

To: MV XXXXXX, Captain XXX XXXXX

From: Ken McKinley, Locus Weather, 207-236-3935, 207-596-4972, locuswx@midcoast.com

Preliminary Forecast for ocean voyage from the Cabot Strait to Szczecin, Poland

Date and Time Prepared: 2100 UTC Sun 22-Dec-19

Desired Departure Date: Mon 23-Dec-19 2100 UTC from Cabot Strait

Average speed of vessel: 8.5 knots

### **Weather Factors:**

At 1800 UTC Sunday: High pressure was centered north of Bermuda with a ridge extending north-north-east to the east of Cape Breton Island. A trough of low pressure extended from western Quebec south-east across the lower St. Lawrence valley and into western New Brunswick.

The high and the ridge will shift east through tonight and the trough will shift east as well and a low center will develop in the trough later at night. The low will be centered along the east coast of Cape Breton Island Monday morning. Through the day Monday the low will move east to the south of Newfoundland but will weaken later in the day as a stronger low moves east to the lower St. Lawrence Valley and its circulation expands east over the Gulf of St. Lawrence. This low will move east-southeast through Monday night and will absorb the weakening low to the east, and it will be centered south of southwestern Newfoundland Tuesday morning. The low will become quite a bit stronger during the day Tuesday while moving east-northeast and will be centered east of Cape Race by evening with its circulation extending well south over the Atlantic and west over the Gulf of St. Lawrence and over Nova Scotia at that time. The low will intensify while moving slowly east through Tuesday night and Wednesday and will be centered near 48N/45W by Wednesday evening with a rather large circulation continuing to extend over Newfoundland and over the Atlantic to the south. High pressure will develop east of Nantucket Wednesday morning and will move southeast through the day Wednesday with its center reaching about 37N/64W Wednesday evening.

Through Wednesday night the high will weaken and dissipate and the intense low center will drift slowly north and its circulation will expand farther west over the Gulf of St. Lawrence. A new low center may develop south of Cape Sable Wednesday night then on Thursday this low will could move quickly east and may be centered near 40N/48W by Thursday evening. Meanwhile the intense low east of Newfoundland may drift slightly back to the west with its larger circulation continuing to cover a good portion of the central Atlantic from Maritime Canada eastward and south to around 35N. The new low may intensify rapidly through Thursday night and Friday while turning northward to the east of the Newfoundland low and eventually merging with it.

The details of the possible new low developing south of Cape Sable at midweek and its possible evolution are very uncertain at this time, but it appears more certain that the large low east of Newfoundland will persist as an intense system through the end of the week. This low and its circulation appears likely to shift north through next weekend and weaken a bit.

### **Analysis:**

There are two issues having to do with the low which intensifies east of Newfoundland in the Tuesday/Wednesday time frame. First, as the low initially intensifies, it will produce gale force NW winds south of Newfoundland beginning later Tuesday and continuing through Wednesday morning, and this will lead to seas exceeding 4 meters east of 58W and south of 46N by daybreak Wednesday, and above 5 meters east of 56W and south of 45N at that time. Winds and seas will ease through Wednesday afternoon and Wednesday night along a route toward a waypoint of about 43N/50W.

The second concern occurs later in the week when the intense low expands back to the west, and this will lead to another period of WNW or NW gale force winds over the entire region south and east of Newfoundland from later Thursday through Friday, and expanding east of 50W by Friday afternoon. Some borderline storm force winds are possible at times. As noted above, the details of the weather pattern through this period are still a bit uncertain, but it seems likely that seas will build to at least 5 meters in this region, and some areas of 7-8 meter seas are possible. Conditions are likely to slowly improve next weekend as the intense low lifts to the north and weakens a bit.

At this time, it appears that a route to the south of the Grand Banks will be best for a few of reasons. First, staying out of the shallower waters will make the sea state a bit more manageable by reducing the chance of shorter period seas, and also the vessel will not be interacting with any fishing operations which may be ongoing over the banks. Also, a route farther south will be farther away from the center of the intense low later next week which may mitigate the sea state a bit.

Even with the more southern route, though, winds and seas are likely to exceed the limits for the vessel for significant periods of time through the upcoming week. Winds and seas will generally be aft of the vessel which may make conditions tolerable, but some slowing is likely.

For illustrative purposes, the forecast is presented for a route toward a waypoint of 42.7N/50.0W, and from there a rhumb line toward the English Channel, and assumes a speed of 8.5 knots. It is unlikely that the vessel will be able to maintain these speeds in the higher seas, and the presence of the higher seas may require some changes in the voyage plan.

#### **Forecast:**

Time: Monday afternoon 12/23/2019 (1800 UTC, 1400 AST)

Expected approximate position: approaching Cabot Strait

Forecast Winds: NW 12-16 kts.

Forecast Sea State: 0.5-1.0 m

Comments: Mostly cloudy. Winds backing to SW through the evening and to SSW after midnight, speeds increasing. Seas building over more open waters once clear of the Cabot Strait.

Time: Tuesday wee hours of the morning 12/24/2019 (0600 UTC, 0200 AST)

Expected approximate position: 46.3N/58.0W

Forecast Winds: SSW 15-29 kts.

Forecast Sea State: 1.0-1.5 m

Comments: Showers likely through the morning, becoming isolated by afternoon. Winds shifting to NW prior to daybreak and increasing significantly through the morning and midday hours, backing to WNW. Seas building.

Time: Tuesday afternoon 12/24/2019 (1800 UTC, 1430 NST)

Expected approximate position: 45.3N/55.8W

Forecast Winds: WNW 31-35 kts. with gusts over 40 kts.

Forecast Sea State: 3.0-3.5 m, periods 6-8 seconds.

Comments: Mostly cloudy. Winds veering to NW through the evening and becoming stronger, seas building.

Time: Wednesday wee hours of the morning 12/25/2019 (0600 UTC)

Expected approximate position: 44.3N/53.6W

Forecast Winds: NW 35-40 kts. with gusts over 45 kts.

Forecast Sea State: 4.5-5.0 m, periods 10-11 seconds

Comments: Mostly cloudy, a few showers of rain or snow possible. Winds easing slightly later in the morning, but seas a bit higher.

Time: Wednesday mid afternoon 12/25/2019 (1800 UTC)

Expected approximate position: 43.3N/51.4W

Forecast Winds: NW 32-36 kts. with gusts over 40 kts.

Forecast Sea State: 5.0-5.5 m, periods 10-11 seconds

Comments: Variable clouds. Winds backing to WNW through the evening, slightly lighter. Seas easing a bit through the evening.

Time: Thursday wee hours of the morning 12/26/2019 (0600 UTC)

Expected approximate position: 42.8N/49.0W

Forecast Winds: WNW 28-32 kts., a few higher gusts

Forecast Sea State: 4.5-5.0 m, periods 10-11 seconds.

Comments: Partly to mostly cloudy. Winds backing to W and becoming a bit lighter through the morning and midday hours, seas easing slightly, but becoming more confused as longer period swells from the N spread over the route.

Time: Thursday mid afternoon 12/26/2019 (1800 UTC)

Expected approximate position: 43.1N/46.6W

Forecast Winds: W 22-26 kts.

Forecast Sea State: 4.0-4.5 m, swell periods 12-13 seconds from the north, mixed with shorter period swells from the WNW.

Comments: Mostly cloudy, rain or showers possible, a few heavier squalls later in the evening. Winds lighter and more variable for a time in the evening, becoming WNW and increasing quickly after midnight.

Time: Friday pre-dawn 12/27/2019 (0600 UTC)

Expected approximate position: 43.5N/44.2W

Forecast Winds: WNW 35-40 kts.

Forecast Sea State: 4.0-4.5 m confused

Comments: Rain with embedded heavier showers or squalls. Winds backing to WSW later in the morning, a bit lighter. Seas higher through the morning and midday, but a bit less confused as swells from the west become predominant.

Time: Friday mid afternoon 12/27/2019 (1800 UTC)

Expected approximate position: 43.8N/41.8W

Forecast Winds: WSW 30-35 kts.

Forecast Sea State: 5.0-5.5 m, periods 10-11 seconds

Comments: Occasional showers and squalls. Winds a bit stronger through the day.

Time: Saturday pre-dawn 12/28/2019 (0600 UTC)

Expected approximate position: 44.2N/39.3W

Forecast Winds: WSW 35-40 kts.

Forecast Sea State: 5.0-5.5 m, periods 10-11 seconds.

Comments: Partly cloudy. Winds backing to SW and easing through the morning and midday hours.

Time: Saturday mid afternoon 12/28/2019 (1800 UTC)

Expected approximate position: 44.5N/36.9W

Forecast Winds: SW 30-35 kts.

Forecast Sea State: 5.0-5.5 m, periods 10-11 seconds

Comments: Variable clouds. Winds and seas easing a bit through the evening and overnight.

Time: Sunday pre-dawn 12/29/2019 (0600 UTC)

Expected approximate position: 44.9N/34.5W

Forecast Winds: SW 25-29 kts.

Forecast Sea State: 4.0-4.5 m, periods 10-11 seconds

Comments: Variable clouds. Winds a bit lighter through the day, seas easing.

Time: Sunday late afternoon 12/29/2019 (1800 UTC)

Expected approximate position: 45.2N/32.1W

Forecast Winds: SW 21-25 kts.

Forecast Sea State: 3.0-3.5 m, periods 9-10 seconds.

Comments: Variable clouds. Winds veering to W and becoming lighter, seas subsiding.

Time: Monday pre-dawn 12/30/2019 (0600 UTC)

Expected approximate position: 45.6N/29.7W  
Forecast Winds: W 15-19 kts  
Forecast Sea State: 2.0-2.5 m  
Comments: Partly cloudy.

*NOTE: Positions given above are not necessarily intended to be waypoints, but rather just a general location for purposes of providing weather conditions in that area. These positions should not be used for navigation.*

### **Recommendations:**

The situation in the Atlantic through the upcoming week will be difficult, and seas are likely to exceed the 3.5 meter threshold for the ship more often than not along the route used above. At times seas could exceed 5 meters. In fact, along just about any possible route heading southeast from the Cabot Strait, high seas are likely to be encountered along with at least gale force winds.

Looking at other options, seas would not be as high through the middle of the week along a route farther north closer to Newfoundland, but east of Cape Race seas could exceed 7 meters Wednesday night into early Thursday. After a brief drop in seas in this area later Thursday night and early Friday, seas could build to 9 meters or more Friday night and into the weekend along this more northern route. Therefore taking a more northern route across the Grand Banks does not at this time appear to be feasible.

Slowing the vessel early in the week to keep from running into the higher seas shown above by Wednesday could mitigate that situation, but at this time it appears that even higher seas would then impact the vessel toward the end of the week due to the vessel being farther west at that time. Actually this may occur anyway because of slowing needed with the higher seas at midweek.

The bottom line here is that this passage is likely to be very rough and may exceed the capabilities of the vessel.

It may be worth considering seeking a port in southern Newfoundland, or even heading southwest to Halifax to wait for a better weather pattern for the crossing.

In this morning's report, I noticed the vessel was making 11 knots. This is considerably faster than the vessel speed I was provided. I have used the 8.5 knot speed which was provided to me. Please advise what the ship's speed will average for the crossing in various situations. Also, please let me know what the schedule flexibility for the crossing is, and whether a delay is feasible. Also, what is the routing flexibility? How far south can the ship go to find better conditions?

If the ship cannot endure seas of more than 3.5 meters, then my recommendation is to delay the crossing until a better pattern prevails.

Call or email with any questions. Please address the questions above, and I will send a final departure forecast tomorrow incorporating this information.