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**AIR ACCIDENT
INVESTIGATION UNIT**

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Supplementary Report

This is supplementary information, subject to change, and may contain errors. Any errors in this Report will be corrected when the Final Report has been completed.

Background

The investigation of a serious incident involving a Eurocopter AS 350 helicopter, registration G-JESI by the AAIU is ongoing. A preliminary report into this event, which included 6 Interim Safety Recommendations, was issued on 26 October 2006 and can be found on the AAIU web site at www.aaiu.ie/upload/general/8358-0.pdf.

Information

During the course of the on-going investigation involving G-JESI, the AAIU has found that a standard refuelling bowser was being used to “hot” refuel turbine-engined helicopters. (Hot refuelling is a practice whereby helicopters are refuelled with an engine running). The AAIU has been advised by the manufacturer of the bowser that a special nozzle specifically designed for hot refuelling should have been fitted, not a standard refuelling nozzle designed solely for refuelling with the engine/s shut down.

Using a standard nozzle, the fuel displaces vapour in the tank, causing the vapour to exit through the filling point. The filling point is invariably located high on the side of the helicopter, close to the engine. Consequently, flammable vapour exiting at the filling point can be ignited by the hot engine exhaust, or by ingestion into the engine(s), if the helicopter is refuelled while the engine is running.

The special nozzle is fitted with a seal that prevents fuel vapour exiting the tank at the filling point. This safety feature causes the fuel vapour to vent through the normal fuel tank vent, which is safely located in a position remote from the engine, during refuelling.

Interim Safety Recommendation

The AAIU therefore issues the following Interim Safety Recommendation:

The IAA should issue an Aeronautical Information Circular (AIC) to alert operators to dangers of using standard nozzles for hot refuelling of helicopters. The AIC should also prohibit hot refuelling of helicopters using a bowser that is not equipped with refuelling nozzle incorporating a vapour seal. [\(SR 15 of 2007\)](#)