



**Fort Lauderdale to La Spezia in Late April and into May**

**Prepared For:**

**Captain Fake Name – M/Y Sample**

**Date:**

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## Introduction:

Below, please find a climatology study for a transit from Fort Lauderdale, Florida to La Spezia, Italy with a stop for fuel in the Azores and Gibraltar and a departure in late April, along with our recommendations. For the Azores, we assume a stop in Horta. An appendix is also included for more detailed weather information.

## Synopsis of Weather Features:

For the North Atlantic, the main weather features during April will typically be a semi-permanent Atlantic high-pressure ridge and any E'ward moving frontal systems, associated with gales/storms within the main gale/storm track. During this time, the west to east oriented axis of the semi-permanent high-pressure ridge is oriented along approximately 31N-33N. Ridging typically extends as far south as approximately 15N, as far north as approximately 40N, and from approximately 65W-70W E'ward through the far E'rn Atlantic. At times, a portion of the ridge will "break away", and move NE'ward toward and into the Iberian Peninsula, W'rn continental Europe, as well as into/across much of the W'rn Mediterranean Sea before moving further east and slowly weakening.

During spring, we begin to see a more N'ward progression of the North Atlantic main gale track and weaker, less frequent frontal passages across the W'rn/central Atlantic. During April, the main gale track typically extends from the Gulf of St Lawrence NE-E'ward through the Grand Banks/SE'rn Labrador. From there, gales normally take one of two tracks: 1<sup>st</sup>, NE'ward toward Greenland/Iceland where systems slowly weaken, or 2<sup>nd</sup>, ENE-E'ward, remaining north of approximately 50N until reaching the British Isles/North Sea region. Associated cold fronts extend S'ward to approximately 27N-28N, and reach the U.S. East Coast approximately every three days, slowly weakening in waters east of approximately 50W-55W.

One can at times find secondary lows developing on the aforementioned cold fronts, normally doing so off the SE'rn U.S. Coast, then deepening and moving NE'ward along fronts toward the Canadian Maritimes, where they become part of the main gale track. Behind fronts, transitory high-pressure ridges weaken as they move SE'ward out of south-central Canada and across the Central/E'rn U.S., then move E'ward into/across the W'rn Atlantic and weaken further, before eventually merging with the above-mentioned semi-permanent Atlantic high-pressure ridge.

During May, a thermal trough will be located between the Iberian Peninsula and Morocco, generally along 09W-10W. This trough will have periods of strengthening as ridging to the west moves E'ward. This generally causes the pressure gradient between the two features to strengthen, and the trough will drift W'ward towards 14W-15W. Once out this far, the trough generally weakens within a day or so.

While the Atlantic tropical season doesn't begin until June 01<sup>st</sup>, tropical cyclones can form in May. Most of the time if a cyclone were to form, it would be in the SW'rn Caribbean, continuing either N-NW'ward into the Gulf of Mexico, or N-NE'ward into the W'rn Atlantic where it then joins the gale



track as an extratropical cyclone or as just the remnants. While very uncommon, there are instances where tropical storms form in April. For instance, Tropical Storm Arlene in 2017 was the last system to form in April. It meandered between Bermuda and the Azores. If a tropical system were to form in April, it would first begin as a nontropical low. It would require ideal conditions with unusually high sea surface temperatures and low upper-level shear.

For the Mediterranean Sea in May, as we assume you will be in this basin by then, the main gale/storm track moves across the Central North Atlantic and passes over the N’rn British Isles to the N’rn North Sea and Norwegian Sea. Associated cold fronts track E’ward across W’rn Continental Europe every 3-4 days and track through the W’rn Mediterranean Sea. These fronts can stall from the Ligurian Sea SW’ward to near the Balearic Islands and linger for 2-3 days before dissipating or will track through Central Italy and the Adriatic Sea but will weaken considerably while tracking E’ward over E’rn Europe.

Along these frontal boundaries, secondary lows can develop off the East Coast of Spain or just south of the Balearics and track NE’ward over the Central Tyrrhenian Sea and Italy, then turn NE’ward over E’rn Europe. Lows can also form along slow-moving or stalled fronts and over the Ligurian Sea. These lows are called “Genoa Lows” and usually remain stationary for a time, normally no more than 2-3 days, before either tracking NE’ward into N’rn Italy, or SE’ward into and across the E’rn Tyrrhenian Sea or across Central Italy and into the Adriatic Sea.

Elsewhere, ridging from high pressure will typically build NE-E’ward toward and into the Iberian Peninsula, in the wake of cold fronts. With time, ridging often tends to “break away” and form a separate high that moves across France and over the W’rn Mediterranean Sea. These highs tend to move SE’ward over N’rn Africa and the W’rn Ionian Sea before weakening, and/or E’ward across much of Continental Europe.

When fronts/lows and ridges interact with one another, a “Mistral” will develop through the Gulf du Lion, often extending as far south as the Balearics and S’rn Sardinia and as far east as the Easternmost Cote d’Azur and North Coast of Corsica. Mistral winds can last 3-5 days but can last for up to a week when weakening fronts or troughs of low pressure are stronger than normal and/or are slower moving and stall/persist for lengthier time periods. The Mistral will normally diminish and end altogether when the front/trough weakens further and dissipates and the ridge of high pressure over France shifts over the Gulf du Lion.

## **Routing Information:**

**Fort Lauderdale to Horta – Recommend routing direct to abeam Matanilla Shoal, RL just south of Bermuda, then RL direct to Horta.**

### *Pros:*

- Winds are 27 knots or less nearly 98% of the time.

Weather Routing Incorporated



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- Winds are following to aft-quartering 31% of the time.
- Swells are 3 meters or less 75% of the time.
- Swells are following to aft-quartering 26% of the time.
- A slight positive average current factor of 0.06 knots.

*Cons:*

- Winds are 28 knots or higher 2% of the time.
- Winds are head or head quartering 21% of the time.
- Swells are above 3 meters 24% of the time and will remain between 2 and 3 meters 48% of the time.
- Swells are head or head quartering 26% of the time.

**Alternative Route: Fort Lauderdale to Horta – Routing to/through the NW and NE Providence Channels, then RL direct to Horta.**

*Pros:*

- Winds are 27 knots or less nearly 99% of the time.
- Winds are following to aft-quartering 27% of the time.
- Swells are 3 meters or less 80% of the time.
- Swells are following to aft-quartering 21% of the time.
- A slight positive average current factor of 0.02 knots.

*Cons:*

- Winds are 28 knots or higher 1% of the time.
- Winds are head or head quartering 26% of the time.
- Swells are above 3 meters 20% of the time and will remain between 2 and 3 meters 49% of the time.
- Swells are head or head quartering 28% of the time.

**Horta to Gibraltar – Recommend routing north of Pico/Sao Miguel then direct to Gibraltar.**

*Pros:*

- Winds are 27 knots or less 99% of the time.
- Winds are following to aft-quartering 30% of the time.
- Swells are 3 meters or less 83% of the time.
- Swells are following to aft-quartering 48% of the time.
- A neutral average current factor of 0 knots.

*Cons:*

- Winds are 28 knots or higher 1% of the time.
- Winds are head or head quartering 13% of the time.



- Swells are above 3 meters 17% of the time.
- Swells are head or head quartering 5% of the time.

**Gibraltar to La Spezia – Recommend routing direct abeam Cabo de Gata, direct north of the Balearic Islands, then direct to La Spezia.**

*Pros:*

- Winds are 27 knots or less 99% of the time.
- Winds are following to aft-quartering 36% of the time.
- Seas are 3 meters or less 98% of the time.
- Seas are following to aft-quartering 41% of the time.
- A slight positive average current factor of 0.01 knots.

*Cons:*

- Winds are 28 knots or higher 1% of the time.
- Winds are head or head quartering 33% of the time.
- Seas are above 3 meters 2% of the time.
- Seas are head or head quartering 33% of the time.

**Conclusions:**

For your leg from Fort Lauderdale to Horta, we recommend the route “**Matanilla Shoal, RL just south of Bermuda, then RL direct to Horta**” when departing in late April. This will allow you to utilize the Central Atlantic high as you voyage north of the ridge axis. In general, breezes located to the east of Bermuda will remain aft of your beam to following as they will be W’ly to SW’ly. The most difficult part of this voyage will be the threat of a cold front moving offshore the SE’rn U.S. every 3-4 days. NE’ly breezes tend to persist behind each cold front to the west of Bermuda, which would put conditions on your bow as you are initially getting underway for the first few days. We would have you depart the day after a cold front continues offshore to allow the sea state to ease, and for NE’ly breezes to ease. Once past Bermuda, we expect conditions to remain ideal. If ridging become too strong or as gales trend further south than expected, we would have you deviate on a more S’rn route to maintain good stance within the ridge. Routing to near Bermuda allows for a potential stop if needed.

Alternatively, you may be able to route through the NW and NE Providence Channels, then make a direct RL to Horta. To allow this route to happen, it depends on a few factors. First, trade winds within the Bahamas would have to weaken for at least 2-3 days. Second, aforementioned cold fronts remain to the north of the Bahamas, not allowing for a Matanilla route but allowing a Bahamas route. Third, the ridge axis tends further south towards 28N-30N, allowing for SW’ly breezes to tend more south and favorably for this departure.





Ideally, we would not recommend routing to Maderia due to strong trade winds located to the south of the ridge axis in late April and the strong N'ly breezes that can be found from Portugal and S'ward towards Maderia.

For your leg from Horta to Gibraltar, we recommend routing “**north of Pico/Sao Miguel then direct to Gibraltar**“ and departing in the early days of May after you arrive and fuel in Horta, which should generally remain ideal. The biggest concern we will have to monitor is the thermal trough that generally remains between Iberia and S'ward towards Morocco. Strong N'ly breezes and swell can develop along the coast of Portugal S'ward towards Maderia if the trough strengthens and if high pressure over the Azores drifts E'ward. The key to allowing this departure to be as comfortable as possible will be to time a lull in the N'lys. Thankfully, N'ly breezes will remain on the beam and should remain within constraints even if the trough were to strengthen moderately while underway. We see no benefit in routing further south towards Maderia then routing direct to Gibraltar, this would add unnecessary distance and would cause the N'ly breezes to locate forward of the beam as you make the turn NE'ward.

Finally, for your leg to La Spezia from Gibraltar, departing in May could require additional stops depending on various weather features. First, while Poniente conditions over the Alboran Sea will be following, they could make the sea state uncomfortable for the first couple of days. This could delay the departure for a few days. Second, an area of low pressure tends to develop over the Ligurian Sea/ NW'rn Italy every few days. If broad ridging is located over the Bay of Biscay/ France, this could cause a Mistral to form. If a Mistral develops while underway, we advise to stop either in Barcelona or the Balearics (Palma de Mallorca, Ibiza). Once the Mistral eases, generally the low over the Ligurian Sea eases as well, allowing for you to continue towards La Spezia within a broad ridge of high pressure. Third, we will have to monitor the tracks of cold fronts as they can trend as south as the W'rn Mediterranean Sea. These cold fronts are normally not severe, but they could increase the likelihood of encountering a squall. If broad ridging remains over the W'rn Mediterranean for several days, this could allow for a continuous voyage to La Spezia.

Please see below the graphic on the dominate weather features within the North Atlantic in the months of April/May and the weather events in the Mediterranean in May.

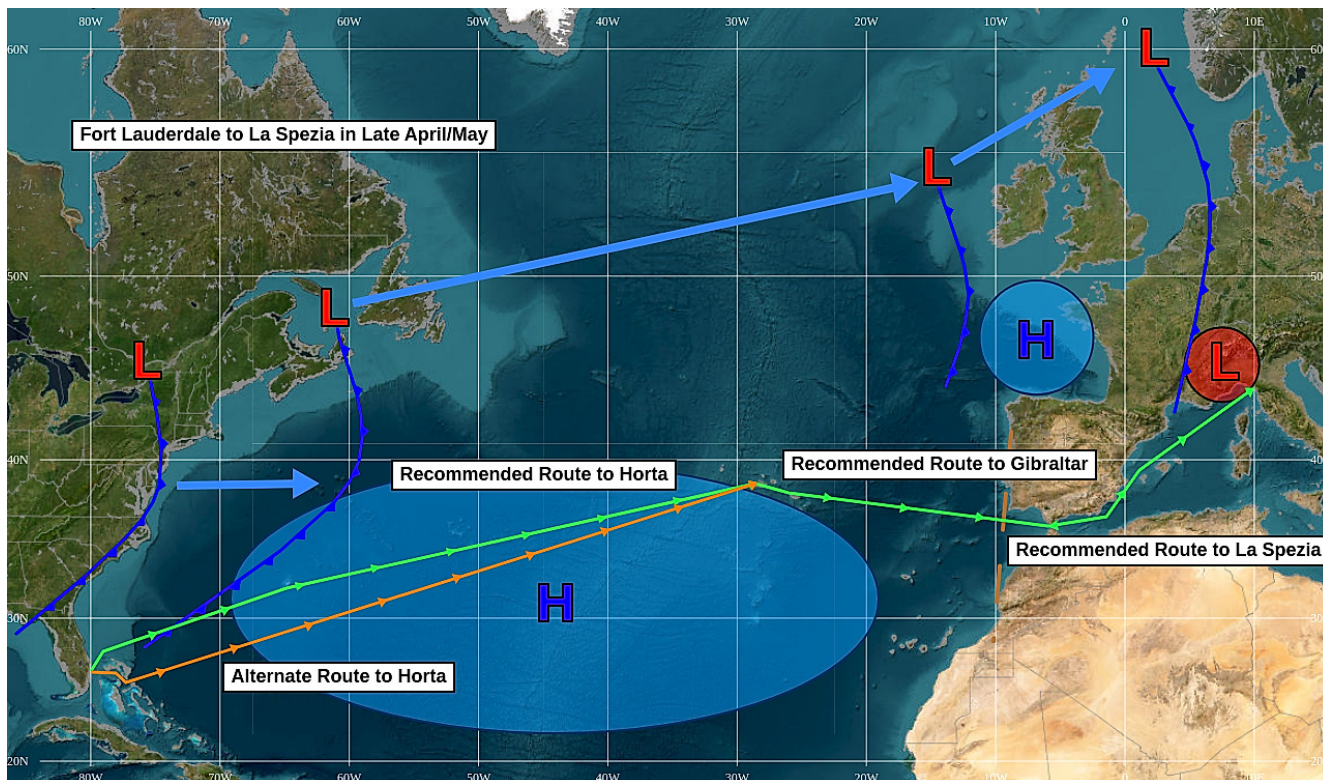
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As pictured above, the green arrowed line indicates the recommended route. The orange arrowed line indicates an alternate route. From left to right is the track and development of the gales and associated cold fronts. In the center of the Atlantic is the area of high pressure. Towards the Mediterranean Sea, the high in the Bay of Biscay and the low over NW'rn Italy are the driving forces of the Mistral. Cold fronts can span as far south as the W'rn Mediterranean Sea before lifting NE'ward into Central Europe. The dashed orange line along Portugal and towards Morocco is the thermal trough.

We trust this assists. Thank you.

