8TH INTERNATIONAL FLIGHT SAFETY SEMINAR 2026

Building Resilient Flight Safety Systems through Integrated Technology, Continuous Training and Cross-Functional Teamwork

PRESENTED BY

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Scope (The three pillars)

Integrated Technology

Must fit into the whole system

Cross-Functional Teamwork

Cross boundaries across organizations

Continuous Training

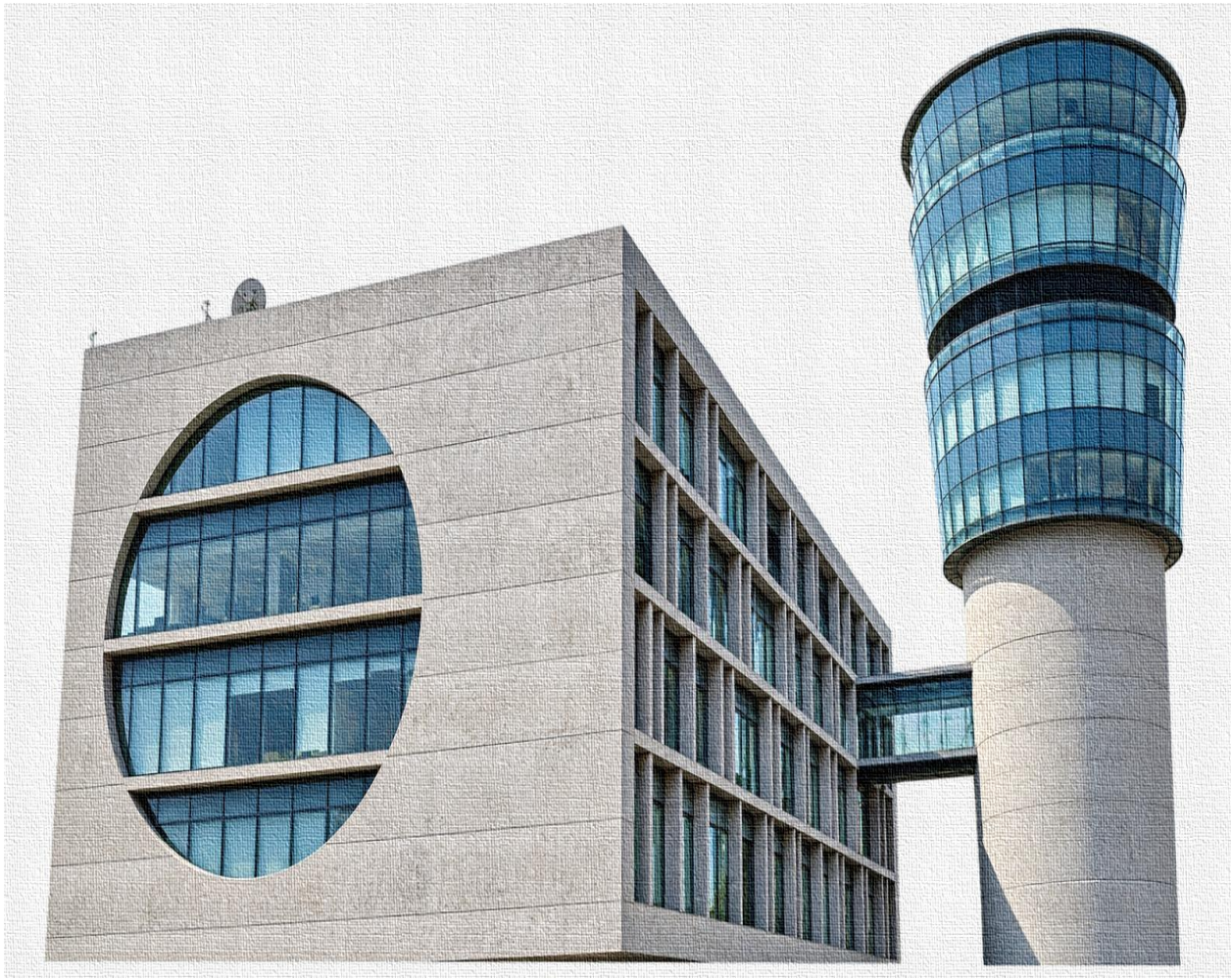
Must never stop

Geometric foundation of stability in tripods, three-legged stools, and even aircraft navigation reference frames.

Global Aspirations

- **ICAO’s Global Aviation Safety Plan sets a vision of zero fatalities by 2030 and beyond**

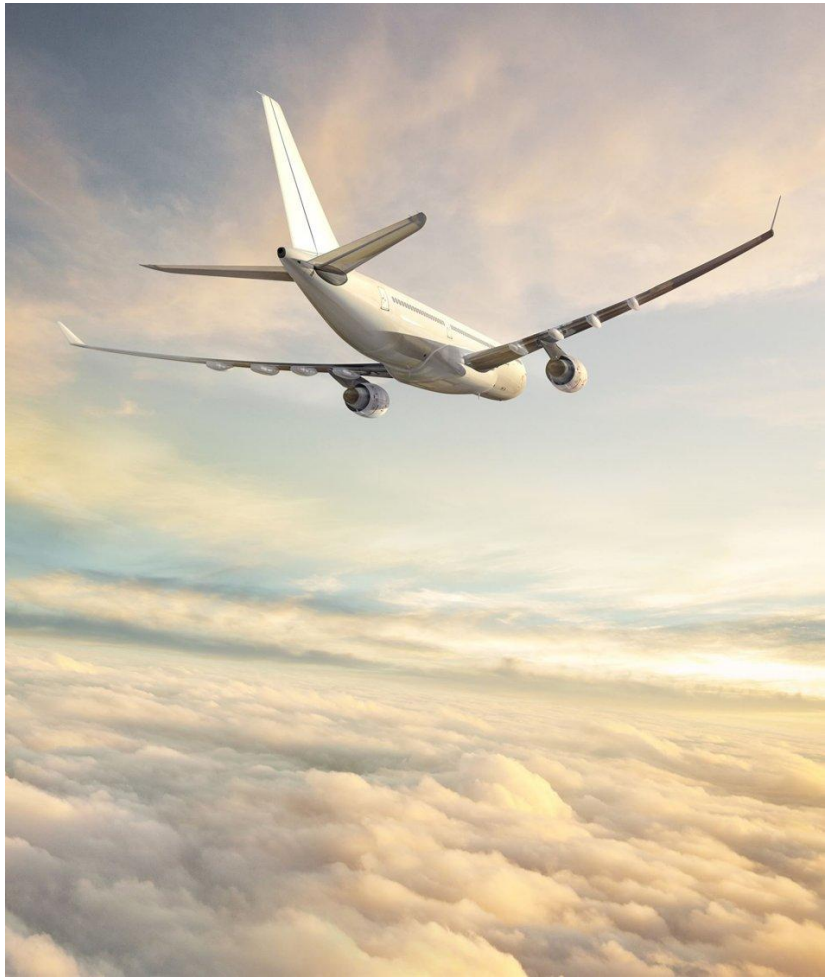
- **This challenges every one of us, civil or military. As an ICAO member State, Bangladesh has a solemn responsibility to remain true to this vision**



Zero (0) fatalities by 2030: ICAO's vision

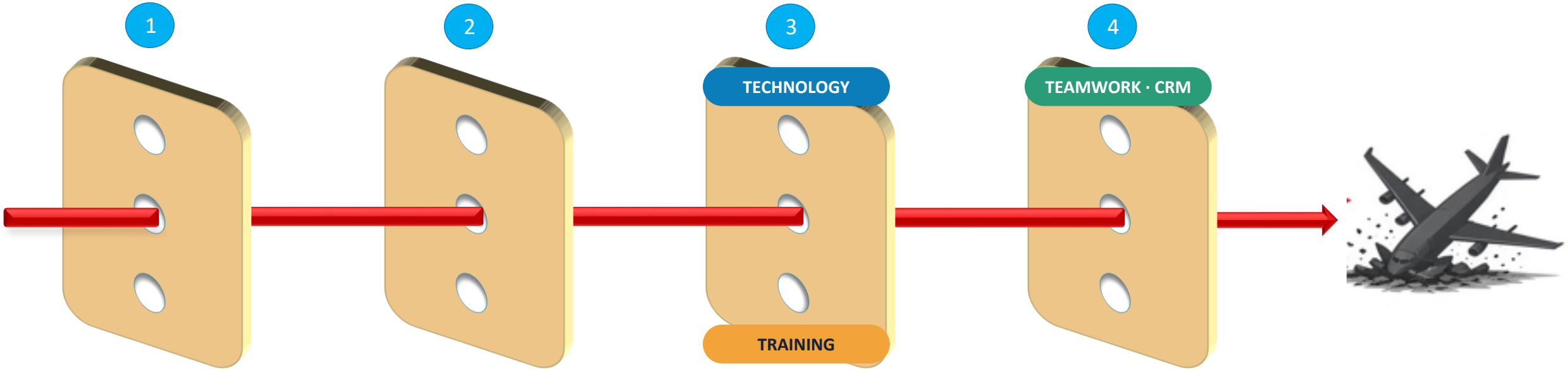
Limitations of traditional safety systems

1. Unexpected events and disruptions are inevitable
2. Perfect prediction and elimination of all risks are not possible
3. Preventing failures remains the main focus
4. Purely reactive, and cannot keep pace with increasing demands
5. Inadequate to meet modern-day challenges
6. Fails catastrophically when the safety boundaries/barriers are exceeded/breached



Swiss Cheese Model for Aviation Safety

An accident happens only when the holes in every layer line up and the trajectory passes straight through. The three pillars keep the holes from lining up.



ORGANIZATIONAL INFLUENCES

Policies, procedures, culture, resource allocation and SMS

HAZARD IDENTIFICATION & RISK ASSESSMENT

Identification of hazards, risk analysis and mitigation

DEFENSES & CONTROL MEASURES

Procedures, automation, training and checklists

OPERATIONAL & HUMAN PERFORMANCE

Situational awareness, Crew Resource Management (CRM) and individual performance

AIRCRAFT CRASH (ACCIDENT OCCURS)

Resilient flight safety systems



Resilience is not achieved by equipment, by people, nor by teamwork alone

Resilience emerges from the interaction of the three pillars of Technology, Training, and Teamwork

In the face of complexity and uncertainty, resilience is no longer optional – it is vital.

Resilience: the ability to absorb, adapt and recover

Technology: the 1st pillar

The backbone for efficiency, safety and innovation

Advanced Flight Management Systems
Help crews manage flights with greater precision

Artificial Intelligence
Opens up new possibilities- Use with caution

Digital transformation
Changes the way our organizations work

Analytics (turning data into insights)
Learn from operations before an accident forces the lesson

Automation transparency
People can see what automation is doing, and why



Technology is often not the sole answer

Why it happened

TWO SEPARATE ACCIDENTS

Boeing 737 MAX

346

fatalities combined

Lion Air 610 (2018)

Ethiopian Airlines 302 (2019)



- Larger LEAP engines
- MCAS Introduction
- Design Flaw
- Certification Weakness
- Commercial Pressure
- Lack of Training

Key lesson: Technology not matched by training and understanding can become a hazard, not a help.

Training: the 2nd pillar

Competency-based training and assessment (CBTA)

Focuses on competencies such as decision-making, monitoring and workload management that prevent accidents.

Evidence-based training (EBT)

Data-driven training that ensures crew are prepared for the real threats and errors.

Threat-and-error management (TEM)

Threats and errors are normal in aviation, not anomalies. Builds resilience by training crew to manage complexity and uncertainty.

Scenario-based practice for the unexpected

Trains the mind as much as the hands, so that when reality brings an unexpected situation the crew can adapt, and recover safely.

When training alone does not work

Air France 447 | Airbus A330 | 2009
Rio de Janeiro to Paris

CAUSE

Failed high-altitude stall recognition and recovery after pitot tubes were blocked by ice crystals, causing unreliable airspeed indications

CONTRIBUTING FACTOR

Lack of recurrent training for a rare, unforeseen but a critical scenario

LESSON LEARNT

Pilots must be continuously trained for unexpected automation failures, not just for normal operations





Teamwork: the 3rd pillar

- Transforms individual understanding into shared, applied competence: what one person knows becomes what the whole team can do
- Transforms a group of individuals into a synchronized unit capable of achieving complex goals
- Connects people, aligns actions, and transforms individual effort into collective success
- Prevents small mistakes from escalating into major failures through error detection
- Creates an environment in which knowledge can be shared openly, and mistakes become learning opportunities rather than punishments

When teamwork goes wrong

583
fatalities

A classic example: Tenerife disaster (1977)

Two B747s: KLM and Pan Am
A cornerstone case study in aviation safety, human factors, and CRM worldwide





Contributing factors

- Poor visibility
- Parked aircraft on the taxiway
- Aircraft backtracking on the runway
- NIL CRM
- Miscommunication between KLM, ATC and Pan Am
- KLM taking off while Pan Am was still on the runway
- Non-standard phraseology
- A heterodyne on the frequency
- The fateful five words- We are at Take Off.

Learning from Tenerife

Tenerife 1977 | KLM and Pan Am

The fateful five words: “We are at Take Off”

LEARNING 1 | STANDARD PHRASEOLOGY/Infrastructure

Use of stricter, unambiguous phraseology for ATCOs and pilots, Airports must have multiple taxiways, clear ground control procedures,

LEARNING 2 | THE BIRTH OF CRM

Crew Resource Management, standardized communication and let all crew speak up, dangers of authority gradients in cockpits

THE SHIFT

From purely technical training to human factors: teamwork, decision-making and psychological safety





When the three pillars join

The system evolves into a platform which:

- Supports shared awareness
- Reduces workload
- Embeds skills
- Is able to coordinate under pressure



Technology reduces workload, supports awareness
Training embeds the skills to use it wisely
Teamwork carries both across the whole group

Outcome: a system that learns continuously

- A just culture of reporting and learning appears
- Quality of hazard reports is measured against metrics
- Corrective actions and training effectiveness become visible
- A genuine cross-functional collaboration starts to take effect





Existing teamwork between CAAB and BAF

CAAB
Civil Aviation Authority of Bangladesh



BAF
Bangladesh Air Force

Both CAAB and BAF share a proud tradition:

Working together with dedication, professionalism and operational excellence

Sharing experiences and information freely

Helping each other in emergencies

Our joint aspirations



Embrace an integrated approach to resilience

We do not treat technology, training and teamwork as separate projects with separate owners



Set up a standard that others will seek to emulate

Ambitious enough that others look at how CAAB and BAF work together, and learn from us



Together, ensure that our sky remains safe

Safety is shared: no single organization, person or technology can deliver it alone

CLOSING MESSAGE



Flight safety is not a destination

It is a continuous journey of building capacity to face an uncertain future

Technology

Gives us powerful new tools

Continuous training

Builds competence and adaptability

Cross-functional teamwork

Ensures that the whole system works as one Unit



Thank you for your patience and attention!

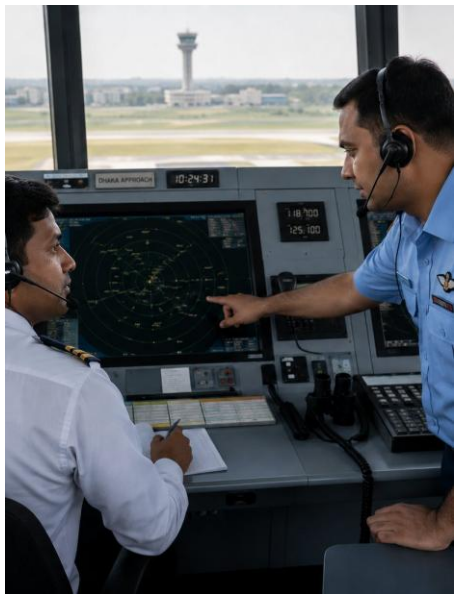
Our thanks to the Sonargaon Hotel, our distinguished guests from home and abroad, participants from civil and military organizations and last but not the least, the behind the scene entities.

Let us leave this seminar not only better informed but also more determined to turn the principles of Technology, Training and Teamwork into living practices across our organizations.

May our skies remain ever safe








Any
Questions