EASA managed projects

Helicopter Safety Research
Management Committee

18 Nov 2014

Your safety is our mission.
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.
Wireless strain sensor installed on the MH-60S pitch link

AgustaWestland RTVP
Challenges:

» Rotation
» Oil
» Faraday cage
» Large rotating metallic components
» Temperature
» Vibration levels
» Power transfer
» Space
» Risk of damage to MGB
Acoustic Emission sensor selected
Homodyne receiver for RF power-scavenging and analogue wireless link
» Acoustic Emission sensor installed
Figure 13. Frequency spectrum of PWAS signal

ORD & harmonics
Thioether Mist Lubrication

Thioether mist
Figure B.62 Thermocouple Locations on MGB (Source: Helicopter Manufacturer and Author)
EASA.2014.OP.15
Helicopter main gearbox health (MGH)

Downloads
- EASA.2014.OP.15 Procedural Documents
- EASA.2014.OP.15 - Questions and answers
Helicopter Low Airspeed Sensor

- Precision airspeed measurement
- 2D probe immune to rotor down wash
- 3D probe provides down wash component
- Aircraft attitude compensation
- No calibration required
- Anti-ice design

Curtiss-Wright Avionics & Electronics
EASA Research Plan

» Crew immersion suits conspicuity
Questions?