SAMPLE REPORT · HISTORICAL VOYAGE · PREDICTIONS AS SERVED, OUTCOMES REALIZED

PREDICTIVE MARITIME INTELLIGENCE · POLARIS BY DMI

Voyage Intelligence Brief

A single completed dry-bulk run into Santos, Brazil's largest grain gateway, shown exactly as Polaris forecast it: the arrival predicted at departure, re-issued at every daily checkpoint, and set against the berthing that actually occurred.

33.7 h	~29 d	3.7 h
Departure ETA miss vs realized arrival (about 1.4 days)	Voyage length, departure to berth	Mean error across the final 48 hours to arrival

The voyage

The vessel below completed a laden dry-bulk run into Santos, arriving at berth on 02 Mar 2026, 12:56 UTC. Polaris tracked the approach for roughly 29 days and re-issued its arrival forecast at each daily checkpoint. Santos is Brazil's largest grain gateway, and its dry-bulk queue is the dominant source of arrival uncertainty on a corridor this long.

Vessel	NEFELI.GR
IMO	9673824
Class	Dry bulk · Bulk Carrier
Deadweight	81,056 t
Built · flag	2014 · Marshall Islands
Destination	Santos, Brazil
Berthed	02 Mar 2026, 12:56 UTC
Approach horizon tracked	**~29 days (692 h)**

What we said at departure

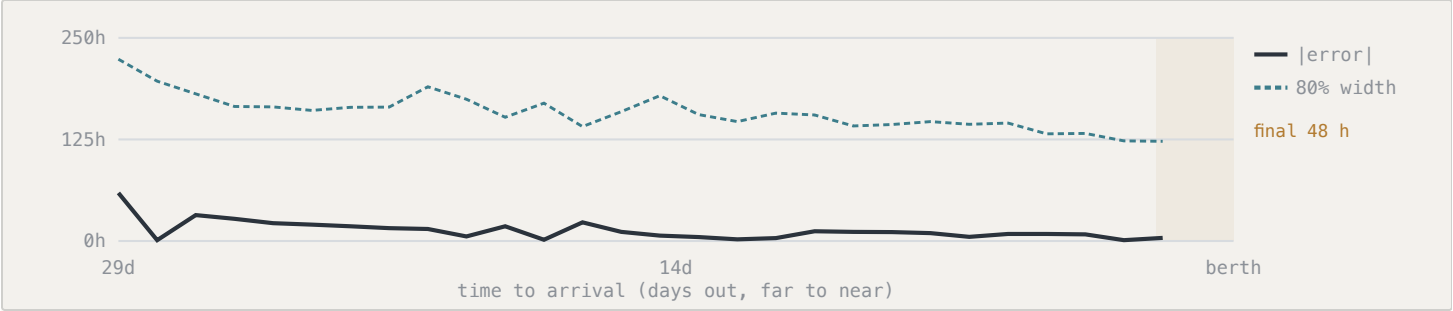
At departure, Polaris put the arrival 33.7 hours late of the realized berthing, a miss of about 1.4 days on a voyage of roughly 29 days, and the realized arrival fell **inside the served 80% window**. The forecast is a decomposed number: a sea-passage estimate from the route and the vessel's speed, plus a port queue-wait drawn from the Santos dry-bulk queue-wait nowcast.

Served ETA (issued at departure)	03 Mar 2026, 22:39 UTC
80% arrival window	01 Mar 2026, 06:02 UTC → 11 Mar 2026, 02:01 UTC
90% arrival window	28 Feb 2026, 23:51 UTC → 15 Mar 2026, 19:30 UTC
Sea passage (transit)	721.2 h
Port queue-wait (Santos dry-bulk queue-wait nowcast)	4.5 h
Served ETA (total)	**725.7 h**
Realized arrival (measured)	**02 Mar 2026, 12:56 UTC**

The band is the proof. The realized arrival landed inside the served 80% window and the point missed by 33.7 hours. The window is not decoration; it is the interval a chartering desk sizes a laycan or a demurrage exposure against, and it is disclosed with its coverage below.

How the forecast sharpened en route

The forecast is re-issued at each daily checkpoint as the voyage progresses. By the final 48 hours to arrival, the re-issued forecasts had narrowed to a mean miss of 3.7 hours, and the 80% window tightened in step. The line below is every checkpoint the model served on this voyage; the band always brackets the error it is calibrated to carry.



DAYS OUT	REALIZED REMAINING	PREDICTED REMAINING	|ERROR|	80% WINDOW WIDTH
28.8 d	692 h	751 h	59.1 h	224 h
20.8 d	500 h	515 h	14.7 h	190 h
13.8 d	332 h	337 h	4.9 h	156 h
9.8 d	236 h	225 h	11.2 h	142 h
6.8 d	164 h	159 h	5.0 h	144 h
4.8 d	116 h	107 h	8.6 h	132 h
2.8 d	68 h	69 h	1.0 h	123 h
1.8 d	44 h	40 h	3.7 h	123 h

Selected checkpoints; 28 in total. |error| = the absolute miss of the re-issued arrival at that checkpoint. The 80% window width is the interval the model served at that checkpoint, which narrows as the vessel closes on the berth.

The queue at Santos

At the vessel's arrival window, the Santos dry-bulk nowcast showed 44 vessels ahead in the queue and an expected wait of 15 hours by the served center, 6 to 152 hours across the modeled spread. The nowcast is a distribution, not a single minute, because the wait at a bulk-export anchorage is driven by berth availability and stem readiness the model cannot see directly.

Vessels ahead in queue (as-of)	44
Expected wait, served center (c2_climatology)	15 h
Modeled wait, p10 / p50 / p90	6 / 23 / 152 h
80% wait band	6 → 152 h
90% wait band	**5 → 180 h**

Calibrated, and disclosed as such. Across all gated cells, the nowcast's 80% wait bands captured 78.6% of realized waits and the 90% bands 88.2%, under the published Gate M3a calibration. Where a wait is not resolvable from AIS, it is carried in the band, not papered over in the point.

How accurate is this in general

This voyage is one draw from a validated panel. Across 52,164 held-out test voyages at 97 ports, the departure ETA carries a median absolute error of 15.41 hours; the 80% arrival window held on 78.7% of those voyages and the 90% window on 89.2%. Mombasa regressed against the baseline and is disclosed, not dropped.

SURFACE	MDAE (H)	COVERAGE 80 / 90	DISCLOSURE
Departure ETA (52,164 legs, 97 ports)	15.41	78.7 / 89.2	Mombasa regressed against the baseline and is disclosed, not dropped
En-route ETA (matched legs)	~13.0 (leg-weighted)	78.2 / 88.7	the pooled instant-weighted figure is grain-cautioned; per leg the en-route ETA is never worse than departure
Queue-wait nowcast (19 ports)	Gate M3a PASS	78.6 / 88.2	the Singapore-tanker anchorage conflates wait with dwell and is disclosed

MdAE = median absolute error (the honest center); coverage = the share of voyages whose realized outcome fell inside the model's 80% / 90% interval (targets 80 / 90). The en-route figure is leg-weighted; per leg the en-route ETA is never worse than the departure ETA and sharpens toward arrival.

Why the numbers carry their bands. We publish our full error tables, including the cells that failed, and every number here is measured on held-out voyages, not backtested marketing.

About this sample

01 How the voyage was chosen

This voyage was chosen as the one whose departure-time absolute error equals the cohort median among legitimate (non-hidden-stop) Santos dry-bulk test voyages. It is a typical result, not a best case.

02 Data basis

Positions are AIS-derived. The predictions shown were generated by the Polaris models at the timestamps listed and are evaluated against the objectively measured berth arrival, so every claim in this brief is verifiable in hindsight.

03 Method

Polaris pairs a physics-informed passage baseline with gradient-boosted quantile heads and conformal-calibrated intervals; evaluation is median-error-led, with coverage disclosed per cell.

04 Scope

This sample uses a completed historical voyage. A live engagement covers the client's own vessels and ports, subject to current port coverage.

Predictions in this document were generated by Polaris models and are shown exactly as served. Numbers as of 2026-07-06.