

Revision nr “Supplement 8.12-Issue 3” to AFM ref. “Hot Air Balloon Flight Manual Issue 10, Amendment 0” is approved under the authority of DOA nr EASA.21J.140.

## 8.12 OUT OF PRODUCTION ENVELOPE TYPES

### 8.12.1 GENERAL INFORMATION

Issue 3 of this supplement consists of six pages.

Supplement 7.12 (two pages) to Maintenance Manual Issue 10 is required to ensure continued airworthiness.

#### 8.12.1.1 Record of Amendments

Issue Number	Description	Pages Affected	Date	Approval
1	HABFM Issue 10 - First Issue	All	10-04-06	Approved by EASA under Approval Number EASA.BA.A.01000
2	Addition of Colt 17A and 21A Addition of Cameron H20, H24 and H34	All	18-04-07	Approved by EASA under Approval Number EASA.BA.C.01075
3	Addition of Thunder AX Series I, AX6-56 SI	1, 2, 5	15-10-07	The technical content of this document is approved under the authority of EASA.21J.140 (C495)

#### 8.12.1.2 Certification Basis

The types of balloon for which this supplement is applicable have been approved by EASA under the following Type Certificate.

EASA.BA.013 Cameron H Types  
Colt ‘A’ Types  
Colt ‘Bullet’ Types  
Thunder ‘A’ Types  
Thunder Ax Series I  
Thunder ‘Bolt’ Types  
Thunder ‘Z’ Types

### 8.12.2 LIMITATIONS

Table I - Envelope Weight Limits And Volumes

Model		Volume		Standard MTOM		Reduced MTOM		FAI Class AX
		cu. ft	cu. m	kg	lb	kg	lb	
	C17A	17 600	498	160	353	160	353	3
	H20	20 000	566	181	400	181	400	3
	C21A	21 000	595	191	421	191	421	3
	H24	24 000	680	218	480	218	480	4
	31Z	31 000	878	285	629	285	629	4
	H34	34 000	963	308	680	308	680	5
	42Bolt	42 000	1190	381	840	381	840	5
AX6-56 SI		56 000	1586	508	1120	499	1100	6
T56A	56B	56 000	1586	508	1120	499	1100	6
56Bolt	56Z							
65Bolt	65Z	65 000	1841	590	1300	499	1100	7
T77A	77B	77 000	2180	698	1540	499	1100	7
77Bolt	77Z							
	90B	90 000	2549	816	1800	499	1100	8
	105Z	105 000	2974	952	2100	952	2100	8
	160Z	160 000	4531	1451	3200	999	2203	10

Key: C= Colt, T = Thunder

### 8.12.3 EMERGENCY PROCEDURES

No change.

### 8.12.4 NORMAL PROCEDURES

#### 8.12.4.3.5 ENVELOPE PREPARATION

**Caution:** The Colt 17A and 21A envelopes are of traditional construction but differ in the lack of continuous nylon load tapes. Since the handling of the envelope must be by the fabric only, caution must be exercised and ground crew properly briefed.

### 8.12.5 WEIGHT CALCULATIONS

Table 2 (additional) - Total Permitted Lift (kg)

Balloon Size	Lift (lb) Per 1000 cu.ft.										
	10	11	12	13	14	15	16	17	18	19	20
17	80	88	96	104	112	120	128	136	144	152	160
20	91	100	112	118	127	136	145	154	163	172	181
21	95	105	114	124	133	143	152	162	171	181	191
24	109	120	131	142	152	163	174	185	196	207	218
34	154	170	185	200	216	231	247	262	278	293	308

Table 3 (additional) - Total Permitted Lift (lb)

Balloon Size	Lift (lb) Per 1000 cu.ft.										
	10	11	12	13	14	15	16	17	18	19	20
17	177	194	212	230	247	265	283	300	318	336	352
20	200	220	247	260	280	300	320	340	360	380	400
21	210	231	252	273	294	315	336	357	378	399	420
24	240	264	288	312	336	360	384	408	432	456	480
34	340	374	408	442	476	510	544	578	612	646	680

### 8.12.6 BALLOON AND SYSTEMS DESCRIPTION

#### 8.12.6.2 Envelope

##### 8.12.6.2.6 Cameron 'Z' Type and Colt 'A' Type (additional)

The Colt 17A and 21A envelopes have twenty four and twenty six vertically cut smooth gores respectively. There are twenty four or twenty six flying cables.

##### 8.12.6.2.17 Colt 'Bullet'

The Colt Bullet envelope has sixteen smooth gores which are alternately cut horizontally and vertically. Sizes range from 56,000 to 90,000 cu.ft. (1586 to 2549 m<sup>3</sup>). There are eight flying cables.

**8.12.6.2.18 Thunder 'A' Type**

The Thunder 'A' Type envelope has twenty four or thirty two vertically cut, smooth gores. Sizes range from 56,000 to 77,000 cu.ft. (1 586 to 2 190 m<sup>3</sup>). There are twelve, twenty four or thirty two flying cables.

**8.12.6.2.19 Thunder 'Bolt'**

The Thunder 'Bolt' envelope has eight vertically cut, bulbous gores. Sizes range from 42,000 to 77,000 cu.ft. (1 190 to 2 190 m<sup>3</sup>). There are eight flying cables.

**8.12.6.2.20 Thunder 'Z' Type**

The Thunder 'Z' Type envelope has sixteen, twenty, twenty four or twenty eight horizontally cut, bulbous gores. Sizes range from 31,000 to 160,000 cu.ft. (878 to 4 531 m<sup>3</sup>). There are sixteen, twenty, twenty four or twenty eight flying cables.

**8.12.6.2.21 Cameron 'H' Type**

The Cameron 'H' Type envelope has fifteen vertically cut, smooth gores. Sizes range from 20,000 to 34,000 cu.ft. (566 to 963 m<sup>3</sup>). There are fifteen flying cables.

**8.12.7 BALLOON MAINTENANCE, HANDLING AND CARE**

No change.

8.12.9 EQUIPMENT LIST

Table 5 - Envelopes

Envelope Type	Drawing Number	Applicable Burners	Applicable Baskets
Colt 17A	CBI122	A	A, AI
Colt 21A	CBI090	A	A, AI
H20	CB683	A	A, AI
H24	CB729	A	A, AI
H34	CB730	A, AB	A, AI, B
56B	CBI226	A, B	A, B, C, D, E, F, G
77B	CBI227	A, B	A, B, C, D, E, F, G
90B	CBI143	A, B	A, B, C, D, E, F, G
AX6-56 SI	CBI135	A, B	A, B, C, D, E, F, G
AX6-56A	CBI541	A, B	A, B, C, D, E, F, G
AX7-77A	CBI542	A, B	A, B, C, D, E, F, G
AX5-42 Bolt	CBI544	A	A, B, C, D, E
AX6-56 Bolt	CBI545	A, B	A, B, C, D, E, F, G
AX7-65 Bolt	CBI546	A, B	A, B, C, D, E, F, G
AX7-77 Bolt	CBI547	A, B	A, B, C, D, E, F, G
AX4-31Z	CBI549	A	A, B, C, D
AX6-56Z	CBI550	A, B	A, B, C, D, E, F, G
AX7-65Z	CBI551	A, B	A, B, C, D, E, F, G
AX7-77Z	CBI552	A, B	A, B, C, D, E, F, G
AX8-105Z	CBI572	B	B, C, D, E, F, G, H
AX10-160Z	CBI553	B, C	D, E, F, G, H, I, J, K, L, M

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## 7.12 OUT OF PRODUCTION ENVELOPES

### 7.12.1 GENERAL

No change.

### 7.12.2 ENVELOPE REPAIRS

#### 7.12.2.6 LOAD TAPE REPAIRS

For instructions regarding load tape repairs to the Colt 17A and 21A, contact Cameron Balloons Limited.

### 7.12.3 BASKET REPAIRS

No change.

### 7.12.4 FUEL SYSTEM REPAIRS

No change.

### 7.12.5 INSTRUMENT REPAIRS

No change.

### 7.12.6 INSPECTION SCHEDULE

<b>6.5 Envelope</b>	
<b>7.</b>	<p><b>Colt 17A and 21A</b> If the envelope has flown more than 100 hours, is suspected of having been overheated, or at the inspector's discretion, perform a grab test (Section 6.20). The minimum value of fabric strength is 15 kg. In marginal cases it is advisable to consult the manufacturer.</p>

**7.12.8 REPAIR PARTS AND MATERIALS**

No change.