

The Racer – only by Ultramagic

The world's leading competition balloon



In 1996 Ultramagic made a giant step forward in the world of competition ballooning. **The Racer** was born.



This was the first time that a balloon had been designed, developed and produced especially for the demanding requirements of balloon competition. It was designed in close collaboration with Uwe Schneider a world top class competitor.

The goal was to produce a balloon with such a shape so as to perform the maximum rate of ascent and descent whilst avoiding deformation of the envelope, thereby improving the precision on approaching the target. The shape still had to be pleasing to the eye and look like a beautiful balloon. Safety was also an important factor in the design equation with clear windows and Ultralast fabric on the top of the balloon being part of the standard specification. The final design and shape was the result of considerable painstaking development work with a great deal of testing and then analysing precise flight data. Many test hours were logged both by Uwe Schneider as well as Josep and Carles Llado Costa who all fly competition with a passion.

The result of all this development work was that the goal requirements were achieved with tremendous success. Consequently **The Racer** is now recognised by most of the worlds top competition pilots as the only balloon to compete. Also its pleasant shape became an instant success with balloon sponsors.

The Racer has been produced so far in 3 sizes to suit all pilot and competition task requirements. These sizes are 56, 65 and 77,000 cu ft.

To date well over 100 Racers have been delivered to competition pilots world wide to countries as listed below.



- | | |
|-------------|------------|
| Argentina | Austria |
| Belgium | France |
| Germany | Holland |
| Hungary | Japan |
| Lithuania | Latvia |
| Portugal | Luxembourg |
| Spain | Slovakia |
| Switzerland | Sweden |
| USA | UK |



Since its introduction **The Racer** has consistently been successful in the hands of the world's best competition pilots in major championships. A sample of championships that have been won by pilots flying Racers over the past few years are listed below.

- World Championship –
(Racers 1,2 & 3)
- World Air games – (Racers
First 6 places)
- European Championship
- Spanish National
Championship
- German National
Championship
- UK National Championship
- Japanese National
Championship
- Japan – Honda Grand Prix
- World Honda Grand Prix
- French National
Championship
- Swedish National
Championship
- Dutch National
Championship
- Hungarian National
Championship
- Belgium National
Championship
- Argentina National
Championship



The first page of the current World Ranking List for Competition Pilots has over 50% of the pilots now flying the Ultramagic **Racer**. See Below

Rank	Name	Country	--
1	Uwe Schneider	Germany	Racer
2	David Bareford (World Champion 2002)	UK	Racer
3	William Arras	USA	-
4	Masahiko Fujita	Japan	Racer
5	Joe Heartsill	USA	Racer
6	Crispin Williams	UK	-
7	Mamoru Endo	Japan	Racer
8	Janne Balkedal	Sweden	Racer
9	Mathijs De Bruijn	Netherlands	-
10	Valeri Machnorylov	Lithuania	-
11	Steven Jones	USA	Racer
12	Josep Maria LLado Costa	Spain	Racer
13	Michel Leblanc	France	Racer
14	Paul Gibbs	Australia	-
15	Rubens Kalousdian	Brazil	-
16	Henk Broeders	Netherlands	-
17	Tomoyuki Asano	Japan	Racer
18	Francois Messines	France	-
19	Johny Petrehn	USA	-
20	Zoltan Nemeth	Hungary	Racer
21	Juraj Brezan	Slovakia	Racer
22	Lindsay Muir	UK	-
23	Sergey Byelorusov	Ukraine	-
24	Oliver Bleikertz	Germany	Racer



- The Racer Story - by Uwe Schneider -

Before Uwe Schneider worked on The Racer development with Ultramagic he flew a Thunder 65 series 1 because he liked the slim shape. Here is a part of his letter in his words explaining some of the development and test work which he was involved with.

I flew the most slimline, because in my experiments I found out, that not the shape nor the diameter of the envelope have a big influence on the climb and descend rate of a balloon but the height of the envelope. We sat down at the design computer and Josep stretched their standard 65 by 5%. It was not much difference. He did 10%, then we skipped 15 and stretched it by 20%. Then he reduced the volume to get back to a 65 and put one image on top of the other. The result was 2 m less in diameter and almost 4 m more in height. I told them that this was a shape I would try to test and they built it. I flew it for the 1st time at the preworlds in Japan. The "racer" performed very good in climb and descend. At the beginning, coming from a "normal" shaped balloon I felt I needed more concentration to fly it but soon I realised that it was showing exactly the same response as a normal balloon of the same shape. The only difference was the rate of climb and descend. It was just 30% more what I read on the instrument, but the interval of burning to keep it steady in the air as well as the length of burning to recover it after a while not heating was almost the same. So I told all pilots testing it not to look on the instrument but just flying it by the feeling, that helped. Of course, flying it level just above the ground requires a little bit more concentration, but I got used to it after 1 or 2 flights.

I developed a testing method for the performance of balloons with an electronic instrument including a barograph. After a flight I downloaded that data and evaluated it. There were several data: The max. variometer reading which was usually far higher than all other (so I didn't use it). Then on the variograph there were some peaks in the rate of climb and descend rate. I got this as an "instant" value. Then I went to the barograph which has a minimum time scale of 1 minute. So I took the altitudes at the crossing of the 1 minute bars and divided the difference by 60 getting the meters per second for a steady climb or descend of 60 seconds. The last measurement for me is the one I use to evaluate envelopes. I tested all balloons since I fly the racer and have quite a useful list. In addition I brought the balloon into a controlled cold descend from high altitude (4 m/s respectively max. descend rate with envelope in full shape). When crossing a round number on the altimeter I switched on one burner and left it running until the variometer went to zero descend. That "altitude difference necessary to recover from cold descend with one burner" is a value of comparison of burners as well as for envelopes.

After having tested the racer 20% i asked UM to build a 25% in order to see if it would be even more faster or if the "bottle effect" would increase i.e. the balloon will spin at higher climb and descend speeds and the mouth will close at high descend rates. The result was that the racer 25 was showing almost the same figures as the racer 20. For me this was an indication that with the "shot" of 20% we almost hit the optimum which maybe in between 20 and 25 and afterwards (30%) it will decrease.



As we can see from the report **The Racer** can be flown by feel. That special feeling when a balloon is fun to fly with high performance combined with safety. The stability of the envelope at greater ascent and descent speeds can enable a more precise approach on targets. However we must always remember that it is the skill and experience of the pilot that ultimately matters. The balloon is just the tool but in the case of **The Racer** a very special tool – A formula 1 balloon.

Where **The Racer** is different to a formula 1 car is that it can be enjoyed by serious competition pilots as well as those who want to learn to compete or just fly for fun. One can also enjoy the beautiful shape and feel confident that if a sponsor is possible then they also will be very pleased with the shape and smooth surface.

Performance, Safety and A Great Shape - *The Racer – only by Ultramagic*