



Information about increased engine malfunctions with ROTAX engines

SEAL SAND 2023-003

Report

Due to several reports from a Swiss flight school about critical malfunctions of a ROTAX engine, the FOCA decided to initiate an investigation into the subject. As part of an analysis, it was determined that there is a systematic problem with ROTAX engines in Switzerland.

With this information, the FOCA would like to draw attention to the topic and inform the owners concerned.

The table below (not exhaustive) shows a list of similar cases (please scroll the table to the right to see all the information).

Year	Headline Information	Registration	airplane model	engine	flight phase
2023	Power loss during climb out (IFSD) (MAYDAY) (in-flight-return)	HB-SFX	AT01	ROTAX 912 S3-01	And itinerary
2023	Power loss during take-off run ended in RWY excursion AOG	HB-KMX	P2008 JC	ROTAX 912 S2	Take-off
2023	Engine problems (in-flight-return)	HB-KGO	BRISTELL B23	ROTAX 912 S3	Take-off

Year	Headline Information	Registration	airplane model	engine	flight phase
2023	Loss of power inflight (in-flight-return)	HB-KMG	P2008 JC	ROTAX 912 S2	Take-off
2023	Power loss (PAN-PAN) (in-flight-return) AOG	HB-SFX	AT01	ROTAX 912 S3-01	Take-off
2023	Powerloss and engine spitting (MAYDAY)	HB-WZB	B600	ROTAX 912 ULS	Take-off
2023	Sudden power loss after lift off led to a successful emergency landing	HB-SGU	AT01-100C	ROTAX 912 S3	Take-off
2023	Sudden engine roughness in upwind-crosswind turn AOG	HB-SFX	AT01	ROTAX 912 S3-01	And itinerary
2022	Engine roughness and power loss AOG	HB-SFX	AT01	ROTAX 912 S3-01	And itinerary
2022	Engine failure (diversion) (PAN-PAN)	HB-2355	HK 36 TTC	ROTAX 914 F2	And itinerary
2022	Suspected imminent engine failure due to noise and vibrations (diversion)	HB-SGM	DV 20	ROTAX 912 A3	And itinerary
2022	Engine problem (in-flight-return)	HB-KGN	BRISTELL B23	ROTAX 912 S3	And itinerary
2022	Engine power loss (PAN-PAN) (smoke/smell)	HB-KGW	S201	ROTAX 914 F2-01	And itinerary
2022	Loss of power (MAYDAY)	HB-WFC	WT9 DYNAMIC LSA	ROTAX 912 ULS2	Approach
2022	Strong vibrations with loss of power (in-flight-return)	HB-SFU	AT01	ROTAX 912 S3	Take-off

Year	Headline Information	Registration	airplane model	engine	flight phase
2021	Engine Vibrations and Power Loss (in-flight-return)	HB-KGN	BRISTELL B23	ROTAX 912 S3	Take-off
2021	Engine failure (in-flight-return) (IFSD)*	HB-2328	HK 36 TTC	ROTAX 914 F3-01	Take-off
2021	Power Loss after T/O (in-flight-return)	HB-WAZ	MCR-ULC	ROTAX 914 UL3	Take-off
2021	Power loss in climb out	HB-KMX	P2008 JC	ROTAX 912 S2	Take-off

Technical Analysis

The reported engine malfunctions often occur during take-off. The following signs were reported to the FOCA several times:

- Power loss
- Rough running, vibrations
- Engine Failure

The cause of the disturbances could not be conclusively determined in the cases.

After a closer look at the individual incident messages, the following causes for the engine malfunctions can be considered:

- Vapor bubble issue when using MOGAS
- Reduced fuel flow
- Fuel lines installed incorrectly or with too tight a radius
- carburetor adjustment
- exhaust back pressure
- cooling
- fuel contamination

The causes listed above are not conclusive. Other incidents are the subject of the current investigation.


The FOCA works together with the specialists from EASA and the manufacturer to identify possible causes and find solutions to the problem.

FOCA recommendation

- Carry out the stationary run/run-up carefully
- Operate the Rotax engine strictly in accordance with the AFM
- Prepare meticulously for your flights and always have the option of an emergency landing ready

Have you made the same or similar statements about the ROTAX engines you operate or maintain?

We are grateful for any information or confirmations of further incidents.

Further information on incidents can be made available to the FOCA via the reporting system at www.aviationreporting.eu . 

✉ Specialist contact (<mailto:info@bazl.admin.ch>) Last change 07/14/2023



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