



Civil Aviation Authority

MANDATORY PERMIT DIRECTIVE



Number: 2022-001R1

Issue date: 30 January 2023

In accordance with 41(1) of Air Navigation Order 2016 as amended the following action required by this Mandatory Permit Directive (MPD) is mandatory for applicable aircraft registered in the United Kingdom operating on a UK CAA Permit to Fly.

Type/Design Approval Holder's Name:

ZIVKO AERONAUTICS INC.

Type/Model Designation(s):

Edge 360, Edge 540 and Laser Z200

Effective Date:	Revision 1: 13 February 2023 Original Issue: 04 February 2022
TCDS:	Not Applicable
Foreign AD (if applicable):	Not Applicable
Revision:	This MPD revises MPD 2022-001 dated 21 January 2022

ATA 27 - Flight Controls – Aileron Centre Hinge Attachment – Inspection / Replacement

Manufacturer(s):

Zivko Aeronautics Inc.

Applicability:

Aeroplanes equipped with Edge wings with aileron centre hinge measuring 1-3/4" in height, this includes but may not be limited to model Edge 360, Edge 540 and Laser Z200 aeroplanes, all serial numbers.

Definitions:

For the purpose of this MPD, the following definitions apply:

The SB: Zivko Aeronautics Inc. Service Bulletin No. E540015.

Reason:

A Zivko Edge 540 was performing an aerobatic flight, as the pilot applied a full left aileron control input, the centre hinge attachment for the right aileron failed. This allowed the right aileron to bend up in the centre and fail before detaching from the aircraft; only a small inboard section of the aileron remained attached. The pilot had sufficient control remaining to make a safe landing.

The Air Accidents Investigation Branch found that the aft spar mounted centre hinge attachment for the right aileron failed due to fatigue cracks developing to such an extent that the parts were no longer able to carry the required load. These fatigue cracks had multiple origins indicating that they were not due to a material feature or flaw. Failure of the aileron centre hinge attachment, could result in the loss of the flying control and cause damage to the surrounding structure. This could result in loss of control of the aeroplane.

Zivko Aeronautical Inc. has introduced Service Bulletin No. E540015 (Mandatory) to inspect the aft spar mounted aileron centre hinge attachment, and to replace the hinge if cracks are present. A repetitive inspection has also been introduced for every 100hrs or Annual Inspection, whichever comes first.

This MPD has been revised as Zivko Aeronautical Inc. Service Bulletin No. E540015 (Mandatory) has now been revised to include a delay to the repetitive inspection if new replacement hinges have been installed.

Required Action(s) and Compliance Time(s):

- 1) Before further flight from the 04 February 2022 (effective date of the original issue of this MPD), use dye penetrant inspection method on the aileron centre hinge in accordance with the instructions numbered (1 through 6, inclusive) of the SB.
- 2) If cracks are found, before further flight replace with a new part, in accordance with instruction number (7) and reinstallation instructions outlined in number (8) of the SB.
- 3) If no cracks are found, hinges may be reinstalled in accordance with the instructions numbered (8 through 9, inclusive) of the SB.
- 4) Required actions (1 through 3, inclusive) as above, must be carried out by a suitably approved person, be certified with a Permit Maintenance Release statement upon completion and duplicate inspections carried out on any disturbed flying controls.
- 5) Repetitive Interval: Inspection interval – Every 100hrs or Annual Inspection (whichever comes first)
- 6) If new replacement hinges are installed, item 1) of the required action above can be deferred for 500 flight hours. A visual inspection should still be carried out at the Annual Inspection.
- 7) Ensure compliance with this MPD is recorded in the aircraft logbook.

Credit:

Inspection(s) and corrective action(s) accomplished in accordance with Service Bulletin No. E540015 original issue, before the effective date of this MPD is/are acceptable to comply with the initial requirements of paragraph (1 through 7, inclusive) of this MPD.

Reference Publications:

Zivko Aeronautics Inc. Service Letter SB E540015, dated 30 July 2021

Remarks:

1. The safety assessment has warranted immediate publication and notification without implementing the full consultation process.

2. If requested and appropriately substantiated, CAA can approve Alternative Methods of Compliance for this MPD.
3. Enquiries regarding this MPD should be referred to: ga@caa.co.uk
4. For any questions concerning the technical content of the requirements in this MPD, please contact: Zivko Aeronautics Inc. 502 Airport Road, Building 11 Guthrie, OK 73044. Tel: +1(405) 282-1330