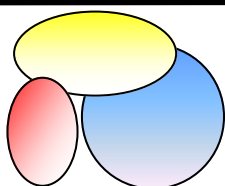




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Bristol Wings



Newsletter of the LAA Bristol Wing

July/August 2011

NEXT AND FUTURE MEETINGS

Rather than organise a speaker who may be talking to only a small audience, we've decided to make the two summer meetings, July and August, a general discussion get-together.

Anyone who is not either away, or out flying (great long light evenings!) is welcome to come along for a chat and drink on **Wednesday 6th July and 3rd August** -

September will be our AGM to be held in rooms 5/6 (where we used to meet) starting at **7.30 on Thursday 8th September**.

For your diary: our October meeting on the 5th will be a presentation by Mike Armstrong and Ian Tadd on 'Unusual engines' as a follow-on from the link in last month's newsletter on the AVEC-Axial-Vector-Engine.

Steve has arranged for Manuel Queiroz to speak to us at our November meeting following the release of his new book 'Chasing the Morning Sun'. Those of us who have heard and of Manuel's talks know what a wonderful turn of phrase he has and his very subtle, witty humour promises an entertaining and enlightening evening. Book your diary for **Wednesday 2nd November**.

LAST MEETING - Brabazon

Last Month Chris Bigg came to talk to us about the Brabazon project.

His talk was enthralling and picture rich. Photos showed the Filton works at that time and the runway extension construction that swallowed the village of Charlton, demolished so the Brabazon had plenty of runway. In the event it was off the ground way before. More photos of the "Brab Hangar" in build showed the mammoth scale of that construction project, now a Bristol Icon. The poor Brabazon was overtaken by events as the jet age beckoned. No one ordered it and the project was abandoned with only the prototype flying



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Where to go...

Free landing vouchers for July / August in:

Flyer Magazine: (Valid 11th July to 12th August) Bodmin, Fishburn, Salcombe/Bolt Head, Panshanger, Crosland Moor, Popham

Pilot Magazine: JULY: St Mary's, Crosland Moor, North Coates, Oxford, Sligo, Dundee

AUGUST: Benbecula, Fishburn, Full Sutton, Lashenden (Headcorn), Netherthorpe, Seething

Duxford RV Bonus Day 16th July 2011.

If you fly an RV, come to Duxford on 16th July, meet your friends and get Bonus Day Discounts.

If you're feeling adventurous why not try the BBQ at Cherbourg on **Saturday 2nd of July and Saturday 27th of August**

Contact: Luc DUFOUR, Tel: +33 (0)2 33 54 68 68, Mobile: +33 (0) 683 78 14 27 or e-mail: lecoucoudefourchette@wanadoo.fr

Never let an aeroplane take you somewhere your brain didn't get to five minutes earlier.

Looking Ahead

Sunday 7th August 2011 - 10th Devon Strut Lundy Fly-in. Contact Pete White 01752 406660, 07805 805679

The LAA have set another date for the Ditching and Sea Survival Seminar at The Lifeboat College - **Thursday 4th August 2011**. Do contact HQ at Tel: 01280 846 786 or visit www.laa.uk.com if you're interested.

Women in the Air day

August, 29th 2011 - celebrating 100 years of British women pilots

This is what has been circulated to the 260-odd flying schools and aero clubs. A number of airfields are offering free landings on the day. Sherburn Aero Club have really gone to town by designating it Hilda Hewlett Day and are running a whole day of events and competitions. The local press will be on hand to record it for posterity!

Snippets

Liberty Belle

Here's a link to the official account of what happened to this historic aircraft: <http://www.libertyfoundation.org/index.html>

Dunkeswell Runway Re-designated

RWY 05/23 is now 04/22, AD 2-EGTU-1-2 and 1-3 refer.

RAF Lyneham changes

RAF Lyneham aerodrome will open Monday to Friday between 0800(L) and 2359(L).

RAF Lyneham's CTR and CTA, will remain extant during Lyneham's opening hours Monday to Friday. Between the aerodrome closing and then opening the next working day, the CTR and CTA is rescinded and becomes Class G, open FIR, airspace. An ATZ of 2.5 mile radius will remain in place. Details of this change will be issued by NOTAM today.

The Lyneham CTR and CTA will be permanently rescinded with effect from 0800(L) on 20th July 2011 and the Military Emergency Diversion Aerodrome commitment will pass to RAF Brize Norton permanently. Additionally, from this date until the aerodrome finally closes at 2359(L) 30 Aug 11, the Lyneham ATZ will be activated by NOTAM on a tactical basis to cater for pre-planned aircraft movements only.

The ATZ co-ordinating authority, when RAF Lyneham aerodrome is closed is ATC Squadron at RAF Brize Norton. Frequencies and contact details remain unchanged and are annotated in the table below.

Please note that it may be necessary to extend opening times on a tactical basis to cater for operational necessity. Where this is the case, controlling authority for the ATZ and ATC services will remain with either Lyneham ATC Sqn or Tactical ATC. Every effort will be made to issue details by NOTAM where time allows. There will be no extension to the activation times of the CTR or CTA".

The Beaver Song

Visit this site for a great video which is sure to make you smile—and sing along too...

http://www.youtube.com/watch?v=3w_v0k57KhE

Corrections

There's a couple of corrections to make to last month's issue:

In Tom's article on 'Teach Yourself Instrument Flying' "*but I seemed content with 350° of bank*" should of course have read "**35°**" in both instances, Proctors never flew inverted!

The reference to <http://www.efha.eu/> is not supported by LAA HQ, they do however support EFLEVA.

Quiz

Last month's picture:

What aircraft?

Vulcan at Wellesbourne.

Bonus point for purpose of the blister?

The landing light blister.

Once again the only person to offer a correct answer is our quiz-master Trevor Wilcock, although he didn't get the bonus point quite right....

We did have a suggestion that it is a "Handly Page Victor Tanker with the blister for the in flight refuelling remote control" which unfortunately is not correct but we won't embarrass them by saying who it was!



This month it's Graham's turn to offer a puzzle for you to consider:

Question: *The motive power for what flying machine?*

Extra points for any alternative names for the flying machine

Surely we'll get more than a couple of contributions to this one—come on folk, let's hear your suggestions.....

FOR SALE—Half share in RV-9A

Built in 2006. LAA permit to fly. Total time on airframe and engine is only 200 hours. Vans design and a 160 HP Lycoming engine makes the aircraft a fast two seat tourer. Fuel consumption 25 litres per hour at 130 knots IAS cruise. 21 litres @120kts.

A usable 4 hours duration at 130kts allowing 1hr reserve. 2 people and 100lbs of bags can fly 600 miles non stop.

All costs are shared 50% except for fuel and oil used.

Instrumentation is classic 6 pack. Engine monitor with master alarm for engine functions, Garmin 495 GPS with spoken TAWS/obstacle warnings to headsets. Accurate fuel meter linked to GPS showing fuel consumption, duration and range.

£26,000 for half share

Fixed costs equate to £200 ppm each hangared in SE22 at Glos

If interested or you have any queries please contact:

Terry Donovan - Tel: 0117 9490513 / 0797 0024363

Email: tdog@blueyonder.co.uk



Bristol Wing Website—Sales Wanted Page

This new page is now set up so do have a look at it to see what's available. If you've got anything for sale then contact Steve, whose details are on the front page of this newsletter, and he'll include it for you. To visit the Sales/Wanted page go to:

http://www.bristol-wing.co.uk/adverts/rv_share.pdf

Fright over water *Another contribution by Tom Geake*

There is folk lore about flying over water with a single engine and those who prefer their flying to be boring should stick to twins.

The flight in this yarn is the short southward crossing of the Mediterranean Sea from Cagliari to Bizerta. J was P1 and I was navigating. The first cause for concern, which we ignored, was the amazement with which the Controller read our flight plan.

"You have no radio compass?"

"No. I shall assess our drift angle with a QDR when settled en route."

"Good luck!"

It was a new experience to lose sight of land almost immediately, but our guide said that Cagliari had a VDF facility, so J settled into an en route climb. In due course I requested a QDR but it was not to be had. Never mind: the visibility was remarkable and there was plenty of fuel to reach somewhere in North Africa. We relaxed, with occasional discussions about the shipping below and no mention of the problems of ditching with a fixed undercarriage.

I was enjoying the view when doubt struck. Try as I would, I had no recollection of checking that the right outer fuel cap was really tight. There were no wing marks such as are now standard, and I did not want to admit my possible folly to J. Several minutes passed while I made grease pencil marks on the window to fix a sight line from which I could see any movement of the lugs on the cap. If it were opening itself, there would be two worries: firstly the loss of fuel, and secondly the delay and cost at a French airport while a replacement cap was located and flown out from the UK. In those days, Tunisia was a French territory.

"Lord, I have been an idiot...." went through my mind. Meanwhile, there was nothing to do but sit back, watch J's accurate flying and relax.

Then the engine note began to rise and fall, nearly rhythmically. The shipping below suddenly became very interesting. J seemed to be unconcerned, and there was no indication on the panel of any trouble. I watched the panel carefully, and the engine note steadied straight away. I relaxed, and the trouble returned. Each time I tried a diagnosis, the engine behaved itself, and each time I relaxed it misbehaved.

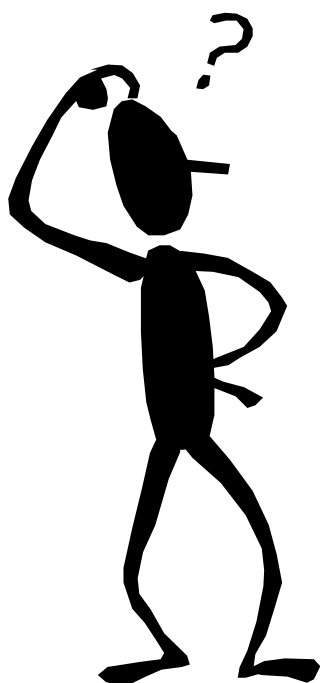
Baffled, I consulted J and he admitted to having noticed the changing engine note. We checked everything and listened carefully, and the engine purred sweetly. We appreciated the superior balance of the six in line cylinders of the Gipsy Queen engine compared to the rougher four cylinders of the Gipsy Majors in the UAS Chipmunks. Had our aircraft developed a mischievous sense of humour? Every time we listened and checked, it purred contentedly. Every time we relaxed, the rise and fall in engine note returned.

It took fully twenty minutes to find the cause – a big bag of toffees between the seats, put there to help clearing ears, and general pleasure. We were both wearing military cloth hats, and the action of chewing was moving the earpieces to give the impression of engine trouble.

We landed at Tripoli to refuel and the old lady seemed to be smiling at the fright she had given us. She did have a sense of humour, but it was a kindly one and just as well because in the next twenty four hours she took us through a precautionary landing at night at a disused airfield and a radio failure – and a little adventure with the Libyan police!

Tom Geake

4th May 2011



Electric aircraft update *A follow-up article by Ian Tadd*

This is a brief look at progress towards Electric aircraft since my presentation on the subject last year. (See February 2010)

I hope you will remember that suitable electric motors are available that offer considerable advantages, and virtually no disadvantages, compared to the internal combustion engine. The issue, and it is a show stopping issue, is the 'electric fuel tank'. As a reminder I concluded at that time a 10 fold improvement in battery energy density was required to compete HP to HP weight-weight with the Rotax 912 with a tank full of petrol.

I have to first report that there has been no break through in battery, capacitor or fuel cell technologies since my presentation, however small incremental improvements continue to be made and some research reported on at that time is now filtering through to practical batteries. In that year I am now able to buy a battery of the same weight and size that will now take 25% more pictures in my camera before recharging, and recharge around 3 times quicker.

Those developments and other incremental laboratory demonstrated improvements do keep us on course for a doubling of battery performance over the next five-ish years, at which time it will be safe to say that for motor gliders the electric motor and battery system will be a credible alternative. It's interesting to see that even with existing batteries more glider manufacturers are starting to offer electric versions, in part because Yuntec (maker of the E230) is offering battery and motor packages to other aircraft manufacturers. There are a number of new glider designs, where electric power has been the first or only choice of motor and an increasing number of existing designs are being offered with an electric option. I had expected to see more offerings in the single seat ultralight area but this has not yet happened, it appears that most designers in this class of aircraft are looking for the doubling of battery energy density before they start offering electric versions. This is not to say there has not been a significant number of successful first flights, and a growing interest for short duration missions. Roger Target at Nympsfield is building a single seat racer, its very nature means it only requires 15-30 minutes endurance and this is just within existing battery capability. I am particularly excited about Roger's approach as he has identified a flight profile that is achievable with existing technology. The thought of these aircraft racing around pylons at airshows is, to my mind, the best promotion electric power could achieve and I think once people see them flying they will realise the potential.



Roger Targets electric racer

Sonex



EADS Electric Cri Cri



New Developments

There have however been a number of interesting new developments both with materials and a potential solution to the battery refuelling issue. "Cambridge crude" as it's been nick named is a liquid that can be used to refuel a battery. In effect the liquid is charged and then pumped into the battery. Far from as simple as it sounds a laboratory battery has been refuelled in this way at MIT.

Easy to see how it got its name.



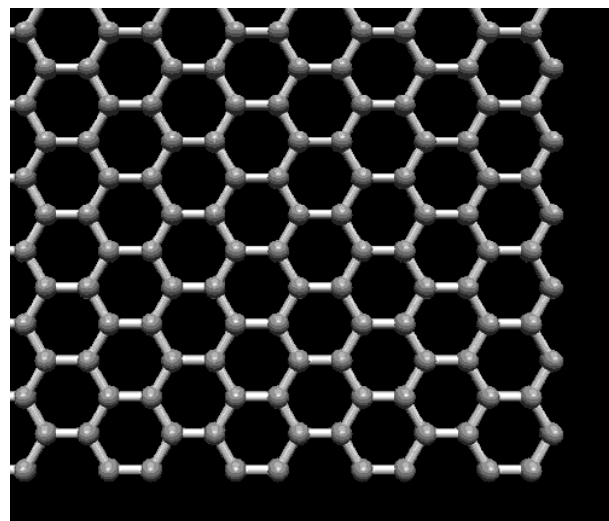
Based on existing lithium battery technology and being developed by the same team that successfully

demonstrated a nano engineered electrode at MIT. The research team lead by Dr Chaing now operating with private and government funding as A123 Systems have been continuing to make good progress towards a 'solid' nano lithium battery, with its potential 10 fold improvement in energy density. They have also just announced the development of a new fluid battery. The two fluids

hold the electrodes (I suspect particles of lithium and carbon) in suspension, the electrodes are very slowly pumped around the system exchanging ions and thus creating electricity as they come into contact via a porous membrane. *The only thing missing from the diagram on the right is a propeller on the motor.* The fluids can be pumped out and freshly charged fluids pumped back in. Fluid batteries are not new, but the claim is that for the first time a fluid particle concentrate has been developed that can function at normal temperatures and rival the energy densities of the best batteries. Existing fluids can achieve around 40Wh/litre, after taking into account overheads (tanks pumps etc) at best they can achieve 10-20Wh/Kg in a practical battery worse than a cheap lead acid car battery and the most recent super capacitors. Tests have indicated around 10-20 times that density is achievable.

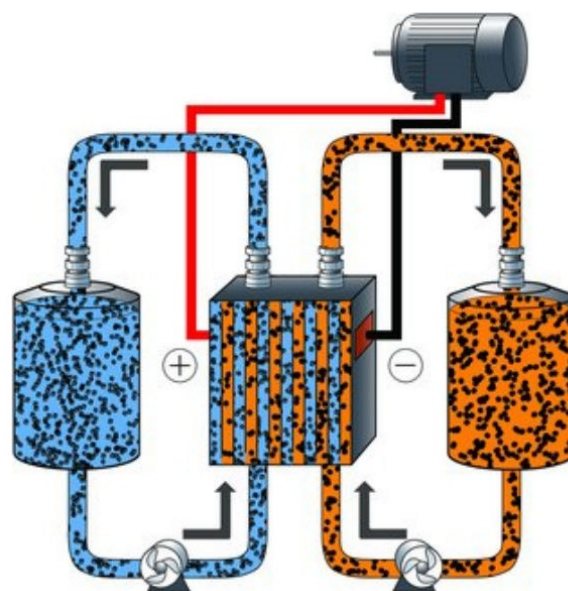
The other interesting development is Graphene, last year a Noble prize was awarded to Andre Geim, and Konstantin Novoselov for work in quantum physics that resulted in refinement of this material. It should be noted that they did not invent Graphene, they have however found a way to make it in what could possibly be best described as its purest state. Since their work others have succeeded in rolling the material into a tube, the first steps to creating a practical structural material. A way to picture this material, which is 200 times stronger than steel, is rather like chicken wire mesh only so thin that 3 million sheets laid on top of one another would only be 1 mm thick. Each node of the chicken mesh is a single carbon atom.

To give some scale to how strong this material is a single sheet of Graphene suspended horizontally would be able to support a 5Kg load placed in the middle of the sheet. For our application, a light weight



electric fuel

tank, imagine those 3 million sheets per mm as plates forming a capacitor, or significantly increasing the surface area of a batteries structure thus increasing its energy density. This development with Graphene maybe as important a mile stone as the first Iron smelting. Demonstrated uses of this material are being announced almost on a daily basis. Hundreds of applications are being tested including IBM's demonstration of a working integrated circuit exhibiting the ability to withstand temperatures of over 100deg C and a transistor utilising only 8 atoms the list is seemingly endless from structural materials to insulators. It's been demonstrated that Graphene can be magnetic and light absorbing. Back to our 'fuel tank' recent work at U.S. Department of Energy's Brookhaven National Laboratory by Dong Su and Eric Stach have made substantial progress improving activated Graphene a key component in current ultra capacitors. With iron it was not until steam and Newtonian physics were added to the mix that a revolution of technology took place. I suspect that the same will need to be true of Graphene with other developments and supporting materials needing to be in place before a 'Graphene revolution' takes place.



MACH 3.18 IN-FLIGHT BREAKUP OF AN SR-71 BLACKBIRD *By Bill Weaver, Chief Test Pilot, Lockheed*

Here is an account that will send shivers up your spine!

Among professional aviators, there's a well-worn saying: *Flying is simply hours of boredom punctuated by moments of stark terror.* But I don't recall too many periods of boredom during my 30-year career with Lockheed, most of which was spent as a test pilot. By far, the most memorable flight occurred on Jan. 25, 1966.

Jim Zwayer, a Lockheed flight-test specialist, and I were evaluating systems on an SR-71 Blackbird test from Edwards. We also were investigating procedures designed to reduce trim drag and improve high-Mach cruise performance. The latter involved flying with the center-of-gravity (CG) located further aft than normal, reducing the Blackbird's longitudinal stability.

We took off from Edwards at 11:20 a.m. and completed the mission's first leg without incident. After refuelling from a KC-135 tanker, we turned eastbound, accelerated to a Mach 3.2 cruise speed and climbed to 78,000 ft., our initial cruise-climb altitude.

Several minutes into cruise, the right engine inlet's automatic control system malfunctioned, requiring a switch to manual control. The SR-71's inlet configuration was automatically adjusted during supersonic flight to decelerate airflow in the duct, slowing it to subsonic speed before reaching the engine's face. This was accomplished by the inlet's center-body spike translating aft, and by modulating the inlet's forward bypass doors.

Normally, these actions were scheduled automatically as a function of Mach number, positioning the normal shock wave (where air flow becomes subsonic) inside the inlet to ensure optimum engine performance. Without proper scheduling, disturbances inside the inlet could result in the shock wave being expelled forward - a phenomenon known as an "inlet unstart."

That causes an instantaneous loss of engine thrust, explosive banging noises and violent yawing of the aircraft, like being in a train wreck. Unstarts were not uncommon at that time in the SR-71's development, but a properly functioning system would recapture the shock wave and restore normal operation.

On the planned test profile, we entered a programmed 35-deg. bank turn to the right. An immediate unstart occurred on the right engine, forcing the aircraft to roll further right and start to pitch up. I jammed the control stick as far left and forward as it would go. No response. I instantly knew we were in for a wild ride. I attempted to tell Jim what was happening and to stay with the airplane until we reached a lower speed and altitude. I didn't think the chances of surviving an ejection at Mach 3.18

I instantly knew we were in for a wild ride

and 78,800 ft. were very good. However, g-forces built up so rapidly that my words came out garbled and unintelligible, as confirmed later by the cockpit voice recorder.

The cumulative effects of system malfunctions, reduced longitudinal stability, increased angle-of-attack in the turn, supersonic speed, high altitude and other factors imposed forces on the airframe that exceeded flight control authority and the stability augmentation system's ability to restore control. Everything seemed to unfold in slow motion. I learned later the time from event onset to catastrophic departure from controlled flight

was only 2-3 seconds. Still trying to communicate with Jim, I blacked out, succumbing to extremely high g-forces.

Then the SR-71 literally disintegrated around us. From that point, I was just along for the ride. And my next recollection was a hazy thought that I was having a bad dream. —Maybe I'll wake up and get out of this mess, I mused. Gradually regaining consciousness, I realized this was no dream; it had really happened. That also was disturbing, because I **COULD NOT HAVE SURVIVED** what had just happened.

I must be dead. Since I didn't feel bad, - just a detached sense of euphoria- I decided being dead wasn't so bad after all. As full awareness took hold, I realized I was not dead. But somehow I had separated from the airplane. I had no idea how this could have happened; I hadn't initiated an ejection. The sound of rushing air and what sounded like straps flapping in the wind confirmed I was falling, but I couldn't see anything. My pressure suit's face plate had frozen over and I was staring at a layer of ice.

The pressure suit was inflated, so I knew an emergency oxygen cylinder in the seat kit attached to my parachute harness was functioning. It not only supplied breathing oxygen, but also pressurized the suit, preventing my blood from boiling at extremely high altitudes. I didn't appreciate it at the time, but the suit's pressurization had also provided physical protection from intense buffeting and g-forces. That inflated suit had become my own escape capsule.

My next concern was about stability and tumbling. Air density at high altitude is insufficient to resist a body's tumbling motions, and centrifugal forces high enough to cause physical injury could develop quickly. For that reason, the SR-71's parachute system was designed to automatically deploy a small-diameter stabilizing chute shortly after ejection and seat separation. Since I had not intentionally activated the ejection system—and assuming all automatic functions depended on a proper ejection sequence — it occurred to me the stabilizing chute may not have deployed.

However, I quickly determined I was falling vertically and not tumbling. The little chute must have deployed and was doing its job. Next concern: the main parachute, which was designed to open automatically at 15,000 ft. Again I had no assurance the automatic-opening function would work.

I couldn't ascertain my altitude because I still couldn't see through the iced-up faceplate. There was no way to know how long I had been blacked-out or how far I had fallen. I felt for the manual-activation D-ring on my chute harness, but with the suit inflated and my hands numbed by cold, I couldn't locate it. I decided I'd better open the faceplate, try to estimate my height above the ground, and then locate that "D" ring. Just as I reached for the faceplate, I felt the reassuring sudden deceleration of main-chute deployment.

I raised the frozen faceplate and discovered its uplatch was broken. Using one hand to hold that plate up, I saw I was descending through a clear, winter sky with unlimited visibility. I was greatly relieved to see Jim's parachute coming down about a quarter of a mile away. I didn't think either of us could have survived the aircraft's breakup, so seeing Jim had also escaped lifted my spirits incredibly.

I could also see burning wreckage on the ground a few miles from where we would land. The terrain didn't look at all inviting — a desolate, high plateau dotted with patches of snow and no signs of habitation.

I tried to rotate the parachute and look in other directions. But with one hand devoted to keeping the face plate up and both hands numb from high-altitude, subfreezing temperatures, I couldn't manipulate the risers enough to turn. Before the breakup, we'd started a turn in the New Mexico-Colorado-Oklahoma-Texas border region. The SR-71 had a turning radius of about 100 miles at that speed and altitude, so I wasn't even sure what state we were going to land in. But, because it was about 3:00 p.m., I was certain we would be spending the night out here.

At about 300 ft. above the ground, I yanked the seat kit's release handle and made sure it was still tied to me by a long lanyard. Releasing the heavy kit ensured I wouldn't land with it attached to my derriere, which could break a leg or cause other injuries. I then tried to recall what survival items were in that kit, as well as techniques I had been taught in survival training.

Looking down, I was startled to see a fairly large animal – perhaps an antelope– directly under me. Evidently, it was just as startled as I was because it literally took off in a cloud of dust.

My first-ever parachute landing was pretty smooth. I landed on fairly soft ground, managing to avoid rocks, cacti and antelopes. My chute was still billowing in the wind, though. I struggled to collapse it with one hand, holding the still-frozen faceplate up with the other. "Can I help you?" a voice said. Was I hearing things? I must be hallucinating. Then I looked up and saw a guy walking toward me, wearing a cowboy hat. A helicopter was idling a short distance behind him. If I had been at Edwards and told the search-and-rescue unit that I was going to bail out over the Rogers Dry Lake at a particular time of day, a crew couldn't have gotten to me as fast as that cowboy-pilot had.

The gentleman was Albert Mitchell, Jr., owner of a huge cattle ranch in northeastern New Mexico and I had landed about 1.5 mi. from his ranch house—and from a hangar for his two-place Hughes helicopter. Amazed to see him, I replied I was having a little trouble with my chute. He walked over and collapsed the canopy, anchoring it with several rocks. He had seen Jim and me floating down and had radioed the New Mexico Highway Patrol, the Air Force and the nearest hospital.

Extracting myself from the parachute harness, I discovered the source of those flapping-strap noises heard on the way down. My seat belt and shoulder harness were still draped around me, attached and latched.

The lap belt had been shredded on each side of my hips, where the straps had fed through knurled adjustment rollers. The shoulder harness had shredded in a similar manner across my back. The ejection seat had never left the airplane. I had been ripped out of it by the extreme forces, with the seat belt and shoulder harness still fastened.

I also noted that one of the two lines that supplied oxygen to my pressure suit had come loose, and the other was barely hanging on. If that second line had become detached at high altitude, the deflated pressure suit wouldn't have provided any protection. I knew an oxygen supply was critical for breathing and suit-pressurization, but didn't appreciate how much physical protection an inflated pressure suit could provide.

That the suit could withstand forces sufficient to disintegrate an airplane and shred heavy nylon seat belts, yet leave me with only a few bruises and minor whiplash was impressive. I truly appreciated having my own little escape capsule.

After helping me with the chute, Mitchell said he'd check on Jim. He climbed into his helicopter, flew a short distance away and returned about 10 minutes later with devastating news: Jim was dead. Apparently, he had suffered a broken neck dur-

ing the aircraft's disintegration and was killed instantly. Mitchell said his ranch foreman would soon arrive to watch over Jim's body until the authorities arrived. I asked to see Jim and, after verifying there was nothing more that could be done, agreed to let Mitchell fly me to the Tucumcari hospital, about 60 mi. to the south.

I have vivid memories of that helicopter flight, as well. I didn't know much about rotorcraft, but I knew a lot about "red lines," and Mitchell kept the airspeed at or above red line all the way. The little helicopter vibrated and shook a lot more than I thought it should have. I tried to reassure the cowboy-pilot I was feeling OK; there was no need to rush. But since he'd notified the hospital staff that we were inbound, he insisted we get there as soon as possible. I couldn't help but think how ironic it would be to have survived one disaster only to be done in by the helicopter that had come to my rescue.

However, we made it to the hospital safely—and quickly. Soon, I was able to contact Lockheed's flight test office at Edwards. The test team there had been notified initially about the loss of radio and radar contact, then been told the aircraft had been lost. They also knew what our flight conditions had been at the time, and assumed no one could have survived. I explained what had happened, describing in fairly accurate detail the flight conditions prior to breakup.

"I realized I was not dead!"

The next day, our flight profile was duplicated on the SR-71 flight simulator at Beale AFB, Calif. The outcome was identical. Steps were immediately taken to prevent a recurrence of our accident. Testing at a CG aft of normal limits was discontinued, and trim-drag issues were subsequently resolved via aerodynamic means. The inlet control system was continuously improved and, with subsequent development of the Digital Automatic Flight and Inlet Control System, inlet unstarts became rare.

Investigation of our accident revealed that the nose section of the aircraft had broken off aft of the rear cockpit and crashed about 10 miles from the main wreckage. Parts were scattered over an area approximately 15 miles long and 10 miles wide. Extremely high air loads and g-forces, both positive and negative, had literally ripped Jim and me from the airplane. Unbelievably good luck is the only explanation for my escaping relatively unscathed from that disintegrating aircraft.

Two weeks after the accident, I was back in an SR-71, flying the first sortie on a brand-new bird at Lockheed's Palmdale, Calif. assembly and test facility. It was my first flight since the accident, so a flight test engineer in the back seat was probably a little apprehensive about my state of mind and confidence.

As we roared down the runway and lifted off, I heard an anxious voice over the intercom. "Bill! Bill! Are you there?"

"Yeah, George. What's the matter?"

"Thank God! I thought you might have left" The rear cockpit of the SR-71 has no forward visibility—only a small window on each side—and George couldn't see me. A big red light on the master-warning panel in the rear cockpit had illuminated just as we rotated, stating: "Pilot Ejected!". Fortunately, the cause was a misadjusted micro switch, not my departure.

Thanks to Frank Bond for forwarding on this spine-chilling article

WHO ARE WE?

A column dedicated to finding out more about those who belong to the Bristol Wing.

This month we talk to our current Quiz master Trevor Wilcock.

Current Day Job/Past Career

Civil Service: RAE Bedford, using a research flight simulator for handling qualities/flight dynamics investigations on aircraft in development - Concorde, Lynx, Tornado. Occasional observer flying in Hunter, Meteor, Wessex and transports. PPL course, also helicopter instruction and hands-on time in Sioux, Scout. Aerodynamics Officer in British Embassy Washington. NATO AGARD Paris. Project management of Tornado, Eurofighter and Future Carrier-Borne Aircraft (now JSF), including 6 years with NATO in Munich. Retired for over 10 years, but retain professional involvement by interviewing aeronautical engineers for Chartered status.

Why Aviation?

Started as a spotter at Ringway in the late 50s - BEA Dakotas, Dan-Air Yorks and Ambassadors, Lufthansa Super Connies. Remember sitting in the cockpit of Fox Moth 'OJH' at age around 15 and operating the mags while pilot swung the prop. Also ATC - summer camps at Leuchars and Colerne, flights in Anson, Chipmunk, Hastings, Britannia, Comet.

First Flight – in What, Where and When?

As passenger: Airviews 3-seater Auster 'GXN', Ringway, around 1956 - with pilot, father and brother in the seats, and me tucked in sideways behind the 3rd seat. Where were H&S!

As glider pilot: 1961, ATC Sedburgh, Hawarden; 4 launches that weekend - solo in T31 the following weekend. Ignorance is bliss!

As power pilot: 1973, Beagle Pup, Sywell

How long in the Bristol Strut/Wing? :

Around 10 years.

Total Number of Aircraft and Hours Flown :

555 hrs, mostly tailwheel; Pup, C172, Auster, PA28, C177, Rallye, Aeronca Champ, Vagabond, Champion Scout, Smaragd. Also gliding, intermittently 1961-1970, and since 2001.

Favourite and Worst Type Flown :

Favourite: Smaragd, of course.

Worst: Schweizer 2-33A glider - like sitting in a deep tub and holding a long broom handle which has a minimal association with the sluggish response of the glider.

Current Aeroplane(s) :

1963 Binder CP301S Smaragd G-DENS, with Mary Leader and Richard Pugh, based Garston Farm.

Best Aviation Moment and Flight :

Evening descent across Golfe du Morbihan into Quiberon at the end of first cross-channel flight.

Any Aviation Heroes - if so who and why?

None in particular.

Any 'Hairy' Aviation Moments - if so – any lessons learnt? :

Taking off from a short, soft, damp grass strip where the aircraft wouldn't accelerate, even downhill. Lessons learned - could have: walked the strip to find out which side was firmest; offloaded the passenger; not gone there in the first place considering recent heavy rain!

Aircraft Wish List – to fly or own

Very content with G-DENS, but always willing to fly something new.

Any Advice For All Pilots :

Go somewhere new.

Thanks Trevor, now, who will the spotlight fall on next?