| EASA | AIRWORTHINESS DIRECTIVE |
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| | **AD No.: 2011-0249**<br><br>**Date: 22 December 2011**<br><br>Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EC) No 216/2008 on behalf of the European Community, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation |

This AD is issued in accordance with EC 1702/2003, Part 21A.3B. In accordance with EC 2042/2003 Annex I, Part M.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD unless otherwise specified by the Agency [EC 2042/2003 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [EC 216/2008, Article 14(4) exemption].

| **Type Approval Holder's Name :** | **Type/Model designation(s) :** |
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| TURBOMECA | ARRIEL 2 series engines |

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| TCDS Number : | EASA E.001 |
| Foreign AD : | Not applicable |
| Supersedure : | None |

| **ATA 73** | **Engine Fuel & Control – Digital Engine Control Unit (DECU) – Identification / Replacement** |
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| Manufacturer(s): | TURBOMECA |
| Applicability: | ARRIEL 2C1, 2C2 and 2S2 turboshaft engines, all serial numbers.<br><br>These engines are known to be installed on, but not limited to, Eurocopter EC 155 B, EC 155 B1 and Sikorsky S-76C helicopters. |
| Reason: | An incident has been reported of a helicopter which experienced a Digital Engine Control Unit (DECU) malfunction in flight from one of its ARRIEL 2C1 engines. The indicating system of the helicopter displayed a "FADEC FAIL" message, with a concurrent loss of automatic control of the engine. The mission was aborted and the helicopter returned to its base without any further incident.<br><br>The subsequent technical investigations carried out by Turboméca revealed that a Digital Engine Control Unit (DECU) assembly non-conformity was at the origin of this event. Further investigations performed with the supplier of the DECU led to the conclusion that only a limited number of DECU are potentially affected by this non-conformity.<br><br>This condition, if not corrected, could lead to a loss of automatic control on one or both engines installed on the same helicopter, potentially resulting in an emergency landing of the helicopter.<br><br>For the reasons described above, this AD requires replacement of each affected DECU with a serviceable part. This AD also prohibits the installation of any unserviceable DECU on an engine. |
| Effective Date: | 05 January 2012 |

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| Required Action(s) and Compliance Time(s): | Required as indicated, unless accomplished previously:<br>(1) Within 50 Engine Hours (EH) after the effective date of this AD, determine if at least one of the engines installed on the helicopter is equipped with a DECU whose serial number (s/n) is listed in the Table (Figure) of Turboméca Mandatory Service Bulletin (MSB) A292 73 2845 version A.<br>(2) For any helicopter fitted with two DECUs whose s/n are listed in the Table (Figure) of Turboméca Mandatory Service Bulletin (MSB) A292 73 2845 version A, within 50 EH after the effective date of this AD, replace one of the two DECUs with a serviceable part.<br>(3) For any helicopter fitted with one DECU whose s/n is listed in the Table (Figure) of Turboméca MSB A292 73 2845 version A, within 1 000 EH or 12 months, whichever occurs first after the effective date of this AD, replace the affected DECU with a serviceable part.<br>(4) From the effective date of this AD, do not install a DECU whose s/n is listed in Table (Figure) of Turboméca MSB A292 73 2845 version A on an engine, and do not install an engine having a DECU installed whose s/n is listed in Table (Figure) of Turboméca MSB A292 73 2845 version A on a helicopter, unless the DECU is serviceable.<br>**Definition:**<br>For the purpose of this AD, a serviceable DECU is:<br>• A part not having a s/n listed in the Table (Figure) of Turboméca MSB A292 73 2845 version A, **or**<br>• A part having a s/n listed in the Table (Figure) of MSB A292 73 2845 version A, provided this DECU has passed the inspection in accordance with the instructions of Turboméca MSB No. A292 73 2845 version A. |
| Ref. Publications: | TURBOMECA MSB A292 73 2845 version A, dated 19 December 2011.<br>The use of later approved revisions of this document is acceptable for compliance with the requirements of this AD. |
| Remarks : | 1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.<br>2. The required actions and the risk allowance have granted the issuance of a Final AD with Request for Comments, postponing the public consultation process after publication.<br>3. Enquiries regarding this AD should be referred to the Safety Information Section, Executive Directorate, EASA. E-mail: ADs@easa.europa.eu.<br>4. For any question concerning the technical content of the requirements in this AD, please contact:<br>Turboméca, S.A., ARRIEL 1 & 2 Customer Support<br>40220 Tarnos – France<br>Fax: +33 (0)5 59 74 45 15<br>or contact your nearest technical representative at<br>www.turbomeca-support.com. |