

Berth window adherence and what it costs your gate

How a deviation at the quay becomes a queue at the gate, and the four numbers you need before you can argue about it.

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1. The two clocks

Almost every dispute about arrival punctuality we are asked to settle turns out to be a dispute about which clock is being read. The carrier measures against the published schedule, which was fixed weeks ago. The terminal measures against the berth window agreed the previous evening, which is the only number its yard plan can actually use. Both parties are correct about their own measurement, and neither number tells the gate team anything useful.

Before any improvement work is possible, the two organisations have to agree on a single arrival measure with a single owner. In our experience that measure is the forecast ETA against the agreed berth window, stated in minutes, published at a fixed time each evening.

2. What the distribution looks like

Adherence figures are usually quoted as a single percentage, which hides the shape of the problem. In a typical twelve-week sample at a mid-size North Range terminal, around 60 per cent of calls arrive inside the agreed window and the mean deviation sits somewhere between 80 and 110 minutes. That mean is not the useful number.

The useful number is the concentration. Two-thirds of total lateness normally comes from roughly one call in eight. Those calls are not random: they are dominated by weather on the previous leg, a missed tide, or a berth conflict at the previous port. In most cases they are known — or knowable — by 18:00 on the day before arrival.

3. Why the gate pays for it

A late vessel does not simply shift work later. It compresses it. The same discharge volume now has to move through the yard in fewer hours, which raises yard density in exactly the blocks the gate depends on, which raises the reshuffle rate, which lengthens every truck transaction that touches those blocks.

This is why gate queues so often peak two to four hours after a berthing that nobody at the gate was told about. The gate team is absorbing a decision that was made on the quay.

4. The four numbers

- Window adherence: the share of calls whose all-fast time falls inside the agreed berth window. One definition, one owner, published weekly.
- Forecast accuracy at T-12: the absolute error, in minutes, between the 18:00 forecast ETA and

the actual all-fast time. This is the number that tells you whether acting on the forecast is safe.

- Reshuffle rate by block: non-productive moves per productive move, reported per yard block rather than as a terminal average. The average always looks acceptable.
- Truck turnaround time at the 90th percentile, by hour: not the median. The median is what management sees; the 90th percentile is what the haulier experiences and quotes to your customer.

5. Acting on the forecast

Once forecast accuracy at T-12 is known and stable, gate slot release can follow the forecast rather than the published schedule. This is a small operational change with a disproportionate effect: it moves truck arrivals away from the compressed discharge window without reducing total gate capacity.

It requires one thing that is harder than it sounds — the terminal has to be willing to publish a forecast that may be wrong, and the customer has to be willing to plan against a forecast rather than a promise. Where both sides accept that, adherence and turnaround improve together. Where one side does not, no amount of measurement helps.

6. What this does not fix

Berth window discipline will not fix a terminal that is structurally short of quay length, crane capacity or yard area at its current volume. If the bottleneck model shows the constraint binding at the quay rather than at the interface, the answer is capital investment and the honest thing to do is say so early.

Nor will it fix a yard allocation policy that puts long-dwell export boxes next to the gate. That is a separate problem with a separate, cheaper fix.

About this paper

Written by Dr. Annika Rehder, managing partner, Hafenlogik. The figures quoted are ranges observed across our own engagements since 2013 and are stated as ranges deliberately: our clients' exact volumes are confidential. Nothing in this paper identifies a client.