

SERVICE LETTER

Definition for propeller strike or accidental engine stoppage for ROTAX® Engine Type 916 i (Series), 915 i (Series), 912 i (Series), 912/914 (Series) and 2 Stroke Aircraft Engines

ATA System: 72-10-00 Propeller gearbox

1) Planning information

To obtain satisfactory results, procedures specified in this publication must be accomplished with accepted methods in accordance with prevailing legal regulations.

BRP-Rotax GmbH & Co KG cannot accept any responsibility for the quality of work performed in accomplishing the requirements of this publication.

1.1) Applicability

All versions of ROTAX® engine types:

Engine type	Serial number
916 i (Series)	all
915 i (Series)	all
912 i (Series)	all
912 (Series)	all
914 (Series)	all
2-stroke UL aircraft engines	all

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

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1.5) Compliance

- on occurrence of incident



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

These maintenance instructions shall be considered at any maintenance events, retrofitting, repair and overhaul.

1.6) Approval

The technical content of this document is approved under the authority of the DOA ref. EASA.21J.048.

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1.7) Labor time

Estimated labor hours:

Engine installed in the aircraft - - - labor time will depend on airframe installation and therefore no estimate is available from the engine manufacturer.

1.8) Mass data

Change of weight - - - none.

Moment of inertia - - - unaffected.

1.9) Electrical load data

No change.

1.10) Software modifications

No change.

1.11) References

In addition to this technical information refer to current issue of

- Operators Manual (OM)
- Illustrated Parts Catalog (IPC)
- Maintenance Manual Line (MML)
- Maintenance Manual Heavy (MMH)

NOTE: The status of the Manuals can be determined by checking the table of amendments. The 1st column of this table shows the revision status. Compare this number to the one listed on the ROTAX website:
www.flyrotax.com. Updates and current revisions can be downloaded for free.

1.12) Other Publications affected

None.

1.13) Interchangeability of parts

- Not affected

2) Material Information

2.1) Material

Price and availability will be provided on request by ROTAX® Authorized Distributors or their independent 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.

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2.6) Special tooling/lubricants- /adhesives- /sealing compounds

Price and availability will be supplied on request by ROTAX® Authorized Distributors or their independent 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

- ROTAX® reserves the right to make any amendments to existing documents, which might become necessary due to this standardization, at the time of next revision or issue.

NOTE: Before maintenance, review the entire documentation to make sure you have a complete understanding of the procedure and requirements.

Accomplishment

All measures must be implemented and confirmed by at least one of the following persons or organizations:

- ROTAX® - Airworthiness representatives
- ROTAX® - Authorized Distributors or their independent Service Centers
- Persons approved by the respective Aviation Authorities

NOTE: Indicates supplementary information which may be needed to fully complete or understand an instruction.



All work has to be performed in accordance with the relevant Maintenance Manuals of the respective engine type.

General

Further material on general inspection, maintenance and repair can be found also in relevant Advisory Circular AC 43.13 from FAA.

Advisory Circular

The Manual "Advisory Circular" AC describes maintenance methods, techniques and practice.

3.1) General

Damages to 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.

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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 also be 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 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 visible damage on the propeller structure is not incurred.

3.2.3) Propeller constructions 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

Non-compliance with these instructions could result in engine damages, personal injuries or death!

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 Line (MML) or Maintenance Manual Heavy (MMH).

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3.4) Summary

These instructions (section 3) have to be followed in accordance with the deadlines specified in section 1.5.

The execution of the Service Letter must be confirmed in the logbook.

NOTE: Work on EASA certified parts might affect the EASA Form 1 and does require appropriate documentation by authorized persons. Repairs must be entered into the engine logbook and also do apply for the EASA Form 1.

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

Translation into other languages might be performed in the course of language localization but does not lie within ROTAX® scope of responsibility.

In any case the original text in English language and the metric units are authoritative.

3.5) Inquiries

Inquiries regarding this Service Letter should be sent to the ROTAX® Authorized Distributor of your area.

A list of all ROTAX® Authorized Distributors or their independent Service Centers is provided on www.flyrotax.com.