



Issue Number 19

September 2007

Hello People,

Another month is over and after the euphoria of Metz, reality has struck home particularly around the area I live where we have had to contend with an Ongoing outbreak of Foot and mouth disease, and the large areas of cordoned off land that is associated with it and therefore the impact on flying. I take a pragmatic approach to all this and having had such great flying in France, wasn't bothered about flying (to the extent that I haven't done any since Metz), but have been to a couple of events and returned to crewing for others. It is difficult for farmers in these conditions and I'm glad to say that the pilots who live in my vicinity have all acted responsibly and stayed on the ground even though the weather has been particularly favourable for flying.

What it does highlight is how important Metz was to the flying season and thank goodness we all got some great flying completed. Further to this, Blue Tongue disease has infiltrated East Anglia and large swathes of Suffolk are now cordoned off with no likelihood of further flying in this region in the near future.

Whilst writing this section of the newsletter, we have received news that Sarah Lyth has unfortunately got to sell her Duo Chariot due to circumstances beyond her control and ill health. This is a very unfortunate position for Sarah who is a very keen pilot in training and whilst I would say that the system is one of the newer Cameron Bottom ends, (please see the

advertisement in this months magazine), should you contact her about buying it, please remember that it has been valued at this price for her by others, and this lady could do with the money to help her current situation so please be considerate. Many thanks!



Another fine "group" shot from Metz thanks to Graham Bell.

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1, Ed Speak by Steve Roake - Concerted Continued Efforts provide results.

The thing about Metz this year, after all said and done, was that the efforts were worth the rewards. Photos like the one above don't really express the feelings felt by those who took part on that launch, but give a good impression of what is possible with some effort by all. I am very pleased to see that the concerted efforts of all on the forum are getting a similar mass launch happening at Albuquerque with most of the thanks to John Goddard who seems to have assumed responsibility for coordinating the event. Please people, record it for me with your jpegs and your words and send it in for inclusion in the Newsletter for all those of us who can't get there. Same deal with the OMM in Italy, we all want to see the good times you enjoy and for those who are UK based in October, we have an event at Kelmarsh Hall thanks largely to Colin Wolstenhome at Cameron Balloons who has worked out all the necessary details. Look to the forum for the details during the week leading up to the 12th October for confirmation.

2, The Features Section -

- Greg Winker -Building a (Tetrahedron) Hopper Part 5

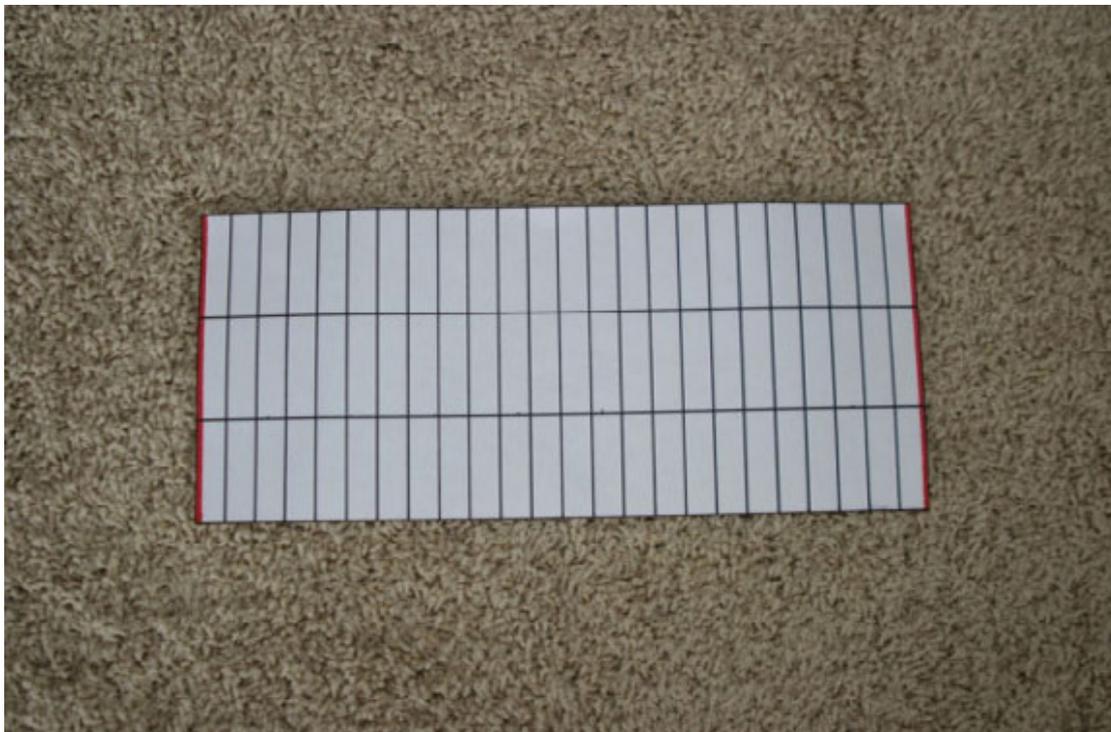
It's been a while since the last installment. That's due to slow progress finishing off the envelope, some traveling and the opening of flying season in Seattle. I've got things back on track now and you can expect the remaining installments to come regularly.

Part 5 – Finishing Off the Envelope

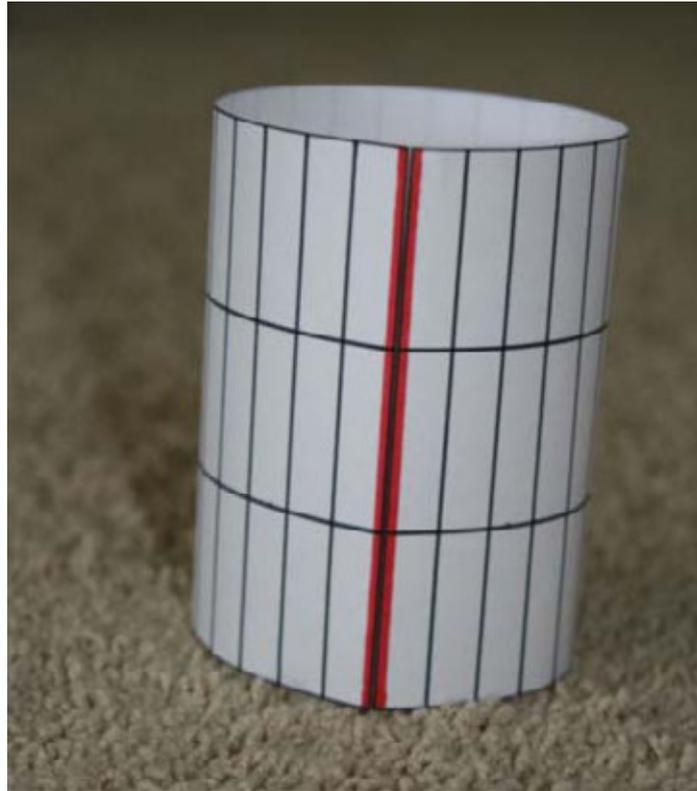
Now we get to the challenging part. All those nifty details we dreamed up during the design phase have to be successfully fabricated into the balloon. In Part 5 we'll focus on forming the tetrahedron, adding the vent and installing the throat. Let's tackle these one at a time.

Forming the tetrahedron

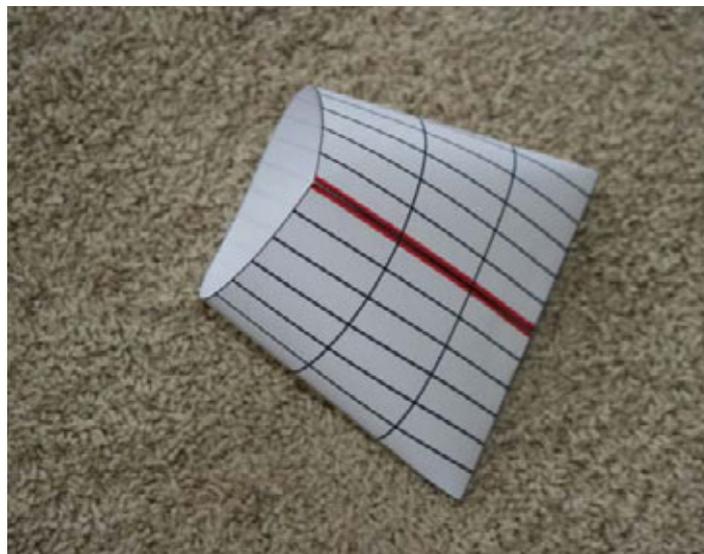
Part 4 left off at the point where I had a large rectangle of fabric approximately 120 feet by 52 feet. To turn this into a completed tetrahedron takes just three seams. It's much easier to show how this is done than to describe it, so here we go.



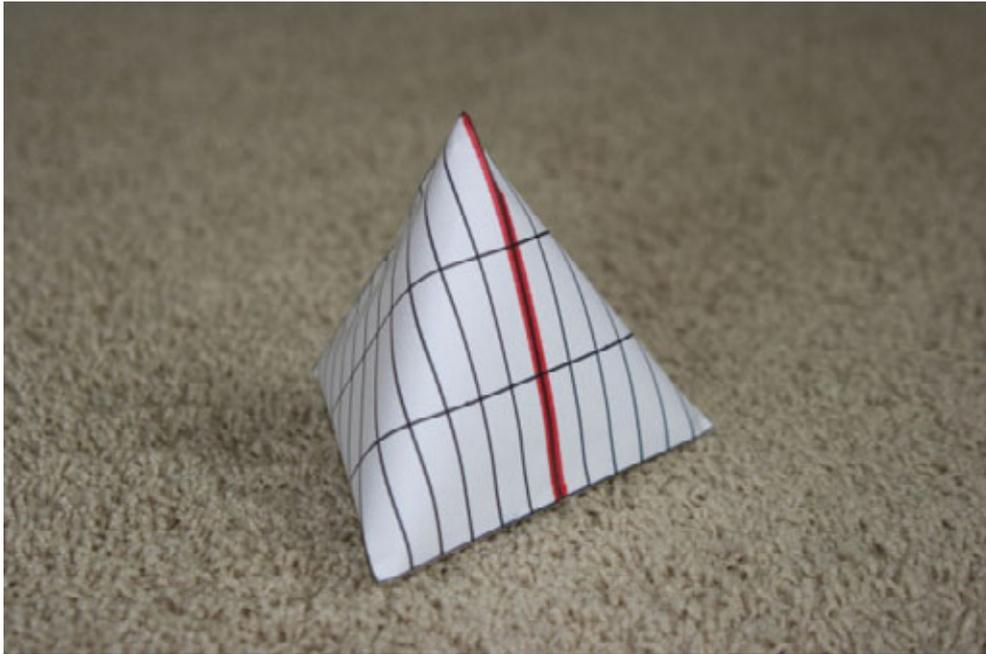
The “ground tarp”



Seam #1 – This seam turns the rectangle into a cylinder.



Seam #2 – Sew one end of the cylinder shut, so the fabric resembles a pillow case. I've decided to include a piece of webbing in this seam to provide some structural integrity. To make sure the color scheme turns out the way I want, I had to make sure the end point of the seam was in the right place.



Seam #3 – Beginning at the mid-point of seam two, follow this gore to the open end of the pillowcase. This is the end point of seam 3. Similar to seam #2, add a piece of webbing to the seam for integrity.

And viola, a completed tetrahedron.

Time to form tetrahedron – 5.5 hours

Adding the deflation panel

During the design phase, I envisioned installing a circular Velcro top. For the newcomers, this was the time honored way of making a deflation panel in the early '70's. Raven pioneered this style of deflation panel. Western used it. Cameron used it. And when the new kids on the block came along – Thunder – they used it too.

My primary reason for choosing this style of deflation panel was not nostalgia, but ease of installation. Parachute tops have a series of anchor points that are 10-15 feet back from the edge of the opening. This is the point where the parachute centering lines are attached to the envelope. Since this balloon does not have vertical seams, I was concerned it was going to be difficult to establish the exact location of these points and get them fabricated properly.

As I was contemplating the details of the Velcro top, something amazing happened. The group on the cloudhopper list came up with what seemed to be a better alternative. Paul Strazza threw out the idea of a para-slit, an onedimensional variation on the parachute top. The beauty of a para-slit is

that the opening, web spider, centering lines, anchor points and other bits all line up within the existing panel structure. And like any parachute, it's self sealing! The concept seemed simple and worth a try.

Like any deflation panel, the goals for a para-slit are reliability, sealing efficiency, ease of use and ease of fabrication. So with these criteria in mind, I set about a detailed design of the deflation panel.

I tried for months to draw up a diagram of what the para-slit looks like. Unfortunately, I'm not much of an artist and could never draw it up so it was easy to understand.

As expected, fabrication was straightforward and no difficulties were encountered.



The para-slit (cold air inflation)

Time to install deflation panel – 8.5 hours

Installing the throat

This is the most difficult task of the three. In fact, this is really the only step that made building a tetrahedron a challenge. When I built the balloon, it formed a complete tetrahedron. I did not construct it with a throat opening. So to make the throat, the first step is to cut off the bottom few feet of the tetrahedron. Here's the trick – cutting the fabric in the exact right place. It

would be no problem if I were simply making an opening and adding cables. Then I could easily adjust the cable length after the throat was finished. But I made the mistake of fabricating the Nomex base panels and sewing them into a loop before I cut the balloon open.

So the crux of the building project was to cut the tetrahedron open at just the right place so when I add the pre-sewn Nomex base panels, it all comes together properly and looks like a million dollars. Much, much easier said than done.

Before I committed to cutting the tetrahedron open, I needed to consider seam allowances, radius of curvature, fabric bias stretch and determine an acceptable tolerance for error. Oh, and then I had to assume I was forgetting something really important because I usually do. So I spent the better part of six weeks mulling over how I wanted to do this; trying to think of anything I might be overlooking. When the time came to be brave, I did what any prudent person would do – I measured twice and cut once. Now that I think of it, I may have measured three times.

Once the opening was made, there was nothing left to do but attach the Nomex base panels and hope it turned out OK. On a scale of 1 to 10, I'd say it went together at about 9.5. As close to perfect as I could have realistically hoped for.

Time to complete make throat opening – 6.5 hours (plus six weeks of thinking about it)

The only step left before we can add the cables is to install the load tapes. After a lot of consideration, I've decided to go with an unusual arrangement. Each triangular face has one extra-strength load tape that runs from the throat to the center of the top. These tapes are my primary load carrying tapes and are the ones I expect to support me in flight. Between these tapes will be a total of nine light weight load tapes that start at the throat and go up 15 feet. These will also help to support the weight of the bottom end, but their primary role is to help keep the throat open and provide stability.



Attaching the centering tapes.

Time to complete attachment of load bearing and centering tapes – 11.5 hours

Before I commit to cutting up my spool of stainless steel cable, I decided to install temporary cables to make sure I have the dimensions right. For the temporary cables, I'm going to use some old parachute centering lines that I saved out of an old retired balloon. Once I'm happy with the length, I'll replace them with the real thing.

Throat - Time to complete – 20.0 hours

OK! Alright! We're finally there - time for our test inflation. The first time you put air into a balloon is a good time to attach the parachute centering lines, the deflation line and, verify the deflation panel seals properly and the cables are the correct length.



The completed envelope having Test inflation.

Coming up next installment – The Bottom End.

Thanks again Greg, great information and the final result looks awesome-Ed!

- **Chris Dobson reviews the Klein Hopper fan.**

A Weekend with Jack!

The Newbury Show sees the last commercial balloon meet of the year and having been relieved of all commercial duties due to a sponsor forgetting a balloon needs passengers; what's a pilot to do?

Well screw the heavy stuff I say, get out the hopper and have some real fun! Now if only I could find a mini fan, I could go as far as leaving the trailer at home and life as they say would be rosy!

Knowing that Pete Bish had just taken delivery of a number of Jack Klein's 2.5hp fans, it seemed a cheeky phone call was in order. "Could I borrow one to see how well it works?" Of course, Pete came up trumps

and I collected a nice shiny fan on the promise if it inflated the hopper I'd part with some cash.

Now for anybody out there wanting a Vorsprung durch Technik style break down of how every piece makes a difference, email Jack! I'm just going to tell you how I found it.

Test 1 (that should be flight 1 but hey, test sounds better!): Long grass, no wind!

There's a syndrome I like to call Car Park Syndrome, park in an empty multi storey car park, and guaranteed the next car will park beside you. Launch sites are the same, have whole field, shove hopper in the space between two already close inflating Balloons.

This meant we decided to just pull the hopper out its bag, turn on fan and see what happened! To be fair it didn't do that badly. It sits on nice long legs for a fan of its size, and as a result, the long grass didn't cause any real problems.

It did however get to a point, where trying to inflate a balloon, unroll it and beat off two other balloons at the same time proved a bit tricky, so a few helping hands later and I was happily sitting underneath a fully inflated hopper. Bob's your uncle and 1-0 to the fan!



Chris Dobson caught on take off at Newbury- jpeg Steve Roake

Test 2: Nicely manicured grass, 8kt surface wind.

Having learnt a few lessons from the morning, we actually spread the envelope and even went as far to tab the parachute in first. What a difference it made; turn on fan, watch balloon inflate, watch a gust knock some air out, watch the fan shove it straight back in.

It should be said; after the mornings rather limp but acceptable performance I was wondering slightly what all the fuss is about. The evening showed me; yeah we gave it some help with the parachute being pre tabbed etc. but it coped as well as any fan blowing up any balloon on that launch site.

About 5 minutes after turning it on I was once again sitting underneath the thing. 2-0 to the fan.

Overall, you just need to stick a Ronseal badge on the front – it does exactly what it says on the tin and all that. It's tiny (it'll happily fit in the rear seat foot well of our 4x4) and doesn't weigh anything; and having inflated my hopper before off a manufacturers equivalent, all I can say is in a straight race I'd be confident of waving at you from the air – up for a challenge Steve?

Chris Dobson (G-CEGG)

(Hmm, don't like to race myself, but the real question is did you part with the money Chris?-Editor).

3. Updates from the Website / Newsletter

After what seems to be an age with various reasons and ill health, my good friend Les Hancock has just completed his transition to being based at home with his work. This is a major achievement because Les has been a man on the road for some considerable length of time and now will have more time to finish off the work necessary for the website. I hope to be able to bring you news of its deployment shortly.

4, Homebuilt section

Nothing to report this month beyond the stuff reported elsewhere by Greg Winker. This is the section for your projects so please send them in to me for future inclusion.

5, Gallery Pages

This section is the Editor's choice of new and older jpegs.



With thanks to Andy Mac for the jpeg, G-CCJY Cameron Z-42 was caught at play at Chelmsford Festival in early September.



Listed as a Cameron Z-31, G-CEJT is a Cameron Lightweight Hopper seen here on test inflation.

It is the new 16 gore hopper design which has flown 1 hour only, with its first flight been conducted by Tom Sage in Mondovi, last March at the dealer conference. Available for sale at Cameron balloons. Contact sales@cameronballoons.co.uk or call +44 (0)117 9637216 for further information.



Lindstrand Hot Air Balloons Ltd has finally got another Demonstrator hopper at last. G-CEO a LBL31A should be available for you to try by appointment soon .Contact them to arrange a test flight. It cannot be over stressed when considering a purchase, it pays to try the goods out first and all the manufacturers are keen for you to sample their wares so compare the lot!

If your hopper /Duo picture has yet to feature in this section of the Gallery pages, send me a jpeg of approx 600kb size for future inclusion. Usual address Steve.roake@ntlworld.com

6, Manufacturer News /Events /Updates

- The Not the One Man Meet- details

With the real One Man meet venturing to the Sunny slopes of Italy, for those not able to join them, a few of us thought that an alternative 'Not the One Man meet' might be worth considering. These are the basic details, and if you're interested please let me know.

The weekend of October 13-14th has been selected and the venue will be probably be Kelmarsh Hall, which is a lovely area with very few SA's with briefing and H/Q to be confirmed but probably Husbands Bosworth Gliding Club. Arrangements for refuelling on Saturday from a local bulk tank have been agreed, and I'll try to find a suitable venue for get together on Saturday evening or Sunday Lunch. There are lots of local B&B accommodation in the area and several excellent pubs. If the weather looks like being totally rubbish, or the problems with F&M deem that such a meeting might be seen as being irresponsible, then we can cancel the weekend via e-mail, relatively quickly.

Look forward to hearing from you. Cheers Captain Red Hat.
Colin Wolstenholme [cwolstenholme@cameronballoons.co.uk]

Further to the above, I understand Jack Klein or a representative for him will be present at the Not the OMM for testing of the Klein fans .Should you wish to try one out , this sounds like the perfect time to get some "hands on" and see for yourself what all the fuss is about.

7, For Sale /Wanted Section

The Klein fan is now available from Zebedee Balloon service see below for details.

The Klein FAN
Compact, Ultra-Light Inflator Fan for Hot Air Balloons
Hand Made, not Production Line



Introductory Price – August 2007

£ 650 + VAT

Available from:
Zebedee Balloon Service Ltd
Hayward Cross, Hungerford
Berkshire RG17 0QD
Tel: 01488 681527
adverts@zebedeelist.co.uk



Description

- Small and ultra-light gasoline-powered fan, designed by balloonists.
- A great alternative to bulky, heavy fans produced by the big manufacturers.
- Perfect for Hoppers and ultra-light envelopes.
- Easy to carry, easy to pack.

Specifications

Weight (approx.)..... Less than 10 kg empty, 11 kg full (fuel + oil)
Size (approx.)..... 48 cm wide x 66 cm tall x 40 cm front to back
Engine..... 2.5 hp Honda 4-stroke GXH50U SE
Propeller..... Double 3-bladed nylon prop

Limitations

Honda provides a 1-year warranty on engine only. Warranty documents are enclosed with fan.

This design has been used successfully to inflate hot air balloons up to 2,000m³ volume, with envelope weight up to 55kg. With two ^{KLEIN}FANS, it may be possible to inflate larger and/or heavier balloons. Our goal is to push as much air as possible with a 2.5 hp engine, while keeping the fan as small and light as possible. **Note that your envelope may not inflate as quickly or as fully as you are used to with a larger fan.**

Caution

- **This is a high-speed propeller and it can cause injury!**
- **Do not let children get close to an operating fan.**
- **Keep lines, clothing, fingers, and other loose objects away from the fan cage.**
- **NEVER LEAVE A RUNNING FAN UNATTENDED!**

Operating Instructions

Read Honda engine manual first!

1. Add fuel (unleaded gasoline) and oil (SAE 10W-30) per Honda instructions.
2. Move fuel valve lever to ON position.
3. **Inspect fan carefully before starting. Make sure cage is secure. Check for foreign objects and loose bolts.**
4. To start cold engine, move choke lever to CLOSED position. (For a warm engine: leave choke in OPEN position.)
5. Set red engine switch to ON position.
6. Pull starter cord and release gently.
Do not allow starter grip to snap back and hit the engine!
7. If choke lever is CLOSED, gradually move it to OPEN as the engine warms up.
8. Adjust throttle lever to desired speed
9. **To shut down:** Turn off red engine switch.

Manufacturer

Advanced, Inc.
Radelfingenstrasse 17
3270 Aarberg, Switzerland

• Duo Chariot for sale Complete

The whole kit and caboodle was C of A inspected and passed without any reservation, observations or any problems on 2nd June 07. It is all in perfect order and has been stored in a garage with other balloon equipment.

The envelope has 100 flying hours and was built in 1994 by Thunder and Colt. It is a 56 with turning vents, registration G-BVRI. We bought it on 6th January, 2005. It is pink and yellow chequered, with navy blue "Voyager II" on it, which could probably be removed, if wanted, but looks nice!

The bottom end - new style Duo Chariot with Cameron Shadow single burner, nylon poles and covers (no fuel cylinders), plus certificates and dropline, restraint line, Bonanno quick release, bags etc. We purchased this brand new from Cameron Balloons on 24 March, 2005. Only one owner.

The whole balloon has flown 62 times since it has been in my possession, so I guess that's probably about 80 hours (without going through my log book and adding it all up) for the bottom end. I have had this valued by Pete Bish at Zebedee, and the asking price for the whole "kit" is £7,000.

It's a very fair amount of money for a "whole system", especially with a pretty new double hopper!!

Contact Sara Lyth via

Home phone number: 01295 690348 (with voicemail)

Mobile number: 07985 967222

Email address: sdlyth@talktalk.net

8, And Finally

Sarah Elston sent in this lovely group shot from Metz the rest!



Membership (current to 1st October) stands at a very healthy 315 worldwide with continued growth continuing. Please keep putting the word about, we only thrive by growth and your inclusion of articles and projects.

All articles for inclusion in future issues will be gratefully received by your editor. Please forward them to info@cloudhoppers.org and feedback good, bad or indifferent is always welcome. Views aired by contributors may not be those of the Editor.

Safe flying,

Steve Roake.