AIRWORTHINESS DIRECTIVE

For the reasons set out in the background section, the CASA delegate whose signature appears below revokes Airworthiness Directive (AD) AD/ROTAX/21 and issues the following AD under subregulation 39.001(1) of CASR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

Rotax Piston Engines

AD/ROTAX/21 Amdt 1 — Coolant "Evans NPG+" or Conventional Water-Glycol Coolant — 3/2005

Applicability: Bombardier Rotax 912 A, 912 F, 912 S and 914 F series reciprocating aircraft engines.

Requirement:

1. Exchange current conventional engine coolant with a new coolant liquid type "Evans NPG+" per provisions of Bombardier Rotax Mandatory Service Bulletin SB-912-043 / SB-914-029 initial issue dated September 2004 or later revision approved by European Aviation Safety Agency (EASA). Operate the engine per Cylinder Head Temperature (CHT) limits specified in requirement 2 of this AD.

   OR

   Continue the use of conventional glycol / water coolant (mixing ratio 50/50). If you use this option, check the open-up pressure of the coolant pressure vessel cap. The open-up pressure is marked on the cap. If marked open-up pressure is any pressure other than "1.2 bar" or if marking is not legible or missing altogether, replace the cap with a new pressure vessel cap Rotax Part number 922.070. Operate the engine per CHT limits specified in requirement 2 of this AD.

2. Make the following changes to the engine installation and operating manuals:

   i) Operator's Manuals Rotax 912 A/F Series, Chapter 10, Operating Limits.

CHT	
Use of EVANS NPG+	Max 150 Degree C
Use of Glycol / Water Coolant (50/50) and use of a 1.2 bar pressure vessel cap.	Max 120 Degree C

Rotax Piston Engines

AD/ROTAX/21 Amdt 1 (continued)

ii) Operator's Manuals Rotax 912 S Series and 914 F series, Chapter 10, Operating Limits.

CHT

Use of EVANS NPG+	Max 135 Degree C
Use of Glycol / Water Coolant (50/50) and use of a 1.2 bar pressure vessel cap.	Max 120 Degree C

iii) Installation Manual Rotax 912 A Series, Chapter 7.1, Operating Limits.

CHT

Use of EVANS NPG+	Max 150 Degree C
Use of Glycol / Water Coolant (50/50) and use of a 1.2 bar pressure vessel cap.	Max 120 Degree C

iv) Installation Manual Rotax 912 F Series, Chapter 6.1, Operating Limits.

CHT

Use of EVANS NPG+	Max 150 Degree C
Use of Glycol / Water Coolant (50/50) and use of a 1.2 bar pressure vessel cap.	Max 120 Degree C

v) Installation Manual Rotax 912 S Series, Chapter 7.1, Operating Limits.

CHT

Use of EVANS NPG+	Max 135 Degree C
Use of Glycol / Water Coolant (50/50) and use of a 1.2 bar pressure vessel cap.	Max 120 Degree C

vi) Installation Manual Rotax 914 F Series, Chapter 8.1, Operating Limits.

CHT

Use of EVANS NPG+	Max 135 Degree C
Use of Glycol / Water Coolant (50/50) and use of a 1.2 bar pressure vessel cap.	Max 120 Degree C

Rotax Piston Engines

AD/ROTAX/21 Amdt 1 (continued)

Note: Austrian ACG Airworthiness Directive A-2004-004 R1 as approved by EASA reference 2004-12534 dated 22 December 2004 refers.

Compliance: 1. Unless accomplished earlier, before 31 December 2005.

2. Unless accomplished earlier, before 31 December 2005.

This Amendment becomes effective on 17 March 2005.

Background: During operation, conventional coolant liquid (mixture ratio of 50% water and 50% antifreeze) can vaporize or boil under certain circumstances before reaching of the maximum cylinder head temperature. Loss of cylinder head cooling may lead to engine over temperature, seizure or fire. This AD addresses the identified unsafe condition associated with engine fire or loss of power.

The original issue of this AD required changing conventional engine coolant with a new coolant liquid type "Evans NPG+". This amendment allows use of either coolant with revised maximum CHT Limits.

The original issue of this AD became effective on 25 November 2004.

James Coyne
Delegate of the Civil Aviation Safety Authority

4 February 2005