

What, if ... Power-loss and now?

Fleet safety initiative on example of BRP Rotax equipped aircrafts

Leistungsverlust, und nun?

Sicherheitsinitiative am Beispiel von Flugzeugen mit BRP Rotax Motoren

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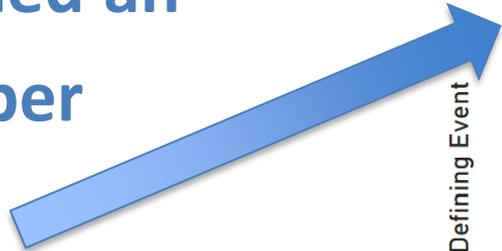
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Talking on ...

- ❑ What & Why now - background and who is involved
- ❑ What is done
- ❑ Outcome - status quo
- ❑ Take away – proposals
- ❑ Next steps

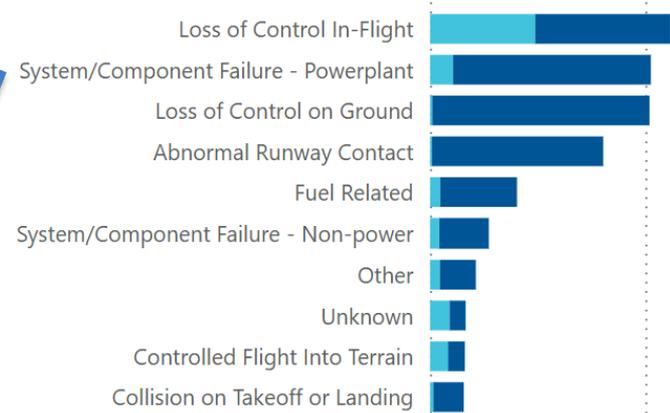
What & Why now - background

Field observations and in-depth investigations revealed an increased **high** number of **unexplainable** engine power losses



Accidents by Defining Event

● Fatal ● Non-Fatal



NTSB dashboard

Background and who involved

- DATA Analysis identified one peak commonality:
- many are equipped with BRP-Rotax 912() (100 HP)

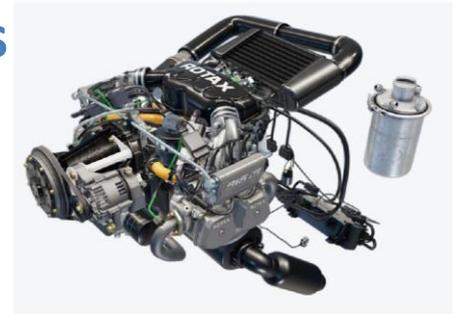
- THUS, for having a noticeable positive effect
- start technical investigation first on these



Background

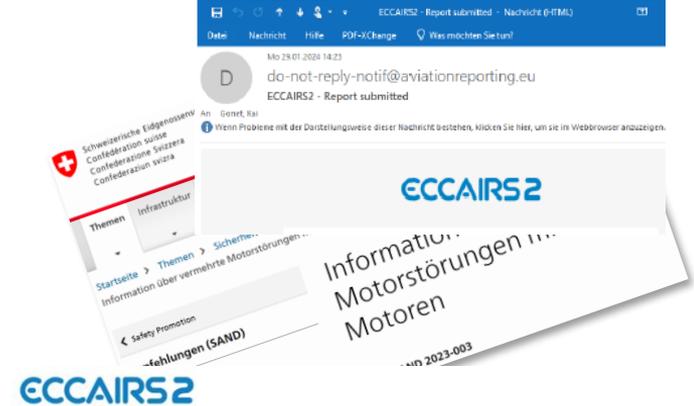
BRP-ROTAX 912/914 engine family including ASTM engines:

- Most installed engine in General Aviation (LSA, level-1 CS23)
- ~83.800 engines since 1989 produced, ~½ still in service
- Powering 250+ aircraft manufacturer/ 400+ types
- From private, club to flight training use



What is done

- EASA created “task force” to analyse occurrence data and possible root cause
- Regular meetings with major NAA’s
- strong link between engine and airframe TCH established
- Essential to report events:
www.aviationreporting.eu



Outcome - status quo

Perception ↔ Occurences

Reliability>

Safety target: $4,5 \times 10^{-5}$

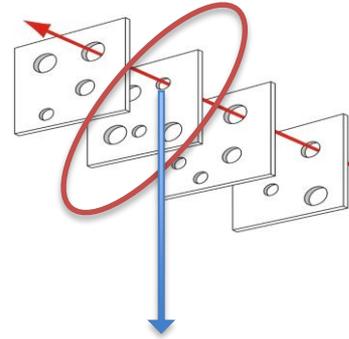
LOPC: 1 per 22,222 FH

Data analysed

... in summary:

not a single root-cause, but a combination of

reliability well better than safety target



Take away – any proposal

Service Bulletin issued: SB-912-079 R2

Addressing essential information, recommendations and best practices for

- Engine installation (OEM)
- Operation (pilot/owner)
- Maintenance (145/owner)

Table of contents:

Chapter	Description
3.2	Fuel system
3.3	Exhaust back pressure
3.4	Engine power setting
3.5	Engine load
3.6	Intake air heat up - Carb. heat bypass, Airbox temperature, Engine compartment ventilation
3.7	Carburetor heat - Usage, Temperature increase
3.8	Coolant temperature (CT)
3.9	Fuel type and quality
3.10	Ignition system - Easy-start activation, Trigger coil gap, Temp. influence
3.11	Spark plugs
3.12	Exhaust gas CO measurement
3.13	Ambient conditions
3.14	Instrumentation
3.15	Idle speed setting
3.16	Engine starting and shutdown procedure and tips
3.17	Differential & crankcase pressure check
3.18	Selection of pistons and cylinders
3.19	Measurement of the vacuum system

Next steps

- EASA – SIB in work with guidance for improvement
- Rotax: to incorporate the SB take away into manuals
- Airframer: to give time to implement and analyse
- Rotax / Airframer – improve communication on occurrences, introduce further regular meetings with additional airframer
- Operators reporting path improvement
- All: Follow the roadmap and **Collect any further improvement feedback**

And, back to the Question: Is GA still safe enough !?!

**Answer: Yes, but its not risk free
+ Common effort**



Thank you



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