AIRBUS Smoke Procedures

Procedures and Philosophy

Presented by
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• Smoke/Fumes Philosophy

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Introduction

A319

A300

A340
What are the 3 main challenges of smoke events?

Location of Source  Time  Communication
TIME: The facts

1. A fire may become uncontrollable in 8 minutes.

2. Crew may have as little as 15 minutes to get the aircraft on the ground...

3. How fast can a fire grow?
TIME: The facts

- Paper procedures and ECAM procedure start with **LAND ASAP**:
  - **LAND ASAP**
    - Advice to the flight crew to consider landing at the nearest suitable airport.
  - **LAND ASAP**
    - Land as soon as possible at the nearest suitable airport at which a safe approach and landing can be made.

- **IMMEDIATE LANDING** (Paper procedure ONLY)
Identify the source:

Ease of Locating

- **CARGO**
  - Covered by ECAM and/or local warning

- **LAVATORY**
  - Available means to treat the fire/smoke

- **CREW REST COMPARTMENT**
  - May be covered by ECAM warning

- **AVIONICS**
  - More difficult to locate and deal with

- **AIR COND**

- **CABIN EQUIPMENT**
Introduction

Identify the source:
Sources merged into **one single layout**.

- Avionics
- Air Cond
- Cabin Equipt
- Single Layout Proc.
Introduction

Communication:

Action step in both **Cockpit** and **Cabin** Smoke procedures:

- CKPT/CABIN COM ...... ESTABLISH
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Smoke/Fumes Philosophy

The alert can come from:

- The **ECAM**
- The **Cabin** or **Cockpit crew**

Procedure must be applied **without delay**.
Smoke/Fumes Philosophy

When supported by ECAM: Carry out ECAM actions

Crew (cockpit or cabin) perception without ECAM Alert

At any time the SMOKE/FUMES QRH paper procedure could be applied
Smoke/Fumes Philosophy

Immediate actions before analysis:

- Quick / simple / reversible
- Prevent smoke recirculation
- Crew Protection
- Communication
- Do not make the situation worse
**Smoke/Fumes Philosophy**

**“AT ANY TIME” items**

- At ANY TIME of the procedure, if smoke/fumes becomes the GREATEST THREAT: SMOKE FUMES REMOVAL CONSIDER ELEC EMER CONFIG CONSIDER
  
  Refer to the end of the procedure to set ELEC EMER CONFIG

- At ANY TIME of the procedure, if situation becomes UNMANAGEABLE: IMMEDIATE LANDING CONSIDER

**IMMEDIATE LANDING CONSIDER:**

- Tail wind landing
- Overweight landing
- Off airport landing
- Ditching
- ...
Smoke/Fumes Philosophy

Q1: Is the smoke source immediately obvious, accessible and extinguishable?

- Yes
  - LAND ASAP
  - Immediate Actions
  - Source Isolation

- No
  - ANTICIPATE DIVERSION
Smoke/Fumes Philosophy

Immediate Actions

Q1: Is the smoke source immediately obvious, accessible and extinguishable?

Q2: Was the smoke source isolated?

Source Isolation

ANTICIPATE DIVERSION

LAND ASAP

END OF PROC

Q1

NO

YES

Q2

NO

YES
Smoke/Fumes Philosophy

Q1: Is the smoke source immediately obvious, accessible and extinguishable?

- IF SMOKE SOURCE NOT IMMEDIATELY ISOLATED:
  - DIVERSION
  - DESCENT (FL 100/MEA, min obstacle altitude)

Q2: Was the smoke source isolated?

- YES
  - ANTICIPATE DIVERSION
  - INITIATE DIVERSION

- NO
  - LAND ASAP
  - INITIATE DIVERSION

If in doubt about smoke warning ➔ DIVERT

Immediate Actions

- LAND ASAP
- APPLY IMMEDIATELY, VENT EXTRACT, OVRD
- ISOLATE

Source Isolation

ANTICIPATE DIVERSION

Berlin, 19-22 March 2012
18th Flight Safety Conference
Smoke/Fumes Philosophy

Immediate Actions

- LAND ASAP
- Initiate Diversion

Source Isolation

- Q1: Is the smoke source immediately obvious, accessible and extinguishable?
- If yes, isolate.
- If no, isolate and anticipate diversion.

Q2: Was the smoke source isolated?

- Yes
  - End of proc
- No
  - Initiate diversion

Troubleshoot

- Action specific to each smoke source
Smoke/Fumes Philosophy

ACTION SPECIFIC TO EACH SMOKE SOURCE

Troubleshoot

► AIR COND smoke
► CAB EQUIPMENT smoke
► AVNCS/ELECTRICAL smoke or Smoke source not detected and still continues.
► How to set ELEC EMER CONFIG

The order of SMOKE Sources, from most probable to the least probable, has been derived from historic data and analysis.
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Coordination with Cabin Crew

Cabin Crew WORKING TEAM

- The Assistant
- The Communicator
- The Firefighter
- The Assistant Firefighter
Coordination with Cabin Crew

Cabin crew reporting to the cockpit is essential:

- Report the location
- Identify the source
- Assess the severity of situation
- Report the action taken
- *Do it accurately!*

Coordinated, immediate and decisive action is necessary to prevent any escalation of the event...
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Conclusion

• Smoke event: many threats and challenges...
  ▪ No two events are the same.

• Train for it:
  ▪ Immediate actions / diversion / troubleshoot...

• React to the situation...
  ▪ The entire crew is part of the solution

Train the entire crew as a crew!
Questions ?