NATS Flight Planning

A technical fault whose value destruction propagated through airlines, airports, crews and passengers

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UNITED KINGDOM
FAILURE AUGUST 2023
CAA independent review

The failure began in technology. **EPM would have modelled the complete economic chain it ran through**, *airlines, airports, crews and passengers, rather than stopping at the system boundary.*

01 What Happened, and the Deeper Failure Beneath It

WHAT THE CAA REVIEW EXAMINED

In August 2023 a failure in NATS (En Route) Plc's Flight Planning System disrupted UK airspace. The Civil Aviation Authority convened an independent panel whose report covered cause and prevention, contingency, fault recovery, system design, sector communication, resilience, investment, consumer impact and performance incentives.

WHY IT SUITS EPM

This is best described as an **operational resilience and process-design failure** rather than a failed multi-year transformation. The review's structure, spanning system design, contingency, communication, industry response, consumer impact and resilience incentives, is almost a ready-made map of a value chain that crossed organisational boundaries.

THE DEEPER ECONOMIC-PROCESS FAILURE

Viewed narrowly, this was **"operate a flight-planning application"**. The real economic process was: *convert submitted flight-plan information into safe, timely and resilient air-traffic-management decisions while coordinating disruption across the aviation system.*

The consequences crossed organisational boundaries: a single system fault propagated into airline operations, airport operations, crew scheduling and passenger disruption.

The value destroyed was system-wide, but resilience may have been treated as unused capacity rather than as economic protection.

02 Decompose — The Air-Traffic Resilience Process

Information

- submitted flight plans
- validation results
- rejected / exceptional plans
- system-status information
- fault diagnostics
- capacity information
- airline & airport notifications
- passenger-disruption data

Actions

- submit & validate
- accept or reject
- diagnose & recover
- switch to contingency
- restrict traffic
- notify participants
- re-plan aircraft & crews
- inform & support passengers

Systems

- flight-plan processing
- contingency capability
- airline operating systems
- airport systems
- communication channels
- consumer-information systems

People

- air-traffic specialists
- technical support
- airline operations staff
- airport personnel
- regulators
- decision-makers
- passengers affected

What this exposes: the fault started in one system, but recovery depended on fault information reaching the right people, contingency triggering early, and coordinated action across many organisations, none of which sits inside the application boundary.

03 Attribute — Where the Economic Value Actually Sat

PROCESS COMPONENT	ECONOMIC VALUE EPM WOULD ATTRIBUTE
Fault diagnostics & system status	**High information & risk value**: worth is realised only if it reaches the people able to act, fast.
Contingency capability	**High risk-mitigation value**: economic protection against system-wide exposure, not idle capacity.
Cross-sector communication	**High value under disruption**: earlier, coordinated notification limits propagation to airlines, airports and crews.
Specialist judgement	**High value where automation is unreliable**: preserved judgement contains a fault that rules alone cannot.
Performance incentives	**Alignment value**: incentives must recognise consumer and system-wide consequences, not just local metrics.
Resilience investment	Looks like cost, but is **economic protection**: the question is who benefits and who bears the exposure.

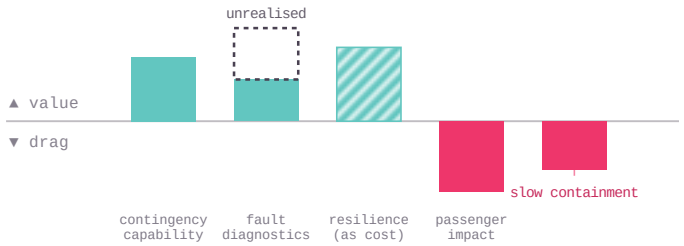
Why this matters: scored this way, resilience stops being unused capacity to trim. Redundancy, recovery capability and communication become priced protection against a system-wide exposure that dwarfs their cost.

From value profile to *the decisions it would have changed*

04 Diagnose — The Patterns EPM Would Have Surfaced

THE ECONOMIC VALUE PROFILE OF THE RESILIENCE PROCESS

ILLUSTRATIVE · RELATIVE VALUE, NOT DOLLAR FIGURES



Scored across the value lenses, the process shows protection that existed but was under-valued, and a fault whose cost propagated far beyond the system. The profile is a **ledger, not an incident log**: it makes resilience's economic worth visible *before* the failure, when it can still be funded.

RESILIENCE MIS-VALUED
Redundancy and recovery capability **treated as cost or unused capacity** rather than economic protection.

INFORMATION NOT REACHING ACTORS
A risk that **fault information did not reach the people able to act** quickly enough.

SYSTEM-WIDE PROPAGATION
Value destruction **spread through airlines, airports, crews and passengers**, far beyond the system.

MISALIGNED INCENTIVES
Performance incentives that **may not recognise consumer and system-wide consequences**.

SLOW CONTAINMENT
Contingency and cross-sector communication **triggering later than the exposure warranted**.

ABSORBED FRICTION
A risk that **critical people absorbed system friction** manually during recovery.

05 Redesign — The Decisions That Visibility Would Have Enabled

AMPLIFY
Enhance the diagnostic and operational information reaching incident decision-makers.

RESEQUENCE
Trigger contingency and cross-sector communication earlier in the incident.

REVALUE RESILIENCE
Treat redundancy, recovery capability and communication as economic protection, not unused capacity.

SUBSTITUTE
Automate slow diagnostic steps where automation is reliable, while preserving specialist judgement.

06 What's In It For the Executive

IF YOU'RE THE CEO

"The fault was technical, but the damage was system-wide. EPM asks what our resilience is worth against that exposure, and forces that number into the room before an incident, not after."

IF YOU'RE THE CFO

"Resilience always looks like cost to cut. EPM prices it as protection against a consumer and system-wide consequence that dwarfs it, and asks who bears the exposure and who funds the safeguard."

THE CREDIBLE ALTERNATIVE OUTCOME

Not necessarily prevention of every technical fault. Rather, **faster containment, better information flow, earlier coordinated action and materially lower system-wide and consumer consequences**, because resilience, diagnostics and communication would have been valued as economic protection and funded accordingly.

EPM retrospective interpretation. This is a critical-process and resilience failure, not a transformation-programme failure. The CAA independent review is an official source; the EPM value profile, attribution, diagnoses and alternative decisions are an analytical interpretation applied after the fact, not findings of the review. EPM does not guarantee success. It changes the decisions made about a process before technology, people, data, contracts and deadlines are committed. Primary source: UK Civil Aviation Authority independent review of the NATS 28 August 2023 failure.