ROTAX
AIRCRAFT ENGINES

SERVICE LETTER

DEFINITION FOR PROPELLER STRIKE OR ACCIDENTAL ENGINE STOPPAGE ON ROTAX® ENGINE TYPE 912 i, 912 AND 914 (SERIES) AND 2 STROKE AIRCRAFT ENGINES

SL-912 i-001
SL-912-015R1
SL-914-013R1
SL-2ST-009R1

This SL revises SL-2ST-009, SL-912-015 and SL-914-013 dated 22 January 2008.

Repeating symbols:

Please, pay attention to the following symbols throughout this document emphasizing particular information.

▲ WARNING: Identifies an instruction, which if not followed, may cause serious injury or even death.

■ CAUTION: Denotes an instruction which if not followed, may severely damage the engine or could lead to suspension of warranty.

◆ NOTE: Information useful for better handling.

| A revision bar outside of the page margin indicates a change to text or graphic.

1) Planning information

1.1) Engines affected

All versions of the engine type:

- 912 i (Series)
- 912 (Series)
- 914 (Series)
- 2 stroke aircraft engines

1.2) Concurrent ASB/SB/SI and SL

none

1.3) Reason

Field experience has shown that additional information is necessary in order to judge the degree of severity of damage and effect to an engine after a propeller strike or accidental engine stoppage.

1.4) Subject

Definition for propeller strike or accidental engine stoppage on ROTAX® Engine Type 912 i, 912 and 914 (Series) and 2 stroke aircraft engines.

1.5) Compliance

- on occurrence of incident

▲ WARNING: Non-compliance with these instructions could result in engine damages, personal injuries or death.

1.6) Approval

The technical content of this document is approved under the authority of DOA No. EASA.21.J.048.

1.7) Manpower

Estimated man-hours:

Engine installed in the aircraft - - -manpower time will depend on installation and thus, no estimate is available from the engine manufacturer.

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1.8) Mass data

Change of weight - - - none.

Moment of inertia - - - unaffected.

1.9) Electrical load data

No change

1.10) Software accomplishment summary

No change

1.11) References

In addition to this technical information refer to current issue of

- Operators Manual (OM)
- Maintenance Manual (MM)

◆ NOTE: The status of Manuals can be determined by checking the table of amendments of the Manual. The 1st column of this table is the revision status. Compare this number to that listed on the ROTAX WebSite: www.FLYROTAX.com. Updates and current revisions can be downloaded on this WebSite.

1.12) Other publications affected

None

1.13) Interchangeability of parts

None

2) Material Information

2.1) Material - cost and availability

Price and availability will be supplied on request by ROTAX® Authorized Distributors or their Service Centers.

2.2) Company support information

None

2.3) Material requirement per engine

parts requirement - if necessary

◆ NOTE: The parts requirement depends on the severity of the propeller strike or accidental engine stoppage and the relevant gearbox configuration.

2.4) Material requirement per spare part

None

2.5) Rework of parts

None

2.6) Special tooling/lubricant-/adhesives-/sealing compound - Price and availability

Price and availability will be supplied on request by ROTAX® Authorized Distributors or their Service Centers.

◆ NOTE: The parts requirement depends on the severity of the propeller strike or accidental engine stoppage and the relevant gearbox configuration.

3) Accomplishment / Instructions

Accomplishment

All the measures must be taken and confirmed by the following persons or facilities:

- ROTAX®-Airworthiness representative
- ROTAX® -Distributors or their Service Centers
- Persons approved by the respective Aviation Authority

▲ WARNING: Proceed with this work only in a non-smoking area and not close to sparks or open flames. Switch off ignition and secure engine against unintentional operation. Secure aircraft against unauthorized operation. Disconnect negative terminal of aircraft battery.

▲ WARNING: Risk of scalds and burns! Allow engine to cool sufficiently and use appropriate safety gear while performing work.

▲ WARNING: Should removal of a locking device (namely lock tabs, self-locking fasteners) be required when undergoing disassembly/assembly, always replace with a new one.

◆ NOTE: All work has to be performed in accordance with the relevant Maintenance Manual.

3.1) General

Damages on a propeller can have different causes. Especially in cases, where the engine speed is suddenly changed due to external factors, unusual shock loads are forced onto the engine. This could be for example bird strike, ground contacts and any other contact with foreign object with the propeller turning. Also in cases where a stopped propeller has contact with an obstacle engine damage is possible.

Judging the extent of the damage requires special knowledge and only can be performed by authorized personnel. If not governed by legal authority e.g. national Authority or propeller manufacturer in a different way, this information should help to classify the damage. The final decision on the airworthiness is at the relevant local authorized personnel by obeying the minimum requirements of the engine manufacturer and its guidelines.

3.2) Definition

3.2.1) Normal wear

Wear and minor dressings e.g.:

- damages as a consequence from improper ground-handling
- small scratches
- damage to paint

can be classified as normal wear.

This can be also cases, where the propeller is damaged during operation by a foreign object, such as a small stone, but no essential RPM drop can be observed.

In case of visible damages an inspection and repair must be accomplished in accordance with the propeller manufacturer´s published instructions.

3.2.2) Propeller strike

A propeller strike can be defined as follows:

1. Any cases in which the engine is operating and the propeller impacts an object which causes **a considerable drop in engine RPM**.
   Propeller strikes on ground or contact with various objects can result in engine and/or component damage even if the propeller may continue to rotate. Such damage may progress to engine failure.
2. Any incident, whether or not the engine is operating (e.g. damage due to contact with foreign objects, landing gear failure etc.), that requires a removal of the propeller for repair. Also if a propeller governor is installed, it must be the inspected and repaired in accordance with the propeller governor manufacturer´s published instructions.
3. Any incident with a sudden RPM drop while impacting water, tall grass, or other similar medium where damage on the propeller structure is not incurred.

3.2.3) Propeller construction should be considered when assessing the possible engine damage from a propeller strike

1. Aluminum and solid composite (including some solid wood) propellers are more likely to transmit the forces and damage the engine due to the increased mass and strength.
2. Lightweight composite propellers with wood or foam cores are less likely to transmit forces to the engine as they tend to disintegrate upon impact.
3. If no drop in RPM is detected and a lightweight propeller is damaged from a strike it is possible there is no resulting engine damage.

▲ WARNING: If a propeller strike or accidental engine stoppage is not reported and inspected by persons approved by the respective Aviation Authority the operator continues to be liable for any subsequent damage.

3.3) Instructions

If it is determined a propeller strike has occurred the engine must be inspected, repaired or overhauled to the extent necessary to bring it back to serviceable condition before further flight.

◆ NOTE: All work has to be performed in accordance with the relevant Maintenance Manual.

3.4) Summary

These instructions (section 3) have to be conducted in compliance with section 1.5.

Approval of translation to best knowledge and judgment - in any case the original text in the German language and the metric units (SI-system) are authoritative.