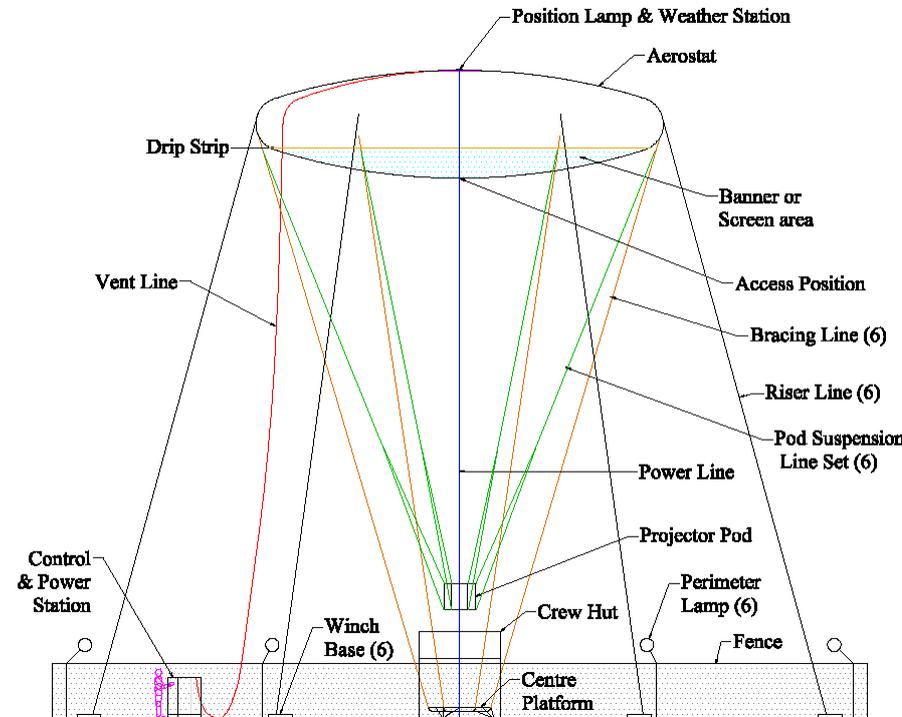


LS-LT15 V1

An Explanation

The LS-LT15 V1, as shown left below, is a low captured lenticular aerostat with multiple lines for mooring and restraint, allowing ascension under control from the ground to a maximum height of 20 m for light-show display and projection purposes as a braced static overhead aerial screen. It provides an attraction at events, seen from afar and viewed from the ground, which may be recovered to ground level for safe keeping. As a non-rigid fabric structure, it will be partially air inflated and pressure stabilised to maintain form, but with enough helium for displacement purposes, thus buoyed by the atmosphere to support its weight and tension restraint lines – preventing slackening against adverse wind loads.



LS-LT15 V1 – For Serial Production



LS-LT18-1
the prototype (Vikki)

Its Ø15 m aerostat minimises cost, improves utility and maximises effectiveness compared with an earlier Ø18 m prototype (Vikki – shown right above) tested 2010. The smaller serial production design incorporates lessons learned to improve overall performance and ease of use.

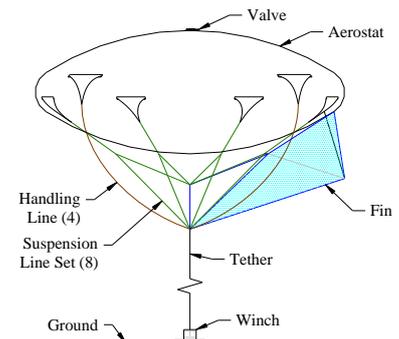
Projection onto the aerostat’s lower surface (a large flat disk area) is undertaken with systems either on a central ground platform or suspended in a pod below (as desired) the latter needing additional helium for increased displacement and thus greater buoyancy to carry the extra weight. Naturally, the aerostat also may carry area lighting and other systems (e.g., cameras or electronic devices) for further purposes.

The concept stems from mooring facilities of similar lenticular aerostats for omni-directional airships (see website below) using the same ground arrangements. This enables basic concepts to be proven and to use for crew training before attempting free flight. The LS-LT15 V1 thus was arranged as a useful product for just ground use (minimising cost).

It also may be used as a big parasol or shelter (i.e., a large floating roof) with a stage below and can be fitted with a skirt for further storm protection or to convert it into a covered shelter (like a hangar or marquee) for other purposes.

Similar Elevators (tethered aerostats, as shown right) also are planned with a single central tether line to hoist a variety of systems to higher altitudes for long duration surveillance and data capture over fixed locations, providing cost effective persistent aerial coverage of wide areas. This uses the same ground arrangements, but with an additional central winch. **Note:** The fin is notional, as it may not be needed.

The V1 version thus is a relatively low height ground-fixed multi-functional arrangement that may be used for various purposes.



LS-LT15 V2

LS-LT15 V1

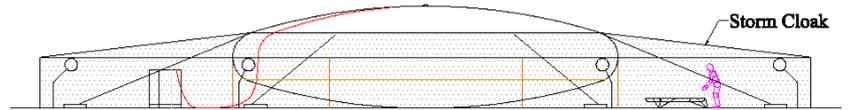
An Explanation



The LS-LT18 (Vikki) Prototype – Securely Held Aloft in Private Operation 2010.

NB: Vikki still is operable as a training aid or private demonstrator, but not for outdoor public events.

If storms are forecast, then the central platform & pod will be moved aside, the ground sheet re-installed and the aerostat winched down to the ground, minimising exposure, as illustrated above.



Storm protection then is completed by reducing the height of perimeter lights and other tall installations, followed by installation of a storm cloak (a fabric disk) over the aerostat to prevent wind from flowing beneath it. Like the Shelter Skirt, this is attached to the top of the fence.

The fence, as well as being needed for security of the arrangements, thus is an essential part of the storm protection system – designed to prevent wind passage across the site (so not open, although it may be optically transparent) and to sustain the impact of wind-blown debris, stopping it from hitting the aerostat.

The arrangements are based on known lighter-than-air (LTA) non-rigid principles using soft pressure-stabilised or tensioned structures with ordinary fabric technology methods that work without much risk of harm and are relatively easy/cheap to produce. The lenticular (discus) aerostat form, like a flying saucer, is an interesting shape (fascinating for people) that helps to minimise aerodynamic drag in a regular way, which is omni-directional. It thus can be held in a fixed position without weathervane action. As a gas container, the aerostat also has better volumetric efficiency than traditional unidirectional aerostats (so smaller) and, from vertical axis symmetry, can be made with far fewer different (so standardised) panels – reducing the number of templates (thus also cost and time) needed for design and manufacture.

Thin film photovoltaic solar panels also may be integrated or installed on the aerostat's upper surface (ideal for this) to provide power aloft without an electrical umbilical line from the ground. Naturally, solar panels also may be integrated on the shelter skirt and fence areas facing the sun.

The LS-LT15 V1 arrangements also may be used with drones and model airships to enhance utility and provide further compatible displays in integrated ways with the projected effects, which naturally also includes sound. Indeed, the aerostat is ideal for pop concerts. Drones (perhaps launched from stations atop) and other R/C models with video facilities thus may interact with the projection and sound systems to enable real-time displays of scenes around the event location. Arrangements to charge drone and other R/C models' batteries also would be provided. No doubt, event security would be enhanced by these arrangements enabling the public to enjoy the show without fear from those who would harm them.

It will be seen in the photographs that the prototype was installed and operated successfully within a private Victorian walled garden. Indeed, as a large parasol or shelter facility, the new series version may be installed in other gardens or places with enough flat level space for it (not excessive). Operators thus may setup to offer services with it for both private and public purposes in similar ways to aircraft.

The LS-LT15 V1 therefore is viewed as a marketable facility that, together with a range of extras and special systems, may be packaged and used for various purposes, but that will need trained crew and procedures for safe operation plus finance to bring it all about. For further information or interest to support further development and enable the business please contact us via the details below. Development will be as a collaborative venture with previous players (as for Vikki) and new partners interested to make it successful.