

Supplement 1 – Tethered Operation

1.1 General Information

This supplement is issued to cover additional actions to be taken to safely and efficiently tether fly an Ultramagic Hot air balloon.

It must not be confused with the balloon restraint techniques that precede a free flight, which are already described in the Flight Manual.

1.2 Limitations

The following table shows the surface wind speed limitations depending on envelope volume:

- Up to 120,000 ft³ (included): 15 kt (10 kt with passengers)
- Greater than 120,000 and up to 180,000 ft³ (incl.): 9 kt
- Greater than 180,000 and up to 275,000 ft³ (incl.): 5 kt
- Greater than 275,000 ft³: Calm (~1 kt)

An area of at least the radius of the height of the balloon plus the length of the tether line should be allowed for a good margin of safety.

1.3 Emergency Procedures

No change

1.4 Normal Procedures

Observe Figure 1 and proceed following the considerations below.

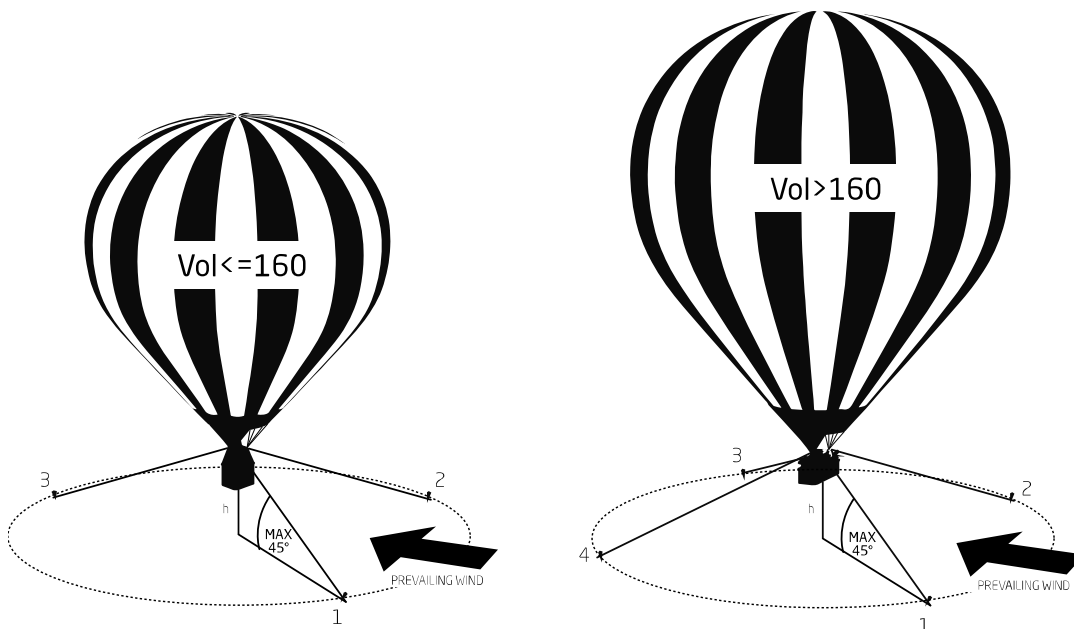
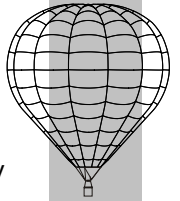
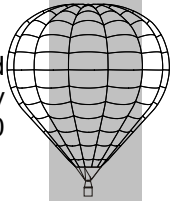


Figure 1

All equipment must be checked carefully before the flight.
Check all ropes and cords for absence of undue knots/entanglements.





Envelope sizes up to 160,000 ft³

The balloon must be attached, at least, by two ropes forming a V on the upwind side and an additional rope on the downwind side. Materials for tether must be supplied by ULTRAMAGIC (Ø14mm ropes min) or be clearly rated in the following way: minimum 4500 kg for ropes and minimum 3000 kg for karabiners (break strength).

Envelope sizes above 160,000 ft³

The balloon must be attached, at least, by two ropes forming a V on the upwind side and two more ropes on the downwind side. Materials for tether must be supplied by ULTRAMAGIC (Ø20mm ropes) or be clearly rated in the following way: minimum 6000 kg for ropes and minimum 4000 kg for karabiners (break strength).

The use of gear and materials showing signs of damage or significant wear must be avoided.

The tether lines should be connected to the karabiners rigging the envelope to the bottom end (either directly or using linking rings EM-01-0040) or, where present, to the free hole in the corner lugs of the burner frame. Refer to the figures on the Ultramagic Flight Manuals section 4.5.2.

WARNING: Bridles used for inflation restraints must not be used for tethering

WARNING: Quick-release devices must not be installed on tethering gear

NOTE: Local operational and/or license requirements on tethering may apply and must be adhered to

Check that the tether points are absolutely secure and that all karabiner gates are locked/secured.

The height to which the balloon is able to rise should be decreased if the wind increases, and ropes should never form an angle beyond 45° with the ground. Under no circumstance a height of 30m (100 ft) above ground can be exceeded – with regard to the basket floor –.

Tether flight must be terminated in presence of changing winds, unless a new clear wind direction is identified and the tether lines can be safely relocated accordingly.

During tether, pilot must infer that the loads applied to the tethering assembly are not excessive at anytime. To do so, pilot must have a mean to check the wind speed (e.g. a handheld anemometer, windsock, etc). Should the winds exceed the parameters from section 1.2, the tethered flight is to be terminated as soon as possible.

1.5 Loading

No change

1.6 Balloon and Systems Description

No change

1.7 Balloon Maintenance, Handling and Care

No change

1.8 Other Manufacturers Equipment

No change