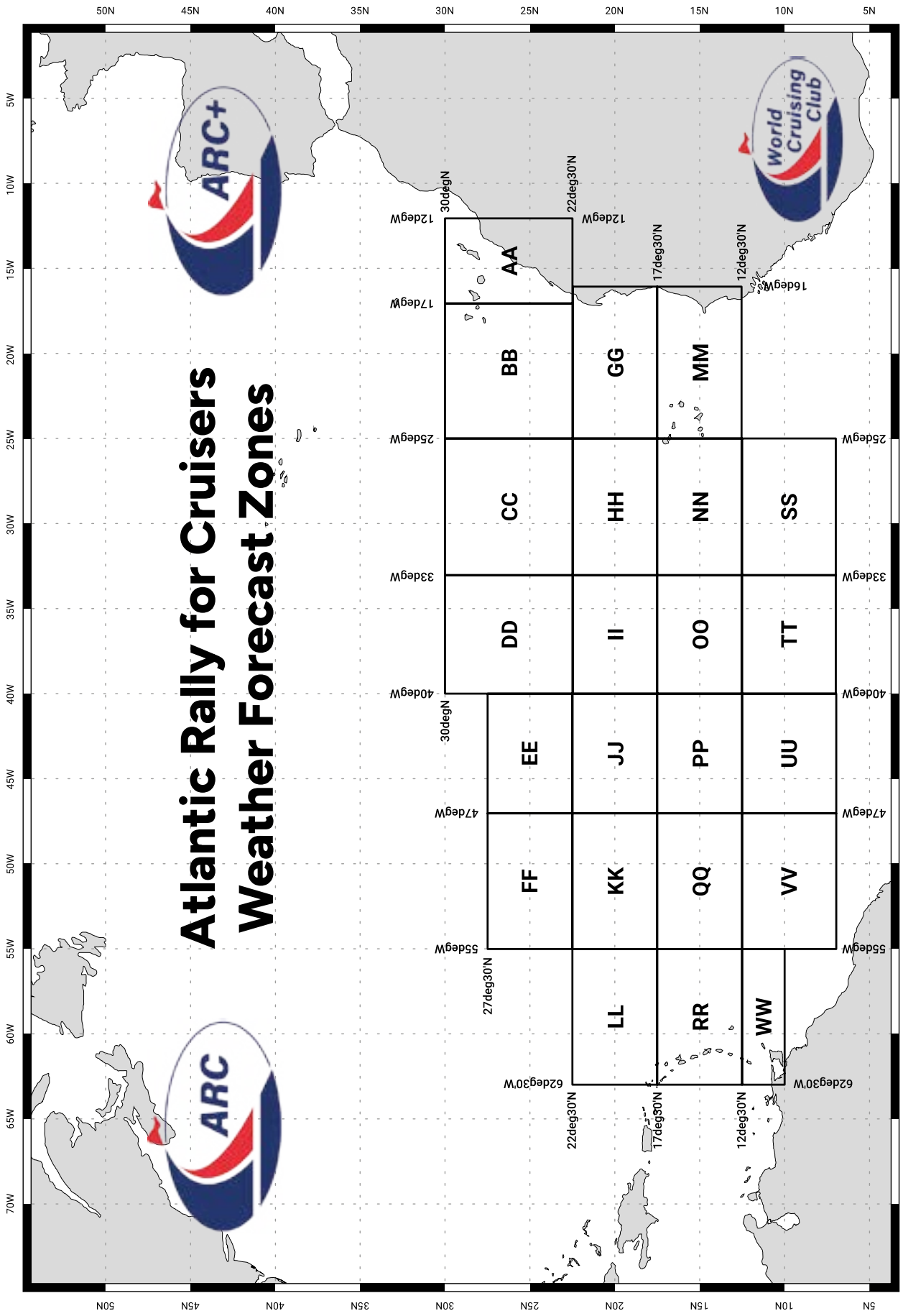
48 hour forecast by rally zone with wind, sea state and weather

AA:
T + 0: NE-E 07-12KTS. SEAS 1-3 SWELLS WNW-NNW 1-3FT (11S).SKIES MOSTLY CLOUDY. CURRENTS NE 0.4KTS.
T + 12: N-NE 08-13KTS. SEAS 1-3 SWLS WNW-NNW 1-3FT (11S). CRNTS NE 0.5KTS.
T + 24: N-NE/VARY/SW 03-08KTS. SEAS 1-3 SWELLS WNW-NNW 1-3FT (11S). CRNTS NE 0.4KTS.
T + 36: SW-W 06-11KTS. SEAS 1-3 SWLS WNW-NNW 1-3FT (11S). CRNTS NNW 0.2KTS.
T + 48: SW-W 11-16KTS. SEAS 1-3 SWLS WSW-WNW 1-3FT (11S). CRNTS WNW 0.1KTS.

BB:
T + 0: SE-S 11-16KTS. SEAS 1-3 SWLS NW-N/MIXED/S 4-6FT (10S). SKIES CLOUDY. CRNTS SSE 0.4KTS.
T + 12: SSE-SSW 16-21 GUSTS 26KTS. SEAS 3-4 SWLS S-SW 4-6FT (10S).. CRNTS S 0.6KTS.
T + 24: SSW-WSW 14-19 GUSTS 24KTS. SEAS 3-4 SWLS SSW-WSW 4-6FT (9S). CRNTS SSW 0.4KTS.
T + 36: SW-W 16-21 GUSTS 26KTS. SEAS 3-4 SWLS SW-W 5-7FT (9S). CRNTS SW 0.2KTS.
T + 48: WSW-WNW 17-22 GUSTS 25KTS. SEAS 3-4 SWLS W-NW 7-9FT (9S). CRNTS SSE 0.3KTS.

CC:
T + 0: SSW-WSW 16-21KTS. SEAS 3-4 SWLS WSW-WNW 4-6FT (9S). SKIES CLOUDY. SCATTERED SHWRS. CRNTS NW 0.2KTS.
T + 12: WSW-WNW 15-20 GUSTS 25KTS. SEAS 3-4 SWLS WSW-WNW 5-7FT (9S).. CRNTS NNW 0.6KTS.
T + 24: SW-W 16-21 GUSTS 26KTS. SEAS 3-4 SWLS WSW-WNW 5-7FT (8S). CRNTS NW 0.4KTS.
T + 36: WSW-WNW 17-22 GUSTS 24KTS. SEAS 3-4 SWLS W-NW 7-9FT (8S). CRNTS NNE 0.8KTS.
T + 48: WSW-WNW 16-21KTS. SEAS 3-4 SWLS WNW-NNW 9-11FT (10S). CRNTS NNW 0.5KTS.

* WINDS AND SEAS HIGHER IN SQUALLS



Weather Forecast Providers

With Starlink and other fast internet services, the access to weather information has improved immensely. Users can browse and compare a wide range of sources, as they would at home.

With satphone, the main choices for forecasts are either calling a forecaster or routing service, or downloading text or GRIB data via email.

For those boats with SSB, radio nets, voice forecasts and data via weatherfax/RTTY or by email with a pactor modem is possible.

Navtex on 518 kHz will work to around 270NM from shore, but is not available in all parts of the world.

HF SITOR (RadioTelex)

RadioTelex (RTTY) is a text based system transmitted via HF radio and is similar to Navtex but with a far greater range,

NOAA Stations Chesapeake NMN, New Orleans NMG nhc.noaa.gov/uscg/

SSB Voice Forecasts

NOAA Stations Chesapeake NMN (November Mike November) nhc.noaa.gov/uscg/

NMN broadcasts the NOAA forecasts for the South West corner of the North Atlantic and the Gulf Stream at the following times and frequencies: 4426, 6501, 8764 kHz at 0330, 0515, 0930 and 6501, 8764, 13089 kHz at 1115, 1530, 2130, 2315 and 8764, 13089, 17314 kHz at 1715.

UK Met Office Shipping Forecast

Prepared four times a day for broadcast on BBC Radio 4 at 0533, 1800 and 0048. All broadcasts are on LW on 1515m (198 kHz), with some also on VHF (FM). They include a summary of gale warnings in force, a general synopsis, area forecasts, and coastal weather reports for sea areas around the UK. metoffice.gov.uk

Includes a North Atlantic high seas forecast.

SSB Radio Nets

Maritime Mobile Net (MMN)	MHz	Time UTC
Transatlantic Maritime Mobile Net	21.400	1300
Worldwide Weather Net	21.303	1300
UK MMN	14.303	0800/1800
Caribbean Maritime Mobile Net	7.250	1100
Caribbean Weather Net	7.086	1120
INTERMAR (German MMN)	14.313	0800/1630
Maritime Mobile Service Network	14.300	1700-0200
ANAVRE (Spanish MMN)	14.323	1630/2230

Weather Fax

USA NMC KVM NMG Download information from weather.gov/marine/radiofax_charts

UK RN Northwood (GYA) 2618.5 kHz, 4610 kHz, 8040 kH, 11086.5 kHz This is a military service available to yachtsmen. weatherfax.com/gya-northwood

Germany Hamburg (DDH and DDK) 3855, 7880, 13882.5 kHz weatherfax.com/ddh3-ddk6-hamburg

When receiving weatherfax via SSB, use USB mode and tune 1.9kHz lower (eg for 3855kHz tune to 3853.1kHz).

A full list of SSB voice and data forecasts can be found in the Admiralty List of Radio Signals NP281/1 (Europe, Africa and Asia) and NP2811/2 (Americas, Far East and Oceania).

GRIB Files

Free GRIB files with viewers or for overlay on an electronic chart:

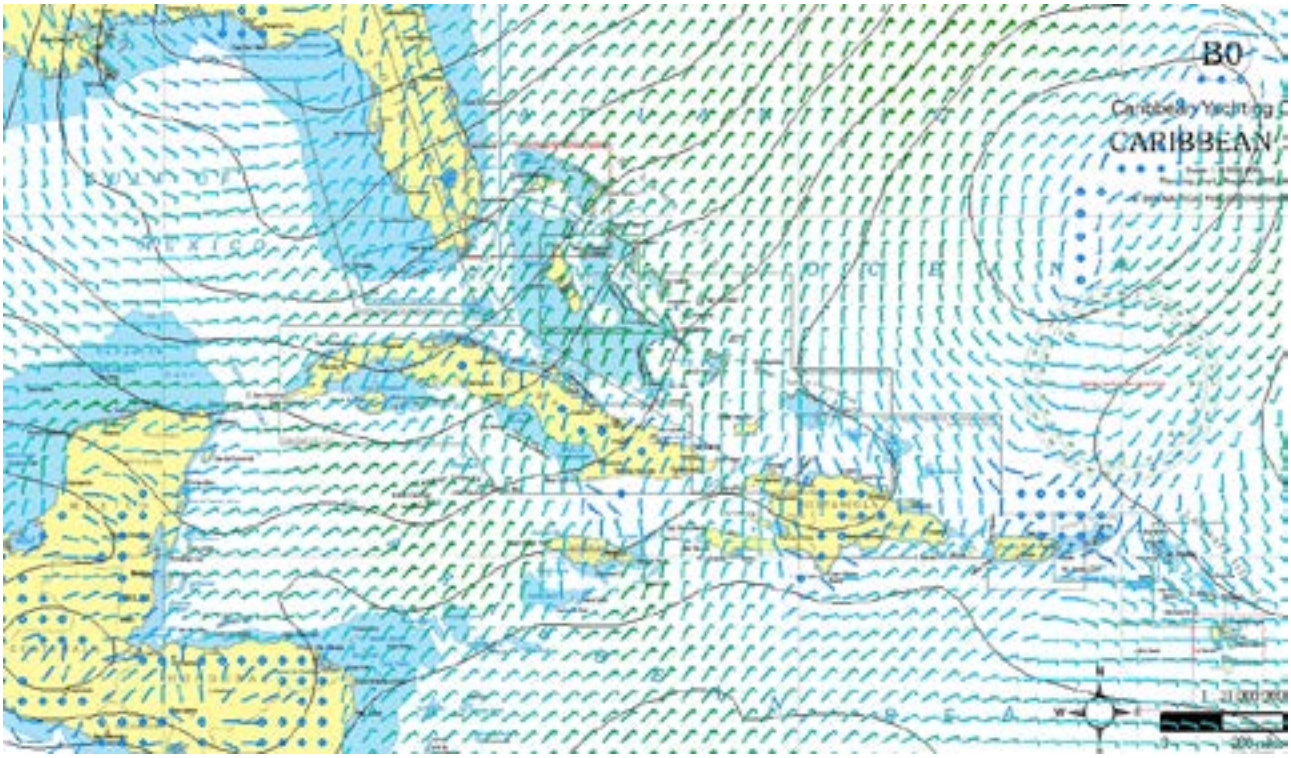
Zygrib zygrib.org

Saildocs saildocs.com

Subscription GRIB services include:

Theyr theyr.com

Most electronic charting systems will allow GRIB files to be displayed on the charts.



Saildocs GTIB data overlaid on an electronic Chart

Free Weather Websites

weather.mailasail.com Lots of information and links to free downloads, including GRIB data. Includes information from Frank Singleton (Frank'sWeather) and Chris Tibbs.

weathercharts.org links to world weather forecast information, satellite images etc.

passageweather.com free forecasts for sea areas worldwide, based on a variety of sources.

ogimet.com Weather maps, data forecasts and directory of information for global weather. In Spanish and English.

Weather Subscription Services

Most weather services are provided on a subscription basis, the information provided and frequency it is sent will depend on the package selected. These can be tailored forecasts for specific routes, or forecast data for a sea area.

Forecasts can be sent in a variety of ways: plain text e-mails; small png graphics for quick download; or GRIB files to integrate with navigation software.

Chris Tibbs	sailing-weather.com
Simon Keeling	weatherweb.net
Ken McKinley	locusweather.com
Ken Campbell	commandersweather.com
Weather Routing Inc.	wriwx.com
Chris Parker	mwxc.com
Buoy Weather	buoyweather.com
Meeno Schrader	wetterwelt.de

Some navigation software offer weather forecasts on subscription.

App based Weather Forecast Providers

There are a number of different app based services, with the best charging a subscription fee.

Predict Wind	predictwind.com
SailGrib	sailgrib.com
Gribview	theyr.com
Squid Moible	squid-sailing.com
Windy	windy.app

Selected National Meteorological Offices

USA	weather.gov/marine/hsmz
UK	metoffice.gov.uk/weather/specialistforecast
France	meteofrance.com

Friendly and Fun Competition

Rally Divisions

World Cruising Club organises rally fleets into divisions:

Cruising

Multihull

Open

Cruising & Multihull Divisions

Boats in these divisions are given a World Cruising Club Time Correction Factor (TCF) or handicap prior to the start. This allows reasonable competition between similar sized boats, makes and models, of varying ages.

The rating is based on boat information given by skippers recorded on the Boat Information page in the members area. The TCF is calculated using the normal parameters of yacht handicapping, including: length overall, waterline length, displacement, beam, draft, sail measurements [I, J, P, E] and an allowance for age.

World Cruising Club Time Correction Factor (TCF)

Your TCF is the number used to adjust your elapsed time (total time taken for the crossing) to enable all yachts to compete on a fairer basis.

For example, a boat with a TCF of 0.995 would have its elapsed time reduced by this factor, while a boat with a TCF greater than 1 would have the elapsed time increased.

Participants should remember that the competition is for fun and enjoyment. A level of sportsmanship and honesty is expected from skippers in accurately providing yacht measurement details and in reporting the number of engine hours used.

Changes to World Cruising Club TCF

World Cruising Club TCFs are calculated based on the information provided by skippers. Provisional TCFs are published prior to the Skippers Briefing. Details of how to request a ratings review will also be issued at this time.

Open Division

Boats not wishing to take part in the competition, or where no measurements are received are placed in the Open Division. Participants in this class will not receive handicaps and will not be awarded prizes.

Overall Results

Overall results are only calculated after all boats have crossed the finish line, and are published before the prize giving, including on the rally website at worldcruising.com

Corrected Time

The following formula is used to calculate Corrected Time (CT):

Corrected Time

CT = [Elapsed Time + (Engine Hours x

Motoring Factor)] x WCC TCF

Elapsed Time

The elapsed time is the total time taken from start to finish, in days, hours, minutes and seconds.

Engine Hours and Motoring Factor

In the cruising and multihull divisions boats are allowed to motor for a limited distance, although use of the engine is penalised. **Motoring is classed as the engine running with the gear lever engaged in 'forward', with the shaft(s) and propeller(s) turning.**

Boats must maintain a full and proper log of daily engine hours used for propulsion during the crossing. These must be submitted together with a declaration for the total hours motored on arrival. Random checks on engine and generator counters may be made.

The boat's total number of engine hours is then multiplied by the Motoring Factor (a time penalty) of between 1.00 and 2.00. This gives a total number of hours, which are added to the boat's elapsed time.

The Motoring Factor is set according to the overall general weather conditions during the crossing, and is only determined after the Finish Line has closed.

Sailors turned scientists

Love the sea and want to be a sea scientist? Find out about projects you can participate in during the crossing.

Join the SeaLabs investigative team

SeaLabs issuing sensors to rally participants in Las Palmas

The SeaLabs Project aims to monitor ocean health by measuring seven key metrics including salinity and temperature using their smart, compact testing sensor. By collecting this data at sea and by a larger group of people, the aim is to support various research projects on the world's oceans.

For more information about the project, and to get involved during your own adventure contact: info@ambienteeuropeo.org

Take part in the world's biggest plankton survey

A unique global study which uses a Secchi disk and a free mobile phone app called Secchi to conduct a vital global study of the sea's plankton. In 2010 a group of marine scientists reported that the phytoplankton had declined globally by 40% since the 1950s. The Secchi Depth measures the clarity of the seawater (using a simple tool you can make yourself), which indicates the amount of phytoplankton at the sea surface. Taking part in this study helps to map the ocean's phytoplankton levels. For more information visit secchidisk.org

Orca Reporting

CA CRUISING ASSOCIATION
GT ORCA ATLÁNTICA

The CA is asking skippers transiting the Iberian Peninsular to report BOTH orca interactions AND uneventful passages. This information helps to map current orca locations and provide boat owners with essential information of current activity when passage planning.

For more information on the project, including reporting processes and links to the interactions map visit: theca.org.uk/orcas

The Cruising Association also provide advice on Risk Reduction and deterrent measures.

My Notes