

Flight Manual Supplement

Raven/Aerostar Bottom Ends with Kubicek Envelopes

This manual is initially approved by EASA under major change approval number 10064737, dated 21 February 2018
Subsequent revisions are approved either by EASA or by authority of DOA, no. EASA.21J.277 as detailed on page 2.

**This balloon is to be operated in compliance with information and limitations contained herein.
The Flight Manual has to be placed in the basket during flight.**

0.1 Record of Revisions

Any revision of the present Supplement, must be recorded in the following table. The new or amended text in the revised page will be indicated by a black vertical line in the outer margin, and the Revision No. and the date will be shown on the bottom of the page.

All changes to this Flight Manual Supplement which were made before the date of the issue stated on the title page have been incorporated into this Manual.

Revision Number	Affected Section	Affected Pages	Date of Issue	Approval	Date of Approval

0.2 List of Effective Pages

Section	Page	Date of Issue
0	AER-2	26 Jan 2018
	AER-3	26 Jan 2018
1	AER-5	26 Jan 2018
	2	26 Jan 2018
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	AER-6	26 Jan 2018
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0.3 Contents

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SECTION 1 - GENERAL

1.1 Introduction

This Supplement to the Flight Manual provides information and limitations applicable when a BB envelope is used with Raven/Aerostar basket, burner and fuel system ("bottom end"). The arrangement and numbering of sections in this Supplement is the same as in the Flight Manual. If any section is influenced, only the different or additional information is stated in this Supplement, all other remain without any change.

SECTION 2 - OPERATIONAL LIMITATIONS

2.3 Fuel

Raven/Aerostar fuel pressure range:

Maximum admissible fuel pressure: **11 bar (160 psi)**

When pressurising fuel cylinders with nitrogen, care must be taken not to exceed **10 bar (145 psi)**.

Minimum admissible fuel pressure: **4 bar (60 psi)**

2.9 Weight Range

When Raven/Aerostar fitment is used see additional limitations in chapter 2.11.

2.11 Fitment Interchangeability

Allowed combinations of Raven/Aerostar baskets and Kubicek envelopes:

MTOW of the Kubicek envelope when Raven/Aerostar basket is used [kg]										
Kubicek envelope model	Raven/Aerostar basket									
	ELS	ELSS	RWS	RWSW, RWSW-AFX	CW, CW-AFX	CWS	RB5	RB6	RB8	RB12
BB16, BB16E	x	x	x	x						
BB17GP, BB17XR	x	x	x	x						
BB18E	544	544	x	x	x					
BB20, BB20ED, BB20E	544	544	x	x	x					
BB20GP, BB20XR	544	544	x	x	x					
BB22E, BB22ED	544	544	x	x	x					
BB22, BB22D, BB22N, BB22Z	544	544	x	x	x					
BB22XR	544	544	x	x	x					
BB26E, BB26ED	544	544	x	x	x	x				
BB26, BB26D, BB26N, BB26Z, BB26XR	544	544	816	816	x	x				
BB30E, BB30ED			816	816	x	x				
BB30D, BB30N, BB30Z, BB30XR			816	816	907	907				

MTOW of the Kubicek envelope when Raven/Aerostar basket is used [kg]										
Kubicek envelope model	Raven/Aerostar basket									
	ELS	ELSS	RWS	RWSW, RWSW- -AFX	CW, CW- -AFX	CWS	RB5	RB6	RB8	RB12
BB34E, BB34ED					907	907	x	1302		
BB34D, BB34Z					907	907	x	1302		
BB37D, BB37N, BB37Z					907	907	1075	1302		
BB40D, BB40Z						907	1075	1302		
BB42D, BB42Z						907	1075	1302		
BB45D, BB45N, BB45Z						907	1075	1302	1302	1302
BB51D, BB51Z								1302	1574	1574/1723*
BB60D, BB60N, BB60Z								1302	1574	1574/1723*
BB64Z								1302	1574	1574/1723*
BB70D, BB70Z								1302	1574	1574/1723*

MTOW of the Kubicek envelope when Raven/Aerostar basket is used [lb]										
Kubicek envelope model	Raven/Aerostar basket									
	ELS	ELSS	RWS	RWSW, RWSW- -AFX	CW, CW- -AFX	CWS	RB5	RB6	RB8	RB12
BB16, BB16E	x	x	x	x						
BB17GP, BB17XR	x	x	x	x						
BB18E	1200	1200	x	x	x					
BB20, BB20ED, BB20E	1200	1200	x	x	x					
BB20GP, BB20XR	1200	1200	x	x	x					
BB22E, BB22ED	1200	1200	x	x	x					
BB22, BB22D, BB22N, BB22Z	1200	1200	x	x	x					
BB22XR	1200	1200	x	x	x					
BB26E, BB26ED	1200	1200	x	x	x	x				
BB26, BB26D, BB26N, BB26Z, BB26XR	1200	1200	1800	1800	x	x				
BB30E, BB30ED			1800	1800	x	x				
BB30D, BB30N, BB30Z, BB30XR			1800	1800	2000	2000				
BB34E, BB34ED					2000	2000	x	2870		
BB34D, BB34Z					2000	2000	x	2870		
BB37D, BB37N, BB37Z					2000	2000	2370	2870		
BB40D, BB40Z						2000	2370	2870		
BB42D, BB42Z						2000	2370	2870		
BB45D, BB45N, BB45Z						2000	2370	2870	2870	2870
BB51D, BB51Z								2870	3470	3470/3800*

MTOW of the Kubicek envelope when Raven/Aerostar basket is used [lb]										
Kubicek envelope model	Raven/Aerostar basket									
	ELS	ELSS	RWS	RWSW, RWSW- -AFX	CW, CW- -AFX	CWS	RB5	RB6	RB8	RB12
BB60D, BB60N, BB60Z								2870	3470	3470/3800*
BB64Z								2870	3470	3470/3800*
BB70D, BB70Z								2870	3470	3470/3800*

x

- combination allowed. Kubicek envelope MTOW applied

a number

- combination allowed. Reduced MTOW based on Raven/Aerostar basket is applied

--

- combination is not allowed.

*

- 3470 (1574) when 2-unit burner is used / 3800 (1723) when 3-unit burner is used

Allowed combinations of Raven/Aerostar burners and Kubicek envelopes:

Allowed combinations of Kubicek envelope with Raven/Aerostar burner						
Kubicek envelope model	Raven/Aerostar burner					
	HPII Single	HPII Dual	HPIII Single	HPIII Single Aurora (ELS)	HPIII Dual	HPIII Triple
BB16, BB16E	x		x	x		
BB17GP, BB17XR	x		x	x		
BB18E	x	x	x	x	x	
BB20, BB20ED, BB20E	x	x	x	x	x	
BB20GP, BB20XR	x	x	x	x	x	
BB22E, BB22ED	x	x	x	x	x	
BB22, BB22D, BB22N, BB22Z	x	x	x	x	x	
BB22XR	x	x	x	x	x	
BB26E, BB26ED	x	x	x	x	x	
BB26, BB26D, BB26N, BB26Z, BB26XR	x	x	x	x	x	
BB30E, BB30ED	x	x	x	x	x	
BB30D, BB30N, BB30Z, BB30XR	x	x	x	x	x	
BB34E, BB34ED		x			x	x
BB34D, BB34Z		x			x	x
BB37D, BB37N, BB37Z		x			x	x
BB40D, BB40Z		x			x	x
BB42D, BB42Z		x			x	x
BB45D, BB45N, BB45Z		x			x	x

Allowed combinations of Kubicek envelope with Raven/Aerostar burner						
Kubicek envelope model	Raven/Aerostar burner					
	HPII Single	HPII Dual	HPIII Single	HPIII Single Aurora (ELS)	HPIII Dual	HPIII Triple
BB51D, BB51Z		x			x	x
BB60D, BB60N, BB60Z		x			x	x
BB64Z		x			x	x
BB70D, BB70Z		x			x	x

x	- combination allowed
---	-----------------------

Additional Limitations

Rotation vent must be fitted for any Raven/Aerostar partitioned basket.
 Before changing a combination of envelope and basket to another approved combination, care needs to be taken of the dimensions of the burner frame. If the new frame has different dimensions than the original one ask KB to consider eligibility of the lengths of flying wires. For bigger differences the flying wires need to be replaced. Instruction for correct replacement is provided in the Maintenance Manual.

2.16 Tethered flight

Tethered lines shall not be attached to the basket or support structures. When tethering the ballon, tether lines must be attached to the load fittings at the interface between gondola and and envelope (and top tether/top ring if installed).

SECTION 3 - EMERGENCY PROCEDURES

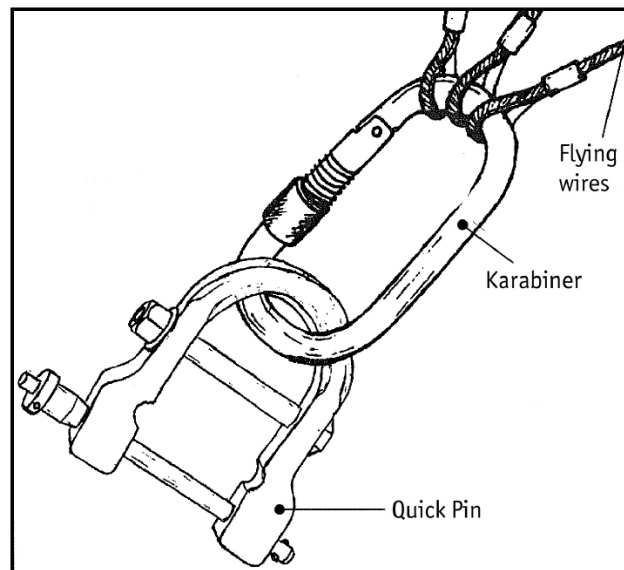
No change

SECTION 4 - NORMAL PROCEDURES

4.3.5 Unpacking and Assembly of the Balloon

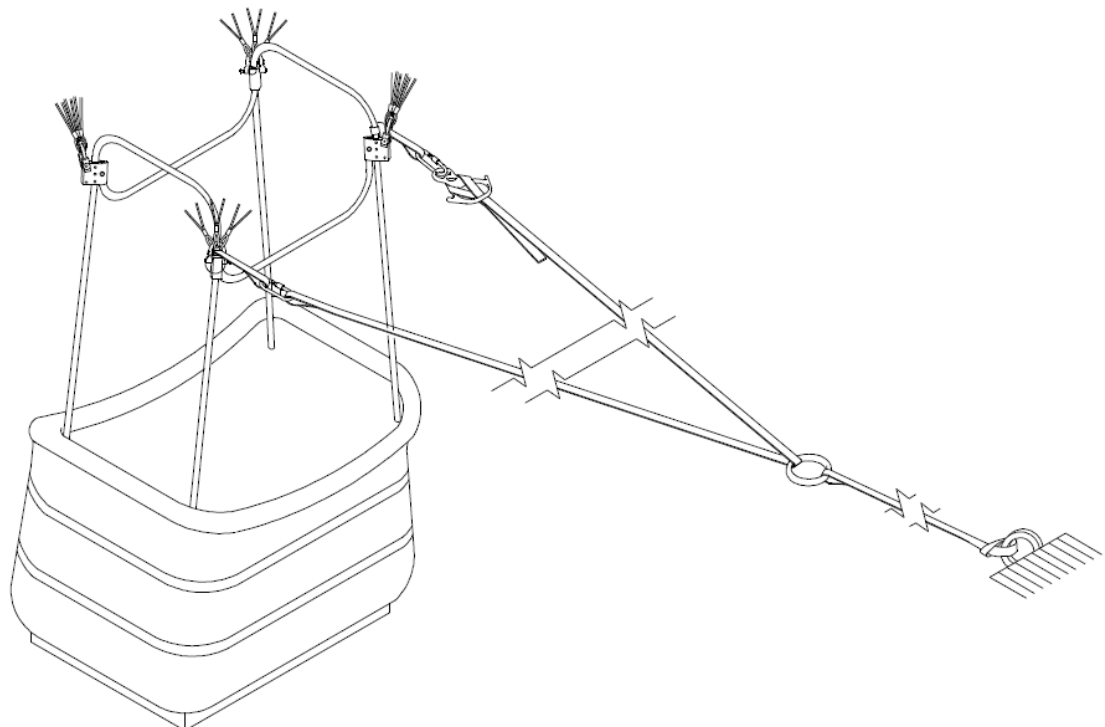
Additional information for assembling the balloon:

The envelope carabiners with appropriate number of flying wires must be attached to the Quick Pins according to the following picture:



4.3.6 Quick release

Launch harness must be attached at the envelope load blocks. Attaching a launch restraint to the gondola uprights (other than at the load blocks), the interface between the uprights and the lower frames, steps or skids is not authorized. Improper launch techniques are liable to induce damage to the structure of the gondola and must be avoided.



SECTION 5 - WEIGHT

No change

SECTION 6 - BALLOON AND SYSTEMS DESCRIPTION

6.5 Burner

Refer to the applicable Raven/Aerostar Flight Manual.

6.7 Baskets

Refer to the applicable Raven/Aerostar Flight Manual.

SECTION 7 - BALLOON HANDLING, CARE AND MAINTENANCE

7.2 Inspection Periods

Refer to the applicable Raven/Aerostar Flight Manual.

7.4 Ground Handling and Road Transport

Refer to the applicable Raven/Aerostar Flight Manual.

7.5 Cleaning and Care

7.5.2 Basket

Refer to the applicable Raven/Aerostar Flight Manual.

7.5.4 Burner

Refer to the applicable Raven/Aerostar Flight Manual.

SECTION 8 - EQUIPMENT LIST AND APPENDICES

No change.

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LET US HELP YOU!

In case that you have any suggestion, difficulty, problem or comment, please contact our technical department at:

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