SUPPLEMENT 31

'LINDSTRAND' BASKETS, BURNERS AND CYLINDERS WITH ULTRAMAGIC ENVELOPES

31.1 GENERAL INFORMATION.

The information contained here in this document, supplements or supersedes the basic manual only in the areas listed. For limitations, procedures and performance information not contained in this supplement, consult the basic Ultramagic Flight Manual.

This supplement is issued to cover additional actions to be taken to safely and efficiently use Lindstrand baskets, burners and cylinders with Ultramagic envelopes.

31.2 LIMITATIONS

31.2.2 Meteorological Limitations

The balloon must not be flown in meteorological conditions which could give rise to erratic winds and gusts of 10 knots (5.1 m/s) above the mean wind speed.

31.2.5 Fuel

The fuel pressure must never exceed the safe working pressure of 15 bar (218 psi)

	Balloons < 340,000 ft³ (9630 m³)	Balloons > 340,000 ft³	Balloons >340,000 ft³ using Stratus burners
MAX fuel Pressure	15 bar (215 psi)	15 bar (215 psi)	15 bar (215 psi)
MIN fuel Pressure	3 bar (44 psi)	7 bar (102 psi)	5.5 bar (80 psi)

CAUTION: *Care should be exercised if the fuel pressure is below 5.5 bar (80 psi)*

31.2.15 Other manufacturers equipment

The burners and baskets manufactured by Lindstrand which may be used in combination with Ultramagic envelopes are listed in section 31.8

The equipment must be identifiable as an FAA type certified vehicle with the applicable Type Certificate Data Sheets B00010CH, B82EU and/or B87EU.

31.3 EMERGENCY PROCEDURES

31.3.2 Pilot Light Failure

31.3.2.1 Single burner unit – Substitute / Liquid Fire as Pilot Light

If a liquid fire which has a 90° ball valve is fitted to the burner, then this can be turned on and adjusted to give a I m (3 ft) high flame. This flame can then be used as the pilot light for the main burner until an emergency landing is completed. If the liquid fire valve is the toggle action type, then the toggle valve should be opened fully and the cylinder valve which is supplying the fuel should be adjusted until the resulting flame is 1.5 m (5 ft) in length. The alternative fuel system or burner should then be used to supply fuel to the main burner. In a double burner, cross-ignition will occur.

31.3.2.2 Substitute – Second Burner As Pilot Light

In a similar manner to using the liquid fire as a pilot light, in a single burner with a dual fuel system (the minimum requirement) or a double burner system, the "second" burner can be used as a pilot light for the first.

If the main blast valve for the burner is a ball valve action with no spring return system fitted, then the ball valve should be opened sufficiently to achieve a flame length of I m (3 ft). The flame should be ignited using a hand igniter such as matches or gas lighter. The other burner can then be used normally to achieve a controlled landing as soon as possible.

If the main blast valve for the burner is a toggle action type of valve, then the procedure is similar to that described above for the liqUid fire. The blast valve should be opened fully and the cylinder valve adjusted so that the resulting flame is I m (3 ft) in length. The other burner should be used as normal to achieve a landing.

WARNING - *In any of the above procedures in 31.3.2.1 and 31.3.2.2, which include a valve being half opened to achieve a low fuel flow rate, it should be noted that this procedure will cause cooling of the valve which is partially open. This cooling effect will eventually result in freezing of the valve and is not recommended for prolonged periods. The technique should only be used in an emergency and even then, a landing should be made as soon as possible.*

31.4 NORMAL PROCEDURES.

31.4.5.2 Rigging the basket and burner.

Lindstrand burner frames are similar to Ultramagic.
Assembly is therefore similar to that of an Ultramagic and the same checks should be carried out.

A single 5 Ton Lindstrand Karabiner (and the corresponding tether ring) may be used on UM envelopes of size 210 and over, when fitted with the appropriate flying wires and all Lindstrand Flight Manual limitations are met.

31.5 LOADING

No change

31.6 BALLOON AND SYSTEM DESCRIPTION

31.6.2.2 Burner and burner frame

Refer to applicable Lindstrand Flight Manual approved for use in the USA as listed on TCDS B00010CH, B82EU, B87EU.

31.6.2.3 Basket

Refer to applicable Lindstrand Flight Manual approved for use in the USA as listed on TCDS B00010CH, B82EU, B87EU.

31.6.2.4 Fuel Cylinders

Refer to applicable Lindstrand Flight Manual approved for use in the USA as listed on TCDS B00010CH, B82EU, B87EU.

31.7 BALLOON MAINTENANCE, HANDLING AND CARE

Refer to applicable Lindstrand Maintenance Manual approved for use in the USA as listed on TCDS B00010CH, B82EU, B87EU.

31.8 OTHER MANUFACTURERS EQUIPMENT.

31.8.3 (Add the table on next page)

LINDSTRAND
BASKETS , BURNERS and CYLINDERS

Basket No.	Basket Size (cm)	Type	Empty Mass (kg)	UM Envelope size range
01	110 x 115	Open	43	42 - 90
02	110 x 130	Open	57	56 - 105
03	110 x 155	Open	65	65 - 120
10	122 x 125	Open	67	105 - 120
11	122 x 165	Open	88	90 - 160
12	122 x 185	ST	117	90 - 160
13	122 x 205	ST	130	120 - 180
14	122 x 220	ST	138	120 - 180
15	122 x 260	DT	152	120 - 210
20	152 x 205	ST	150	150 -210
21	152 x 240	ST	175	180 - 250
22	152 x 270	ST	200	180 - 300
23	152 x 260	DT	230	180 - 250
24	152 x 300	DT	255	180 - 425
25	152 x 350	DT	302	180 - 425
26	152 x 390	DT	320	250 - 425
30	152 x 280	DT	285	180 - 300
31	140 x 270	DT	210	160 - 300
32	140 x 300	DT	230	180 - 425
33	140 x 390	DT	295	180 - 425
34	140 x 240	DT	186	120 - 250
35	140 x 240	ST	172	120 - 250
36	140 x 270	ST	196	100 - 425
	140 x 340	DT	257	180 - 425

Burner Nr.	Burner Type	Mass (kg)	UM Envelope size range
1	Jetstream Single	16	42 - 90
2	Jetstream Double	22	42 - 210
3	Jetstream Double + CLF	25	120 - 250
4	Jetstream Triple	31	120 - 250
5	Jetstream Triple + CLF	35	160 - 425
6	Jetstream Quad	42	180 - 425

Cylinder Type	Empty Mass (kg)	Fuel Capacity (kg)	Basket range
Worthington	14	20	All
V20	14	20	All
V30	18	30	All
V40	20	40	All
T30	10	30	All

Notes :

- Dimensions of the basket are external in the base.
- ST means Single Partition and DT Double Partition.
- UM envelope sizes are given in thousands of cubic feet, so 65 mean 65.000 ft³.

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