

IFALPA PRESENTATION

International Federation of Air Line Pilots' Associations

Conference Eyjafjallajökull and
Aviation
15/16 Sept 2010, Keflavik



About IFALPA

- Approx 100 Member Associations world-wide
- In excess of 100,000 pilot members
- IFALPA Headquarters based in England, close to London's Heathrow Airport
- Most of the jobs performed by volunteer pilots
- Offices in Montreal and Mexico City
- Full time Secretariat employed

IFALPA's Mission

... is to be the global voice of airline pilots, to promote the highest level of aviation safety worldwide and to provide representation, services and support to all of its Member Associations.



Pataya

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Orographic ascent



*Volcanic Ash &
Cloud interaction*

Photo: GARCIA ROYO

Thunderstorm echoes



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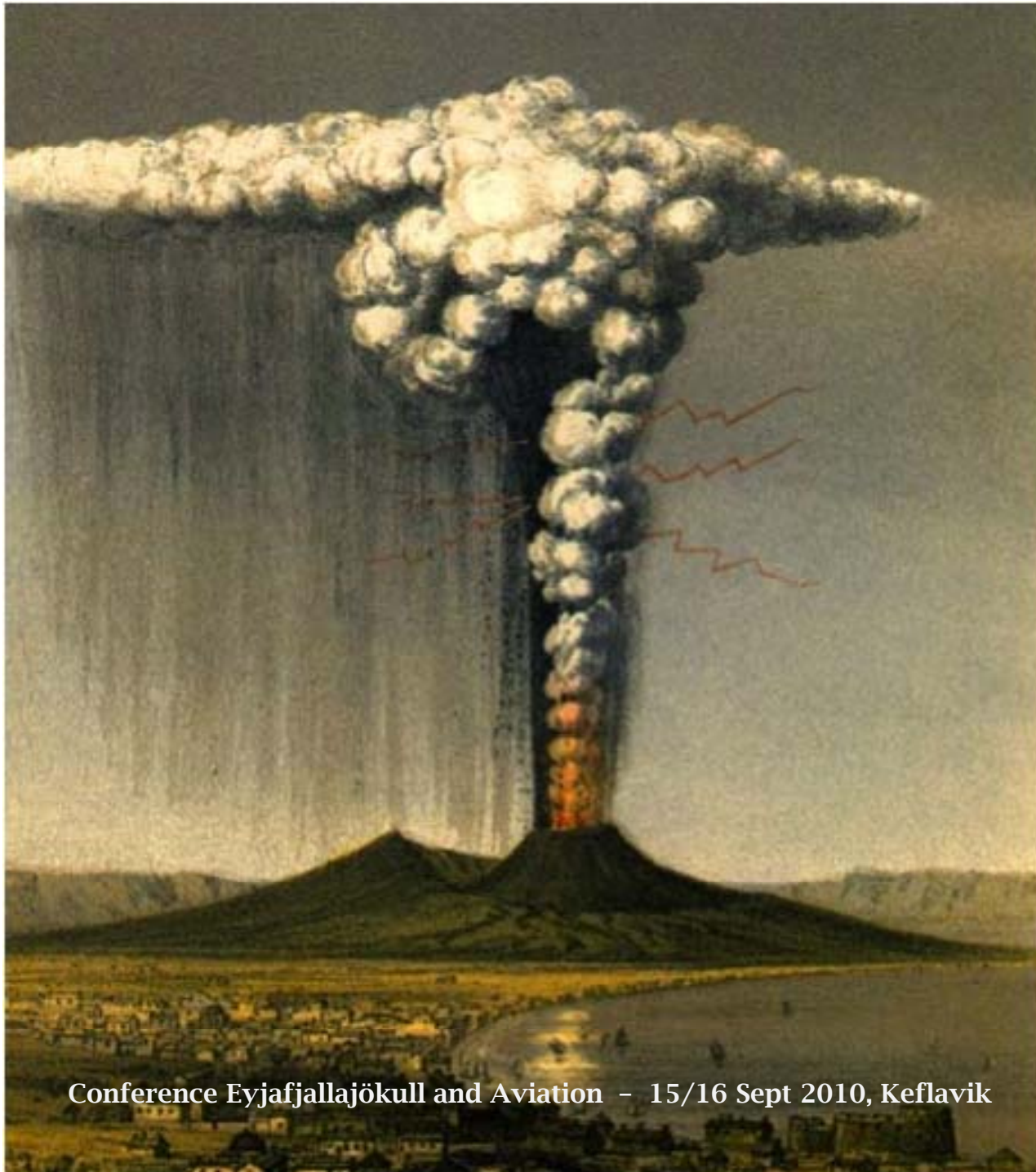
The **PROBLEM**:

No spectral signature
Of VA to be

DISPLAYED on
board

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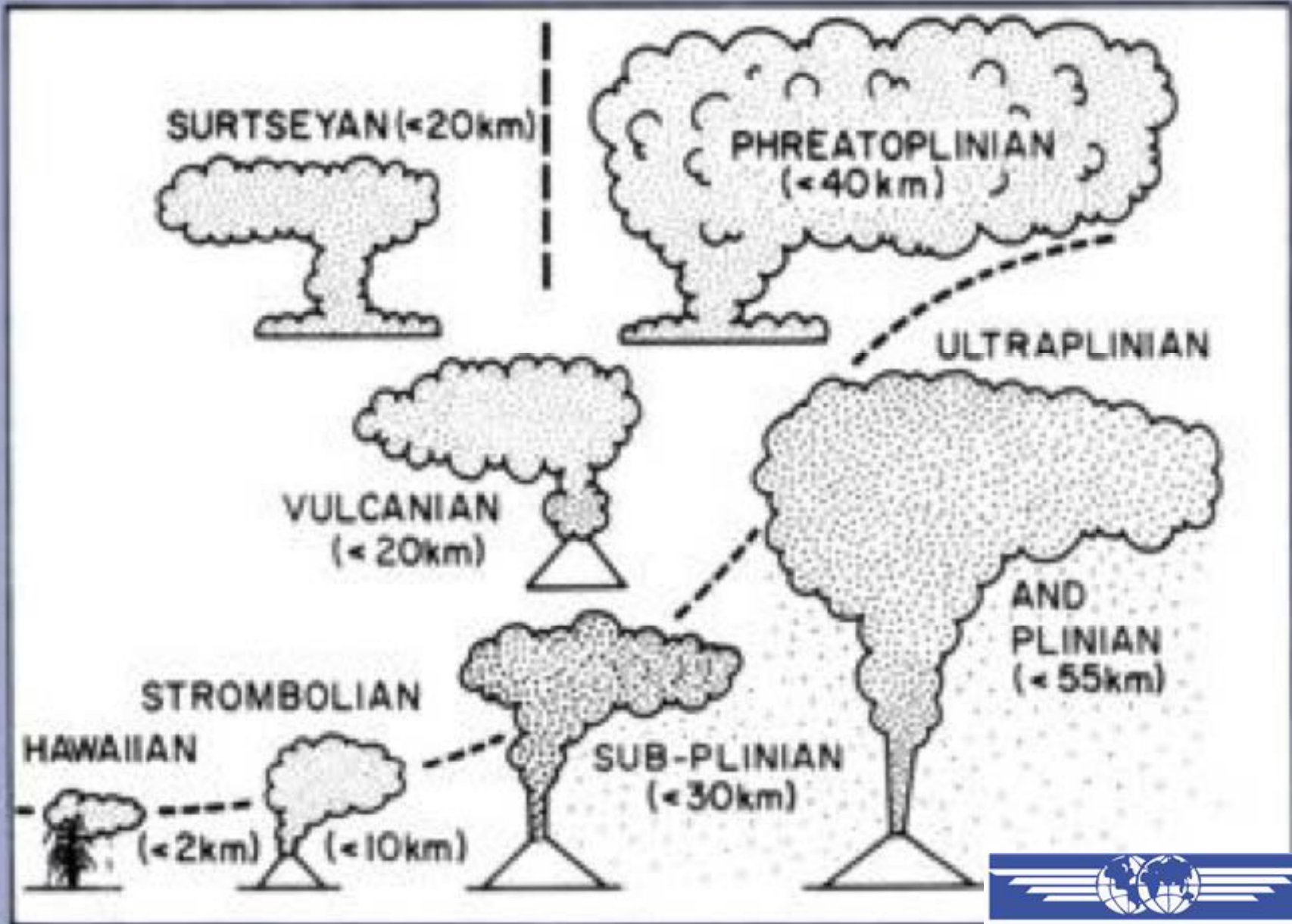
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Rely on ground observers
79ac
Plinius

8



Explosiveness ↑





1250 °C

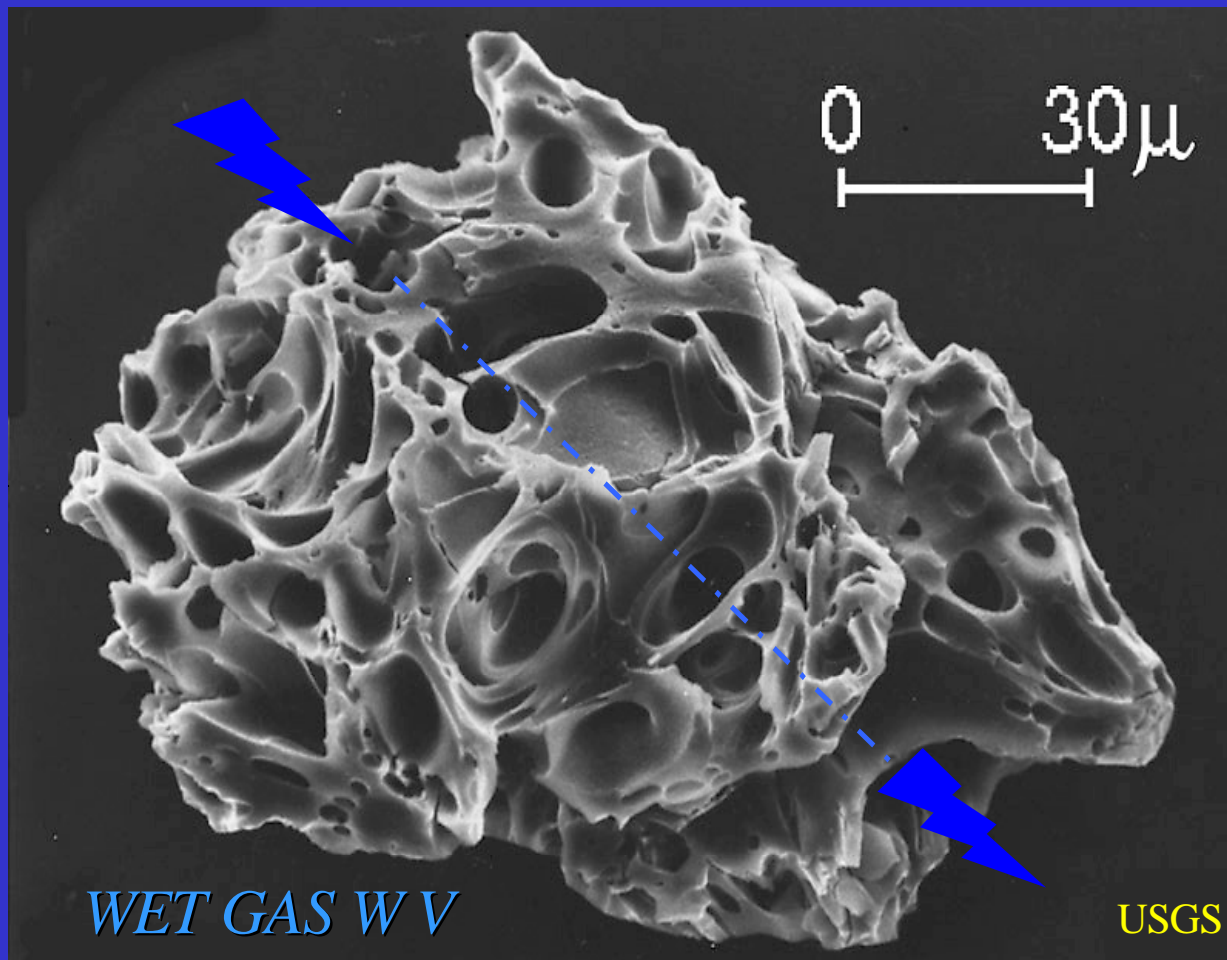
Photo: García Royo

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Melting point







Cabo verde

Sand/dust storm

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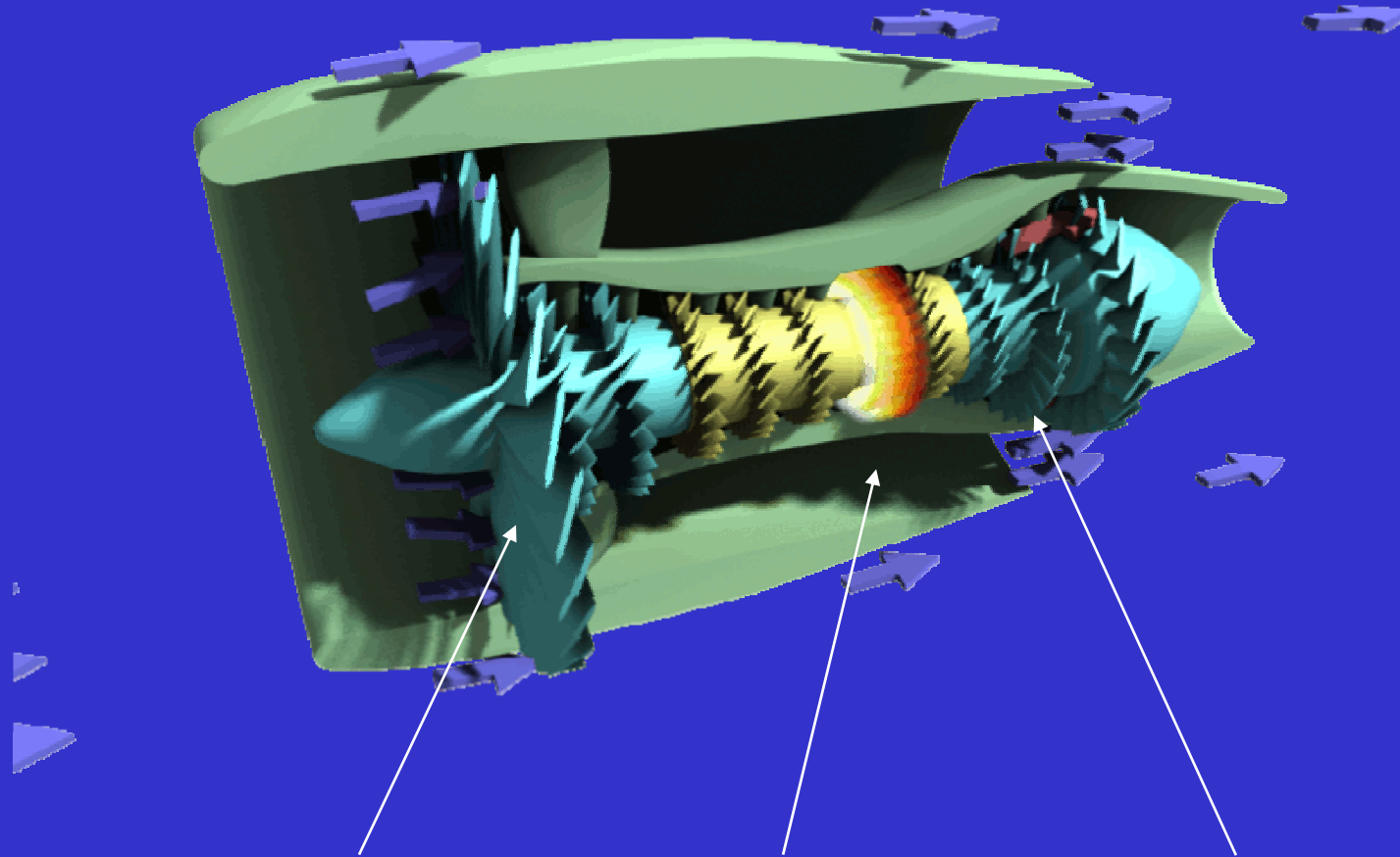
NASA

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VOLCANIC ASH EFFECTS ON AIRCRAFT

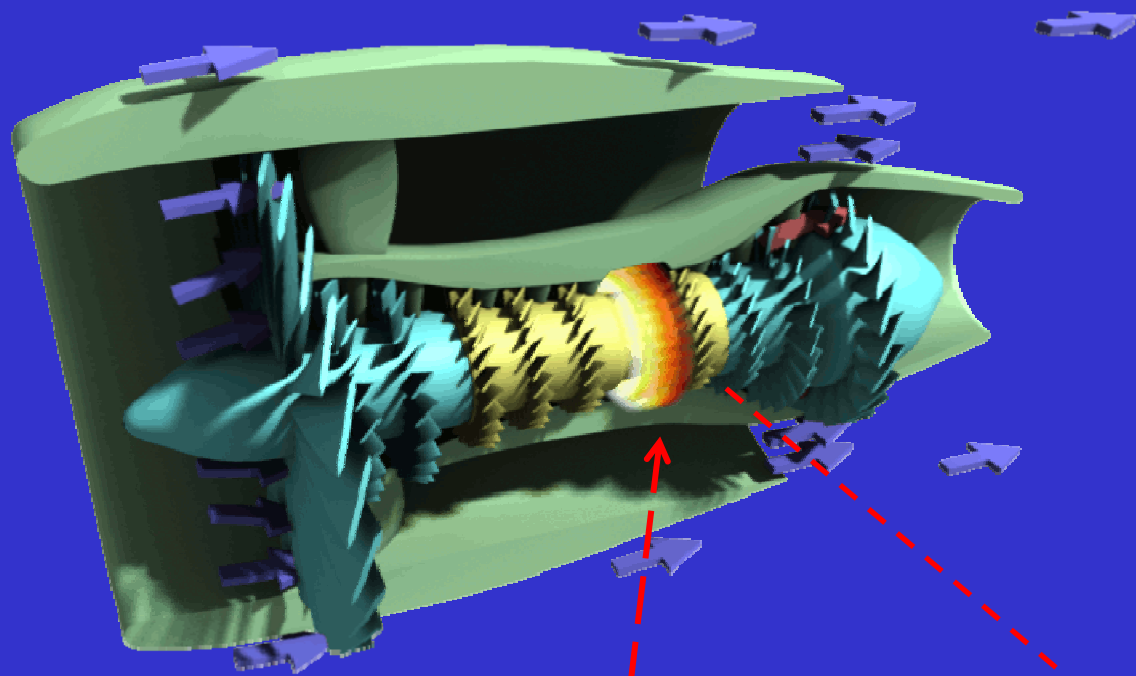
- *MECHANICAL:* *EROSION*
ABRASION
ABLATION
- *CHEMICAL:* *REDOX PROCESSES*
OXIDIZATION-REDUCTION OF
DIFERENT ALLOYS
METALLIC SALT PRECIPITATES
METALLIC OXIDES
- *ELECTRICAL:* *INTERFERENCES ON ENGINE*
SENSORS, MELTING ELECTRICAL
INSULATOR COVERS.



Erosion

Partial melting

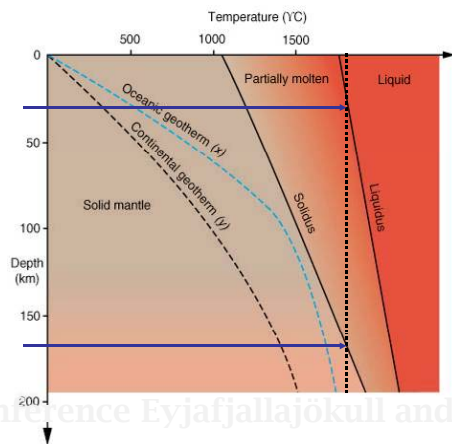
volcanic glass



1250°C

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Geothermal Gradient, Pressure and Melting



MELTING PROCESS

1600°C

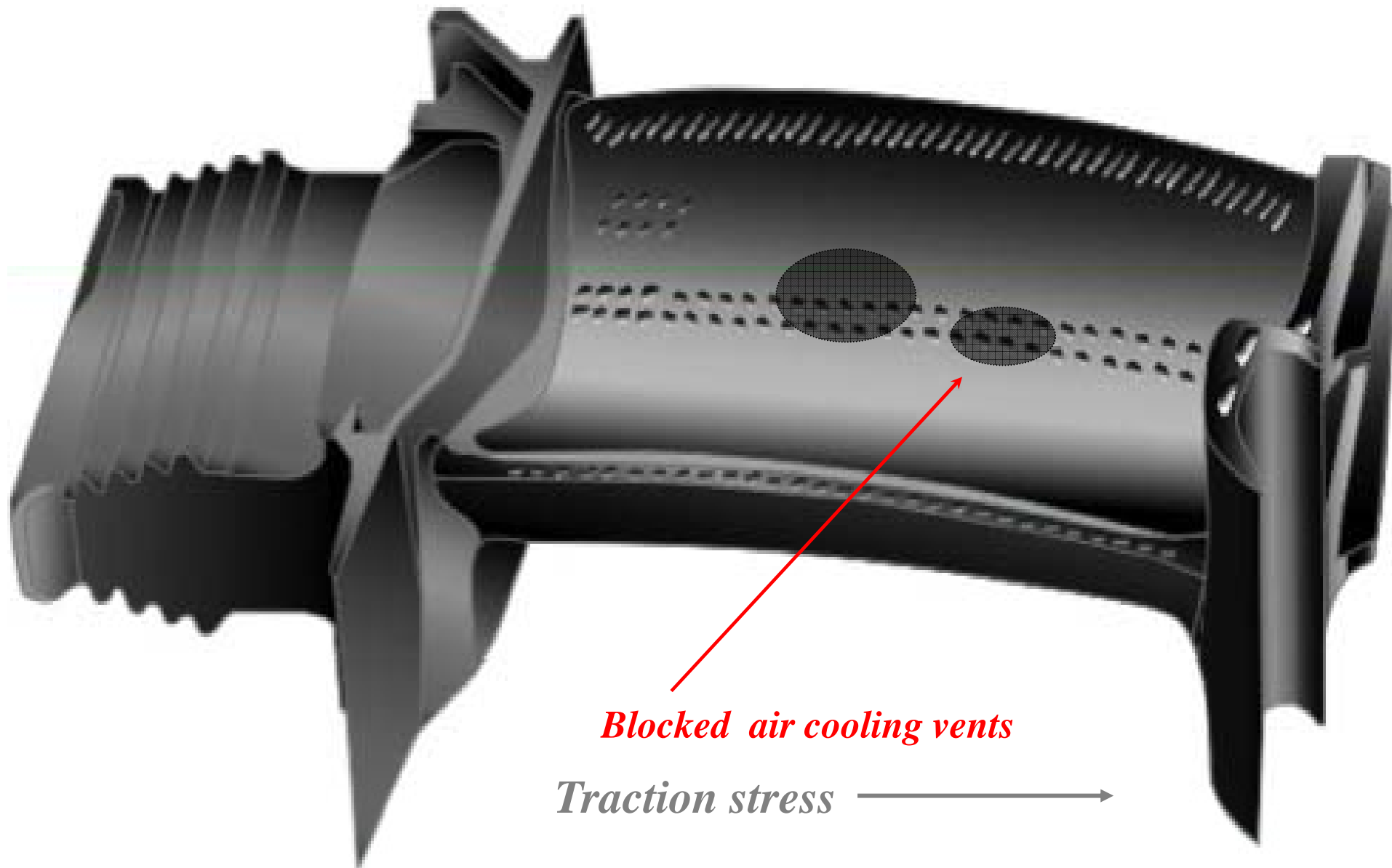
990°C MAX. EGT

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Davidson, Reed, Davis. 2002. Exploring Earth.



Blocked air cooling vents

Traction stress →

An aerial photograph of a runway, likely at an airport, showing a significant amount of damage to the pavement. The surface is uneven and has a 'blistered' appearance, with numerous small, raised areas and deep cracks. The text 'Blistered shaped' is overlaid on the right side of the image.

Blistered shaped



Redox processes

Salt precipitates

Metallic oxides

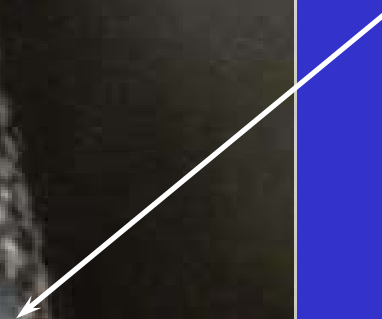
Bright 4
Maxexp 20ms

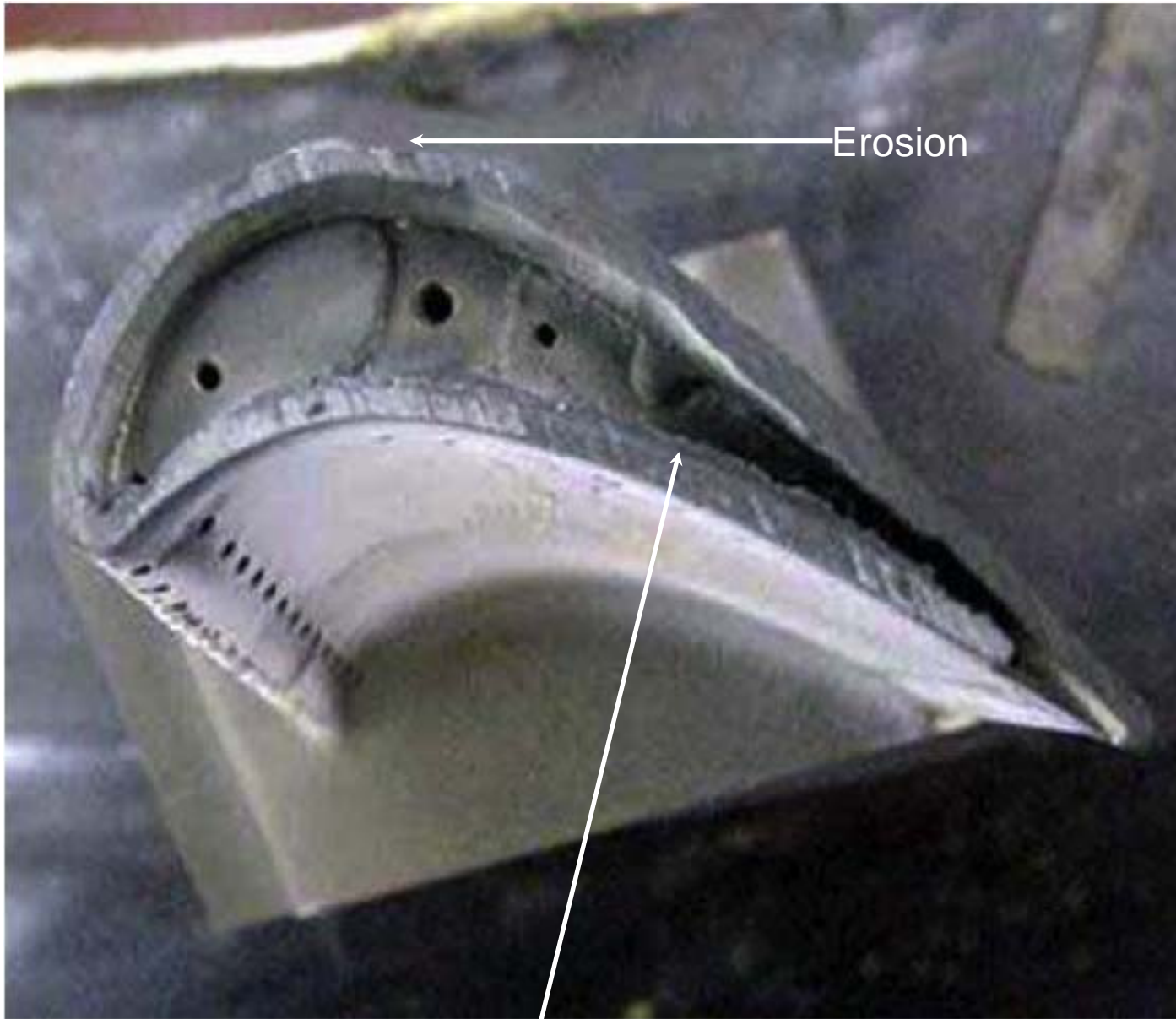
Gain 2.0
Exp 20ms

04/15/2010
15:18:24



Leading edge
Abrasion
DC8 NASA





DC8 NASA

Ash deposits

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BLURRED vision
Abraded surface

Cotopaxi



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Quito Rwy 17

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VA = Operational Problem

- Operational solution needed
- Operators/Pilots decide
- Safety First = avoid hazards
- Good Information = Good Decision

ATS Problems

- Additional workload
 - Information provision
 - Special aircraft requests
 - coordination
- Revised Air Traffic Management
 - Traffic Flow different
 - Flow Management

Solutions

- Scaled Response
- Small vs large eruption
 - Local vs regional effects
 - Low vs high altitude
 - Good vs sparse information
 - Estimated vs measured concentration

Solutions

- IVATF to develop global “toolbox“
- All interested parties contribute
 - Safe concentration levels?
 - How much ash is too much ash?
 - Test and certify safe VA TRESHOLD concentration levels
- States/Regions: Contingency Plans
 - Global perspective
 - CDM

IFALPA POSITION

SAFETY FIRST

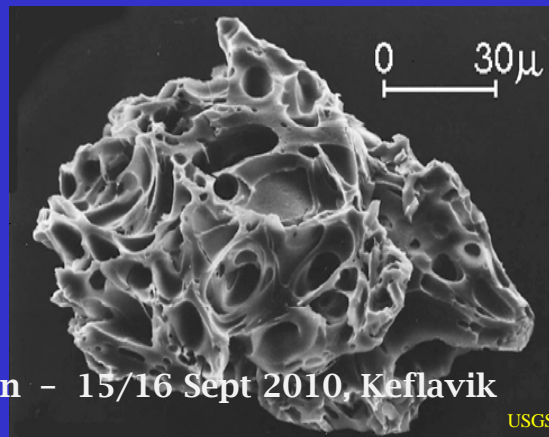
<http://tinyurl.com/IFALPA-VA-Position>

RESILIENCE

ASSUME HUMANS ARE
WEAKER THAN NATURE
ADMIT IT

OBSERVE UNDERSTAND AVOID

VA



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Summary and Conclusions

- VA is an OPERATIONAL problem
- ATS and AIRPORTS to BE prepared
- SAFETY FIRST
- DEFINE and TEST SAFE VA CONCENTRATIONS
- SCALED response
- CERTIFY or AVOID VA



Thank you, Safe Flights!

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