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SERVICE BULLETIN

IMPORTANCE	INFORMATIONAL
AREA AFFECTED	Throttle System Maintenance
SA/B NUMBER	CH 017-07-2022
EFFECTIVE DATE	22 July 2022

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1. **Applicability:**

All Cheetah aircraft with Nylotron throttle handle pulleys.

2. **Subject:**

Advisory to ensure correct throttle movement and behaviour.

3. **Purpose:**

This advisory service bulletin serves to inform owners of an area of added attention that is needed in the maintenance of older Cheetah aircraft. This relates to the throttle system, and in particular the smooth movement and operation thereof, based on a potential of the old system becoming worn after extensive use.

4. **Background:**

The throttle handle pulley serves to ensure the throttle lever connects correctly to the actual cables that connect to the engine. This design is largely unchanged in general from the initial versions in terms of the overall shape and function. This shape has a crimp on the middle of the throttle cable, that fits into the recess in the pulley (and a plate secures this further). The cable itself runs along a groove in the pulley.

However, the throttle handle pulley used on the original Cheetah aircraft was manufactured from Nylotron. This was replaced (for assembly and all in stock) with an aluminium one over a decade ago. Aluminium was chosen as it is a stronger and more durable material than the Nylotron, and it would give a longer guaranteed lifespan.

It has been seen on one old aircraft used in flight training, manufactured with the Nylotron pulley, that the Nylotron actual wore away on one side, resulting in the crimp and cable having some play in the groove. This means that the throttle lever on that side does not control the actual throttle as directly as it should. The second throttle lever (on the other side of the aircraft) still functioned fully as long as firm control input was applied. This means that control from the side with the faulty throttle pulley is compromised.

This deficiency in normal control performance is easy to spot in a standard pre-flight inspection when cycling the throttle. However, to prevent this occurring again and causing a risk to another aircraft, it is necessary to draw further attention to inspection of the throttle pulley before flight.

5. Discussion:

In order to ensure the safe and correct performance of the throttle, and by extension aircraft, the throttle must be responsive and operable from both sides of the aircraft. While the throttle can still be perfectly operated if one side is non-functional, this is not safe for continued flight. If there is some play in the throttle, meaning that it is no longer as responsive as it should be, this should be identified and repaired as soon as possible.

The newer design of the aluminium pulley eliminates this problem, but for the limited number of aircraft with the Nylotron one, the possibility of the pulley wearing down, and allowing play in the throttle pulley, does exist. Therefore, these aircraft must be identified by their operators, and particular attention paid to the operation of the throttle and any deficiencies acted upon. While this is not likely to even occur with many aircraft, for at least many years, aircraft with particularly heavy use, or that are used in flight training, are more likely to develop an issue here.

6. Required action:

Before further flight, the aircraft owners should first check if their aircraft is even potentially affected. This is done by simply lifting up the armrest and looking at the pulley. Figure 1 shows a raised armrest, and has the pulley circled. Note that this is an aluminium pulley (and this aircraft would therefore not be affected). The Nylotron version of a pulley would be in the same location but would be coloured black.

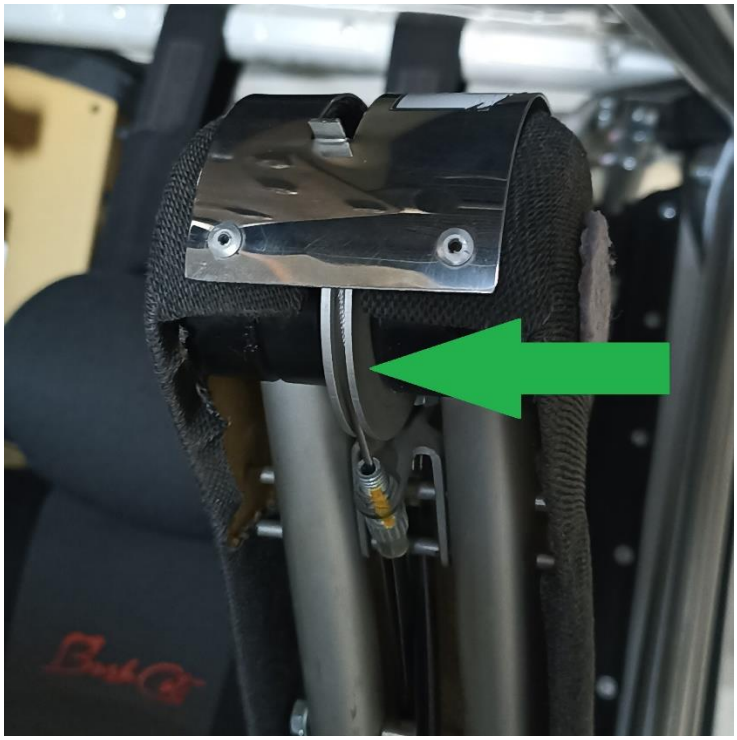

Figure 1: Pulley Identification (Aluminium disk with Groove at Arrowhead)

If the pulley on the owner's aircraft is aluminium, this advisory can then be ignored. If it is Nylotron, please follow the reminder of the procedure.

Testing Procedure:

1. Simply cycle each throttle lever through its full range, closed to open to closed again. Do each side independently, while watching the opposite to side to observe response.
2. If the throttle does not respond/has abnormally high resistance, or the other side does not move in sync with the side being operated, or the other side jumps or responds with a delay, the throttle pulley may be worn/damaged. In this case, the aircraft should be inspected by a qualified aircraft mechanic, or the factory should be contacted immediately before any further flight.
3. If both throttles move normally and in sync, without any significant resistance or abnormal behaviour, the aircraft can be flown as normal.

Periodicity

This simple procedure should be done before any further flight, and then following the initial check, it should form part of the pre-flight procedure – basic cycling of the throttle, as well as all other flight controls, should be done as part of the pre-flight procedure and checks in any case already.

7. Approved personnel:

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

- In South Africa: 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.
- The relevant repair person approved by your local aviation authority.

8. Effective date:

This notice takes effect as of the 22nd of July 2022.

9. Contact:

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

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