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SAFETY DIRECTIVE

IMPORTANCE	HIGH
AREA AFFECTED	SEAT-BELT
SA/D NUMBER	CH 016-11-2021
EFFECTIVE DATE	5 November 2021

TABLE OF CONTENTS:

1. Applicability:	2
2. Subject:.....	2
3. Purpose:	2
4. Background:	2
5. Discussion:.....	2
6. Required action:.....	3
7. Design Improvement:	3
8. Approved personnel:	5
9. Effective date:	5
10. Contact:	5

1. Applicability:

All BushCat/Cheetah XLS aircraft with serial number lower than CH-277C, with the 'X' style stitch pattern (visible in Figure 1). Belts with the new stitching pattern (visible in Figure 2) can ignore this directive.

2. Subject:

Inspection of the shoulder segment joining of the seatbelt for fraying/unravelling.

3. Purpose:

This mandatory safety directive ensures that all relevant aircraft are inspected to ascertain whether there are any signs of fraying or unravelling on a noted area of the seatbelt. It also ensures that all aircraft owners and maintainers are informed to be aware and regularly check the area.

4. Background:

While strapping in, a pilot noted his seatbelt system had excess slack while attempting to fasten the harness. The specific aircraft is based in a training school, and therefore was possibly subject to above average use. The owner/pilot inspected the harness and noted the shoulder-harness section of the belt joining the main section of belt, aft of the pilot, had come undone.

Testing at the factory did manage to replicate the unravelling of the stitching to a lesser degree on one belt of a well-used aircraft. However, this failure could not be replicated in all cases, even on the other belts of the same aircraft at the factory.

While this fraying will likely not result in complete failure of the harness, continued flight with a faulty belt is a definite hazard and must be avoided.

5. Discussion:

In order to ensure the safety of the aircraft for continued flight, any indications of this unravelling or fraying of the sewing in the area of concern needs to be checked for.

Factory testing of the seatbelts to ASTM standards (F2245) was satisfactory without any failure. However, the potential for some seatbelts to have this latent weakness, and without being able to limit the potentially affected seatbelts to a specific batch, necessitates the issuing of this safety directive to ensure that all installations are safe.

In addition, it will be necessary to regularly perform this type of check again, as this may only become apparent after some time.

The failure is not likely to result in all sections of the belt being problematic, however, even if one belt is found to be deficient, all the remainders should still be checked as well. While the

belt may not fail completely and fall apart, any seatbelt with the weakness identified should not be used as the weakened belt has not been strength tested and should be presumed to be unsafe.

6. Required action:

1. To aid in the inspection, push the backrest of the seat forward, as this will help show the area of concern.
2. Inspect the area of the join of the vertical segment of the seatbelt, and the shoulder-harness section that runs (almost horizontally, when the backrest is pushed forward) over and down the seat (see Figure 1).
 - a. Inspect the general quality of the stitching for any signs of fraying or unravelling of the stitching that joins the belt sections.
 - b. From below, inspect the join area where the shoulder-harness section moves horizontally away for separation. This is the critical area of failure (see Figure 3).
3. If the belt is in good condition, without signs of fraying or separation, the aircraft can be flown as usual. The inspection step should be repeated as part of every preflight inspection.
4. If there are signs of fraying and/or separation, please contact your distributor/the factory immediately in order to obtain a replacement seatbelt, and do not fly in that seat until the part has been replaced.

7. Design Improvement:

Since this possible issue was brought to our attention, an improved method of stitching the affected area on the shoulder harness has been incorporated into our manufacturing methods. This is shown in **Figure 2**.



Figure 1: Belt Pulled Horizontal by Seat being pushed Forward
(Stitching area to inspect shown by red arrow)



Figure 2: New Stitching Pattern



Figure 3: Belt Separation Visible from Below

8. Approved personnel:

This work prescribed in this safety directive may be carried out by the owner themselves if their country of registration allows, or by an approved person such as:

- In South Africa: RAASA 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.

9. Effective date:

This notice takes effect as of the 5th of November 2021.

10. Contact:

Questions and/or comments regarding this safety directive should be directed to Rainbow SkyReach (Pty) Ltd on:

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