



SAIB: CE-07-43

Date: September 4, 2007

SUBJ: Volkswagen Engine Cylinder Head Fastener Torque
This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin alerts the operators of airplanes powered by Volkswagen air-cooled engines of an airworthiness concern where the engine loses power due to the loss of cylinder head fastener torque.

Background

On March 5, 2006, at 1430 Central Standard Time, an experimental amateur-built Quickie Q-2, N89WW impacted an agricultural field near Edwardsville, Illinois, receiving substantial damage . After takeoff from St. Louis Regional Airport (ALN), Alton/St. Louis, Illinois, the pilot reported to air traffic control that the airplane was having engine problems. Visual meteorological conditions prevailed at the time of the accident. The flight was operating under 14 CFR Part 91. The pilot was fatally injured.

A post-accident investigation revealed that both left cylinders had no compression. All the cylinder head fasteners were found with zero torque. In fact, the lower forward hold down fastener was backed out 1/8 inch. After removing the cylinder head and barrels for both left cylinders, both barrels and both heads showed evidence of severe combustion gas blow by . Metal was melted out of the heads at the bottom forward and bottom aft hold down fastener areas, obviously caused by the combustion gas blow by.



Recommendations

Ensure that you, as the owner/operator, follow the engine manufacturer/supplier cylinder head torque procedures (initial and repetitive).

The following are the recommended torques for the cylinder head fasteners on Volkswagen Type I, Type II, and Type IV engines:

Type I engine with 10mm head studs	23 ft-lbf
Type I engine with 8mm head studs	18 ft-lbf
Type II engine	23 ft-lbf
Type IV engine	23 ft-lbf

NOTE: The above torques are offered only as information. Refer to the engine manufacturer/supplier maintenance instructions for the recommended cylinder head torque procedures.

The following is a summary list, but not a complete list, of Volkswagen based aircraft engine manufacturers/suppliers:

AeroConversions, Inc.
P.O. Box 2521
Oshkosh, WI 54903-2521
(920) 231-8297

Great Plains Aircraft Supply Co., Inc.
P.O. Box 222
Bennington, NE 68007
402-493-6507

Revmaster Aviation
7146 Santa Fe Avenue East
Hesperia, CA, 92345
760-244-3074

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