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**March 2005**

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**Last month – 10th February**

We were delighted to welcome Barry Tempest to our meeting last month, when he gave an illustrated talk on some of the interesting aircraft he has flown as a PFA test pilot over thirty years in aviation. When a newly built aircraft is flown for the first time, it needs a high degree of experience to identify any inherent problems that have to be resolved before a Permit to Fly can be issued. Barry has that experience in abundance, and it was fascinating to hear how such first flights are performed.

After the formal presentation, Barry was happy to answer many questions from the floor, discussing such topics as EASA and this year's PFA rally, Flying for Fun. All together, a very interesting and educational evening.

**Next meetings, 10th March and Saturday 12th**

Since the second Thursday was chosen by Bristol & Wessex for their CAA safety evening, the decision was made to defer the March meeting so that anyone who wanted to attend could go to Lulsgate instead. These events are always worthwhile, and all local pilots are encouraged to go along for their periodic 'refresher'. When was the last time *you* attended a CAA safety presentation?

In lieu of missing the Thursday evening meeting, we are grateful to Pete Turner for setting up a special group visit to the Helicopter Museum at Weston-super-Mare. This will take place on the Saturday after, and we will meet there at 10:30 for a personal guided tour hosted by Elfan Ap Rees.

Important! We will be charged a reduced admission fee of only £3.50 each, as long as there are more than twelve in the party. If you wish to join us, please let us know by Wednesday 2nd March (phone 01275 541572 or e-mail [ian@pfabristol.flyer.co.uk](mailto:ian@pfabristol.flyer.co.uk)) so that Pete can organise the special admission rate with the office.

**Where to go in March**

*Flyer's Free Landings:* Cardiff, Fishburn, Popham and Sheffield.

*Pilot's Free Landings:* Bodmin, Cardiff, Huddersfield, Lands End, Old Buckenham and Wolverhampton.

**6th March** – North Weald fly-in (see below)

**10th March** - CAA GA Safety Evening, Bristol & Wessex Flying Club - *Denis Skidmore 01275 472514*

**12th March** – Strut visit to the WSM Helicopter museum. *Ian or Mary 01275 541572 - ASAP*

**13th March** - Cardiff International Airport Fly-in (!) This is the date currently suggested on the UKGA website for a fly-in which includes a visit to ATC. Also, look for a free landing voucher for Cardiff in this month's FLYER and PILOT magazines which can be used any time during the month. *Call for PPR on 01446 710000*

**19th March** – Mad Hatters fly-in at Kemble (free landings). *01285 771177.*

**21st March** - RAeS Bristol Branch Lecture, 6.30pm @ BAWA Filton, Room 1: *Boeing - a Key Stakeholder in the UK; Exploiting Technological Excellence in Commercial Aircraft Design* presented by Sir Michael Jenkins, President, Boeing UK Ltd.  
*Enquiries to Scott Phillips, External Affairs Manager, on +44 (0)20 7670 4372*

**Long-standing member retires.**

We were sorry to hear the other day that Strut member Arthur Forbes has recently been diagnosed with Alzheimer's disease

and has therefore been forced to withdraw from the Strut and his associated flying activities. Sadly, he has had to sell his farm strip and also his Jabiru. Arthur has been a Strut member since October 1992, and a card has been sent on behalf of the membership to recognise his long-standing support.

### **Radio Bristol**

Alan has recently received a communication from Andy Howard, who works on Keith Warmington's Drive-Time show on Radio Bristol. Every Monday they invite a guest into the studio to have a quick chat (10-15mins) about their 'passion'. Basically, it's a slot where they look at what people get up to, and talk about their interest.

He was looking through our website, and wondered if someone from the Strut would like to go along and tell them about flying, the PFA way.

Could any Strutter who would like to take advantage of this opportunity please call Alan, and he will pass your details to Andy. *First come – first served!*

### **FLY TO NORTH WEALD SUNDAY 6 MARCH!**

The North Weald Airfield Users Group (NWAUG) is delighted to announce that landing fees at North Weald are waived on Sunday 6 March!

The NWAUG invites everyone to fly to North Weald, on that day, and will be holding a workshop so that you can lodge your objections to RSS 14 (the East of England Plan) to build 6000 houses on the Airfield. All the forms will be completed in advance, so all you need to do is sign and submit them. We will even post them for you!

NWAUG members will be in attendance from 11.00 onwards to offer advice and a briefing will be held at 14.00, for visitors and local residents, which will last approx. 30 mins. You are then free to enjoy your hamburgers!

Please help the cause! We need as many as possible to attend and make their views known. Please come along even if you have already made submitted your objections.

**PLEASE NOTE** - This invitation is for everyone - not just those with aircraft - so please join us however you wish to get here. PPR is not required!

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### **Sigh ... for an Allison**

Intro by Graham Clark

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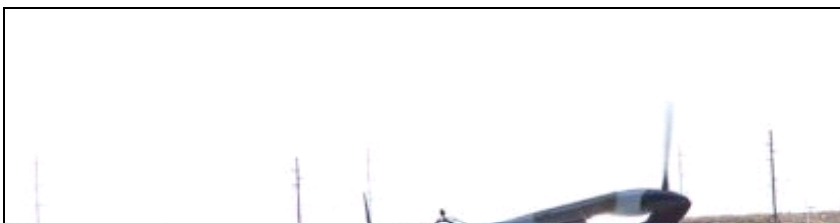
EAA Members and those who were at Oshkosh last year may have seen it, but the juicy details below from Graham Clark's good friend Hal Rozema in Phoenix, USA, are worth repeating in the Brissle Strutter.

Last November I spent a couple of airplane weeks in Arizona, and was able to visit an EAA Chapter fly-in at Deer Valley Airport. It was a small Saturday afternoon affair; just a small group of members; and old-timers who as young men fought bravely for our defence and freedom. It gave me the greatest of pleasure to shake their hands in personal thanks. Such a privilege is rare.

Mid-afternoon....and there was a deep, unmistakable, musical, bass, (D-flat Minor) approaching rumble.....followed by that unmistakable, most beautiful of wings. It could only be Spitfire.

At Deer Valley Airport in Arizona? Yep. Howdy Guys.

Subsequently owner/pilot Bob DeFord gave a presentation to the Deer Valley EAA Chapter. This copyright report and copyright photographs by Hal Rozema.



Lucky Bob resides at Prescott and already owns an RV 4 or 6, a pristine Boeing Stearman; and now the Spitfire. He retired from an airline career in 1990 and was divorced in 1989 (so he doesn't have any "Honey, dos" or have to be home for supper, etc. He has always



chased Spitfires wherever he could see one or watch them fly, including most places in the UK and Europe.

In 1993, he heard about a Frenchman M. Marsec who had full-size Spitfire plans in Paris. He had photographed and carefully measured a Mk 9 (I think) Spitfire in a French museum. Marsec developed the drawings using some kind of projection system, and also acquired some smaller scale drawing

that were in circulation in Europe in the 1980s, where he obtained spar and rib details. Bob didn't say how accurate these were to actual WWII construction, but observed that these were the only full size plans he has ever seen to date. They were a whole lot more accurate than any of the half-size or 3/4-size plans even today. He met Marsec in a Paris hotel and they pinned up the whole set, page by page around the hotel suite.

No doubt the hotel management greatly appreciated the subsequent condition of the walls, full of drawing pin holes. Bob didn't actually buy the plans until about a year later; the box that arrived was about 50 cm deep, filled with folded 2 x 3 m sheets of plans.

Later that year, December 1993, he was at an air show with his Stearman, in San Clemente, California. He glanced over a chain-link fence and through a hangar door, and spotted the tail of a Spitfire under construction; all wood, but full-size. Bob tried to buy it but the builder would have none of it. The wood fuselage had only been completed up to the firewall.

In 1994, he made friends with an expert metalworker, wood worker and aircraft builder in Spring/Oregon, who was equally crazy about Spits. Bob bought the plans and with the Spring/O guy developed a massive chrome molybdenum steel truss fuselage that they could wrap with aluminium. It worked perfectly with only minor adjustments. The fuselage was subsequently moved to Prescott for the skin fabrication and covering.



In 1995, Bob bought the San Clemente/Calif. Spitfire and moved it to Prescott. The parts that he most wanted were the original WWII bits: instrument panel, yoke/s tick, seat, some minor instruments, the tail feathers and some landing gear parts.

In 1998, The Spring/O guy fabricated the main spar from a single baulk of timber 36'10" long and then started on the ribs and other wing components. The fuselage was moved to Spring for mating with the wing assembly.

#### The Allison Motor

Bob had been trying for some time to identify a source for an Allison. This was during a six-year period when Bob was one of three pilots flying the CAF B-17 around the country. At some airport in the Mid-West, he was talking about his Spitfire project. A chap overheard him and said there was a guy on the field with a 'bunch' of Allisons. An hour later Bob was standing in the hangar with 'the Allison guy' looking at a stack of 25 to 30 Allison engines that had never made it to Russia for their P-39s. All were still in their 1945 boxes conserved in cosmaline and varnish paper, in sealed crates. The Allison guy said everyone wanted them for their 'da—' tractors or boats, but he was n't going to sell them to just anyone who might resell them to one of those hicks... The CAF also had a P-39 restoration going and had been searching for an engine. Bob was n't able to get an engine at that time. The guy said he'd think about it. Fifteen months later Bob went back to pick up an engine for the CAF, and one for himself. While they were loading the trailer, he talked the guy out of a third engine just so he would have a spare, should anything happen to his prime engine.

They had brought the nearly completed wing and fuselage back to Prescott and the Spring/O guy came and stayed with Bob to work on the plane. To develop an engine mount for the Allison, Bob studied the German engine mounts fitted to Me109s and some other Spits that by this time were nearing completion in Europe using Hispano Suiza-built Merlins. With these ideas and tubes a couple of sizes larger than anyone else was using, they hung the engine in front of the fuselage and carefully aligned the fuselage for straight and level flight. When everything looked OK by eye and measuring tape, Spring/O began to chop and saw steel, and TIG-weld the tube until the engine was secure.

The Allison from the P-39 has a 2:1 gearbox; they found a prop shaft with the right extension someplace and put that in place of the shaft coupling from the P-39. Then Bob decided that a rebuilt DC-3 propeller would be just right if he had the necessary prop clearance. They leveled the plane on its gear with normally inflated tyres (British for tires) and swung the prop. Whew, for a minute he did think it was not going to miss the floor, but down on hands and knees with a tape....1" clearance. Wow, good! Bob: "Plenty, I always fly the Steerman off and on tail-low, because it also has an oversize prop."

The wing is covered with 3/16 aircraft ply, a layer of glass cloth and West System Epoxy under Emron paint. Spring-O guy did the surfacing work with micro balloon stuff, etc.

One day he decided he simply had to hear the Allison and see if the numbers would stay in the green so he checked the tower at Prescott for a little taxi down the runway. The plane had no skin forward of the firewall and no spinner. He was trying to monitor water temp, oil pressure and Manifold Pressure all at once when he looked outside and found he was already 50 feet in the air! Power off, stand on the brakes and he got it stopped with the nose over the grass at the departure end of the runway. First flight (unintentional), July 2000.



When they weighed the bird it came out 5,800 lbs (1,400 lbs lighter than combat Spits) with 700 less HP. The CG came out perfect at the leading edge of the main spar. No extra weight anywhere for balance.

The DAR passed the Spits in 2003 and gave him permission to do his 40 hour fly-off at Cooledge where the weather was warmer.

Bob's Spitfire has a 65-gallon fuel tank behind the firewall and he is adding a 50-gallon tank behind the seat and later still, a slipper tank on the belly with another 50. The Spitfire rotates at 65 mph; slow cruise is 240 mph at 2400 (tach.) rpm. (propeller turning 1200) and 26" manifold pressure; high cruise is 260 mph at 2600 & 28". The fastest he has flown it is 300 mph with 3000 rpm & 33". A friend who spent some years as a USAF test pilot has warned him about flutter and suggested he not press it further unless he is prepared to lose the aircraft, since this could result in flutter and the loss of more components than any pilot can handle. Fuel consumption is 52-3 gals/hr at low cruise, 65 at high cruise. Bob says the Allison is rated to 4400 RPM (prop 2200) at 55"... that would put him right up with modified P-51s if it would hang together.

#### If you can't stand the heat...

Overheating... always a problem with Spits if flying from paved field. They would blow the high temp coolant valve if taxied for any length of time. WWII grass airfields were no problem because the aircraft would take off directly from their dispersal points around the field. Well, American Auto parts to the rescue; page from the drag racers' book. Bob has Mazda cooling fans behind the wing radiators, and an Arizona misting system using distilled water to prevent mineral deposit build up, by spraying the face of the radiators: 8 gals of water is good for four hours of taxiing. The temp never goes over 110 degrees while the red line is 120 C.



Bob says it loops, rolls, and snaps like a dream: Immelman turns and hammer stalls. He just wishes he could fight somebody! He has never before flown anything so smooth. So far, he has flown just over 80 hours (February 2005).

Hal continues: "Then he ran an hour of CD through a computer projector with sound. I cried at the sound. Indescribable. CD not available... I tried. His son prepared the stuff. He's a professional multi-media guy and has a tight rein on Dad's copy. Sigh ...

How's that... "  
Hal

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