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**EASA.21J.117**

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## **SERVICE BULLETIN**

### **No BO-22/2015 MDM-1 FOX**

DESIGNATION-TYPE/MODEL: MDM-1 FOX

SERIAL / NUMBER: MDM-1 FOX model gliders, S/N: P-14, P-16 and 201-247 inclusive variants: MDM-1 FOX, MDM-1P FOX-P

CONCERNS: Bringing the glider to eligibility for a U.S. Standard Airworthiness Certificate

COMPLIANCE TIME: At operator discretion

The technical content of this document is approved  
under the authority of DOA ref. EASA.21J.117  
and agreed with FAA

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Bielsko-Biała, 29.04.2016  
with Rev.1 of 30.11.2016

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## **1. GROUNDS FOR ISSUANCE OF THIS BULLETIN**

The Federal Aviation Administration (FAA) Type Certificate (TC) for the MDM-1 "Fox" glider in both: MDM-1 "Fox" and MDM-1P "Fox-P" variant is granted as a result of FAA Type Validation of the European Aviation Safety Agency (EASA) Type Certificate No EASA.A.039, undertaken to the application of glider Producer.

Details on eligibility of concerned glider Serial Numbers (S/N) for U.S. Standard Airworthiness Certificate and Import Requirements are specified in Type Certificate Data Sheet (TCDS) No G00069CE, being a part of the concerned FAA TC.

As per FAA TCDS, the specific S/N - being the first one produced after the issuance of the FAA Type Certificate, and subsequent - are considered eligible provided the Import Requirements of the TCDS are satisfied.

The earlier produced S/Nos (see Serial Number applicability on Page 1 of this Service Bulletin), including those operated now with an EXPERIMENTAL Airworthiness Certificate, or those which might still be brought to the United States by re-sale between operators, can be considered eligible for a Standard Airworthiness Certificate, provided this Service Bulletin is incorporated, and the applicable requirements of the TCDS are satisfied, except as specified in this Service Bulletin.

Incorporation of this Bulletin is at the discretion of the owner/operator of the concerned aircraft.

## **2. SERIAL NOS COVERED WITH THIS BULLETIN**

As stated in the concerned FAA TCDS, the following MDM-1 "Fox" gliders in both MDM-1 "Fox" and MDM-1P "Fox-P" variant are considered eligible for a U.S. Standard Airworthiness Certificate:

Serial Numbers 248 and subsequent                      if all Import Requirements of FAA TCDS are satisfied.

Serial Numbers P14, P-16, and 201-247                      if this Service Bulletin is incorporated, and the applicable requirements of the TCDS are satisfied, except as specified in this Service Bulletin.

In this context, this Bulletin only concerns MDM-1 "Fox" glider S/Nos: P14, P-16, and 201-247 inclusive, in both MDM-1 "Fox" and MDM-1P "Fox-P" variants.

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3. REVIEW OF AFFECTED PROJECT AREAS

A. Design – original approval and modifications

The Polish Civil Aviation Authority (CAA) originally type certificated the MDM-1 “Fox” glider under its Type Certificate No. BG-197 issued on July 27, 1994. The MDM-1P “Fox-P” glider was subsequently certified and added to Type Certificate No. BG-197 on January 12, 1999. Effective May 01, 2004, the EASA began oversight of these products on behalf of the CAA. The EASA TCDS number is EASA.A.039.

After design evaluation in Type Validation process, the FAA approved the glider in both variants with Type Certificate No G00069CE.

Since original CAA approval, the original design has been modified with design changes, out of which the following modifications described in Producer Service Bulletins are considered important to airworthiness and required on gliders eligible for a U.S. Standard Airworthiness Certificate:

Item	Service Bulletin No	Description of design change or maintenance	Status of design change	S/N affected
I	BE 01/95 MDM-1 FOX	<div>Part A – installation of added element/ limiter preventing inadvertent deflection of elevator trim beyond design maximum values, the latter potentially reducing deflection of aileron control,</div> <div>Part B – strengthening the bonded joint between skeleton and shell in fuselage tail portion</div>	<div>required by Producer Bulletin</div> <div>recommended by Producer Bulletin, [originally] at the discretion of operator</div>	P-14, P-16, 201 – 207
II	BE 02/95 MDM-1 FOX	Introducing limiter/ stop on airbrake plate to avoid excessive forces in control system	required by Producer Bulletin	P-14, P-16, 201 – 207
III	BE 03/96 MDM-1 FOX	Enlarging the gap between the wing skin edge and fuselage (4 mm/ 0,15 in) along the section contour, at the wing-fuselage connection	required by Producer Bulletin	P-14, P-16, 201 – 207
IV	BO 13/99 MDM-1 FOX	<div>Replacement of removable ballast weights with new ones of higher mass (11 instead of 8.5 kg/ 24,2 instead of 18,7 lb).</div> <div>Rear limit of empty glider C.G. changed from 66,5 to 64,5 cm / from 26,2 to 25,4 in/ aft of Datum, by installation of fixed ballast in dedicated container at front seat</div>	required by AD No: SP-0080-1999-A (Polish CAA)	P-14, P-16, 201 – 225

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Item	Service Bulletin No	Description of design change or maintenance	Status of design change	S/N affected
V	BO 14/99 MDM-1 FOX	Change to elevator mass balance (<30 mm instead of <48 mm C.G. limit) by installation of added weights  For operation of glider version with wing span extended to 16,15m {53,0 ft} (long wing-tips), allowed elevator C.G. is <24 mm {<0,94 in}	required by AD No: SP-0081-1999-A (Polish CAA)  Producer requirement based on results of flutter evaluation for MDM-1P Fox-P	P-14, P-16, 201 – 225
VI	BO 15/00 MDM-1 FOX	Installation of added cable clamp at trim spring, preventing displacement of broken-off trim spring segment – potentially blocking controls	required by AD No: SP-0091-2000-A (Polish CAA)	P-14, P-16, 201 – 228
VII	BO 18/11 MDM-1 FOX	Added inspection openings on wing skin bottom surface, to facilitate inspection of aileron control circuit, inspection of aileron control circuit (EASA AD 2012-0074) and elevator control push rods (EASA AD 2012-0079).  Note: the required repetitive inspections are accounted for within the TSM.	required by AD No: 2012-0074 (EASA) and by AD No: 2012-0079 (EASA)	P14, P-16, 201-239, 241
VIII	BO 20/15 MDM-1 FOX	Verification of bonded joint between wing upper skin and spar, by “tap-test” method	required by AD No: 2013-0166 (EASA)	P-14, P-16, 201-239
IX	BO 21/15 MDM-1 FOX	Modification to front node in tailplane mounting, to improve resistance to cracks of the tailplane composite components	recommended by Producer Bulletin, [originally] at the discretion of operator	P-14, P-16, 201-244
X	BO 17/11_rev1 MDM-1 FOX	verification of clearance between control stick tube at front seat and fuselage elements, verification of aluminium tube in concerned control stick by geometry check and Visual & Dye Penetrant Inspection  Note: the required repetitive inspections are accounted for within the TSM.	required by AD No: 2015-0182-E (EASA)	all S/N

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Item	Service Bulletin No	Description of design change or maintenance	Status of design change	S/N affected
	or  BO 23/2016 MDM-1 FOX	Note also: the control stick tube related requirements may be complied with by alternative method consisting in replacement of aluminium tube with a steel one, in which case only clearance verification remains – as given in BO-23/2016 MDM-1 FOX,	AMOC to AD No: 2015-0182-E (EASA)	
<p><b>B. Flight Manual with operation limitations</b></p> <p>I Flight Manual and operation limitations approved under FAA TC, while generally coherent with original approval, also contains entries specific to U.S. regulations and arrangements used in FAA Type Validation. For every glider in either MDM-1 “Fox” or MDM-1P “Fox-P” variant, operated with a U.S. Standard Airworthiness Certificate, the Flight Manual iss. V elaborated within FAA Type Validation process must be used. Details – see item 7. ENCLOSURES, pos. A.</p> <p>II Moreover, the cockpit placards with operation limitations for FAA TC differs in some details from those enclosed in other editions of the Flight Manual, which means the information in placards of the affected glider might be inconsistent with those provided in the appropriate Flight Manual.</p> <p>III Finally, airspeed indicator marking on affected gliders may differ from that used in the FAA approval: the border between green arc (NORMAL OPERATING RANGE) and yellow arc (CAUTION OPERATING RANGE) is at 116 kts (214 km/h) instead of 122 kts (225 km/h).</p> <p><b>C. Maintenance Manual with instruction on continued airworthiness</b></p> <p>I Technical Service Manual in its part approved under FAA TC, while generally coherent with original approval, also contains entries specific to U.S. regulations and arrangements used in FAA Type Validation. For every glider in either MDM-1 “Fox” or MDM-1P “Fox-P” variant, operated with a U.S. Standard Airworthiness Certificate, the Technical Service Manual iss. IV elaborated within FAA Type Validation process must be used. Details – see item 7. ENCLOSURES, pos. B.</p> <p>II Among other changes introduced to the Manual, is a Section on Airworthiness Limitations, which is not present in earlier editions.</p>				

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<div data-bbox="245 260 418 296"> <p><b>4. <u>ACTION</u></b></p> </div> <div data-bbox="302 323 1357 390"> <p>The actions listed below are considered necessary, and sufficient in bringing the glider to eligibility for a U.S. Standard Airworthiness Certificate:</p> </div> <div data-bbox="345 417 472 453"> <p><b>A. Design</b></p> </div> <div data-bbox="345 478 1357 672"> <p>All items I – X (specified in this Bulletin under: 3. REVIEW OF AFFECTED PROJECT AREAS, A. Design – original approval and modifications) must be fully implemented on the affected glider, including those items that had originally been at the discretion of the operator, by accomplishment of the relevant Producer Bulletins. All Service Bulletin modifications implemented on an affected glider in the U.S. must be accomplished by a properly certificated person in accordance with Part 43 of the FAA regulations.</p> </div> <div data-bbox="345 745 865 781"> <p><b>B. Flight Manual and operating limitations</b></p> </div> <div data-bbox="345 808 1357 932"> <p>FAA approved Flight Manual iss. V, must be used with the affected glider instead of hitherto version of this document. Replace the hitherto used Flight Manual with issue V, available from Producer. Remember to copy all entries on glider weighing to new document.</p> </div> <div data-bbox="345 961 1357 1029"> <p>Placards consistent with this Flight Manual iss. V, must be installed on a glider – replace hitherto used placards with new ones available from Producer.</p> </div> <div data-bbox="345 1056 1357 1341"> <p>The airspeed indicator marking between the green and yellow arc for a given glider S/N may be different from that defined in the FAA approved Flight Manual. However, in this case it is noted that the actual value is lower than the allowed design value (116 kts versus 122 kts). Therefore, it is more conservative. Taking into account that in some cases this marking is applied by instrument producer, and modification might be troublesome, it is acceptable to allow the border between the green and yellow arc on the instrument to remain at 116 kts (214 km/h) instead of 122 kts (225 km/h). If this is the case for a given glider S/N, then the operator should notify the Producer who will provide a modified FM page with an explanation in a footnote as follows:</p> </div> <div data-bbox="345 1369 1357 1497"> <p>“Leaving markings for the upper airspeed limit of the Normal Operating Range at <math>V_A=116</math> kts, in accordance with item 4.B. of Service Bulletin No BO-22/2015 i.e. at a value lower than allowed for the design (<math>V_{RA}=122</math> kts) is considered conservative and accepted on this particular S/N, lying in the range up to 247 inclusive.”</p> </div> <div data-bbox="345 1585 1164 1619"> <p><b>C. Maintenance Manual with instruction on continued airworthiness</b></p> </div> <div data-bbox="345 1648 1357 1743"> <p>Technical Service Manual iss. IV, with FAA approved portion, must be used with the affected glider instead of hitherto version of this document. Replace the hitherto used Technical Service Manual with issue IV, available from Producer.</p> </div> <div data-bbox="345 1772 1357 1866"> <p>In operation of glider under U.S. Standard Airworthiness Certificate, the rules prescribed in the appropriate Manual must be observed, including those introduced in the added Section 4. AIRWORTHINESS LIMITATIONS.</p> </div>		

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<p>5. <b><u>LABOUR DEMAND</u></b></p>	<p>Time required to implement this modification depends on history of glider servicing and maintenance – when all Bulletin recommended modifications have been implemented in due time, the modification consists mainly in re-placarding the glider: 1 day/1 person</p>	
<p>6. <b><u>MASS (WEIGHT) AND BALANCE</u></b></p>	<p>In case of modification, repeat the weighing and CG determination for empty glider – in accordance with item 2.6 WEIGHING THE GLIDER in Technical Service Manual.</p>	
<p>7. <b><u>ENCLOSURES</u></b></p>	<p>There are no attachments to this Bulletin.</p> <p>The listed below glider manuals, <u>not attached to this Bulletin</u>, are available from Producer:</p> <p>A. Flight Manual for Models MDM-1 “Fox” and MDM-1P “Fox-P”, Issue V / 29 April 2016, Original Revision or later approved revisions</p> <p>B. Technical Service Manual for Models MDM-1 “Fox” and MDM-1P “Fox-P”, Issue IV / 29 April 2016, Original Revision or later approved revisions</p> <p style="text-align: center;">- THE END -</p>	