Rainbow SkyReach (Pty) Ltd

Hangar 27, Springs Airfield, Springs
P O Box 3408, 1544 Dalview
South Africa
Tel: +27 (0)11 817 2298
Fax: +27 (0)11 817 2297
E-mail: info@fly-skyreach.com
Web: www.fly-skyreach.com

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SAFETY DIRECTIVE
(Various fatigue findings on high hour aircraft)

IMPORTANCE	MANDATORY
AREA AFFECTED	VARIOUS
SA/B NUMBER	CH 21-06-2024
EFFECTIVE DATE	22 June 2024

TABLE OF CONTENTS:

1. Applicability:

All Cheetah/Cheetah-XLS/BushCat aircraft.

2. Subject:

Fatigue cracks found in aircraft used for flight training – potential exists for similar cracks to be found across the fleet requiring urgent inspections on:

A) All engine mounts
B) Back Cabin Struts - Fuselage tubes
C) Bottom side cabin joining brackets

3. Purpose:

To inspect for cracks in the aircraft structure that could lead to structural failure if left unnoticed.

4. Background:

During the course of an annual inspection, a flight school (and maintenance organization) found various cracks and failures on their fleet of BushCat aircraft. While these aircraft have spent high hours in the training environment, it can not be ruled out that similar failures could be found on low hour privately operated aircraft and especially those that operate or have operated at some time in the past, from unprepared runways.

3 separate areas of concern have been identified as a result of these inspections:

A: Engine mounts

Figure A 1 – Examples of cracks found on engine mounts/front fork assembly

The photos above show cracks in part number BC-A1-41000 (Engine mount and nose wheel fix point). While all recently observed failures of this nature have only been found on nose wheel equipped aircraft, It is imperative that tail wheel equipped aircraft engine mounts (part number BT-A0-12000) are inspected for same. It is presumed that the crack relates to stress incurred by the nose wheel strut on harder than average landings, there is however no firm evidence to support this hence the inspection required on all aircraft

(All mention of part numbers relating to engine mounts are for the latest version/design of this part and for use with Rotax 912 series installation. ALL engine mounts must however be inspected regardless of version or motor installed.

B: Back cabin struts (Left and Right)

Figure B1 – example of failure found

Figure B2 – Crack that will lead to failure

The photos above show cracks/failures in part number BC-00-12230-01/02 “Back Cabin Struts L/R”. These are again the part numbers relating to the nose wheel version of the aircraft.

The tail wheel equipped aircraft is fitted with similar “Back Cubin Struts” but due to minor differences, are allocated part number BT-00-12130-01/02 (L/R). We do not have history of such a failure on a tail wheel equipped aircraft but it remains crucial that the inspection is done on all aircraft regardless of configuration.

(All mention of part numbers relating to cabin tubes are for the latest version/design of this part, all versions of the “Back cabin strut” must be inspected regardless of the part number/version installed on the aircraft.

C: Bottom side cabin joining brackets (Left and Right).

Figure C1 – overview of area of concern.

Figure C2 – viewed from ground up. (Mirror view)

Figure C3 – visible crack on Bracket (Mirror view)

Figure C4 – visible crack on bracket. (Mirror view)

The photos above show multiple cracks in the “Bottom Side Cabin Bracket”. It is important to note that most of these are more visible when viewed from below which may require a mirror or laying down on the ground to view properly.

The brackets are part number BC-00-12060-01/02 (L/R) on Nose wheel equipped aircraft and BT-01-12120-01/02 c(L/R) for tail wheel equipped aircraft. Again while the cracks were found on a nose wheel equipped aircraft, it is imperative that the equivalent bracket is inspected on tail wheel equipped aircraft.

5. Discussion:

Cracks found in the areas of concern highlighted by this document, regardless of how minor they might be, can lead to structural failure of the aircraft. Any such findings, no matter how small the cracks may appear, should be addressed and aircraft should not be flown until the affected parts have been replaced.

6. Required action: (Before next flight)

- Operator to remove upper cowling of the aircraft and conduct a thorough inspection of the engine mount forward and aft (cabin side) of the firewall.
- The entire engine mount assembly must be inspected under good lighting conditions (use a flashlight/torch and mirrors if necessary) for cracks or any other defects.
- Ensure parts are clean to allow for a thorough inspection.
- Any cracks found regardless of how small they may appear requires replacement of the engine mount.

- If there is any evidence of a crack or defect, contact SkyReach for replacement parts to be ordered. (contact details below).

6.1 Operator to inspect visually for cracks/defects in the “Back Cabin Struts”

- Shift both seat backs forward to allow better access to the area.
- Use a torch/flashlight and mirror if required to inspect the entire strut/tube
- Pay specific attention to the top and bottom of the tube as well as the area highlighted in the picture.
- Check for any excess play on the struts by firmly manipulating them by hand.
- Check for signs of elongated bolt holes within the struts.
- If there is any evidence of a crack or defect, contact SkyReach for replacement parts to be ordered. (contact details below).

6.2 Operator to inspect visually for cracks/defects in “Bottom Side Cabin Joining Brackets”

- This may require sitting on the floor next to aircraft to action a thorough inspection.
- The use of a flashlight/torch and mirrors may assist in completing the task in a detailed fashion.
- Check for signs of cracks or any other defect paying particular attention to the areas highlighted in the photos above.
- If there is any evidence of a crack or defect, contact SkyReach for replacement parts to be ordered. (contact details below).

6.3 All of these 3 potential failure points highlighted in this document need to be carefully inspected immediately before next flight and again receive special attention at every annual/100 hour inspection.
NB!! If the aircraft is used for flight training or on unprepared/rough runways, this inspection must be done every 25 flight hours.
The inspection must also be done after any harder than usual landing.

6.5 Make use of online assembly manual for all “BushCat” Branded aircraft to assist with identifying parts: https://www.skyreachparts.com/
The manual can be found under “parts ordering” tab:

Engine Mount:	Page 58-60
Back cabin struts:	Page 46-52
Bottom side joining brackets:	Page 46-52

6.6 In the event that any defects are found, please send photos and any additional info to SkyReach and we will advise on how to proceed on a case by case basis. Contact info is location dependent and all details can be found at the end of this document.

7. Approved personnel:

While the inspection may be done by the aircraft owner/operator, it is recommended that a suitably qualified aircraft mechanic does a dual inspection or on the owner/operator’s behalf.

For any structural repair work (replacement of parts etc) that is required as a result of the inspection, the work may only be carried out, and signed off by persons with the following qualifications:

- In South Africa: SACAA Approved Person (AP), SACAA Aircraft Maintenance Engineer (AME) or higher, or person approved by the manufacturer.

- In USA: FAA Light sport repairman (LSRM) or higher, or person approved by the manufacturer.
- Suitably qualified and approved aircraft mechanic based on the regulations in place in the country in which the aircraft is based.

In the case of owner/kit-built aircraft the kit builder is also approved to conduct the installation, if his/her country of registration allows.

8. Effective date:

This notice takes effect as of the 22nd June 2024

9. Contact:

Should the result of the inspections lead to findings of defects, please contact SkyReach via email and include the aircraft serial number, hours on airframe as well as full details and photos of found defects. Emails should be sent to:

For all Cheetah/BushCat aircraft based on the African continent: partsafrica@fly-skyreach.com

For all Cheetah/BushCat aircraft based outside of Africa: partsinternational@fly-skyreach.com

NB! This document does not override or supersede any other document in circulation relating to the safety of the Cheetah/BushCat. All other service or safety related documents need to be taken into account and used in parallel to this.