



Veridical Insights

TIER 1 · DOCK & YARD FLOW SNAPSHOT

What a one-week dock and gate study looks like

Measured from four cameras the site already had. No new hardware, no network access, footage deleted after.

ILLUSTRATIVE SAMPLE, NOT CLIENT DATA

This is a sample to show what the report looks like. "Example Distribution Co." is fictional and every site number in it comes from a simulated week. We have no client case study yet. Page 5 shows step 2, the model, on four simulated weeks of the same site. Page 6 is real: our measured accuracy on public test footage.

Site: Example Distribution Co. (fictional), 6 dock doors, one truck gate

Window: 5 weekdays (Mon-Fri) · 4 cameras: gate, dock doors 1-3, dock doors 4-6, yard · sampled every 2 s

Delivered in person, with the evidence pack and a deletion certificate

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Morning trucks wait for doors 1-4 while doors 5-6 sit mostly empty

"Drivers complain about the morning wait and we pay detention a few times a week. Is it the number of doors, or how we use them?" (what the site asked; fictional)

59 min **Median time on site for trucks arriving before 09:00** grade B
vs 46 min for trucks arriving later. 117 of the week's 239 trucks arrived before 09:00. The extra time is spent waiting at the gate, not at the door: median door time is 42 min before 09:00 and 40 min after.

87 % **Doors 1-4 occupied, 06:00-10:00** grade A
while doors 5-6 were occupied 32 % of the same hours. Doors 5-6 are only used after a truck has waited about 25 minutes, so the morning queue forms with two doors free.

78 trucks **Waited more than 15 minutes at the gate** grade B
33 % of the week's trucks. The gate queue peaks at 4.4 trucks on average around 08:50; the 90th-percentile gate wait is 33 minutes.

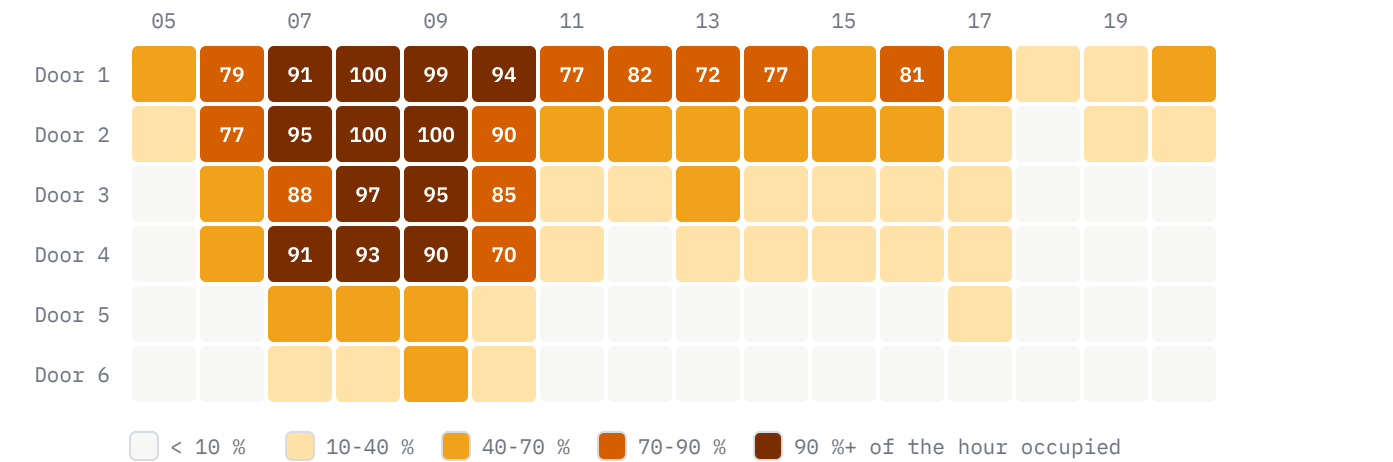
Ranked fix list

#	change	truck-hours saved / week	effort
1	Send morning trucks to doors 5-6 as soon as doors 1-4 are full. A rule for the gate, not a capital change. Trucks waiting over 15 minutes at the gate drop from 78 to 33 in the re-run week.	15-25 h	a gate rule, this week
2	Fix 1, plus move about two arrivals an hour from 06-09 to 10-12 appointments. Needs carrier agreement; worth testing with the two biggest carriers first.	18-42 h (total)	carrier calls, 1 month
3	Check before you add a door. The measured week does not show a door shortage after 10:00; re-measure after fix 1 before spending on more.	avoids the spend	a before/after re-measure

Savings are ranges (10th-90th percentile) over 100 simulated weeks run with and without the change; "78 to 33" re-runs this week's arrivals with fix 1. They are an estimate, not a promise; a before/after re-measure checks the real effect. Grades: A = measured on a camera with a clear view and checked against a hand count; B = measured, with a known gap (here: a truck's gate wait and door time are matched across two cameras); C = estimated; D = told, not seen. Grades on this sample show how a live report is marked; these pages were not hand-counted.

Not covered by this study: the inside of the trailers, paperwork time in the office, door 6 after 18:00 (the yard camera's view is blocked by parked trailers), and anything about individual drivers or staff. No faces, no names, no scoring people. If your yard system already logs gate-in and door times, the cameras add what it can't see: early arrivals, doors it thinks are free, dropped trailers and time after check-out.

Doors 1-4 run near full from 06:00 to 10:00; doors 5-6 stay below half



Share of each hour a door held a truck or trailer, mean of 5 weekdays (Mon-Fri) · dock cameras 1-3 and 4-6 · numbers shown where 70 %+ · illustrative

door	stays in the week	occupied, 05-21	median time at the door
Door 1	73	70 %	44 min
Door 2	66	57 %	39 min
Door 3	45	39 %	37 min
Door 4	35	34 %	45 min
Door 5	12	13 %	54 min
Door 6	8	7 %	36 min

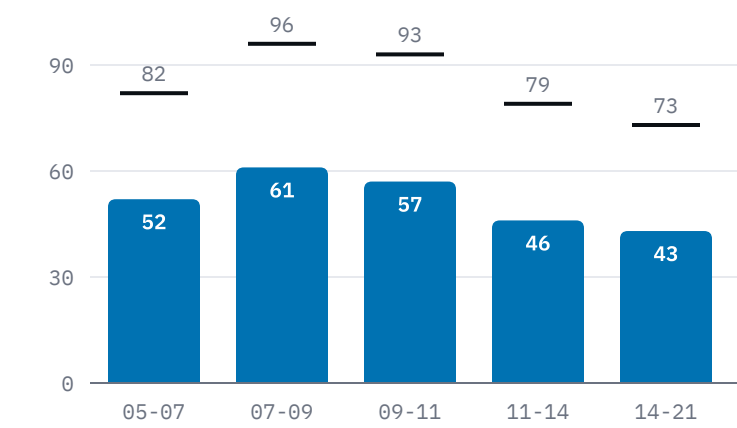
What this means

The doors are not short of capacity over the day: after 10:00 the six doors are occupied 27 % of the time on average. The morning crunch comes from **which** doors are used. Doors 5-6 take a truck only after it has waited about 25 minutes (the rule the site described), because staging is farther away and a truck there can take a few minutes longer to work. That cost is small next to the gate wait it removes (fix 1).

Doors 5 and 6 had few stays this week, so their median door times are rough.

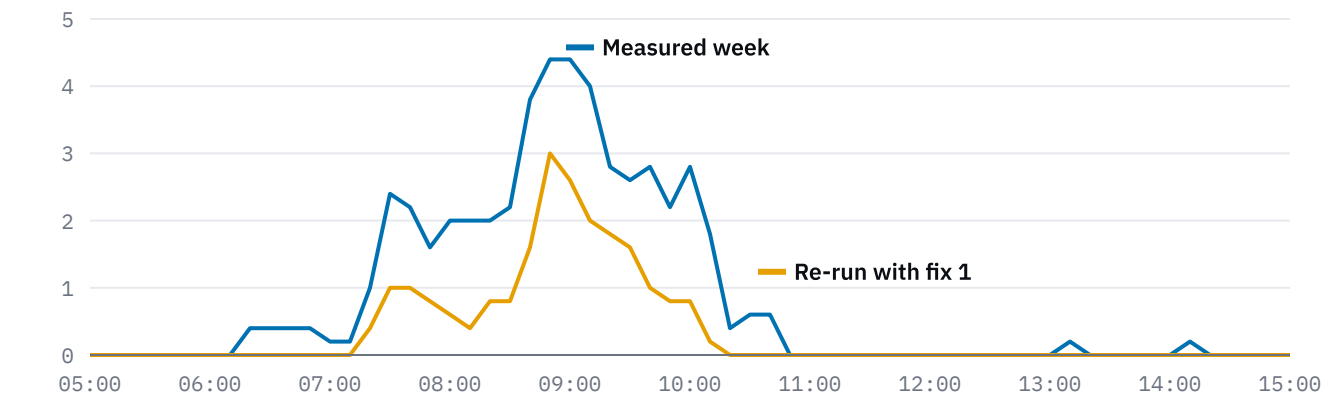
How a stay is counted: a truck or trailer box sits inside the door's marked strip on the ground for 60 seconds or more. A stay ends when the strip is empty for 60 seconds. Trailers dropped without a tractor count as stays.

Trucks that arrive 07:00-09:00 spend the longest on site



Minutes from gate in to gate out, by arrival time · bar = median, line = 90th percentile · n = 34, 83, 35, 36, 51 trucks · 5 weekdays (Mon-Fri) · illustrative

In this simulated week, fix 1 cuts modelled gate-wait minutes by about 58 %



Trucks waiting at the gate, 10-minute steps, mean of 5 weekdays, 05:00-15:00 · gate camera · fix 1 line is an estimate from the measured arrivals · illustrative

Week in numbers

trucks through the gate	239 (48 a day)
time on site, median / p90	53 / 87 min
gate wait, p90	33 min
truck-hours on site	222 h

Evidence pack (delivered with the report)

- the event table: every arrival, door stay and departure with its time
- one blurred still per finding, people and plates blurred
- the hand-count check behind each grade
- the study settings, so a re-measure uses the same rules

Four weeks of the same site: two to learn from, two the model never saw

What the check found first. A plain model (any free door, first come, first served) replayed the calibration weeks' real trucks with a 90th-percentile wait error of 19 min: trucks waited far longer than six free doors explain. The model then tested door rules against the same weeks and found the site's: doors 5-6 open only after a truck has waited about 25 min: the rule the site described, found from the footage alone. The model keeps it; the first what-if lifts it.

Calibrated on 10 days, checked on 10 held-back days with 6 doors. Nothing clearly disagrees with what happened, but the held-back days are too few to tell for yard wait, median; yard wait, 90th percentile, so what-ifs that lean on those are directional until more weeks are checked.

measure (daily mean, held-back days)	measured	model	error	agreed	days inside model band	result
Trucks a day	53 trucks	48 trucks	-9.6 %	± 5.3 trucks	80%	within
Door utilisation	42 %	39 %	-7.9 %	± 4 %	80%	within
Door time, median	40 min	40 min	-0.6 %	± 4.0 min	90%	shown
Door time, 90th percentile	69 min	67 min	-2.9 %	± 10 min	80%	shown
Yard wait, median	11 min	2.6 min	-76.5 %	± 2.8 min	70%	too few days to tell
Yard wait, 90th percentile	39 min	26 min	-33.0 %	± 9.8 min	60%	too few days to tell
Most trucks waiting at once	6.9 trucks	5.3 trucks	-23.1 %	± 1.7 trucks	80%	within

The model learned only from the earlier days, then predicted the held-back days it never saw. **within** = the error is inside the accuracy agreed before the study and nothing disagrees; **too few days to tell** = past it, but the held-back days are too few to call it wrong; **miss** = the model is wrong there, and no what-if leans on it. A two-week export can be calibrated but only lightly checked; about four weeks (two to learn, two held back) checks it properly.

What-ifs (the calibrated model, many simulated days)

change	door utilisation	yard wait, 90th percentile
Use doors 5-6 at once, no 25-min wait first	39 % to 39 % (90 % range of the change +0 to +0 points)	25 to 11 min (90 % range of the change -23 to -4)
One door fewer (6 to 5)	39 % to 46 % (90 % range of the change +6 to +10 points)	25 to 34 min (90 % range of the change +0 to +26)
+20 % trucks	39 % to 46 % (90 % range of the change -4 to +20 points)	25 to 38 min (90 % range of the change -11 to +48)

Fictional site, 1003 simulated trucks, our real dock model, printed as it came. The held-back weeks had +10 % trucks a day, and yard waits swing hard with that; "too few days to tell" means more weeks, not a better table.

Every number carries its window, its source and a grade

Method

- **Capture check first.** Each camera's export is checked for blur, glare, gaps and the recorder clock before any model runs.
- **Detection and tracking on our own machine.** Open-weights vision models find trucks and trailers and follow them between frames. No cloud AI sees your footage; there is no face recognition and no face templates.
- **Doors and gate as marked strips.** We draw each door and the gate lane on one still per camera and count stays inside them.
- **A person checks the findings.** A person on our side spot-checks each headline number against a hand count on a sample of the footage; that check sets the grade. On a live site we re-measure, we don't assume.

Measured accuracy on public synthetic yard footage (real test results; not a client site, not a week)

test (public synthetic yard footage, 3 gate cameras)	result
truck arrivals and departures caught	31 of 39 (79 %)
events we reported that were real	31 of 34 (91 %)
dwell (stop to start) within 1.5 % of the true value	9 of 11 stops
far trucks (under 60 px tall, one camera) caught, before / after zooming the far zone	14 % / 72 %

Source: Synth-Yard-MCMOT-1, Chilla, Stein, Pionzewski, Urbann, Rutinowski, Kirchheim (Fraunhofer IML / TU Dortmund), zenodo.org/records/12744424, CC BY 4.0. Three gate cameras, about 2.5 minutes of frames each, a computer-rendered yard in clear weather, with exact ground truth. Misses came from trucks parked side by side and trucks creeping into place. Real footage (rain, night, glare) will be harder; that is why every study carries its own hand-count check and says what it could not see.

Privacy

- We don't install anything or connect to your network.
- Sound is stripped; people and plates are blurred in every frame we show you.
- Totals for doors and the gate. We do not name people or score staff. The evidence pack is not a disciplinary file.

Deletion

- The export and every working file are deleted on the date in the agreement.
- You get a deletion certificate listing what was destroyed, with file hashes.
- You keep the report and the evidence pack.

What this study needs from you

One week of footage from up to four camera views that see the dock, the gate or the yard, exported from your recorder (we send a one-page export guide), and a 20-minute call. Fixed price, no subscription; findings delivered in person.