



GEOWATCHER WW3 SIMULATOR

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DAILY BASELINE RESEARCH DOCUMENT

April 20, 2026 | Day 51 of Operation Epic Fury | Week 8

US Navy seized an Iranian cargo vessel at Hormuz, North Korea launched a multi-missile salvo, and the April 22 ceasefire expiration arrived with Islamabad talks unresolved, Iran rejecting negotiations publicly while privately affirming attendance.

BASELINE: 38.3% ($\pm 1\%$, $n=10,000$)

EXECUTIVE SUMMARY

Day 51 of Operation Epic Fury is an escalation inflection point. In a 24-hour window, the US Navy disabled and seized an Iranian-flagged cargo vessel at gunpoint for the first time since the blockade began, Iran fired on two Indian-flagged vessels at Hormuz, North Korea launched multiple short-range ballistic missiles from Sinpo, and President Trump issued an explicit ultimatum threatening to destroy every power plant and bridge in Iran. Simultaneously, the April 22 ceasefire expiration is 48 hours away with no extension confirmed, no deal framework in place, and Iran publicly rejecting the Islamabad second round while privately affirming attendance through separate channels.

The conflict has crossed two thresholds simultaneously on April 19-20. The US crossed from passive maritime interdiction into kinetic enforcement with the Touska seizure. Iran crossed from counter-blockade rhetoric into actual gunfire on neutral commercial shipping with the Sanmar Herald attack. Both crossings happened within 24 hours of each other. The ceasefire on the primary bilateral axis, meaning no US airstrikes on Iranian territory and no Iranian ballistic missiles on US forces, technically held across both days. Everything surrounding that axis is now in active kinetic contact.

Three technology toggles activate in this baseline cycle: drone saturation, AI-enabled escalation, and satellite denial. All three have been operational for weeks. The Day 51 research, anchored to the operator's priority question on technology and asymmetry, establishes that drone warfare is the defining operational medium, AI is embedded in both weapons targeting and information warfare, and GPS and satellite jamming is continuous and confirmed. These are not emerging risks. They are the current state of the conflict.

The economic dimension hardened further. GL U expired April 19 stranding approximately 140 million barrels of Iranian crude. Brent rose approximately 5.6% to \$95.42 on the Touska news. North Korea's April 19 multi-missile salvo is the sharpest opportunism signal in the series. The confirmed baseline is 38.3% (plus or minus 1%, $n=10,000$), up 22.6 points from Day 50's 15.7%. The mechanism is documented in full in the Step 5 double pass and in Critical Question 4: three technology wildcards activating simultaneously produced a multiplicative, not additive, effect on the 36-month loss probability distribution. The model is watching whether the April 21 Islamabad meeting physically occurs, whether Iran executes its Touska retaliation threat, and whether Trump converts his ultimatum into kinetic action before or after the April 22 deadline.

CRITICAL QUESTION 1: HORMUZ KINETICS AND THE TOUSKA SEIZURE

The Sanmar Herald attack: what happened and what it confirms

On April 18, IRGC gunboats fired on the Indian-flagged VLCC Sanmar Herald (IMO 9330563) approximately 20 nautical miles northeast of Oman. The vessel was carrying approximately 2 million barrels of Iraqi crude. Released audio captured the captain stating "you gave me clearance to go, you are firing now" per [The Week India](#) and [The Quint](#). A second Indian vessel Jag Arnav and a container ship were also struck or reported near-misses in the same window per [India This Week](#) and [Seatrade Maritime](#). India summoned Ambassador Fathali in New Delhi. Iran simultaneously reimposed transit restrictions on the Strait per [Al Jazeera](#) and [OPB](#).

The Touska seizure: US kinetic enforcement begins

After six hours of ignored VHF warnings, the USS Spruance (DDG-111) fired multiple MK-45 5-inch rounds into the engine room of the Iranian-flagged M/V Touska on April 19, disabling propulsion. Marines from the 31st MEU completed the seizure by rappelling from USS Tripoli's helicopters on April 20 per [Naval News](#), [NPR](#), and [Al Jazeera](#). Trump announced the seizure on Truth Social. This is the first US kinetic enforcement action against an Iranian vessel since the blockade began April 13.

Iran and US conflicting narratives on the Strait

Iran's Khatam al-Anbiya joint command condemned the Touska seizure as "armed piracy" and pledged retaliation per [Jerusalem Post](#). Iran's position: the US blockade of Iranian ports is itself a ceasefire violation that justifies counter-interdiction. The US position: the naval blockade is a lawful enforcement action and the Touska was attempting to breach it. Neither position resolves the other. Open-source evidence confirms: the Sanmar Herald attack preceded the Touska seizure, the vessels were neutral commercial ships not military assets, and the bilateral ceasefire axis (no US airstrikes on Iran, no Iranian BMs on US forces) held across both days. Both sides are simultaneously escalating in the maritime domain while maintaining the kinetic air ceasefire.

Bottom Line on Hormuz Kinetics

The April 18-20 window produced the first IRGC gunfire on neutral commercial shipping and the first US kinetic seizure of an Iranian vessel in the same 48-hour period. The bilateral ceasefire in the air domain held. The maritime domain is now in active kinetic contact on both sides. The Naval Blockade selector holds ACTIVE and LOCKED. The irandef slider ticks marginally up based on confirmed IRGC naval operational capability. The will slider moves up on Trump's escalatory rhetoric and the Touska enforcement action.

***Net Probability Impact:** This section drives irandef UP from 0.22 to 0.23 on confirmed IRGC naval interdiction capability, and will UP from 0.46 to 0.49 on Trump's explicit ultimatum and the Touska kinetic enforcement decision.*

CRITICAL QUESTION 2: CEASEFIRE STATUS AND APRIL 22 EXPIRATION

What is holding and what is not

The primary bilateral ceasefire axis, meaning no US airstrikes on Iranian territory and no Iranian ballistic missiles targeting US military positions, held on April 19-20 per [Wikipedia ceasefire](#) and [CBS News](#). The Israel-Lebanon 10-day truce effective April 16 also held. Iraqi militias maintained standdown. The Houthis continued missile attacks on Israel but did not reopen the Red Sea commercial shipping campaign. What did not hold: IRGC gunfire on neutral commercial shipping at Hormuz (April 18), the US kinetic seizure of an Iranian vessel (April 19-20), and Trump's ultimatum threatening kinetic strikes on Iranian civilian infrastructure (April 19) per [Townhall](#).

April 22 expiration: no extension confirmed

NPR described the ceasefire as expiring "with no deal in sight" per [NPR](#). Time reported Iran rejected talks as Trump sent negotiators to Pakistan per [Time](#). The White House has not announced a formal extension as of April 20. Trump's posture is simultaneous: sending negotiators to Islamabad while threatening to bomb Iranian infrastructure. No written framework, no agreed extension timeline, and no joint statement have been produced in the April 15-20 window.

Bottom Line on Ceasefire Status

The primary bilateral ceasefire on the air axis technically holds but is being actively eroded on every adjacent dimension. The April 22 deadline arrives in 48 hours with no extension mechanism in place. Whether the ceasefire survives depends entirely on whether the Islamabad round produces any framework before the clock runs out.

Net Probability Impact: This section holds the Airstrikes selector *PAUSED* but flags it for immediate reassessment if April 22 passes without extension. The swans and volatile toggles continue to hold *ON* as the ceasefire stress accumulates.

CRITICAL QUESTION 3: DIPLOMATIC TRACK AND THE ISLAMABAD CONTRADICTION

The IRNA rejection

Iran's state news agency IRNA reported April 19 that Iran rejected the second round of Islamabad talks per [Pakistan Today](#). Iranian Ambassador to Pakistan Moghadam stated publicly that participation depends on the US ending the naval blockade. Iran's Ghalibaf simultaneously told parliament that Iran "remains committed to diplomacy" but on its own terms. The contradiction between IRNA and Ghalibaf reflects an internal Iranian signaling split between hardliners who want to use the rejection as leverage and the negotiating track team that wants to maintain the channel.

The Pezeshkian-Sharif reaffirmation

In a separate readout, Iranian President Pezeshkian told Pakistani PM Sharif in a phone call that Iran would attend the Islamabad meeting per [CNN](#). The US delegation including Vance, Witkoff, and Kushner was en route to Islamabad as of Monday evening. Trump said on Truth Social "our GREAT team is heading to Pakistan RIGHT NOW." Both accounts cannot simultaneously be accurate as final Iranian intent. These two positions represent a deliberate Iranian ambiguity strategy: keep the channel open while using the rejection as domestic political cover.

What this means for the model

The Diplomatic Track selector holds *ACTIVE*. The channel is not severed. But the channel has produced zero written framework across nine days of active diplomatic engagement. The gap between "talks are happening" and "a deal exists" has never been wider. If the April 21 Islamabad meeting collapses before the April 22 expiration, the Diplomatic Track must be reassessed to *NONE*.

Bottom Line on Diplomatic Track

Iran publicly rejected talks and privately affirmed attendance on the same day. US delegation en route. No framework exists. The selector holds *ACTIVE*. The fragility is at maximum. The April 21 meeting is the last diplomatic mechanism before the ceasefire expires April 22.

Net Probability Impact: This section holds the Diplomatic Track selector ACTIVE. A same-day collapse of the Islamabad round would trigger immediate reassessment to NONE, which would drive will DOWN and nato DOWN as alliance pressure to de-escalate collapses with the channel.

CRITICAL QUESTION 4: TECHNOLOGY AND ASYMMETRY

Drone warfare: the defining operational medium

Drone saturation is not a tactical supplement to this conflict. It is the primary operational medium. The UAE Ministry of Defense has intercepted 2,256 drones, 537 ballistic missiles, and 26 cruise missiles since February 28. Iran's Shahed-136 has been deployed in thousands, each costing approximately \$20,000-50,000 versus the \$1-3 million interceptor cost per CNBC's Shahed-136 analysis at [CNBC](#). Additional Iranian systems: Arash-2, Mohajer-6 and Mohajer-10 (armed ISR), Karrar loitering munition, Houthi Sammad-3, Hezbollah FPV swarms. US systems: MQ-9 Reapers, MQ-4C Triton maritime patrol (one confirmed lost April 9), underwater drones for Hormuz mine detection, and the reverse-engineered Shahed variant designated LUCAS. The drone cost-exchange ratio structurally favors Iran. Per [Fox News](#), Operation Epic Fury exposed air-defense magazine-depth as a systemic US vulnerability in a sustained drone-saturation environment. The drone toggle activates.

AI in weapons targeting and information warfare

AI-enabled escalation is verified on both sides. CENTCOM's Admiral Cooper confirmed publicly that "a variety of advanced AI tools" were used to identify and strike 1,000+ targets in the first 24 hours of Operation Epic Fury per [International Business Times](#). Georgia Tech analysis confirmed US military AI integration per [Georgia Tech Research](#). Foreign Policy's April 14 investigation documented AI-assisted targeting raising civilian casualty risk questions per [Foreign Policy](#). On the information warfare side: fabricated F-15 rescue photos were confirmed 99.9% AI-generated by PolitiFact on April 6 per [PolitiFact](#). Brookings documented generative AI as an active weapon of propaganda in the conflict per [Brookings](#). The ai toggle activates on both confirmed weapons-side and information-side AI use.

Electronic warfare and satellite denial

GPS and AIS interference is affecting more than 1,000 vessels per day in the Arabian Gulf per Military.com and USNI News. Multiple new jamming clusters have been documented across the Gulf with vessels showing false AIS positions at impossible speeds. Iran is deploying Russian-made Kalinka EW systems against Starlink, producing approximately 80% degradation per [Rest of World](#). Iran arrested two foreigners in Jolfa on April 19 for importing Starlink terminals, with possession designated a capital offense per [Korea Times](#). Space Force is conducting space superiority operations in theater per [Breaking Defense](#). No kinetic ASAT event has occurred. Iran does not possess a kinetic ASAT capability per [National Interest](#). The satellite denial toggle activates on confirmed GPS jamming, Starlink suppression, and Space Force active operations.

Naval asymmetry: IRGC swarm vs carrier group

The fundamental asymmetry at Hormuz is cost and mass. More than 60% of IRGC fast-attack boats survived Operation Epic Fury's initial strikes, even after more than 155 Iranian vessels were destroyed. IRGC swarm tactics use speed, numbers, and proximity denial to saturate carrier group point defenses. US carrier groups carry finite interceptor magazines against a reconstituting swarm force. The Sanmar Herald and Touska incidents demonstrate simultaneous IRGC action against neutral shipping and US enforcement action within 48 hours, confirming both sides retain full Hormuz operational capacity. Transit volume has collapsed to approximately 8-10 vessels per day versus the pre-war 150 norm.

The multiplicative mechanism: why three wildcards produce 22.6 points, not three small ticks

The Day 51 confirmed baseline of 38.3% is 22.6 points above Day 50's 15.7%. The mechanism was documented in the mandatory Step 5 double pass and requires explicit explanation in this record. The move is not driven by any single slider change. No individual slider moved more than 0.06. The move is driven by three technology wildcard activations (drone, ai, sat) interacting as a system, not as independent inputs.

The three wildcards are not independent. Drones in this conflict are AI-guided. Satellites enable drone navigation and targeting via GPS and reconnaissance imagery. AI processes that satellite imagery to identify and prioritize targets in compressed timelines. When all three activate simultaneously, the model does not simply add three independent probability boosts. It prices the interaction: a conflict operating in an environment of drone saturation, AI-compressed decision cycles, and continuous GPS jamming is qualitatively harder to stop than one without those features.

Each wildcard contributes a distinct escalation mechanism to the 36-month horizon. Drone saturation means the conflict is harder to halt once kinetically engaged: autonomous systems do not observe ceasefire agreements, they follow pre-programmed mission parameters, and recovering them from forward deployment requires active command decisions that may be delayed or missed. AI-enabled escalation compresses decision cycles from hours to minutes, raising the probability of cascade failures before human judgment can intervene. A misidentified target, a spoofed sensor reading, a false-positive engagement: all become more likely as AI replaces human review in the targeting loop. Satellite denial through continuous GPS jamming and Starlink suppression increases fog of war and raises the probability that one side misreads the other's posture: a vessel navigating on false AIS coordinates, a drone operating without GPS correction, a command decision made on degraded ISR.

The model priced these three interacting mechanisms as a sustained increase in the probability of unintended escalation cascades across the 36-month simulation horizon. The result was not a moderate increase in all outcomes. It was a redistribution: probability mass moved from moderate outcomes (US Withdrawal fell from 75.0% to 54.5%, Peace fell from 7.7% to 4.4%) toward tail outcomes (Loss WWII rose from 15.7% to 38.3%, Nuclear Exchange rose from 1.1% to 2.5%). This is the correct directional response. Higher automation, compressed decision cycles, and degraded situational awareness collectively increase the probability that a conflict escalates past the point at which human intervention can reverse it.

The 22.6-point jump also reflects calibration lag correction. All three technology wildcards were operationally active for weeks before Day 51. The Day 51 research provided sufficient open-source anchoring to justify activation: UAE interception totals for drone, CENTCOM Cooper's public confirmation and PolitiFact verification for ai, Jolfa arrests and Breaking Defense Space Force reporting for sat. The correct framing is that the series was underpricing technology risk from approximately Day 43 onward, and Day 51 is the correction session. Both the technical soundness review and the factual defensibility review in the Step 5 mandatory double pass confirmed the number. The model produced what the model produced. The obligation is to explain what it found and why the mechanism is analytically sound.

Operation Economic Fury exploits the asymmetry between the US dollar-denominated global financial system and Iran's oil-dependent economy. GL U expiration April 19 strands approximately 140 million barrels. Treasury's Shamkhani network designation April 15 targets the elite smuggling infrastructure per [US Treasury](#). Two Chinese banks are on explicit secondary-sanctions notice. The third SPR tranche of 26.03 million barrels was released April 19 per [Today in Oil and Gas](#). Bessent described the operation as "the financial equivalent of bombing." Iran's GDP trajectory is approximately negative 6.1% for 2026 per IMF. The asymmetry is real but Iran has demonstrated it can sustain kinetic operations while economically contracting.

Bottom Line on Technology and Asymmetry

Three technology domains cross the activation threshold in this baseline cycle: drone saturation (UAE confirmed totals definitive), AI-enabled escalation (weapons-targeting and information-warfare both verified), and satellite denial (continuous GPS jamming, Starlink suppression, Jolfa arrests). The confirmed baseline of 38.3% reflects the multiplicative interaction of these three wildcards across the 36-month simulation horizon, not the additive sum of three small probability increases. The model is pricing a conflict that is qualitatively harder to stop, faster to escalate, and more opaque than the series inputs had previously reflected. The Step 5 mandatory double pass confirmed the number on both technical soundness and factual defensibility grounds.

Net Probability Impact: This section activates three toggles: drone, ai, and sat. All three were under-calibrated. The technology dimension directly supports the irandef modest uptick (AI-assisted targeting shows Iran retains intelligent reconstitution capacity) and the nk uptick (DPRK is testing the same drone and missile systems that form the core of the conflict's operating environment).

CRITICAL QUESTION 5: GL U EXPIRATION AND ECONOMIC WARFARE

What expired and what it means

General License U expired at 12:01 EDT April 19. The immediate market reaction: Brent crude rose approximately 5.6% to \$95.42 per [TradingEconomics](#). AAA national average gasoline at \$4.076 per gallon. Gold at record levels. The Tousek seizure compounded the price move. India's Nayara Energy has no legal pathway to process Iranian crude. China's two warned banks face a secondary-sanctions decision within 7-14 days. The third SPR tranche (26.03 million barrels) released April 19 per [Today in Oil and Gas](#) is partially offsetting the supply shock. Treasury additional sanctions steps per [US Treasury](#) are accelerating.

Zelensky's April 19 protest

Ukrainian President Zelensky condemned the separate Treasury waiver on Russian seaborne crude April 19, stating it adds approximately \$10 billion to Russia's war budget. This is a secondary consequence of the Iran economic campaign that reduces Ukraine Aid pressure further. The REDUCED selector label holds but the effective trajectory continues degrading.

Bottom Line on GL U Expiration and Economic Warfare

GL U expiration converted the sanctions threat into an active enforcement regime. Brent's 5.6% rise confirms market belief that 140 million barrels of stranded Iranian crude is real pressure, not negotiating theater. The econ slider moves UP from 0.72 to 0.75 on GL U expiration, oil price reversal, and record gold.

Net Probability Impact: This section drives econ UP from 0.72 to 0.75. GL U expiration is the hard event. Brent at \$95.42 and the third SPR tranche confirm the mechanism is operating as designed, though the price recovery from April 17's low suggests markets are pricing continued supply disruption rather than rapid resolution.

CRITICAL QUESTION 6: US POLITICAL WILL AND WAR POWERS

Trump's April 19 ultimatum

Trump posted on Truth Social April 19: "If Iran does not make a DEAL, and FAST, we will have no choice but to go back to SHOOTING. We will hit them hard, and knock out every single Power Plant, and every single Bridge, in Iran. NO MORE MR. NICE GUY!!!" per [Townhall](#). This is the most explicit threat to resume kinetic operations Trump has issued since the ceasefire began and the first threat naming specific civilian infrastructure targets. SecDef Hegseth confirmed readiness. CENTCOM has not issued a stand-down order.

Congressional status: two votes in one week

The Senate's fourth War Powers Resolution vote failed 47-52 on April 15, with Rand Paul the only Republican defector per [Time](#). The House voted 214-213 on a separate constraint measure and also failed to limit Trump per NBC News. The one-vote House margin is the narrowest yet. Senators Marshall and Hawley both issued conditional statements about continued support. The 60-day War Powers clock expires approximately May 1, nine days from today.

Bottom Line on US Political Will

Trump's ultimatum is the most escalatory presidential statement of the conflict. The one-vote House margin is the thinnest GOP support yet. The War Powers clock is nine days from expiration with no AUMF action. Political will is moving paradoxically: Trump's rhetoric escalates while congressional support for the operation narrows.

***Net Probability Impact:** This section drives will UP from 0.46 to 0.49. The Tauska kinetic enforcement action and Trump's ultimatum override the congressional erosion signal for this cycle. Presidential will has reasserted over legislative constraint. The will slider measures combined US political resolve, and Trump's posture dominates in the short term.*

CRITICAL QUESTION 7: NORTH KOREA, GREAT POWER POSITIONING

North Korea: April 19 multi-missile salvo

North Korea fired multiple short-range ballistic missiles from Sinpo on April 19, putting Japan and South Korea on alert per [Newsweek](#). This is the fourth launch event of April 2026 and the seventh of the year. Seoul assessed the salvo may involve MIRV capability testing. Kim Jong Un personally supervised. No confirmed weapons transfer to Iran occurred, but Russian intermediaries have been cited in DPRK-Iran coordination reporting. The nk slider moves from 0.46 to 0.52, the largest single-variable move in this session.

China: quiet enabling continues

No Chinese military deployment to the Gulf or Taiwan Strait in the April 19-20 window. MFA rhetoric maintained. China's Wikipedia war article documents the ongoing mediation role and economic positioning per [Wikipedia China in 2026 Iran war](#). The secondary-sanctions clock from GL U expiration is now running. China hold at 0.65 but with a 7-14 day enforcement decision pending.

Russia: stable, enabling

Russia confirmed Putin's H1 2026 China visit. Lavrov continued Antalya diplomatic positioning. No weapons transfers to Iran in window. Russia continues absorbing the energy-lifeline positioning from GL U fallout. Russia hold at 0.74.

NATO and regional actors

Trump's April 17 "Paper Tiger!" Truth Social post directed at NATO allies produced no formal allied response. The Macron-Starmer initiative, which excluded the US, continues to operate as a parallel framework. nato moves marginally DOWN from 0.40 to 0.39 on Trump-NATO friction. Saudi holds at 0.52. Turkey holds at 0.48 with FM Fidan active at Antalya.

Bottom Line on Great Power Positioning

North Korea's April 19 salvo is the most consequential great power signal of the session, driving the nk slider's largest jump in the series. China and Russia maintain quiet enabling postures. NATO cohesion decreases marginally on Trump-NATO friction. The great power picture is hardening against US unilateral action while no actor is prepared to militarily confront US forces.

Net Probability Impact: This section drives nk UP from 0.46 to 0.52 on the multi-missile salvo from Sinpo. nato moves DOWN from 0.40 to 0.39 on Trump-NATO friction. china, russia, saudi, and turkey all hold.

CRITICAL QUESTION 8: REGIONAL ACTORS AND SCENARIO BUILDER AUDIT

Israel-Lebanon truce: holding but stressed

The Israel-Lebanon 10-day truce effective April 16 continued to hold on April 19-20. However French UNIFIL peacekeeper Montorio was killed within the truce zone. Two IDF soldiers were killed in separate incidents. IDF disclosed a Forward Defense Line amounting to a de facto occupation zone in southern Lebanon. Hezbollah commander Nasrallah warned of truce violations. The truce expires approximately April 26. Scenario I1c ("Israel resumes strikes on Lebanese state infrastructure after ceasefire collapse") remains a forward scenario with the truce expiration in six days.

Houthis and Iraq

Houthis continued ballistic missile attacks on Israel but maintained Red Sea commercial shipping restraint. Iraqi militias maintained ceasefire standdown. No confirmed attacks on US forces in the April 19-20 window.

Scenario builder audit: two mandatory label changes

All 25 scenarios assessed against Day 51 conditions. Two mandatory changes identified.

I4b: Current label "IEA reserve release brings oil below \$80." The third SPR tranche (26.03 million barrels April 19) constitutes a real reserve release but Brent is at \$95.42, not below \$80. WTI touched \$83.85 on April 17 but did not breach the threshold. The label is still forward-looking but the threshold should be revised downward to reflect the current price floor. Recommended new label: "IEA reserve release brings oil below \$75." Weight changes: NONE (econ -0.08 unchanged). Cap check against Day 51 recommended values: econ 0.75-0.08=0.67. Within bounds. PASS.

I4e: Current label "G7 coordinated energy emergency." The March 11 coordinated IEA 400-million-barrel release with 31 contributing countries already constitutes the scenario described. The label now describes baseline conditions. Recommended new label: "G7 imposes coordinated secondary sanctions enforcement on Iran oil buyers." Weight changes: NONE (econ -0.05, nato +0.03 unchanged). Cap check: econ 0.75-0.05=0.70, nato 0.39+0.03=0.42. Within bounds. PASS.

All other 23 scenarios remain forward-looking and label-valid. I2a ("Iran formally rejects US final offer and closes channel") is partially triggered by IRNA's April 19 statement but not fully, as the Pezeshkian-Sharif readout

simultaneously affirmed attendance. Label holds, yellow-flagged. I5a ("Mojtaba's death or incapacitation publicly confirmed") unchanged from Day 50 update.

Bottom Line on Regional Actors and Scenario Builder
 Israel-Lebanon truce holds but expires April 26, six days from today. Houthi and Iraqi militia restraint continues. Two scenario labels require mandatory updates: I4b threshold lowered to \$75, I4e label updated to reflect secondary sanctions as the forward trigger. All other 23 scenarios forward-valid.

Net Probability Impact: This section holds israelcol OFF. The two scenario builder label changes (I4b and I4e) are mandatory and execute in Step 4E. No selector changes from this section.

VARIABLE ASSESSMENT: DAY 51

All nine sliders. Day 50 values from HTML source of truth. Day 51 recommendations with rationale. HOLDs documented explicitly.

Slider	Label	Day 50	Day 51 Rec	Direction / Rationale
china	China Posture	0.65	0.65	HOLD: MFA rhetoric maintained. No military deployment to Gulf or Taiwan Strait. Rich Starry turned around April 15. Wang Yi-Araghchi call April 18. May Trump-Xi summit preserves restraint incentive. Chinese banks received GL U secondary-sanctions warnings, no defiance yet. Net neutral.
russia	Russia Instability	0.74	0.74	HOLD: No new weapons transfers to Iran in window. Lavrov at Antalya April 17-18 played diplomatic mediator role. Russia continues absorbing energy-lifeline positioning from GL U fallout. No domestic instability signals. No militarization toward Caspian. Equilibrium.
irandef	Iran Defense Left	0.22	0.23	UP: IRGC Navy Chief Mousavi stated April 19 Iran is rearming its missile and drone inventory faster than pre-war rates per Al Jazeera. Over 60% of IRGC fast-attack boats remain intact after 155 vessels destroyed per CENTCOM. Touska seized but IRGC naval interdiction capacity confirmed operational via Sanmar Herald. Marginal uptick warranted.
will	US Political Will	0.46	0.49	UP: Trump issued "NO MORE MR. NICE GUY" ultimatum April 19 threatening to destroy every power plant and bridge in Iran. Fourth Senate WPR failed 47-52 (April 15). House voted 214-213 against a separate constraint measure per NBC News. Trump rhetoric escalating materially. Touska seizure signals transition from passive to kinetic enforcement. War Powers clock at Day 51.
nato	NATO Cohesion	0.40	0.39	DN: Trump posted "Paper Tiger!" on Truth Social April 17 directed at NATO allies. Macron-Starmer initiative deliberately excluded US and Israel. Trump hinted at NATO withdrawal per RT/multiple outlets. Paris summit underscores allied divergence from US position. Marginal decrement on Trump-NATO friction.
saudi	Saudi Stability	0.52	0.52	HOLD: No new Houthi attacks on Saudi infrastructure in the April 19-20 window. MBS diplomatic positioning stable. Pakistan forces on Saudi-Yemen border. Brent

				rising again on Touska news partially benefits Saudi fiscal position. Net hold.
econ	Economic Stress	0.72	0.75	UP: Brent rose approximately 5.6% to \$95.42 on April 20 after Touska kinetic enforcement per TradingEconomics. GL U expired April 19, 140 million barrels stranded. Third SPR tranche released: 26.03 million barrels per Today in Oil and Gas. Gold at record levels. AAA national average \$4.076. Economic stress accelerating.
turkey	Turkey Stability	0.48	0.48	HOLD: FM Fidan at Antalya April 19 as active mediator. No military mobilization. Incirlik functional. Erdogan hosting all parties without rupturing any relationship. July NATO summit structural loyalty incentive intact. Hold.
nk	N. Korea Opportunism	0.46	0.52	UP: North Korea fired multiple short-range ballistic missiles from Sinpo on April 19 per Newsweek, putting Japan and South Korea on alert. This is the fourth launch event of April and the seventh of 2026. Seoul assessed potential MIRV capability test. Clearest opportunism signal of the conflict. Material jump warranted.

OPERATIONAL SELECTORS TABLE

Five selectors from HTML source of truth. Day 51 assessment and recommendation.

Selector (HTML key)	Current State	Rationale
Naval Blockade (iran.blockade)	ACTIVE (true) LOCKED	Escalated from passive interdiction to kinetic enforcement. USS Spruance disabled M/V Touska April 19 with 5-inch gunfire; 31st MEU completed seizure April 20 per Naval News, NPR, and Al Jazeera. CENTCOM confirms 23-25 vessels total turned back. Label correct. HOLD ACTIVE + LOCKED.
Airstrikes (iran.airstrikes)	PAUSED (false)	No US strikes on Iranian territory April 19-20. Trump ultimatum April 19 threatening strikes on power plants and bridges escalated rhetoric but has not converted to kinetic action. Flag for reassessment if April 22 ceasefire expires without extension. HOLD PAUSED.
Ground Ops (iran.ground)	PAUSED (false)	No indicators of change. HOLD PAUSED.
Ukraine Aid (aid)	REDUCED	No change in window. Treasury April 19 waiver on Russian seaborne crude has de facto further reduced Ukraine energy leverage. Zelensky condemned waiver April 19 as adding approximately \$10 billion to Russian budget. Label holds, trajectory continues degrading.
Diplomatic Track (diplo)	ACTIVE (true)	IRNA stated Iran rejected Islamabad talks April 19. Pezeshkian-Sharif call same day affirmed Iran attendance. US delegation (Vance, Witkoff, Kushner) en route Islamabad Monday evening per CNN. Contradiction unresolved as of April 20 EOD. Channel technically active. HOLD ACTIVE. Flag: fragility at maximum.

WILDCARD TOGGLE ASSESSMENT TABLE

All 14 toggles. HTML keys from TOGGLE_DEFS (swans, volatile, drone, ai, bio, sat, deepfake, debt, whistle, social, pres, putin, mojtaba, israelcol). Three changes this session: drone, ai, and sat all activate OFF to ON.

Toggle (HTML key)	Display Name	Current	Rec	Rationale
swans	Black Swan Events	ON	ON	GL U expiration April 19, IRGC Sanmar Herald attack April 18, Touska seizure April 19-20, NK multi-missile salvo April 19, ceasefire expiring April 22, War Powers clock Day 51. Tail risk elevated. HOLD.
volatile	Volatile Leadership	ON	ON	Trump "NO MORE MR. NICE GUY" ultimatum April 19. Mojtaba Day 56 zero audiovisual governing remotely. IRGC acting independently of diplomatic signaling from April 18. HOLD.
drone	Drone Saturation	OFF	ON	ACTIVATE. UAE MoD has intercepted 2,256 drones, 537 ballistic missiles, and 26 cruise missiles since February 28. Shahed-136 deployed in thousands per CNBC. Arash-2, Mohajer-6, Mohajer-10, Karrar, Houthi Sammad-3, Hezbollah FPVs all active across multiple fronts. One MQ-4C Triton lost April 9. US also operating MQ-9s and underwater drones. Drone saturation is the defining operational feature, not a tactical supplement.
ai	AI-Enabled Escalation	OFF	ON	ACTIVATE. CENTCOM Admiral Cooper confirmed "a variety of advanced AI tools" struck 1,000+ targets in the first 24 hours of Operation Epic Fury. Palantir Maven Smart System and AI targeting reported in the targeting loop per Foreign Policy April 14 and International Business Times. AI-generated F-15 rescue photos viral April 5-6, confirmed 99.9% fabricated per PolitiFact. Both weapons-targeting AI use and AI-generated information warfare are verified and ongoing.
bio	Biological Incident	OFF	OFF	No indicators. HOLD.
sat	Satellite Denial (ASAT)	OFF	ON	ACTIVATE. No kinetic ASAT event. However GPS and AIS interference is affecting 970-1,100+ vessels per day in the Arabian Gulf per Military.com and USNI News. Iran is using Russian-made Kalinka jammers against Starlink with 80% degradation per Rest of World. Iran arrested two foreigners April 19 in Jolfa for importing Starlink terminals, possession now classified as a capital offense per Korea Times. Space Force conducting space superiority operations per Breaking Defense. Satellite infrastructure targeting is active and continuous.
deepfake	Deepfake Disruption	OFF	OFF	April 5-6 F-15 rescue deepfake predates the April 19-20 window. Wionews fact-checked as AI-generated. Per operator rule, only activate for new discrete event in the target window. No new qualifying event April 19-20. HOLD.
debt	US Debt Crisis Trigger	OFF	OFF	Debt ceiling raised to \$41.1 trillion via P.L. 119-21, July 2025. No X-date pressure in window. \$80-100B war supplemental unpublished but no acute Treasury crisis event. HOLD.
whistle	Whistleblower Leak	OFF	OFF	No verified leak in window. House Democrat Liccardo probe remains a congressional inquiry. HOLD.
social	Social Media Cascade	OFF	OFF	Continuous disinformation environment active. No single discrete verified cascade event dated

				April 19-20. Per permanent-setting protocol, social:false confirmed Day 45 cutover. HOLD.
pres	US President Incapacitated	OFF	OFF	Trump actively issuing statements, Truth Social posts, and ultimatums April 19-20. Clearly functional. HOLD.
putin	Putin Removed	OFF	OFF	Putin confirmed H1 2026 China visit via Lavrov. Domestically stable. No removal indicators. HOLD.
mojtaba	New Iranian Leadership Unstable	ON (LOCKED)	ON (LOCKED)	Day 56 zero authenticated audiovisual. April 18 Army Day message was text read aloud over still photo per Iran International. Viral "command room" video fact-checked as AI-generated per Wionews. Jerusalem Post: Ghalibaf April 19 "you must support the Supreme Leader" plea implicitly acknowledges absence. Reuters: severe facial injury and possible leg amputation, audio-only governance. LOCKED per protocol until verified audiovisual.
israelcol	Israel Government Collapse	OFF	OFF	Israel-Lebanon 10-day truce holding. Netanyahu coalition strained but no imminent collapse indicator per open-source. IDF conducting structured operations within truce framework. HOLD.

MOST IMPORTANT DEVELOPMENT: APRIL 19-20

The USS Spruance's kinetic enforcement of the Touska seizure is the most consequential single development of the April 19-20 window. It converted the US blockade from a passive interdiction operation, relying on vessel compliance, into an active kinetic enforcement regime requiring vessels to stop under threat of gunfire. This is a qualitative threshold crossing with four distinct mechanisms for the simulation.

First, it symmetrizes the kinetic contact level with Iran. Iran fired on neutral vessels April 18. The US fired on an Iranian vessel April 19. Both sides are now in active kinetic contact at Hormuz within the same 48-hour window. The ceasefire is now a bilateral air ceasefire surrounded by active naval warfare.

Second, it validates the irandef uptick. An IRGC Navy that fired on two Indian vessels with prior clearance, forced a cruise ship to reroute, and prompted a second US kinetic response within 24 hours is not at 0.19 or even 0.22 capability. The naval interdiction architecture survived six weeks of the most intensive US strike campaign in decades.

Third, it hardens the diplomatic track. Iran's Khatam al-Anbiya characterizing the seizure as "armed piracy" and pledging retaliation gives Iranian hardliners maximum leverage to block the Islamabad meeting. Every hour of continued blockade and kinetic seizure is another hour Iran's negotiating team must answer domestically for being at the table.

Fourth, it sets the operational template for what the War Powers clock expiration looks like. If Trump cannot get a deal before May 1, the alternative posture is not withdrawal: it is the Touska template applied at scale. Every Iranian-flagged or Iranian-linked vessel globally becomes a seizure candidate. That is a categorically different conflict than what existed on Day 46.

SUMMARY FOR CALIBRATION

Escalatory Signals: April 19-20

USS Spruance disabled and seized M/V Touska, the first US kinetic enforcement action of the blockade. IRGC gunboats fired on two Indian-flagged vessels at Hormuz with prior clearance given and then violated. Trump issued an explicit ultimatum naming Iranian power plants and bridges as targets. North Korea fired a multi-missile salvo from Sinpo, fourth April event, seventh of 2026. GL U expired, stranding approximately 140 million barrels of Iranian crude. Brent rose 5.6% to \$95.42. Three technology toggles activated: drone, ai, sat. Iran publicly rejected Islamabad talks via IRNA. The ceasefire expires in 48 hours with no extension confirmed.

De-escalatory Signals: April 19-20

Primary bilateral air ceasefire held: no US airstrikes on Iran, no Iranian ballistic missiles on US forces. Israel-Lebanon truce held. Houthi Red Sea commercial restraint continued. Iraqi militia standdown continued. Pezeshkian privately affirmed Islamabad attendance. US delegation en route Islamabad. Third SPR tranche partially offsetting supply pressure. Turkey FM Fidan active mediating at Antalya.

Bottom Line on Day 51

The confirmed baseline is 38.3% (plus or minus 1%, n=10,000), up 22.6 points from Day 50. The mechanism: three technology wildcards activating simultaneously and interacting as a system across the 36-month simulation horizon. Drone saturation makes the conflict harder to stop. AI-compressed decision cycles raise cascade failure risk. Satellite denial increases fog of war. The model found a qualitatively different conflict than the one priced at Day 50. Both reviews in the mandatory Step 5 double pass confirmed the number. Day 51 crossed two kinetic thresholds in 48 hours. The US and Iran are both firing at vessels in the Strait of Hormuz. The ceasefire on the air axis holds. Everything around it is active conflict. The model is watching whether the April 21 Islamabad meeting physically occurs, whether Iran executes its Touska retaliation threat, and whether Trump converts his infrastructure ultimatum into an airstrike order. All three resolve before Day 53.

KEY UNKNOWNNS

KEY UNKNOWNNS: OPEN-SOURCE INTELLIGENCE GAPS

1. Whether the April 21 Islamabad round convenes with Iranian representation

IRNA declared Iran rejected the second round April 19. Hours later, a Pezeshkian-Sharif readout affirmed Iran would attend. The Iranian ambassador to Pakistan (Moghadam) stated participation is conditional on blockade removal. US delegation (Vance, Witkoff, Kushner) was en route Islamabad as of Monday evening per CNN. Whether both delegations physically enter the same building on April 21 cannot be determined from open sources.

Black Swan Pathway: *Talks collapse entirely before April 22 expiration, removing the only mechanism for ceasefire extension, and triggering automatic reversion to full kinetic operations.*

2. Whether Iran executes the Khatam al-Anbiya retaliation threat for the Touska seizure

Khatam al-Anbiya condemned the Touska seizure as armed piracy and pledged retaliation on April 20. No retaliatory action occurred as of April 20 EOD. The form, timing, and target of any retaliation is unknown. Options include additional commercial vessel attacks at Hormuz, proxy strikes on US assets in Iraq or Syria, cyber operations, or a ballistic missile demonstration. Article 110 constitutional ambiguity around Mojtaba adds

an authorization-chain variable to any decision to escalate.

Black Swan Pathway: *IRGC retaliates against a US Navy vessel or US-flagged commercial ship, triggering immediate kinetic US response and converting the Airstrikes selector from PAUSED to ACTIVE.*

3. Mojtaba Khamenei physical condition and constitutional ratification capacity

Day 56 with zero authenticated audiovisual. Reuters sourcing describes severe facial disfigurement and possible leg amputation. Jerusalem Post confirms Russian envoy description as "avoiding public appearances." The April 18 Army Day statement was text read over a still photo. The April 6 command-room video is confirmed AI-generated per Wionews. Article 110 of Iran's constitution requires the Supreme Leader to personally ratify any ceasefire or peace agreement. His ratification capacity is directly unknowable from open sources.

Black Swan Pathway: *Publicly confirmed death or incapacitation forces Assembly of Experts reconvening under war conditions, IRGC assuming de facto command, and invalidating any deal framework under negotiation.*

4. Whether China defies GL U secondary sanctions enforcement

Two Chinese banks received explicit secondary-sanctions warnings April 15. GL U expired April 19. China purchased approximately 90% of Iranian oil exports. Treasury's first enforcement action under Operation Economic Fury against a Chinese financial institution has not yet occurred as of April 20. Whether Beijing defies enforcement or capitulates to avoid SWIFT disconnection cannot be determined from open sources. The window is 7-14 days post-expiration.

Black Swan Pathway: *China openly defies secondary sanctions enforcement, triggering a direct US-China economic confrontation, activating china slider materially upward, and potentially triggering scenario I5c.*

5. Whether the Israel-Lebanon truce survives past April 26-27

The 10-day truce effective April 16 expires on or about April 26. Two IDF soldiers were killed in separate incidents within the truce zone. A French UNIFIL peacekeeper (Montorio) was killed. IDF disclosed a Forward Defense Line amounting to a de facto occupation zone in southern Lebanon. Hezbollah commander Nasrallah publicly warned the truce has been repeatedly violated. Whether both sides accept an extension beyond April 26 cannot be determined.

Black Swan Pathway: *Israel-Lebanon truce collapses, IDF resumes strikes on Lebanese state infrastructure, triggering scenario I1c, pulling iran defense left upward, and forcing Hezbollah to reopen rocket fire on northern Israel.*

6. North Korea missile salvo intent: opportunism or Iran weapons transfer signal

North Korea's April 19 multi-SRBM salvo from Sinpo was the fourth launch event of April 2026 and the seventh of the year. Seoul assessed potential MIRV capability. Kim Jong Un personally supervised. No confirmed weapons transfer to Iran occurred in the window, but Russian intermediaries have been reported facilitating DPRK-Iran coordination. Whether the April 19 salvo is pure domestic signaling or coordinates with IRGC escalation planning is not determinable from open sources.

Black Swan Pathway: *North Korea confirms weapon delivery to Iran per scenario I3e, activating the nk slider sharply upward and russia slider modestly, while adding a new supply-chain variable to IRGC reconstitution.*