


EASA	EMERGENCY AIRWORTHINESS DIRECTIVE	
	<p>AD No.: 2008-0182-E</p> <p>Date: 01 October 2008</p> <p>Note: This Emergency 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</p>	
<p>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].</p>		
Type Approval Holder's Name :		Type/Model designation(s) :
Lange Aviation GmbH		E1 Antares
TCDS Number :	EASA.A.092	
Foreign AD :	Not applicable	
Supersedure :	None	
ATA 24	DC-DC converter in the Hydraulic Management Module - Modification	
Manufacturer(s):	Lange Aviation GmbH	
Applicability:	Powered Sailplanes E1 Antares with serial numbers 01 to 03, 06 to 12, 18, 19, 22, 23, 25, 32E30 to 40E38, 42E39, 44E40, 45E41 and 901.	
Reason:	<p>A powered sailplane E1 Antares experienced an in-flight short-circuit of its Direct Current (DC) converter which became inoperative and stopped energizing the hydraulic pump. The heat that was generated during the failure of the DC converter also damaged the adjacent Hydraulic Management Module (HMM) in such a way that micro-switches' positions in the engine-bay could no longer be recorded.</p> <p>Consequentially, it was no longer possible to determine the position of the motor pylon (retracted, extended or in-between) and the system switched off the running motor as a precautionary measure.</p> <p>Investigations identified an elevated risk of failure with the present design of the DC converter and revealed that current fluctuations happening in the drive battery caused the DC converter to fail.</p> <p>A failure of the DC converter can make the extension and retraction of the motor and retraction of the landing gear impossible while a damaged HMM can lead to the complete loss of motor-power.</p> <p>For the reasons stated above and as an interim measure, this AD mandates installation of a fuse in the feeder cable to protect the DC converter and the Hydraulic Management Module and an update of the Airplane Flight Manual (AFM).</p>	

Effective Date:	03 October 2008
Required Action(s) and Compliance Time(s):	<p>Before further flight after the effective date of this AD, unless already accomplished:</p> <p>(1) Install a fuse in the Hydraulic Management Module & DC-DC converter supply cable and perform a Functional test of the retractable engine unit as instructed in the Lange Aviation Technical Note No. 904-2.</p> <p>(2) Insert the following information into the E1 Antares AFM (to that end, a copy of this AD can also be inserted as the first page of the E1 Antares AFM) :</p> <div style="border: 2px solid red; padding: 10px;"> <p>PILOT QUICK REFERENCE AFTER DC-DC CONVERTER FAILURE</p> <p>Failure of the DC-DC converter could lead to the loss of the following functions:</p> <ul style="list-style-type: none"> - Extend motor - Retract motor - Retract landing gear <p>With no damage to the Hydraulic Management Module, three scenarios are possible. Apply the procedures as applicable:</p> <p>1. IN POWERED-FLIGHT AND MOTOR RETRACTION IMPOSSIBLE</p> <ul style="list-style-type: none"> - WITH DRIVE BATTERY ENERGY AVAILABLE: <ul style="list-style-type: none"> ▪ FLY TO THE CLOSEST AIRFIELD/LANDING SITE AND PERFORM A SAFETY LANDING. - WITH DRIVE BATTERY ENERGY NOT AVAILABLE: <ul style="list-style-type: none"> ▪ WIND-MILL MOTOR, ▪ USE BEST GLIDE RATIO APPROX. 1:27 AT 110 KM/H (60 KT) AND SINK RATE APPROX. 1.1 M/S (217 FT/MIN) ▪ FLY TO THE CLOSEST LANDING SITE AND PERFORM A SAFETY LANDING <p>For powered gliders, the motor is typically put into operation at (for a self-launch) or near (for an air-start) an (out-) landing field. In such a failure scenario it should be possible to safely reach this field.</p> <p>2. IN SOARING CONFIGURATION AND MOTOR EXTENSION IMPOSSIBLE</p> <ul style="list-style-type: none"> ▪ PERFORM AN OUT-LANDING AT THE NEAREST IDENTIFIED LANDING SITE. <p>3. LANDING GEAR RETRACTION IMPOSSIBLE.</p> <ul style="list-style-type: none"> ▪ CONSIDER A 10% DEGRADATION OF THE AIRCRAFT FLIGHT PERFORMANCES FOR THE REST OF YOUR FLIGHT ▪ THE FUNCTION "EXTEND LANDING GEAR" IS STILL AVAILABLE SINCE IT DOES NOT REQUIRE HYDRAULIC POWER. </div>
Ref. Publications:	Lange Aviation Technical Note No. 904-2

Remarks :	<ol style="list-style-type: none">1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.2. The safety assessment has requested not to implement the full consultation process and an immediate publication and notification.3. Enquiries regarding this AD should be referred to the Airworthiness Directives, Safety Management & Research Section, Certification Directorate, EASA. E-mail: ADs@easa.europa.eu.4. For any question concerning the technical content of the requirements in this AD, please contact: Lange Aviation GmbH, Brüsseler Straße 30, 66482 Zweibrücken, Germany Telephone: + 49 (0) 63 32 96 27 0; Facsimile: + 49 (0) 63 32 96 27 19 e-mail: info@lange-aviation.com
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