



Issue Number 28

November /December 2008

Dear Friends,

December is with us and I was determined to deliver a newsletter even if it only had a "dreaded" review of the year. The main reason I wanted to publish was to remind you all to get along to the Icicle Balloon Meet to see the newly awaited Cameron hopper. However events have a way of surprising all of us and literally today (the 17th), I have spoken to Tim Revell of Ultramagic who told me about a new material that has enabled Mark Shemilt to break the Ax2 world record in G-CFMR his Ultramagic V-14.



Mark Shemilt in record breaking action in G-CFMR his Ultramagic V-14. (Jpeg by Mark Shemilt)

With this fabric also to be launched at the Icicle, there are now double the reasons to attend. The review of the year is still here though! Let me also say Merry Xmas to you all and remind you that by the time of the next newsletter the forum will be five years young!

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In this 28th edition I have for your reading the following selection of subjects;

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 - The Editorial review of the year
 - New Member Mark Shemilt sets an Ax2 world record. - Ideas and what happened in his own words.
3. **Updates for the Newsletter/Website/ Forum talk**
 - Form talk about just how good Sam Canders new Hopper is- by those who know.
4. **Homebuilt Section** -
 - "Little Rhody" the new 28K homebuilt of Sam Canders
5. **Gallery Pages**- Another mixed choice of hoppers selected by your editor for inclusion including some new balloons.
- 6, **Manufacturer News / Events / Updates**
 - Mondial Air Balloons Lorraine News (Metz).
- 7, **For Sale /Wanted Section**
- 8, **Last and not least.**

1, Ed Speak by Steve Roake - New Technologies move fast

The most amazing thing for me this year is that early on we had Patrick Duvoisin pulverising the Ax-02 world record with a staggering time of 6hrs and 30mins. As an engineer with my background, I understand how critical small amounts shaved off here and there all up to a leap forward in technology, and yet, less than eleven months later, Mark Shemilt rolls in with a new benchmark for the same category one full hour extended. The most amazing thing for me is the technological leap forward we are witnessing with fabric materials, and the great thing from a selfish Hopper fan perspective, is that All the leading lights in furthering the limits are forum members. The sheer fact that Mark did the record at only -5deg Celsius shows the potential for the record to be pushed further forward and the great thing with all of the attempters is that they all recognise the need to show what they have done as soon as it is achieved. Speaking with him only a few nights ago, as with Pauline Baker/Malcolm White, and Patrick Duvoisin, you sense the sheer enthusiasm for the project. Mark spoke of a desire to create a small hopper that could be reduced down to fit into a rucksack for transportation. Imagine taking your flying equipment to an event in this format. Lightweight plastic based fuel tanks and ultralight fabrics with miniaturised burners could revolutionise the idea of ultralight flying for all. Bring it on!

Steve Roake

2, The Features Section

Greg Winker reports from Prosser Washington.



Greg Winker at play in Prosser-(jpeg by Greg Winker)

With a big apology from me for forgetting to post this story in the last month's newsletter, Greg Winker sent in three jpegs from an event he visited in Prosser- Washington State in September saying that he had a brilliant time .See for yourself.



Greg called this shot, "The whole Gang"!-jpeg by Greg Winker

The whole event is run annually by volunteers with up to about 30 balloons taking part and whilst nestled in the Horse heaven Hills, the entrants take the opportunity to splash and dash in the Yakima River as you can see from the jpegs. More details on this fine rally at <http://www.prosserballoonrally.org>



Greg comments that this was the first flight of the "smash lab" balloon (very nice) and it looked a great weekend for flying-Ed!

Editorial review of the year

I think 2008 will go down as a pretty good year for hopping. When you think what has gone on during the last twelve months, the popularity of cloudhoppers seems to be continually growing which is great. Let's add some data to that statement and you'll see what I mean.

- January- news of Patrick Duvoisin increasing the AX-1 world record by recording at time of 6hrs30mins and 38seconds.
- March- 4th Solo Meet festival continues to flourish
- May -XLTA 4 sees record numbers of attendees
- July- Kent Crouch goes cluster ballooning 230miles
- October- the OMM sees 20plus hoppers airborne at one time.
- Barolo International OMM is held for 2nd consecutive year
- December - Mark Shemilt moves Ax2 world record onto 7hours 30mins.

Not bad for a sport with little or no publicity I'd say. The membership continues to grow with now all of the intrepid challengers for world records as members; we should see some fresh attempts shortly to move further the goalposts in 2009.

Mark Shemilt on his Hopper ideas and setting a new record

I love the technical and developmental side of small balloons and for a long time have felt that just about all balloon equipment is too heavy. A duo airchair when fuelled still takes 4 people to lift the bottom end! Having set some British records with stock balloon equipment, I wanted to have a go for a world record and felt ax2 was a class that appealed.

It was obvious from the start that twin skin for the envelope was the way to go, despite an increase in weight. Both

Pierrick Duvoisin and Steve Griffin had favoured Mylar, and yet Rich Jaworki's woven fabric ax4 twin skin had returned awesome duration. I didn't fancy flying under a foil balloon held together with tape with its low tear resistance, so looked into lightweight woven fabrics (weighing as little as 23gsm) and even the possibility of a solar balloon like the Michaelis balloon of Julian Nott (translucent outer envelope and opaque inner). However small balloons have very little core temperature and I felt that the advantages of a solar balloon would be lost on a 400m³ or 14000cu ft.



Mark over Morzine in G-CFMR-(jpeg M. Shemilt)

Meanwhile Michael Boelling and his father in Brigachtal, Germany were making me a miniature double

burner, using their extensive knowledge of building model balloons. We also developed a paraffin burner based on the sheen weedkille burner, which worked well when preheated, but became a flamethrower when it cooled, so I decided to stick with good old propane. Michael suggested I look into a new insulated balloon fabric that had been developed by Alex Borman of Aeroix and Berlin University during their HEIDAS project, or steam powered balloon. This fabric termed 'Aerofabrix' is essentially two layers of 45gsm silver woven ripstop separated by flock dots that serve to keep the 2 fabrics apart by a fractional distance. I gathered that much research had gone into the optimal separation distance between the twin skins (without touching) and in its reflective properties. The other attraction of this fabric was that it is relatively robust; the Festo 105 has already racked up 150hrs. Ultramagic have the sole rights to this fabric and after a trip to Igualada and a chance to fly their aerofabrix duo I commissioned my small envelope. However all my queries into the fabric's fuel consumption in such a small envelope were met with shrugged shoulders, there were simply too many variables. Along with Paul Dickinson and Joseph Llado of Ultramagic we designed a sphere on cone design, with a simple Velcro rip (parachutes tend to leak on this size) and the smallest mouth we could get away with to retain heat. The balloon had stub load tapes and no horizontal tapes to save weight.

However there are two major disadvantages of aerofabrix. Firstly its weight at 90gsm is the same as hyperlast and I was gambling that if I used this fabric that its miserly fuel consumption would be worth the extra weight. Secondly the fabric is eye wateringly expensive, ostensibly in order to recover the developmental costs.

The Boelling model burner was pure genius. Using miniature valves and fittings, and a separate pilot light feed fed from a 1 litre Ali bottle. My fuel tanks were small composite bottles which are available all over Europe in different guises (check out butagaz' viseo bottle). I simply removed the outer plastic casing and then shaved all extraneous fibreglass and

resealed with resin, until I had a 20 litre tank weighing 2kg empty. Don't try this at home folks! We pressure tested them to 20 bar but undoubtedly had compromised their integrity. My harness was a lightweight paragliding number and the plan was to drop tanks as I used them, further increasing performance.

Probably the hardest part of any serious record attempt is the necessity of the pilot having to lose weight to become what Hempelman Adams calls an anorexic whippet! My weight normally is 80kg and I wanted to get down to 65kg (still a long way off Pauline Baker's petite 45kg). I managed 67kg by living off cups of tea, but with all the warm weather gear, I added another 4kg.



Preparing to go in G-CFMR-(jpeg M. Shemilt)

I should add at this point that for a record attempt, there is also a lot of paperwork and permissions that have to be obtained (especially from the NAC of the country in which the record is to be attempted). Any homebuilt/historical or record balloon under new EASA rules is eligible to be listed as Annex 2, which as long as it is UK registered and insured, makes it exempt from a permit to fly or a certificate of airworthiness, which is one hell of a concession and I would have thought a boost for homebuilding.

The last annoyingly intangible facet of balloon record breaking is of course the weather and temperature. I elected to trial the balloon in the French Alps, near Morzine, where I have spent the last 4 years renovating a barn and an area I have ballooned many times and although at 1000m, occasionally very cold. It became apparent on its maiden flight from St Jean D'Aulps in a balmy 5 degrees that the balloon fuel consumption was incredible and very competitive. Sue Carden, a BBAC observer came out the next week, with my trusty crew, we met at 6am on Sunday 7th December in the field below the house in a disappointing minus 5 degrees Celsius. My first set back was that my thermocouple wire opened the vent when we stood the balloon up, so I removed it thereby denying myself the ability to monitor envelope temperature at take off. In light of the decidedly uncompetitive ambient temperature I elected to carry less fuel than planned. As I launched, I was glad to see the first glimmers of sunlight, and remembered Don Cameron's advice that a cold but sunny day was optimal duration record breaking conditions. Apparently any flying in the dark will gobble up fuel. My fuel tank drops passed without event and despite adiabatic winds pulling me up forested slopes around Morzine, I felt unconcerned as I knew this balloon had the legs for a long flight. Possibly the scariest bit of the flight was when my pilot lights went out and I discovered my 1 litre vapour tank was empty after 5 hours airborne (this was bizarre as we had previously run the pilot lights for a good 10 hours previously on this tank), perhaps I had them turned up excessively. Because I was

over trees my trusty 3 euro gas match came into its own, acting as a pilot light to each burn, which by now was about once a minute. Never in my life have I held onto something so tightly! As I passed the ax2 existing record mark, I was aware my last tank was getting light and as I reached the ax3 record at 7hrs 30mins (sadly I needed to exceed this by 1% or 7 mins to beat it) it became clear that the burner note was changing and I landed straight away in the town centre of Morzine.



Clearly this envelope fabric is something special and I feel really to do it Justice I should take it somewhere colder and carry more fuel. I now want to try a distance record in this balloon which stands at about 85 miles. The Alps are not a place for distance records in a hopper, the one time I experienced some wind shear was hair raising and deflected the flame burning some mouth panels. You feel very

exposed in a harness under a balloon, so small that you can see the stitching at the top of the balloon whilst you get sucked up 3000m summits. Last summer I also built a 400m³ envelope out of silver metalized ripstop, using a deramacourt design spec I gleaned from Steve Griffin's website ('Flymetothemoon'), I bought the coated rip stop and load tapes and Kevlar cord off e bay and like my aerofabrix balloon, it has minimal load tapes. From the attached photos, my homebuilt envelope is discernable by its duller silver colour and black load tapes; she is still quite bulky and weighs in at 20kg. My intention now is to build a 'travel balloon' with some spinnaker ripstop of 32gsm I have bought from a yacht suppliers, theoretically it should be possible to build a 14kg 400m³ envelope, which I could fly in the mountains and wherever I land, pack the whole thing in a rucksack and walk home with a couple of composite tanks.

I strongly believe that in the future, we are going to see advances in weight saving and fuel economies in ballooning. For me, I am looking forward to putting on a bit of weight this Christmas!

Mark Shemilt

Such is the camaraderie in our sport that on the very same day I received this from Malcolm White.

Congratulations to Mark Shemilt, UK, who recently broke the General AX-2 duration record using a 14 made out of the Festo/Ultramagic Aerofabrix material. I don't have the claimed duration, but it was around 7.5 hours, missing out on the AX3 duration record because he hadn't quite increased the 7h 27m by the requisite 1%. The flight took place around Morzine, France. More details should be available once the claim has been processed by the FAI. That's a very good performance for such a heavy, lardy fabric LOL. Don't be too surprised if Pierrick Duvoisin shows some interest in his (soon to be

ex-) AX2 record, particularly as he was only an hour short, in an AX1!!

3, Updates to the website / Newsletter/ Forum Topics

Most of Decembers Forum talk has focussed on the first hopper design built by Sam Candors who has done a terrific job which he fitted in between resupplying the troops in his C-130J Hercules day job.(Now your Ed is jealous! Not only does Sam fly for a living but he also likes Long Eze's, your Ed being a big fan of any Rutan / Scaled project knowing some folks who work there). Respected members of the list have given it the thumbs up, and Sam is thinking of attending XLTA 5 with it(I hope to see you there too-Ed). So let's take a look at it.

Homebuilt section

First spotted by David Tanzer on the photo pages, Sam Candors has been very unassuming about his first design.



Talk about having all the toys! -Sam shows great classic taste!



"Little Rhody "in June 2008-jpeg Sam Candors

This very striking 28,000 ft hopper is married to a Lindstrand bottom end. The two symbols on each side of the envelope are attributed to Sam's squadron in the Air force (143rd Airlift) which are based in North Kingsdown Rhode Island which isn't too far from Sam's home in Providence. No idea how long the project took but judging by the quality of finish, it didn't matter. The bottom end appears to be the latest Mark three Lindstrand bottom end complete with wheels and jpegs in the files section show that Klein fans have been used at some stage. The envelope

weighs in at 70lbs or 31.82kgs and whilst Sam has been away, he has graciously let his friends fly the craft.

5, Gallery Pages.

This section is the Editor's choice of new and older jpegs. Just two but what a nice balloons.



Seen here on its test inflation on 20th November 1997, G-CFPS Sky 25-16, c/n 075 was owned by Bill Brogan in Austria but never went on the OE- register because at that time Austria only registered Baskets! .Expect it to be for sale soon from Zebedee balloon services (jpeg by Mel Kirby -Additional info from Bernie Williams).



G-CFRF, Brand new LBL31A ,c/n 1232 for Tony Attwood and the RAF Halton Balloon Team.(jpeg thanks to Lindstrand balloons)

6. Manufacturer News / Events / Updates



The Bi annual festival Mondial Air Balloons of Lorraine, otherwise known as Metz is now taking on line bookings for the 2009 event. Dates are from 24th July until 2nd August inclusive and having checked with the very helpful Aline Dufour, I can confirm that hoppers are once again allowed as a second balloon included in the registration costs. The organisers are keen to promote the hoppers with a planned flyout on the Saturday 25th evening just for us to show off to the crowd. I have tried to explain that we may be curtailed by the heat and suggested a morning line-up but to no avail. So what I plan to suggest to anyone who wants to do it is that we do our own on the Wednesday morning as an addition like last year.

For online registration use the link below;

<http://www.pilat-re-de-rozier.com/>



As you all know by now, Colin Wolstenholme's "Favourite Project", the next Cameron Hopper will be on display at the Icicle Exhibition at the Elcot place Hotel. Subject to the promised jpegs arriving, I hope to review it next month, but already we know of Gimballled burner frame and lightweight material usage to improve takeoff weight. Also on show from the Bristol folks will be a lightweight system with collapsible basket and a Concept 50 envelope for under £10K. This may be of interest to some for use with a duo chariot where weight isn't an issue, so whilst that kit is sold with two tanks I will endeavour to glean weight and price for the envelope only. It may only suit the

fairies but being larger I have pushed Cameron to do a Concept 40 or 42 for hoppers but so far to no joy, but never say never.



Fresh from the success of Mark Shemilt's joy with G-CFMR the Ultramagic V-14, the Team of Tim and Hillary Revel will officially launch the "Aerofabrix" material alongside their current range of stock nylons. I am excited to see what is potentially another leap into the future of our sport in terms of material development. This is where all manufacturers are now trying to seek an advantage and bodes well for longevity of fabrics and lightening of weights.

7, For Sale /Wanted section

No Second hand equipment currently notified for sale, not to say that previously notified items have been sold because I have no knowledge of any successful purchases recently.

However, amongst potential items coming Next month is a Cameron 3hp hopper fan, potentially available from late January. One owner from new used less than 9hours so still mint condition. Purchased February 2006. If you are interested in this item then as and when it becomes available if you let me know of your interest I will pass it on to the seller. Looking for £575. Email as ever steve.roake@ntlworld.com

And Finally

It only remains for me to wish you all a great Christmas vacation and a "Hopping" good new year. Thanks to all those who support both the forum and the newsletter with their time and

assistance. Keep up the support and let's celebrate 5 years of the forum next month. Items for inclusion to the usual address please and come on let's have some Home building project news please Santa!

Membership is currently a healthy 377 members and still rising. All articles for inclusion in future issues will be gratefully received by your editor. Please forward them to steve.roake@ntlworld.com and feedback good, bad or indifferent is always welcome. Views aired by contributors may not be those of the Editor

Safe flying Steve Roake.

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