Seeing a War Without Standing in It

What open ships, planes, satellites and markets reveal about the 2026 Gulf conflict, and where they go blind

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Abstract. Journalists in conflict zones are dying at record rates: 129 press members were killed in 2025, by one count. Most of us will never go, and would help little if we did. Can we understand a war from outside, safely, with what is already public? We built an open observatory, GlobalWatch, that reads five *witnesses* that need nobody's permission: ship transponders, aircraft transponders, thermal satellites, markets and aviation regulators. We tested it on the conflict that began on 28 February 2026. Money and ports speak clearly. Brent rose 63.3% to its peak close, and its 20-session move sits at the 99.7$^{\text{th}}$ percentile of all such moves since 2015; port calls inside the Persian Gulf fell to 28% of their earlier rate (95% CI 26–30%), while control ports held at 98%. Free transponder feeds go blind exactly where it matters: only 17.5% of 68,680 vessel positions were under six hours old, none lay in the Red Sea, and the Gulf was quieter than every other lane we measured, so a silence there cannot be told apart from a coverage gap. Our own platform also erred: a hand-written milestone claimed $140 Brent on 4 March, when the close was $81.40, and a composite gauge read "LOW" while three of its four inputs were offline. The contribution is not a sharper eye but an honest one: every reading should travel with a measure of what could have been seen. Code, data and scripts are open.

Key points.

- **Seen clearly:** prices and port calls moved at once, far outside normal range, and independent sources agree.
- **Seen poorly:** free ship and aircraft feeds cannot tell an empty sea from an unheard one.
- **Seen wrongly, by us:** three errors in our own dashboard, found by auditing it with the same method.
- **The rule:** never show a silence without showing how well the sensor could hear.

1 The question

Journalists are dying faster than ever. The Committee to Protect Journalists counted 129 press members killed in 2025, the most in its records, after 124 in 2024 as first reported (Committee to Protect Journalists, 2025, 2026). Most of us have no combat experience. Going would add one more body to a war zone, not one more witness to it.

So the question is practical. From outside, can we understand what is happening? Do liners and cargo ships still move? Do aircraft still fly, and which skies do they refuse? What do prices say? What burns? And can a small team, without permissions or budgets, answer these in a way that anyone can use today?

Two things make the question harder than it looks. First, reporting is itself a sensor, and it has eyesight. It sees what reporters can reach and editors choose to print (Earl et al., 2004; Weidmann, 2016). Event datasets built on reporting inherit that eyesight (Leetaru and Schrodt, 2013; Raleigh et al., 2010; Sundberg and Melander, 2013). Second, the machines that do not need reporters have eyesight too. A ship is a loud object: it announces itself every few seconds to anyone who listens. Whether anyone listens is another matter.

Our answer, the most important thing first: *we can see that something changed, fast and cheaply, by reading systems that cannot lie cheaply, namely money, ports and regulators. We often cannot see why. In some places we cannot see at all, and the instrument will not say so unless it is made to.*

We make four contributions. (i) An open observatory that reads five independent witnesses. (ii) An *observability audit*: a procedure for deciding whether an empty cell on a map is a quiet place or a deaf receiver. (iii) Evidence from the first eight months of the 2026 Gulf conflict. (iv) An audit of our own platform, which found three errors; we report them because the method is only credible if it is turned on its author.

2 Related work

Open-source investigation turned public traces into evidence long before this war (Higgins, 2021). **Conflict event data** (ACLED, UCDP, GDELT) code reports into counts and coordinates (Leetaru and Schrodt, 2013; Raleigh et al., 2010; Sundberg and Melander, 2013); their known weakness is that reporting is uneven across space and time (Weidmann, 2016). **Remote sensing** sees without reporters: nightlights tracked the Syrian crisis (Li and Li, 2014), airborne sampling measured the Kuwait oil-fire smoke (Hobbs and Radke, 1992), and thermal sensors now detect fire at 375 m (Schroeder et al., 2014); Witmer (2015) reviews the field. The environmental toll of the Gaza war has been assessed the same way (United Nations Environment Programme, 2024).

Transponders. Ship AIS reveals fisheries at global scale (Kroodsma et al., 2018), satellite imagery finds the fleets that switch it off (Park et al., 2020), and AIS has been turned into trade nowcasts (Cerdeiro et al., 2020). Aircraft ADS-B, collected by volunteer receivers, produced research-grade air-traffic data (Schäfer et al., 2014; Strohmeier et al., 2021). Since flight MH17 was shot down over Ukraine (Dutch Safety Board, 2015), civil aviation authorities have published conflict-zone guidance (European Union Aviation Safety Agency, 2026; International Civil Aviation Organization, 2018). **Markets** price geopolitical risk (Caldara and Iacoviello, 2022) and distinguish oil shocks by cause (Kilian, 2009). **Dashboards**

can inform in real time (Dong et al., 2020), and forecasting war is hard (Cederman and Weidmann, 2017; Hegre et al., 2019), so we do not forecast here.

What is missing is a single frame that puts these channels side by side *and* measures how well each could hear. That is the gap we fill.

3 Method

3.1 Five witnesses

Table 1 lists the witnesses. We chose them because each is produced by a system with its own purpose, so none was written to persuade us. Planes squawk to avoid collisions; ships broadcast to avoid collisions; satellites pass on their own schedule; markets clear because someone pays; regulators publish because liability demands it.

3.2 Study design

The event is the first strikes on Saturday 28 February 2026; the last pre-war close is 27 February. For prices we use 212 daily sessions from 2 January 2026 to 4 November 2026. For port calls we compare a pre-window (1 January 2025 to 27 February 2026, 423 days) with a post-window (1 March to 30 October 2026, 244 days), against control ports (Singapore, Rotterdam) that are far from the conflict. For transponders and heat we take cross-sections on 4 November 2026. The design is descriptive. It is one event with many confounders, and we make no causal claim.

3.3 The observability audit

A silence informs only if the sensor could have heard. For each channel we therefore measure, next to the reading, a proxy for what could have been seen. For AIS: the *age* of each vessel's last position, with a six-hour threshold for "currently at sea". For ADS-B: occupancy of well-covered neighbours and non-conflict countries as a contrast. For heat: *persistence*, meaning how many days the same 1 km cell lights up, which separates chronic sources (flares, kilns) from transient ones. For all: cross-channel agreement. If two physically unrelated witnesses agree, the reading is stronger than either alone.

3.4 Statistics

Ratios of means (post over pre) carry 95% moving-block bootstrap intervals with 7-day blocks, 4000 resamples, to respect the weekly cycle. Correlations carry Fisher-z intervals. "Unusualness" of a price move is its percentile among all rolling windows of the same length since 2015. Port groups are fixed by geography before looking at results.

3.5 Reproducibility

Every number and table in this paper is generated from scripts that read the files in the repository (see Data and code availability); a single command rebuilds the PDF. Live feeds change, so snapshot files are archived with their timestamps.

4 Results

4.1 Money spoke on the first day

Brent closed at $72.48 on 27 February. It rose 7.3% in the first session, 27.9% in five, and 55.3% in twenty. The peak close was $118.35 on 31 March, 63.3% above the pre-war close; on 4 November 2026 it stood at $104.06 (43.6%, intraday at the time of data collection; Table 2, Fig. 1). Measured over twenty sessions, the rise sits at the 99.7$^{\text{th}}$ percentile of all such windows since 2015. For comparison, twenty sessions after Russia's invasion of Ukraine in 2022, Brent was up 25.6%; here it was up 55.3%. After sixty sessions the figures are 15.7% and 37.4%.

Volatility nearly doubled: Brent's daily standard deviation went from 2.19% before the war to 4.07% after, while the S&P 500 moved only from 0.76% to 0.83%. The Brent–WTI gap, which averaged $4.69 before, averaged $6.35 after and reached $16.97 on 31 March, though that day was the expiry of the May Brent contract, so part of the gap is contract roll rather than physical dislocation. European gas rose 186.6% by 4 November; gold, notably, fell 23.2%. Airlines split by region: Lufthansa ended 17.8% lower and Air France–KLM 11.5% lower, but Delta 26.8% higher. Frontline, a tanker owner, first fell 11.3% over twenty sessions and ended 38.2% higher; Maersk ended 46.7% higher. The correlation of daily Brent returns with an airline basket moved from −0.43 (95% CI −0.66 to −0.13) to −0.75 (−0.81 to −0.67), which is consistent with the market treating fuel as the airlines' main risk.

An audit of our own annotation. The dashboard carried a hand-written milestone: "4 March 2026, Oil spikes $140: Brent crude surges past $140/bbl." The data say otherwise. Brent closed at $81.40 that day (Yahoo reports the same value for 3 March, so the exact figure may be a repeated print; either way no session came near $140). Its highest intraday price of the year was $126.10 (30 April), and it never reached $140 in any session. The annotation was off by about $59 and had been public for months. We have corrected it. The lesson is general: a curated annotation is a claim, and claims need the same audit as sensors.

4.2 The ports went quiet

Prices say something happened. Port calls say where. Inside the Persian Gulf, nine ports averaged 74.3 calls a day before the war and 20.9 after: 28% of the earlier rate (95% CI 26–30%; Table 3, Fig. 2). Tanker calls fell the same way, from 19.7 to 5.4 a day. Control ports did not move (98%). On the Gulf of Oman coast, outside the strait, calls fell less (57%). The Eastern Mediterranean stayed near normal (91%).

The path matters as much as the average. Inside-Gulf calls dropped to 25% of baseline in March, bottomed at 19% in May, recovered to 36% in July, and sat at 31% in October. The strait did not close and reopen; it narrowed and stayed narrow.

The Red Sea group tells a different story, and one we do not yet understand. Averaged over the whole post-window it held at 83% (CI 73–92%), but it did not fall in March; it fell from August, to 44% in October. One port drives this: Jeddah

Table 1. The five witnesses. Every source is public; none required an agreement or a paid key for the analyses reported here.

Witness	What it hears	Source used here	Cadence	Where it is deaf
Ships	AIS positions; port calls	Axiom Overwatch snapshot (Axiom Overwatch, 2026); PortWatch daily port calls (Arslanalp et al., 2021; International Monetary Fund, 2026)	minutes; daily	Beyond receivers; spoofing; transponders off
Aircraft	ADS-B state vectors	OpenSky anonymous API (OpenSky Network, 2026); adsb.lol in the dashboard (adsb.lol, 2026)	seconds	Receiver geometry; many military aircraft are silent
Heat	VIIRS 375 m active-fire detections	NASA FIRMS open CSV (NASA LANCE FIRMS, 2026)	about 2 passes a day per satellite	Cloud; industrial flares; no attribution
Money	Daily closes of 20 assets; oil flows	Yahoo Finance chart endpoint (Yahoo, 2026); EIA flows (U.S. Energy Information Administration, 2026)	daily	Causes are confounded
Rules	Airspace conflict bulletins	EASA CZIB list (European Union Aviation Safety Agency, 2026)	event-driven	Institutional lag and politics

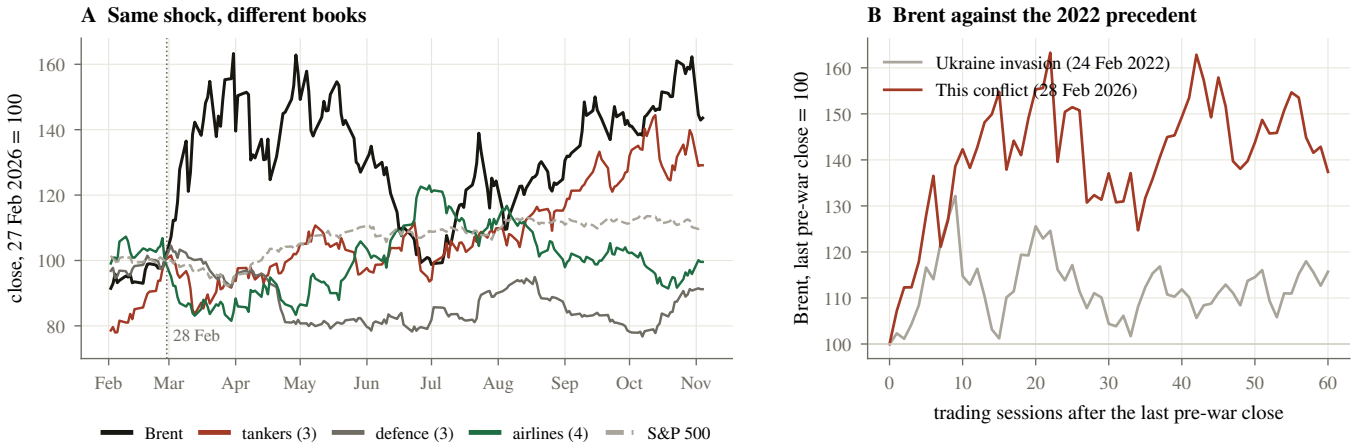


Figure 1. Money spoke on the first day. (A) Closes normalised to 27 February 2026 = 100: oil, tankers, defence, airlines and equities moved very differently after 28 February. (B) Brent after the last pre-war close, here against the first sessions after Russia's 2022 invasion of Ukraine. Front-month futures; roll days can add small jumps.

went from 102% of baseline in June to 13% in October, while Djibouti and Port Said stayed roughly flat; without Jeddah the group sits at 90%. A single-port collapse can be real or can be a change in how satellites count; we flag it and leave it open.

Independent evidence agrees on the Gulf. The U.S. Energy Information Administration reports oil flows through the Strait of Hormuz of 21.6 million barrels a day in the fourth quarter of 2025, 14.9 in the first quarter of 2026 and 4.9 in the second (U.S. Energy Information Administration, 2026). Hormuz normally carries about a fifth of the world's petroleum liquids (U.S. Energy Information Administration, 2025). Crucially, EIA adds that since the end of February "AIS signal data for ships transiting the Strait of Hormuz have become especially unreliable" (U.S. Energy Information Administration, 2026). Part of any AIS-based drop could therefore be lost signal rather than lost ships. We cannot separate the two. What we can say is that the port calls, the EIA flows, the oil price and the tanker equities all point the same way, and that no single one of them is pure.

4.3 The free ship feed is blind where it matters

The most natural way to ask "do ships still move through Hormuz?" is to look at ship positions. We did. On 4 November 2026 the open global AIS snapshot held 68,680 vessels. Only 12,043 (17.5%) had reported within the previous six hours; the median position was 170 hours old and the ninetieth percentile 2,219 hours (Fig. 3, Table 4). Repeated snapshots over 81 minutes gave the same share (17.5–17.6%, $n = 4$).

In the Strait of Hormuz box the snapshot held 1,110 vessels, of which 0 were fresh. In the Persian Gulf, 1,171 vessels and 1 fresh. In the Red Sea and at Bab el-Mandeb, *no* vessel at any age. A careless reading says shipping stopped. But the Strait of Malacca, a busy and unthreatened lane, shows 353 fresh positions among 8,357 (4.2%), while the North Sea shows

Table 2. Change in close from the last pre-war session (27 February 2026). Daily closes from Yahoo Finance (Yahoo, 2026); the peak column is the date of Brent's highest close (31 March).

Asset	27 Feb close	2 Mar	+5	+20	Peak	4 Nov
		change from 27 Feb close, %				
Brent	72.48	+7.3	+27.9	+55.3	+63.3	+43.6
WTI	67.02	+6.3	+35.6	+48.7	+51.3	+43.8
TTF natural gas	31.96	+39.3	+67.0	+69.5	+58.8	+186.6
Gold	5,247.90	+1.2	−1.7	−14.4	−11.4	−23.2
S&P 500	6,878.88	0.0	−2.0	−7.4	−5.1	+10.0
VIX	19.86	+8.0	+48.5	+56.3	+27.1	+4.9
Delta	65.70	−2.2	−10.2	−1.3	+1.2	+26.8
United	106.30	−2.9	−13.4	−16.8	−13.4	+0.9
Lufthansa	9.09	−5.2	−10.7	−19.1	−20.8	−17.8
Air France–KLM	12.30	−9.4	−18.0	−28.9	−30.4	−11.5
Frontline	37.95	+4.4	−8.9	−11.3	−8.1	+38.2
International Seaways	75.53	+1.3	−4.1	−5.8	−3.5	+38.7
A.P. Møller–Maersk	15,675.00	+7.9	+9.1	+2.7	+2.4	+46.7
Lockheed	658.08	+2.8	+2.1	−6.4	−8.2	−2.9
Northrop	724.38	+6.0	+4.4	−6.3	−5.8	−24.0

Table 3. Port calls per day before (1 Jan 2025–27 Feb 2026) and after (1 Mar–30 Oct 2026) the start of the conflict, with moving-block bootstrap intervals for the ratio.

Port group	Before	After	Ratio	95% CI
	calls per day			
Inside the Gulf	74.3	20.9	0.28	0.26–0.30
Gulf of Oman coast	16.9	9.7	0.57	0.52–0.63
Red Sea and Suez	14.7	12.1	0.83	0.73–0.92
Eastern Mediterranean	30.6	27.7	0.91	0.87–0.94
Control: Singapore, Rotterdam	209.1	205.0	0.98	0.97–0.99

Table 4. Last-reported vessel positions in analysis boxes (first snapshot, 4 Nov 2026, 07:07 UTC). "Fresh" means reported within six hours.

Box	Vessels (any age)	≤6 h (n)	% fresh	Median age (hours)
North Sea	3,369	1,914	56.8	1
Baltic	2,206	936	42.4	19
Eastern Med	1,720	248	14.4	153
Suez	681	26	3.8	536
Malacca	8,357	353	4.2	314
Taiwan Strait	934	41	4.4	376
Persian Gulf	1,171	1	0.1	173
Hormuz	1,110	0	0.0	279
Gulf of Oman	37	0	0.0	366
Red Sea	0	0	–	–
Bab el-Mandeb	0	0	–	–

56.8%. The Gulf is quieter than any other lane we measured. That fits lost ships, jammed signals or a thin receiver network, and one snapshot cannot say which. The Red Sea's zero at every age looks more like a filter in the provider's feed than silence at sea. For this question the open ship feed is not enough on its own; the port calls above are a better check, though not an independent one, since they too derive from AIS.

This is a finding about our own dashboard too. Its vessel layer draws every position in the snapshot, including positions that are days or months old. We now label that layer by age rather than let stale ships pose as live ones.

4.4 The sky, and the regulator

Aircraft are harder to hide and easier to lose. We sampled airborne ADS-B aircraft over a box covering the Middle East (10–42°N, 24–65°E) and two control boxes, Europe and Southeast Asia, 8 times on 4 November 2026 (Fig. 4, Table 6). The Middle East box held 405 airborne aircraft per sample on average (range 344–452), Europe 2,293 and Southeast Asia 464. Per unit of land area the United Arab Emirates was the busiest airspace in the box (50.0 aircraft per 100 000 km^2, above the European median of 28.6), followed by a cluster of small, well-covered countries (Georgia, Israel and Greece). Iran (0.0), Iraq (0.0) and Yemen read close to zero.

These are the countries for which the European Union Aviation Safety Agency (EASA) currently advises caution (Table 5). The regulator's own clock is a witness. A bulletin for "Iran and neighbouring airspace" was first issued on 16 January 2026, six weeks before the war. A region-wide bulletin for the Middle East and the Persian Gulf was issued on 28 February, the day of the first strikes, was revised fourteen times, and was last revised on 1 July (valid to 8 July). Country bulletins followed: Iran, Iraq and Lebanon on 8 July, the Persian Gulf and Gulf of Oman on 14 July, Jordan on 22 July, and Saudi Arabia as late as 30 September (European Union Aviation Safety Agency, 2026). The advice was reissued country by country as the region-wide bulletin retired.

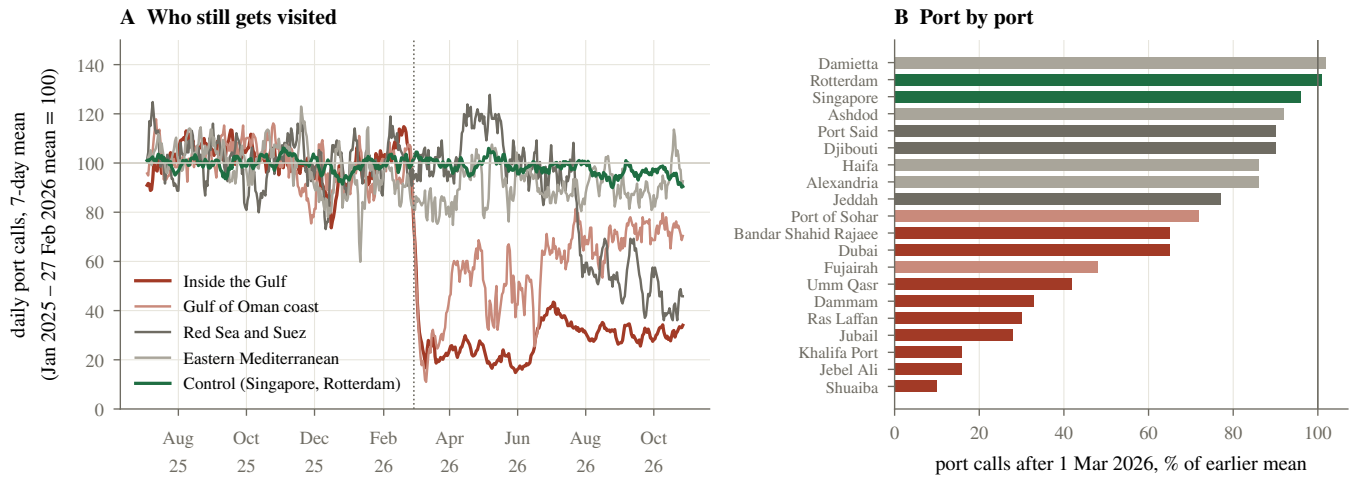


Figure 2. Ships that still call. (A) Daily port calls, 7-day mean, as a share of each group's January 2025 to 27 February 2026 mean. The dotted line marks 28 February 2026. (B) Port-by-port ratio of calls after 1 March 2026 to calls before. Source: IMF PortWatch (International Monetary Fund, 2026).

But look at Egypt. Egypt has no active bulletin, yet it reads almost as empty as Iraq (0.5 against 0.0 aircraft per 100 000 km^2). That is not a closed sky; it is a sky the open receivers cannot hear. So an empty cell is a question, not an answer. Aircraft density is only a weak check on the regulator: countries with a bulletin, such as Jordan and Syria, sit beside countries with none, such as Turkey and Georgia, and it says little where receivers are thin.

4.5 What burns

Thermal satellites see heat, not intent. The open FIRMS file for 28 October to 2 November 2026 held 271,252 global detections over 6 days. The first task is to separate chronic sources from transient ones: in the Persian Gulf basin 19% of the 611 detected 1 km cells lit up on at least two-thirds of the days, against at most 4% in Ukraine, Sudan, Myanmar, the Levant or western Europe (Fig. 5). That is consistent with industrial flaring, which is why a single bright pixel at a Gulf oil terminal says almost nothing on its own. Only 3 transient cells in the basin exceeded 50 MW in the window. We report them as candidates, not events; we have no ground truth. Measuring *environmental damage* (smoke plumes, spills, burned land) needs imagery and a baseline we do not yet have, though earlier wars show what is possible (Hobbs and Radke, 1992; United Nations Environment Programme, 2024).

4.6 An audit of the observatory itself

Table 7 shows the state of our own feeds on audit day. Four of ten data feeds were down or demonstration-only: one had no key and returned an empty payload by design, one served clearly labelled demonstration events, and two had upstream errors. A fifth, the ship feed, was live but stale. One composite output deserves a second look. The platform's escalation gauge read 2 out of 100, "LOW", on a day when Brent stood at $104.06. The score was computed from three inputs that were offline (heat, news, strikes) and one that was live (markets), and the system knew it: its own field said only 25 of 100 points were available. The display did not say so. We call this a *false calm*. A broken pipe looks exactly like peace unless the instrument is made to tell the difference, and the reader of a map cannot tell which they are looking at.

5 Discussion

5.1 Did we see better than the journalists?

No, and it would be a mistake to say so. A reporter can ask a question, smell smoke and meet a family. We cannot. What we can do is different, and three things stand out. We see a whole sea at once, which no reporter can. We see *absence over time*, such as ports that quietly fell to a fraction of their traffic, which no single story records. And we see money's verdict, which is a vote by people with something to lose.

Equally, three things are out of reach: *why* (a falling port count does not say whether the cause was mines, insurance or fear), *who* (a transient thermal cell does not say whose weapon), and the human cost, which is the reason the question matters at all.

5.2 The strongest objection

The best counter-argument runs as follows. Sensors are contested terrain. Ships switch transponders off; signals can be jammed or spoofed; receivers are placed by volunteers, who are not placed evenly across a war. A platform that shows sensor data with confidence may mislead more than a hesitant reporter, because a map looks like truth. The objection is right, and our own results illustrate it: the free ship feed cannot hear the Gulf, the aircraft feed cannot hear Egypt, and our own dashboard once drew days-old ships as live.

5.3 What survives

What survives is a principle. *Treat every channel as a witness with known eyesight, and print the eyesight next to the testimony.* Concretely: (1) show the age of every position and the coverage

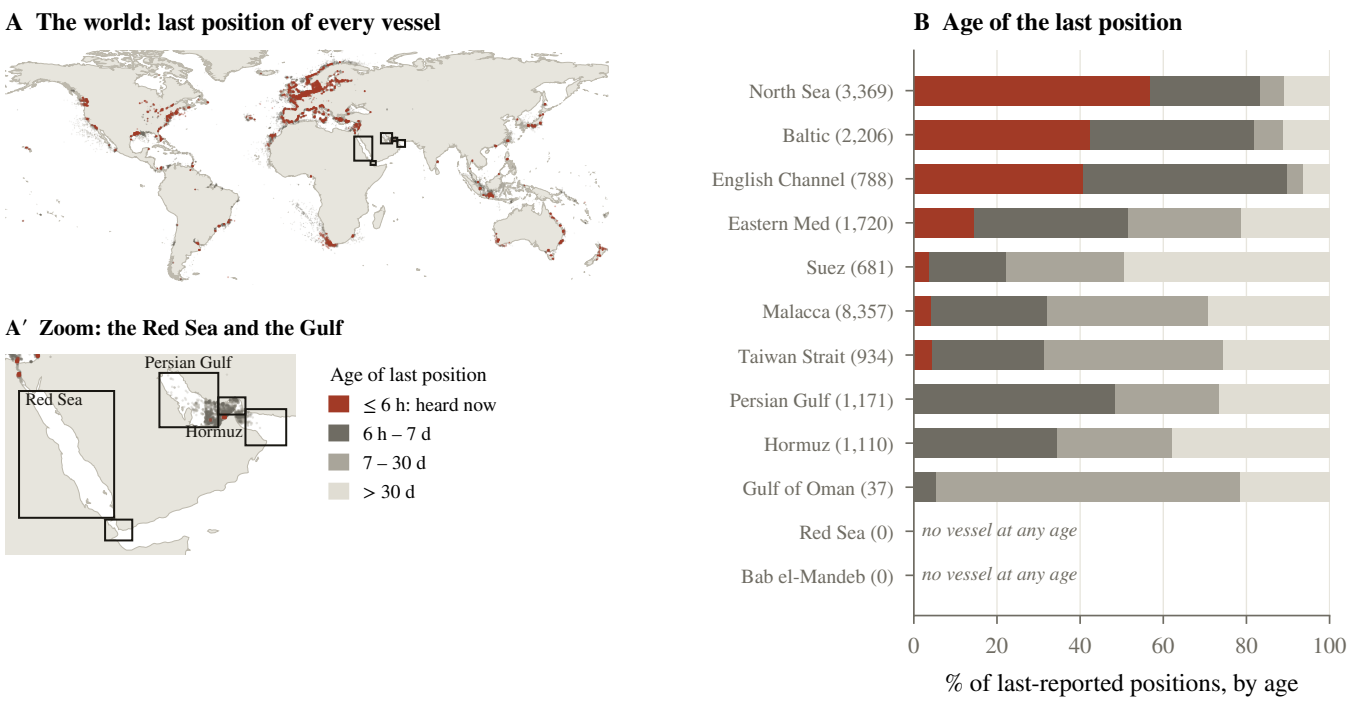


Figure 3. Observability of open ship data. (A) 68,680 vessel positions from the Axiom Overwatch snapshot (Axiom Overwatch, 2026), 4 November 2026, coloured by age. Fresh positions (red) are densest in northern Europe, with fewer in Asia and North America. Boxes: Hormuz, Persian Gulf, Gulf of Oman, Bab el-Mandeb, Red Sea. (B) Share of last-reported positions by age in each analysis box; counts in brackets.

Table 5. EASA Conflict Zone Information Bulletins relevant to the conflict, as listed on 4 November 2026 (European Union Aviation Safety Agency, 2026). †Withdrawn. Dates as shown on the page: issue, last revision, valid until.

Airspace	Reference	Issued	Revised	Valid until
Iran and neighbouring airspace†	2026-02-R1	16 Jan 2026	12 Feb 2026	31 Mar 2026
Middle East and Persian Gulf†	2026-03-R14	28 Feb 2026	1 Jul 2026	8 Jul 2026
Lebanon	2026-06-R2	8 Jul 2026	30 Sep 2026	16 Nov 2026
Iraq	2026-05-R2	8 Jul 2026	30 Sep 2026	16 Nov 2026
Iran	2026-04-R2	8 Jul 2026	30 Sep 2026	16 Nov 2026
Persian Gulf and Gulf of Oman	2026-07R3	14 Jul 2026	30 Sep 2026	16 Nov 2026
Jordan	2026-08-R3	22 Jul 2026	14 Oct 2026	16 Nov 2026
Saudi Arabia	2026-09-R1	30 Sep 2026	9 Oct 2026	16 Nov 2026

of every region beside the data; (2) refuse a composite score when its inputs are missing, and say “insufficient data” instead of “low”; (3) triangulate across witnesses that fail for different reasons, such as ports, flows, prices and regulators; (4) record the provenance of every hand-written annotation and audit it like a sensor; (5) keep it free and open, so that anyone can repeat the audit. This is a design rule, not a technology. It costs nothing to implement and it changes what the screen claims.

5.4 Ethics and safety

Every input is already public, and our analyses use aggregate counts; we do not follow named people, vessels or aircraft over time. The dashboard displays only what its sources publish. Open tools can help the careful and the careless alike, so we recommend that deployments avoid persistent tracks of individual military assets and avoid alerts keyed to named facilities. We do not describe any use as targeting. Our figures about journalists come from CPJ, whose counts it revises as cases are reviewed (Committee to Protect Journalists, 2025, 2026).

6 Limitations

This is one event over eight months, not years: the platform’s continuous archive was not retained, so the longitudinal evidence comes from public series that can be reconstructed (prices, port calls, regulator bulletins), and the ship, aircraft and heat results are cross-sections on a single day. The aircraft result rests on 8 samples from an anonymous research API with uneven coverage. Port calls are model estimates from satellite AIS, and the source flags the Gulf as unreliable (U.S. Energy Information Administration, 2026). The Yahoo Finance endpoint is unofficial and its terms restrict some uses, so we

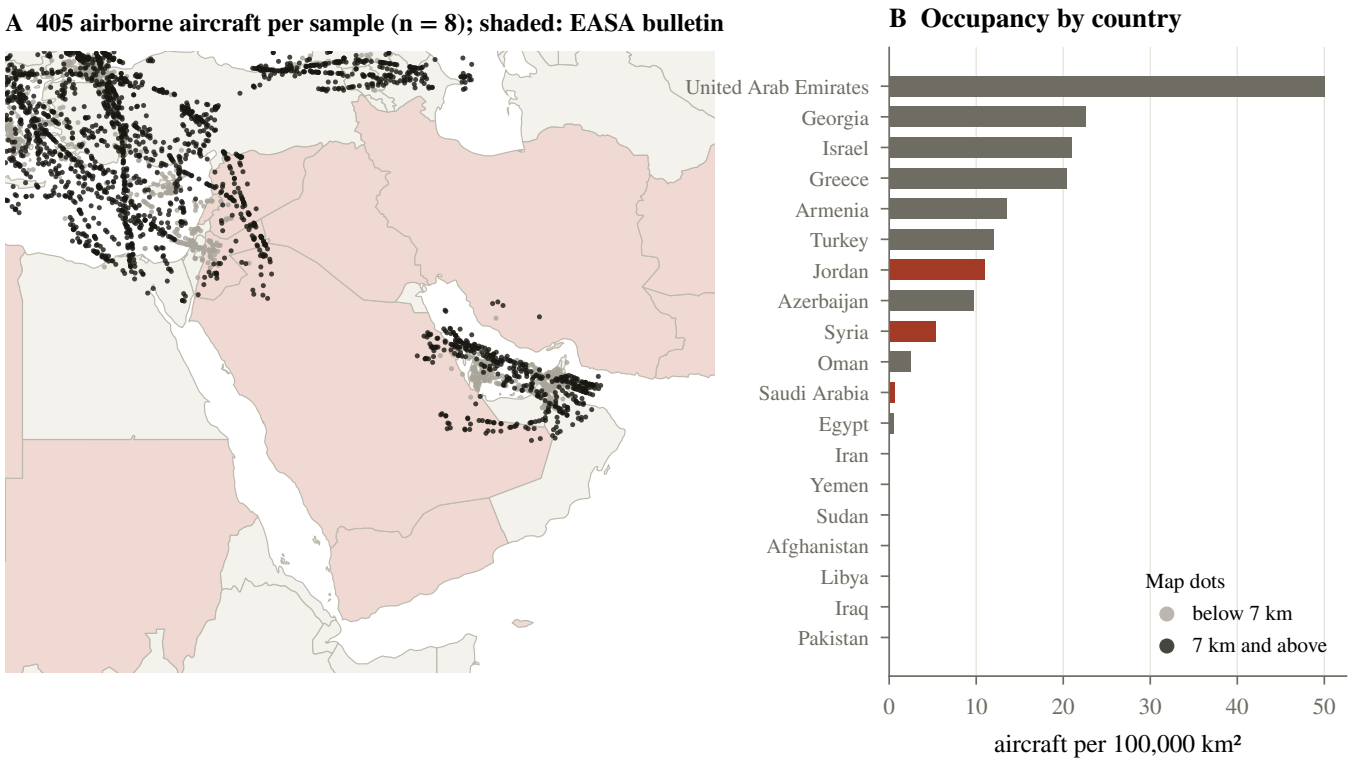


Figure 4. The sky over the Middle East. (A) Airborne ADS-B aircraft pooled over all samples on 4 November 2026 (OpenSky (OpenSky Network, 2026)); countries with an active EASA bulletin are shaded. Dark points are at or above 7 km. (B) Mean aircraft per 100 000 km^2 of country area inside the sampled box. Egypt, with no bulletin, reads almost as empty as Iraq: coverage, not closure, dominates the lowest bars.

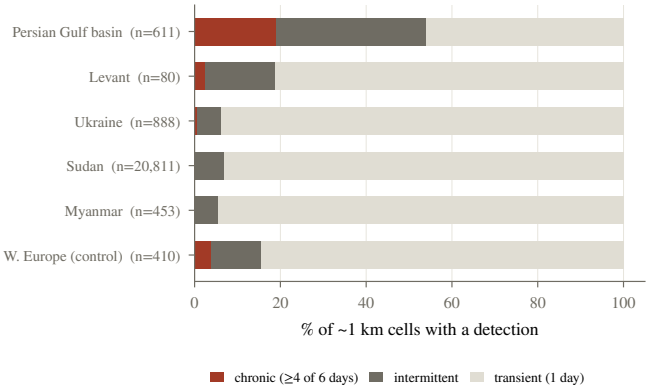


Figure 5. Chronic or transient. Share of detected 1 km cells by number of days lit, by region, from the FIRMS 7-day file (NASA LANCE FIRMS, 2026; Schroeder et al., 2014). The Gulf basin shows the chronic signature of flares.

archive derived closes only. Front-month futures contain roll jumps. Geography fixed the port groups, but their size is small. The bulletins list is a snapshot of a page that changes weekly. We found no way to test our results against ground truth on casualties or damage, and we make no claim about either.

7 Conclusion

A war can be partly seen from a laptop. The money spoke on the first day and spoke hard. Ports inside the Persian Gulf fell to under a third of their usual traffic and stayed low. The regulator reissued its advice country by country. These readings agree, and they come from witnesses that fail for different reasons, which is why we trust them. The same method told us that the free ship feed cannot hear the Gulf, that the aircraft feed cannot hear Egypt, and that our own dashboard had said things that were not true. The lesson is not to look harder. It is to say, beside every number, how well we could have heard.

Data and code availability

The platform, analysis scripts, derived tables and this paper's LaTeX source are in the repository github.com/Nonarkara/globalmonitor-v3 under `research/` (MIT licence). Source data keep their original licences: PortWatch, OpenSky, adsb.lol, Axiom Overwatch (CC-BY 4.0), NASA FIRMS, EASA, EIA, Natural Earth (Natural Earth, 2026). Live URL: globalmonitor.nonarkara.org.

Funding and competing interests

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Table 6. Airborne ADS-B aircraft per sample by country inside the Middle East box (countries over 20 000 km^2; area clipped to the box).

Country	Area (km^2)	Mean aircraft	per 100 000 km^2	EASA bulletin
United Arab Emirates	71,443	35.8	50.0	no
Georgia	30,443	6.9	22.6	no
Israel	22,103	4.6	20.9	no
Greece	29,995	6.1	20.4	no
Armenia	29,625	4.0	13.5	no
Turkey	781,404	93.6	12.0	no
Jordan	89,074	9.8	10.9	yes
Azerbaijan	86,605	8.4	9.7	no
Syria	186,430	9.9	5.3	yes
Oman	312,975	7.8	2.5	no
Saudi Arabia	1,934,022	13.0	0.7	yes
Egypt	1,006,994	4.6	0.5	no
Iran	1,629,383	0.6	0.0	yes
Pakistan	130,781	0.0	0.0	yes
Iraq	438,711	0.0	0.0	yes
Libya	128,668	0.0	0.0	yes
Afghanistan	262,421	0.0	0.0	yes
Sudan	1,734,703	0.0	0.0	yes
Yemen	455,299	0.0	0.0	yes

Table 7. State of the platform's own feeds on 4 November 2026, 07:00 UTC.

Feed	State	Note
Markets, oil	live	Yahoo Finance; platform feed, 129 sessions
Flights	live	adsb.lol (platform feed); 134 in the Middle East box
Quakes, UNHCR	live	USGS; UNHCR displacement
Ships	stale	live feed, but 82.5% of positions older than 6 h
Heat (FIRMS)	offline	key not set; empty by design
Conflict events	demo	labelled `demo_offline`
News sentiment	error	upstream HTTP 502
Maritime warnings	error	upstream HTTP 503
Escalation gauge	misleading	2/100 "LOW" from 1 of 4 inputs

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