

# ...CONTACT!

September 2023

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**... and don't forget EAA's upcoming events below!**

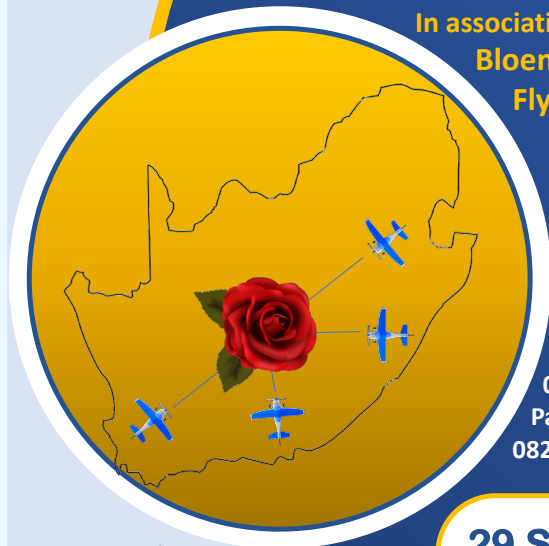


## Sun 'n Fun '23

**New Tempe, Bloemfontein**  
Camping, in town accommodation,  
catering on the airfield,  
flying competitions!

EAA's 2024 Sun 'n Fun  
Fly-In has been planned  
to accommodate EAA'ers  
from all over South Africa -  
whether you're flying from the  
Cape, KZN, Mpumalanga or Gauteng!  
And Free Staters – this wonderful  
venue is right on your doorstep!

In association with the  
**Bloemfontein  
Flying Club!**



Neil  
084 674 5674  
Paul  
082 8227018

**29 Sept to  
1 Oct '23**



## SILVER CREEK PANCAKE DAY

Sat, 16 September 2023



Camp over Friday night - braai packs and  
beer available

Bring your stories, smiles and have fun

Frequency: 124.80 | Runways: 08 - 26  
Elevation: 4,300 | All Circuits - South  
Be aware of animals on runway

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## PRESIDENT'S COLUMN



Welcome back to all our members that made the trip to Oshkosh this year, I watched it intrepidly on the wires getting up sometimes at 03h00 am to tune in to some of the forums which piqued my interest.

One subject that looked particularly interesting aside from all the wonderful stuff that usually happens at Oshkosh, was the momentum given to the MOSAIC (Modernisation of Special Airworthiness Certification) an initiative that the EAA along with AOPA is monitoring closely and providing input and guidance to the FAA rule makers within this process.

The Federal Aviation Administration (FAA) is planning to enhance the safety and performance of Light Sport Aircraft operations through the proposed Modernization of Special Airworthiness Certification (MOSAIC) rule, which would put performance safety standards around larger aircraft that innovators are building by expanding the definition of Light Sport Aircraft.

The main thrust of MOSAIC aims to redefine the light sport aircraft category and dramatically raises the size and performance capabilities of airplanes that can be flown by sport pilots.

MOSAIC would take the current LSA weight limit of 600 kilograms (1,320 pounds) and replaces it with "performance-based" measures such as a 54-knot maximum clean stall speed ( $V_{s1}$ ) that will allow airplanes with gross weights up to about 3,000 pounds to be operated by sport pilots.

"This rule will encourage manufactures to make Light Sport Aircraft operations safer, more versatile and accessible while maintaining rigorous safety standards. Around this proposal, the aircraft's weight limit is based on its stall speed.

By permitting higher stall speeds, the proposal would bring within the Light Sport Aircraft regulatory framework aircraft weighing as much as 3,000 pounds. This more than doubles the weight of aircraft under the current definition of Light Sport of 1,320 pounds, allowing larger and more powerful aircraft to qualify as Light Sport.

The proposal would also expand the type of aircraft sport pilots can operate and allows them to use their aircraft for a wider range of operations such as some aerial work. Although sport pilots could operate aircraft designed with up to four seats, they would remain limited to operating with only one passenger.

This NPRM (Notice for Proposed Rulemaking) is out for comment until mid-October and the USA public has 90 days to comment on the proposed rule once it is published in the Federal Register.

A brief overview reveals that the FAA has indicated that it will publish a final rule and respond to comments after the comment period closes.

Within this new regulations under review with the FAA MOSAIC will do away with the current 120-knot LSA speed restriction and allow controllable-pitch propellers and retractable landing gear. Sport pilots also will be allowed to fly at night and operate the more capable aircraft with appropriate training and instructor endorsements.

Under the new definition, light sport aircraft can have up to four seats, and travel at a top speed of 250 knots calibrated airspeed. MOSAIC would also replace the current requirement that LSAs have a “single, reciprocating engine” with an open-ended allowance for “any number and type” of power plant.

An article by Dave Hirschman from AOPA USA editor penned a great article summarizing MOSAIC and reports; it’s a head-spinning turnabout that is gaining interest momentum double fold.

He points out that under the current LSA rules, for example, a Cessna 152 doesn’t qualify because it has a gross weight of more than 600 kilograms. The new rules will allow 150s and 152s, as well as a Cessna 172, 172RG, 170, 180, and some 182s.

Under MOSAIC, it means that thousands of legacy airplanes, including the 152 and 172, would now qualify to be flown by a Sport Pilot, this with the accompanying driver’s license medical. In the USA it means that no trip to an Aviation Medical Examiner of any kind, a refreshing change for nervous newbies and a boost for flight schools, who can now offer Sport Pilot training without buying a new aeroplane. For career-pilots, the medical exam may still be routine, but there is a host of pilots that also learn to fly for fun. As well as pilots that are flying in their twilight years, that are healthy tea totalers by day, can now fly into their nineties as the medical requirement now is more reachable. ☺

Sport pilots would still be limited to taking no more than one passenger at a time even if the aircraft has more seats than that. This could prove to be problematic, so will be interesting to see the comments and how it will pan out. MOSAIC also imposes certain noise restrictions.

MOSAIC also allows the use of relatively inexpensive, safety-enhancing avionics to be installed in LSA aircraft regardless of whether they’re FAA certified, and it allows manufacturer-approved, appropriately equipped LSA airplanes and qualified pilots to fly under IFR in instrument conditions.

Angle of attack indicators, envelope protection equipment, and moving maps are encouraged under MOSAIC to promote “safe and cost-effective flight training.”

Among those likely to be enthusiastic about the proposed changes are owners of existing aircraft that could soon qualify as LSA and experimental avionics firms that can sell their products much more broadly. The FAA intends for these expansions to increase safety by encouraging aircraft owners, who may be deciding between an experimental aircraft or a light-sport category aircraft, to choose aircraft higher on the safety continuum.

That should also make the Sport Pilot certificate a much more popular option for new pilots. As mentioned it’s up for comment in the USA and if promulgated, we then could be on the SA CAA steps with a mirror proposal.

Don’t forget Sun n Fun in Bloemfontein at the end of September. This venue makes easier provision for our coastal pilots to meet halfway and have some aviation fun in the City of Flowers. We are looking forward to seeing all our members and friends there in their droves. To quote an EAA South Africa Legend, Bill Keil “Everybody will be Welcome like the Flowers in Spring”.

Take Care up There!

Paul



# Chapter 322

## September Gathering

As we welcome the beautiful spring weather, the month of September brings an abundance of exciting aviation events. The first weekend of September we had the pleasure of attending both the Rand Airshow and Spring Day at Tedderfield Airfield. To ensure that our members could fully enjoy the festivities, we decided to move our gathering to Sunday.

The day started off with an early meeting, where our members gathered over coffee and breakfast. We later made our way into the EAA Auditorium grounds, basking in the warm sun while watching the airshow activities.

As always, our incredible team worked tirelessly to make the day a success. Ronell, Marie, and Dean were the first to lend a helping hand with the setup, ensuring everything was in place. Coen and Ronnie got the fires going, filling the air with the tantalizing aroma of cheese patties.



*Coen and Ronnie once again sorting the braai!*

By 9 o'clock, we were ready to commence the usual EAA business, including announcements of birthdays and upcoming events. Moose Woods shared exciting details about the forthcoming Silver Creek Pancake Day and Campover, along with Mike Visagie, who introduced our new streamlined approach and joining procedures, inspired by the renowned Oshkosh "Fisk" approach.

We were also fortunate to have Neil, who



*Ant and Brenda proudly showing off their Oshkosh Weekend Work Party caps!*

recently returned from an extended stay in the USA, share his family's remarkable experiences at Craig Ritson's Aviation Estate, thrilling rocket launches at Cape Canaveral, and the breathtaking hot air balloon activities in Goreme, Turkey.

To conclude our gathering, Karl Jensen treated us to an amazing video capturing the highlights of the Children's Day event held at Orient.

Afterward, Danie Morkel from Fuselage Wines entertained us with a delightful wine tasting session, showcasing their aviation-inspired wines.

The rest of the day was spent in the company of friends, enjoying the various aviation activities. It truly was a wonderful way to experience the annual Rand Airshow!

We hope you will all join us for our upcoming events and continue to be a part of our EAA aviation community!



*Danie Morkel from Fuselage Wines - for more information on their wonderful aviation labels please visit [www.fuselagewines.com](http://www.fuselagewines.com)*





# Children's Flight 2023

by Karl Jensen, EAA Chapter 322

An amazing amount of organisation and effort by Felix Goshier was expended over months for The Children's Flight 2023. Felix must be congratulated for his seemingly tireless efforts. Felix has been running The Children's Flight for 8 years as well as the new Elders Flight which made its debut at Benoni/Brakpan earlier this year. I have taken part at several of these events, and this year I was just one of 127 pilots who gave of their time and airplanes voluntarily for this edition of The Children's Flight. There were 109 airplanes, 14 helicopters and a hot air balloon that took part at the home of the Magalies Gliding Club, Orient Airfield (FAOI).



*Children lining up at the EAA Gazebo for registration*

The organisers and an army of volunteers, including several EAA Members who have a natural community spirit, and sponsors started setting up



*Pilot Briefing*



*The Emergency Crew*

The organisers and an army of volunteers, including several EAA Members who have a natural community spirit, and sponsors started setting up on the day before the event on the official 1<sup>st</sup> Spring Day, Friday 1 September. Most activities taking place on the airfield and with many volunteers packing the hundreds of colourful Lucky Packets well into the night in the Gliding Club main building.



*Herding passengers to fly in the Heystek's Antonov An2*

The weather was kind initially with a brisk temperature early in the morning which suited the hot air balloon that gave early arriving children rides. Some of the more than 500 children came from places of shelter and the majority from orphanages. This event was a wonderful eye opener and experience for many of them who would ordinarily never get a close-up view of airplanes, never mind flying in them. When the





*The next Caravan load*

distinctive event T-Shirts and caps. All air crew and helpers were presented with hazard vests with their names and purpose screened onto the vests. The generous sponsors provided unlimited food and drinks to everyone taking part. The payoff for the sponsors was the joy and happiness of the children and of course many of the helpers and handlers. Deservedly, the resulting publicity in all manner of the media was spread to many parts around the world.



*Under the large Stretch tent Marquee*

Ground bound entertainment was in the form of a massive children's party, with face painting,

jumping castles, clowns, magicians, music from Hot 102.7 FM and Capital Sounds. An enormous stretch marquee provided shelter for everyone. Many of the sponsors also had tents with plenty of bean bags that the children appeared to enjoy immensely.



*Explaining the guages to the passengers in simple terms*

The deputy head of the SAAF, General Mathebula arrived in a Casa 212. The SAAF presence was by a large contingent as well as flypasts by the Hawk that flew from Air Force Base Makhado, adorned in the colours of the SA flag. The air display was opened by skydivers with a large SA flag. This was followed by the ever-present Puma Energy Flying Lions who put on an immaculate display.

Most of the children and their minders had flights in both helicopters and the fixed wing airplanes and gyrocopters. All passengers were registered at the EAA Gazebo run by our Marie Reddy and Ronell Myburgh with other willing volunteers. Significantly every flight had every individual manifested. The allocated children and their handlers were in turn, taken by their pilots to their aircraft assisted by other uniformed helpers to ensure absolute safety.



*Karl with Marie Reddy and Ronell Myburgh*





*Safety Officers, CAA Inspector and ATNS ATC*

Nigel Musgrave, our EAA National EAA Safety officer, headed the Safety Team which included Rikus Erasmus, head of ASSA, who kept strict control of activities. ATNS provided AFIS in a three tier control tower. ER24 had a contingent of about 19 officials and several vehicles to provide emergency service that thankfully was not needed.

The wonderful day ended without a single incident that probably had all the children that night dreaming about the magic happenings of the day.



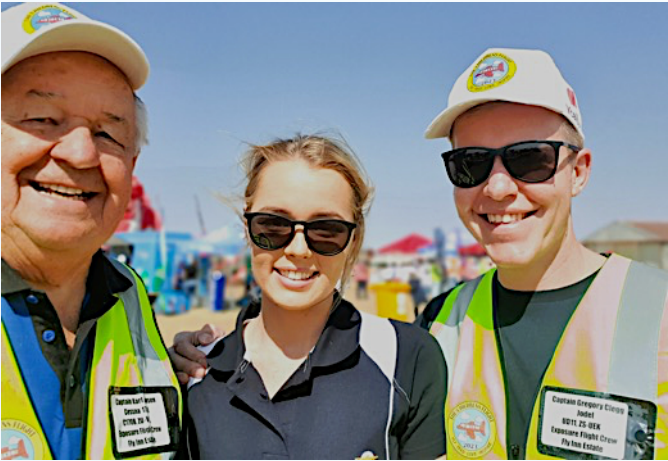
*Juggler on stilts entertaining the children*



*Children enjoying sponsors bean bags*



*Karl von Seidlitz briefing his passenger*



*Karl Jensen, Gregg Clegg and Maritza Boswel who flew her first flight as a qualified Flight Instructor the previous day*



# SILVER CREEK PANCAKE FLY-IN 2023

## *Approach, circuit and ground procedure*

1. Unmanned airfield joining rules apply. AFIS only, no ATC.

- a. Do not repeat AFIS instructions to reduce radio chatter
- b. Approach from the South, call 3 minutes out.
- c. Two holding areas in use, to the West beyond the Buffelspoort dam (If 08 is in use) and to the East, about 5 miles from the Airfield a prominent set of buildings (If 26 is in use), only if requested by AFIS
- d. Airfield elevation 4400', therefore plan to cross runway (From the South) at right angles at 5900'.
- e. Descend to join either L for 08 or R for 26 downwind (Wind direction applies on the day)
- f. Maintain safe following distance in the circuit, if any doubt, inform AFIS and go around passing on the outside of the circuit and rejoin behind
- g. Call Base and turn finals
- h. Land at pilot's discretion
- i. Maintain a turn of speed to the end of the runway to clear ASAP
- j. After landing, obey Marshall's instruction. Red flag means STOP or proceed with caution according to the Marshall's indication. Green flag means proceed according to instruction.
  - i. This will be a visual indication communication system
  - ii. The flag bearing Marshall will point the flag at the intended recipient pilot in his/her aircraft.
  - iii. A vigorous indication will follow instructing the pilot (YOU= the Point) to "Go there" (Indicating a specific place, usually the position of the parking Marshall on a quad bike or golf cart
  - iv. Alternatively the indication may be to STOP, with the red flag in a stopping motion.
  - v. After a STOP instruction a gentler green flag will point the intended pilot with indicated direction or taxi path of what is expected of him to do.
  - vi. Pilot will acknowledge flag instructions with a simple nod of the head
- k. Any uncertainty can be immediately clarified with a radio call at any time. The intention is to reduce chatter and resultant workload.

The flag signals may sound complex but in reality it is a very simple, direct and very rapid form of communicating cutting a minutes worth of radio work down to a second or two of visual cues.

## SILVER CREEK PANCAKE DAY

Sat, 16 September 2023



**Camp over Friday night - braai packs and beer available**

**Bring your stories, smiles and have fun**

**Frequency: 124.80 | Runways: 08 - 26**

**Elevation: 4,300 | All Circuits - South**

**Be aware of animals on runway**





# EAA Sun 'n Fun

**New Tempe Aerodrome, Bloemfontein - 29<sup>th</sup> September to 1<sup>st</sup> October 2023**

The EAA Sun 'n Fun at New Tempe Airfield in Bloemfontein is a great opportunity for EAA members from all over South Africa to come together. It's wonderful that the Bloemfontein Flying Club will be hosting the event – they have huge experience in organizing large aviation events in the past such as the Presidents Trophy Air Race (PTAR).

The flying competitions and aircraft judging will not only be great fun, but will be most rewarding. We need to get a glimpse of some of those unique aircraft from far and wide. And of course, the social activities will provide a fantastic chance to catch up with friends from all corners of the country. Whether you prefer camping on the airfield or staying in a nearby hotel or BnB, there are plenty of accommodation options available (see next page).

Attending this fun flying weekend is not only a must but also the best way we can show our appreciation to our hosts for their hard work in making it happen.

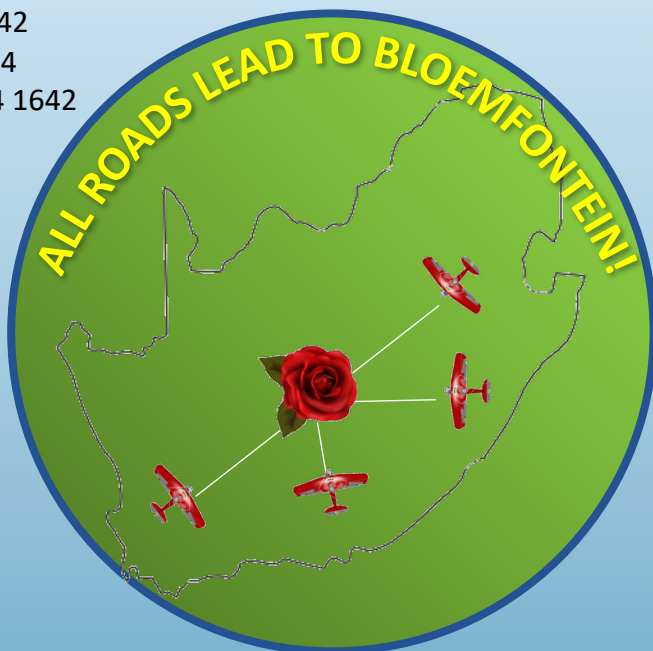
Here's hoping we all have an incredible time at this year's **EAA Sun 'n Fun!**

## **Event Info:**

Paul Lastrucci 082 404 1642

Neil Bowden 084 674 5674

Kassie Kasselmann 082 404 1642



## **Airfield Info:**

FATP Runways 01/19 1 300m Asphalt & 28/10 1 200m Asphalt Join overhead 6000' Descend either western or northern side Airfield Elevation 4 500' Coordinates Latitude -29.0345 Longitude 26.1585 Avgas available R33,81 /L





# EAA Sun 'n Fun

*In town accommodation options – camping is also available on the airfield*

Name	Tel	Website
Pepper Tree Venue & Guesthouse	+27647096274	<a href="http://www.peppertreevenue.co.za/">http://www.peppertreevenue.co.za/</a>
Krige Lodge	+27822552326	
Marrakech Guest House	+27825667220	<a href="http://www.marrakechguesthouse.co.za/">http://www.marrakechguesthouse.co.za/</a>
Figberry Guestrooms & Lodge	+27828212462	<a href="http://figberry.co.za/">http://figberry.co.za/</a>
Ashwood Guesthouse & Conferences Centre	+27510114333	<a href="http://www.ashwood-guesthouse.com/">http://www.ashwood-guesthouse.com/</a>
Tuscan Rose	+27514519006	<a href="http://www.tuscanrose.co.za/">http://www.tuscanrose.co.za/</a>
Liedjiesbos B&B Bloemfontein	+27832825701	<a href="http://www.liedjiesbos.co.za/">http://www.liedjiesbos.co.za/</a>
Calypso lodge	+27723107646	<a href="http://www.fourleaf.co.za/">http://www.fourleaf.co.za/</a>
Monte Christo Country Lodge	+27837311400	<a href="http://www.montechristocountrylodge.co.za/">http://www.montechristocountrylodge.co.za/</a>
Bains Lodge	+27514511761	<a href="http://www.bainslodge.co.za/">http://www.bainslodge.co.za/</a>
a Little Guesthouse	+27822289988	<a href="http://www.alittleguesthouse.co.za/">http://www.alittleguesthouse.co.za/</a>
Ilanga Estate	+27514368450	<a href="http://www.ilangaestate.co.za/">http://www.ilangaestate.co.za/</a>
Toscana Estate Guest House and Function venue	+27639145706	<a href="http://www.toscanaestate.co.za/">http://www.toscanaestate.co.za/</a>
Stonehill Villa	+27664657526	<a href="http://www.stonehillvilla.co.za/">http://www.stonehillvilla.co.za/</a>
Helenas Accomodation	+27844463084	<a href="http://www.helenasbloem.com/">http://www.helenasbloem.com/</a>
Recato Guesthouse	+27721949549	
ParkHill Luxury Accommodation.	+27834438165	<a href="http://parkhill.co.za/">http://parkhill.co.za/</a>
Melsetter's Guest House Bloemfontein	+27825249134	<a href="http://melsetters.co.za/">http://melsetters.co.za/</a>
Park Living Guesthouse	+27795409990	<a href="http://parkliving.co.za/">http://parkliving.co.za/</a>
Protea Hotel	+27514444321	<a href="https://www.marriott.com/hotels/travel/bfnbf-protea-hotel-bloemfontein">https://www.marriott.com/hotels/travel/bfnbf-protea-hotel-bloemfontein</a>
Anta Boga HOTEL	+27514444643	<a href="http://www.antaboga.co.za/">http://www.antaboga.co.za/</a>
College Lodge	+27514443837	<a href="http://www.collegelodge.co.za/">http://www.collegelodge.co.za/</a>
Southern Sun Bloemfontein	+27514441253	<a href="https://www.tsogosun.com/southern-sun-bloemfontein">https://www.tsogosun.com/southern-sun-bloemfontein</a>
Villa Bali Boutique Hotel	+27514446606	<a href="http://www.villabali.co.za/">http://www.villabali.co.za/</a>
Hide Place Lodge and Spa	+27514445608	
Castle with a View	+27798877095	<a href="http://koelkas.co.za/">http://koelkas.co.za/</a>
City Lodge Hotel Bloemfontein	+27514442974	<a href="https://clhg.com/hotels/105/City-Lodge-Hotel-Bloemfontein">https://clhg.com/hotels/105/City-Lodge-Hotel-Bloemfontein</a>





# GROUNDING WINGS



## Investigating fuel starvation and over-supply problems on a Jabiru 430

by Dr Robert Clark

I need to state upfront that I do not subscribe to the philosophy of fiddling on aircraft, but what do you do when the manufacturer offers no guidance, you have fuel pouring out of the air filter casing, and your aircraft is grounded for safety reasons. I trust this article will be enlightening to Jabiru owners, and their AMO's and in some small way, improve safety within aviation.

Before delving into the fuel problems, I must mention that my Jabiru 430 is a wonderful aircraft to fly. It is relatively quick (118 to 120 knots at 19-20 litres per hour), the Jabiru brand has a fantastic safety record and the aircraft is economical to operate, when compared to similar aircraft in its class.

We know from statistical data, that a pilot will eradicate 52% of engine failures on their aircraft if they:

- a) make sure there is adequate fuel in the aircraft (9%)
- b) ensure the fuel is not contaminated, and of the correct grade (5%)
- c) they understand the fuel system, and know how to get the fuel to the engine (16%)
- d) use carb heat when necessary (6%)
- e) ensure the aircraft is correctly maintained (16%)

Have you ever been flying your trusted aircraft and the engine starts to splutter? It is not a pleasant experience, especially when you are low and slow. This article is based on my experience with a Jabiru 430, after a top end engine overhaul, with a newly fitted roller cam.

The Jabiru 430 has three fuel supplies to the carburettor, namely:

- Gravity feed, as it is a high-wing aircraft. On my Jabiru 430, I can sustain straight and level flight just on gravity feed. The engine will splutter at wide open throttle, in the climb.
- There is a mechanical fuel pump fitted to the engine block, which supplies a positive pressure to the carburettor needle and seat. In the case of a Jabiru 430, the pressure parameters for the carburettor should range between 0.75 and 3 psi (5.17 to 20.7 kPa).
- The Facet electrical auxiliary fuel pump, which delivers a fuel pressure of 20 to 21 kPa. The electrical fuel pump is used for the critical phases of flight, including take-offs and landings.

A mechanical fuel pump is used in internal combustion engines to deliver fuel from the fuel tank to the engine's carburettor. In the case of the Jabiru 430, the fuel tanks are in the wings. The mechanical fuel pump is driven by the engine's camshaft. An overview of how the pump works is as follows:

1. The mechanical fuel pump consists of a housing, diaphragm, inlet and outlet valves, and a lever arm. The pump is mounted on the engine block, with a solid push rod to the camshaft.
2. The fuel pump is driven by a lobe on the engine's camshaft. As the camshaft rotates, it pushes the push rod connected to the fuel pump. This causes the pump

to reciprocate up and down. In the case of my aircraft, I measure a total lift of 3.03mm.

3. When the diaphragm moves downwards, it creates a vacuum inside the pump's housing. This draws fuel from the fuel tank through the inlet valve. As the push rod moves upward, the fuel is compressed, and the diaphragm pushes the fuel out through the outlet valve, to the carburettor.
4. Mechanical fuel pumps are commonly found in older carburetted engines. Electric fuel pumps have gained widespread adoption for fuel injection systems, as they can provide a higher pressure required by fuel injectors with a very high degree of reliability, and better control over the fuel discharge pressure.



*Jabiru mechanical fuel pump*

After 991 trouble free operating hours on my Jabiru 430, the engine was due for the top end overhaul. As the Jabiru factory in George, is the only Jabiru Australia approved factory for

engine overhauls in South Africa, the engine was sent via courier by the AMO to the factory. As part of the top-end engine overhaul, the roller camshaft modification was carried out on the engine. Since the engine top-end overhaul, the aircraft has been inundated with fuel related problems. They were as follows:

- Approximately 5 hours after the engine overhaul, the aircraft engine spluttered after take-off when the auxiliary fuel pump was switched off. The aircraft was returned to the AMO, where it was ascertained that an internal component of the mechanical fuel pump was rubbing against the fuel pump body. It is suspected that the mechanical fuel pump was jammed, and not pumping any fuel to the engine. The AMO removed the fuel pump pushrod, and it was shortened from 72.6mm (out of specification) to 72.4mm (further out of specification). The six-cylinder Jabiru engine can, at cruise power, operate without a mechanical fuel pump. The aircraft however cannot climb at a higher power setting, without a mechanical fuel pump, unless the auxiliary fuel pump is in service. The four-cylinder Jabiru engine may be able to climb and cruise with a faulty mechanical fuel pump, as the fuel demand is so much less than a six-cylinder engine.
- The aircraft was flown back to Witbank after the repairs by the AMO. On landing, the engine cut and on multiple occasions thereafter, the engine would cut on landing. The idle was also abnormally rough, especially below 1 000 RPM.
- During a routine aircraft inspection, it was noticed that black smoke was bellowing out of the exhaust and Avgas was pouring out of the air filter casing. In the interest of safety, the aircraft was immediately grounded.



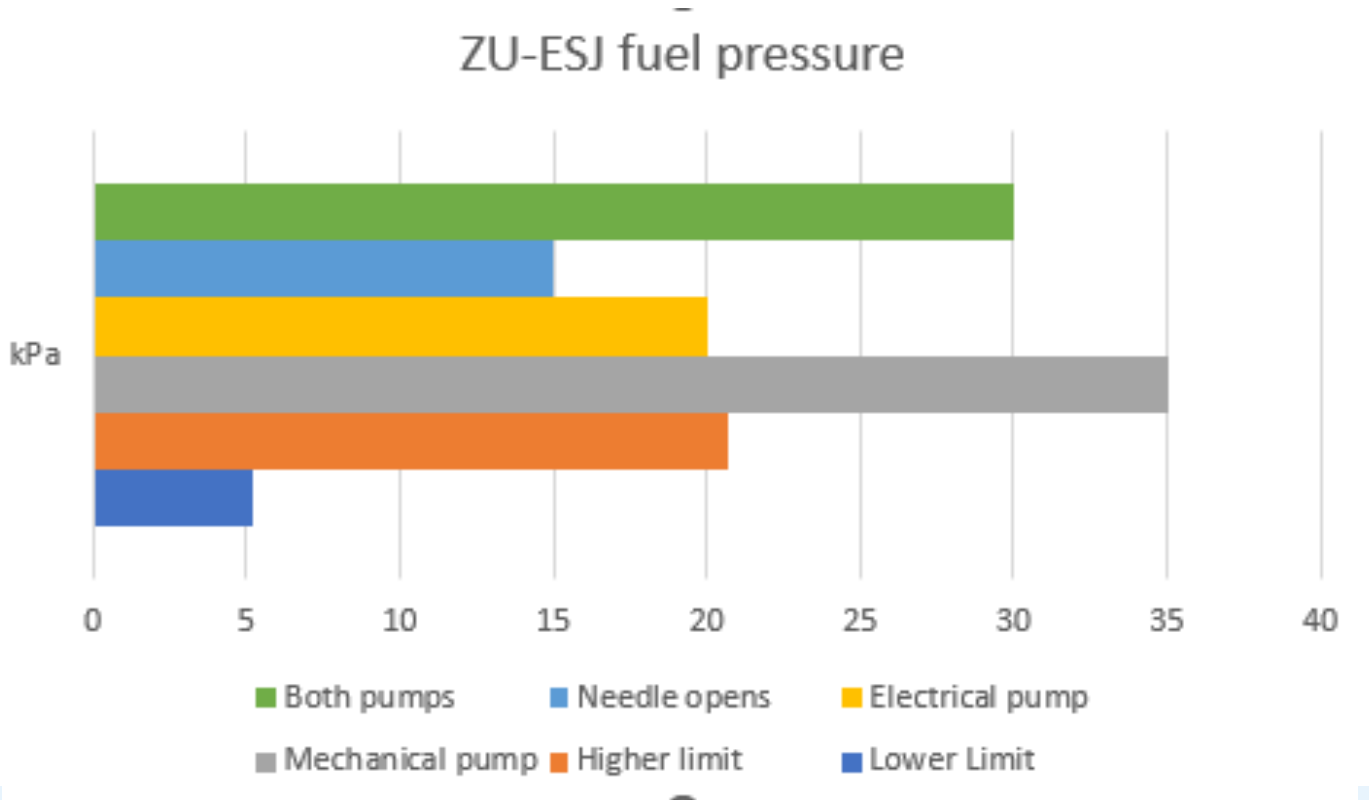


A pressure gauge was fitted to the fuel line after the mechanical fuel pump, to determine the reason why fuel was pouring out of the air filter casing.

The results from the pressure test were very concerning. Whilst the needle and seat in the carburettor requires a pressure between 5.17 and 20.7 kPa, the mechanical fuel pump was delivering 35 kPa. The needle would pass at 15 kPa.

The AMO returned to the airfield, as the mechanical fuel pump was simply over-riding the needle and seat and flooding the intake plenum chamber and pumping fuel from the carburettor up the equalization line, to the air filter. With the carburettor float bowl removed after the engine had idled for 1 minute, a stream of Avgas would pour out of the main jet, for approximately two minutes. This suggested that the entire plenum chamber of the aircraft was totally flooded with fuel.

The push rod driving the mechanical fuel pump was 72.4mm in length, which gave a mechanical fuel pump discharge pressure of 35 kPa. This push rod was replaced with a push rod that was 74mm in length. The discharge pressure increased from 35 kPa, to 51 kPa. A shorter push rod was installed, which was 70.9mm. The mechanical fuel pump pressure dropped to 30 kPa. To reduce the fuel pressure further an additional 0,7 mm gasket



Jabiru mechanical fuel pump

was inserted between the engine block and the fuel pump (as suggested by the manufacturer of the fuel pump). The fuel pressure dropped from 30 kPa, to 0 kPa. A 0.7mm gasket can remove all fuel pressure from the mechanical fuel pump, which is very worrying.

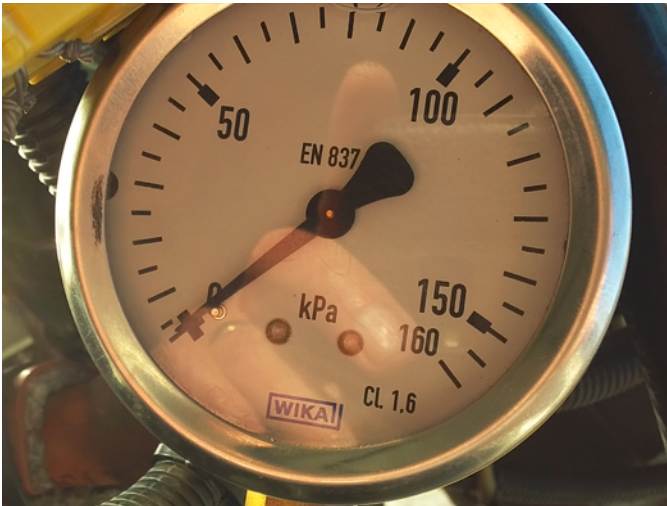
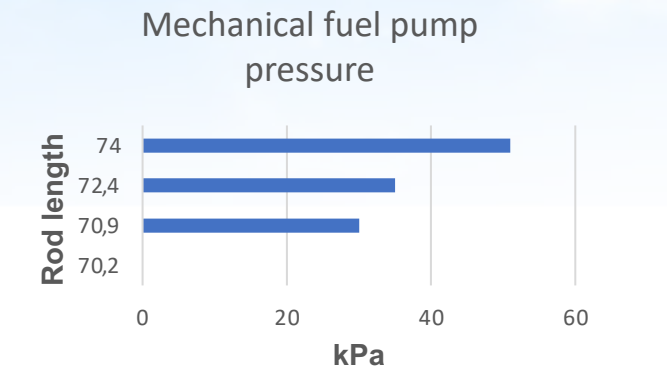


*Float level was confirmed to be within specifications*

Following all the work done on the aircraft fuel system, the engine was subjected to a full power test on the ground, with the fuel gauge connected to the fuel line. The following was evident:

- At idle speed (1 000 RPM), the fuel pressure was 24 kPa.
- At full power with wide open throttle, the fuel pressure dropped to 12 kPa.
- At full power with wide open throttle and the auxiliary pump in service, the fuel pressure increased to 15 kPa.

As the new push rod length was shorter than the standard requirements of 72.8mm, there was the possibility that the push rod would not be in touch with the camshaft, especially with the cam at bottom dead center (BDC) conditions. This would result in undue wear of the cam, as the push rod would be chattering on the cam. To prove this theory, the pump was removed, and measurements were taken with the push rod at bottom dead center, and top dead center (TDC). It was apparent at bottom dead center that the push rod was missing the cam by 1.81mm. To remedy this unacceptable situation, a standard-length pushrod was installed which had a length of 72.81mm. At bottom dead center conditions, the push rod was still missing the cam by



*The fuel pressure with the additional 0.7mm gasket in place*

The gasket was removed to restore the fuel pressure to the carburettor.

The seat within the carburettor was polished with Brasso and an ear bud, to improve the seal between the needle and seat. Five minutes of effort improved the sealing from 15 kPa, to 19 kPa. The buoyancy of the float was also in question. To remove all doubt, the float was replaced. This improved the sealing pressure of the needle and seat to 24 kPa. The float level was also confirmed to be within the specifications, as specified by Jabiru.



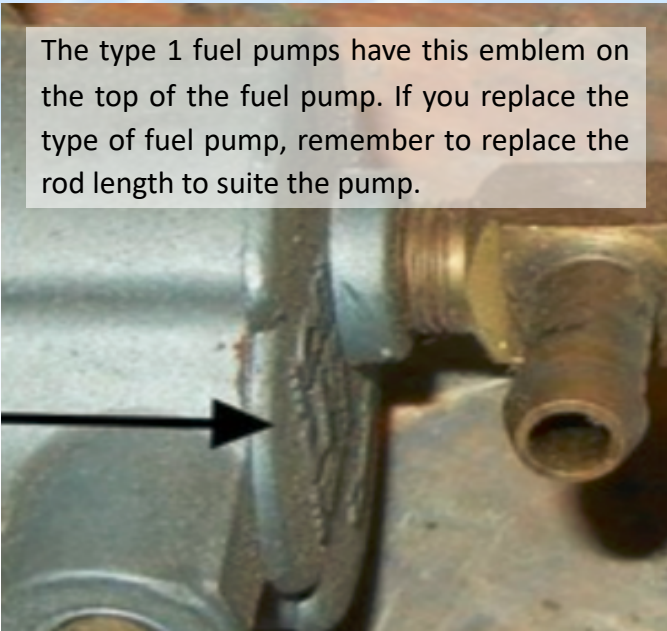
0.06mm. Considering the thermal expansion at operating temperature, the push rod will still be missing the cam by circa 0.00685mm. This is of no concern from a mechanical perspective, as the push rod is within the tolerances as specified by Jabiru. From previous experience, it is known that the longer push rod would result in a higher pump discharge pressure, which would once again result in the carburettor flooding, by forcing open the needle and seat.

With the fuel pump plunger at BDC, the fuel pump was bolted to the engine casing with the two cap screws. Whilst in this position, the 6 bolts holding down the pump diaphragm were loosened. The crankshaft was rotated one full revolution until the fuel pump plunger was at TDC. At this position, the 6 bolts on the pump diaphragm were tightened. With an inline pressure gauge fitted to the aircraft, the engine was cranked with the magneto's in the off position. The fuel pressure at no-flow conditions was 25 kPa. With the engine at idle conditions, the fuel pressure was at 24 kPa and decayed to 15 - 16 kPa when the engine was at 2 000 RPM. This was a significant improvement, and resolved the fuel related problems on this aircraft.

Further research in this regard revealed that Jabiru have two different types of fuel pumps, with different push rod lengths.

	Type 1 fuel pump	Type 2 fuel pump
Rod length	72.75 to 72.85mm	74.75 to 74.85mm

Goss, the fuel pump supplier, state that the maximum movement on the cam within the pump is 10.3mm, and the discharge fuel pressure will be between 2.9 and 4.5 psi (20 to 31 kPa). Bing (the carburettor manufacturer) however state that the carburettor has an operating pressure between 0.75 and 3 psi (5.17 to 20.7 kPa).



The type 1 fuel pumps have this emblem on the top of the fuel pump. If you replace the type of fuel pump, remember to replace the rod length to suite the pump.

The lessons learnt from this experience are as follows:

- On a six-monthly basis, ensure that the discharge pressures of the mechanical and auxiliary fuel pumps are within specification.
- At every annual service, insist that your AMO checks and records the fuel supply pressure to your carburettor. You need a 0 to 60 kPa pressure gauge, a T-piece, two fuel line connectors and a 100mm piece of fuel hose. Total cost will be about R800. Pressure gauges are available from multiple suppliers in South Africa. The electrical pump will have a discharge pressure of 20 to 21 kPa, and you would expect the mechanical fuel pump to have a similar discharge pressure at no-flow conditions.
- With the fuel pressure gauge in service after the engine has been cranked with the magneto's off, any decay in pressure will suggest that the needle and seat, or the fuel pump non-return valves are passing. This would require immediate corrective action by the AMO.

As fuel related problems are the result of many aircraft accidents, it is prudent to pay attention to any fuel associated problems on your aircraft as soon as possible. Fly safely!- Dr Robert Clark

# POST OSHKOSH

Our adventure to Florida and beyond ...!

By Neil Bowden



## Chapter 1236's meeting place at Love's Landing

After wrapping up the SA Camp at "Hotkosh", we embarked on a journey down south towards Florida, where temperatures were scorching hot. Our main goal was to visit friends and witness a few rocket launches. Luckily, we had the comfort of air conditioning in our vehicle during the heatwave that the US was experiencing.



Craig's "7" in the well-maintained aviation estate, Love's Landing

Our first destination was the home of our friends Craig and Mandy Ritson, located in the picturesque Loves Landing aviation estate. Craig, an aviation enthusiast, had recently completed his RV 7 aircraft, his Sonex and RV both housed at his dream-like abode. As soon

as we arrived, Craig wasted no time taking us on a thrilling tour of the stunning lake-studded countryside in his RV 7. It was truly a magical experience witnessing the beauty from above, knowing that Craig had flown his RV all the way from Rochester to his new home just before Oshkosh.



Bruce and myself about to board the Super Petrel – note the life vests!

The following day, Craig arranged for us to enjoy a ride in his neighbor's Super Petrel amphibious aircraft, a remarkable Brazilian creation. We taxied out to Runway 27, one of the two meticulously maintained grass runways within the estate. Surrounded by picturesque lakes, we embarked on a series of





*Approaching Lake Weier*

"splash downs" on various rivers and lakes in the area, expertly piloted by Bruce. The entire experience was absolutely breathtaking! Next on our itinerary was a visit to John Stahr's hangar and home. John, a renowned airbrush artist, is sought after for his exceptional plane painting skills throughout the USA. We had the pleasure of witnessing his incredible work, which had recently been featured in the June issue of Sport Aviation. Just after our visit, John was off to paint five stunning Sling aircraft. We can't wait to see the masterpieces he creates!



*John's tail on his RV 8 – check his website [www.artisticaviation.com](http://www.artisticaviation.com)*

Steve and Kathy Wolf's hangar was our next stop. Both accomplished airshow aerobatic

display pilots, John shared captivating stories from their aviation adventures. Steve is currently building a scale P-47 aircraft, and with John's assistance, plans to recreate the battle-damaged appearance of Jack Hallet's P-47 from World War II. Jack, who was actively involved in the project until his passing at the remarkable age of 101 last year, flew until he was 100!



*Steve's P-47 project*

Later that day, we rejoined John and Patti Stahr at their home for a delightful late lunch with friends from the estate. We left relatively early as John had arranged an air-to-air photo shoot with Craig the following morning keen to catch the "golden hour". The subject of their shoot was John Demartino's new RV, expertly painted by John Stahr. We took off at first light, heading east to Umatilla Municipal Airport, while Patti skillfully captured stunning air-to-air shots along the way.



*Air-to-air taken by John's wife, Patti*

At the airport, we discovered not just one, but three courtesy vehicles parked in the car park for visiting pilots' use, with keys conveniently available in the clubhouse. Thanks to the





*Craig at the controls of John Demartino's RV – Loves Landing in the background*



*John, Patti, Craig and myself at Greg's Haystax*  
hospitality of Umatilla, we headed to a diner called Greg's Haystax for a delicious breakfast. On our flight back, we made several touch and goes at Leeward Air Ranch, a wide 2-mile grass runway, before returning to Love's Landing. It was another unforgettable morning!



*John Demartino's RV – that's all paint, no vinyl*

Just when we thought we couldn't be any more surprised, Craig took us to Frank's place. Frank, the proud owner of a bright red Enstrom helicopter, generously offered Laura and Jesse a ride. A ride they can't stop talking about!



*Laura, Jesse and Frank*



*Jess and Frank, with the Enstrom in the background*





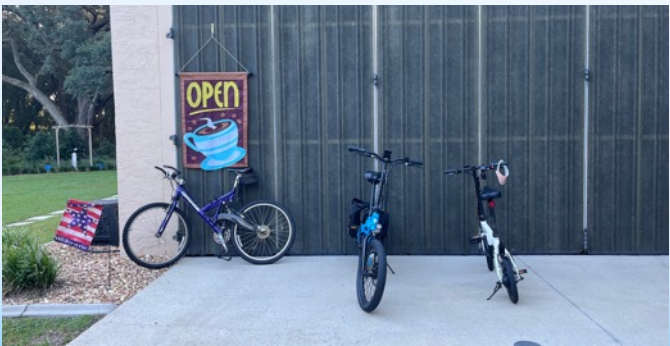
*KO and his planes*

We then walked over to Frank's neighbor, KO Sanders, a Delta pilot and owner of a beautiful Tiger Moth aircraft. KO, who got his nickname from his boxing background, also shared fascinating stories about his Super Cruiser, Tiger Moth and a hunting trip to South African boxer Corrie Sanders' farm. It seems that both aviators and boxers stick together!



*Jesse tries out KO's seat!*

A new day brought us to Byron Covey's weekly coffee meeting, a casual gathering at his stunning house. The event was a true South African affair, with women gathered inside while the men enjoyed the warmth of the fire outside. Our time with Craig and Mandy had been incredible, and we couldn't be more grateful for the unforgettable moments we shared.



*What better way to get around an aviation estate than on a bikes!*



*Early morning coffee at Byron Covey's place*

Another memorable visit was to John Carlile's hangar. John had just completed a Pedal Pitts for his grand children, complete with all the sound effects associated with a high-performance aerobatic aircraft and airbrushed by John Stahr. Not yet tested, Jesse was invited to give it a go, and declared the official test pilot of the aircraft!



*Test pilot Jesse Jeffrey!*

Our next destination was Orlando, where our main mission was to witness a rocket launch by SpaceX. We found a comfortable motel on Cocoa Beach, just south of Cape Canaveral.



*Watching the launch from Port Canaveral*



Locals recommended watching the launch from the Port Canaveral Harbour, offering a close vantage point only 10 miles away from the launch pad. Despite some delays and bad weather, we were fortunate enough to witness the awe-inspiring launch alongside fellow spectators from around the world.



*The Blue Origin facility at Cape Canaveral*

The following day, we embarked on a visit to the Kennedy Space Centre. On the way in I was surprised at the size of the Blue Origin facility at Cape Canaveral, we normally only hear about SpaceX and NASA. We planned a couple of hours at Cape Kennedy - little did we know, our 4-year-old companion would have happily spent days exploring the wonders within.



*Jesse at Cape the Kennedy Rocket Garden*

Reluctantly, we began our journey back to Chicago, marveling at the magnificent scenery of the Appalachian Mountains in Kentucky. As we approached Cincinnati, a call from our friend Arnie Quast in Chicago informed us of the Chicago Air & Water show, featuring a closing performance by the Thunderbirds. Determined to witness this grand spectacle, we hastened our pace and secured parking on

the lakefront just in time for the Thunderbirds' breathtaking display.



*The Thunderbirds at the Chicago Air & Water Show*

Our time in the USA had come to an end, and bidding farewell was bittersweet. On our last night, we were joined by Arnie and Dawn for a memorable dinner near our hotel, cherishing the beautiful memories we had created together.

Before heading back to South Africa, one final adventure awaited us – a trip to Göreme in Türkiye. This enchanting town is nestled in Cappadocia, renowned for its unique landscape shaped by volcanic rock and erosion.



*Watching balloons at Göreme*

We woke up early to witness the mesmerizing sight of a mass balloon over-fly, with over 82 balloons floating above the town. It was truly a sight to behold as the skilled pilots navigated between the cave towers and eventually returned to the launch site.

As we reflect on nearly two months of incredible experiences, we realize that this journey has filled our hearts with unforgettable moments. Now, it's time to head back home, carrying cherished memories and a newfound appreciation for the world's wonders.



# BREAKFAST IN AMERICA



## *A short story of my privileged flying week at Oshkosh.*

After the delayed flights out of Paris, and missing the bus from Chicago to Osh, we were very relieved when Neil called to say there were five other stranded souls in the same boat, and he would collect us the next morning, to drive us all up to the camp.



## *The beautiful Wisconsin countryside*

affairs, and I was asked to fly one of the planes at the show. A true privilege indeed, and an opportunity not to be turned down.



## *Breakfast in the campsite*

WOW...what a setup. Neil and his team travel over a month ahead to set up camp, mow the grass and buy the supplies. It is a massive task undertaken by a very well-greased team. It all 'just works' !

The USA agent for Bat Hawk, Gary Saitowitz, and his fiery, but wonderful wife Vanda, plus Mom Pat and Dad Sam brought two aircraft up to Oshkosh for the week-long show. Gary had organised all my

A very strict protocol was in place. After a two hour briefing, you get your badge and wrist band for the week. Another set of paperwork, and you get issued another wrist band, allowing you to be towed to the Ultralight strip.

Every morning, after the best 'Breakfast in America' put on by Neil and the A team, was the daily briefing at 07h30 with another wrist band.



Miss the briefing and you simply do not fly that day!

Day one, looking like a colourful Maasai warrior, we started up and taxied to the holding point for my first solo circuit. Rules are rules...do not exceed 300 ft AGL. Do not deviate from the pattern. Do not start decent before you are ready to turn finals. Do not land short of the markers. Do not do a touch and go. Do not talk on the radio. We will speak to you if we need to. Missed approaches had to be done before turning base. This had to be



*Myself and Laura McDermid*

another scrumptious ‘Breakfast in America’, with enough fresh cherries to fill a cargo ship, we got flying again.

Today was different, as now we had two queues. One for potential buyers, and the other filled by South African pilots, Done by following a tree line as reference, and you then re-enter the pattern looking out for aircraft that have taken off.



*The ultralight circuit takes you over the campground*

A few solo circuits and we started flying potential customers, plus my wife of course.



*The smiles say it all! Myself and Neil Bowden*

Day two, and after all of whom now knew there was a chance of a flight at Oshkosh. Athol, Karl, Neil, Laura and more, all had a circuit with the mandatory few ‘missed approaches’.

Some of the folk I had included an A350 Captain and an F35 pilot. They were both very keen to own one of these for their respective ranches.



*Leaving the circuit*

So now to exit the pattern for some country pictures, one had to maintain 300ft AGL and exit at the furthest corner crossing the interstate and following a road at 45 degrees. The incoming traffic from Fisk for the main runway were at 500 ft AGL from your right. We stayed at 300AGL for 5 nm, and then you are free to play around the lakes and fields.



*Karl exiting the Bathawk*





Approaching from the south – take care to avoid the main runway

Enter the pattern the same way and complete your circuit.

The cherry (pardon the pun) on top was getting to fly from Oshkosh, all the way to an airfield west of Chicago, assisting Gary return his second aircraft home. This was a 2,5 hr flight, and a real ‘pinch myself’ moment !



Heading south to Chicago

What an LEKKA time it was with good friends, new friends, cold beers and the best ‘Breakfast in America’.



Fly safe, Sean!

### 322 in Action at Oshkosh!



Chapter 322 Pointer mounted at the Blue Barn

Chapter 322 was busy at Oshkosh this year. Thanks to Dean Nicolau and Sean Cronin a splendid directional pointer was made for the totem pole at the Blue Barn. With the help of chapter staff it was mounted during the event.

Dean also kindly made up an Adirondack chair for the Blue Barn. It was carried disassembled to Oshkosh and assembled and varnished at the camp by Ray Hollins – Brenda and Ant with chair below!



Chapter 322 also made a donation of over 100 sleeping bags to a local homeless shelter which was greatly appreciated – Oshkosh winters are cold!





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