



**LSA MAJOR REPAIR AND/OR ALTERATION (MRA)**

**ASTM F2483-18 ANNEX A1**

ID Number:	TDO-MRA-2-1-0-US-0001-2022	Revision Level:	New issue	MRA Date:	03/08/2022
Document Title:	Upgrade of PFD and MFD displays				
Description:	Replacement of Garmin G3X GDU-370 non-touch PFD and MFD displays with new GDU-470 touch displays.				

NOTES:

1. If a specific block is not required for a particular MRA, insert the words: **Not Applicable**
2. Any external documents referenced on this form should include revision level, issue date and title as appropriate.

**BLOCK 1—AIRCRAFT INFORMATION:**

Registration Mark	Nationality	Serial Number	Make	Model
N593BL	USA	093/2014	BRISTELL	TDO

**BLOCK 2—OWNER INFORMATION:**

Name: (As it appears on the Aircraft Registration)	Address: (As it appears on the Aircraft Registration)
H. Paul Shuch	121 Florence Drive, Cogan Station PA 17728 USA

**BLOCK 3—AIRCRAFT DATA:**

	Manufacturer	Type/Model	Total Time Since New	Total Time SMOH
Airframe	BRM Aero	BRISTELL TDO	197	-
Engine	ROTAX	ROTAX 912 ULS 2	197	-
Propeller	FITI	FITI ECO COMPETITION 3LR 158	103	-

**BLOCK 4—MRA APPROVAL:**

The Aircraft OEM confirms the aircraft being repaired or altered still meets the requirements of the applicable ASTM design and performance specification subsequent to completion of the repair or alteration specified in the MRA

Applicable ASTM Design and Performance Specification Rev Level:		F2245-14	
Name:	Milan BRISTELA	Title:	Chief Designer, BRM Aero
Signature:		Approval Date:	03/08/2022
Stamp:			

**BLOCK 5—CONFORMITY STATEMENT—RETURN TO SERVICE:**

Required Qualifications:	A&P	<input checked="" type="checkbox"/> LSR-M	Aircraft Owner/Operator	Task specific
I hereby certify the repair and/or alteration has been completed in accordance with this MRA and all the referenced documents. Potentially unclear procedures have been clarified with the Aircraft OEM. No issues were observed that might hinder return to service.				
Certificate Holders Name:	H. Paul Shuch		Address:	121 Florence Drive Cogan Station PA 17728 USA
Certificate Type and Number:	LSRM-A 3550588		Date:	5 March 2022
Signature:				

**BLOCK 6—AIRCRAFT CONFIGURATION PREREQUISITES:**

This MRA is only valid for the aircraft identified, when the configuration conforms to the following definitions. Any listed documents must be complied with prior to conducting this MRA.

<b>Preceding MRA(s)</b>				
ID Number	Rev	Issue Date	Title	
-	-	-	-	
-	-	-	-	
<b>Preceding Notifications(s), Service Bulletin(s), Safety Alert(s), Service Instructions</b>				
ID Number	Rev	Issue Date	Title	
-	-	-	-	
-	-	-	-	

File name:	Document Number:	Form Issue:	Date of issue:	Page 1 of 4
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Other: -			
<b>BLOCK 7—PREPARATION:</b>			
Information on task specific training:	Not required		
Removal of existing assemblies, subassemblies, detail parts, etc:	Qty	Part Number:	
	1	glareshield	
	2	Garmin GDU-370	
Instructions for modification of the existing airframe, assemblies, subassemblies, wiring harnesses, etc.:	N/A		
Cleaning procedures:	N/A		
Instructions for priming, painting, or the application of other special treatments that are required as preparation tasks:	N/A		
Consumable and Bulk Materials list:	N/A		
Other Documentation/Information:	Garmin G3X Installation Manual 190-01115-01 Rev AP, September 2021		
<b>BLOCK 8—ACCOMPLISHMENT INSTRUCTIONS:</b>			
Consumable and Bulk Materials list:	N/A		
Special Tools, Fixtures, or Test Equipment:	N/A		
Instructions for installation:	In accordance with above referenced Garmin Installation Manual		
Instructions for assembly:	N/A		
Other Documentation/Information:	N/A		
Is a new Weight & Balance required?	Yes or No: NO		
<b>BLOCK 9—VERIFICATION:</b>			
Ground Procedures:	In accordance with above referenced Garmin Installation Manual		
Flight Procedures:	In accordance with above referenced Garmin Installation Manual		
Other Documentation/Information:	N/A		
<b>BLOCK 10—ENGINEERING DATA:</b>			
System descriptions:	In accordance with above referenced Garmin Installation Manual		
System schematics:	GARMIN G3X manuals		
Block diagrams:	In accordance with above referenced Garmin Installation Manual		
Wiring harness diagrams:	In accordance with above referenced Garmin Installation Manual		
Local manufacture instructions:	N/A		
Other Documentation/Information:	GARMIN G3X manuals		
<b>BLOCK 11—OPERATING INSTRUCTIONS:</b>			
If specified below, the following shall be added to, or revised in, the POH for the specific aircraft to which this MRA applies. The POH Record of Revisions page shall note the date and description of the changes that were incorporated into the POH.			
POH Changes to Airworthiness Limitations and Operating Instructions:	N/A		
POH Supplement	Title	Rev	Issue Date





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<b>NOTE:</b>	If the POH supplement and/or provided information renders information within the POH obsolete, that information must be changed or marked obsolete as appropriate with reference to the POH supplement and/or MRA form where the information is provided
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## BLOCK 12—INSTRUCTIONS FOR INSPECTION AND MAINTENANCE PROCEDURES:

The following shall be added to, or revised in, the Maintenance Manual for the specific aircraft to which this MRA applies.  
 This MRA shall be placed in the back of the Maintenance Manual for the specific aircraft to which this MRA applies.  
 The Maintenance Manual Record of Revisions page shall note the date and description of the changes that were incorporated into the Maintenance Manual.

<b>Suggested aircraft logbook entry:</b>	Replacement of G3X GDU-370 with new GDU-470		
<b>Maintenance Manual Supplement</b>	<b>Title</b>	<b>Rev</b>	<b>Issue Date</b>
	N/A		
<b>Information for continued airworthiness:</b>	<i>to be included when applicable:</i>		
<b>Servicing information:</b>			
<b>Scheduled inspections:</b>			
<b>Maintenance information:</b>			
<b>Troubleshooting information:</b>			
<b>Removal and installation information:</b>			
<b>Special inspections:</b>			

Overview: This letter authorizes modification of the subject aircraft, as specified below, by replacing both Garmin GDU-370 displays in the instrument panel with new Garmin GDU-470 touch-screen displays.

Aircraft: NG-5 Bristell S-LSA, s/n 093/2014, registration N593BL  
 Total Flight Time: 197 hours

Prof. H. Paul Shuch, 3550588 LSRM-A, will perform the following modifications to the above mentioned aircraft:

- Remove glareshield from above the instrument panel.
- Remove the Garmin G3X primary flight display GDU-370 and multi-function display GDU-370 from the instrument panel.
- Replace both primary flight display and multi-function display panels with new Garmin GDU-470 touch screen units.
- Upload and configure system software in accordance with Garmin G3X Installation Manual 190-01115-01 Rev AP, September 2021.
- Re-install glareshield.

under the conditions as follows:

- The installation(s) must comply with ASTM Standard-F2245-16c or 18, Specification for Design and Performance of a Light Sport Aircraft.
- The installation(s) to be done in accordance with best practices and procedures outlined in current BRM Aero maintenance manuals, and above-referenced installation manual.
- The installation(s) must be tested for non-interference with aircraft controls, components, or Function.
- Following installation, displays must be tested in flight in accordance with the above-referenced installation manual.
- The alteration must be recorded in the Airplane Log Book.
- Aircraft Weight and Balance data must be updated to reflect new Empty Weight and Empty Center of Gravity, if change is significant.

<b>File name:</b> MRA_LOA_093_2014_BRM_G3X-displays	<b>Document Number:</b> LSA-MRA-0-0-0-US-0001-2016	<b>Form Issue:</b> Rev. 1	<b>Date of issue:</b> 03.02.2022	<b>Page 3 of 4</b>
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**Revision History:**

(This page is for in house record keeping and is not required to be printed with the MRA when making copies to place with the POH or Maintenance Manual)

Rev Level	Date	Change Description
-	03/05/2022	Initial Issue by prof. Paul Shuch
	03/08/2022	Check, corrections, signature by BRM Aero

File name: MRA_LOA_093_2014_BRM_G3X- displays	Document Number: LSA-MRA-0-0-0-US-0001-2016	Form Issue: Rev. 1	Date of issue: 03.02.2022	Page 4 of 4
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