Suites données aux recommandations de sécurité

Accident de l'hélicoptère Sikorsky S76 C immatriculé F-HJCS survenu en mer d'Andaman (Birmanie)

On 11 July 2011 the helicopter Sikorsky S76 C++ registered F-HJCS operated by Heli-Union took-off from Kanbauk Airfield with 7 passengers and 2 flight crews bound for the Yetagun Floating Storage Offloading (FSO). After landing on the FSO, one passenger disembarked and three passengers boarded. During this phase, the rotor was still turning. Then the crew intended to take-off to Yetagun platform. The captain (pilot flying) climbed vertically. At 25 feet above the platform, the pilot initiated a cyclic input, then the aural warning sounded and ENGINE OUT warning light illuminated on the instrument panel. The captain noticed the left engine T5 temperature increasing to the red zone (up to 983°C) and heard a clanking noise. He decided to ditch the helicopter. He initiated the floating devices deployment. The contact with the sea surface was rather hard and the helicopter then capsized onto its left side. Flight crew and passengers managed to get out of the helicopter. All the crew and passengers were rescued after approximately one hour. Three occupants (including co-pilot) drowned to death and two other passengers suffered serious injuries. There were no signals detected from either the emergency locator transmitter or the personal locator beacons worn by the occupants of the helicopter.
Réception par la DGAC : 10 Septembre 2012

Recommandation 01

MAIB (extrait)

After recovery of the wreckage, the engines were examined at Turboméca facilities. The first results indicated the rupture of a HP turbine blade on #2 engine. This rupture phenomenon, identified since 2007, is the subject of corrective action by Turboméca through modification TU166. However, the increase in the cases of failures in 2011 led the BEA to issue a safety recommendation . The BEA recommends that :
- The EASA and the FAA take the necessary steps in order to suspend operations of Sikorsky S76C++ equipped with Arriel 2S2 engines in performance class 2 with exposure time as long as their engines have not been modified with TU166. (BEA recommendation FRAN-2012-002)

Réponse de la DGAC

Cette recommandation est adressée à la FAA et l'AESA.

La DGAC est concernée par cette recommandation en ce qui concerne les exploitants français de S76 opérant en classe de performance 1. Elle a émis la consigne opérationnelle n° F-2012-01 en date du 23/02/2012, à délai d'application immédiatement. Elle suspend les autorisations liées à l'application des paragraphes OPS 3.005(e) ou OPS 3.517 pour un hélicoptère de type S76 équipé de moteurs de type Arriel 2S2 jusqu'à la réalisation de la modification TURBOMECA TU166 sur ses deux moteurs. Les appareils de type S76 inscrits sur liste de flotte d'exploitants français ont tous été modifiés selon la TU166.

Degré d'avancement (05 Juillet 2013)

100%

Recommandation 02

MAIB (extrait)

During takeoff in category A from a helideck, the Sikorsky S76C++ flight manual defines TDP (take off decision point) as a height of 30 feet above the helideck. In case of failure of one of the engines below TDP, the pilot must land on the helideck. Beyond the TDP, the pilot must take into account the meteorological conditions and the height of the helideck in order to deduce from it the value of the resulting dropdown and consequently the maximum takeoff weight to continue the flight. The instruction of 21 March 2011 provides interpretations and explanations for the application of OPS 3 of 21 March 2011. The ACJ relating to procedures for the use of a helicopter from a helipad does not refer to the TDP as defined by the manufacturer. A point designated as “rotation point” is the reference without being defined. Its value is variable according to the type of helicopter. The IEM OPS 3.520 relating to takeoff procedures without precise exposure time states that if a failure occurs during climb up to the rotation point, a safety landing or an emergency landing on the helideck is planned. Concerning takeoffs with exposure time, there is no specific procedure in case of a failure before the rotation point. It is indicated that an emergency landing for safety reasons may not be possible in these conditions. The Héli Union operations manual, approved by the DGAC, makes no reference to the TDP nor to the rotation point in its description of the procedure for engine failure during takeoff from a helideck. However, the illustration indicates a height of 20 feet above the helideck. The references and values in the operations manual should not be lower than those certified by the manufacturer. The absence of any cohesion in the definition of the reference points and associated values leads to the development of erroneous procedures, source of confusion for crews.
MAIB and the BEA recommend that DGAC ensure that its operators precisely define in their procedures and pilot training the different reference points used during helicopter take off operations in performance class 2 with exposure time.

Réponse de la DGAC

A l’occasion de la session de maintien des compétences des inspecteurs de surveillance des opérations (IOPS) en date du 20 mars 2013, un cours de clarification sur les procédures d’exploitation des hélicoptères en classe de performances 2 a été dispensé. Ont été en particulier abordées les

différentes possibilités de définition et de combinaison des points de décisions avant décollage et avant atterrissage, ainsi que la nécessité de leurs positionnements précis dans les plans verticaux et horizontaux.

Dans le prolongement de cette action de formation, il a été donné comme priorité de surveillance l'examen des parties C des manuels d'exploitation des sociétés de transport aérien par hélicoptère. Sera ainsi poursuivi la vérification de la cohérence des éléments exposés dans le cadre de cette exploitation, en particulier, le cas échéant, la procédure et les paramètres d'évitement des bords de plateformes, ainsi que la hauteur de descente avec un moteur critique en panne au moment de la rotation.

Degré d'avancement (05 Juillet 2013)

100%

Recommandation 03

MAIB (extrait)

In June 2009 the DGAC informed Héli Union that the Sikorsky S76C++ helicopter was eligible to exposure time in relation to the statistics supplied by the manufacturer for the period 2003-2007. The European regulation obliges operators to provide statistics to their respective national authorities. In practice, this is rarely respected since it is the national authority that takes steps through the manufacturer to recover the data that it needs to update the eligibility list. At the end of 2011 the DGAC finally received data from the manufacturer for the period 2005-2009 after having asked several times. In addition, the failure to release updated statistics within a reasonable time period makes it impossible for the national authorities to rule on the continuation or the suspension of eligibility for a helicopter type.
MAIB and BEA recommend that - EASA modify paragraph 1 ACJ-1 appendix 1 JAR-OPS3 3.517 (a) so that, prior to granting an approval, the operators provide validated power plant reliability statistics for the previous 5 year moving window. - DGAC transpose into national regulations the changes made by EASA to paragraph 1 ACJ-1 annexe 1 JAR OPS 3. MAIB and BEA recommend that - EASA modify paragraph 4 ACJ-1 appendix 1 JAR-OPS3 3.517 (a) in order to introduce a reasonable time period (annually for example) of periodically reassessed updated statistics. - DGAC transpose into national regulations the changes made by EASA to paragraph 4 ACJ-1 annex 1 JAR OPS 3.

Réponse de la DGAC

Dans le cas où des consignes émaneraient de l'EASA sur ce sujet avant la date de mise en oeuvre du réglement UE965/2012 en France (IR-OPS), la DGAC transposerait cette modification dans le droit national dès leur parution. Au 28 octobre 2014 au plus tard, c'est le réglement 965/2012 qui s'appliquera.

Toutefois, le guide d'obtention d'une approbation du Manuel du Contrôle Technique demande que les exploitants fournissent les statistiques de fiabilité : " l'exploitant doit effectuer une analyse des risques qui s'appuiera sur l'éligibilité de l'hélicoptère conformément au paragraphe 1 de l'ACJ-1 à l'appendice 1 de l'OPS 3.517(a), avec fourniture de documents constructeur confirmant la conformité des statistiques de défaillance moteur au paragraphe 2 de l'ACJ-1 à l'appendice 1 de l'OPS 3.517(a)."

Le paragraphe 2 de l'ACJ-1 demande que les données de fiabilité couvrent une période glissante de 5 ans, ce qui amène naturellement certains constructeurs à fournir aux exploitants ces données sur 5 ans.

La difficulté rencontrée provient du fait que les dispositions ci-dessus, se trouvent dans un règlement opérationnel et ne sont donc pas directement opposables au détenteurs de certificat de type.

Degré d'avancement (05 Juillet 2013)

100%

Recommandation 04

MAIB (extrait)

The separation between the authorities responsible for operational oversight and continuing airworthiness does not enable a coordinated and immediate corrective action. The helicopter and the engine manufacturers supply EASA with information relating to continuing airworthiness of the helicopter. The European organisation in charge of continuing airworthiness was apparently informed of all of the occurrences to Arriel 2S2 engines. The helicopter and the engine manufacturers also provide statistics for risk assessment to the national authorities in order to determine the type of operations to be undertaken by operators. The national authority was not aware of the occurrences. Considering the increasing number of in-flight engine shutdowns due to the failure of a HP blade as well as the increasing number of blades with cracks, and this despite the corrective action taken since 2009 (modification TU166) and the decrease in the number of engines to retrofit, the organisation responsible for continuing airworthiness should have alerted the authorities in charge of operational oversight.
MAIB and BEA recommend that : - EASA study a method for release of information to the national authorities regarding sudden power loss rates of which it is aware and as soon as these rates get close to acceptable limits or show significant evolution.

Réponse de la DGAC

La recommandation ne nécessite pas d'actions particulières pour la DGAC. Elle serait favorable à ce que l'AESA diffuse aux Autorités des informations sur la fiabilité des moteurs en service.

Degré d'avancement (05 Juillet 2013)

100%