

Safety Data Analysis

From data → intelligence → intervention



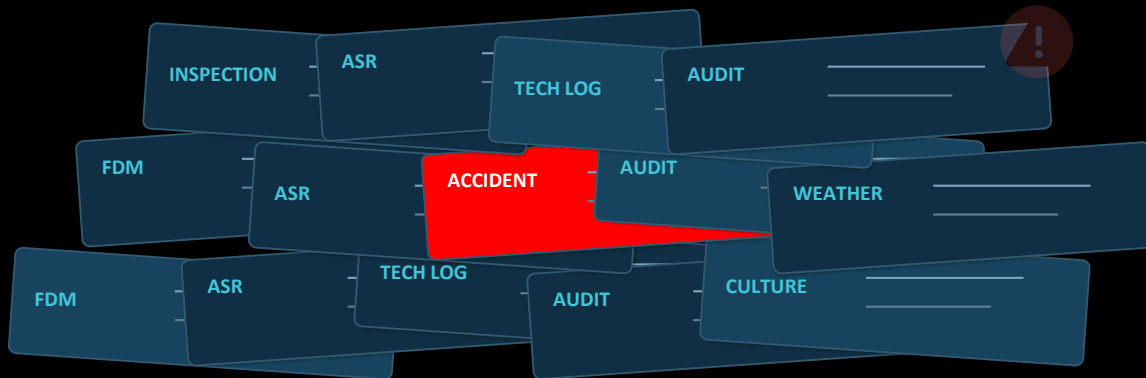
KQ/CORP/PPT/CLASS3 - CONFIDENTIAL





Where is your next accident/ incident?

It may already be hiding in your mountain of data.



Safety Data Analysis

From data → intelligence → intervention

Capt. Haig Anyonyi • Kenya Airways

Humanitarian Aviation Safety Campaign • Nairobi

An iceberg floating in the ocean. The tip of the iceberg is visible above the water line, while the much larger, more complex structure is submerged below. The water is a deep blue, and the sky is a lighter blue with some clouds. The image is split horizontally by the water line.

The Safety Data that you analyze

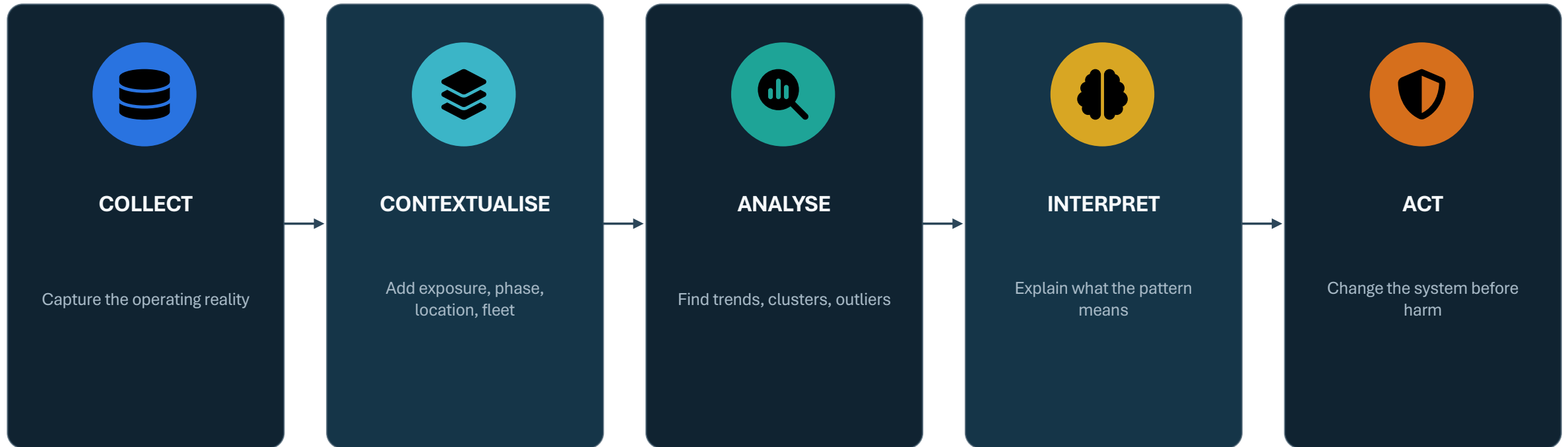
The Safety Data that you have at your disposal

Safety Data Ecosystem



The opportunity is not simply to collect more data — but to connect the signals.

The data process



The output is not a chart. The output is a decision.

Find the signal in the noise



Trend

Is it moving?



Cluster

Where does it concentrate?



Outlier

What is abnormal?



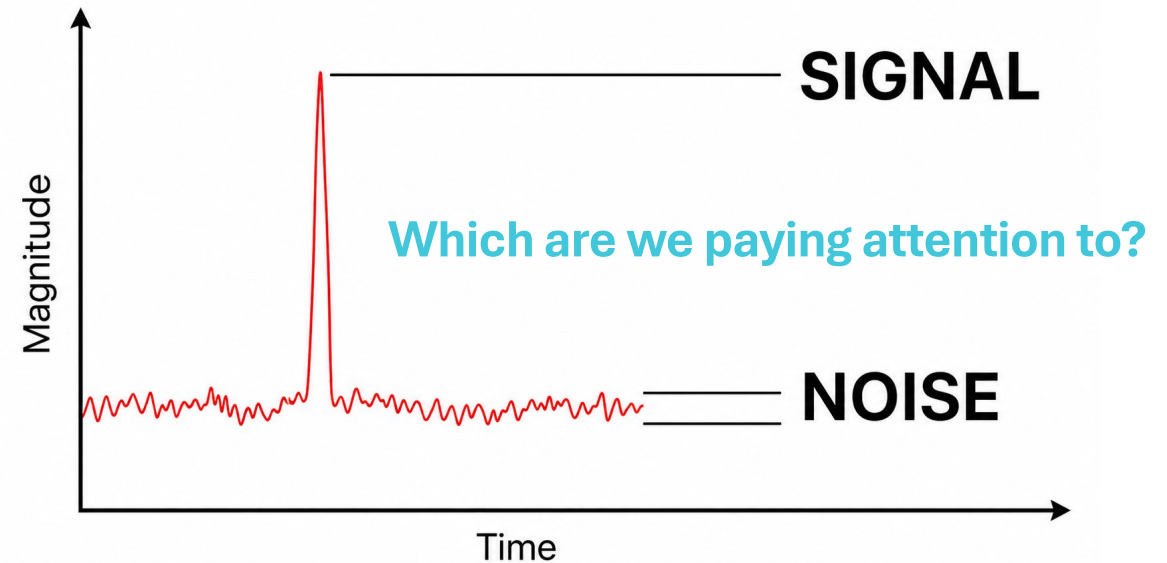
Recurrence

What keeps coming back?



Severity

What could hurt us most?



“Data has value when it changes our understanding of risk — and ultimately, our decisions.”

Ask better questions



Descriptive statistics tell you what. Safety intelligence asks where, when, who, under what conditions, and why.

*“How many unstable approaches did we have?”
Its useful but NOT complete*

WHERE?

Airport • Runway • Fleet

WHEN?

Phase • Time • Season

CONDITIONS?

Weather • Traffic • MEL

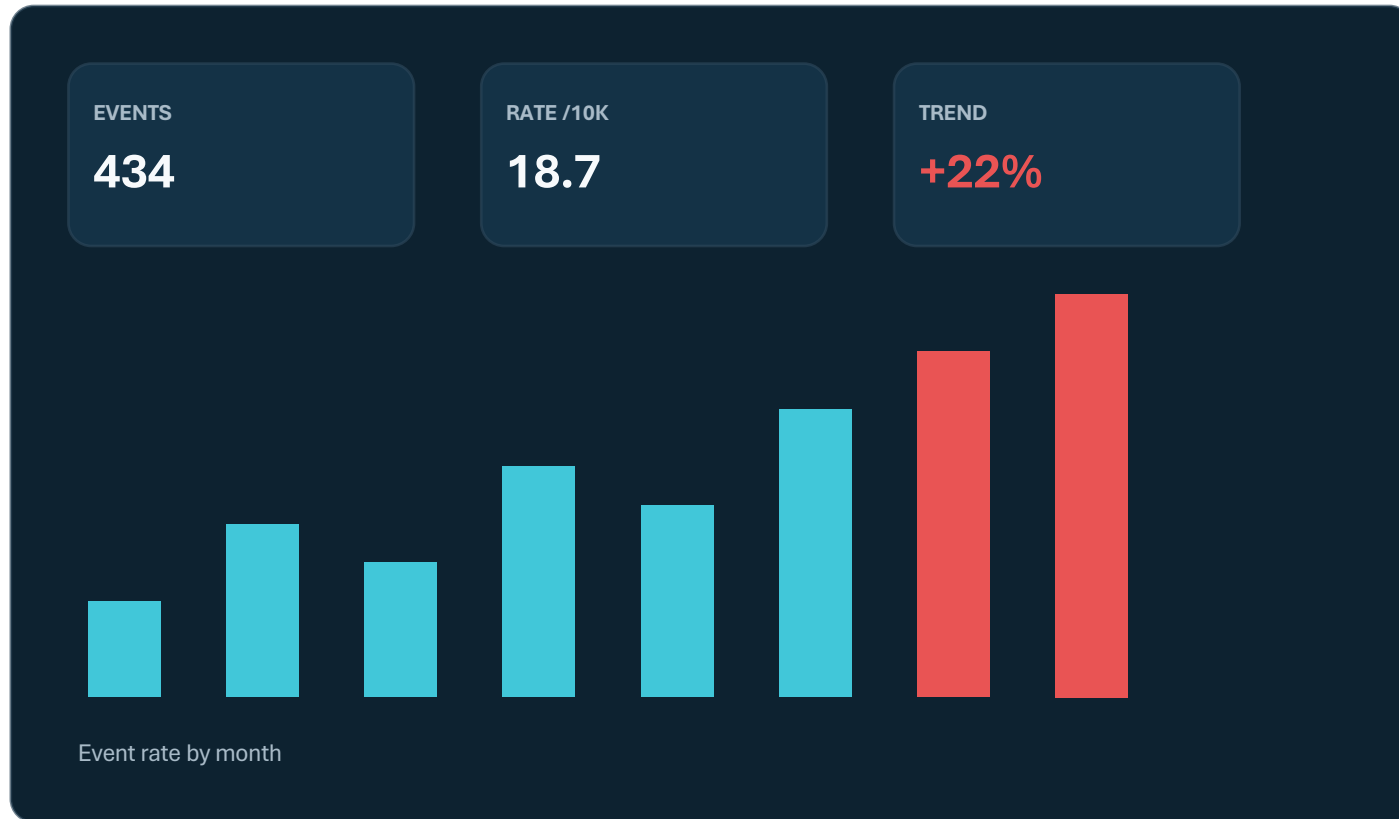
WHO / WHAT?

Crew Profile • Equipment

WHY?

System • Human • Procedure

Turn a dashboard into a decision



DECISION TEST

- > What changed?
- > Where is it **concentrated**?
- > What is the **exposure**?
- > What **control** is weak?
- > **What action will reduce risk?**

If the dashboard cannot support a decision, redesign the analysis.

FIND IT BEFORE IT FINDS YOU.

**Your next accident does not have to
become an accident.**

Collect → Contextualize → Analyze → Validate → Act → Verify

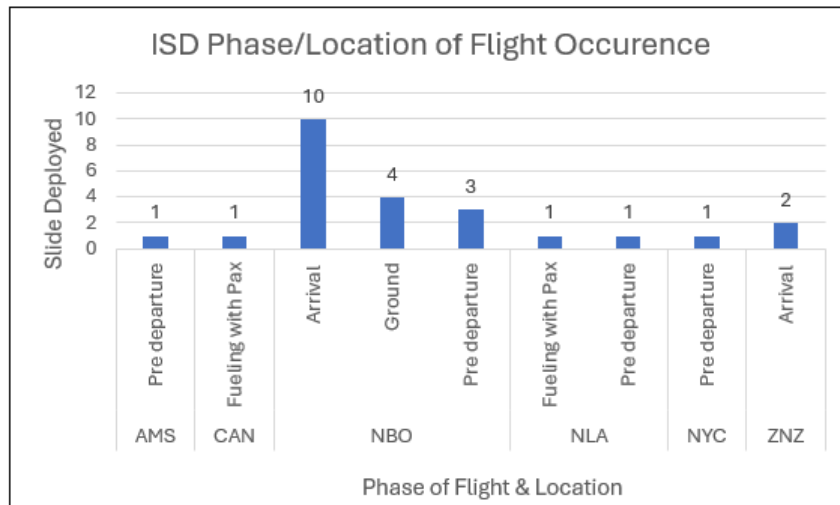
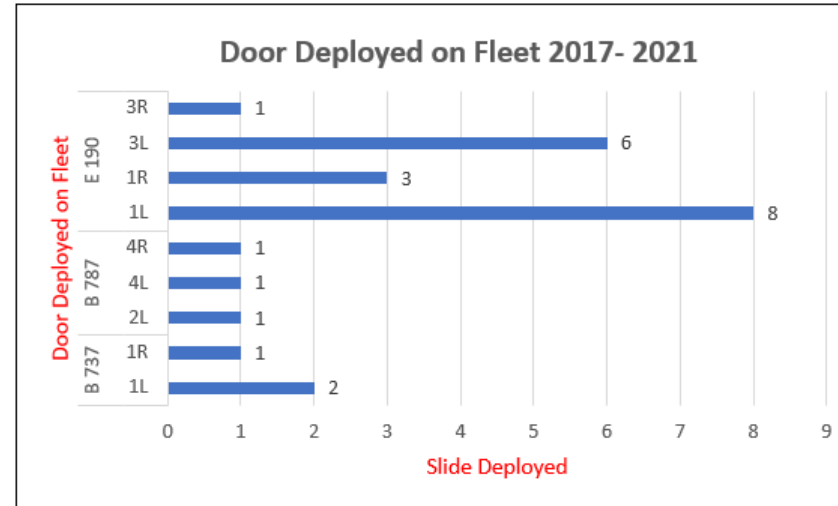
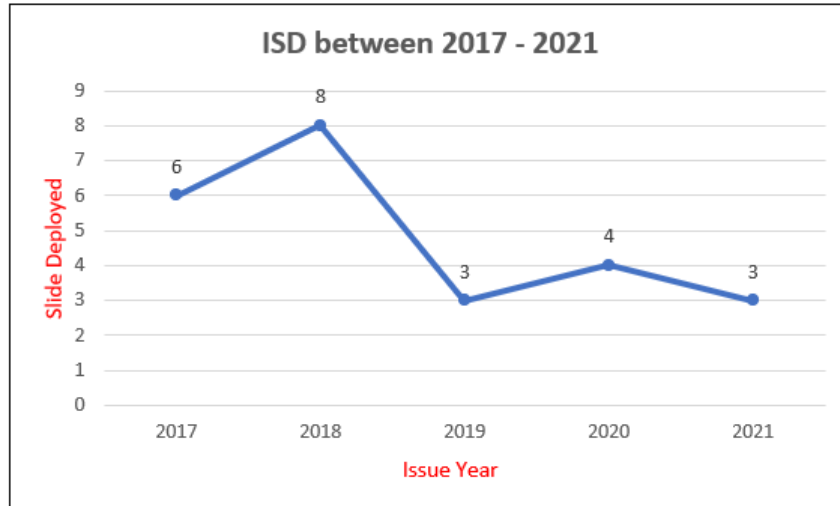
The purpose of safety data analysis is not to describe yesterday. It is to change tomorrow.

A few Examples of SDA (Safety Data Analytics)



*“Jump,
Slide,
Run away”*

A few Examples of SDA (Safety Data Analytics)



Staff category	Arrival	Fuelling with Pax	Ground	Pre departure	Grand Total
Catering Team				1	1
First Officer	1				1
Flight Attendant	6	2		2	10
Flight Purser	4			3	7
Ground Personnel			1		1
Load Master			1		1
Security Personnel			1		1
Technical	1		1		2
Grand Total	12	2	4	6	24

YOU ARE MOST LIKELY TO **DEPLOY** A **SLIDE** IF



**STOP
DROP
REVIEW**

The **MINIMUM**
amount of money
that is deployed
down the slide
during an **ISD** event

If the Slide was destroyed, the cost is Kshs 5,078,782

You, however,
cannot quantify the
cost of a **HUMAN
LIFE**

KShs 1,214,737



*Where is my
next accident
going to come
from?*

Do we have clear procedures for abandoning the approach late into the flare or after touchdown?

Which of the pilots will most likely be flying during the accident?

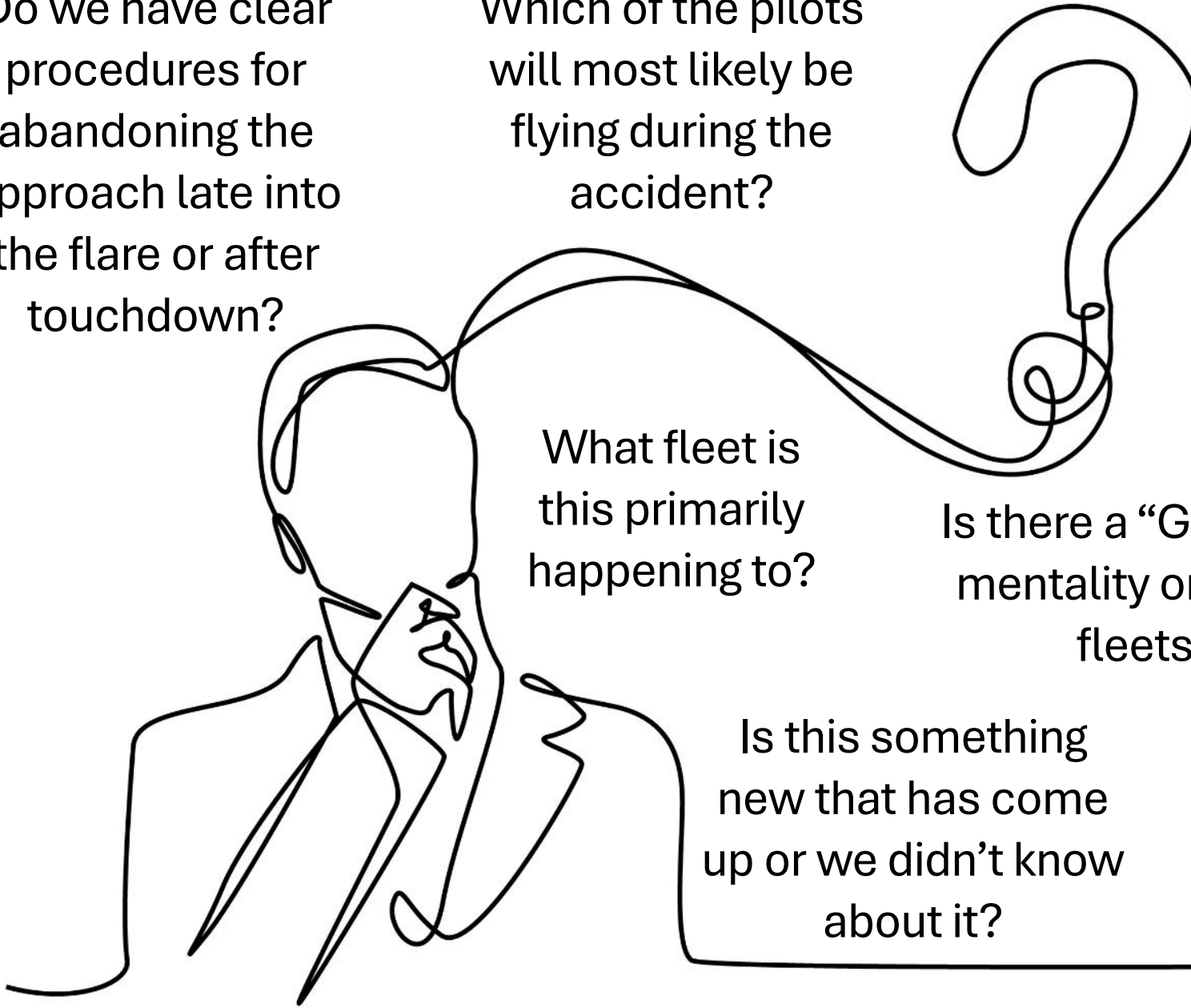
Is there a "Signature Airport" or Runway? Are these remaining events heavily skewed toward a specific destination? What about the airport/runway is a causal factor?

What fleet is this primarily happening to?

Is there a "GREASE" mentality on some fleets?

"Why does the Pilot Monitoring stay silent during a high-risk landing. Is it fear of authority, or total cognitive overload?"

Is this something new that has come up or we didn't know about it?



YEAR

2025

2026

B733

B738

B788

E190

AIRPORT

ABJ

ACC

ADD

ALG

AMS

APL

ASM

BGF

BJM

BKK

BKO

BOM

BZV

CAI

CAN

CDG

COO

CPT

DAR

DKR

DLA

DSS

DWC

DXB

DZA

EBB

EDL

FBM

FIH

FNA

GOM

HAH

HGA

HRE

JFK

JIB

JNB

JRO

JUB

KGL

KIS

LFW

LGW

LHR

LLW

LOS

LUN

LVI

MBA

MGQ

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NLA

NSI

OUA

PEK

PNR

ROB

RUN

SEZ

SHJ

SSG

TNR

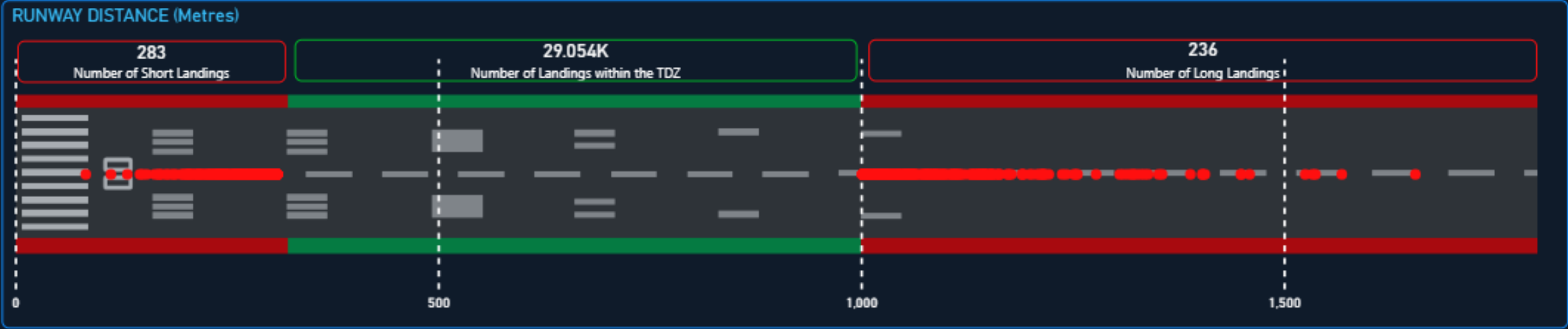
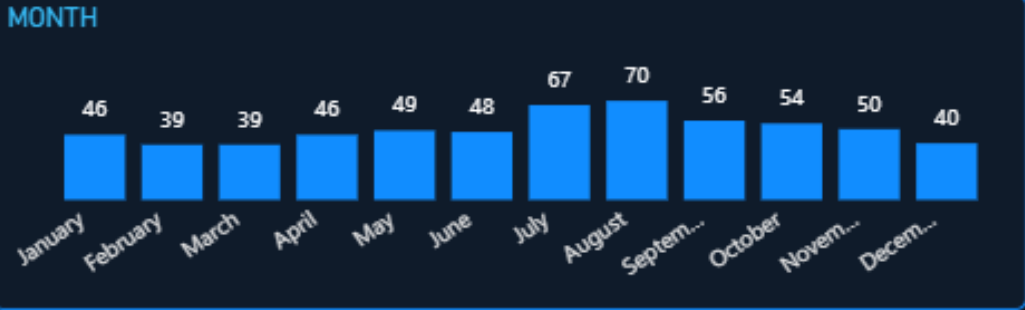
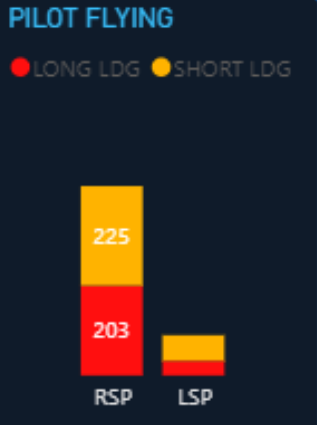
VFA

WDH

ZNZ

LANDING AIRPORT - RUNWAY

Airport	Runway	Short	Normal	Long
ABJ	ABJ 03	0	2	0
ABJ	ABJ 21	2	421	0
ACC	ACC 03	0	2	0
ACC	ACC 21	6	805	4
ADD	ADD 07R	5	171	1
ADD	ADD 25L	2	64	1
ALG	ALG 09	0	1	0



Gates to Safety!

15 - 12 - 8 - 6



IT'S A VERY THIN LINE



12 - 10 - 6 - 4

Three Questions that we need to ask



01 What is our data telling us that we are not yet acting on?

02 Which weak signals deserve management attention now?

03 How will we know the control actually worked?

Safer Together





Thank you

