

The Future of Air Safety

IN HUMANITARIAN AVIATION

What the Future Holds

Improved safety data collection

Accurate analysis of the next threat

Modifying operations and training based on actual events

Incorporating new technology to reduce risk



Where We've Been

Airfield conditions were hard to assess

Pre-GPS world

Piston aircraft widely used

Lack of centralized safety coordination

- Reactive safety culture

Communication: landlines, HF, walkie-talkies

Hi risk often considered acceptable



Where We Are

Turbine powered aircraft fleet

Unmanned Vehicles for surveillance

Improved supply chain

Smart phones, Internet

Accurate Risk assessment

Safety Management Systems in place

Has your training changed?



Ownership of Safety

- Information System
 - Collection, Analysis, Distribution
- Ground Services
 - Collect Reports
 - Implement Changes
- Flight Operations
 - Collect Reports/Data
 - Implement Changes



Safety Information

Reporting

- Operators, Pilots, Focal Points, Agencies

Analysis

- Risk Management Reports
- Recommendations and Advisories

Distribution

Integration

- Operators, Regulators, Pilots, FP's, Trainers and Auditors



Ground Services Safety

Airports

- Paved runways
- Air Traffic Management
- Government Security

Airstrips

- Soil or grass
- Close proximity to towns
- Focal Point provides condition reports/security

What problems are occurring?



Flight Operations

Aircraft and Equipment

Pilot training

Mechanic Training

Loading Teams

Operations Dispatch



Evidence Based

Integrating safety information to MY operation

How can I use this data in my job?

If I see a problem in my world

- I need to fix it
- Tell someone who can

Take a Holistic approach to safety

Train to solve problems not just perform tasks



Example: Airstrip Security

Reports of people, vehicles, and livestock on strip increase

Audit of location reveals Focal Point overworked

Pilots have a higher rate of go-arounds

Aircraft have increased rate of damage at this strip



Using the Data

Operators provide Focal Point with additional helpers to manage wildlife, crowds, and vehicle traffic

Pilots focus training for go arounds and SOP's for monitoring runways/strips for incursions

Engineers review inspection tasks for hard landings or high stresses during go around maneuvers

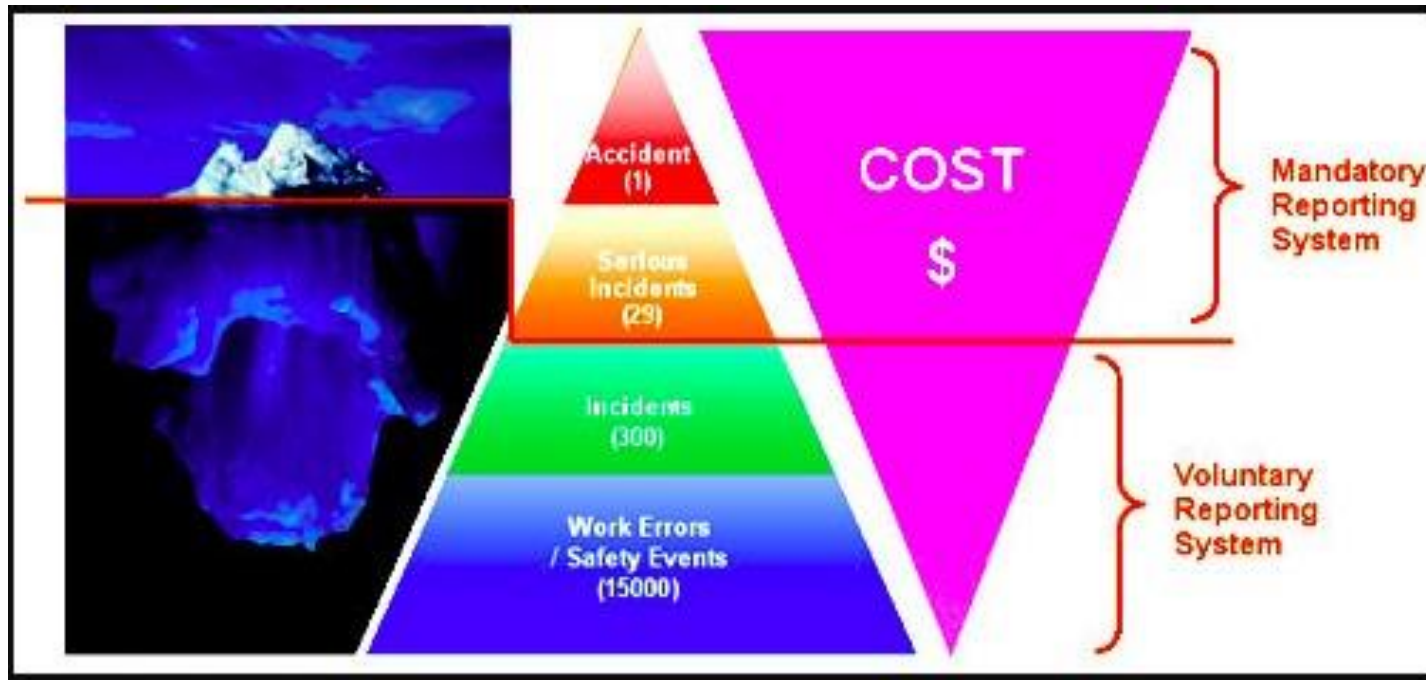
Review later reports to measure effectiveness



Example: Airprox

- Increase in Airprox reports
- Audits reveal lack of ATM training and congested airspace
- Operators coordinate arrivals and departures
- Training for Controllers and funding for better radios
- Pilots include TCAS and avoidance maneuver training
- TCAS/Transponders are deemed no-go items for high risk areas

Encourage Reporting



Expensive Lessons

Free Lessons

Safety Culture

- Informed
- Reporting
- Just
- Flexible
- Learning



Setting the Tone With Your Team

Promote a Safety Culture

Non Punitive

Reporting Methods

- SMS
- Confidential

Using the Data in your world



Technology

Needs to reduce risk

- Drone aircraft in high risk areas

Should be affordable

Easy to use

Have a clear benefit to safety

Simple Fixes

Angle of Attack indicators

Tablet apps

- Performance calculations
- Manuals

Computer Based Training

Basic simulators

Go Pro cameras



Less Simple Fixes

Aircraft simulators

Aircraft training

Automated Data gathering

Training programs based on evidence

Improved reporting from the field

Integrated training programs

- CRM with technical training/managers



The Human Factor

Pilot Shortage

How many flight hours is enough?

- Quality of training more important than flight hours
- Mission specific training
- Integrating CRM with Technical learning

Mentoring

Retaining experienced staff

- Motivation

Where Next?

Setting Standards

Accountability

Training the Trainers

Airborne Mobile Devices

Airborne Internet repeaters

VR in training devices



The Next Approach

Improve Reporting of incidents

Provide accurate analysis and recommendations to the field operators as quickly as possible

Operators use the data to address threats and risk

Look for the next accident before it happens

Integrate technology to reduce risk

Summery

The future of safety must use actual events happening in the real world to improve every level.

Technology is a tool to speed the flow of information or make implementing changes easier and more cost efficeint

Human Factors needs to be integrated with every part of aviation safety: from management, to the shop floor, to the aircraft, to the airstrip

Each of us can make a difference in our own world and push for change everywhere in the system



Thank You
