

LINDSTRAND TECHNOLOGIES LTD

FLIGHT MANUAL SUPPLEMENT NO. 1

OTHER MANUFACTURERS' ENVELOPES

1.1 TYPES OF ENVELOPES

This Supplement covers other manufacturers' envelopes with Lindstrand Technologies baskets and burners.

The following envelopes are covered in this section:

TABLE 1 – APPLICABLE MODELS

Envelope Type	Drawing Number	cu.ft.	cu.m.	AX Class
X Series	EX-077-A-001	77,000	2,180	AX7

1.2 GENERAL INFORMATION

This supplement is to be included with the Flight Manual with all balloons of the above type using Lindstrand Technologies Ltd basket and burners under the Lindstrand Technologies Supplementary Type Certificate for models listed in Table 1.

1.3 CERTIFICATION BASIS

The type of balloon listed in Table 1 is covered by the following Type Certificates:

EASA.BA.506 Lindstrand X Type

1.4 LIMITATIONS

1.4.1 Envelope Temperature and Loading

The maximum continuous envelope temperature that is permitted is 125°C (257°F). The never exceed temperature is 127°C (261°F).

1.4.2 Rates of Climb and Descent

- The maximum rate of climb and descent for X Series balloons is 1,700 ft/min (8.5 m/sec), except where a RDS is fitted, when the maximum rates of climb and descent are limited to 1,000 ft/min (5 m/sec.).

1.4.3 Tethered Flight

1. The maximum surface wind speed for a tethered flight is 10 kts.
2. The maximum balloon loading must not exceed 75% of the maximum weight of the balloon or the weight permitted under the ambient conditions.
3. The basket of the balloon must not exceed a height of 30 m above the ground level when tethering.

1.4.4 Modifications

1. The balloon must not be flown if it has been modified, without the approval of the National Airworthiness Authority in the state of registration.

1.4.5 Power Lines

1. The balloon must not be flown into contact with power lines.

1.4.6 Night VFR Flight

1. When conducting VFR night flights, navigation lights which satisfy the national regulations must be used.

1.4.7 Envelope Weight and Limitations

The following envelope weights and limitations apply:

TABLE 2 – ENVELOPE WEIGHT AND LIMITATIONS (LBL 77X)

Model	cu.ft.	cu.m.	Standard MTOM	Reduced MTOM	MLM	FAI Class AX	Envelope Weight
77X	77,000	2,180	770 kg	499 kg	316 kg	AX7	84 kg

1.4.8 Emergency Procedures

There are no changes to the Emergency Procedures as listed in the Flight Manual.

1.4.9 Normal Procedures

Care should be taken when first operating the burners. If the envelope has been filled with too much cold air, the burner flame can be pushed radially outwards by out-flowing cold air. This can cause burn damage to the flying wire / envelope connection in extreme conditions. The best method for avoiding this is to turn the fan down to a lower speed setting for the start of the hot inflation.

1.4.10 Weight Calculations

Please refer to the following for total permitted lift:

TABLE 3 – TOTAL PERMITTED LIFT LBL 77X (KG)

Lift Index	Total Lift (kg)
4.8	370
5.0	385
5.2	400
5.4	416
5.6	431
5.8	447
6.0	462
6.2	477
6.4	493
6.6	508
6.8	524
7.0	539
7.2	554
7.4	570
7.6	585
7.8	601
8.0	616
8.2	631
8.4	647
8.6	662
8.8	678
9.0	693
9.2	708
9.4	724
9.6	739
9.8	755
10.0	770

1.5 **BALLOON MAINTENANCE, HANDLING AND CARE**

No change.

1.6 COMPATIBLE EQUIPMENT

The Following Lindstrand Technologies basket and burner configurations are considered compatible with the LBL 77X, covered by the Supplementary Type Certificate. The following tank configurations are considered compatible with the LBL 77X and Lindstrand Technologies basket and burners.

TABLE 4 – LINDSTRAND TECHNOLOGIES BASKETS

Basket No.	Basket Size cm	Basket Style	Envelope Range Size
1	100 x 120	Open	42 - 90
2	110 x 125	Open	65 - 105
3	110 x 150	Open	70 - 120

TABLE 5 – LINDSTRAND TECHNOLOGIES BURNERS

Burner No.	Burner Type	Envelope Size Range	Empty Weight (kg)
1	VORTECH Double	50 - 210	19

TABLE 6 – OTHER MANUFACTURERS' CYLINDERS

CAMERON BALLOONS FUEL CYLINDERS

CYLINDER TYPE	EMPTY WEIGHT		FUEL CAPACITY		FULL WEIGHT		APPLICABLE BASKET RANGE
	KG	LBS	KG	LBS	KG	LBS	
CB 497	16	35.2	20	44	36	79.2	All
CB 599	17	37.4	22	48.4	39	85.8	All
CB 426	22	48.4	28	61.6	50	110	All
CB 959	26	57.2	35	77	61	134.2	All
CB 2380 (60)	14	30.8	28	61.6	42	92.4	All
CB 2383 (80)	16	35.2	35	77	51	112.2	All
CB 2385 (40)	12.5	27.5	20.5	45.1	33	72.6	All
CB 2387 (T60)	14	30.8	26	57.2	40	88	All
CB 2900 (45)	20	44	23	50.6	43	95	All

CAMERON BALLOONS FUEL CYLINDERS Cont....

CYLINDER TYPE	EMPTY WEIGHT		FUEL CAPACITY		FULL WEIGHT		APPLICABLE BASKET RANGE
	KG	LBS	KG	LBS	KG	LBS	
CB 2901 (60)	22	49	30	66	52	115	All
CB 2902 "T60" (54)	23	51	27	59.4	50	110	All
CB 2903 (72)	26	57	36	79.2	62	137	All
CB 250 (Worth.)	14	30.8	20	44	24	52.8	All

THUNDER AND COLT FUEL CYLINDERS

CYLINDER TYPE	EMPTY WEIGHT		FUEL CAPACITY		FULL WEIGHT		APPLICABLE BASKET RANGE
	KG	LBS	KG	LBS	KG	LBS	
Worthington	14	31	20	44	34	75	All
V20	14	31	20	44	34	75	All
V30	18	40	30	66	48	106	All
V40	20	44	40	88	60	132	All

FIRE BALLOONS (SHROEDER) FUEL CYLINDERS

CYLINDER TYPE	EMPTY WEIGHT		FUEL CAPACITY		FULL WEIGHT		APPLICABLE BASKET RANGE
	KG	LBS	KG	LBS	KG	LBS	
VA50	14.6	32	21.2	46.5	35.8	78.5	All
VA70	18.6	41	30	66	48.6	107.8	All

ULTRAMAGIC BALLOONS FUEL CYLINDERS

CYLINDER TYPE	EMPTY WEIGHT		FUEL CAPACITY		FULL WEIGHT		APPLICABLE BASKET RANGE
	KG	LBS	KG	LBS	KG	LBS	
M20 & M20D	15	33	20	44	35	77	All
M30 & M30D	20	44	30	66	50	110	All
M40 & M40D	24	53	40	88	64	141	All

LINDSTRAND HOT AIR BALLOONS LTD CYLINDERS

CYLINDER TYPE	EMPTY WEIGHT		FUEL CAPACITY		FULL WEIGHT		APPLICABLE BASKET RANGE
	KG	LBS	KG	LBS	KG	LBS	
Mini Worthington	3.6	8	3.4	7.5	7	15.5	All
Worthington	14	31	20	44	34	75	All
V20	14	31	20	44	34	75	All
V30	18	40	30	66	48	106	All
V40	20	44	40	88	60	132	All
T30	10	22	30	66	40	88	All

SKY BALLOONS FUEL CYLINDERS

CYLINDER TYPE	EMPTY WEIGHT		FUEL CAPACITY		FULL WEIGHT		APPLICABLE BASKET RANGE
	KG	LBS	KG	LBS	KG	LBS	
V20	14	31	20	44	34	75	All
V30	18	40	30	66	48	106	All
V40	20	44	40	88	60	132	All