



EASA
European Aviation Safety Agency

EASA managed projects

**Helicopter Safety Research
Management Committee**

4 May 2017

Your safety is our mission.

EASA is an agency of the European Union



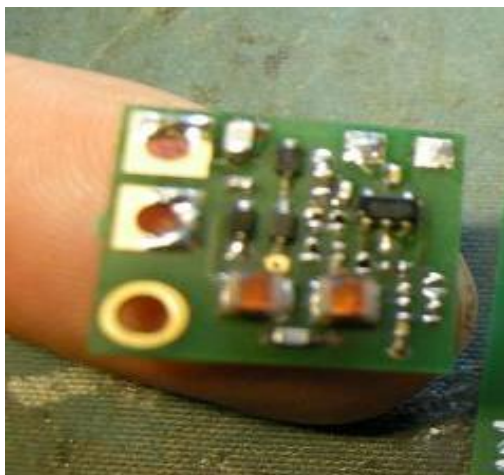
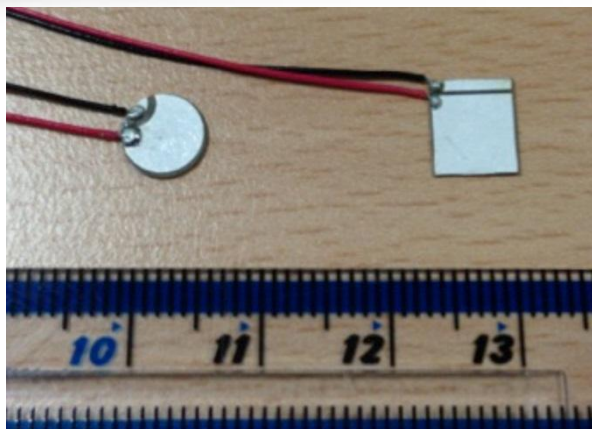
G-PUMI UNKG-2010-027

It is recommended that the European Aviation Safety Agency, with the assistance of the Civil Aviation Authority, conduct a review of options for extending the scope of Health and Usage monitoring Systems (HUMS) detection into the rotating systems of helicopters.

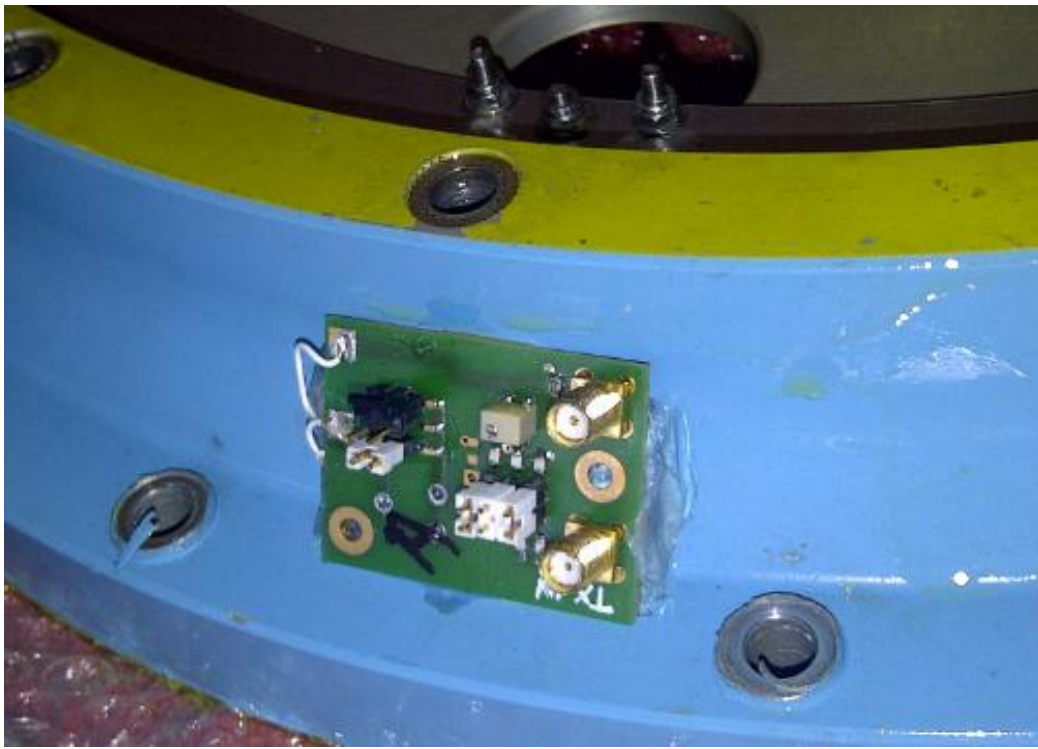
**G-REDL UNKG-2011-041**

It is recommended that the European Aviation Safety Agency research methods for improving the detection of component degradation in helicopter epicyclic planet gear bearings.





► **Acoustic Emission sensor installed**



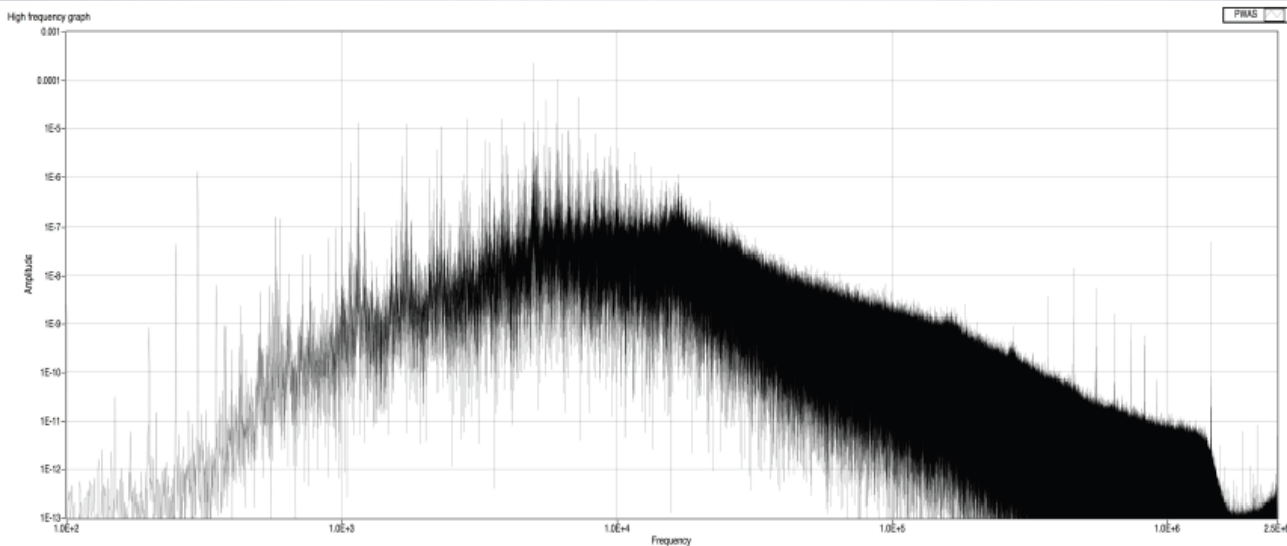
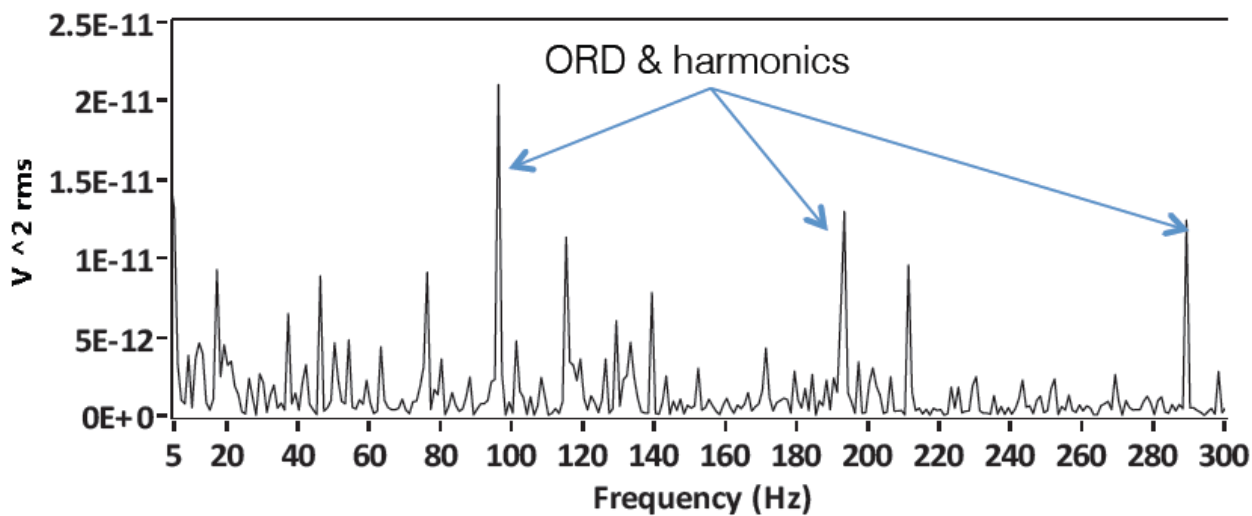
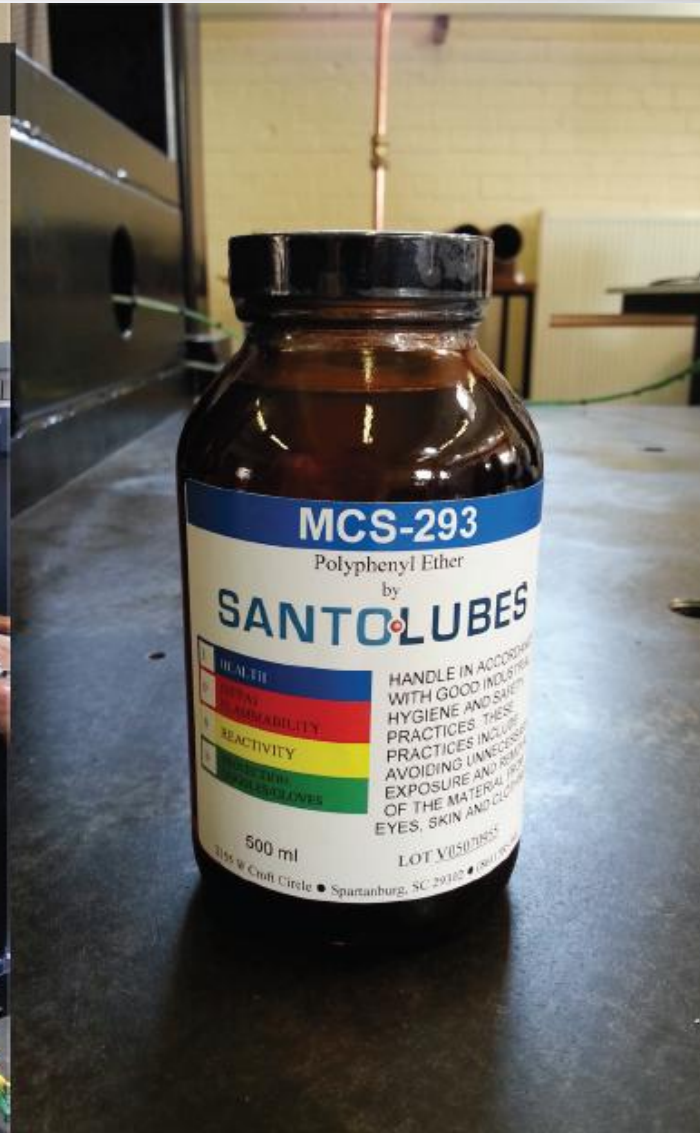


Figure 13. Frequency spectrum of PWAS signal





Thioether Mist Lubrication

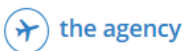


MCS-293
Polyphenyl Ether
by
SANTOLUBES

HAZARD PICTOGRAM
CORROSIVE
REACTIVITY
OXIDIZING LIQUID
GLOVES

HANDLE IN ACCORDANCE WITH GOOD INDUSTRIAL HYGIENE AND SAFETY PRACTICES INCLUDING AVOIDING UNNECESSARY EXPOSURE AND REMOVAL OF THE MATERIAL FROM EYES, SKIN AND CLOTHING

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Application Forms ∨

Regulations ∨

Agency Rules (Soft Law) ∨

Rulemaking Process ∨

Product Certification ∨

International Cooperation ∨

Research & Publications ∧

Overview

Safety & Promotion material

04
JUN
2015

EASA_REP_RESEA_2012_6

Vibration Health Monitoring or Alternative Techniques for Helicopters

FINAL

Research Area: Rotorcraft

Date: 04/06/2015

The project investigates new methods and associated technologies for the in-situ detection of main rotor faults in comparison to existing health monitoring techniques for large helicopters and considering the use of Health and Usage Monitoring Systems (HUMS) data. A particular focus is on the main gearbox and epicyclic planet gear bearings.

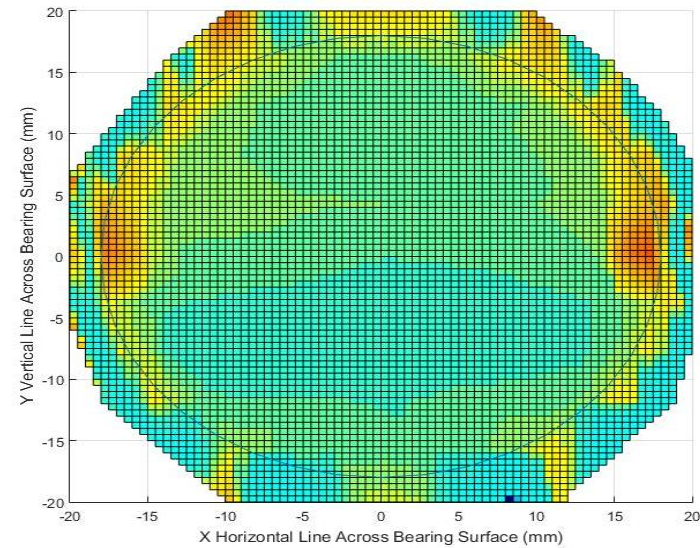
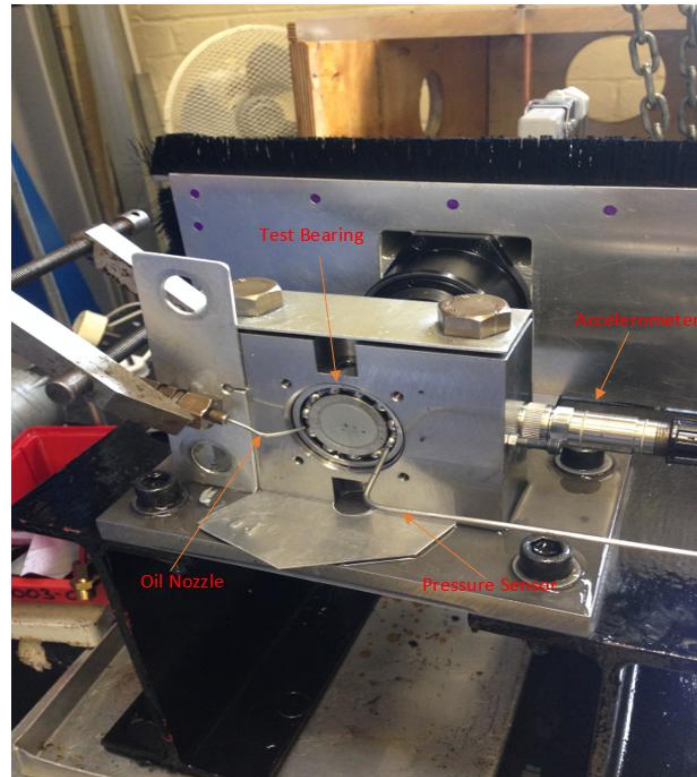


Downloads

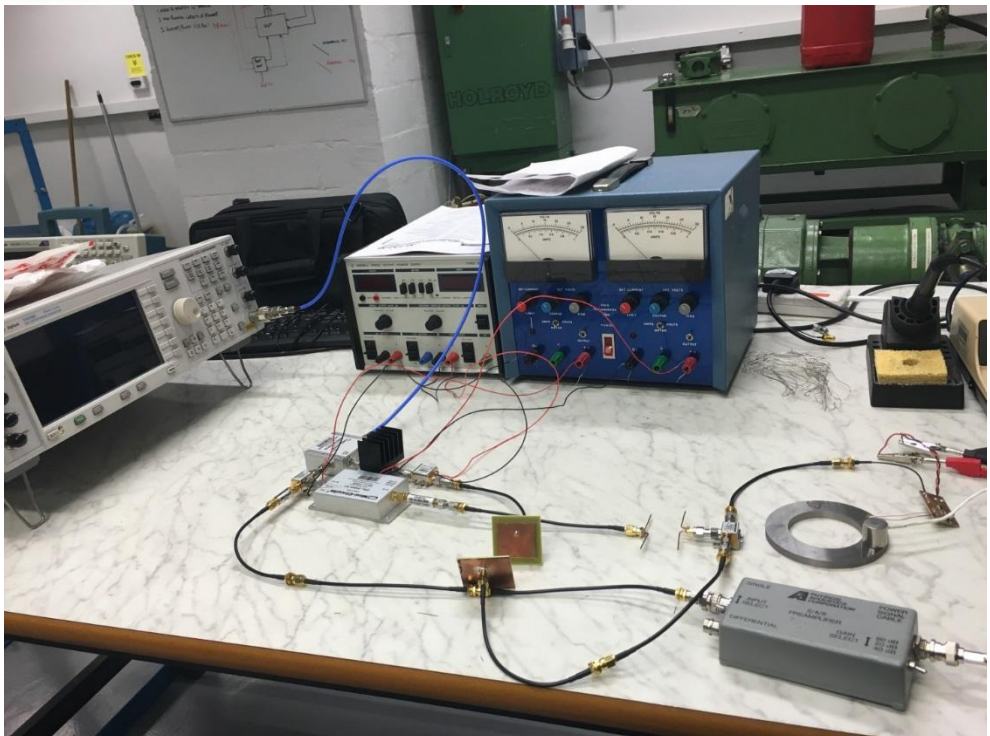




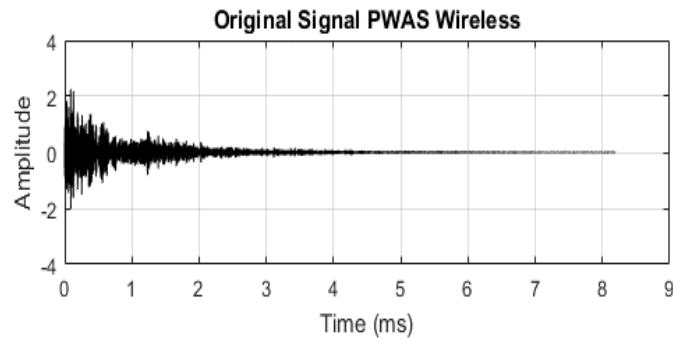
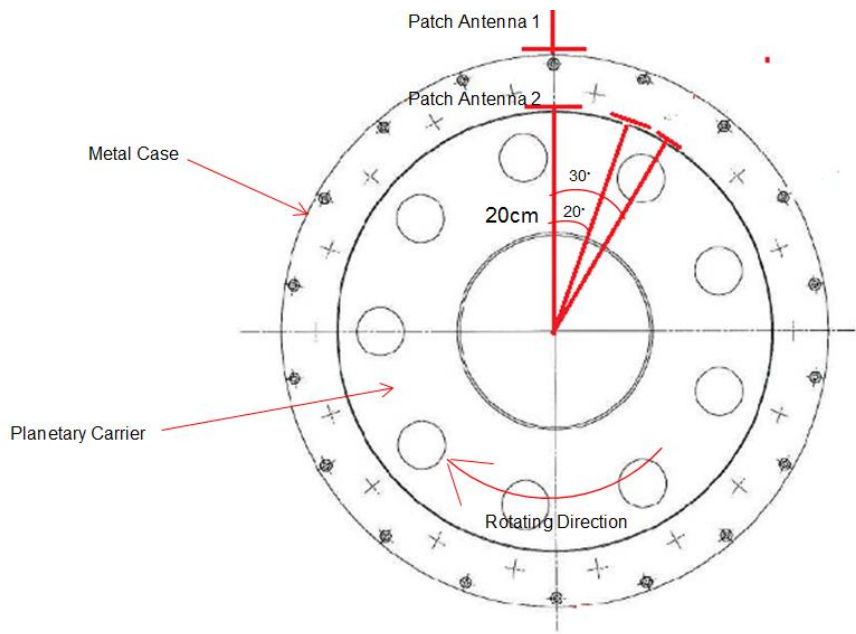
**London
South Bank
University**



➤ Windage test rig



► Wireless AE sensor





Crew immersion suits conspicuity

G-BLUN UNKG-2008-036

It is recommended that the European Aviation Safety Agency (EASA) investigate methods to increase the conspicuity of immersion suits worn by the flight crew, in order to improve the location of incapacitated survivors of a helicopter ditching.



[...] the immersion suit and un-inflated lifejacket are designed to have low reflectivity in order to reduce internal reflections in the cockpit during night time flight operations. Previous trials have examined ways of enhancing the conspicuity of survival suits but have not reached any definitive conclusions. It is possible that enhancing the infra-red reflectivity of the survival suit would provide the most beneficial results since most SAR helicopters use infra red sensors to assist the search [...]



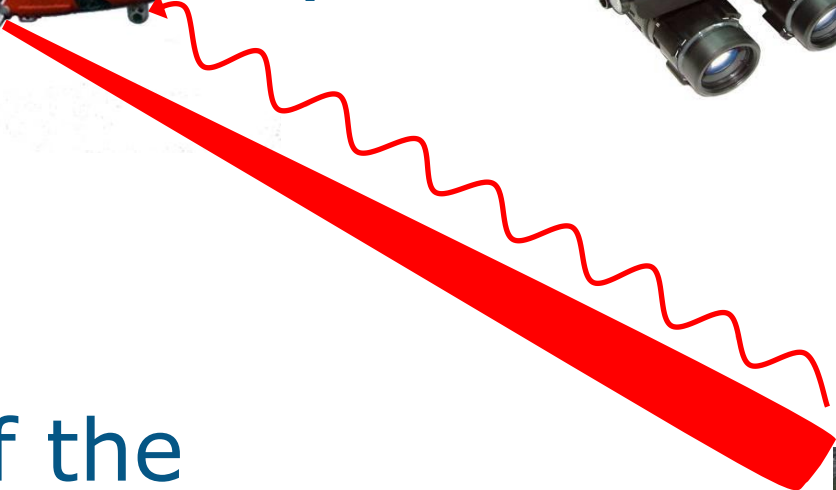
Crew immersion suits conspicuity



(and



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➤ IR mode of the searchlight used





Crew immersion suits conspicuity

- ▶ GLINT tape does not reflect visible light thus it seems to be adapted to the cockpit environment

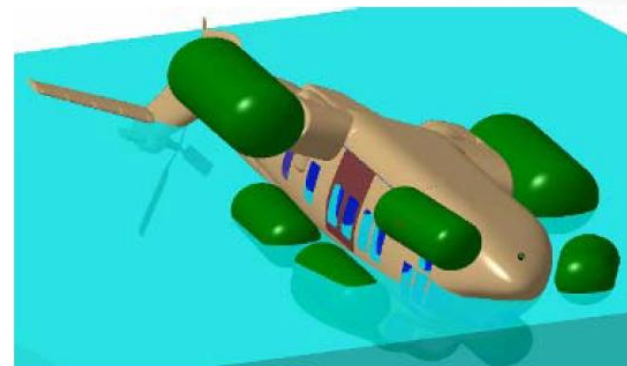




Enhanced Emergency Floatation Systems

Part of RMT.0120 “Ditching and Water Impact Occupant Survivability”

Follow-up to EASA.2007.C16 “Study on Helicopter Ditching and Crashworthiness”



Enhanced emergency floatation systems for helicopters to enable post capsized floating attitudes that provide for a portion of the passenger cabin to remain above water to enable occupants to breathe whilst making their escape.



Evacuation and survivability

G-WNSB UNKG-2016-016

It is recommended that the European Aviation Safety Agency instigates a research programme to provide realistic data to better support regulations relating to evacuation and survivability of occupants in commercial helicopters operating offshore. This programme should better quantify the characteristics of helicopter underwater evacuation and include conditions representative of actual offshore operations and passenger demographics.





Future topics

- ▶ Main Gearbox design to reduce critical parts and maintain autorotation capability in case of component failure
- ▶ Improve right-side-up floating capability
- ▶ Standardisation of AWO automatic approaches for HEMS and offshore operations
- ▶ De-icing of smaller rotorcraft
- ▶ Integration of new rotorcraft configurations (tiltrotor, compound, etc.) in European operations





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Questions?

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