

Aircraft Rescue Fire Fighting (ARFF) to pilot communication and cooperation

What we should know to help
each other to save lives



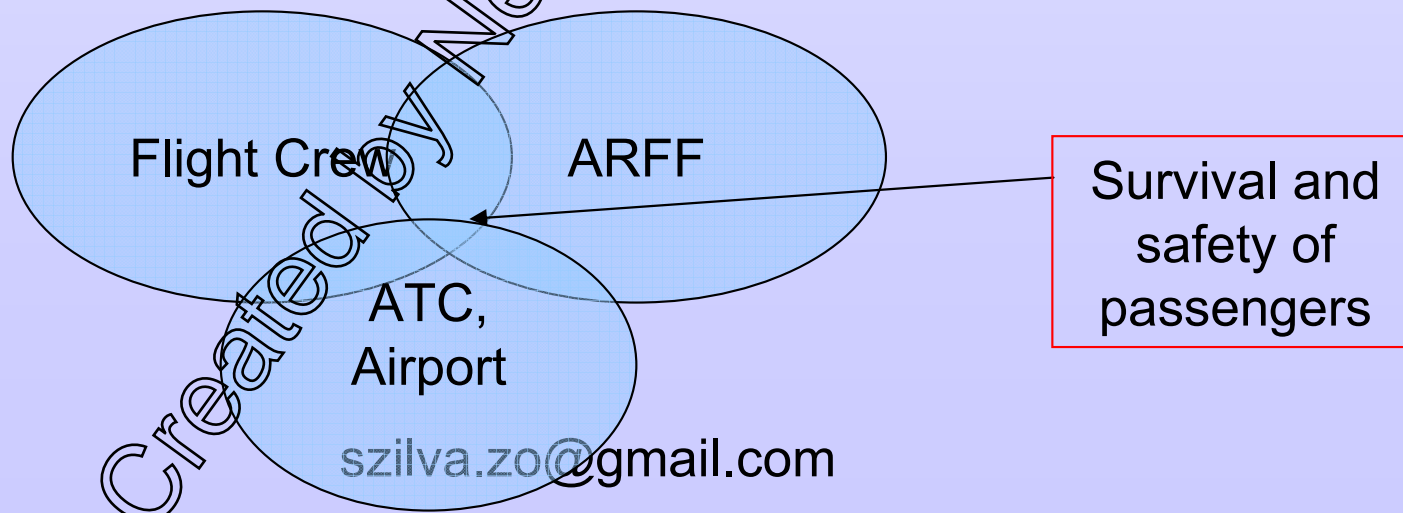
Cpt. Zoltán Szilvási, (ex. Malév) B-737 pilot, CRM trainer, ARFF trainer

szilva.zo@gmail.com



You are going to learn about:

- Lessons from incidents
- The purpose of pilot to ARFF cooperation
- Communication methods
- Regulations
- Recommendations



Incidents with lack of communication to ARFF

- Military cargo plane crash on landing:
 - firefighters unaware of passengers on board
 - not entering the cabin for rescue
- Widebody jet diverts with fire/smoke onboard:
 - no evacuation,
 - no communication after landing,
 - firefighters not entering the cabin

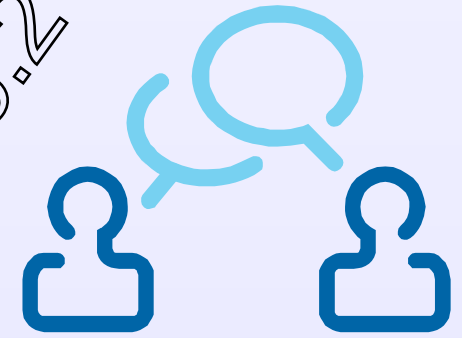
Incidents with lack of communication to ARFF

Jet lands with cargo fire warning:

- info not passed to ARFF chief,
- firefighters open cargo hold before passengers disembark

Common error: Ineffective communication among the parties (ARFF, Flight Crew, ATC)

The purpose of ARFF to pilot cooperation



The two crews should act as **ONE TEAM** during emergencies

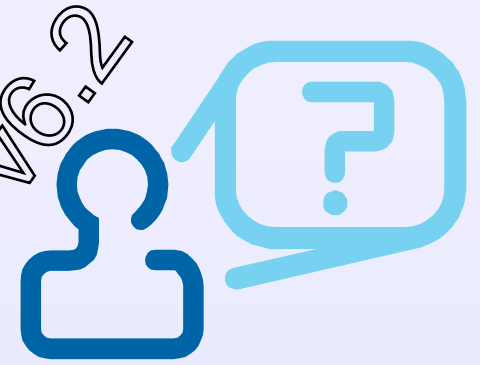
General CRM principles are applicable:

- Communication
- Situation awareness
- Decision making

Regarding their communication:

N.I.T.S. briefing: Nature, Intention, Time, Special

Purpose of communication



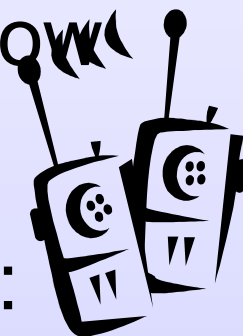
Provide information

- For *flight crew* about:
 - Outside conditions/hazards
 - Arrival and intention of ARFF units
 - Help on evacuate decision
- For *ARFF units* about:
 - On board conditions/ aircraft status
 - Intention of flight crew
 - Special info (fuel, souls, time to land, Hazmat)

Communication methods



- Relaying via ATC: the old method, generally available but prone to errors, slow
- Discrete Emergency Frequency (DEF): optimal, two way, inexpensive but depends on: language, agreement with ATC
- Hand Signals: simple, one way, after stopping only (ICAO Annex 2 requirement)



ICAO, US, EU Regulations

EASA proposal on aerodromes:

- ADR-OPS.B.010 (b) The aerodrome operator shall implement and maintain **training and check programmes** to ensure the continuing competence of rescue and firefighting personnel.
- AMC7-ADR-OPS.B.010(2) The rescue and fire-fighting personnel training programme includes training in **human performance, including team coordination**
- GM2-ADR-OPS.B.010 — Communication System
 - (a) Communication means are provided for **direct communication** between fire-fighting service and the flight crew of an aircraft in emergency

FAA AC - ARFF Communication (DEF, Hand Signal)

ICAO Annex 14, chapter 9, Att „A”: direct ARFF to pilot comm

Recommendations

- Update pilot training with ARFF familiarisation including communication methods
- Enhance use of DEF providing both technical details (frequency) and training (English)

Recommendations

- Provide guidance material on ARFF training, - training hours, recurrent tr.
- Implement CRM training for ARFF units, preferably involving pilots (ICAO, EASA)
- Training excercises with the participation of flight and cabin crews and ARFF units.

Summary



Communication and cooperation should be improved among ARFF and flight crew in order to deal with emergencies

safely, effectively, and with minimal impact to operations

Thank you for your attention!

Questions?

szilva.zo@gmail.com

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