CIVIL AVIATION SAFETY AUTHORITY AUSTRALIA

AIRWORTHINESS BULLETIN

AS350 & AS355 Helicopter - Flight Crew Seat Crashworthiness

AWB 25-004 **Issue** : 1
Date : 23 June 2005

Effectivity

All AS 350 and AS 355 series helicopters.

Purpose

The objective of this bulletin is to advise operators of the availability of an alternative flight crew seat with improved crashworthiness characteristics. It also advises of modifications that may be performed to the original seat to improve crashworthiness.

Background

Recently, an accident involving an Australian Defence Force AS-350BA helicopter highlighted the need to re-assess the flight crew seat crashworthiness characteristics.

The incident involved the failure of both crew seats during a “run on” landing. The seats distorted and failed due to delamination and crushing of the GFRP seat pan. This in turn resulted in seat separation from the seat rails. The ADF technical authority believes that the seats had failed below 6g forward deceleration, because the 6g crash inertia switches had not activated.

Eurocopter have advised that there may be instances of abnormal vibration; such as ground resonance that may cause this type of seat failure at well below the 16g forward deceleration capability required by FAR 27 requirements.

Also, In April 2000, the UK Air Accidents Investigation Branch (AAIB) made a safety recommendation that required the reassessment of the crashworthiness of the AS350 and AS 355 flight crew seats. They recommended the incorporation of several service bulletins to improve the seat crashworthiness, however these have not been made mandatory.

Eurocopter have advised that the options available to improve the flight crew seat crashworthiness are:

(1) Incorporation of S/B’s 25-00-63 (for AS 350) or S/B 25-00-43 (for AS 355), which involve the strengthening of the front seats and floor structure to improve crashworthiness; or

(2) Installation of EC-120 crew seats in accordance with S/B 25-00-57 (for AS 350) or S/B 25-00-58 (for AS 355).

Note: The original seats fitted to the AS350 and AS 355 comply with the design requirements specified in FAR 27. This purpose of this AWB is to emphasise that under certain conditions, such as ground resonance and other off-design conditions, the crew seat performance can be improved by adopting the recommendations of this Airworthiness Bulletin.

Recommendations

As the standard AS350 and AS355 flight crew seats are known to fail under certain conditions not addressed by their design requirements, operators should consider the alternative solutions presented in this AWB. Either will significantly improve the protection offered to flight crew. It is recommended that Eurocopter be contacted if you intend using EC 120 seats. They will be able to provide engineering support and advice on the fitment of the alternate EC120 seats.

Enquiries

Enquiries with regard to the content of Airworthiness Bulletins should be made via the direct link e-mail address included on the Airworthiness Bulletin web site, AirworthinessBulletin@casa.gov.au

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