



EASA Safety Information Bulletin

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Subject: DR400 series - Engine Air Filter P/N 56-23-02-000

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Applicability: CEAPR (Robin) DR400/100, DR400/120, DR400/120D, DR400/140B, DR400/160, DR400/160D manufactured from 1980 to 1988 equipped with air filter P/N 56-23-02-000

Description: On 3 July 2010 an accident occurred involving a DR400/160, causing serious injuries to the four occupants.

The French accident investigation body "Bureau d'Enquetes et d'Analyses" (BEA) has examined the wreckage and has determined that the engine air filter had been incorrectly installed in its holder.

Engine tests have been carried out on an aircraft of the same type fitted with an identical air supply system, with the air filter installed upside down. In such a configuration, the air filter completely blocks the air intake box and causes, upon starting the engine, the carburetor heat opening, resulting in the loss of at least 1000 Engine Revolutions per Minute (RPM) at full throttle.

The engine air filter of the accident aircraft had been removed, inspected and reinstalled during the previous 50-hour scheduled maintenance check. The aircraft had flown 55 minutes since this maintenance check.

The air filter is cylindrical consisting of synthetic foam contained in an aluminum frame. One of its bases is closed by a black colored rubber bottom, the other base is open. When fitted properly, the bottom of the filter is oriented towards the front of the aircraft, facing the air intake cowling under the propeller. The base is open to connect to the air box and facing the rear of the aircraft.

The only means to check the correct installation of the filter is a hole of 3 mm in diameter drilled in the metal plate for fixing the

filter in the air stream, through which the "bottom" of the filter is visible, through the air intake of the engine cowling.

The rubber bottom of the filters used to be fluorescent orange coloured, thus easily detectable through the hole of 3 mm if the filter was installed correctly. In the current design, the bottom of the filter being black, it is less visible, necessitating a cautious check.

Recommendation: The Type Certificate Holder "Centre Est Aeronautique Pierre Robin" (CEAPR) is working on a design modification providing a physical means to prevent improper installation.

As a provisional measure, EASA recommends that all persons involved in the maintenance of the affected CEAPR aircraft types pay special attention when installing the air filter. For this purpose, the elaboration of a detailed work card is recommended.

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