

OLM FBW 2006 – Toulouse – 26-28 September 2006



Presented by

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Operational Standards

Hot Weather Operations

Sandy environment



AIRBUS

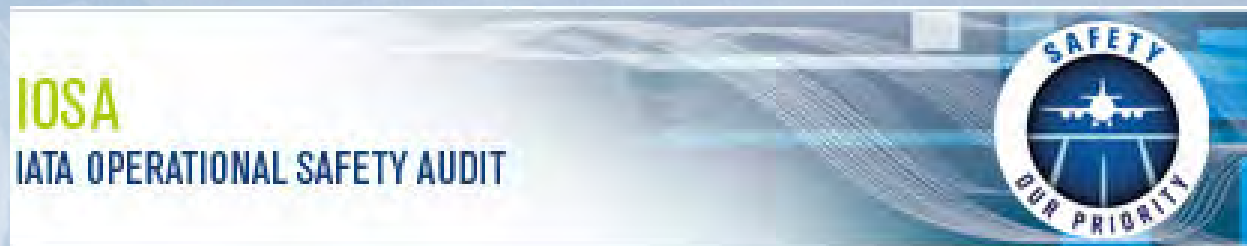
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Introduction

- Recent customer questions concerning hot weather operations
- linked to IATA Operational Safety Audit



- Also questions concerning operations in sandy environment

Introduction

Goal of this presentation :

- Review Airbus procedures in hot weather conditions
- Modification of volcanic ash procedure to cover operations in sandy environment
- Get airline inputs

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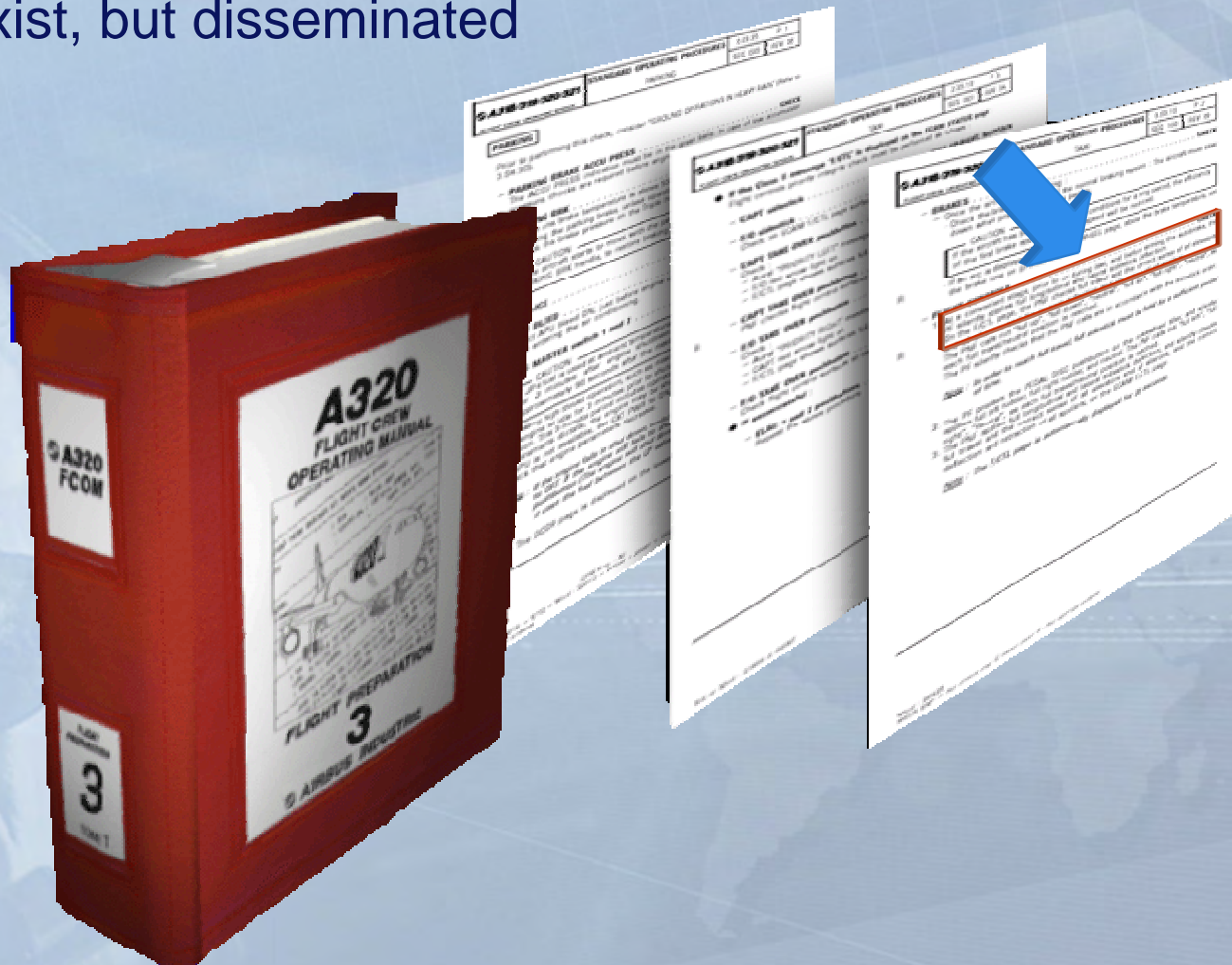
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Current situation

Recommendations for Hot Weather Operations


- Exist, but disseminated



Current situation


Recommendations for Hot Weather Operations

- Examples:

 A330 <small>FLIGHT CREW OPERATING MANUAL</small>	STANDARD OPERATING PROCEDURES	3.03.04	P 3
	PRELIMINARY COCKPIT PREPARATION	SEQ 105	REV 13

ELEC

* — **EXT PWR (if ON)** **AS RQRD**
 External power may be kept on to reduce APU load, **especially in hot conditions.**

 A318/319/320/321 <small>FLIGHT CREW OPERATING MANUAL</small>	STANDARD OPERATING PROCEDURES	3.03.06	P 4
	COCKPIT PREPARATION	SEQ 001	REV 32

*** AIR COND**

* — **PACK FLOW** **AS RQRD**
 Select :
 LO : If the number of passengers is below 115.
HI : **For abnormally hot and humid conditions.**
 NORM : For all other normal operating cases.
 If the APU is supplying, pack controllers select HI flow automatically, independent of the selector position.

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Need to change ?

Hot Weather Operations Procedure

- A dedicated procedure would be more convenient
- Would complete existing procedures
- Would necessitate change in documentation
- Would not change the procedures

Decision will be based on YOUR inputs

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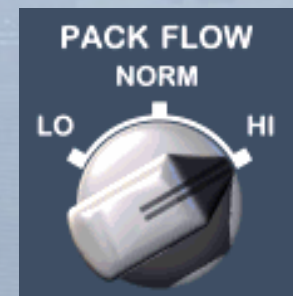
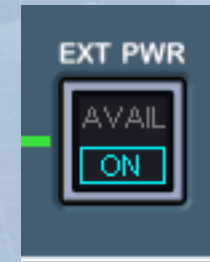
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Hot Weather Operations Procedure

Ground Operations

- Consider External Power to reduce APU load
- Consider keeping doors and blinds closed
- Select high pack flow



Hot Weather Operations Procedure

Engine Start

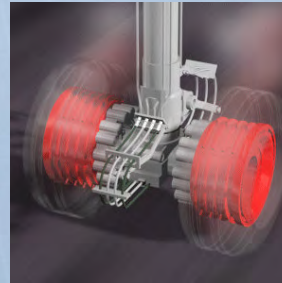
- Consider manual start
 - ▶ Due to degraded bleed performance, or
 - ▶ Engine with a reduced EGT margin, or
 - ▶ Marginal performance of the external pneumatic power group



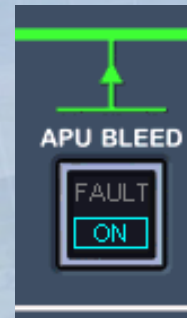
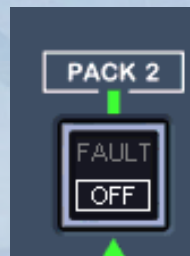
Hot Weather Operations Procedure

Takeoff

- Check brakes temperature



- Consider Packs OFF or APU BLEED ON



- Be aware of possible lateral jerks (thermal vortices)

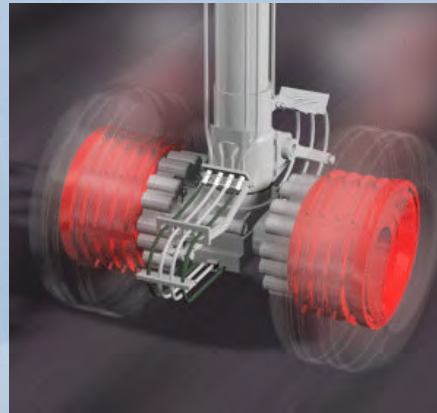


Refer to FCOM bulletin
(n° 829/1 on SA)
(n° 815/1 on A330)
(n° 816/1 on A340)

Hot Weather Operations Procedure

Landing

- Check brakes temperature (maintenance actions)



- Use BRK FAN (If available)



Parking

- If brakes > 500°C: Avoid applying parking brake



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Sandy Environment

Background

- Some airlines operate in sandy environment
- Airline questions about procedures to be used
- Today, no procedure for “Sandy Environment”
- But, **OPERATIONS IN VOLCANIC ASH** procedure exists (**FCOM 3.04.90**)



Sandy Environment

Main sand effects on aircraft

- Engines / APU wear increase
- May impair bleed operation
- Braking performance reduction



Similar to volcanic ash effects




Operations in volcanic ash procedure apply

Sandy Environment

FCOM Changes

- Sand will be mentioned

 A318/319/320/321 FLIGHT CREW OPERATING MANUAL	SUPPLEMENTARY TECHNIQUES ADVERSE WEATHER	3.04.91	P 11
		SEQ 001	REV 28

– ACCESS PLATFORM(S) REMOVE

OPERATIONS IN VOLCANIC ASH / SANDY ENVIRONMENT

The following procedures are recommended for operators who fly routes that could take their aircraft through the material emerging from active volcanoes.

Because volcanic ash is composed of very abrasive particles it can do serious damage to aircraft parts and impair the operation of aircraft systems significantly.

Operators should avoid airports with volcanic ash deposits if possible. If operations at such airports are unavoidable, operators should heed the following recommendations.

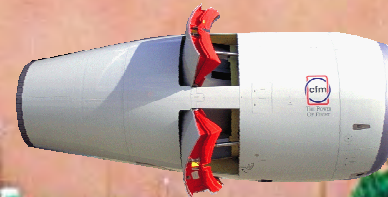
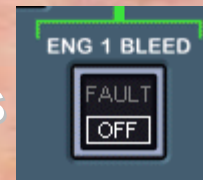
R Similar recommendations apply when operating from sandy or dusty airport.

R GROUND OPERATIONS ON AIRPORTS COVERED WITH ASH DUST or SAND

Sandy Environment (FCOM 3.04.90)

Main APU and engine recommendations on ground:

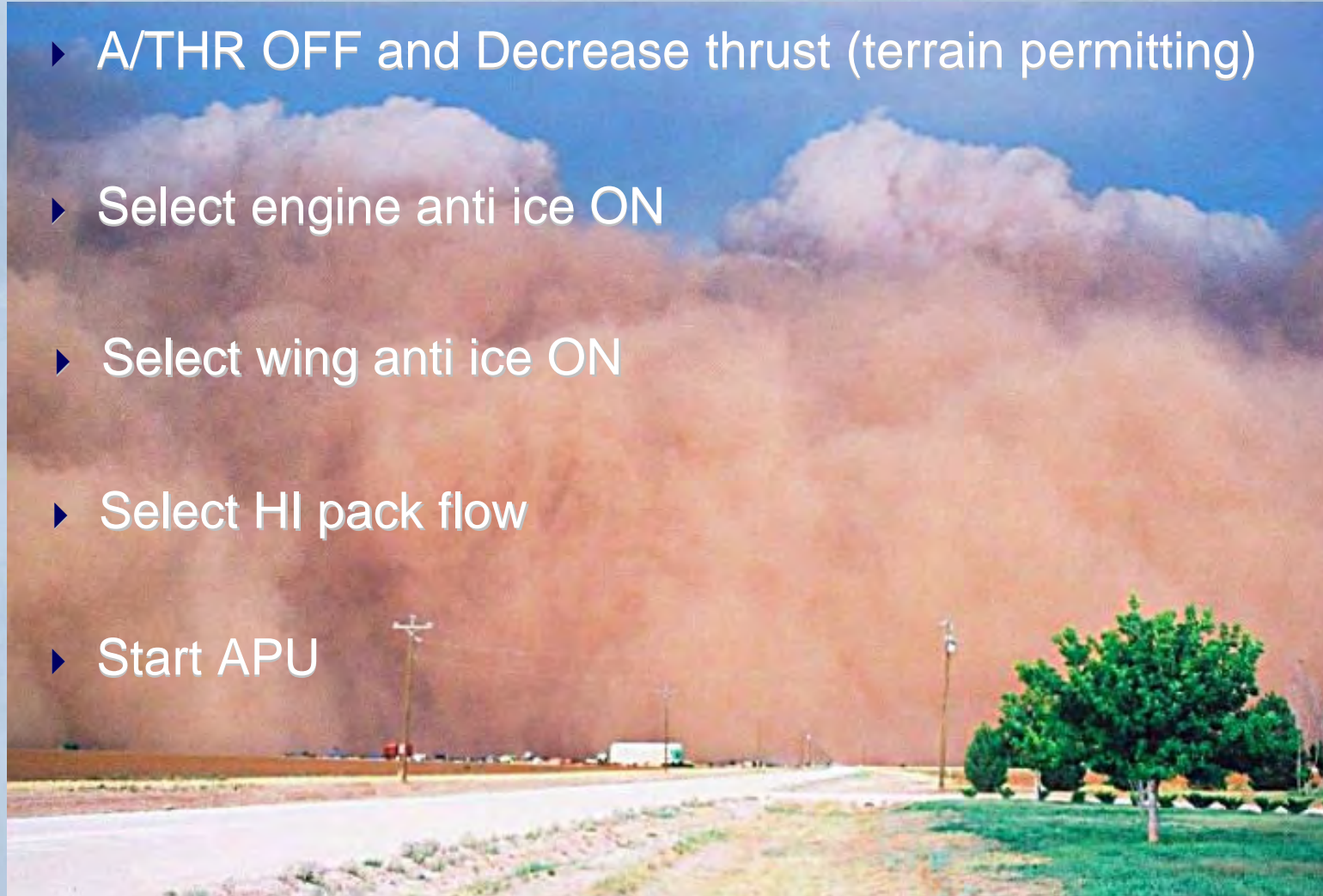
- ▶ Avoid using the APU
- ▶ Crank engine before start
- ▶ Limit engines thrust during taxi
- ▶ Avoid using Engine Bleeds
- ▶ Avoid reversers use



Sandy Environment (FCOM3.04.90)

Main APU and engine recommendations in flight:

- ▶ A/THR OFF and Decrease thrust (terrain permitting)
- ▶ Select engine anti ice ON
- ▶ Select wing anti ice ON
- ▶ Select HI pack flow
- ▶ Start APU



Sandy Environment

- 2 Additional Recommendations:

- ▶ Taxi with all engines

- To limit engine thrust and subsequent sand ingestion

- ▶ For U-turn, initiate the turn nose down wind (case 2).

- To prevent sand to be blown back to engine intake
 - To not impair visibility



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Conclusion

- ✓ Review of Hot Weather procedures
- ✓ Necessity of a dedicated procedure in the FCOM ?
- ✓ Update of Volcanic Ash procedures to cover sandy environment
- ✓ Any airline inputs ?

Conclusion

Anything to drink ?

