

BRISBANE VALLEY FLYER

DECEMBER 2012



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***Tony King's Koala arrives at Forest Hill
(Page 11)***



RA-Aus Insurance

In November's Flyer, Peter Bugg, an insurance professional with over 35 years experience in the industry, questioned the AGM report of the RA-Aus insurance broker. I approached a member of the RA-Aus Board executive (who doesn't want to be quoted) for comments on the Bugg letter and was given this one sentence reply:

Reference Mr. Bugg's letter; he has carefully avoided mentioning the very small number of underwriters who are willing to be involved in our type of aviation.

I wrote to Peter Bugg and asked if he thought this was a reasonable comment. Or, to put it another way, is it a reasonable explanation for not putting RA-Aus insurance business out to tender?

Peter Bugg replied:

Arthur, from the RA-Aus broker's own admission, he went to 16 or 18 (I cannot remember his exact words) underwriters without success. This is hardly "a small number". However, the risk they have screwed up on is not Aviation policy. It is Management Liability policy (for directors and officers). There are several Australian and overseas underwriters willing to write this type of business. Many brokers like Marsh, Aon, Willis have exclusive (available to their clients only) facilities in place where they could place these policies with a minimum of fuss. Several other brokers like Prorisk out of Melbourne have Lloyds binders and can easily place business of this kind. The opportunities do not stop there. Only a fair tender would bring out these options. The usual agreement with an underwriter is "We give you all our business, the good, the bad the ugly; no cherry picking; you take the lot or we will place our facility with another underwriter".

Aon for example are brokers for Avalon Airshow. They also have an insurance scheme for members at the Southport Flying Club which is the envy of all. Southport's insurance scheme rates are less than half that most aviators can get their aircraft insured for. Yet they only have a membership I think of under 400. RA-Aus has over 10,000 members! Just imagine the member benefits with that sort of clout.

I believe we have a broker capacity problem here, not a market capacity problem. The only way the Board can prove it is has done the correct thing in giving a 12 month tenderer our business for over 5 years (really, how does that work??? Come on!!) is to have another tender with no funny business! I cannot understand why the Board is resisting.

I reiterate, I do not wish to be the RA-Aus broker. I'm still smarting from the last time I tendered. I wish to oversee the tender process to make sure it is fair, honest, transparent and gives RA-Aus members the best result possible. I presently own three and a half aircraft, as well as three hangers, and without RA-Aus being a well organized and professionally run body looking after my best interests I own a worthless heap of scrap metal. That is my motivation towards us getting it right.

Insurance is not the only thing which needs to change. We need people with legal, accounting and business management skills to stand forward for nomination, or be recruited onto the Board by some other means. We have a plethora of CFIs and people with only small business experience at best, trying to run a large and complex corporation. I'm afraid to say that having the best of intentions does not cut it. We need the best people we can get to get professional results!

Cheers,

Peter Bugg

An RA-Aus good news story!

At the last Natfly meeting, I raised the issue of the delay members were having in accessing the Member's Market pages of Sport Pilot. The magazine was continually appearing on newsagent shelves as much as a week earlier than it arrived in members' mailboxes. The magazine seems to be getting to most people more quickly now and problems with certain postcodes also appear to have been addressed. My magazine was often not getting to me till about the third week of the month, but now it arrives on the third or fourth day. The other big improvement, however, concerns the online Members Market. (From memory) this was also discussed at the meeting. Often the online updates were weeks, even a month behind the hardcopy. Now they appear to be at the same time or even earlier. Moreover, there are also photographs of the planes online. Furthermore, there seems to be some real time editing going on because some aircraft disappear from the online pages through the month, presumably because they have been sold. I know that Tony King's Koala is no longer online even though it was in the hardcopy magazine Members' Market. Overall, this is definitely a good news story for RA-Aus. Well done!

The Banana Canyon (by Rob Dawson)

Arthur, I read your article on the “178 seconds to live” myth (as you described it), and it reminded me of an experience that Diana and I had ten or so years ago. This is what happened:



On 4th April 1999, having flown our kit-built Jabiru 2200 from Rockhampton in Queensland to yet another successful and enjoyable fly-in at Narromine in NSW, we set out back home to Rocky. The weather forecast was for more of the perfect flying conditions we had experienced on the way down. We deviated from our flight plan a bit from time to time, but still stayed west of the Great Dividing Range. Approximately 20 nautical miles SW of Glen Innes, we observed smallish balls of cloud drifting from west to east. They appeared to be multi-coloured, very symmetrical and increasing in number, I couldn't recall having seen anything quite like it ever before. My wife Di and I considered our options. We could either continue as planned, or call into Glen Innes, top up our fuel tank, then re-assess our plans. We decided on the latter.

On the ground at Glen Innes, we saw that very thin light cloud was not far away to the west but there appeared to be little change in the wind. The sun was shining above and it looked OK to the east. So we checked the weather report for Ballina, which read clear skies with light breezes. By this time, we were in company with two other Jabirus that had also put into Glen Innes. Both of these planes were piloted by CFIs, so, naturally, I was interested in their opinion. Both pilots intended to make for Ballina. They seemed to be of the opinion that we could beat the weather, so we all quickly refuelled and took off together.

At 3500 feet, we found ourselves climbing through patches of cloud with the broken stuff increasingly joining together. However, Ballina was only 60 minutes further on and it was all down-hill. The flying conditions had not changed and it seemed easy to climb higher into the clear skies just above us. So we climbed and climbed, but the visibility quickly deteriorated. The weather seemed to be catching us. Suddenly, we heard one of the other aircraft report that they had found a hole in the cloud cover and were descending through it. That was the last we heard from them. Although we didn't know it at the time, shortly after they landed on a mountain ridge without injury (but with damage to their propeller). Moments later, the second other aircraft also reported diving through a hole (and we learnt later that they had also landed in difficult terrain without injury).

On receiving these reports, we looked down for our own escape hole but there were none. The situation was becoming more than a little alarming at this stage. Then WALLAH! We burst into this open space; a long crescent of perfectly clear sky surrounded by solid white cloud walls. We just flew into it. It was really beautiful, like a long banana-shaped canyon of pure air hidden in the clouds.

At this stage, though, I noticed that I was having difficulty maintaining engine rpm. Our motor was icing up. “OK”, I thought, “no worries – pull on carburettor heat,” and very quickly we had full power again. Then the left wing stalled but I quickly picked it up. Then the right wing stalled and I picked it up, then the left wing again, then the right, and so on. It became repetitive. Then I noticed rime ice coming up the windscreen! Oh! I chanced a quick glance to the left wing. Oh no! My wing strut was carrying long fingers of rime ice along its whole length. These fingers were more than two centimetres wide and evenly spaced horizontally, about 150mm apart and the full width of the strut. I reckon I could not have spaced them more evenly if I had tried. I had no time to look at the starboard strut but just assumed it had to be the same. Realising that the plane might soon stop flying, I reduced power and tried to fly at a lower airspeed even though this made it more difficult to maintain control. Logical or not, my thinking at the time was that the slower I could safely fly, the higher would the aircraft's skin temperature be. At that stage our inside air temperature was 4°C. We were at 10,000 feet, in summer clothing, yet not cold!

Reluctantly I decided to look up to see what was happening on the underside of our wing surfaces. Horror of all horrors – there was rime ice from the leading edge almost back to the ailerons! The ice was in strips about two-and-a-half centimetres wide and spaced about 300mm apart, also very evenly. Still picking up stalling wings I turned to my darling Di and said, “We are in big trouble. It's only answered prayer that can get us out of this crisis.” So we committed our aircraft and ourselves to God's hands and asked that He lead us to a safe landing in Ballina.

We were trapped in this huge canyon, the dimensions of which I would estimate at about 4 to 5 nautical miles long, 2 nautical miles wide, with a curved bottom about 1,500 feet below and a similar height above. All the walls seemed smooth and brilliantly white, and above these walls, grew great clouds, boiling and twisting. This whole cloud canyon we began to realise was rising with us. We were at maximum altitude and going nowhere, so, rechecking our airspeed and trim settings, we buried the aircraft's nose into the smooth white wall of cloud and began a gradual descent.

The Banana Canyon (continued)

Our aircraft has a full GA panel with an attitude indicator, turn and bank indicator and directional gyro. However, I had had absolutely no instrument flying experience. Consequently, I suppose, it wasn't long though before I started to feel very strange. I felt I was flying OK, but my DG was beginning to turn to the left at an increasing rate. Also, the airspeed needle was slowly but surely moving in a clockwise direction around the dial. I did not realise it at the time, but I guess we had started to use our personal allotment of those 178 life seconds. The plane was gradually but inevitably entering a death spiral. I knew things were not quite right but my brain had difficulty convincing my body what to do about it.



Now I know that many people will not believe this next part of my story. However, just then I heard a man's voice say to me, clearly and distinctly, "right rudder, right rudder". Diana, sitting beside me did not hear these words, but I did, and I believe this was God's Holy Spirit speaking to me. I immediately obeyed and applied pressure on the right rudder pedal. My DG then showed me that we were straightening up. I also eased back on the control stick and the speed reduced and the descent became more controlled. I was completely disoriented and my body was not giving me proper feedback, but I became fixated on the instruments and we continued to descend under control through the cloud.

As I said above, I had never flown without visual reference before that day. When we built our Jabiru I had fitted a full panel, but, even to this day, I have never been trained to properly use it. Occasionally, while flying VFR, I had tried to fly on instruments only, but I now know that this is very far short of flying on instruments for real. I can say, however, that I knew the function of those instruments and what they should have been indicating if the aircraft was flying well.

On we flew through the cloud, still descending. So intently was I concentrating on my flight instruments that I had no idea in what direction we were going. I asked Di to check the GPS and read the heading information aloud to me. Gradually I was able to get us back on a heading for Ballina.

Then there was a sudden red splash of colour reflecting through the clouds. I jokingly said, "There is a red cloud just below on my side. Don't say we have a fire in the motor as well!" Then in seconds the whole cockpit was lit with a brilliant flash of red, and then immediately it was gone. Actually, we thought we knew what it was. We had passed through the eye of a rainbow. To us it was confirmation we were not alone.

It was now starting to drizzle, slowly at first and then in torrential proportions. The cloud we were in began churning. Still flying on instruments only, a new sound filled my ears. Bang, bang, bang! Good grief – whatever was that? We can't be running into solid objects thousands of feet in the air? Then the penny dropped. I had forgotten about the ice on the wings. The rain was melting it and there were chunks of the stuff hitting our tailplane and rudder. This continued only for a few seconds and then we were back to only the sound of pelting rain and the humming motor.

The rain was forcing itself in wherever it could, in through the top of the door, and the air vents. It continued for the next 15 minutes or so then stopped. So did the turbulence. We were still in heavy cloud and zero visibility, but with hands and feet off the controls we could be forgiven for thinking we were sitting on the ground. With about 30 nautical miles to go I looked down through a small break in the cloud. Not very far below I had a fleeting glance of a house on a ridge.

Continuing this slow descent, a short time later we slipped gingerly out from under the cloud and to our amazement, found ourselves only a couple of hundred feet above flooded, harvested cane fields, a road to my right, a car travelling towards us with its lights on and the occasional street light also on. But this was too low! We could easily have flown into high tension power lines, so we pulled up into our cozy clouds to an altitude no pylons could reach. I say "cozy" because, by that stage I was feeling perfectly at home and really safe up there.

About 6 nautical miles out from Ballina airfield I once again began a cautious descent. Still on track for the airfield, easing ever so gently out of our cloud cover, what incredible joy we felt. Right on the nose was runway 06. All grass surfaces were under water. Only the runway, taxiing and hard standing surfaces were above the water. They must have experienced much heavier rain for a longer period than we had had.

Finally on the ground in the parking area, we had not even turned the motor off before a man came running up to our aircraft through the rain to ask if we were the plane that had left Glen Innes in company with the two other Jabs. Apparently, one of the CFIs we had been with had been picked up by a farmer and had immediately phoned Canberra. An alert phase had been declared on our aircraft, one that we were only too happy to cancel. As it turned out, the rain and low cloud continued for the next three days. This unscheduled stopover gave us time to unwind and relax before taking off on the last uneventful (almost boring) leg of our journey home to Rocky. By the way, I met both of those CFIs again and they found it unbelievable that we had made it safely to Ballina.

Editor: Rob clearly believes it was the Holy Spirit that saved the day for him and Di. However, divine intervention or not, one thing is very certain. Without those blind flying instruments in his plane, neither of them would be here to tell the tale. By the way, Rob and Di's lucky little Jabiru LSA is still for sale; a very well maintained (and well priced) aircraft it is too.

Jabiru's new fibreglass propeller

At her Monto seminar, Sue Woods informed us that Jabiru were developing a new type of propeller for use on all their aircraft. Previously, Jabiru propellers have been the tried and true, one-piece, laminated wooden variety, constructed of strong and light Queensland hoop pine. The new propeller design is a complete departure from the traditional in that the blades are separately attached to a metal hub and are made of fibreglass. Not only that, the shape of the blades has changed. They now have swept back pointed tips. All this adds up to more efficiency and Sue told the audience that Jabiru were already getting increased performance from the test propellers. She said that they were expecting to ultimately achieve as much as 5 knots increase in cruise speed. The test propellers have adjustable pitch and there is a lot of thought being put into determining the optimum pitch angle for the Jabiru flight envelope; however, once this has been worked out, the production propellers will be fixed at that pitch. The new propeller is being used on the J170-D prototype and having taken a ride in that plane a couple of weeks after Monto I can say that the new prop is extremely smooth running.



From Deb on the Burnett

Hi, Mal and Gail. Here are some photos of our 'operations centre', which is coming along nicely. Nic was sanding all day, while I planed. Don and Ralph got the outer seats mounted. Ralph and I got the tank stand done earlier. We had a busy day, and in the evening we were entertained by some spectacular lightning. When the wind whipped up it was time to head home. We are still keen to get the roof on, but it all depends on Peter having time to bring the iron up. Deb.



Ave Terry Kronk



Many envied his passion, skills and energy, but for me it was the encouragement he provided for me to learn new skills, be it welding, metal fabrication or test flying at his Emu Gully base. And there was always plenty to do. A prolific aircraft builder, each project seemed to increase in complexity and scale. With right hand man Bryce, nothing seemed beyond their abilities. With the first V8 powered Spitfire in one corner, the popular radial-engined FW-190 in another, there was still time and energy to sort out that amazing P-51, build a Grumman Bearcat replica and commence a twin-engine Mosquito replica. Any one of these projects would tax the average builder. To say that Terry Kronk was an exceptional person would be an understatement, but his quiet nature meant that a lot of what he achieved has gone unrecognised outside South East Queensland.

Chris and I regarded Terry as one of our favourite people, and, along with many others, in knowing him, our lives have been enriched forever. Marty.



Marty Hone remembers TK

I first met Terry at the Mangalore airshow when he had his KR2. It was only a brief meeting and there was no indication that we would end up as neighbours or that he would have such an influence on my life some 15 years later. Terry was what I would call a 'quiet achiever'. Well, that is unless you happened to be around when he paid a visit in one of his aircraft. The howl of the Spitfire, Focke-Wulf or Mustang at full throttle and zero feet above the ground certainly announced his arrival, but once on the ground, Terry was just another regular guy. The only difference was really that he was successful at most things that he did, whether it was in business or building aircraft.

Mike O'Sullivan remembers his best mate, Terry Kronk

We first met on a property. It was so far back I cannot really say exactly when, but it was in the late 80s. He was flying an early rag and tube machine, teaching himself to be a pilot. He was well ahead of the rest. Terry was truly hooked on flying. Right from the start, I could see he was going to be brilliant.

From that first meeting, we became the best of mates. I later built a two-seater and Terry and I flew it together to airshows, fly-ins and into the outback every weekend we could get away. When I started building Spitfires, I didn't have as much time, but up until the move to the USA in 2010, we flew together whenever we could. We had been planning to fly up to Cape York this Xmas for a few days as it was one place neither of us had ever been. We always flew planes we had built ourselves. For us it was about doing our own thing, being together, two mates inventing and flying, going to far off places. We made it happen. We also travelled overseas a lot together and flew together in the US.

We all go through life and we all make friends. However, to be honest, it is rare to have a mate that is on the same wave length as yourself, someone you can phone anytime, day or night, and they will run out the door to help you. Terry Kronk was certainly that person to me and I was to him.

When I built the very first Spitfire replica, Terry took time off from his work to help load it onto his utility and we drove some 300 miles to a deserted airstrip to test fly it. In the few weeks after that, I had a lot of trouble with the engine. One day, Terry told me that he had bought a brand new engine for me and wanted to help fit it up. This done, we started flying the plane and flew it for many hours together. Terry also flew it to many airshows, fly-ins, etc. The one thing I always knew was that Terry was a much better pilot than me. He did wonderful aerobatics.



Terry was always a very humble man. I can say that I never saw or heard him bragging, and he would be quite embarrassed when people applauded him. Terry was a deep thinker and while he did not suffer fools too easily, I never saw or heard Terry making critical judgements about people.

It is hard to believe now as my pen crosses this sheet of paper that we flew together on most weekends for 30 odd years, on so many outback trips, as well as travelling the world. We shared life and only ever once had words with each other and that was stupidly over how to drive a bloody truck and was most likely my fault.

Terry was one of the first to buy a Spitfire kit off me. He dearly wanted to know how to work metal for aircraft. He spent nearly a month at my factory starting to build his kit. Terry was an absolute joy to work with. He picked up working with aircraft metal very quickly. He had a gift of doing things very fast and getting them right the first time through. He never wasted time. Sometimes, though, I had to ask him to slow down. I would say that he needed to "hurry slowly" and remind him that we were not building a house. At times I would go to help Terry on his house projects for a day or so and he would remind me that I should stick to building planes. He always said I was too slow on a building site. He was without doubt the hardest working man I have ever known. He ran everywhere when he was at work.

Terry was a caring mate. Once, when we were on our way to Victoria for an airshow, I started to suffer a migraine headache. We landed and I was laid up at a motel for two days. Terry refused to go on alone in his own Spitfire and leave me there.

In later years, Terry and I flew to the USA to find out how to set up big block V8s in aircraft only to discover that we knew more than the people we went to see. We ended up giving information rather than receiving it. Terry built an FW 190 replica and it would be one of the best in the world. It was an absolute credit to him and Bryce, the bloke who helped him. They went on to build the Mustang and again I was very privileged to see these aircraft in all their build stages, to see the



beautiful work done by both of them. Terry had two other WW2 replica planes in the building stage, these being the Bearcat and the Mosquito, and the sad part is that they may never be finished. Terry and I spent many hours talking about engine re-drive combos and I always said that belts were the only way I would ever go, but he favoured gear drives, sad to say.

Terry will really be missed, not just by myself but by a great many others. He did so much and offered so much to everyone who knew him. Terry loved life. He loved his mum, his wife Bo and his two lovely daughters. He would talk of them often. People like Terry Kronk are not missed for a week, a month or a year. They are missed for a lifetime by the people they touched. I miss you dearly, Mate. Michael O'Sullivan.

P.S. Knowing Terry, he is up in Heaven right now, designing better fitting Pearly Gates and higher performance wings for the other angels.

A good news story from Bundaberg (well done, Jabiru!)

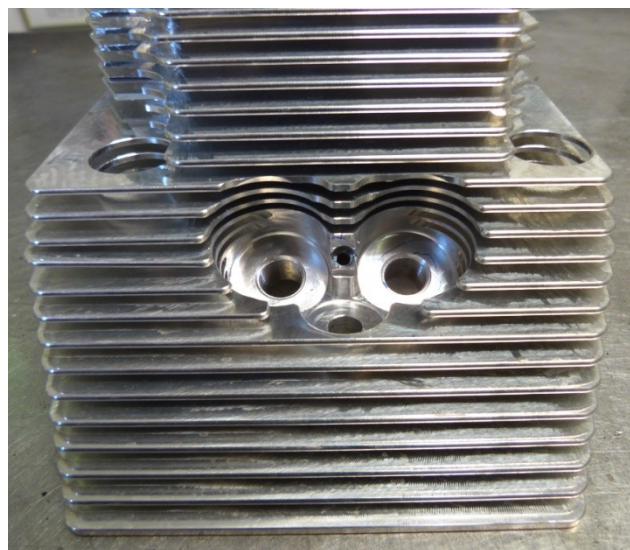
In the early days of Jabiru, full CASA certification was the only way a factory produced aircraft could be approved to fly in Australia. So Jabiru engineers and technical writers put a lot of effort into producing the Jabiru Quality Assurance Manual (JQAM), which, after much negotiation, CASA eventually approved. All Jabiru aircraft were subsequently constructed in strict compliance with that manual. However, since ASTM (American Society for Testing and Materials) airworthiness standards were introduced, manufacturers have been able to self-certify their products. Jabiru still produce a J160C (certified) aircraft fitted with a 2200C (certified) engine and a certified propeller, but this aircraft is sold only in China. All other Jabiru aircraft are now built under the ASTM standards, but, even so, Jabiru still comply with the JQAM. In effect, Jabiru's authority to produce ASTM compliant aircraft is based on their original production certificate for a CASA certified aircraft. When CASA agents audit Jabiru every six months, they are at pains to ensure that Jabiru are doing everything to the letter of the JQAM. Of late, these paperwork demands have escalated dramatically, but, as RA-Aus members know only too well, this is not just the case for Jabiru.

In October when I visited their facility at Bundaberg airport, I began my tour in the glass cloth cutting shop. It is here that the documentation trail for each airframe part begins. Cloth for the fuselage layups is cut out using templates, then packed in a big plastic tub. Along with the cloth, extra structural parts that have been cut with a CNC water jet cutter are taken from nearby racks and sent with the cloth kit to be bonded into the bare fuselage. Before the tub leaves the cutting shop, however, a job traveller is added. This traveller begins its work by recording the batch number of the cloth. Job travellers for the extra structural parts are added to the package for that particular serial numbered aircraft. The tub then goes to the laying-up shop a little further down the way. Eventually, it comes back as a fuselage main section and other composite pieces. By this stage the



job traveller package has recorded the history of every single one of those parts. As well, test samples of the resin used in the layup are attached, each one dated and labelled with suppliers' names and batch numbers. The traveller package also carries the drawing, the issue status, and the certification by the fabricator that the part has been built exactly to the drawing. By the time a Jabiru aircraft is ready to roll off the assembly line, there is a complete package of documentation behind it, recording the quality control history of every individual structural piece. The final documents added to the package include a Manufacturer's Certificate of Compliance with the ASTM F2245 and CASA Certificate of Airworthiness. (Jabiru's production certificate is available on the CASA website, by the way.) Having seen firsthand this Jabiru Quality Assurance System in operation, I can truthfully say that I am absolutely impressed with the way they build planes up there in Bundaberg.

The engine manufacturing company that makes the engine parts and assembles Jabiru engines is also audited by CASA (as part of Jabiru's overall audit) to the same approved quality assurance standards. The engine manufacturing company also holds a fully maintained and registered AS/NZS ISO 9001:2008 Quality Assurance System. Jabiru motors have undergone significant development since first being introduced. It's true that there were problems along the way, especially with top end cooling, but Jabiru engineers (and technicians like Don Richter under their direction) have always responded innovatively to each new challenge and the product is now vastly improved. Don was one of Jabiru's first three employees, having joined the company not long after its first day of trading, 23 years ago. The other two who came on board even before Don are Johnny Farmer and Jamie Cook, and they are still with Jabiru also. These three guys have deep domain knowledge. They know the Jabiru product inside out.



An example of innovative development is the thin-finned heads that now come as standard equipment on all Jabiru motors. The extra surface area provided by these thin fins reduces head temperatures by as much as 25°C. What I found particularly interesting about them is that they do not use a CHT probe spark plug washer. These washers are normally 14mm in diameter and Jabiru spark plugs are 12mm in diameter. It was noticed some while back that if the washer was not correctly centred under the plug, the seal could be compromised and the sensors would then over-read. A better method was obviously required, so it was decided to screw the CHT sensor directly into the head. This arrangement works beautifully, transmitting completely accurate CHT readings. It also has the advantage of plug changes without disturbing the sensors. The photo left shows the CHT probe attachment point directly between the plug holes.

A good news story from Bundaberg (continued)

Not all Jabiru engine innovations have gone as smoothly as the thin-finned heads, however. Early this year, it was decided to introduce a new kind of gudgeon pin retaining circlip. Not that there were issues with the existing wire one; in fact it had proven itself extremely reliable; however it was not the easiest part to install or remove, and there had been instances of people damaging pistons in their enthusiasm to get it out of its groove. So it was decided to adopt a more conventional eye-hole type of circlip that could be installed and removed with circlip pliers. It was also decided to reduce the size of the clip from 25mm to 23mm. Various suppliers were investigated and international standards for circlips examined. American clips were tried but these were not satisfactory and eventually it was decided to use JIS (Japanese Industrial Standard) ones. These parts quickly came onto the production line and motors were soon being sold with them fitted. As well, Jabiru began supplying them as a standard replacement part.

Not too long after, however, trouble started and Jabiru CEO Sue Woods had the first of what was to become many sleepless nights. The first incident was a Jabiru motor failing at Mildura only 19 hours after a top overhaul by an experienced LAME. Examination showed that a gudgeon pin had come loose, seizing the motor. This motor had been fitted with the new circlips. The company immediately initiated a discussion on its web "JabbaChat" forum in relation to the proper installation of the new circlips. Besides JabbaChat, the company made urgent alterations to the engine maintenance manuals to correctly describe the circlip installation technique. However, shortly after came another engine failure from the same cause. Again, it had happened only a short time (20 hours) after a top overhaul by an outside firm.

By this stage, the alarm bells were ringing loudly and clearly in the Jabiru sheds at Bundaberg Regional Airport. The emergency couldn't have come at a worse time because the place had also been hit by flu and many employees were off sick. Sue got together a small engineering team. They knew that both failed engines had been fitted with the new circlips. The confusing factor was that many engines fitted with the new circlips were having no problem at all, some of them having done two or three hundred hours.

Over the next few frantic days the team began taking new stock engines off the shelves and out of their wooden crates, pulling them apart, looking for loose circlips. Engine after engine appeared perfectly normal with the clips tightly fitted into their grooves, until finally, after about six of seven motors had been dismantled and examined, they found a clip that could be rotated. The clip was carefully removed and measured and it quickly became apparent that it had been overstressed on installation by being compressed too far with the pliers. As a result it could not grip the piston groove tightly enough to stop itself rotating. What had happened with the two motors that had failed was that the rotating circlips had chewed their way through their grooves and liberated their gudgeon pins.



Sue then called in various local LAMEs and asked them to install circlips under her team's close observation. Despite being warned about bringing the eyes of the clips too closely together, several people managed to overstress them. It was at this stage that a decision was made to pull all out the stops. A directory was compiled of Jabiru engine customers who had bought motors fitted with the new circlips. Sue then got on the phone and tried to call each and every one of them, as well as phoning the dealers overseas. When she found a motor had been sold on, she made every attempt to track down its current owner. BVSAC member Steve Donald was one of those called in relation to his Jabiru-engined Aeropup. Steve had been super careful installing the new circlips when he had repaired the Jabiru 2200 motor after having had a valve problem. Steve, a senior LAME with Virgin Airlines, told Sue he thought the installation was OK, but passed on the new owner Tony Loeffel's details anyway.

At the same time Sue directed Jab's technical writer to urgently prepare an appropriate service bulletin which was very quickly promulgated on the Jabiru website and also put out to the industry. Furthermore, Sue made the decision that Jabiru would recall all motors fitted with the problem clips and repair every last one at Jabiru's expense. This repair involves not just new circlips, but also new pistons, new gudgeon pins, new cylinder bases, O rings, through bolts and nuts. As can be imagined, this is adding up to be a very expensive exercise for a small company like Jabiru, but it has been one they are prepared to follow through on in order to protect not just their good name but, ultimately, the lives of their clients. (It should be noted that it is not always the case that Jabiru cover costs with their Service Bulletins. However, they usually do offer some parts free and also do work free of charge at Bundaberg if the aircraft can be flown there.)

A new circlip has been sourced, one made by a German company and made to the DIN standard. It is available in both 25mm and also 23mm for engines with the 23mm grooved pistons (see photo right). It is less susceptible to deformation at installation. However, care must still be taken and instructions followed.



Even in the highly technological world of aviation engineering, mistakes can and do occur. In this instance though, a small Australian aircraft company picked up an error very early, an error which, incidentally, wasn't fully theirs, and did the absolute utmost to successfully rectify the problem in the shortest possible time. Not only that, they voluntarily bore all the costs. That is why this is a good news story. In fact, it really doesn't get any better than this. Absolutely well done, Jabiru!

The case for reduced power takeoffs

The tragic death of Terry Kronk was the result of an engine failure after takeoff (EFATO). Informed opinion is that the re-drive unit (the propeller drive reduction gearbox) failed. This article addresses the issue of EFATO, particularly when it occurs as a result of power stress.

The ATSB reported in 2010 that partial engine failure after takeoff in light aircraft is statistically more dangerous than total engine failure after takeoff. However, partial or total, EFATO always carries potentially serious consequences.

At the risk of over-simplification, engine failures can be divided into two categories; these being failures which are a direct result of the application of power (torque, rpm or both) to the drive train, and those which are the result of failures not directly associated with the application of power to the drive train, such as cam drives, valves, fuel systems, ignition systems, etc. This second category of engine failure is obviously not as constrained in terms of when it might happen as is the power dependent type of failure. It is also logical to think that engine failures that are related to power are more likely to be total than are those that are not.

Aircraft engine systems are designed and built to sustain the loads that are placed upon them. When a drive train component fails, the actual moment of failure is probably the final moment in a period of deterioration for that part, and this process may take several flying hours to actually terminate in failure.

Statistics also tell us that the most likely time for engine failure is during or shortly after takeoff, or close to destination when fuel mismanagement may come into play. Some of those early-in-the-flight failures may also be fuel management related, but it is probably safe to assume that a significant proportion are of the power dependent type. Also, it goes without saying that takeoff is when the aircraft's energy reserves, both potential and kinetic, are at their lowest, and so it is the most critical time to lose the motor.

Applying full power up to takeoff safety speed then going for maximum rate climb, of course, increases total energy reserves in the shortest possible time. However, this standard takeoff technique also puts maximum load on the drive train during the most critical period for engine failure. The case for reduced power takeoffs is simply that if a full power, maximum rate takeoff is not required, then the motor should not be stressed in this way. The application of full power at the beginning of the takeoff roll is recommended, however; because this is the safest moment to apply maximum torque to the drive train. If a weakness is developing, this is the ideal time for that weakness to manifest itself as a failure. However, assuming everything holds together at the start of the takeoff roll, the power should be coming off even before the wheels have left the ground, thereby decreasing drive train stress to a level below that just applied.

Most pilots rarely if ever fly out of airfields that are marginal in terms of required climb rate. Therefore, reduced power takeoffs are an entirely feasible standard operating procedure. Reduced power takeoffs test the integrity of an aircraft engine's drive train at the beginning of every takeoff, then maximise the motor's structural reserves during the critical stage of climb out.

Comments on this article are invited from readers.



The Great Eastern Fly-In 2013
5th-6th January

The Great Eastern Fly-In is on 5-6 January, 2013 at Evans Head. Whatever you fly, join us at the Evans Head Memorial Aerodrome. If you are looking for a beach holiday, flying, fun activities and good food, don't miss this opportunity! Camping on site. There are also Markets, Car Clubs, a Pilots dinner Saturday night. There is something for the whole family. Bring your spouse/partner, kids, friends and your neighbour and if you can't fly...drive, catch a bus or walk...For more information please call Gai on 0427825202

**LOOKING FORWARD TO SEEING YOU AT
THE GREAT
EASTERN FLY IN!**

BVSAC member Paul Escott's gyrocopter is for sale

This is a new Patroney Revolution G1812 two-seater; almost new with 50hrs on the clock (23hrs since purchase). Paul says that it is a very reluctant sale. The plane has a carbon reinforced pod with an aluminium and chromoly composite mast/frame.



It has dual controls and radio. It is fast and precise to fly, and is located at Caboolture Airfield, Qld. At <http://youtu.be/7P5GZQ1TMQ0> you can find a short video about this machine. Paul is asking \$55,000 (he may possibly consider a single seat project in part payment). Contact Paul on 0404 855 456 or email: paul.escott@me.com

Tony's Koala

The BVSAC has a new member; Tony King from Gatton. Tony has been an aviation enthusiast for most of his life and first started flying as a student pilot in 1985 at Coldstream near Melbourne. After getting a few hours past first solo, life intervened in ways that will be familiar to many. The financial and time demands of a young family, interstate relocations and so forth all added up to no flying for over 15 years.

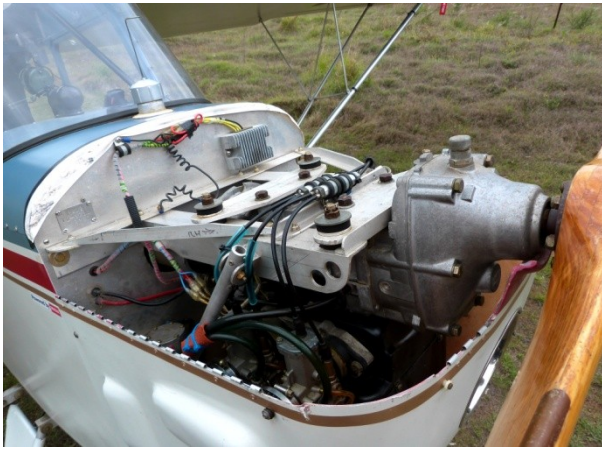


In 2001, while on a short term contract in Townsville, a work colleague introduced Tony to recreational aviation. The following weekend after a short drive out to Jones Rd, introductions and a few formalities, Tony found himself in the left seat of Pat McGrath's Lightwing. The passion for flying was well and truly re-ignited and Tony gained his AUF Pilot Certificate a couple of months later.

Life continued to limit opportunities for flying and Tony became convinced the best way for him to keep flying was to have his own plane. Not being in a position to stump up the cash for an aircraft that would meet his desire to travel long distances quickly, Tony decided to build, and shortly after started work on a KR2S. That project is progressing, but realising that it will likely be a few years before it's in the air, Tony began looking for something low cost with which to 'scratch the itch' in the meantime.

Tony's Koala (continued)

Enter FP202 Koala 10-3736. When it came on the market mid-2011 Tony was immediately interested, but it had sold before he was in a position to do anything about it. It came on the market again early this year, but once again Tony wasn't quick enough. Then, in September this year, Tony saw a comment on a forum indicating that the new owner was thinking of selling. Third time lucky they say, and in this case it is true. After a somewhat epic road trip, Koala 3736 arrived in South East Queensland mid-October.



The aircraft is timber and fabric and was built by Phil Bird in Sydney about 10 years ago. It's powered by a Rotax 447 with a Sweetapple propeller and cruises between 55 and 60 knots. To say Phil did a great job is an understatement. The quality of the construction and finish really is impressive. Phil sold the Koala after six or seven years to the first of three owners in Tasmania, none of whom used it very much.



After reassembly with the assistance of John Walmsley at Coominya, Koala 3736 took to the air once again, and the dream of owning his own aircraft came true for Tony. Since then, a second dream has been realised with landing his new aircraft on an airstrip he has constructed on his property near Gatton. The property is yet to have a house or shed/hangar (one reason the KR2S won't be in the air for a while yet), so for the present the Koala is living comfortably at Forest Hill.

When the Koala arrived at YFRH last week, I was just as impressed as everyone else who has seen it. Tony told me that when he told BVSAC member Vern Grayson how much he had paid for the little ship, Vern accused him of stealing it. I think Vern's got a really good point.



The world's only flying Mosquito

The story goes that in the UK in the early 40s, metal workers were in high demand but there were thousands of cabinet makers looking for work. Thus was the motivation for the design of the Mosquito that uses a lot of laminated wood in its construction. It had two Spitfire engines and so no other aircraft could catch it. The first Mosquito was delivered in 1941 and was used in many different roles, as a low-level daytime bomber, as a reconnaissance aircraft, as a bomber escort and was particularly successful as a U-boat hunter. As a low level strafing it was devastating. Its most famous duty was that of a pathfinder where it would fly ahead and drop incendiaries to act as targets for bombers.

Only a month or so ago, the world's only flying Mosquito on its maiden flight from Ardmore aerodrome in New Zealand. The pilot, Cathay pilot David Phillips, is one of New Zealand's most experienced pilots in vintage and classic aircraft. He owns and flies his own Hawker Hunter jet. He said the Mosquito was quite unlike anything he's flown before.

"Kind of heavy and light and the same time. It's hard to describe. The controls are light; it's responsive but you are conscious of the inertia. You can feel the rudder is a long way back. It flies like a very well designed, 15,000lb twin-engine, strike aircraft." He went on to say he wasn't really nervous, just concentrating hard, conscious of what he would be remembered for if anything went wrong. "Basically, however, it was lovely. They did a fantastic job of building it."

His observer on this historic first flight was Warren Denholm who runs Avspecs, the Ardmore-based restoration company that has been rebuilding the aircraft for its American owner since 2005. He was also concentrating hard on the gauges. "It's my first time in a Mosquito; it's the pilot's first flight in a Mosquito; it's the first time the plane has flown; it's the first time anyone has flown a Mosquito anywhere in the world for decades so you don't have much time to smell the roses. But when you finally stop gritting your teeth and look out the window over South Auckland and realize no-one else can do this, in the only flying Mosquito anywhere in the world, life is pretty good."

They picked a couple of items they wanted their engineers to look at before the flight back, but Warren was well satisfied with the first flight. "It went very, very well."

KA 114 was built in Canada and saw brief service in 1945 before going into reserve storage. Eventually sold to a farmer, it lay in a field for 30 years before being moved to the Canadian Museum of Flight awaiting restoration. The Mosquito is special (and rare these days) because of its wooden balsa-core sandwich construction. It was one of the world's first composite construction aircraft (DeHavilland pioneered the technique with the DH91). Like almost every other Mosquito, KA114's body had rotted (it broke in two when being rescued from the farmer's field). This and several other Mosquito projects in the world owe their existence to Kiwi Glyn Powell and his Mosquito Aircraft Restoration team who undertook the task of building the two 11m moulds needed to lay up the new fuselage halves. They also built the 16.5m wing.



Watts Bridge signage

According to BVSAC Secretary, Richard Faint (the good-looking codger on the right, the other good-looking codger being Peter Freeman), this sign just about completes the name change formalities except for one final sign to go on the front of the clubhouse. Richard actually designed our logo, and, personally, I think it (he) is quite brilliant. Good job there, guys!



The RA-Aus political situation

We began this month's Flyer with BVSAC member Tony King's smiling face, so let's finish it with the start of Tony's reply to Steve Runciman earlier this week.

Hi Steve. Thanks for reminding me that there are 2 sides to every story. I would point out, however, that the fact I've heard a lot more of one side than the other is something that you and the rest of the Board could and should have done a lot more about long before now. In the absence of information, people always tend to fill in the blanks for themselves, and what they come up with is rarely as positive as the truth. I don't think I'm engaged in a witch hunt. In fact I'm keen to hear what our elected representatives (and the Executive in particular) have to say, although it's unlikely I'll be able to get to Canberra for a meeting. Based on the reports I've heard from those who were at the AGM (unfortunately I wasn't able to attend, although I did vote), I'm not confident of a satisfactory response, but I live in hope. However, I do believe the issues with RAAus have gone on long enough and the Executive/Board has had sufficient time to demonstrate improvement. Someone has to be accountable for the ongoing issues, thus the suggestion that it's time for change.

Well over 200 RA-Aus members, significantly including at least half a dozen ex-board members, have so far signed and returned requisition forms for a General Meeting. I've also been told that postal form returns are still coming in at a high rate. The RA-Aus Secretary is now bound by the constitution to call a meeting to be held on a day within the timeframe specified by the constitution.

Despite numerous approaches to the RA-Aus Executive by Don Ramsay and other RA-Aus members wanting constitutional and other reforms, no negotiations between the two camps are taking place (or, for that matter, have ever taken place). The Executive and many Board members appear to have closed ranks in a 'them-and-us', hunkered down show of defiance. Instead of negotiating, or even enquiring about what the would-be reformers are on about, some members of the Board are engaging in a shoot-the-messenger tirade of vitriol directed not just at Don and his group but also at their own dissenting Board members like South Queensland representative, John McKeown.

Meanwhile, the aircraft registration debacle continues. This problem will likely be solved soon, however, it should be recognised that this *4th audit failure in 12 months is symptomatic of underlying maladministration and a general failure to inform members of these difficulties until aircraft were being grounded. (At the AGM, the registration issue was presented as a small problem that was being sorted out, mainly a concern with Ibis aircraft.) Without doubt, the departure of the CEO has been a necessary and not insubstantial step towards the eventual re-establishment of proper procedure at management level, but the question of inadequate oversight, including the question of why the CEO's departure took so long to occur, despite repeated warnings and the numerous resignations of disgruntled Board members, remains.

Sadly, this refusal to listen to membership concerns, this 'now don't you worry about that' attitude, appears as entrenched as ever. The Executive clearly regard themselves as being as wrongfully accused and besieged as did Joh Bjelke Petersen's cabinet during their final days. Attitudes are bordering on the farcical. On the day of the AGM, one Exec member, in all seriousness, warned me to be wary of Don Ramsay because he was a spy for the SAAA.

There seems to be no easy way out of this. Reform is coming to RA-Aus in the most difficult way. But it has to come.

*SQ Rep John McKeown was told by CASA that this is indeed the 4th audit failure in 12 months

BRISBANE VALLEY SPORT AVIATION CLUB Inc

MINUTES OF THE NOVEMBER 3RD 2012 GENERAL MEETING

MEETING LOCATION: Watts Bridge Memorial Airfield
MEETING DATE: 3rd November 2012
MEETING OPENED: 12:45PM

MEMBERS PRESENT: 18

APOLOGIES: Mary Clarke, Scott Meredith

VISITORS: 2 – Wayne & Lyn Petty
NEW MEMBERS: 1 – Wayne Petty

MINUTES: October meeting of the BVSAC Inc.
Proposed: Mike Smith Seconded: Richard Faint Acceptance motion carried.

PRESIDENT'S REPORT: Nil

SECRETARY'S REPORT: Nil

TREASURER'S REPORT: Bank Account Balance is \$10,376.71

WBMA REPORT: Nil

BUSINESS ARISING: Mike Smith spoke on RIAMA Memorial & that BVSAC donate to a memorial plaque.

GENERAL BUSINESS: The Christmas Party was discussed with the following resolutions
To be held on 01.12.2012 starting at 12:00PM
Catering organized by Caroline Bowden
RSVP to the President by 17.11.2012
Cost \$15.00

A resolution was made that "The QUA sign be removed from the clubrooms and that a new sign be made incorporating the new BVSAC Logo. The sign should also carry some contact information such as a phone number, email or web address"
The resolution was put by Arthur Marcel, Seconded by John Innes. Carried.

Arthur Marcel spoke to the meeting about the ongoing litigation involving RAAus

NEXT MEETING: 1st December 2012 in the BVSAC Clubrooms Watts Bridge at 12:00PM for the Christmas Party.

MEETING CLOSED: There being no further business, the meeting was declared closed at 1:30PM
A BBQ lunch was held prior to the meeting in conjunction with the WBMA AGM.

**The BVSAC Xmas Party is on Saturday 1st December
at the Watts Bridge Clubhouse (42 acceptances).**

PRESIDENT: Neil Bowden 3200 3821 TREASURER: Priscilla Smith 3206 3548

SECRETARY: Richard Faint 0412 317 754 [richard@auav.org]

BRISBANE VALLEY FLYER EDITOR: Arthur Marcel [a.marcel@optusnet.com.au]