



Flying Smarter

The business case
for geopolitical risk
intelligence



Aviation
Insights Series

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April 2026

\$5 – 12 billion

Airlines' first order annual cost exposure arising from geopolitical risk

We estimate that the cumulative effects of airspace restrictions, operational disruption, and geopolitically driven volatility cost the global airline industry in the order of USD 5 – 12 billion annually.

This represents a small proportion of total industry revenues but a disproportionately large drag on profitability, reflecting the sector's thin margins.

We estimate that 20-30% of these costs may be avoidable through the adoption of geopolitical risk-intelligence tools that provide timely, predictive insight. [1]

Note: [1] This estimate is based on an active global commercial fleet of approximately 31,000 aircraft, comprising around 25,000 narrow-body and 6,000 widebody aircraft. The breadth of the estimated range reflects the number of underlying variables and the resulting year-to-year variability in geopolitical developments. To address this uncertainty, 10,000 simulations were conducted, with USD 5 billion representing the 25th percentile and USD 12 billion representing the 75th percentile of outcomes.

This USD 5 – 12 billion estimate is by nature conservative: it captures direct, first order operational disruption (e.g., rerouting and delays), but does not quantify broader knock-on effects - for example, when an aircraft is diverted or grounded and cannot operate its subsequent scheduled flights, as well as the resulting re-routing costs for passengers and crew.

In practice, geopolitical events can ripple through the global economic system and affect airlines well beyond those operating in and around the immediate conflict zone.

For example, a regional war can tighten jet fuel supply and raise prices for airlines globally. A scenario where this type of event causes a USD 50 per barrel increase in jet fuel, sustained for ~3 months, implies ~USD 30bn of incremental aviation industry fuel cost if purchased at spot. Even allowing for hedging, such an event could still disrupt global supply chains for essential aircraft components, including semiconductors and avionics.

These second and third-order impacts are difficult to measure reliably at an industry level. However, it is reasonable to expect that the exposure could greatly exceed the more readily quantifiable first-order impacts.

Reactive approaches to geopolitical risk are increasingly insufficient in today's rapidly evolving threat environment

Global air travel is expanding rapidly, with around 200,000 flights operating daily and this figure projected to roughly double by 2042. At the same time, geopolitical tensions and airspace restrictions are forcing more flights into fewer corridors, creating unprecedented operational challenges. Risk is no longer confined to traditional conflict zones; disruptions originating in one region can quickly ripple across global networks. Rising traffic, shifting conflict dynamics, and constrained airspace are collectively increasing both risk exposure and operational costs for airlines.

Aviation leaders, including heads of security, operations, and insurers, emphasise that rising global instability is forcing airlines to shift from reactive approaches to proactive, real-time geopolitical monitoring.

For most of aviation history, airlines mainly relied on government-led intelligence because it was the only authoritative, structured source of information about geopolitical threats, airspace restrictions, and security risks. Regulators, embassies, and national security agencies controlled access to updates on conflict zones or safety concerns, and airlines depended on these official channels to know where it was safe to fly. This system made sense in an era when governments held the best data; but it also meant airlines often received information that was slow, limited, or difficult to share across their operational teams.

“

MH17 really opened the international community's eyes to just how insufficient government warnings were, and how limited governments often are in providing the intelligence airlines actually need.”

Former regulator

EASA gives information on active conflict zones, but those areas are already restricted. What I really need is the pre-warning; the early hint that something might happen.”

*Head of Operations,
European charter airline*

Figure: Limitations of government-led geopolitical monitoring

Limitation	Illustrative industry feedback	
Biased	Long-haul airline, Middle East	<i>“Publications from the authorities can be filtered through political lenses, which means risks communicated can be downplayed or overplayed.”</i>
Slow	Business aviation operator, Europe	<i>“Regulators announce closure of airspace, but they are often lagging what geopolitical events are unfolding on the ground.”</i>
Generic	Oil and gas company, Global	<i>“Often the reports being published by government agencies are for a wide audience and too general to be operationally useful in the aviation context.”</i>
Not easily distributable internally	Leisure airline group, Europe	<i>“Government intelligence, whilst very good, is inherently not shareable with a wide community in our organisation.”</i>

The costs of disruption caused by geopolitics are multi-fold

Geopolitical disruption is costly because it impacts multiple P&L lines simultaneously, through factors such as fuel burn, crew duty constraints, missed airport slots, diversions, fines, and insurance costs.

Cost Type	Description	Quote
Direct operational impacts	Rerouting	Longer routings to avoid unsafe, or perceived unsafe, airspace increase fuel burn, flight time, and ANSP charges, making some routes unfeasible due to aircraft range limits or nonviable due to higher operating costs <i>“Rerouting around Iranian airspace during pre-2026 regional tensions added 45–50 minutes of flying time for Far-East routes costing us more than £1.5 million over a season.”</i> Leisure airline group, Europe Note: These reroutings highlight how precautionary (and in some cases arguably premature) decisions, rather than imminent threats, can nonetheless result in significant cost exposure.
	Diversions	Unexpected diversions and emergency repositioning create operational costs. <i>“When we took the call to suspend our operations in Israel when the Gaza War began, and had to reposition aircraft and crew, it was a major and costly network decision.”</i> Global freight carrier
	Route suspension	Route suspensions in higher-risk operating environments lead to lost revenue. Furthermore, aircraft and crews stranded at the start of a crisis create immediate operational and recovery costs, while delayed restarts after a disruption further reduce passenger and cargo revenue even after airspace risk has returned to acceptable levels, as operators wait for competing airlines to make the first move. <i>“There is a scenario where airlines suspend flights but know they will eventually restart them. When that restart is delayed, for example, starting the route one or two months later, the airline incurs an opportunity cost equal to those one or two months of lost revenue.”</i> Geopolitical risk intelligence vendor
Indirect operational impacts	Asset exposure	Aircraft face increased risk of missile, drone, or conflict-related damage. <i>“We operate in regions with missile threats and no-warning weapons testing; it’s a volatile environment for aviation.”</i> Global air-cargo operator
	Crew exposure	Crew and ground staff may require rerouting, relocation, rapid evacuation or repatriation, creating knock-on rostering impacts when staff are out of position <i>“When local security deteriorates, we become concerned about getting our people out safely and ensuring they are not stuck in the wrong place at the wrong time.”</i> Long-haul carrier, UK
Overhead costs	Insurance premiums	Higher insurance premiums and restrictions when flying into risky regions. <i>“Flights into high-risk areas require higher premiums and restrictions, such as no overnight stays or refuelling.”</i> Speciality insurer underwriter
	Risk staffing	More analyst hours required to monitor conflicts and assess risks. <i>“For an organisation of our scale, conducting route risk assessments manually would demand a dedicated team of 10 to 12 analysts.”</i> Long-haul carrier, UK

Commercial geopolitical risk intel solutions enable airlines to move proactively rather than reactively

Due to the shortcomings of relying on slow, inconsistent government intelligence, and the heavy operational burden of manually interpreting raw information for aviation, airlines increasingly look to commercial risk-intelligence platforms.

Best-in-class risk intelligence means airlines get fast, verified, aviation-specific insights about any threat that could affect a flight, crew or airport. It goes far beyond news scraping or waiting for late government notices. Instead, solutions exist that integrate data from multiple sources, including news platforms, social media, government notices, satellite and thermal imagery, aircraft movement data and filters it into accurate, unbiased, real-time and even predictive alerts. By cross-checking data inputs and filtering out unreliable data, these platforms help ensure that risk assessments rely on objective and verified information rather than isolated or subjective observations. Airlines value this because decisions on overflight, routing, and airport safety and security must often be made within minutes, not hours, and are further strengthened by predictive alerts that enable contingency planning.

It also means the intelligence is interpreted, not just delivered raw. Leading platforms show what threats mean for actual flight paths, altitudes, aircraft types and crew safety. Historical trends, predictive analysis and easy-to-use dashboards help airlines assess whether risks are rising, falling or stable. Ultimately, best-in-class intelligence supports safe but optimised operations; avoiding unnecessary costs while avoiding genuine hazards. It enables airlines to implement timely mitigation measures as risk rises - neither too early nor too late - while also supporting dynamic route reopening once risk returns to acceptable levels, with decisions clearly justified across the organization, including to crew and passengers.

Industry adoption remains limited, with most airlines operating below best practice.

Only an estimated 15–20% of airlines, typically larger and more safety-mature carriers, have adopted truly best-in-class, daily risk-intelligence tools. These airlines treat risk intelligence as essential infrastructure rather than a “nice to have,” and expect immediate alerts, deep analysis, forecasting, and aviation-specific insight.

By contrast, the majority of airlines continue to rely on government advisories, media reporting, manual checks, or generic intelligence tools not designed for aviation. Even among larger carriers, capability is often fragmented or incomplete. While adoption is accelerating in response to recent global events, the industry overall remains in the early-to-middle stages of maturity.

“

During the escalation in Myanmar’s civil war, when some of our establishment partners were advising us to avoid the airspace entirely, our risk intel tool gave us confidence to continue operating safely at defined minimum altitudes”

*Security Manager,
Long-haul cargo airline*

We spot upcoming peaks in military activity and adjust routes or pause flights early; keeping us operating longer and resuming faster than if we’d relied on government intel.”

*Security Manager,
European carrier*

Implementing geopolitical
risk intelligence solutions
can deliver rapid payback
for airlines,



with a typical
payback period of

6-8 weeks.

The market is somewhat under-served, with few vendors capable of offering a comprehensive, real-time risk picture

Figure: Capability comparison of aviation intelligence and risk-monitoring providers, ordered by completeness of coverage on the evaluation categories

Provider	Analyst verified aviation intelligence	Proactive alerts (push, not pull)	Quantified tactical risk forecasts with timings	Location-specific dynamic risk scores	Scalable (batch) flight risk assessment	Crisis response
Osprey Flight Solutions	✓	✓	✓	✓	✓	✓
Dyami	✓	✓	✓	✓	✗	✓
MedAire	✓	✓	✗	✓	✓	✓
DragonFly	✓	✓	✓	✗	✗	✗
Seerist	✗	✓	✓	✓	✗	✓
Control Risks	✓	✗	✗	✗	✗	✓
Ops Group	✓	✓	✗	✗	✗	✗
Horizon Intelligence	✓	✓	✗	✗	✗	✗



Has capability



Has partial capability



Doesn't have capability

Note: Evaluation adapted from the U.S. Transportation Security Administration competition-in-contracting assessment, J&A No. JA2020-02-0522. This scorecard is an indicative, outside-in view developed on a best-efforts basis from public sources and limited secondary references as of April 2026. It does not constitute vendor confirmation and may not capture paid modules, roadmap items, client-specific configurations, service wrap-arounds, or proprietary capabilities. Ratings reflect evidence observed rather than a guarantee of absence or presence. As vendor capabilities may be broader in practice; all evaluations should validate directly.

Perceived intangibility of ROI is an adoption hurdle for some

Many airlines struggle to justify investment because the financial benefits of risk-intelligence tools are not easily expressed in a simple, measurable way.

Many airlines we've spoken to say a major barrier to adopting commercial risk-intelligence solutions is that the ROI feels difficult to articulate or quantify. While the operational value is often clear to them – better decisions, faster intelligence, and improved safety and security – the financial return is harder to convert into a simple number. Much of the benefit comes from "losses avoided", which procurement teams struggle to treat as tangible. Combined with tight budgets and competing priorities, this leads many airlines to continue relying on slower government intelligence or manual assessment processes rather than investing in commercial platforms.

This challenge is reinforced by organisational dynamics. Security and operational teams are, for valid reasons, not commercially driven, which can make it difficult to build a strong business case. In hindsight, better intelligence would have changed some past decisions and avoided costly outcomes, but acknowledging this can be difficult, particularly where it implies that earlier judgments had material financial consequences. As a result, there is often a tendency to protect the status quo. In these cases, airlines may rely on external justification, such as alignment with government guidance or peer decisions, rather than taking ownership of different, independent judgements enabled by next-generation tools.

While long-haul and high-exposure airlines see large, measurable returns, even airlines operating in supposedly low-risk regions are recognising that unexpected events can quickly turn risk intelligence into a critical operational asset.

Airlines also highlight that ROI varies dramatically depending on route network and exposure profile. Global carriers flying long-haul over conflict-affected regions see very large, measurable gains: airspace reopening, fuel savings, avoided detours, and reduced crew-time impacts. Some report that a single routing decision can outweigh the annual platform cost.

“There's a large proportion of airlines that haven't sourced a geopolitical risk solution simply because it isn't a regulatory requirement, rather than because they've evaluated the economic case.”

Former regulator

Many airlines operating in what they believe are stable environments don't immediately see the benefit; yet that stability is increasingly fragile.

Recent events across Europe show how quickly conditions can change, whether through geopolitical shocks or sudden, highly disruptive drone incursions.

In late 2025, for example, drone sightings shut down airports across Belgium, Denmark, Germany, and the Netherlands, including a complete suspension of flights at Eindhoven Airport, showing that even 'low-risk' regions can face major operational disruption with no warning.

Even adopters acknowledge that ROI fluctuates widely based on routes, exposure, disruptions, and seasonality, leaving non-adopters unsure how to quantify value.

Many airlines using these platforms generally describe payback in weeks rather than months, with most recovering the investment well within a single operational season. Others view payback as a longer-term accumulation of safety, efficiency, and compliance benefits. In both cases, many airlines are still making ROI judgments based on gut feel and intuition. For those that already use these tools, they have become core infrastructure, making financial justification far easier than in the past. However, for airlines yet to adopt them, the perceived low measurability of returns remains a key reason for hesitation.

Scenario modelling shows that adopters of these solutions can expect a positive ROI.

A probabilistic approach to understanding ROI is needed because the disruptions driven by geopolitical tensions are highly variable by nature.

Because ROI is highly variable across fleets, routes, aircraft mix, and geopolitical exposure, many airlines struggle to form a confident financial case for adopting risk-intelligence tools. To address this uncertainty, we've developed a structured way to quantify ROI using a Monte Carlo simulation. This approach reflects the reality that disruption costs depend on wide-ranging factors: aircraft types, daily flight volumes, percentage of routes exposed to geopolitical tension, the likelihood of diversions, typical delay minutes, and the rare but costly grounding of aircraft. Monte Carlo is well-suited here because it helps model situations where uncertainty genuinely matters and simple averages hide meaningful variation.

In practice, the model runs ten-thousand simulations for an archetypal 100-aircraft airline, randomising inputs such as fleet mix, daily flight volume, disruption rates, diversion probabilities, additional flying minutes and the occasional multi-day grounding of aircraft. Each run produces a different annual disruption cost, building a realistic distribution of low, median and high financial outcomes. A conservative mitigation rate (e.g., 10-20%) is then applied to estimate the portion of these costs that risk-intelligence tools could reasonably avoid.

The analysis also incorporates the per-aircraft insurance discount realised by adopting a geopolitical risk management solution.

Comparing those savings to the total solution cost (e.g., ~USD 10-12k per tail) produces a range of plausible ROI results, highlighting typical, downside and upside scenarios.



A typical airline can expect to recover the cost of a one-year subscription to a geopolitical risk-intelligence solution in around 6–8 weeks.

We modelled 10,000 scenarios to understand the payback period for adopting a geopolitical risk-intelligence solution.

Each simulation varied core drivers such as fleet mix, flight volumes, disruption rates, diversion probabilities and grounding events, producing a wide distribution of possible financial outcomes.

The results show that while payback periods naturally differ across operating profiles, the distribution clusters tightly enough to give a clear picture of the likely return.

Across all 10,000 simulations, the median scenario achieved payback in around 7 weeks, reflecting the

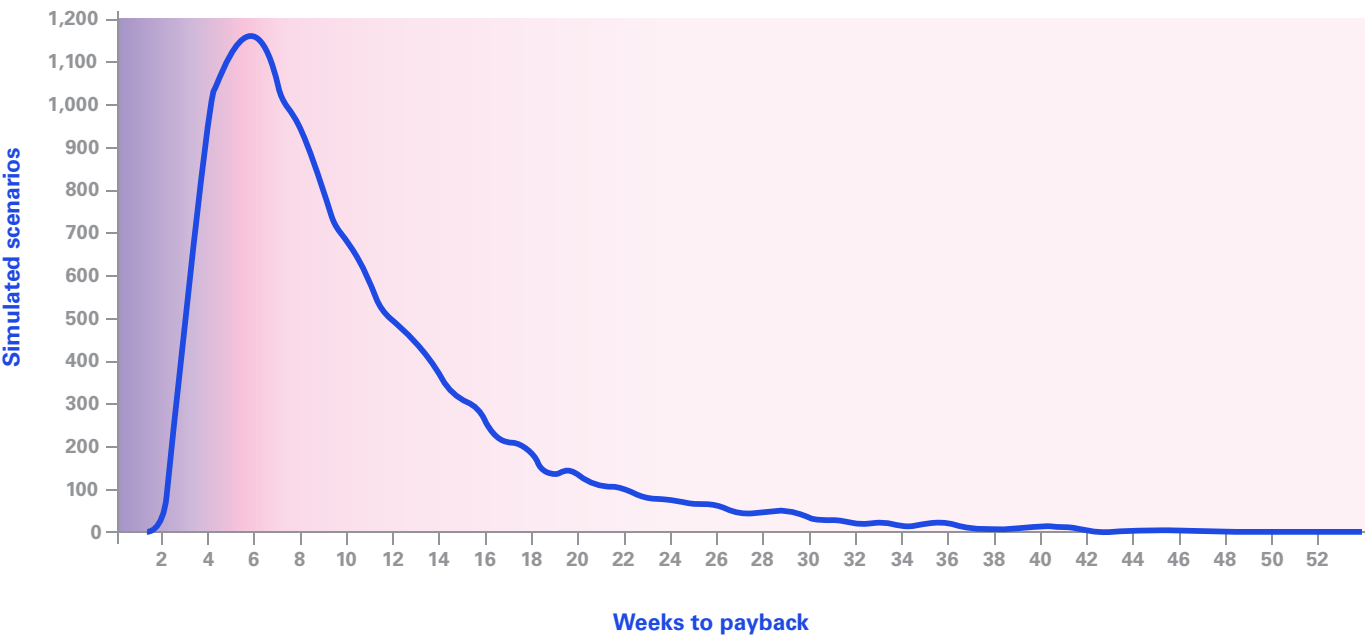
cumulative effect of avoided disruption, shorter routings and faster operational decisions.

Early-benefit cases demonstrate even faster recovery, with 25% of scenarios paying back within 5 weeks.

Even under more conservative conditions; where disruption is less frequent, rerouting benefits are smaller, and grounding events are rare; 95% of cases reached payback within 24 weeks.

This indicates that, although individual airlines will experience different levels of impact, the underlying economics remain robust across a broad range of real-world conditions.

Modelled payback period for a geopolitical risk solution, 10,000 scenarios



Payback windows

0–3 weeks	Immediate payback (top 5%)	9–12 weeks	Extended return window (top 75%)
4–5 weeks	Early payback (top 25%)	13–24 weeks	Conservative-case outcomes (top 95%)
6–8 weeks	Majority payback (median)	24+ weeks	Tail cases (very rare)

Typical scenarios have been modelled, but real-world benefits can be even larger

A. Black Swan events aren't modelled; even though they can happen, they are rare and massively distorting.

The model reflects expected costs and benefits under normal operating conditions, based on disruption patterns that occur frequently enough to measure. It does not attempt to predict extreme, ultra-rare events that fundamentally sit outside normal risk assumptions and would distort everyday decision-making. In aviation, a true black swan is less about the existence of conflict risk itself, much of which is well preceded, and more about novelty or unprecedented scale, such as the use of aircraft as weapons on 9/11, or state-level actions that far exceed historical experience.

B. Opportunity-cost gains and second-order disruption impacts are not explicitly modelled, even though they can be material for some operators

The model captures direct efficiency benefits such as shorter flight times and reduced fuel burn from more optimal routings. It does not, however, reflect the wider operational value unlocked when improved geopolitical risk intelligence gives airlines the confidence to move beyond blanket guidance or long-standing avoidance habits. Examples include reopening routings over parts of Africa, such as Libyan airspace, or removing overly conservative detours in South America, such as around Venezuelan airspace. The upside for these airlines can extend beyond fuel savings to improved aircraft utilisation and network efficiency.

The model also does not capture knock-on disruption costs when adverse events occur, such as passenger reaccommodation, crew displacement, or the inability to operate subsequent sectors following a diversion.

As these effects are highly operator- and network-specific, they sit outside the core ROI calculations.

C. Small-fleet effects aren't fully modelled because the 100-aircraft baseline is designed for scale, and percentage impacts can be disproportionately higher for smaller operators.

The model is built around a 100-aircraft scenario, simply to give a clear, scalable picture of the commercial impact of geopolitical disruption. However, for many regional and mid-sized operators, losing even a single aircraft or experiencing a multi-day routing disruption can represent a much bigger percentage hit to their overall operation than it would for a 100-tail carrier. That means the risk exposure is proportionally higher; and so the ROI case for predictive, real-time risk intelligence becomes even more compelling.



Black Swan Events

Black swan events are shocks so extreme, either in nature or scale, that no normal operational or commercial model can meaningfully account for them.

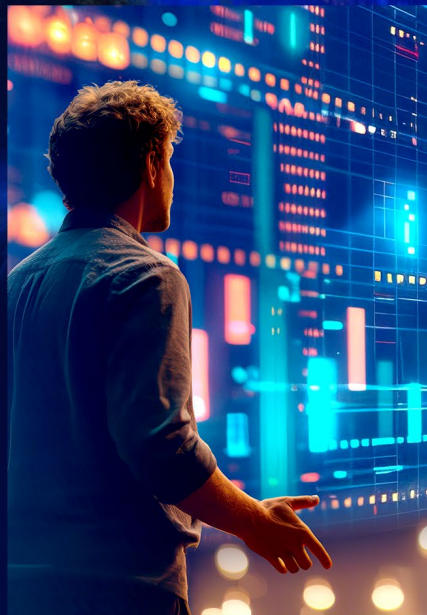
- **Scale:** Aircraft confiscation is an anticipated war risk. However, the overnight immobilisation and effective expropriation of hundreds of commercial aircraft by Russia, following its invasion of Ukraine, was unprecedented in magnitude. Despite being a black swan in scale, Osprey escalated its Russia–Ukraine risk to “extreme” approximately six hours prior to the conflict escalation, enabling appropriate operational mitigation measures to be taken by airlines.
- **Novelty:** Events such as 9/11, where aircraft were deliberately used as weapons, fundamentally altered aviation risk assumptions and fall squarely outside historically modelled threat patterns.

By contrast, damage to aircraft or airport infrastructure in active conflict zones, while severe, follows a well-established risk pattern and should be explicitly incorporated into risk assessments and forward-looking operational planning rather than treated as statistical outliers.

In an operating environment shaped by predictably unpredictable geopolitical shocks, timely intelligence becomes a cost lever as well as a safety lever

Priority actions for airlines

- Airlines should integrate geopolitical risk intelligence into their day-to-day operational decision-making, rather than treating it as an occasional reporting exercise.
- The C-suite should set a clear organisational expectation that proactive geopolitical risk management is a strategic priority, ensuring that investment decisions, governance structures, and cross-functional accountability all support the consistent use of high-quality intelligence in safeguarding the airline's network, financial performance, and long-term resilience.
- Airlines should present the business case for adopting risk-intelligence tools by using a range of realistic scenarios that capture how disruption varies in practice, rather than relying on a single financial estimate.



Appendix:

Rol model assumptions [1/2]

Airline Scenario		Low	High
Narrow-body (NB) aircraft	%	0	100
Wide-body (WB) aircraft	%	= 100 – NB	

Network intensity		Low	High
Legs per day (NB)	#	4	7
Legs per day (WB)	#	1	2

Share of flights impacted by geopolitics		Low	High
Share of flights impacted by geopolitics (NB)	%	0%	20%
Share of flights impacted by geopolitics (WB)	%	20%	40%

Airborne delays		Low	High
Delay occurrence due to geopolitics (NB)	%	1%	2%
Delay occurrence due to geopolitics (WB)	%	2%	4%
Extra airborne minutes when impacted (NB)	mins	2	10
Extra airborne minutes when impacted (WB)	mins	15	45
Airborne delay cost (NB)	USD	75	125
Airborne delay cost (WB)	USD	200	300

Appendix:

Rol model assumptions [2/2]

Diversions		Low	High
Diversions due to geopolitics / 1000 flights (NB)	#	0	1
Diversions due to geopolitics / 1000 flights (WB)	#	0	2
Diversion cost (NB)	USD	15k	150k
Diversion cost (WB)	USD	35k	350k

Groundings		Low	High
Aircraft grounded events/year due to gp (NB)	#	0	1
Aircraft grounded events/year due to gp (WB)	#	0	1
Days grounded when impacted (NB)	days	1	10
Days grounded when impacted (WB)	days	1	10
Daily grounded cost (NB)	USD	100k	150k
Daily grounded cost (WB)	USD	30k	90k

RoI		Low	High
Geopolitical risk intel solution per aircraft	USD	10k	12.5k
Insurance discount per aircraft	USD	1.5k	3k
Mitigation rate w/ risk intel solution	%	20%	30%

Appendix:

Rol model assumptions, definitions and rationale [1/2]

Airline scenario

The model varies the share of narrow-body (NB) versus wide-body (WB) aircraft because operational economics and geopolitical exposure differ meaningfully by aircraft type. Wide-bodies typically operate longer sectors and more frequently traverse higher-risk regions/overflight corridors, while narrow-bodies skew toward shorter, denser networks with different disruption patterns.

Legs per day

Legs per day is a practical proxy for aircraft utilisation and network intensity, which directly scales the number of opportunities for disruption (delays, reroutes, diversions). NB aircraft generally fly more daily sectors than WB aircraft, so setting separate low–high ranges for each reflects real-world scheduling patterns and avoids understating the disruption surface area for high-frequency short-haul operators. The typical numbers of flights per day based on EUROCONTROL data. [\[Link\]](#)

Share of flights impacted by geopolitics

This metric reflects the proportion of flights that require operational changes due to geopolitical factors. Because this exposure varies by airline and network and isn't captured in a single dataset, we treat it as an exposure parameter and apply conservative low–high ranges. The range is higher for wide-body fleets, as long-haul routes more often cross contested or restricted airspace and therefore face greater geopolitical risk.

Airborne delay occurrence due to geopolitics

This parameter is applied only to geopolitically impacted flights: it measures what fraction of those impacted flights turn into an actual delay event (rather than being absorbed as a reroute with no delay). We use conservative conditional ranges (NB: 1–2%; WB: 2–4%), reflecting that most impacted flights are absorbed operationally, while a small minority translate into recorded delay. For example, at an assumed ~20% “impacted flight” rate, these conditional ranges imply only ~0.2–0.8% of total flights incur a geopolitics-driven delay, keeping the assumption intentionally conservative.

Extra airborne minutes when impacted

This reflects the additional flying time when a flight must reroute around restricted or sensitive airspace for geopolitical reasons. The ranges sit above normal day-to-day route inefficiency (as measured by EUROCONTROL) but well below rare crisis events where long-haul flights can face multi-hour detours due to full airspace closures. At typical cruise speeds (~830 km/h), 5 extra minutes equals ~70 km. So an NB uplift of up to 10 minutes (~140 km) and a WB uplift of up to 45 minutes (~620 km) are consistent with tactical avoidance reroutes, rather than the extreme, multi-thousand-kilometre deviations seen in exceptional conflict scenarios. These assumptions are based on historical observations and should be viewed as conservative. As data from the current Middle East conflict is incorporated, observed airborne exposure may increase, with current averages in some affected corridors trending toward the upper end of the 30–45-minute range for wide-body operations.

Airborne delay costs

Airborne delay cost converts “extra airborne minutes” (en-route cruise extension from rerouting) into an incremental USD/minute operating cost. The assumed NB vs WB ranges are aligned with EUROCONTROL's cost-of-delay benchmarks (derived from the University of Westminster delay cost reference values), which show materially higher en-route delay costs for wide-body aircraft than narrow-bodies and emphasise that values are indicative and context-dependent.

Note that EUROCONTROL's values go beyond purely direct operating costs and include passenger-related impacts and an allowance for average knock-on delay within a day or rotation, based on historic European network statistics. These benchmarks are designed to represent average, short-horizon disruption, rather than event-specific tail scenarios. They do not explicitly model multi-day aircraft unavailability, downstream cancellations on unrelated rotations, or exceptional mitigation measures such as short-notice wet leasing. [\[Link\]](#)

Appendix:

Rol model assumptions, definitions and rationale [2/2]

Diversions due to geopolitics / 1000 flights

Geopolitics-driven diversions are calibrated as a small subset of overall diversion events. EUROCONTROL reports that ~0.3% of flights landed at an airport other than planned in 2022 (all causes); our geopolitics-only rates (NB 0–1/1,000; WB 0–2/1,000) are therefore conservative and reflect that only a minority of diversions are attributable to geopolitical drivers.

Diversion cost

We benchmark diversion costs to EUROCONTROL's Standard Inputs for Economic Analyses, one of the few widely used, airline-validated sources that break out key drivers such as handling availability, extra flying time, downstream passenger disruption and compensation obligations. EUROCONTROL's figures are Europe-specific. In other regions, diversion costs may be higher (e.g., more distant alternates, no local handling contracts, greater passenger care burden) or lower (e.g., where EU261-style compensation rules do not apply or diversion infrastructure is cheaper). Inputs can be regionally adjusted where better local data exists.

Groundings

Aircraft grounding events due to geopolitics are defined as instances where a single aircraft is out of productive service for ≥3 days as a result of geopolitical conditions (e.g., sudden security deterioration, airport closures, or an inability to reposition the aircraft). These events are rare for most operators, so we set an assumption of 0–1 events per year for both narrow-body and wide-body fleets. This approach aligns with the model's intent: to capture tail-risk outcomes without implying that such disruptions should be expected annually. As noted in the report, extreme geopolitical shocks can ground many aircraft simultaneously; however, these situations are exceptional rather than typical.

Days grounded when impacted

This input estimates the duration of operational unavailability once a grounding event occurs. A broad range is used because recovery time depends on local conditions, safety decisions, repositioning constraints, and the pace of de-escalation.

Daily grounded costs

The total operational cost of grounding an aircraft includes both the fixed daily expenses (such as the aircraft lease, staff-related costs like emergency accommodation or flights back to base, and parking fees) and the cost of lost flights, including cancelled sectors, disrupted schedules, and compensation or rebooking activity. Together, these factors make grounding far more expensive than the fixed daily costs alone.

This combined effect is why IBA, an aviation valuation specialist, estimates that grounding a narrow-body aircraft can cost up to USD 150,000 per day. [\[Link\]](#)

In contrast, wide-bodies typically cost less per day when grounded because they usually operate only one long-haul flight per day, rather than the five or six short sectors flown by narrow-bodies. So even though each wide-body cancellation is individually expensive, fewer flights are affected overall when a wide-body is out of service.

Geopolitical risk intelligence solution cost

The solution cost is modelled on a per aircraft basis because many aviation risk intelligence platforms price by fleet size and because value scales with the number of flights and operational decisions supported. A narrow cost range is used which aligns with observed pricing in the market.

Mitigation risk with risk intel solution

The mitigation rate represents the proportion of disruption costs that better intelligence can realistically avoid through earlier warning, better routing choices, faster decisions, and reduced over-mitigation. The range assumption is deliberately conservative (a minority of costs avoided) because risk intelligence does not fully eliminate geopolitical risk.

These assumptions are intended to provide a scalable, conservative baseline for a randomised airline and to illustrate the economics across a wide distribution of scenarios. Assumptions could be adjusted to reflect an airline's specific fleet mix, utilisation profile, route network, and its unique geopolitical exposure (airspace, airports served, and operating regions), which can materially shift both disruption risk and potential mitigation value.

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KPMG's independent assessment of the value of geopolitical risk intelligence is informed by multiple sources, with thanks to Osprey Flight Solutions for specific data contributions and support with production costs.

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