

Minor Design Change - Configuration Change no AEPS system

A 1.) Request of change/repair (any)

Part name/number:	Bristell B23
Product/TCDS number:	Bristell B23 EASA.A.642
Reason for change/repair request	Addition of a configuration of the Bristell B23 without the installation of the AEPS (aircraft emergency parachute system) and related parts. To achieve equal zero weight and cg a dummy mass is installed in the AEPS bay.
Preliminary change / repair description	Parts drawings: new mass ballast dwgs (to compensate mass of missing AEPS system (mass and cg similar)) Assy drawings: new assy drawings with new configuration Placard drawing: new placard drawing with corresponding placards for new configuration AFM: new AFM with updated procedures AMM: new AMM with updated maintenance instructions
Change/repair request by, date:	As requested per design change requests ADxC-DCR-73-013 and -014 Milan Bristela, 09.12.2020

A 2.) Feasibility and Acceptance (to be filled by HOD, accepted by Management)

Feasibility of change/repair expected certification basis (HOD)	Feasible, original certification basis (CS 23 admt. 5) shall be applied
Available background information (HOD):	All design data is available (TC-holder as per 21.A.2: ADC)
Resources needed/available (HOD):	Checked – positive
Will change/repair request be investigated by ADC?:	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Decided by (MD), date:	B. Kölmel, 11.12.2020

A 3.) Classification (HOA, ref ACP 1.3.3)

Is any of 21.A 91 items given?		Statement
appreciable effect on mass	No	Same mass
appreciable effect on balance	No	Same cg
appreciable effect on structural strength	No	Not applicable
appreciable effect on reliability	No	No life limited parts affected, loads in AEPS bay area locally distributed (no appreciable effect), other loads not affected
appreciable effect on operational characteristics	No	No change
appreciable effect on noise/fuel venting/exhaust emission	No	Not affected
appreciable effect on Operational Suitability Data	No	Not applicable

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appreciable effect on any other charact. affect. airworth.	No	Not affected
Adjustment of certification basis or OSD cert. basis	No	Same as initial TC
New interpretation of requirements used for the TC basis or OSD basis	No	No change
Demonstration of compliance uses methods that have not been previously accepted as appropriate	No	No change
Extend of new substantiation data and degree of re-assessment re-evaluation considerable	No	-
The change is made mandatory by an airworthiness directive or the change is the terminating action of an airworthiness directive	No	-
Introduces or affects functions where the failure condition is catastrophic or hazardous	No	No change of function

See guidance material to be found in GM 21.A.91 for changes to type design

See guidance material to be found in GM 21.A.435 for repairs

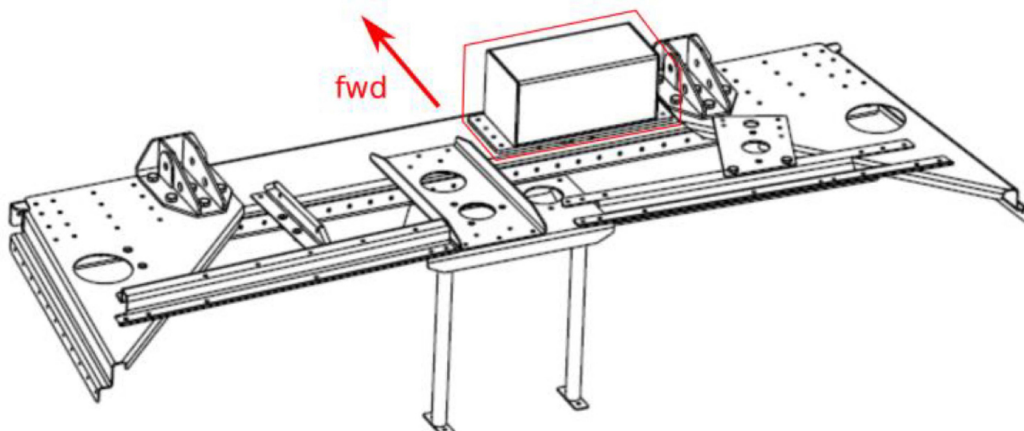
Micro change criteria:

- No extensive compliance demonstration required
- No iterations of compliance demonstration expected ('one off' approval)

Is OSD (MMEL) affected?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<u>No change to MMEL for introduction of new equipment, system or function in the type design</u> Guidance see DOH Chapter ACP 1.3.3
Classification:	<input checked="" type="checkbox"/> Minor	
Certification basis definition (ref. DOH ACP 1.3.4) ** provide amdt. level	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Latest Requirements <input type="checkbox"/> CS-VLA <input type="checkbox"/> CS-22 <input checked="" type="checkbox"/> CS-23 amdt.5 <input type="checkbox"/> CS-P <input type="checkbox"/> Other:	
HOA Name, signature and date	B. Kölmel,  11.12.2020	

A 4.) Definition of change / repair

Change of configuration: installation of mass balance instead of the AEPS system as can be seen in the drawing below (marked area) next to the front RHS engine mount bracket and adjacent to the firewall.



The dummy mass consists of a welded steel casing filled with lead to a total mass of 12kg. It is riveted to the structure (front fuselage cross channel) by means of 4,0x12,7mm pop-rivets.

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Removed parts (compared to basic configuration) is just one supporting bracket for the AEPS system:

- 53B220115N_B BRS BRACKET 2

Subsequent changes to documentation as described in A 1.) marking APS as “optional / if installed” is performed in conjunction with other editorial changes in CD-016.


Follow up

<p>C 1.) prepare:</p> <ul style="list-style-type: none"> - DDP (if applicable – for exchange of parts provide new part number / manufacturer in MDL – see below) - Substantiation report (or provide statement below) - Engineering Order Template for repetitive installation including instructions for continued airworthiness (ICA) and aircraft release to service 	<p>15.04.21</p>
<p>D 3.) Perform final Design/Change review meeting (see DAS 3.2)</p>	<p>29.04.2021</p>
<p>D 5.) Date Declaration of compliance (<i>This constitutes the internal approval</i>)</p>	<p>29.04.2021</p>
<p>D 8./9./10.) internal approval of minor change/repair (HOA):</p> <ul style="list-style-type: none"> - Stamp data as “approved” - Prepare Change Register (use ADxC-F-CR Change register template) 	<p>29.04.2021</p>

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Annex:

- MDL (Part number / Manufacturer; Manuals; datasheets; service and continued airworthiness data)
- DL (if applicable)
- MCC / Compliance Record
- Appendix to AFM/AMM (parts exchange; provide ICA if applicable)
- Declaration of compliance

<p>Aircraft Design Certification GmbH Reichensteinstr.48 69151 Neckargemünd</p>		<p>Bristell - B23</p>	<p>Doc-Nr: ADx-C-73-DC-008 Issue: A Date: 29.04.2021</p>
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Compliance Record

Requirement	MOC	Reference	Compliance Statement:	CVE
CS-23.2000 Applicability and definitions CS-23.2005 Certification of normal-category aeroplanes	0	-	The design change does not affect the applicable certification specification of Bristell B23 (Level 1 aircraft; normal category, low speed).	1
CS-23.2010 Accepted means of compliance	0	-	The same Acceptable Means of Compliance as for the initial type certificate (Initial issue) are used for this design change (AMC No3 (CS-VLA amdt.1))	1
CS23 amdt.5 Subpart B – FLIGHT	0	-	No appreciable effect to: mass &cg, performance, speeds (incl. stall speed), landing controllability, stability, characteristics (ground-handling, stall) and operating limitations w.r.t. the DC-001/-002/-005/-007/-009/-011/-014 (original TC; changes of basic configuration). Subpart B is not affected by the change.	1
CS23.2235 CS-VLA 305 Strength and deformation	0	-	<i>(a) The structure must be able to support limit loads without detrimental, permanent deformation. At any load up to limit loads, the deformation may not interfere with safe operation. The structure is able to support limit loads without detrimental, permanent deformation and does not interfere with safe operation.</i>	1

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Requirement	MOC	Reference	Compliance Statement:	CVE
CS23.2235 CS-VLA 307 Proof of structure	0	-	<p>(a) Compliance with the strength and deformation requirements of CS-VLA 305 must be shown for each critical load condition. Structural analysis may be used only if the structure conforms to those for which experience has shown this method to be reliable. In other cases, substantiating load tests must be made. Dynamic tests, including structural flight tests, are acceptable if the design load conditions have been simulated.</p> <p>(b) The structure must be able to support ultimate loads without failure for at least three seconds. However, when proof of strength is shown by dynamic tests simulating actual load conditions, the three second limit does not apply.</p> <p>By engineering judgment, loads derived from CS 23.2270 are the most critical for the attachment and the surrounding structure. As the assessed critical elements do withstand these loads, no separate limit nor ultimate load test is needed.</p>	1
CS 23.2270 CS-VLA 561 Emergency landing conditions - General			<p>[...] Ultimate Inertia Load Factors Upward 3,0 g Forward 9,0 g Sideward 1,5 g. (c) Each item of mass that could injure an occupant if it came loose must be designed for the load factors stated above.[...]</p> <p>Applying the most critical (emergency) load condition to the riveted connection in the most critical load direction for the rivets this would result in a safety of margin of 685%: $12\text{kg} \cdot 9,81\text{N/kg} \cdot 9 = 1060\text{N}$ equally distributed over 8 rivets $\rightarrow 132,5\text{N}$ ultimate shear strength of the rivet is 1040N^1 $(1040/132,5) - 1 = 6,85$</p>	1

0,5	3,2	9,3	1,13	01661-00508
0,8	4,7	10,7	1,13	01661-00510
1,2	6,3	12,5	1,04	01661-00512
4,0 (582*)	4,1	4,2	2,2	1,67
4,0	9,5	16,2	1,04	01661-00516
6,4	12,7	19,6	1,04	01661-00521

1 taken from manufacturer datasheet and recorded in the corresponding DDP folder

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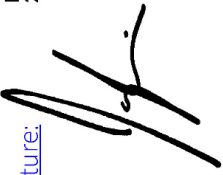

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Requirement	MOC	Reference	Compliance Statement:	CVE
CS 23.2250 CS-VLA 603 Materials and workmanship	0	-	<p>(a) The suitability and durability of materials used for parts, the failure of which could adversely affect safety, must -</p> <p>(1) Be established by experience or tests;</p> <p>(2) Meet approved specifications that ensure their having the strength and other properties assumed in the design data; and</p> <p>(3) Take into account the effects of environmental conditions, such as temperature and humidity, expected in service.</p> <p>(b) Workmanship must be of a high standard.</p> <p>Materials used are listed in the EQL and do fit the requirements listed under point (a). Workmanship is of high standard (POA: CZ.21G.0063)</p>	1
CS 23.2255 CS-VLA 609 Protection of structure	0	-	<p>Each part of the structure must -</p> <p>(a) Be suitably protected against deterioration or loss of strength in service due to any cause, including -</p> <p>(1) Weathering;</p> <p>(2) Corrosion; and</p> <p>(3) Abrasion; and</p> <p>(b) Having adequate provisions for ventilation and drainage.</p> <p>The dummy mass being painted according to the approved surface finish process BRM 544 – 121a.</p>	1
	1	ADxC-73-AMM-001_Edition 1.2 Airplane maintenance manual	<p>Potential contact corrosion between the aluminum rivet and the steel body of the dummy mass are mitigated by an inspection interval as stated in the AMM (100h/yearly inspection). Note: this AMM change is performed under DC-016.</p>	1
	0	-	All other points listed in the requirement do not affect the described installation.	1

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Requirement	MOC	Reference	Compliance Statement:	CVE
CS 23.2620 CS-VLA 1581 General - AEROPLANE FLIGHT MANUAL AND APPROVED MANUAL MATERIAL	0,1	ADxC-73-AFM-001_A2 Airplane flight manual (Cover doc issue A7)	A flight manual is issued, updating all relevant information regarding the option of the incorporation of the dummy mass instead of the AEPS system. All entries relating to the AEPS are streamlined accordingly. <i>Note: this AFM change is performed under DC-016.</i>	1

<u>CVE List</u> CVE 1 Marcus Basien	<div style="text-align: center;"> <p style="font-size: small;">Signature: </p> <p style="font-size: x-small;">Marcus Basien 2021.04.29</p> </div>	I declare that compliance to the marked paragraphs of the requirements is provided by the statement or by the reference documentation. <div style="text-align: center;"> <p style="font-size: small;">Signature: </p> <p style="font-size: x-small;">2021.04.29</p> </div> Compliance record sheets release:	all
HOA: Boris Kölmel			

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Master Document List for Minor Change

Document Nr	Issue	Date	Title
ADxC-73-008-DL	A	29.04.21	Drawing list DC-008 (contained in this document)
ADxC-73-008-EQL	A	29.04.21	Equipment list DC-008 (contained in this document)
ADxC-73-001-AFM	A2	15.04.21	Airplane flight manual
ADxC-73-001-AMM	Edition 1.2	15.04.21	Airplane maintenance manual

Drawing List for Minor Change

ADxC-73-008-DL Issue A:

L1	L2	L3	L4	L5	L6	L7	Number	Name	Issue
	x						53B205000N	EQUIPED FUSELAGE	C
	x						53B206000N	EQUIPED FUSELAGE	A
				x			53B220100N	F.F. CROSS CHANNEL ASSY	C
				x			53B220060N	F.F. CROSS CHANNEL ASSY	A
					x		53B220260N	F.F. CROSS CHANNEL ASSY	A
						x	53B220261N	BALLAST (BRS)	A
						x	53B220262N	BALLAST BODY	A
						x	53B220263N	COVER PLATE	A
						x	53B220264N	BASE	A

EQL List for Minor Change

ADxC-73-008-EQL Issue A:

Number (DDP or industry standard)	DDP Issue	Check date	Item	Type/Part No	Specific Manufacturer or Supplier (DO responsibility)	Material; Standard Hardware or Component; Process	QS-Class (M,SH) or Failure mode (C)	Income Inspection Criteria
S235JR+N, EN 10025-2	n/a	-	steel sheet	4mm		M	Minor	E) Delivery Bill
DC01-A-m, EN 10130	n/a	-	steel sheet	2mm		M	Minor	E) Delivery Bill
S235JRH, EN 10219-1	n/a		steel square tube	80x80x3		M	Minor	E) Delivery Bill

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Declaration of compliance of ADC GmbH

- Minor change
 Minor Repair

References:

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On behalf of ADC GmbH I hereby declare that our investigation has demonstrated that the change and areas affected by the change as defined in chapter A.4) are in compliance with the type-certification basis and environmental protection requirements incorporated by reference in the type certificate. If certification specifications which became applicable after those incorporated by reference in the type-certificate are used for approval of this minor change, this is stated in chapter A.3) and they do not affect the demonstration of compliance.

Details of compliance are recorded in the Compliance Record Sheets and associated design reports.

No features or characteristics have been identified that make the change unsafe for the uses for which certification has been obtained, provided it is operated and maintained in accordance with instructions and limitations as defined in the corresponding documentation.

I confirm that the procedures of DOA, approved under EASA 21.J.411 as specified in ADxC-DOH have been followed.

29.04.21
(Date)

Marcus Basien
2021.04.29



Marcus Basien
Head of Design ADC GmbH

BRM AERO DECLARATION

BRM Aero hereby confirms that the configuration of **BRISTELL B23 aircraft WITHOUT the installation of a rescue parachute system has been approved** by approved design change number ADxC-73-DC-008 dated 29.4.2021.

This means that the Bristell B23 can be produced and operated with or without a parachute, with no restrictions arising from this.

This Declaration is issued following some confusion (parachute listing in the Type Certificate Data Sheet) but in particular spreading incorrect statements and false information to the public that the BRISTELL B23 must be equipped with a parachute and if not, then such an aircraft is illegal.

However, such information is completely untrue and BRM Aero will act against these false assertions by all available means, including legal prosecutions.

BRM AERO, 2.12.2021