ARC EUROPE 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.

Contacting Rally Control

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

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

There 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 facilitates 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 Preparation section for ocean pilots and passage planning books. These will provide more detailed ocean observations and landfall information.

East Coast to Bermuda

The weather on the route from the Solomons to Bermuda in May should be prevailing south west winds, and provided there is a favourable forecast, then crossing the Gulf Stream should not present any problems. The passage is around 620 nautical miles and should take 4 to 6 days. The location and spread of the Gulf Stream varies with the season and climatic changes. The current can be as low as a couple of knots or as high as 6 knots northward. Keep an eye on the weather; if the wind is out of the north, opposite to the current, steep waves are formed. Always try and cross the stream at right angles to give the quickest route across. Free online Gulf Stream predictions from:

ocean.weather.gov

cnmoc.usff.navy.mil/navoceano

Sint Maarten to Bermuda

The weather on the route from Sint Maarten to Bermuda is dominated by the position of the Azores (Bermuda) High. On leaving Sint Maarten, the winds will typically be easterly, veering south-easterly, the actual direction depends on the position of the high and if it is ridging towards Florida. Watch for any cold fronts moving off the coast of the USA and crossing the route.

As you get closer to Bermuda the North Atlantic weather systems start to influence the winds, as low pressure systems progress through the area generally passing North of Bermuda. Heading north it is advisable to allow for a westerly setting current, the strength of which is influenced by the prevailing wind. For example, when there has been a wind of 15 knots blowing for a 24 hour period there is likely to be a current of up to half a knot, which builds as the wind strengthens or continues to blow.

An area of calms may well be experienced as you sail out of the easterlies and into an area influenced by a ridge of high pressure that may extend to Florida; these are known as the 'Horse Latitudes'. Apart from patience, the only other way of getting through is to motor.

You can expect it to start to get colder after about four days. Depending on the exact position of any low pressure systems passing to the north, the weather approaching Bermuda can get windy, and quite rough, especially when compared to Caribbean trade wind sailing.

Approaching Bermuda

Bermuda is a low-lying set of islands that are difficult to identify. To protect sailors going onto the reefs to the north of the islands there is a large restricted area that prohibits approach from this direction. Bermuda Radio monitors the waters around Bermuda as well as controlling the harbour traffic.

Bermuda Radio will put a radar tag onto your vessel as soon as the boat is within about 50NM, and will keep an eye on the course during the approach to the Islands.

As soon as you are 25NM away, you should contact Bermuda Radio (VHF Ch 16) identify your boat and advise that you are with ARC Europe. They should be expecting you.

Information required from each vessel by Bermuda Radio is collected from ARC Europe participants prior to the start and passed to them in time for your arrival, ensuring minimum hassle when first reporting in.

The fleet depart Sint Maarten

Topping-up on fuel in Bermuda

Bermuda to Azores

The route chosen for this passage is influenced by the position of the Azores High, and associated low pressure systems. On leaving Bermuda it is sometimes necessary to head north for stronger winds, but how far depends on the exact position and tracking of depressions.

For a smooth comfortable sail east, it is advisable to sit on the top of the Azores High in westerly or north-westerly winds. Or for stronger winds, favourable current, but a slightly rougher ride, slightly further north on the bottom of a depression. At the time of year that ARC Europe crosses the Atlantic, there is a conveyor belt of lows one after the other, and so the latter option is simple to achieve. If the winds are too strong, head a little south. Wet weather gear will definitely be required from an early stage on this leg, and it will get cold, depending on which route is opted for. Arriving in the Azores you will find warmer weather, but it will be much less predictable on a daily basis.

With the Azores High to the south of the Azores, expect colder and bigger seas when getting closer to the Azores. However, if the Azores High is over the Azores, there will be light winds or even head winds close to the Azores.

On approaching the Island of Faial, be warned that there is a strong current setting to the south in the Pico-Faial Channel. By staying close to the airport coast, and following it towards Horta, it is possible to pick up a counter current to your advantage, and also avoid the high winds off Pico.

Azores to North Europe

Again this route is controlled by the position of the Azores High but yachts bound for the English Channel are usually faced with a tougher passage as the prevailing winds in early summer are from the north east. On this route it is normally necessary to go north from the Azores to prevent being set into the Bay of Biscay by the westerly winds and east setting current. Depending on the position of the Azores high long periods of calm may be encountered giving way to lots of motoring hours. Once far enough north and into the westerly winds of a depression you are set for a fast trip into the channel. However, the chance of no gale on this course at this time of year is very remote and full wet weather gear is definitely required, as are thermals. In the approaches to the English Channel visibility can become poor, strong tidal currents can be expected as well as plenty of shipping.

Dock paintings in Horta.

Azores to Lagos

Once again the weather on this route is dominated by the Azores High, but also by the position of any thermal low off the coast of Portugal. On leaving the Azores set course for a point just below Lisbon (up current, up wind). A patch of calm weather is usually encountered before typically picking up the Portuguese Trades (northerlies) 250 to 300 miles off the coast and it is here that the winds and the south setting current will be at their strongest.

Winds on route are likely to be north-easterly, northerly and finally north-westerly on approaching the coast.

For the last 24 hours set a course for about 8 miles north of Cape St. Vincent to offset against the northerly wind and south setting current. This will bring you close to the busy shipping area, with a very busy Traffic Separation Scheme (TSS) that needs to be negotiated. The wind will be far stronger

in the vicinity of the Cape – as much as 25 knots of wind in the afternoon and early evening. For this reason try to approach the Cape at first light when there is less wind, and it will be easier to spot the many fishing pots and nets in the area.

If approaching at night, light westerly winds will be replaced by warm wind off the land with the familiar smell of land wafting out onto the water!

An added hazard off Cape St. Vincent in June/July is the possibility of local sea fog. The final approach to Lagos means rounding Pointe de Piadade and often beating into the wind for the final mile or two to the finish line. For early afternoon arrivals in Lagos, winds funnel down the channel, which has the advantage of making berthing on the waiting pontoon easier as it is straight into the wind.

A word of caution: On passage from the Azores approx 150 miles west-south-west from Cape St. Vincent are the seamounts of the Gorringe Bank discovered in 1875 by an American exploration vessel. These three seamounts (Josephine, Ormonde and Gettysburg) are where the depth of water goes from 1000s of meters to just 24 meters at Gettysburg. Very large commercial traffic will avoid the area and although they do not pose a threat of running aground to small sailing yachts the often increased swell and confused seas should be avoided.

Orca Advisory

In summer, orcas migrate between the Straits of Gibraltar and Galicia, Spain, following the tuna. There have been well-publicised interactions between orcas and yachts, and while there are still many questions around why some boats attract negative attention, there are now more trustworthy resources on orca movements and for avoiding and repelling 'attacks'.

The ARC Europe Rally team are monitoring the information available in English, Spanish and Portuguese. Updates will be provided during the Rally if necessary.

It is important to note that the vast majority of boats sailing the Iberian coast do so without ever seeing an orca.

Orca Resources

Noonsite.com Collated resources from monitoring organisations. noonsite.com/cruising-resources/orcas-and-yachts/

The Cruising Association - practical advice from the CA, including risk reduction and deterrent measures, reporting processes and links to an interactions map. theca.org.uk/orcas

orcaiberica.org/en (Atlantic Orca Working Group GTOA) - latest position reports and advice

PBO July 2024 article- www.pbo.co.uk/seamanship/orca-encounters-on-boats-what-you-need-toknow-84077

orcas.pt - Up-to-date orca sighting reporting service, providing advice to sailors.

Orca Reporting

You can also report any orca interactions, sightings or uneventful passages on the orcas.pt telegram group.

This information helps to share current orca locations and provide boat owners with essential information of current activity when passage planning. More information on how to join the group can be found on their website orcas.pt

The Cruising Association is also asking skippers transiting the Iberian Peninsular to do the same on their platforms. theca.org.uk/orcas/interaction-report-form

Orca reporting can also be done via the following apps:
Orcinus reporting app (download from the app store)

GT Orcas reporting app (download from the app store)

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 of 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

Synopsis

See Weather Forecast Zones Map on next page

Date & Time of issue

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

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.

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.

T=01 DEC 0600 UTC

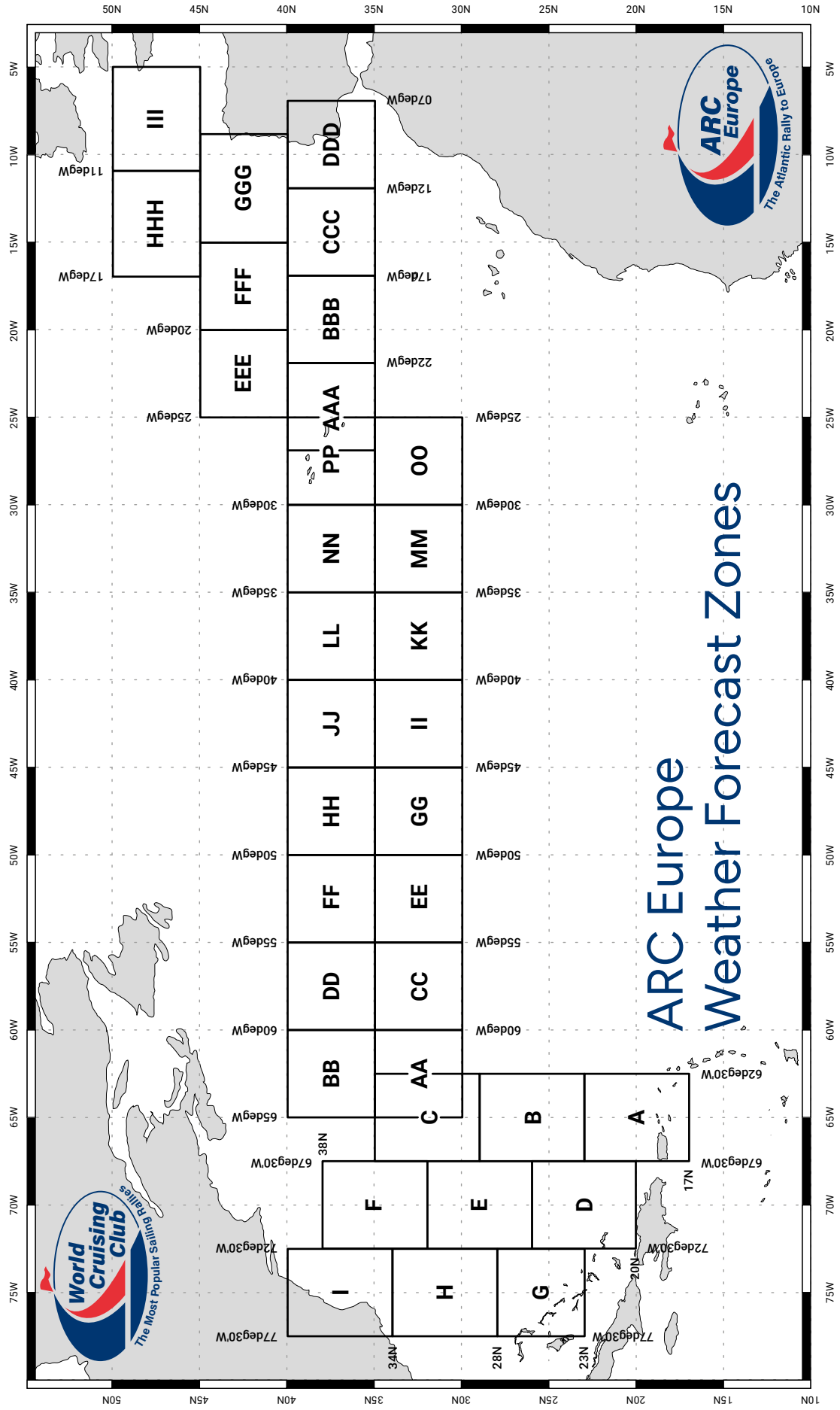
AA:
T + 0: NE-E 07-12KTS. SEAS 1-3 SWELLS WNW-NNW 1-3FT (11S).SKIES MOSTLY CLOUDY. CURRENTS NE 0.4KTS.
T + 12: N-NE 08-13KTS. SEAS 1-3 SWLS WNW-NNW 1-3FT (11S). CRNTS NE 0.5KTS.
T + 24: N-NE/VARY/SW 03-08KTS. SEAS 1-3 SWELLS WNW-NNW 1-3FT (11S). CRNTS NE 0.4KTS.
T + 36: SW-W 06-11KTS. SEAS 1-3 SWLS WNW-NNW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

Typical ARC Weather Report



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.

www.weather.gov/marine/uscg_broadcasts

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. It includes a North Atlantic high seas forecast.

metoffice.gov.uk

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
Martime Moible Service Netwok	14.300	1700-0200
ANAVRE (Spanish MMN)	14.323	1630/2230

SSB Radio Nets

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:

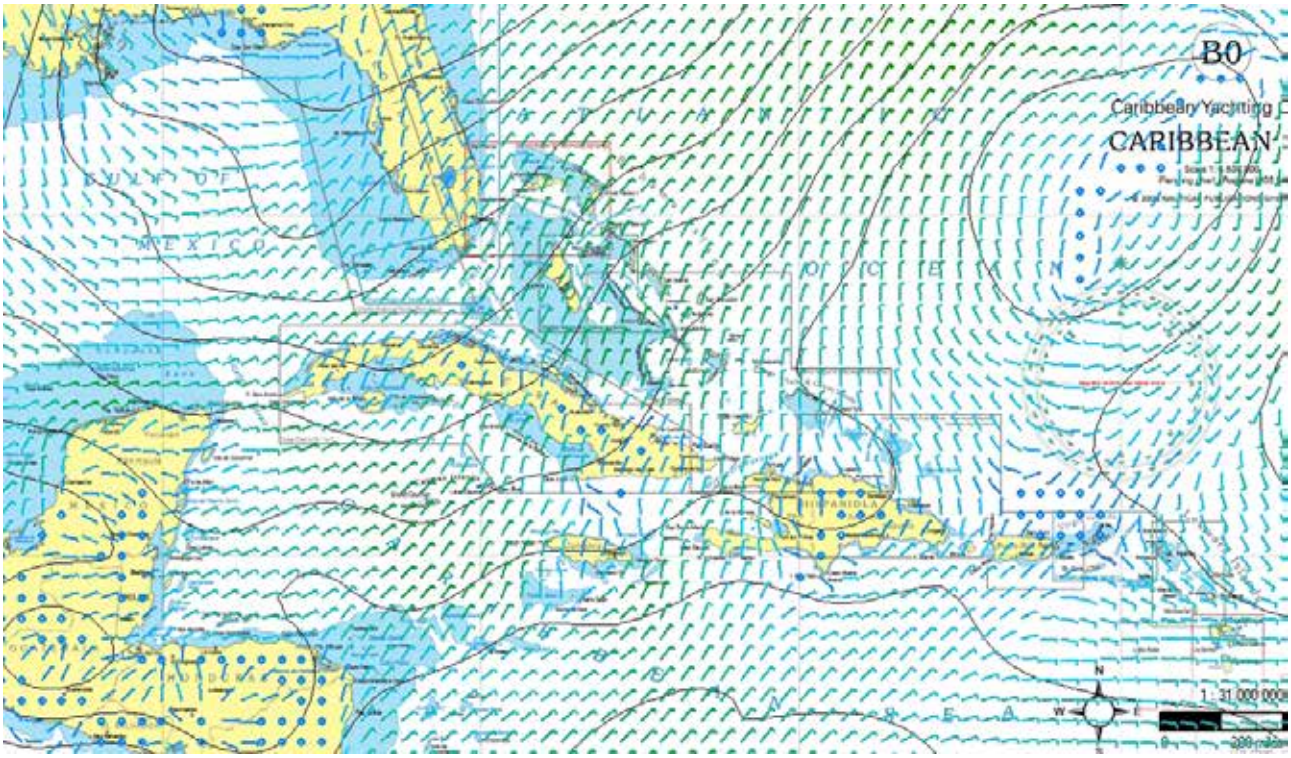
Zygrib zygrib.org

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 GRIB 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	weather.mailasail.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	squid-sailing.com
Windy	windy.app

Selected National Meteorological Offices

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

Friendly and Fun Competition

Each boat is 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.

ARC Europe Prizegiving in Lagos

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. They are published 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 division 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.**

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 experienced by the fleet.

Sailors turned scientists

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

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

Secchi Disk

My Notes