



SERVICE BULLETIN NUMBER AX- 2018

ISSUE 1

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TITLE	WING TIP INSPECTION and CENTRE SECTION INSPECTION.
CLASSIFICATION	CYCLONE AIRSPORTS HAVE CLASSIFIED THIS BULLETIN AS COMPULSORY.
COMPLIANCE	INSPECTION BEFORE FURTHER FLIGHT
APPLICABILITY	ALL AX-3 VARIANTS, AX2000

INTRODUCTION:

1) WING TIPS

A non-fatal accident to PFA homebuilt 450kg version of the AX-3 in Ireland was probably caused by failure of the starboard wing tip covering due to pre-existing damage. It is proposed that the failure allowed the tension in the wing covering to be relaxed, allowing the tip tube to move, the wing tip to flex and the wing covering to inflate. The effect of the failure was to produce an uncontrollable roll to port with strong adverse yaw to starboard.

The accident aircraft showed scuffing marks on the RH wing tip, close to the leading edge, with broken stitches. It is probable that this damage propagated in flight.

It was also observed by the accident investigators that the rear wing tip fitting rivets were missing, presumed corroded and dropped out. This is not considered to be a primary cause of the accident. The wing drag bracing cable on the right wing was stretched, though probably due to impact damage.

Note: The rear wing tip fittings on the AX2000 are integral with the rear spar tube and rivets are not used.

2) WING CENTRE SECTION COVER:

The wing centre section gap sealing cover is secured by full-length Velcro strips. Deterioration of the Velcro or insufficient pressure applied when attaching the cover, may allow it to lift at the trailing edge. If the top surface cover detaches, buffeting and partial blanketing of the tail surfaces can result. Internal pressure in the wing is also affected, which changes the aerofoil characteristics. Flight tests on an AX2000 with a panel detached to 50% chord have shown buffet felt through the elevators and rudder, with nose down trim and reduction of tail control effectiveness.

ACTION:

1) WING TIPS

Before the first flight of each flying day:

Inspect the wing tip covering for scuffing and broken stitches. Any tear in the covering along the wingtip tube edge is critical and must be repaired before further flight.

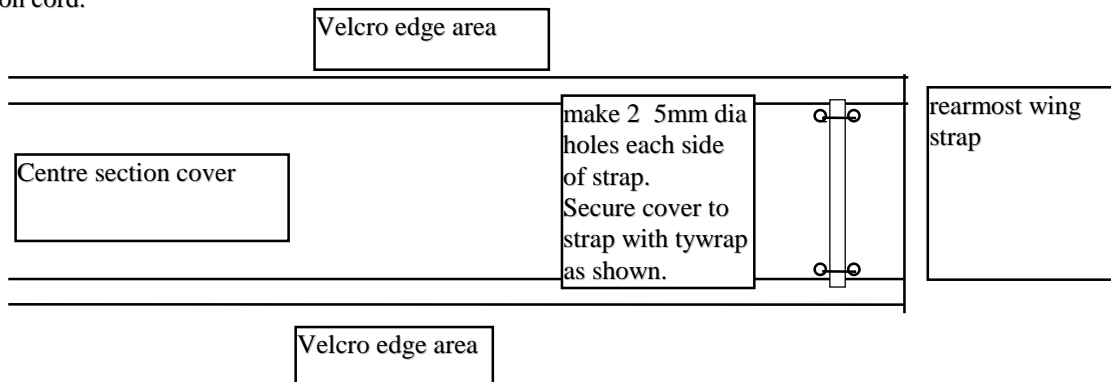
Repair must be by Cyclone Airports or Cyclone Airports approved facility, designed to restore the structural strength. If the wing covering is removed for such a repair, the stitching pitch in the wingtip French Seam straight stitches must be inspected. If the stitch pitch is less than 2.0 mm, a new complete tip panel must be applied by Cyclone Airports.

Before further flight and then at 50 hour /annual intervals, whichever is least:

Inspect the wing drag and anti drag bracing cables. There should be no slack in either cable.
(AX3 only) Inspect the rear wing tip fitting rivets and replace them if missing or loose.

2) WING CENTRE SECTION COVER.

Inspect the attachment of the cover for security. Make 2 pairs of holes, each side of the rearmost wing centre section straps, with a soldering iron. Fasten the cover to the wing centre section strap using ty-wraps or 2mm nylon cord.



New gap covers are now supplied with straps to additionally secure the cover to the centre section straps (Cyclone Airports minor modification AX268).

ISSUED BY W.G. Brooks

DATE 8/2/99

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