The technical content of Issue 1 of this Supplement is approved under the authority of DOA nr. UK.21J.0140 (C899)

8.73 LINDSTRAND TECHNOLOGIES LTD 'BOTTOM ENDS'

8.73.1 GENERAL INFORMATION

This supplement shall be inserted in the Flight Manual, in Section 8: 'Supplements' with the revisions record sheet amended accordingly.

Information contained herein supplements, or in the case of conflict, supersedes that contained in the basic Flight Manual. For Limitations, Procedures, and Performance Data not contained in this supplement, consult the basic Hot Air Balloon Flight Manual. Throughout this supplement the term "Cameron" refers to envelopes, burners and cylinders manufactured by Cameron, Lindstrand Hot Air Balloons Limited, Sky and Thunder & Colt.

Issue 1 of this supplement consists of eight pages.

Supplement 7.73 to Maintenance Manual issue 10 is required to ensure Continued Airworthiness

NOTE: Throughout this document "LTL" refers to Lindstrand Technologies Ltd; LHABL refers to Lindstrand Hot-air Balloons Limited

8.73.2 LIMITATIONS

8.73.2.3 FUEL

2. A minimum of one full fuel cylinder for each fuel feed to the burner assembly is required to be available on take-off.

8.73.2.3.1 Fuel Pressures

Minimum fuel pressure is 58 psi (4 Bar), Flying with a fuel pressure below 75 psi (5 bar) requires caution. It is advised that the fuel pressure should be increased if fuel pressure is below this level (see Section 4.10). The ideal operating burner pressure is 125 psi (8.6 Bar).

8.73.2.4 MINIMUM BURNER REQUREMENTS

Burner Configuration	Permitted Envelope Volume
Double	50,000 ft^3 (1585 m^3) - 210,000 ft^3 (5950 m^3)
Triple	180,000 ft^3 (5098 m^3) - 310,000 ft^3 (8778 m^3)
Quad	180,000 ft^3 (5098 m^3) - 450,000 ft^3 (12743 m^3)

8.73.2.5 PERMITTED DAMAGE

7. **BASKET:** When there are more than five strands of a basket wire broken, it must be repaired or replaced before the balloon may be flown.

8. **BASKET - PLYWOOD FLOOR:** If the plywood floor has separated from the lower stainless frame or if the floor is damaged so that a 250 mm crack is visible on both sides of the floor, the basket must be repaired or the damaged part replaced before the balloon may be flown.

8.73.2.14 TETHERED FLIGHT

Limitations	Balloons <180,000 ft³ (5098 m³)	Balloons >180,000 ft³ <275,000 ft³ (7788 m³)	Balloons >275,000 ft³
Max. Surface wind speed	10 knots (5.1 m/sec)	5 knots (2.5 m/sec)	Calm
Max. Surface wind speed with passengers	10 knots (5.1 m/sec)	5 knots (2.5 m/sec)	Calm
Max. Height above ground (measured from underside of basket)	30 m (100 ft)	30 m (100 ft)	30m (100 ft)
Maximum Take-Off Mass	limited to 75% of the standard MTOM		

The balloon must not be tethered in the vicinity of cumulonimbus activity.

8.73.2.15 BASKETS

7. Reasonable space must be provided for each occupant. Table 1 shows the maximum number of occupants for each basket type.

9. The balloon must not be flown without the nylon burner support rods in place.

TABLE 1: BASKET LIMITATIONS

Basket No.	Basket category	Envelope Size Range	Number of People with 2 Fuel Cylinders	Number of People with 3 Fuel Cylinders	Number of People with 4 Fuel Cylinders
1	E	42 -90	4	3	3
2	E	65 - 105	4	4	3
3	F	70 - 120	5	5	5
4	F	80 - 120	6	5	5
5	G	90 - 150	7	6	6
6	H	105 - 150	8	8	7
7	J	120 - 180	10	10	9
8	M	150 - 450	14	14	13
9	M	180 - 240	13	13	12
10	N	180 - 310	16	15	15
11	C	31 - 70	2	2	1
12	B	31 - 90	2	1	1
13	N	180 - 240	15	14	14
14	O	180 - 450	17	17	16
15	Q	240 - 450	24	23	22
16	Q	240 - 450	26	25	25
17	N	210 - 450	16	15	15
18	M	150 - 260	12	12	11
19	Q	400 - 450	26	26	26

NOTE: The applicable size range of envelopes includes the sizes given, e.g. 80 - 120 means any envelope in the range between 80,000 cu.ft. and 120,000 cu.ft.

8.73.2.18 EQUIPMENT INTERCHANGABILITY

1. The burners and baskets manufactured by LTL which may be used in combination with Cameron envelopes are listed in Section 8.73.9 of this supplement.

2. LTL Baskets may be used in conjunction with Cameron burners where the burners are fitted in compatible frames. A listing of compatible frames (additional to compatible LTL frames) is given in Table 9. An Assembly Check (SI 21), must be completed.

3. LTL Vortech Burners may be fitted to Cameron/ T&C burner frames where the frame has been fitted with a suitable crossbar (denoted by -6 (double), -7 (triple), -8 (quad) after the part number). An Assembly Check, (SI21) must be completed.

4. LTL Vortech burners may be fitted to LHABL burner frames. Double Vortech burners may replace double LHABL Jetstream burners, triple Vortech burners may replace triple LHABL Jetstream burners, and quad Vortech burners may replace quad Jetstream burners. An Assembly Check, (SI21) must be completed.

5. LHABL Jetstream burners may be fitted to LTL burner frames. Double Jetstream burners may replace double Vortech burners, triple Jetstream burners may replace triple Vortech burners, and quad Jetstream burners may replace quad Vortech burners. An Assembly Check, (SI21) must be completed.

8.73.3 EMERGENCY PROCEDURES

No Change

8.73.4 NORMAL PROCEDURES

8.73.4.2.2.1 Assembly of LTL foldable basket

Fold out the foldable sides. Lift the top frame and insert eight nylon rods into floor and top frame. Take care not to confuse base nylon rods with nylon rods for the burner.

Insert fuel cylinders into basket as required. Fasten and tighten straps to opposite corners of frame. Lift foldable sides up and fold the padded trim over the top frame and use Velcro to secure in place. Use Velcro tabs to secure sides to each other.

Secure fuel cylinders in basket by passing cylinder straps between the foldable sides and nylon basket rods, ensuring that the flying wires pass through the guides in the top burner frame.

Continue with assembly of basket as with normal Open basket.

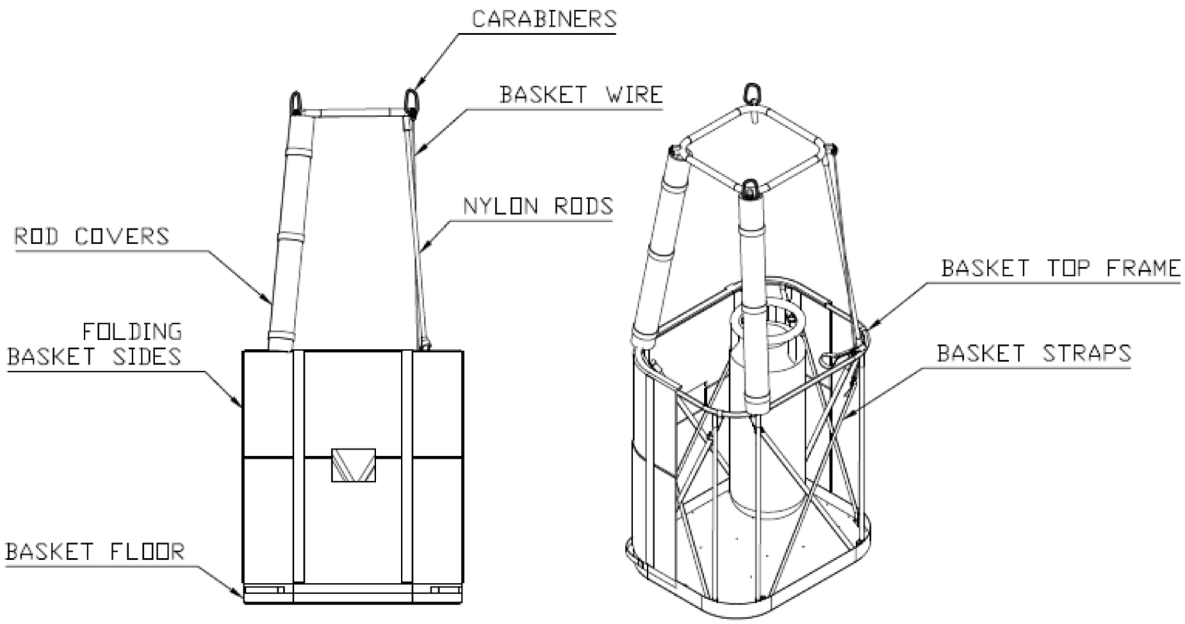

Fig 1: LTL Foldable Basket

8.73.5 WEIGHT CALCULATIONS

No Change

8.73.6 BALLOON SYSTEMS AND DESCRIPTION

8.73.6.3 Burner (Additional)

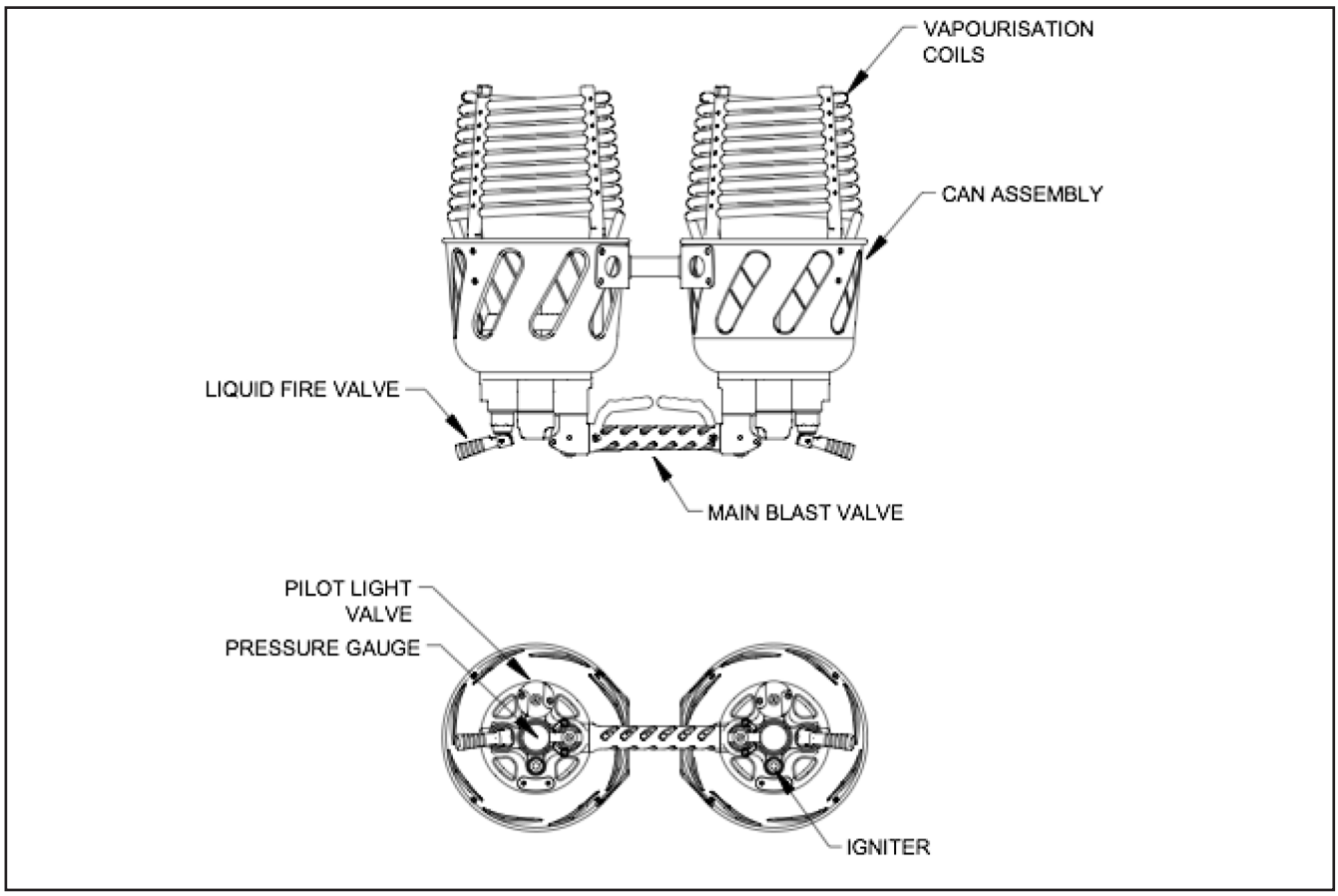

Fig 2: LTL Vortech Burner

8.73.7 BALLOON MAINTENANCE, HANDLING AND CARE

No Change

8.73.8 SUPPLEMENTS

No Change

8.73.9 EQUIPMENT LIST

TABLE 6: LTL BASKETS (ADDITIONAL)

Basket No.	Basket Size cm	Basket Description	Applicable Cylinders	Applicable Burner Frame
1	100 x 120	Open, Foldable	1a, 1, 2, 3	70 x 70 cm
2	110 x 125	Open	1a, 1, 2, 3	70 x 70 cm
3	110 x 150	Open	1a, 1, 2, 3	70 x 70 cm
4	110 x 160	Open	1a, 1, 2, 3	70 x 70 cm
5	125 x 160	Open	1a, 1, 2, 3	70 x 70 cm
6	125 x 190	Single-T	1a, 1, 2, 3	100 x 150 cm
7	125 x 225	Single-T	1a, 1, 2, 3	100 x 150 cm
8	140 x 275	Single-T	1a, 1, 2, 3	100 x 150 cm
9	152 x 240	Single-T	1a, 1, 2, 3	100 x 150 cm
10	152 x 280	Single-T	1a, 1, 2, 3	100 x 150 cm
11	80 x 100	Open, Foldable	1a, 1, 2, 3	70 x 70 cm
12	80 x 90	Open	1a, 1, 2, 3	70 x 70 cm
13	152 x 260	Double-T	1a, 1, 2, 3	100 x 150 cm
14	152 x 300	Double-T	1a, 1, 2, 3	100 x 150 cm
15	152 x 400	Double-T	1a, 1, 2, 3	100 x 250 cm
16	152 x 440	Double-T	1a, 1, 2, 3	100 x 250 cm
17	140 x 300	Double-T	1a, 1, 2, 3	100 x 150 cm
18	140 x 240	Single-T	1a, 1, 2, 3	100 x 150 cm
19	152 x 500	Double-T	1a, 1, 2, 3	100 x 250 cm

NOTES

1. For basket category and envelope size limitations see 7.73.2.15
2. The 100 x 150 cm burner frames used on single-T and double-T baskets are not interchangeable.
3. The basket dimensions refer to outside dimensions

TABLE 8: LTL BURNERS (ADDITIONAL)

Burner Category	Burner Model No.	Burner Description	Envelope Size Range
B	1	VORTECH Double	50 - 210
C	2	VORTECH Triple	180 - 310
D	3	VORTECH Quad	180 - 450

NOTES

1. The applicable size range of envelopes includes the sizes given, e.g. 80 - 120 means any envelope in the range between 80,000 cu.ft and 120,000 cu.ft.

TABLE 9: LINDSTRAND TECHNOLOGIES / LINDSTRAND HOT AIR BALLOONS / THUNDER AND COLT / CAMERON – COMPATIBLE BURNER FRAMES.

LTL Basket Number	Applicable LHABL Burner Frames	Applicable CAMERON Burner Frames
1, 2, 3, 4, 5, 11, 12	BA-100-A-001, BA-100-A-007, BA-100-A-200, BA-100-A-228, BA-150-A-001, BA-152-A-001, BA-153-A-001, BA-154-001, BA-156-A-002	CB2203, CB2224, CB2231, CB2278, CB2598, CB8805, SB8807, CB8810, CB8811 CB8820, CB8821, CB8864, CB6694, CB8902, CB8903, CQ2218

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