

Enhancing AFS training for effective emergency response

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Introduction

- **The Role of Airport Fire & Emergency Service**

Ensuring Safety and Effective Rescue Operations

- **Critical Responsibility of AFS**

Ensuring saving lives, protection of assets, and swift rescue operations during aircraft accidents.

- **ICAO's Emphasis on Training and Rapid Deployment**

Highlighting the importance of training, equipment effectiveness, and rapid personnel deployment for effective rescue operations.

- **Need for Scrutinizing Training Practices**

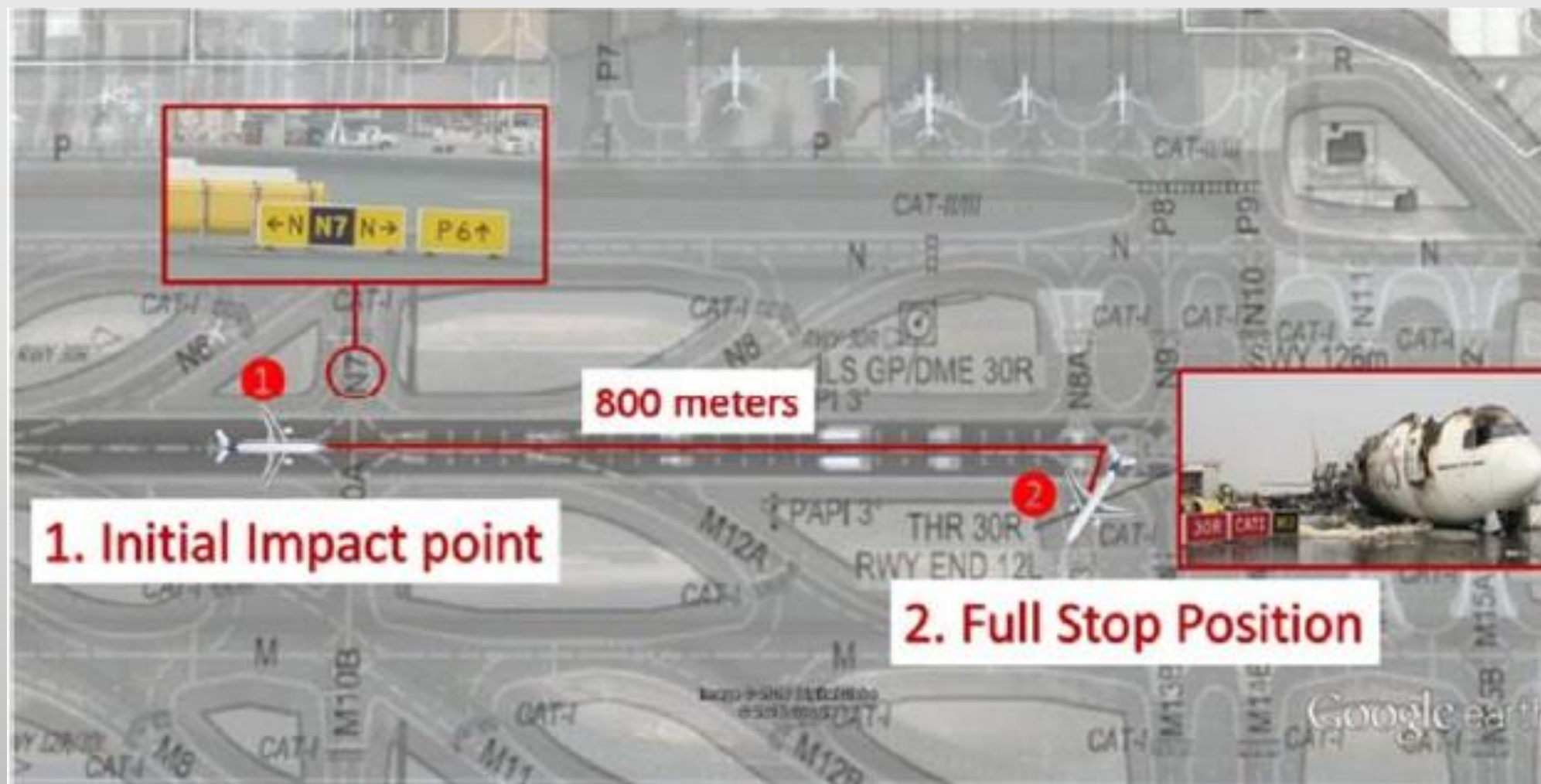
Evaluating the adequacy of current training practices and their alignment with real-life emergency situations.

- **Re-evaluation of Station-Level Training Patterns**

Necessity to review and enhance station-level training patterns for optimal preparedness.



Case Study: Emirates Flight 521 Incident



ACCIDENT



EVACUATION



RESCUE STATUS

PERSON ON BOARD	STATUS
POB	300
FATAL	0
SERIOUS INJURY	4
MINOR INJURY	28
NO INJURY	268

FIREFIGHTERS	STATUS
FATAL	1
MINOR INJURY	7

INVESTIGATION

الهيئة العامة للطيران المدني
GENERAL CIVIL AVIATION AUTHORITY



Air Accident Investigation Sector Accident - Final Report -

AAIS Case No: AIFN/0008/2016



الهيئة العامة للطيران
AVIATION AUTHORITY



Conducted by the Air Accident Investigation Sector of the United Arab Emirates in compliance with Air Accident Investigation Regulations, and in conformance with the Annex 13 to the Convention on International Civil Aviation. The investigation was conducted independently and without prejudice. The sole objective of the investigation is to prevent future aircraft accidents and incidents. It is not the purpose of the investigation to apportion blame or liability. The Air Accident Investigation Sector of the United Arab Emirates issued this Final Report in accordance with National and International Standards and best practice. Consultation with applicable stakeholders, and consideration of their comments, took place prior to the publication of this Report.

The Final Report is publicly available at:
<http://www.gcaa.gov.ae/en/epublication/pages/investigationReport.aspx>

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WHAT HAPPENED

(accident report)

- Damage to the aircraft
- Invisible fire
- Position of the responding CFTs
- Heat transfer
- Explosion



Findings from Incident Investigation

Relevant to ARFF

- Inappropriate positioning of the first responding vehicles(MFV).
- Failed to establish incident sectors
- DRA not carried out
- Communication failure
- Incident command

“The ARFFS training system could not detect the lack of knowledge, understanding, and experience in aircraft incident command and firefighting tactics. Exercises were limited to simple fire scenarios and no appropriate simulated techniques were developed to challenge the fire commanders, sector commanders, crew managers, and firefighters to assess fire dynamics and develop appropriate tactics”

Accident
- Final Report -
AAIS Case No: AIFN/0008/2016

TACTICAL TRAINING

- 360 ° assessment
- Dynamic Risk Assessment
- Incident Command and Communication
- Fire Dynamics and appropriate Fire fighting tactics
- Fast developing scenarios
- Passenger Management System (PMS)
- Team work

Can be practiced during lean period of aircraft movement, maintenance breaks or the monthly hot fire drills.



AUTOMATION IN AIRPORT EMERGENCY RESPONSE

Automated Firefighting Vehicles



AUTOMATION IN AIRPORT EMERGENCY RESPONSE

Drone technology for aerial surveillance and IMS



AUTOMATION IN AIRPORT EMERGENCY RESPONSE

Training simulators for enhanced readiness



AUTOMATION IN AIRPORT EMERGENCY RESPONSE

- **Integrated communication systems**

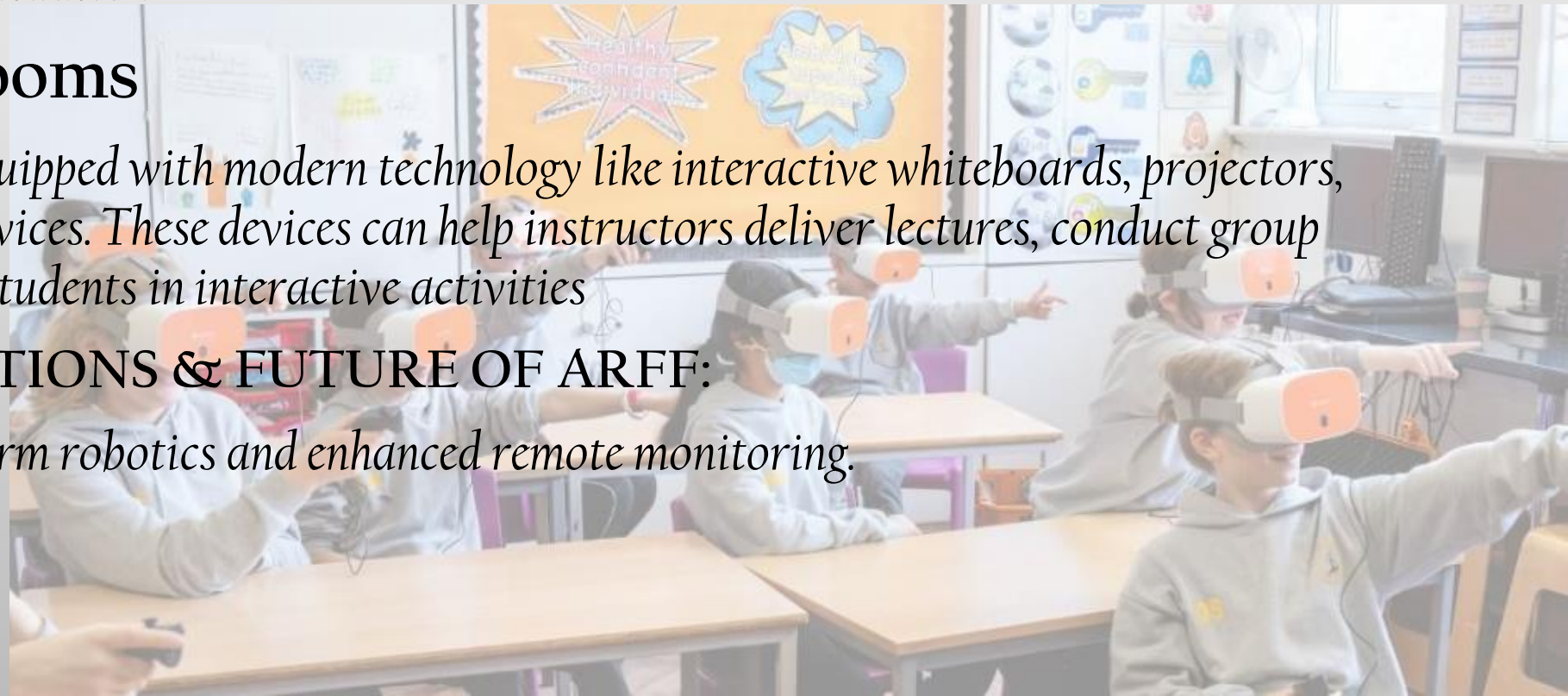
Integrated communications between the onsite commanders, FWT, ATC and AEOCC helps in a efficient handling of the situation

- **Smart Classrooms**

Smart classrooms are equipped with modern technology like interactive whiteboards, projectors, and other multimedia devices. These devices can help instructors deliver lectures, conduct group discussions, and engage students in interactive activities

FUTURE INNOVATIONS & FUTURE OF ARFF:

predictive analytics, swarm robotics and enhanced remote monitoring.



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References:

- The Air Accident Investigation Sector, General Civil Aviation Authority, The United Arab Emirates
- Pictures courtesy: ARFF, Kannur international Airport Ltd, Rosenbauer and the internet

