

SEQUENCE

- i** Various **Smoke Sources**
- i** Existing Procedures
- i** Smoke **Procedure**
- i** Smoke **Removal**
- i** Conclusion

VARIOUS SMOKE SOURCES

- CARGO
- LAVATORY
- CREW REST COMPARTMENT (A330/A340)

Easy to Identify

- AVIONICS
- AIR COND
- CABIN EQUIPMENT

Hard to Identify

EXISTING PROCEDURES

Easy to Identify

Supported by **ECAM**
Procedure

Always the same process:

Isolate (close door / hatch, close isolation valve...)

Extinguish (automatic system or manual)

Hard to Identify

Supported by **ECAM** or **Paper**
procedures

More **difficult to locate** and to
treat

Process depends on the
situation

EXISTING PROCEDURES

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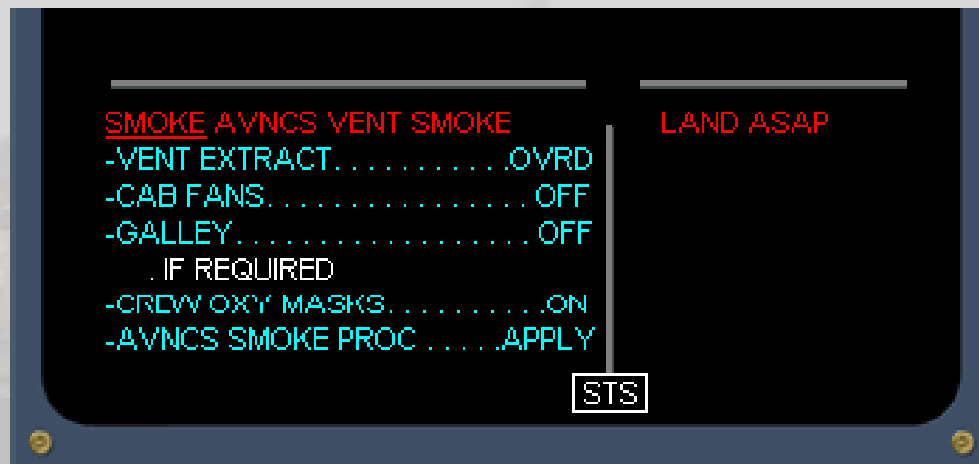
More **difficult to locate** and to
treat

Process depends on the
situation

In all cases, application of the
SMOKE REMOVAL PROCEDURE may be necessary.

EXISTING PROCEDURES

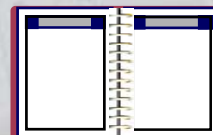
When **ECAM supported** : Carry out **ECAM actions**



When **not supported** by ECAM or ... **ECAM not readable**

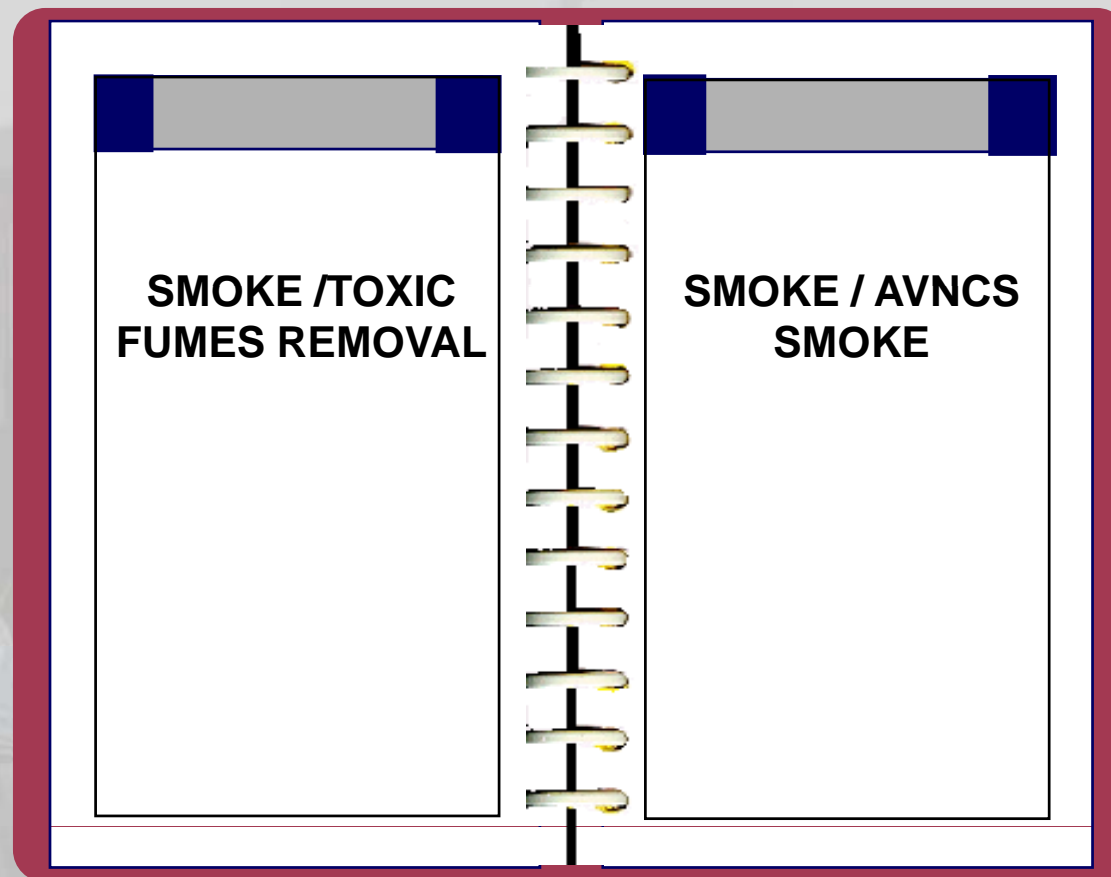
Refer to : **SMOKE /AVNCS SMOKE**

paper procedure



SMOKE PROCEDURE LAYOUT

In the QRH, the **SMOKE REMOVAL** procedure is facing the **SMOKE** procedure.



SMOKE PROCEDURE LAYOUT

Standard actions:
must be applied in all cases of smoke.

SMOKE/FUMES/AVNCS SMOKE	
	LAND ASAP
	IF PERCEPTIBLE SMOKE APPLY IMMEDIATELY :
	- BLOWER OVRD
	- EXTRACT OVRD
R	- CAB FANS OFF
	- GALLEY OFF
R	- SIGNS ON
	- CKPT/CABIN COM ESTABLISH
R	● IF REQUIRED :
R	- CREW OXY MASKS .. ON/100%/EMERG
R	● IF SMOKE SOURCE IMMEDIATELY OBVIOUS, ACCESSIBLE, AND EXTINGUISHABLE :
R	- FAULTY EQPT ISOLATE
R	● IF SMOKE SOURCE NOT IMMEDIATELY ISOLATED :
R	- DIVERSION INITIATE
R	- DESCENT (FL 100 or MEA, or minimum obstacle clearance altitude) INITIATE
R	● AT ANY TIME of the procedure, if SMOKE/FUMES becomes the GREATEST THREAT :
R	- SMOKE/FUMES REMOVAL ... CONSIDER
R	- ELEC EMER CONFIG CONSIDER
R	<i>Refer to the end of the procedure to set ELEC EMER CONFIG</i>
R	● At ANY TIME of the procedure, if situation becomes UNMANAGEABLE :
R	- IMMEDIATE LANDING CONSIDER

SMOKE PROCEDURE LAYOUT

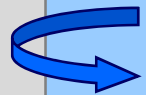
Dense smoke recommendations:

- **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

SMOKE PROCEDURE LAYOUT

General **guidelines** to determine the smoke source:

(available in FCOM Volume 3 but not in QRH)



- If smoke initially comes out of the **ventilation outlets** in the cockpit...
 - Suspect **AIR COND SMOKE**.

(In addition, very shortly after, several SMOKE warnings (cargo, lavatory, avionics) will be triggered)



- **AVIONICS SMOKE** warning with a piece of equipment declared faulty...
 - Suspect smoke from that piece of equipment.



- **AVIONICS SMOKE** warning alone ...
 - Suspect AVIONICS SMOKE.

- Avionics or forward galley smoke may be smelt or may enter the cockpit before ECAM warning activation (A320 family only).

SMOKE PROCEDURE LAYOUT

Specific actions:

AIR COND SMOKE

■ IF AIR COND SMOKE SUSPECTED :

- APU BLEED OFF
- BLOWER AUTO
- EXTRACT AUTO
- PACK 1 OFF

● **If smoke continues :**

- PACK 1 ON
- PACK 2 OFF

● **If smoke still continues :**

- PACK 2 ON
- BLOWER OVRD
- EXTRACT OVRD
- SMOKE/FUMES REMOVAL . CONSIDER

SMOKE PROCEDURE LAYOUT

Specific actions:

CAB EQUIPMENT SMOKE

- **IF CAB EQUIPMENT SMOKE SUSPECTED:**

- **If smoke continues :**

- EMER EXIT LIGHT ON
- COMMERCIAL OFF
- SMOKE DISSIPATION CHECK
- FAULTY EQPT SEARCH/ISOLATE

- **If smoke still continues or if faulty equipment confirmed isolated :**

- COMMERCIAL NORM
- SMOKE/FUMES REMOVAL . CONSIDER

SMOKE PROCEDURE LAYOUT

Specific actions:

If smoke source cannot be determined or AVNCS/ELEC smoke suspected:

- SMOKE/FUMES/AVNCS SMOKE (CONT'D)**
- **IF SMOKE SOURCE CANNOT BE DETERMINED AND STILL CONTINUES OR AVNCS/ELECTRICAL SMOKE SUSPECTED :**
 - **Shed AC BUS 1 as follows :**
 - GEN 2 CHECK ON
 - ELEC page SELECT
 - BUS TIE OFF
 - AC ESS FEED ALTN
 - GEN 1 OFF
 - SMOKE DISSIPATION CHECK
 - **If smoke continues :**
 - GEN 1 ON
 - AC ESS FEED NORM
 - **Shed AC BUS 2 as follows :**
 - GEN 1 CHECK ON
 - ELEC PAGE SELECT
 - AC ESS FEED CHECK NORM
 - BUS TIE CHECK OFF
 - GEN 2 OFF
 - SMOKE DISSIPATION CHECK
 - **If smoke continues :**
 - GEN 2 ON
 - BUS TIE AUTO
 - SMOKE/FUMES REMOVAL ... CONSIDER
 - ELEC EMER CONFIG CONSIDER

SMOKE PROCEDURE LAYOUT

How to set **ELEC EMER CONFIG**

TO SET ELEC EMER CONFIG

- EMER ELEC GEN 1 LINE OFF
- EMER ELEC PWR MAN ON

● **WHEN EMER GEN AVAIL :**

- APU GEN OFF
- GEN 2 OFF

ELEC **EMER CONFIG**

- APPLY ECAM PROCEDURE
- IF AVIONICS SMOKE ECAM NOT TRIGGERED DO NOT PERFORM THE GEN RESET

SMOKE REMOVAL PROCEDURE

Smoke Removal without window opening

If cockpit window opening required ...

SMOKE/FUMES REMOVAL

Use the smoke removal procedure if there is dense smoke, toxic fumes (smell), or if smoke generation cannot be stopped.

- EMER EXIT LIGHT ON
- If fuel vapors :
 - CAB FANS ON
 - PACK 1+2 OFF
- If no fuel vapors :
 - CAB FANS OFF
 - PACK FLOW HI
 - LDG ELEV 10000 FT/MEA
 - DESCENT (FL 100, or MEA, or minimum obstacle clearance altitude) INITIATE
 - ATC NOTIFY
- SMOKE/FUMES/
AVNCS SMOKE PROC CONTINUE

While descending, continue applying the appropriate steps of the SMOKE/FUMES/AVNCS SMOKE procedure depending on the suspected smoke source.

- At FL100 or MEA :
 - PACK 1+2 OFF
 - MODE SEL MAN
 - MAN V/S CTL FULL UP
 - RAM AIR ON
- If smoke persists, cockpit window opening :
 - MAX SPEED 200 KT
 - COCKPIT DOOR OPEN
 - HEADSETS ON
 - PNF COCKPIT WINDOW OPEN
- When window is open :
 - NON-AFFECTED PACK(s) ON
 - VISUAL WARNINGS (noisy CKPT) MONITOR
 - SMOKE/FUMES/
AVNCS SMOKE PROC ... CONTINUE

CONCLUSION

Apply the procedure (regardless of whether a warning is triggered or not)

Apply the “**standard actions**”.

Determine the smoke source.

Depending on the smoke source, **apply the specific actions.**

At any time, if necessary:

EMER EXIT Lights ON

Descend to 10,000ft or MORA for **smoke removal.**

Set **ELEC EMER CONFIG.**

General **guidelines** to determine the smoke source:

(available in FCOM Volume 3 but not in QRH)

Guidelines to determine smoke source :

- If smoke initially comes out of the ventilation outlets, the crew may suspect AIR COND SMOKE. In addition, very shortly thereafter, several SMOKE warnings (cargo, lavatory, avionics) will be triggered. The displayed ECAM procedures must be applied.*
- Following an identified ENG or APU failure, smoke may emanate from the faulty item through the bleed system and be perceived in the cockpit, and/or in the cabin. In such a case, it will be recirculated throughout the aircraft, until it completely disappears from the air conditioning system.*
- If only the AVIONICS SMOKE warning is triggered, the crew may suspect avionics smoke.*
- If the smoke is detected while an equipment is declared faulty, the crew may suspect that smoke is coming from this equipment.*
- Avionics or forward galley smoke may be smelt, or may enter in the cockpit before ECAM warning activation.*