

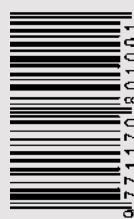
KiwiFlyer™

Magazine of the New Zealand Aviation Community

Issue 56 2018 #1



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From the Editor

With weather over summer that has often been either very good or very bad, organisers of aviation events have needed luck on their side so far this year. We've got some of those mentioned in this issue – the Bush Pilot Champs, Dannevirke gyros, New Year's fly-in, and Walsh to name a few.

A notable feature of this KiwiFlyer issue is the content included from younger flyers well and truly bitten by the aviation bug. Jill McCaw interviews Ross Brodie who having become famous for 16 type solos on his 16th birthday a couple of years back, is now well on the way to a CPL and predictably, a career in aviation. Ross got his 'start' by growing up around aircraft and frequently flying with his father Russell. But for many young aviation enthusiasts at the annual Walsh Memorial Scout Flying School, their first go on the controls will have happened within the same two week period that they take to the skies solo. The annual Walsh camp at Matamata is a fantastic institution supported by many companies and volunteers. Our Walsh report this year is by Noah Woolf, whose first solo took place there on 20th January shortly after 6am, shortly followed by the traditional Walsh celebratory dousing with buckets of cold water.

Another feature of this issue is bush flying. Craig Anderson writes of the history behind the Healthy Bastards Bush Pilot Champs that he co-founded at Omaka some seven years ago and which quickly became an annual fixture on the NZ aviation calendar. Craig has also contributed an essay titled 'Airstrip Flying 101', a must read for anyone who doesn't always land as accurately as they might like to, or should.

Chris Gee writes of his trip to the Singapore Airshow in February where he found quite a lot of things with a New Zealand connection, particularly regarding our pending Defence Force acquisitions. He also found an 'alarming' array of military hardware on show, much of which is nowadays focused on very sophisticated drone and precision weapons technology. Isolated as we are in New Zealand, and with our own Defence Force generally only visible in humanitarian roles, it takes a show like this to properly remind oneself of the extraordinary capability for destruction that exists in the world - and the extraordinary amount of cost and effort that goes into continually extending that capability.

On a happier note, it's Autumn now and the weather might possibly be a little more settled. The air will be denser too. Enjoy.

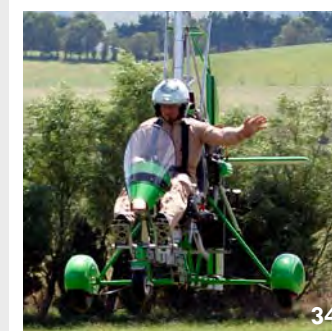
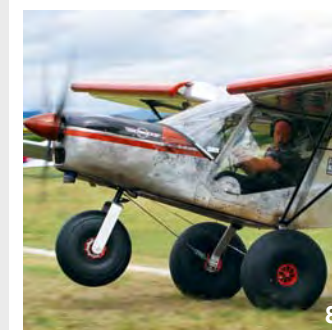
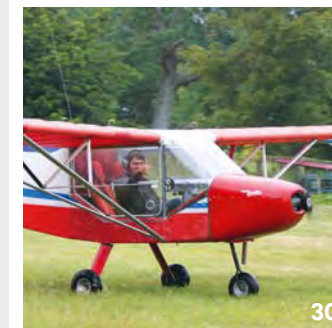
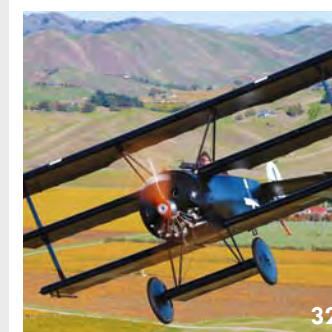
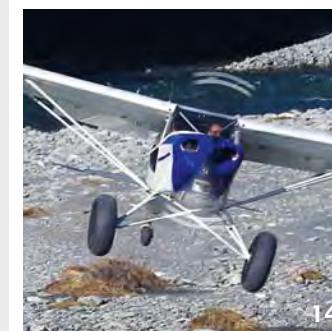
Michael Norton

Editor | Publisher
KiwiFlyer Magazine



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Jim Benbow in Piper Super Cub JLB approaches the line at the Healthy Bastards Bush Pilot Champs. Gavin Conroy took the image.

About Us

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KiwiFlyer is proud to support Walsh Memorial Scout Flying School, YouthGlide, and Flying NZ Young Eagles.

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FLARM Traffic Awareness available in NZ

As air traffic increases and technology improves, it is increasingly easy to justify installing or at least operating a portable collision avoidance system. Most pilots who have used one will have a story to tell of receiving a nearby warning and then being alarmed to suddenly see the aircraft they hadn't seen already with their normal scans of the sky around them.

NZ company LAM Systems Ltd. has recently become a distributor for the FLARM range of products from Swiss company FLARM Technology. These include the new PowerFLARM Core and PowerFLARM Portable units for advanced collision protection.

PowerFLARM Portable mounts on the instrument panel (no STC required) with its own batteries and display and has the necessary hardware to predict collisions with transponder equipped aircraft.

As well, FLARM systems broadcast their own projected flightpaths to other FLARM devices via an encrypted radio channel twice per second, thus providing collision avoidance warnings between FLARM equipped aircraft regardless of transponder use.

PowerFLARM Core provides for a fixed install option in two variants, Pure and ADS-B, the latter displaying nearby ADS-B equipped aircraft to the same level of detail and accuracy as FLARM equipped aircraft.

For more information contact Mike Ross at LAM Systems on 021 422 786. www.flarm.com

Lightspeed at Warbirds Over Wanaka

NZ distributor of the Lightspeed range of aviation headsets, Phil Jones, has arranged for Allan Schrader, the Founder and President of Lightspeed Aviation to join him on his trade stand at Warbirds over Wanaka on 31st March. A great variety of Lightspeed deals are currently available (see advert page 18). Phil invites all readers to come and say hello and find out more. Phil can be contacted on 0800 116 741 or see www.lightspeedheadsets.nz

Aero Club In a Box

A project developing free resources to help microlight organisations improve safety systems is the winner of the \$5000 2018 Jilly Murphy Memorial Scholarship.

Scholarship recipient Shaun Sutherland will use the fund to launch his Aero Club In a Box concept – a fully compliant safety management system and student training syllabus that will be available free to

microlight organisations nationally.

Shaun says cost and a lack of resource means many microlight clubs are operating without proper safety management and training systems, resulting in the sector being over-represented in aviation incident statistics. “Not having robust safety systems in place is putting operators at risk,” he says. “As microlight flying is fast becoming the first choice for recreational flyers, it's imperative that clubs and their members are operating within acceptable industry standards.”

Aero Club In a Box provides organisations with the tools they need to easily implement a health and safety system, operations manuals, maintenance manuals and a student training syllabus.

Shaun has 30 years of aviation experience and operates a microlight flying school in Whangarei.

The Jilly Murphy Memorial scholarship was established jointly by Christchurch Airport and Airways in 2013 to honour Christchurch Airport based Air Traffic Controller Jilly Murphy, who died in central Christchurch during the 2011 earthquake. Jilly worked for Airways for 20 years as a highly skilled controller, with a passion for aviation safety.

Congratulations Peter Turnbull ONZM

Pete Turnbull, Chief Executive and Chief Pilot of the Northland Emergency Services Trust has been made an Officer of the New Zealand Order of Merit (ONZM) for services to aviation.

The award recognises Pete's contribution to aviation during nearly 50 years of flying and especially his involvement with air ambulance and rescue work in New Zealand since the 1990s.

Pete's citation for the award reads: “With a varied background in commercial flying Mr Turnbull began his employment with Northland Emergency Services Trust (NEST) in Whangarei in 1995. He became Chief Pilot and worked tirelessly, often for very little remuneration or at his own cost, to ensure the rescue/air ambulance service survived. He was instrumental in NEST's upgrade to the three S-76 Sikorsky helicopters the Trust currently operates, having joined when NEST only operated a single BK-117 helicopter. In 2008 he became CEO of NEST and has remained in this role to the present. In 2016 NEST's rescue crews flew 916 missions. Personally he



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has accrued more than 21,000 flying hours, which stands as a record for a pilot in air ambulance/rescue work in New Zealand. He implemented the personalised GPS route structure in Northland for Instrument Flight Rules, which has been emulated by other EMS services around the country. NEST has provided emergency cover for Starship and the Auckland District Health Board since 2005. Mr Turnbull has driven the creation of further helipads in Northland communities."

And from the AviationNZ press release by John Nicholson: "It is great when contributions people make to the safe development of our industry are recognised in this way. Pete is a humble man who does not seek public recognition. But having seen him in operation in a variety of meetings, with CAA and government agencies, it is very clear that his views are respected and valued. Pete, we salute you!" Hear hear.

Aircraft operating stats: File or be fined

Despite no longer sending out reminder notices, CAA recently began issuing infringement notices and (substantial) fines to commercial GA operators who did not send in their quarterly aircraft operating statistics on time.

Unsurprisingly the action resulted in outrage from operators, followed by advocacy from AviationNZ, the General Aviation Advocacy Group, and others. The Director subsequently declared an amnesty until 1st March, warning that he will act against anyone who fails to comply by this new deadline.

The obligation to file aircraft operating statistics is set out in Table 1 of Rule 12.151.

As well as commercial operators, the

operators of NZ registered aircraft issued with a standard category airworthiness certificate or a restricted category airworthiness certificate and used in private operations are also required to file a return of their annual operating statistics by 1st February. CAA have not indicated whether they will seek to issue fines for late filing in these categories, but in case they do, operators are advised to make sure they are fully up to date with their obligations.

2018 Aviation NZ Conference

The dates and location of the 2018 Aviation NZ conference have been confirmed as 30-31 July in Nelson.

More information will become available on www.aviationnz.co.nz

Warbirds Over Wanaka update

Organisers of this Easter's 30th Anniversary Warbirds Over Wanaka International Airshow are preparing for the possibility of one of the biggest crowds in years.

Warbirds Over Wanaka Event Manager, Mandy Deans says, "We hoped the 30th Anniversary would resonate with lots of people and it seems that has definitely been the case with ticket sales consistently ahead of the same time before the 2016 event." Ticket sales have also been given a big boost with the announcement of the USAF F-16 Fighting Falcon demonstration team coming to the airshow for the first time.

Organisers are ensuring they have the infrastructure to cope with more people this Easter. Mandy says while they're working hard to keep the traffic flowing the best way for people to ensure they get to the event in plenty of time is to leave a bit earlier. "The airshow gates open at 7.30am and all the ground displays and

food outlets are operating from 8am so we're encouraging people to leave earlier and maybe have breakfast at Warbirds, then have a look around all the displays before the non-stop aerial action starts at 10am," says Mandy.

Warbirds Over Wanaka is also encouraging people to consider biking out to the event. Cyclists could avoid the traffic by using the Luggate cycle trail and coming up Stevenson Road to the airport. Organisers will provide cycle racks inside the airshow grounds.

The US Air Force F-16s will head up the largest modern military turnout ever at Warbirds Over Wanaka. The US are also sending a C-17 Globemaster. The RNZAF are sending one of every type of aircraft they operate except for the Orion, including the Boeing 757 displaying at Wanaka for the first time in 12 years. The RAAF are sending two Hawk jets and one of their new Spartan transport aircraft while the French military are returning with the CASA.

Other expected highlights include the Marsh Harvard Salute formation display involving 13 of the iconic aircraft, a glider display set to classical music and a WWII fighter display involving a Spitfire, Buchon Me-109, Yak 3 and P-51 Mustang representing the four main aerial combatants of WWII.

Also in support will be the Avro Anson, Catalina Flying Boat and numerous other aircraft types.

On the ground the 'Warhorse' re-enactors and one of the best line ups of classic Packard motor cars, including a Packard originally owned by American aviatrix Amelia Earhart will display.

Warbirds Over Wanaka is being held on March 30th, 31st and April 1st. For more information and tickets visit www.warbirdsoverwanaka.com

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The Healthy Bastards Bush Pilot Champs

Innes Bint in Piper Super Cub BVJ, winner of the precision landing contest at 0.3m from the line.



Deane Philip in CH701 ZK-JUG was the first placed microlight for STOL and third equal for precision landing.



Wait, is that fair competition?



Turbine entries were welcome too.

STOL competitions are the flavour of the month these days, with most major airshows now including a STOL event of some kind within their proceedings. There are a multitude of aircraft on the market that come standard with bush-wheels, STOL aerofoils, and vortex generators. “Which is all just fine by me as my passion in life is STOL,” says Craig Anderson, co-founder of the Healthy Bastards Bush Pilot Champs (and Safety Manager of Sounds Air and Sounds Aero Maintenance). For our coverage of this year’s Healthy Bastards event, Craig explains how a little STOL competition among friends earned its name and became an annual feature on the NZ aviation events calendar:

A marriage that became the Healthy Bastards Bush Pilot Champs

Back when Willie Sage and I were first experimenting with off airfield landings in our stock standard little Piper Pacer, STOL flying was nowhere near as popularised as it is now. I’m pretty sure there were no aircraft fitted with bush-wheels in NZ at all back then. Carbon Cubs, Zenith 701s, and Highlanders hadn’t been invented yet, and unfortunately there was no one to teach us how to do this stuff.

I think it was probably a love of the backcountry, and hunting and fishing that was the catalyst for learning how to fly STOL in the backcountry, but either way

it all had to be self-taught the hard way. Our Pacer was underpowered, had tiny short wings, and an undercarriage not well suited to rough landing strips. Back then we didn’t know any better, but what those things were quietly teaching us was how to fly an aircraft by the seat of your pants and stay alive.

The strip (for strip read riverbed or paddock) was always too short – especially when the aircraft was loaded with a couple of deer, and the wind turned tailwind. But it taught us great lessons in judging required distance for the conditions, and best take-off directions/techniques. The rocks were always too big – but it taught us how to plan a take-off line with precision in order to not wreck the poor little Chaser.

Roll forward 13 years, and a few hard

won lessons from the school of experience later, things have really changed. STOL aircraft, and off airport modifications are all the rage now – not just in New Zealand, but all around the globe.

To many, our little STOL competition held at Omapa every Waitangi Weekend is probably just another short take-off and landing event. But to the key sponsors and instigators, the Healthy Bastards Bush Pilot Champs is more than just another STOL competition. For us it represents issues bigger than the event itself, and hopefully serves as a marketing tool to drive these messages home.

When we first floated the idea of a STOL competition at Omapa, the question of what to call it was never really solved until Doctor Dave came along and muscled in on the party. He was already



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Chris Anderson in Zenair CH701 ZK-TIA



Scott Madsen in PA18 Super Cub ZK-BKN



Bruce Coulter in PA18 Super Cub ZK-BTX



Willie Sage in Maule M-6-235 ZK-MTP



John Richards in Rans S6 ZK-LSW

pushing his Healthy Bastards message, so the name fell into place pretty quickly after that. When Dave gets an idea in his head, he's like a dog with a bone. You might as well not try and change his mind.

Those of you that know Dave well, will know how bloody stubborn, and passionate he is about his 'Healthy Bastards' message. Sometimes (in fact most times) when I watch his YouTube videos I question why did we ever get involved with this mad man, but you can't deny the good he's doing in pushing this message. In fact he has become a real good mate over the years, and if this competition helps get the message of men's health out there, then it's a great thing for all of us. What it really needs is for us guys to take note of his core message, and start looking after ourselves a bit better.

Old-fashioned skills

As one of the key instigators of the Healthy Bastards Bush Pilot Champs, what am I personally hoping to achieve from the event?

In a nutshell, it would be to encourage old-fashioned flying skills that are so often not taught in flight training these days.

As Willie and I gained our off airport STOL skills over the years, a few things began to stand out as key factors in many aircraft take-off and landing accidents.

1. Speed on approach. Many pilots come in way too fast.
2. Stabilised approach. Many approaches are not stabilised before landing.
3. Nominate a touch down point. Many pilots seem happy to float half or two thirds down the runway (because they are going too fast). Go around points often are not decided in advance, or well executed.

A quick survey of the accidents in Vector on nearly any given month will confirm this: "The aircraft got a gust on short finals, and touched down too far into the strip, ending up in the ditch at the far end". "The grass was wetter than the pilot expected, and along with the excessive touchdown speed, caused the aircraft to come to a stop in the fence at the end of the strip". Sound familiar?

It always amuses me how these accidents are written up to make it sound like the result was a foregone conclusion that the pilot had no control over. [Ed: I've always assumed the authors just had a very dry sense of self-deprecating humour,

"It always amuses me how these accidents are written up to make it sound like the result was a foregone conclusion that the pilot had no control over."

but in most cases it's likely that Craig's point is exactly right.] As instructors, watching many, many such incidents at Omapa over the years (several ending up in bent metal) was so frustrating. We decided to try and do something, and what better way to encourage good flying techniques than to take the tiger by the tail and organise a competition where the whole aim is to land on a nominated touchdown point. I know it's called a short take off and landing competition, but it's not actually about short take-offs or landings at all. It's about flying a beautiful stable approach, and touching down within a few metres of the line.

What really gets my juices running each year at Healthy Bastards is to see young, low time pilots flying as good (or in many cases better) as those with tens of thousands of hours. It can be in a Tomahawk, Cherokee, 172, or a Cub. It doesn't matter. It's the execution that is the important thing, and that is what we are trying to achieve with this.

I heard many comments this year that the standard of flying was simply outstanding. And it was. I don't think anyone touched down more than 20 metres from the line on any landing! That is incredible, and it just goes to show that it's not that difficult. It just needs pilots to chose to do it, and then fly the aircraft accordingly.

So to come back to the title of this essay, I really do think that the Healthy Bastards Bush Pilot Champs is a great marriage. I hope it serves to sell the messages of a) staying healthy, and b) flying safe.

And as an added bonus, it is always an awesome, fun day, shared with a good bunch of like-minded healthy bastards! Book a weekend in Omapa and start practising now for the Healthy Bastards Bush Flying Champs in February 2019.

Craig Anderson



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Healthy Bastards Bush Pilot Champs 2018 Results

Precision Landing Competition

1	Innes Bint	ZK-BVJ	PA18A	0.3m
2	Russell Young	ZK-SNE	PA28-180	0.5m
3=	Deane Philip	ZK-JUG	CH701	0.6m
3=	Chris Anderson	ZK-TIA	CH701	0.6m

Short Take-Off and Landing Competitions

			Take-off	Land
STOL Microlight Category (<1325 lb)				
1	Deane Philip	ZK-JUG	CH701	12.6m
2	Chris Anderson	ZK-TIA	CH701	12.4m
3	John Richards	ZK-LSW	Rans S6	31.4m

STOL Light Touring Category (1326-2550 lb)				
1	Scott Madsen	ZK-BKN	PA18	30.7m
2	Bruce Coulter	ZK-BTX	PA18	32.6m
3	Jim Benbow	ZK-JLB	PA18	31.8m

STOL Heavy Touring Category (>2550 lb)				
1	Willie Sage	ZK-MTP	M-6-235	34.1m
2	Nigel Griffith	ZK-CES	C185F	41.1m
3	Richard Coop	ZK-RWC	C180B	68.8m



Richard Coop in Cessna 180B ZK-RWC



Nigel Griffith in Cessna 185F ZK-CES

Healthy Bastards Pilot Profiles

A very broad mix of pilots competed at this year's 'Healthy Bastards'. At either end of the experience spectrum were Hamish Sullivan with just 36 hours proudly entered in his logbook, and Noel Kruse who can wave the question away with 18000 plus.

Hamish Sullivan

Hamish is 18 years of age and started flying less than a year ago in March 2017. At competition time there were 36 hours entered in his logbook. Hamish competed in Piper Pacer ZK-PAL. Aviation is in Hamish's blood. He was brought up around aircraft and has enjoyed many hours in his Dad's 185. Hamish learnt from scratch in the Piper Pacer (taught by Bernard Kennelly), and aims to complete his PPL, CPL, and then work towards an airline career hopefully with Air New Zealand. Hamish works at McVicar's Timber Mill, and is also studying for a Bachelor of Aviation Management at Massey University's School of Aviation via correspondence.



Noel Kruse

Competing in Piel Emeraede ZK-CBP and at the other end of the aviation spectrum to Hamish, was Noel Kruse, aged 74 and with 18000+ hours in his logbook. Noel started flying at age 17 in 1961, gaining his PPL at 18. He was then accepted by the RAAF where he was "taught to fly". At age 19 years 11 months Noel was certified to fly the Avon Sabre, becoming 'AA elite'. He was one of very few 'supersonic teenagers'. Over the next few years Noel flew fighter jets, was a test pilot, combat instructor, and then "progressed" onto the de Havilland Caribou where he flew low in the trees for the next six years. At age 39 he quit the Air Force and started an aerobatic flying school which he ran for the next 22 years based out of Bankstown. In 2006 Noel moved to New Zealand and took up an offer to be Chief Test Pilot for Alpha Aviation, flight testing the Alpha 2000 (Robin) aircraft. Noel has retired now, spending several months of the year flying recreationally out of Omapa, and the remainder of the year overseas. His favourite aircraft: Unsurprisingly, the Avon Sabre.



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Airstrip Flying 101

Mastering the Stabilised Approach

Craig Anderson's Piper Pacer at Middlehurst Station, Upper Awatere Valley, Marlborough.

When Craig Anderson was helping us put the preceding Bush Pilot Champs content together, he mentioned that he wrote some notes on 'Mastering the Stabilised Approach' a few years back and might it be of interest to readers?

We didn't have to read very far into Craig's essay to be certain that it would be. I'm reminded of something a wise instructor told me when I was training: "Make every landing the best one you've ever done." As Craig points out, that best-ever landing will largely be determined by the approach you have made.

If I had a dollar for every budding bush-pilot who has come up to me over the years wanting training on how to do airstrip landings, I still wouldn't be rich, but I certainly would have a few more dollars in my pocket than I have now. What I always tell them, is that in most aspects, an airstrip or off airport landing should be no different than any other landing you make at a 'normal' airport.

Many budding 'airstrip' students seem to think that they should land using one method at their home airport, and then expect to

"To summarise, you can see that the first step to becoming a bush-pilot legend is to master the basics of the Stabilised Approach. It's not hard."

be taught something different, revolutionary, and exciting when they sign up for an airstrip flying course. There is often a flicker of disappointment in their eyes when they are told that there is no magic involved, and no new amazingly skilful techniques to master – if they fly well and have been trained properly, any competent PPL or CPL should have no problems flying in and out of a farmers airstrip or paddock (assuming the length and surface conditions etc. are ok).

Of course, I am not saying there is nothing new to learn, and no additional traps for the unwary bush-pilot to fall into. There is plenty to catch you out! My point however is that the method of flying, of landing, of taking off, shouldn't be any different, and in many cases it really is a matter of going right back to basics to learn the fundamentals properly, and ingrain them into your flying psyche.

For example: An airline pilot makes his approach down an ILS at an international airport on a 3 degree glidepath, and expects to see a certain 'picture' out of the cockpit window. A GA pilot in his 172 should be doing the same thing and should see the same picture. A bush-pilot in his souped up Piper Pacer landing on a mountain strip should be no different.

The main errors I see nearly every day that typical pilots (students/PPLs/CPLs/instructors alike) make are:

1. Approach not stabilised
 - Approaching too fast
 - Too high or too low on approach
2. Not flying in trim at ALL times
3. Not picking a fixed touchdown point
4. Not going around if touching down too far into the runway

By far the most common fault without a doubt I would say would be approaching way too fast. The consequences of too fast an approach are:

- You are constantly fighting against the aircraft to get down.
- If you get too high you are left with very few options for losing height apart from shoving the nose down further – which only has the effect of increasing speed more, and you are then really just along for the ride.
- It is near on impossible to touch down at a nominated point.

The number of pilots I hear complaining that their aircraft has a horrible tendency to "float" on landing astounds me. There is only one reason an aircraft floats on landing, and that is simply that it is going too fast. My Cessna 172 has a published stall speed with full flap of around 40 knots. An approach speed of 1.3 Vs works out to be 52 knots. Why is it then that 75% of pilots make their approach at 65 or 70 or even 75 knots? Of course it is going to float, and of course you are going to touch down half way into the strip, and of course if the grass is wet and there is a little tailwind and the stars don't all quite align you are going to go through the fence at the end! It isn't rocket science.



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Nail that Speed.

So we have established you must approach at the correct speed, which is a lot slower than many pilots typically fly. I find that many pilots have an irrational fear of slow flight. That is not always in itself a bad thing as it is merely self-preservation instincts kicking in, but if you can fly a nice tidy trimmed approach at 1.3 Vs you should not be scared of what the ASI is showing. Go and do a few stalls, and look at where the nose is pointing when the wing finally gives up... it is pointed well and truly UP. On approach, at 1.3 Vs I can assure you the nose will not be pointing up, and the aircraft is also descending, which means you are not holding power and 'G', therefore there is very little to no chance of stalling.

One great little trick I was taught very early on when learning to fly the Pacer is to take note of the angle of the bottom of the wing. This is easier to do in a high wing aircraft, but still works amazingly in any aircraft type.

The trick is to keep the bottom of the wing horizontal in all aspects of flight – in cruise; downwind; base leg; and finals.

On approach, if you continually trim the aircraft so that the bottom of the wing is horizontal at all flap settings, you will magically find that the speed will be perfect at all times. You will never need to look at the ASI again! An exception to this rule is when in the flare to land. As you are flaring a nose wheel aircraft, or a taildragger into a three point landing, obviously the rule does not apply as the nose will be pointing higher. This is the one situation when you are actually trying

to stall the aircraft onto the ground.

So as you continue the approach onto finals and apply full flap, you will need to trim back more, but if the bottom of the wing is kept horizontal, the speed will decrease with each increase in flap (more drag). Now, here is the bonus with this trick that many pilots don't realise. Because your speed is now lower than you might be used to, more power is needed to maintain the approach profile. This is a good thing. Holding a little more power gives you, the pilot, control.

If you get a little high, all you do is reduce power. If you get a little low, increase the power a little (20-30 rpm is often plenty). The critical thing is to keep the nose attitude the same right throughout the approach.

It is the nose attitude that sets your airspeed. The nose attitude is non-negotiable. Use power to control your descent profile.

So, next time you see an aircraft on finals with the nose pointing down and with the wind whistling past the wings at about 75 knots, watch the touchdown closely. I guarantee it will be a 'floater'. You can't land a plane when the wing still wants to fly. You are fighting the laws of physics, and nature always wins :-).

See that Trim Wheel? Use it. It's there to make your life easy!

Some pilots use the elevator trim rarely. Others use it sometimes. Good pilots are fiddling with the bloody thing all the time. Watch a good pilot's hand on the control yoke. He will be holding it lightly with only two or three fingers. He can do

this, because he is keeping the elevator in trim constantly. It gives him time to focus on other more important things without having to actually worry about flying the plane all the time.

Anything that will upset the natural balance of the aircraft needs a corresponding trim change... any change in throttle setting; flap changes etc. It's there to make life easy for you. Don't forget to use it – often!

Pick a Touchdown Point, and stick to it.

Airline pilots are trained to touch down on the 1000ft markers every time. Bush-pilots by necessity must touch down at the correct point or they will likely career though the ditch at the end of the strip.

Why is it that many GA pilots feel that touching down on the line every time is not an important consideration? It's not that they don't have the skill – of course they have the skill – it's not very difficult!

I'm sure the answer is a) that most times they can get away with it at the local airfield, and b) that the training establishments don't make an issue of it.

A while back I watched a Cessna 172 touch down at Omaka well past the half way mark. After taxiing to the fuel pumps, out climbed the student - and a very experienced instructor. When I queried why they landed so long, the answer was that the student had only done a few hours in the 172, and was still getting used to it. I bit my tongue at the time, but letting this behaviour go unchecked is like letting your kids get away with pinching biccies out of the cookie jar. It will only

develop into worse habits, and one day the student will end up tangled in the fence at the end of the strip.

Be proud to Go Around.

If you have made a hash of the approach and can't touch down on the line without seriously upsetting your nice stable approach profile, there is only one thing for it... go around and do it again, and again, and again until you get it right, and can do it every time. There is no point going strip flying until you can do this every time at the home airport on a 1000m runway.

We teach go arounds to students but it is very rarely I ever see one used. Many pilots are more than happy to merrily float past 50% (or more) of perfectly useable runway, but seem to feel very uncomfortable with going around due to a mis-judged approach. I would like to suggest that the situation should be reversed.

There is no shame in mis-judging an approach. We all do it – even highly experienced 777 pilots at San Francisco have been known to stuff it up! There is no shame in going around. It is simply a way of saying to everyone watching that you have very high standards, and that the previous approach wasn't quite up to your expectations. By floating over half the runway, what you are actually saying to everyone watching is that you have very low standards, and you don't give a stuff where you touch down – as long as you stop somewhere before the end of the vector it's ok with you.


In summary

So, to summarise, you can see that the first step to becoming a bush-pilot legend is to master the basics of the Stabilised Approach. It's not hard. Just be disciplined with yourself, and don't get slack.

1. Nail that Speed
2. Use the Trim
3. Pick a Touchdown Point – and stick to it
4. Be proud to Go Around

Once you master these four basics, you are all but ready to strap on your mighty bush-plane and get out flying on some back country airstrips!

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AirVenture Oshkosh

Gaye Pardy Travel Tour departs 21st July



New Zealand's most experienced EAA Airventure Oshkosh Tour Organiser, Gaye Pardy, is this year organising her 32nd tour to this 'Got to be There' annual aviation extravaganza. Given the extraordinary scale of 'Oshkosh', there are obvious benefits to be enjoyed by making the trip as part of an organised group. Aside from having all the necessary logistics taken care of, there are several pre and post-Oshkosh events and visits to take in, not to mention the advantage of being surrounded by like-minded aviation enthusiasts the whole time you're away.

Tell-tale anecdotes of how successful these trips are include the number of repeat travelers Gaye has (there have been many) and comments such as this from Andy Schumacher, Assistant Director at the Conference Centre Gaye's groups stay at: "I would be happy to provide feedback to anyone considering to book with you about the care you have for your participants. I personally see you as one of the most superior groups we host in the way you care for your individuals and the service you provide. This was very clear in the way you worked to assist the gentleman in the hospital last year."

The 2018 Gaye Pardy Travel tour will depart on 21st July. After a night in Chicago, the group will travel by coach to Oshkosh via Milwaukee and a visit to the Harley Davidson Museum. Then follows seven nights accommodation at the University of Wisconsin with organised daily transport to and from EAA AirVenture, where the first day will also include an Orientation Tour of the event and local area. On Friday the group attends the International Dinner and then for those staying on, the Extension Tour begins. In 2018 this includes four nights in Washington DC, visits to the Udvar-Hazy and Smithsonian Museums, then four nights in

Tucson AZ and visits to the AMARG (desert boneyard), PIMA AIR Museum (300+ aircraft), Titan II Missile Base and Copper Mine, plus more. After that, enjoy a night in LA with visits to the CHINO Planes of Fame and Yanks Air Museums. The group then heads home to winter in NZ, although if you would like to continue travelling then of course Gaye is only too happy to assist with advice and onwards arrangements.

Typically about 2500 show aircraft participate at EAA AirVenture, including homebuilts, antiques, classics, warbirds, microlights, rotorcraft and amphibians. Exhibit buildings contain just about everything in aviation, instruments, avionics, aircraft parts, manuals and clothing, the list goes on and on. Over 800 exhibitors participate at the show.

During the day and through the whole week over 500 forums and hands on workshops are conducted by aviation leaders and designers etc.

One of the daily highlights is the spectacular afternoon airshow, which varies daily. It starts with showcase of many unique aircraft, from early racers to historical airplanes and newly developed aircraft. The airshow also features many of the world's outstanding aerobatic performers.

This year sees an expansion of the Twilight Flight Fest and is also the 'Year of the Tanker' with the USAF Reserve celebrating its 70th anniversary at the event.

There's plenty of aviation entertainment and seminars in the evenings too. Plus Gaye always has options for travelling partners who might not be so keen on non-stop aviation for a whole week.

All the details are available on the Oshkosh page at www.gayepardy.co.nz or call Gaye on 07 574 1950, 027 493 9073, or email: travel@gayepardy.co.nz for more information and a full itinerary.



The ground display area at Oshkosh is enormous and nearly everything is touchable.

Aviation Insurance Explanation of Terms

Insurance policies have a number of terms and definitions that may not always be fully understood. Bill Beard from Avsure explains:

Hull Insurance

This is the main component of an aircraft policy. The hull insurance is intended to provide payment towards the cost of repairing or replacing an aircraft that has been damaged. Most policies protect the aircraft on an "all risk" basis, meaning that the aircraft is covered against any cause of loss unless specifically excluded. Excluded items typically include things like mechanical breakdown, ordinary wear and tear and loss of use. You can buy coverage while the aircraft is on the ground, taxiing and in flight.

Aircraft Liability Coverage

This is the other major element of an Aircraft Hull and Liability Policy. Liability coverage protects those who are covered by the policy against action brought by others who claim that they have suffered injury or that their property has been damaged in relation to the insured aircraft. In New Zealand personal injury and death claims fall under ACC legislation.

Named Insured

This is the actual policyholder(s) specifically named on the policy. Named insureds are responsible for premium payment, and have the authority to cancel or make changes to a policy.

Additional Assureds

Are persons or entities other than the policyholder, who are covered under the provisions of the policy. Additional insureds are given the same protection under the policy that the policyholder is. It should be noted that the 'limit of liability' is the maximum that the insurance company will pay to settle a claim. In other words, say three entities are each 'additional insureds' on the policy in an action, the 'liability limit' of the policy will be split among the individuals.

Private, Pleasure and Business Uses

Private Pleasure and Business aircraft insurance is coverage for non-professional, non-commercial aircraft. In other words, general aviation aircraft, flown by the owner or authorised pilot, operated for pleasure or non-aviation business use but specifically not for hire, or rental or compensation. This means that you cannot make a charge for the use of your aircraft.

Open Pilot Warranty

A clause in the insurance policy that lays out the requirements for pilots who fly the aircraft other than those specifically named in the policy and is usually subject to the pilot meeting minimum qualifications and flying experience requirements.

Subrogation

A legal doctrine under which your insurance company attempts, in your name, to recover money it has paid under your policy due to the fault or actions of a third party. In aviation insurance, the most common example of this is physical damage to your aircraft caused by a third party, such as a maintenance provider.

Waiver of Subrogation

A promise, in advance, by you and your insurer not to try to recover damages from a party who causes damage to your aircraft. Waivers of this sort can be found in hangar agreements, and are sometimes requested by Instructors or Professional Pilots who will be providing you with pilot services.

To discuss this topic or any other questions relating to aviation insurance or to seek quotations, contact Arden Jennings or Bill Beard at Avsure on 0800 322 206.

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Tekapo Airport in wintertime. The runway is in the foreground.

Fly yourself to Tekapo

Tekapo - Mackenzie Country is right in the heart of the South Island nestled by a glacier fed lake with stunning views up to the mountains. Many readers will have flown over the Mackenzie basin, but how often have you stopped to enjoy a weekend at the not so little town situated at almost 2500 feet? The climate is cold and dry in the winter and has mild, sunny summers, making for many good flying days throughout the year. In this episode of Places to Go, Ruth Allanson visits Tekapo:

Tekapo airport is owned by Air Safaris who operate from the sealed 29/11 vectors. They are happy for private aircraft to use the field, after a phone call (03 680 6880) and briefing from them. The strip is narrow and sloped, plus located in the high traffic area of 118.60 Mount Cook area, so a briefing over the phone is essential.

Your briefing will include practical advice on joining overhead and the best arrival times, the sloped runway, the height and slope of surrounding terrain, going around decisions and advice on where to park. Air Safaris staff are welcoming and will also advise on any landing fees. They are present on the airfield 8.00am to 5.30pm in summer and 8.30am to 5.00pm in winter - and prefer you plan your arrival and departure times within these hours.

Transport to and from town can be arranged with Tekapo Taxis (Billy Morgan, ph. 021 153 6547, \$10 + \$5pp for additional passengers) or often Air Safaris staff are going backwards and forwards so it may be possible to hitch a ride.

There is also a good walking or biking (MTB) track between airport and town which is clear of the State Highway.

Winter operations can be tricky with snow and ice often present. Air Safaris have snow clearing equipment and will open the airport with limited access after a snowfall. Check for NOTAMS which close the airport until all taxiways and aprons, plus of course the runway has been cleared sufficiently. Fuel is available with Z Energy swipe cards.



The Church of the Good Shepherd on the shore of Lake Tekapo.

If you have not been to Tekapo for a while you may be surprised at the growth. Once there was just the one hotel in town called The Godley, named after the river that feeds into the top of Lake Tekapo. Now the population is around 500 and places to stay are many and varied. A place with a great outlook and a variety of options is Lake Tekapo motels & Holiday Park. Situated on Lakeside drive, which is the first road to the left as you drive in from the airport, they have motels, backpacker lodge, campsites and a 2-bedroom holiday home. Book early, as it is very popular. If you haven't booked ahead and find accommodation is at a premium, then try The Godley as they usually have rooms available starting at \$129 which includes breakfast and if you are fortunate, a stunning view out across the lake.

The Tekapo area was first discovered by Scotsman James Mackenzie who was a sheep rustler. He was searching for a less conspicuous inland route to drive the stolen sheep, with the huge help of his dog named Friday. Although intermittently occupied by Maori, this huge inland

basin was practically devoid of humans. Mackenzie was eventually caught, but the authorities had great trouble collecting the sheep due to Friday's cunning ability to herd them away. After Friday was brought under control, the land was divided up into big sheep stations, the first being on the eastern shore of Lake Tekapo in 1857. The remains of the old Tekapo Station Homestead can be seen on the eastern shore when the lake is low. The first hotel was built in 1861 and the first bridge across the Tekapo River constructed 20 years later. Dam building in the area started in the 1930s but wasn't completed until 1951 because of the interruption of WWII.

There are a surprising amount of things to do in such a small town. A visit to the Church of The Good Shepherd is a photo opportunity that almost all tourists take up nowadays. It was the first to be built in the basin, in 1935. The bronze statue of the Border Collie dog, commissioned in 1968, is also much photographed by visitors. This was installed to celebrate the work of the Collie in the Mackenzie.

Tekapo is the place for stargazers

because even simply stepping out at night is a sight to behold. I remember visiting the area in 1986 to view Halley's comet and was overwhelmed by what could be seen with the naked eye. A walk up the nearby hill of 1.5 hours to the Mount John Observatory, offers mind boggling views through their massive telescopes. The view over the surrounding country side at night is worth the trip up there just in itself. It is regarded the best astronomical research area in New Zealand and has a neat little café called the Astro - with the best view in town.

Tekapo Springs (www.tekaposprings.co.nz) is nestled at the base of Mount John on Lakeside Drive and is open year round. The complex has five pools and inside, a day spa. There are three hot pools, shaped like lakes from the region: Pukaki, Ohau and Tekapo, ranging from 27 to 39 degrees. In winter you can pull on your skates and set out on the international-size outdoor ice rink, skating with the most awe inspiring views, then sample the scrumptious menu at their fully licensed café. Then experience the thrill of the 150 metre snow tube

ride. By night, you can soak up the stars with Tekapo Star Gazing, the only guided hot pools and star gazing tour in New Zealand. You may even spot the sensational Southern Lights!

www.tekapostargazing.co.nz

For skiers there is the Roundhill Ski Area, initially started up in the 1960s by local famers. It boasts the longest rope tow in the world at 1473m. Checking out the pricing at www.roundhill.co.nz, this field looks to be a really affordable option for a family fun day out and also away from the bustle of the better-known ski-fields.

After a fun packed day, the locals tell me the Tin Plate is the place for a great meal and wind down. They have highly appraised pizza and many other dishes to enjoy.

My suggestion: Before you set out the next morning head to Run 76 Café for the best breakfast and coffee in town. Then as you reflect on the great time you've had here, why not decide to stay an extra day?

Check out www.mackenziencz.com and start planning Tekapo as one of your next Places to Go.

Ruth Allanson 



Star gazing from the Tekapo Springs hot pools. Tekapo is world famous for its night skies.

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That's Jill in the front seat, heading for home.

Soaring to Aoraki / Mt. Cook

KiwiFlyer Soaring contributor Jill McCaw says that flying a glider out and return from Omarama to Mount Cook is one of the Bucket List New Zealand soaring experiences. As a soaring flight, it has everything: enough distance to make it a challenging cross-country flight, variable topography creating variable lift (and sink) conditions, scenery in spades, and the highest peaks in the country to fly around. In Jill's words, "Just after Christmas I knocked this bastard off." Jill writes:

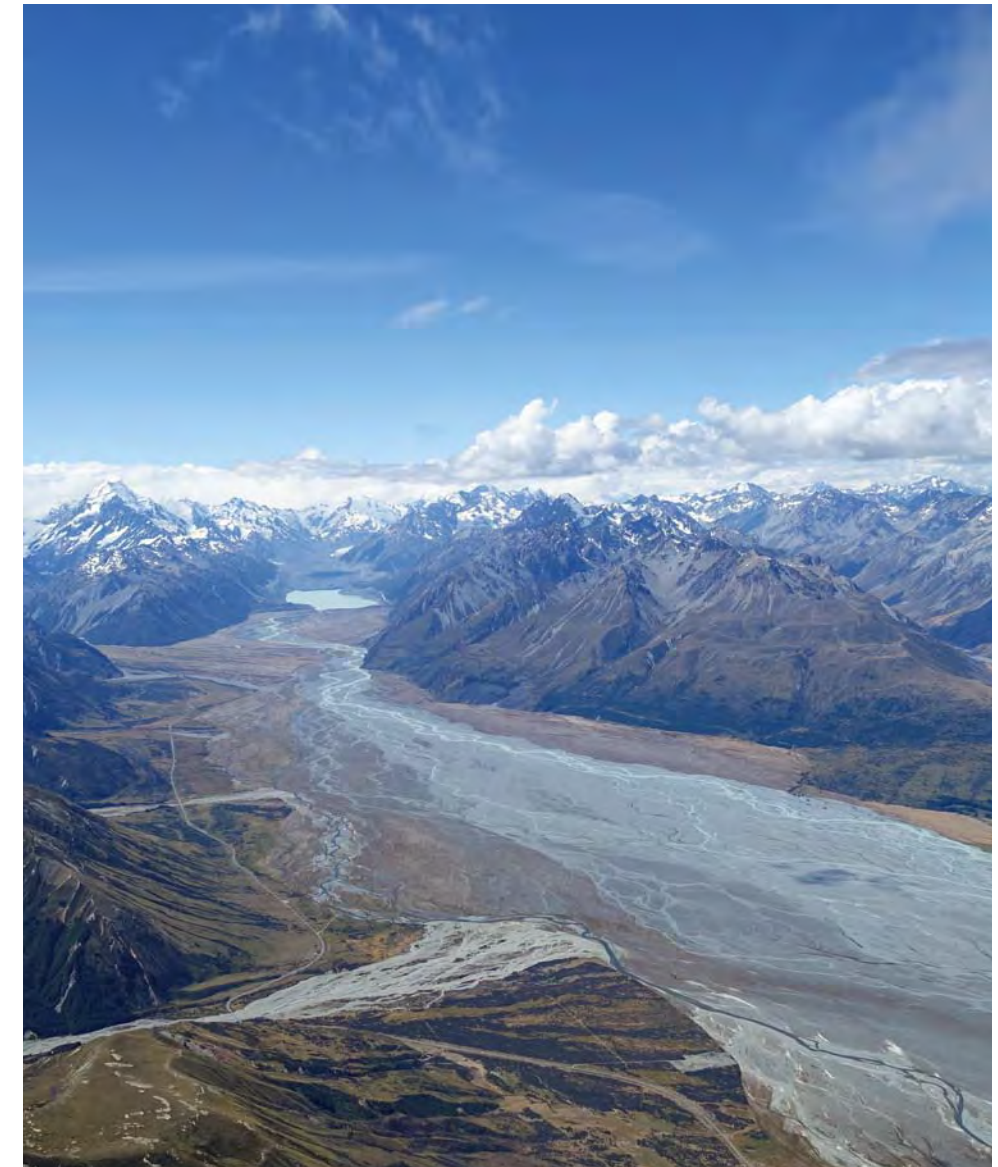
Every Christmas, glider pilots from around the country gather at the campground on the Omarama airfield for a Christmas camp. There are a core of South Island pilots; people from Canterbury, Timaru, Balclutha, Queenstown, Nelson and Blenheim with a regular North Island crowd from Wellington who brave the ferry crossing and the iffy roads south with their glider trailers. This year we were joined by a crowd from Hawke's Bay and one visitor from the far North. Missing this year were the usual suspects from Auckland, Tauranga and Taupo.

While soaring is the focus of the camp, there are other activities on offer too. Omarama is in the centre of the great outdoors with lakes, rivers, plains and forests providing multiple recreation opportunities. But enough about that. Let's talk about gliding.

All I wanted from camp this year was one good cross-country flight. However, I'm not cross-country rated, and because the club is on camp, there are no rostered instructors on call. I was lucky that Youth Glide pilot and instructor Jono Wardman was happy to take me flying, and as a member of the Omarama Gliding Club, he had access to the club's lovely Duo Discus, a cross-country two-seater. We agreed to split the costs.

We launched into a booming sky about 1.30. The day was hot and still and massive cumulus build ups were growing above the high points on the hills. We released, probably a little lower than we should have for an easy climb, on the 'nursery ridge' on the western side of Mt. Horrible to the south of the town. Horrible's real name is Mt. St. Cuthbert, but no glider pilot calls it that, ever. Jono is a canny pilot and he managed to scrounge us up out of the lower air and into the thermal that was going off at the end of the valley. Once finally established we rocketed away, climbing in strong lift until we were well above the mountain top, the view of the Mackenzie and Lake Benmore spreading out below us.

A bunch of the Hawke's Bay pilots had also taken off around the same time and climbed along with us. Chatting on the radio (133.55) we made a call to follow the cloud street running along the top of the St. Bathans range and head south. After a top-up of height at Hugo's Elevator, a north facing scree slope at the top of the Lindis Saddle, so named for its



Above Glentanner looking to Mt. Cook, the Tasman Glacier and lake. The Jolly Brook is the valley to the right.

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nearly assured source of rising air, we followed the group down the St. Bathans at around 8,000 feet ASL – i.e. about 200 feet above the tops. There was so much lift we barely slowed in areas of good lift, we didn't need to. Running at 80 knots we reached the end of the range with a great view out across the Maniototo. The Hawke's Bay group decided to go east, but Jono knew I had my heart set on flying Mt. Cook, so we U turned and arrived back at Hugo's about 20 minutes later.

To the north the clouds indicated good lift running up the Diadem Range, the Neumans and all the way north as far as we could dream of flying. But first we had to get across the gap between the Lindis Ridge and Magic Mountain on the end of the Diadems. It took us several attempts, pushing out in to the dead air and losing height, so that we'd have to turn back to Hugo's to top up and try again. Jono was flying this bit, his much greater cross-country experience invaluable to knowing just how far it was safe to push and gaining every centimetre of height out of any lift available.

Eventually we made it and in no time, we were high above the Ohau ski field and contemplating the jump across to the Ohau Range on the other side of the lake. Cloud base here was higher than it had been down south so taking a thermal as high as we could gave us ample height to cross over and still arrive above the tops. I had been flying but Jono took over as we flew up the range and over the rough high ground. We were flying at best L/D of about 80 knots, once again just pulling back slightly to maximise rising air. Our height was about 9,500 feet with the cloud bases keeping us from going any higher. As the mountains tops here are about 9,000 feet high, I was happy to let Jono fly. It was exhilarating.

We switched onto the Mt. Cook common frequency and found the airwaves full of tourist traffic and other gliders. There were lots of us up there. Abeam of Glentanner the view of Mt. Cook was spectacular. I'd have happily have stopped there but Jono wasn't having that. I needed to fly up the Jolly, he said. Everyone should fly up the Jolly. Jolly Brook is a valley to the north of the Tasman

valley, the head of which runs into the high country of the Liebig Range. The cloud base kept rising. We reached the top of the Jolly at over 11,000 feet, looking down on the Murchison Glacier and across the Tasman Glacier to the summit of Cook, the Caroline face and all its glaciers. It was awesome.

Jono wanted to keep running north, but I was getting tired. I'd seen what I'd wanted to see and I'm just not accustomed to long flights. I was still having fun, but it was quite a long way back home and I decided we had done enough.

So, we turned around and flew home.

It really was that easy. The Duo Discus has a glide ratio of 46:1. We were roughly 60 nm from home and 10,000 feet above our intended landing point. (Please don't make me share my workings, but we had a good 2,000 feet of spare height plus a decent circuit.) We just pointed down the valley, flew down Lake Pukaki and took as slight right turn at Twizel, quietly descending. We didn't need to, but we couldn't help ourselves, (gaining height is engrained in a glider pilot's psyche) so we stopped to take a couple of turns in lift as we contacted the Benmore Range.

During our three hours in the air we had flown 290 km (calculated as straight lines between our turn points – we of course had flown further), climbed to just over 11,000 feet in thermal and seen some of the most iconic New Zealand scenery from a special vantage point.

We arrived above the airfield with height to spare and obtained permission for a 'practise competition finish', a nice, fast, flypast along the field which created a fitting ending to an amazing flight. Thanks Jono.



If you'd like to try a scenic glider flight, find your local gliding club through the Gliding NZ website and try it out. For subscriptions to SoaringNZ and more stories of great flights, contact me through mccawmedia.co.nz

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Hawera Aero Club locals at the field. Mt. Taranaki is in the background.

Hawera Aero Club's new Vixxen

Hawera Aero Club's distant history is much the same as many other NZ aero clubs. In Hawera's case, it was 1929 when a group of local aviation enthusiasts got together and decided to form a club. A suitable mix of determination and foresight from those early members ensured the future prosperity of their venture which today flies around 850 hours per year and has just purchased another new aircraft, this time an Aeroprakt Vixxen A32LS. KiwiFlyer asked Club President Tony Muller to put some words together on the club's interesting history and future. Tony writes:

Hawera Aero Club was formed at Dunlop field on Turuturu road in 1929. This was soon outgrown however and a neighbouring parcel of land was obtained from the estate of Mr. A Spratt. In 1934 the club borrowed from the bank and purchased a nearby 196 acre flat, free draining, farm for 70 pounds per acre. That was 13720 pounds! This

silenced criticism from the local Borough Council who claimed the exercise was not financially viable. Aviation was seen to be flamboyant and fickle.

This farm on Waihi Road was to become the club's base and still is. The club is an incorporated society which owns and operates the airfield that was developed on the property. Over the years the club's land has been successfully farmed for sheep and cattle, and is currently cropped by Bruce Nickle in wheat, barley, maize and straw. Revenue from the farm is channelled into the club to help maintain assets, aircraft and the aerodrome. Club membership is a healthy mix of 80+ pilots and retired pilots, plus enthusiasts young and old. A committee of 11 hardworking, realistic people take their custodianship of club assets seriously. The criteria for Committee membership is pretty simple: we value life and business skills, and we don't value egos or agendas or empires. A mix of young and old ensures stability and we evolve as a club and adapt to the issues as they arise.

Planes and People

We are a recreational flying club that operate a Cessna 152 Aerobat, a Cessna 172N (purchased new in 1980) and most recently, an Aeroprakt Vixxen A32LS in the LSA category. Most of our student training has been happening in the 152. We'll now be utilising the Vixxen for microlight and Part 61 pilot training.

We fly on Friday, Saturday and Sunday from 9.00 to 5.00. Members can also access the aircraft midweek. Many pilots have trained with the club to PPL, CPL, C-Cat and B-Cat levels. Currently we have a changing of the guard due to the retirement of our CFI and A-Cat instructor of many years, Wayne Harrison. Wayne's experience and knowledge will be missed, however a succession plan is in place which will see the void filled by two C-Cats and a B-Cat instructor.

There is a listed GPS approach on runway 32 which Massey utilise for training mid-week.

We try hard to look after local pilots and students and to make obtaining a

The aircraft flies very well, and climbs in excess of 1000 fpm with fuel and TBBOB (Two Big Buggers on Board).

licence affordable and fun to anyone from 14 to 80+. As long as you are enthusiastic and passionate about aviation, and have a few clues, then we will navigate your way through training so you can achieve your goals and then become part of our crew and contribute to our club's ongoing success.

We also have several private aircraft and hangers on the field including an Acro Sport 2, RV7, RV10, Piper Cherokee, Bearhawk Patrol, and an Alpi Pioneer 300.

The new Vixxen A32LS

A year ago we sold our Tecnam Super Echo microlight. The replacement rationale was that we needed something which could train microlight pilots and Part 61 PPL pilots – and which would complement the 152 when busy. The replacement needed to be a club plane, with simple attributes; easy to fly, good cruise, tricycle undercarriage, fixed pitch prop, and tough.

After suitable research, we settled on a Vixxen A32LS from NZ Aeroprakt agent Doug King. Ours is the second of this model on the NZ register and the first of type in the LSA category. These are Ukrainian factory-built aircraft developed by Yuri Yakovlev (previously one of the leading Antonov design engineers). There are numerous Foxbat A22LS aircraft currently flying in New Zealand with

proven reliability. As well, Foxbats are very popular in Australia and at \$122k brand new excluding ELT and certification, the purchase to be very cost effective.

At time of writing we have nearly 50 hours on the aircraft. Pilots have been enjoying the plane and are becoming familiar with it. There's nothing like time in the training environment to prove an aircraft's success and thus far the committee is confident the A32LS will fulfil its duties very well in our fleet.

The aircraft flies very well, and climbs in excess of 1000 fpm with fuel and TBBOB (Two Big Buggers on Board). She cruises at 105 kts at 4900 rpm, stalls at 27 kts it is very slippery. Attention to getting the approach back to 45-50 kts over the fence helps to reduce float from the high lift wing. The Vixxen is comfortable, visibility is fantastic, and the Rotax 914 ULS supplies good, predictable power to weight at a 16 lph fuel burn.

These aircraft are proving very popular worldwide, with a growing waiting list.

Current Projects and Direction

Like a lot of aero clubs our Avgas usage has dropped below the level that warrants a fuel facility here (from the oil companies' point of view). Eight years ago our underground tank was removed by BP and since then we have operated trailer tanks which we fill in New Plymouth an hour away – about twenty times a year. This works well enough but is reliant on members with time and a dangerous goods licence.

We are now installing a 15000 litre above-ground tank at the airfield. This is being built by Martin Engineering in Palmerston North and will be fully certified, on skids, with unloading and

dispensing pumps. The area will be banded, fenced and have a security camera. We expect to complete the project for \$90k with the sale of our trailer tanks and some TSB Bank funds. Fuel companies are happy to deliver us fuel as required.

Most smaller aero clubs find themselves in a complex, changing environment. Committees have to evolve and adapt with a solid, common sense, business approach. We now have Committee liability to consider, Safety Management Systems, health and safety monitoring, employment responsibilities, insurances for public liability, aircraft and hangars, not to mention the responsibility to follow CAA rules and to ensure our pilots are competent and safe.

These are not so much new issues as an evolution of older ones. We endeavour to address each issue with our voluntary resource of level-headed aviator members, committee and enthusiasts. One needs to adapt and move with the times, but most importantly to remember that flying is supposed to be fun: After all, the reason you walked in the door was simple - to go flying! Having fun flying is the main thing we like to offer to everyone.

Tony Muller, HAC President



Ralph Gibson learned to fly at Hawera Aero Club 50 years ago and is deservedly a life member today.

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Ross gets underway on his 16th birthday in RANS S-6ES ZK-JHZ

An interview with Ross Brodie

Ross Brodie is the youngest person we have interviewed for 'Interesting Persons in Aviation', but his aviation credentials are impressive. Just turned 18, Ross already has more type ratings than most pilots gain in a lifetime. That's because he gained most of them the day he soloed, on his 16th birthday. Ross is the extraordinary young man who made waves two years ago, soloing in 16 different type aircraft on his 16th birthday flying from his family's airfield on South Canterbury's Rangitata Island.

Ross has aviation in his blood. His great, great grandfather purchased the farm in 1895, but it wasn't until 1917 that the aviation side of things started when great grandfather, Ross Brodie learnt to fly with the Canterbury Aviation Company at Wigram. He later served with the RFC and RAF in Egypt in 1918-1919. In the 1950s both Ross' grandfather and grandmother Struan and Anne Brodie learnt to fly with the South Canterbury Aero Club and were quite successful at RNZAC competitions through the '50s, '60s and '70s. Ross' father Russell learnt to fly in the late '70s and became involved in the microlight movement in the early 1980s. He soon became a microlight instructor. In 1992 he and a friend set up East Canterbury Aviation importing RANS Aircraft from the USA. These days Russell and Ross are still selling RANS Aircraft and offering microlight flight training with two RANS S-6s at Rangitata Island. Jill McCaw had a chat with Ross to find out more about those 16 solos and what he's been doing since.

I know it's old news, but can we have a wee talk about those 16 type solos on your 16th birthday? What on earth gave you the idea? And what were the 16 types?

I'm not sure anymore if it was mine or someone else's. I'd seen something about someone else doing it somewhere, I don't know where. A family friend said that 16 seemed like a good round number and so we gave it a bit of thought and decided it could be done and we'd give it a go.

The aircraft were: RANS S-6ES 155, RANS S-6ES 116, RANS S-6ES 155 TD, Zenith CH-701, Bantam B-22, CFM Shadow, Jabiru J-160, Alpi Pioneer 200, De Havilland Tiger Moth, Tecnam Sierra, AESL Airtourer, Beagle Airedale, Cessna 150, RANS S-7, Druine Turbulent and Eipper Quicksilver.

We tried to start about sunrise but low cloud and lag over the Canterbury Plains meant we didn't get going until 6.30. We did two and then it lagged in again and we had to wait about an hour and a half before we could fly again. Then it cleared progressively through the day. I did the last flight about 6pm.

How many months of preparation did it take to learn to fly all those different types?

I'd already been flying the RANS, the Tiger and the Airtourer on and off. I'd actually started learning in the RANS when I was nine. We really only got into it in the last six months. Three of

"You can't say one is your favourite, because aircraft aren't really inanimate objects... so if I said the RANS, then next time you went out to fly say, the Airtourer, it probably wouldn't start."

them, the Turbulent, the Bantam and the Shadow - that day was the first time I'd flown them. The Turbulent's only got a single seat and the other two didn't have enough usable fuel load to allow any training in them. Dad flew them though, and said they weren't difficult and that I'd be fine. I did fly those ones early in the day, when I was fresh and not tired.

You're 18 now. There was talk of you gaining your CPL on your 18th birthday but I understand that didn't happen.

No, there was just too much involved that we couldn't take control off. I will be finishing my commercial, but it's better to do it properly and not cram all the exams in and rush it.

So, you're well on the way to your commercial. What else have you done since your spectacular 16 type solos?

I'm a microlight instructor. I managed that seven months after I soloed. I'd learnt a lot of instructional techniques from Dad. I've got about 215 hours instructing and 560 hours total time.

I did my PPL flight test on my 17th birthday and passed. I've got about 20, might be more, type ratings now, including gliders. I've been going to the Youth Soaring Development Camps.

The main thing I really like is aerobatic competition flying. I've got two contests coming up. I'll be flying the Airtourer for the Pam Collings Trophy - that's in the recreations category, at the Flying NZ Nationals at Timaru. And I'll also be flying in the NZ Aerobatic Club Nationals a bit later.

I've been doing the routine for over a year now so there's not much time needed to keep it sharp and current. However, it all comes down to the performance on the day.

I'd like to move up a level, but that would involve a more capable aircraft. A Pitts would be ideal, but just something with more horsepower and penetration. A Robin can just do it. A lot of people fly RU7s and RU4s; they just have the extra inertia. I was lucky enough to be allowed to fly Brent Thompson's RANS S10. It's got a fully inverted capable engine and it was so great to just fly around upside down. I was really fortunate to be able to fly it. It would be a great contest aircraft.

What's your favourite aircraft to fly?

I can't really say. They're all fun for different reasons. And you can't say one is your favourite, because aircraft aren't really inanimate objects and somehow... So if I said the Rans, then next time you went out to fly say, the Airtourer, it probably wouldn't start.

So I wouldn't say it's my favourite, but the one that puts the biggest smile on my face is the Tiger Moth. We've had her for just over 10 years and she's beautiful. She's got quite a history, but she's never had any major accidents and she was never used for Ag, so she's in really good nick.

Have you had any epic flights? What stands out?

I think the flight I'm most proud of was taking the old K7 glider to 10,000 feet in wave. Dad bought the K7 a while back. It's a wood and fabric old training glider. It's old and noisy and drafty. We were at Omarama with it and I wasn't expecting to get over 5,000 feet. I was just wearing a tee shirt and shorts. The wind comes right through the tow hook hole and I was only wearing light canvas shoes. My feet were numb. But it was so exciting.

What's next? What is that CPL for?

Well I don't really have any commercial plans, it's more something I'm doing for any future business. A friend who is like my mentor, suggested that as I'd probably want a commercial at some stage in the future, I was better to do it now, while I was used to school and study.

I intend to operate a business out of the airfield here at Rangitata. I want to add to what I'm able to do. I'd like to get into restoration, especially of de Havilland aircraft, Tiger Moths and others. I want to get an apprenticeship or be supervised by an engineer. The sheds here hold lots of projects waiting to be restored and I could work through those.

I'd like to make this place something like Mandeville or JEM Aviation - doing lots of restoration work while also offering flight training which we're already doing - but make it bigger, maybe adding a 115 operation offering rides in the Tiger Moth.

What else do you do for fun?

Not much. I'm usually flying or working on aircraft. I have been playing around, manufacturing the Windy type Airspeed Indicator, the de Havilland designed indicator mounted on the port side wing of all Tigers, Gypsy Moth and even the Fox Moth and Dominee. It's designed to make it easier for the pilot in a left-hand circuit. It's very basic but it's very accurate. It's nice to make something.

Good luck for the future Ross. It's been great talking with you.



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NZ Warbirds '1 Hangar'

Back in August 2017 I wrote about the 'new' Warbirds hangar facility at Ardmore and made mention of a further acquisition for the Association. This has come to fruition and Warbirds are proud to announce our occupation of the previous Tecnam Hangar facility at Ardmore. This has been made possible by a group of investors purchasing the hangar and providing a long term lease to the Association.

Following the purchase of ex Hawker Pacific hangar, this has cemented Warbirds' position at Ardmore with an identifiable 'Warbirds Precinct' based on our clubrooms and the two hangars. The two hangars are complementary in location and will be used to house our expanding fleet.

The new hangar is known as '1 Hangar' and will become the home for our growing fleet of WWI aircraft. We currently have the BE.2 (previous articles) and the recent arrival the Fokker Triplane (at left). In the pipeline is a Bristol Fighter replica from Classic Aircraft Sales in Omasa (recent article in Classic Wings) for delivery in four or five months following rebuild and certification.

Keeping these aircraft company are a number of vintage types: Tiger Moth, Stearman, Ryan PT-22, Ryan STM, Fox Moth and a WWI Ford Model T Ambulance on loan from the American Field Service group.

Since taking charge of the building we have been busy on minor renovations, carpet upgrades and painting of the hangar floor. The Office annex of the building is currently tenanted, however, long term there is a consideration to develop this into Association administration and social facilities.

With the classic aircraft 'gathered' from around the airfield and housed in 1 Hangar we have been able to redefine the aircraft exhibits in the ex-Hawker hangar (which you may have guessed will be known as 2 Hangar) to the WWII era and more modern types. These include the Skyhawk, Aermacchi, CAC Sabre, P-51 Mustang, P-40 Kittyhawk, Harvard, Beaver, Chippy, Yak-52 and Airtrainer, plus the occasional visitor.

The Association has also retained the previous south-east apron hangar to provide a home for 'over-flow' Warbirds, currently a T-28 Trojan (on long term repair following a landing incident), Scottish Bulldog, 3 or 4 Harvards and a number of light aircraft which were previously in 1 and 2 Hangars.

Thus we now have an established Warbirds area at Ardmore to build on and consolidate our presence for the future. We also have a unique collection of aircraft encompassing WWI, the 'Golden

Years', WWII and the 1950s and '60s. The unique aspect of this collection is that apart from the Jets in 2 Hangar, these aircraft are all airworthy and flown on a regular basis.

With continued development NZ Warbirds aims to make our hangars and already established Visitors Centre a 'must do' on any aviation buff's calendar. I invite you to come and take a look for yourself. If you like what you see then do join up as a member. Even better, sign up as a 'Volunteer' and be part of the Action. Great aircraft and facilities are only part of the story; it's the people that add the life and character to the Association and we would like to see you involved.

Frank Parker



Graham Orphan at the controls of NZ Warbirds' latest acquisition, a Fokker Dr.I Dreidecker.

The Fokker Triplane

Late last year NZ Warbirds took delivery of a replica Fokker Triplane. Frank Parker has been for a fly or two, of course:

NZ Warbirds' new Fokker was supplied by Classic Aircraft Sales in Omasa and is an 'Amateur Built Plans' aircraft, similar in many respects to the current 'Vintage Aviator' aircraft which have been part of the airshow scene for a number of years.

This example is powered by an Australian built Rotec radial engine with similar power to the original Oberursel rotary engine, but with much simpler handling and hopefully better reliability.

The 'Dreidecker' was made famous by the 'Red Baron', Manfred von Richthofen, and is no doubt the most recognisable of WWI aircraft. It was noted for its performance and handling, a fact verified by Allied pilots after the War. There were a number of original aircraft preserved in Germany after WWI, however these were destroyed by bombing during WWII.

This aircraft is in the livery of Joseph Jacobs, an Ace with 48 victories which made him No. 4 (equal with Werner Ross) among the German Aces. Joseph's first flying posting was to a reconnaissance unit in July 1915. His first 'official' victory was flying a Fokker Eindecker in May 1916. He joined Jasta 7 in early 1918 flying Fokker Dr.I Dreideckers (Triplanes) and became the highest scoring Ace on type.

The Triplane is a 'treat' to fly. It is light and nimble with a relatively sprightly performance. Its leading characteristic is a lack of stability, especially in yaw. To the modern 'eye' with its pug nose and stack of wings there is a lot of drag 'up front' and not a lot of tail surface at the rear. Accordingly it requires a bit of work on the tailplane to keep it balanced. This lack of stability was one of the aircraft's assets in 'Service' which made it a nimble and manoeuvrable aircraft, just the ticket with a Sopwith on your tail.

Flying the aircraft lives up to expectations. In the air: sprightly, nimble,

nice and light on the controls, a 'fun' machine. On the ground: another story. A fixed skid makes steering a challenge and precision manoeuvring requires wing walkers.

Any pilot with Tiger Moth experience would feel comfortable in the 'Fokker', however once again I must say I admire the men who with minimal experience took these aircraft to war.



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Ryan PT-22, DH 82A Tiger Moth and Fokker Dr.I Dreidecker in '1 Hangar'

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So many Dominator gyros arrived that it became necessary to pose for a photograph.

Gyros Fly-in to Dannevirke

Every year on Auckland Anniversary weekend, members of the NZ Autogyro Association gather at Dannevirke for their annual AGM and fly-in. Seventeen aircraft made the muster this year and were well outnumbered by club members, their families and quite a few interested visitors. Nearly half the field were Dominator types, three built from the same set of plans shared by their respective owners many years back, and the rest constructed by local agent Neil Hintz. The other nine aircraft present comprised seven different types. Needless to say it was a great weekend.

Did I say it was a great weekend? It always is, and as many other aviators in similar clubs will attest, these gatherings are looked forward to with enthusiasm pretty much for the entire year.

Albeit dominated by, well, Dominators, the wide range of gyro types now available in New Zealand was well represented. There were Xenons, MTO Sports, a Kallithea, Magni, ELA, and Cavalon, along with Paul Scherrer's KB3 variant and Lloyd Fitzsimons' hybrid Bensens.


As well as good discussions on club activity and future plans, the AGM this year was also notable for generational reasons, with the election of Kirstin Belton to the committee - Kirsten being the daughter-in-law of long time club CFI Garry Belton.

Trophies were awarded for Man & Machine (John O'Leary), Promotions (Brett Oswald), Best Annual Progress (Andrew Carter) and Furthest Flown (Hub Hall).

The furthest flown award might have gone to David Wright and your KiwiFlyer Editor who set off together from Mercer on Saturday morning. However as President Bruce Anderson kindly pointed out during the prizegiving, "you only got half way". That's because at about the summit of the Desert Road, one of David's prop blades flew away on its own somewhere. Proving how safe gyros are to land on unfavourable ground, the only (minor) damage to the aircraft was caused when we subsequently manhandled it onto a trailer following an eight hour rescue mission by our good friends at Dannevirke. Thanks heaps guys.

As has become a tradition at Dannevirke, a Sunday fly-out was organised to Athol and Betty Sowry's farm near Woodville. Hot drinks and some very good scones were much appreciated by all.

The rest of the weekend was spent catching up with friends and flying around the field for fun, as you do.

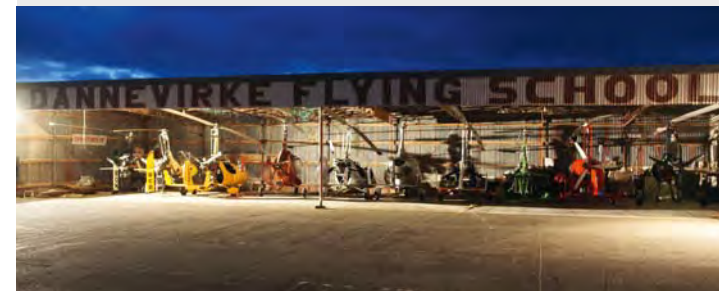
Where will the 2018 AGM be held? Dannevirke of course. 



Trophy recipients L-R: Andrew Carter, John O'Leary, Brett Oswald, Hub Hall.



If the Dominators were all going to stick together then so would the Xenons.



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Lloyd Fitzsimons was regularly airborne throughout the weekend in RCI.



MTO Sport lifts off the Dannevirke grass. Luckily gyros can fly themselves.

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All the way from Rangiora and winner of the furthest flown award, Philip Richards in his Thatcher CX4.

New Year's Day Fly-in 2018

The first aviation event in the world for 2018 saw the 13th annual New Zealand New Year's Day Fly-In being hosted at Koputaroa Airfield (NZKP) north of Levin. 28 aircraft from far and wide attended the event which grows every year. Phil Craig and Athol Sowry were there and tell the story for KiwiFlyer readers:

Since being established 12 years ago this fun event had always been hosted on the Athbey Farm airstrip near Woodville, by owners Athol and Betty Sowry. Last year Athol and Betty decided that instead of hosting the event on their airstrip every year, it should be moved around other venues across the lower North Island. Judging by the attendance and comments

following this year's event, their decision has only served to add momentum to this popular annual aviation gathering.

Owners of Koputaroa Airfield, Peter and Pam Kernohan, welcomed 28 aircraft and their crews along with a number of drive-in attendees. Types on the field ranged from home-built to LSAs, traditional microlights to 'spam cans',



Philip Richards and airstrip owner, Peter Kernohan.

vintage tourers, and even an autogyro too.

This year's hosts treated those gathered to a most satisfying sit-down barbeque lunch. Members of the Manawatu Aviation Club assisted the hosts with organisation, catering, and cleaning up - something the club also did at the previous Athbey Farm events. It was a great effort by the cooks and their helpers to feed us all so well!

The prize for the furthestmost travelled aircraft went to Philip Richards from Rangiora in his Thatcher CX4 ZK-JDY, with a flight time of a little over two hours. Also awarded prizes were Michael Fleming from Hastings in Piper Super Cub ZK-BPM, and Paul Scherrer of Upper Hutt who flew the only rotary wing aircraft seen on the airfield that day - his Paul Scherrer KB3 ZK-RKK. Unfortunately Paul was unable to take his prize home due to a lack of luggage capacity, so he kindly but reluctantly left it behind for the hosts to enjoy!

New Year's Day 2019 will see the 14th annual fly-in hosted at Waipukurau Airfield by the Central Hawkes Bay Aero Club. It's sure to be a great way to start the year. Mark it in your diary now.



Pterodactyl Ascender II+2 ZK-PAY heads to Feilding.



Piper Super Cub from Hastings was first to arrive.



Manawatu Aviation Club's Maxair Drifter XP503.



Jerry Chisum heads to Hastings in Gipsy Moth ADT.



Paul Scherrer departing in his version of the KB3 gyro.



Also Hastings-based, Stinson 108-2 ZK-VGR.



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The 52nd Walsh Memorial Scout Flying School 2018

The 52nd Walsh at Matamata

During two weeks of January, the 52nd annual Walsh Memorial Scout Flying School took place at Matamata. Thousands of ab-initio students have soloed at 'the Walsh' over the years and the school is a massive credit to all those who volunteer their time to make it happen. One of the 2018 intake's proudly soloing students was Noah Woolf who kindly agreed to write up his experience for KiwiFlyer readers:

On Saturday 20th January at 0600 hrs, my dream of flying solo came true thanks to the remarkable Walsh Memorial Scout Flying School.

Since the age of six I have had an avid passion for aviation. I have always wanted to get behind the controls of an aircraft and take to the sky as the pilot in command. Walsh provided me with that incredible experience.

Like all beginner pilots, before I could get behind the controls, I needed

an instructor. One of the great things about 'Walsh' is that all the instructors are volunteers who give their time for the benefit of keen students. The Instructors were all fantastically passionate about teaching us future aviators how to fly - which was important as most of us were slightly nervous about getting into the left hand seat. Somehow I managed to get the School CFI, Steve Scott as my Instructor! He is an awesome guy, and was always easily locatable by his Hawaiian shirt and cup of tea in hand. Steve gave me the best flying instruction I could have wished for.

Before every flight there would be a lecture / briefing. There were usually two 'briefs' a day where all 44 ab-initio students crammed into the Soaring Centre at Matamata Aerodrome to learn about different aviation topics. These included Meteorology, Principles of Flight, Aviation Law, Fire & Emergency, Engine & Instruments, Effect of Controls, Human Factors and Stalls.

The sensation of taking to the air at

the controls was just phenomenal. There is no other feeling like lifting off the ground, feeling the forces on your body, experiencing amazing views and having the responsibility of controlling an aircraft.

One of my favourite moments of the whole camp was when Steve took me up in the Citabria. This was my first experience with a tail-dragger aircraft. It was pretty scary at times when you couldn't really see where you were going while taxiing, but as soon as you brought the power up the nose pitched level and with gentle back pressure, the plane rapidly gained altitude. I did stall turns, loops and rolls. I even did a bit if formation flying with the Ercoupe, landing with a huge grin on my face!

The Open Day saw an inspiring aerial performance by the RNZAF Black Falcons. Friends and family were entertained watching the many visiting aircraft and the continued water dousing of solo achievers. Open Day gave me the opportunity to fly the Tiger Moth which unfortunately didn't go to plan, as just after we took off the

engine sounded like a lawnmower running over nuts and bolts, and we had to make a hasty landing without radio contact, flying super low to the ground in order to clear incoming and overhead traffic. That flight will forever stay in my memory! As it turned out, the Ground Crewman had accidentally knocked one of the magneto switches off while buckling me in.

My solo flight was another major highlight. I had to fly three perfect circuits to qualify for solo, and sure enough I did! Steve said, "Right, I've had enough of you." and hopped out of the aircraft. The PA38 Tomahawk climbed like a rocket without the extra weight of an instructor. I went around the circuit nailing my downwind and final calls and gently landed the aircraft. Who would've thought that being doused in buckets of cold water would be such an honour - the reward for successfully completing your first solo.

The Walsh wouldn't be possible without the dedication, enthusiasm and commitment of other aviation enthusiasts and I thank them profusely for the time and energy they put into making the school run successfully. There were so many amazing people involved that it's hard to name just a few, from Flight Ops Phil who stayed up till midnight nearly every night dealing with all the paper work involved with the days aircraft movements - and was up again at the crack of dawn, to the kitchen staff who worked tirelessly while downing endless coffees to beat the heat and stress of keeping our hunger at bay, and to all the Flight Instructors who gave up their time to turn a bunch of teenagers into pilots. I have all my fingers and toes crossed that I'll be able to return to Walsh next year to help lead the new students and further my flying experience.

Noah Woolf



The RNZAF visited with Black Falcons and an NH90.

Walsh Memorial Scout Flying School 2018 Awards

The School is very well supported by numerous organisations offering 40+ significant prizes for high-performing students. Prizes range from cash contributions towards flying training, to simulator time, work experience days at Air New Zealand, a whole week at RNZAF Base Ohakea hosted by 3 Squadron, and much more. Every student attending also receives a KiwiFlyer subscription. The most prestigious award is the Walsh Trophy (including \$1000 of flying) which goes to the best all-round ab-initio student in flying, exams, and leadership.



Alexander Barbarich-Bacher receives the Walsh Trophy (including a \$1000 flying award from Allen Williams) from Capt. David Morgan and John Mounce.



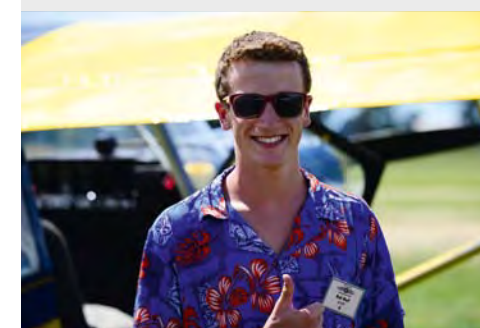
Three Charles Todd Memorial Awards of \$1000 for top all-round returning students in flying and leadership went to Gareth Lacey, Caitlin Ferner, and Carmen Haybittle.



Three Air New Zealand Group Awards of \$2000, B787 Simulator time and a work experience day went to Phoebe Kirk, Alexander Barbarich-Bacher, and Millie Simpson.



Many hands making light work of aircraft cleaning.



That's the smile of Noah Woolf's first solo.

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Could the Saab 'Swordfish' replace our Orions?

An option for Orion replacement

After more than half a century of service to the nation, time is finally running out for the RNZAF's Lockheed P3 Orions. New Zealand's Ministry of Defence is in the process of choosing a replacement through the Future Air Surveillance Capability (FASC) programme, which aims to ensure that 'no less than an equivalent level of capability matched to current and future needs' is in place by 2025, when the Orions will have retired after sixty-four(!) years of operation. Regular KiwiFlyer contributor Chris Gee caught up with a possible contender for the role whilst at the 2018 Singapore Airshow and sees several reasons to rate the Saab 'Swordfish' very highly on the preference list. Chris explains:

The departure of the P-3K2 Orions will leave big shoes to fill. There are the obvious matters of our vast maritime patrol areas and the reliance New Zealand's economy has on oceanic trade. Then the 'future needs' aspect adds complexity given uncertainty surrounding the effects of climate change and the likelihood of increasingly frequent humanitarian, economic and ecological crises throughout the Asia-Pacific region. This and more must all be considered alongside our comparatively low defence budget. Given the platform NZDF runs with for the FASC requirement must endure for perhaps fifty years, making the right choice is of the utmost importance to the nation.

There are six contenders known to have submitted proposals for the FASC requirement: Boeing, with the P-8 Poseidon, a 737 derivative; Airbus, with the C295 and possibly an A320neo derivative; Leonardo, with a version of their C-27J Spartan or ATR-72MP; Embraer, with a combination of missionised KC390 airlifters and or E190-E2s; Kawasaki with its P1; and Saab, with its Swordfish system which is integrated onto the Bombardier Global 6000 airframe. All of these companies were at the 2018 Singapore Airshow and Aerospace Expo. Our Ministry of Defence's options include: choosing a one-for-one replacement of our six P-3s with high-tier airframes; an increased number of low-tier airframes; or a two-tier approach with a small number of high-tier aircraft backed up by additional low-tier airframes.

An early favourite

The Boeing P-8 Poseidon has been widely considered as the front runner in the competition, with this capable (and expensive) aircraft used by our major defence partners the United States and Australia. The armed forces of the UK, Norway and India have also ordered the type. The US Government has already given the nod for New Zealand to purchase four P-8s through their Foreign Military Sale programme, complete with systems and support, at a total cost of NZ\$1.91 billion. However; the P-8's increased Maximum Take-Off Weight and size means it cannot operate with

a full fuel load from Whenuapai Airbase in Auckland without major infrastructure investments. Additionally, the combination of training, maintenance and overseas deployment will mean that procuring only four airframes could leave extended periods with no 'on-demand' capability for urgent domestic needs. There is talk of entering an 'airframe sharing' pool with the RAAF and their P-8s, but our operational needs may not always align. In any case, RAAF and USN P-8 aircrews at the Singapore Airshow were also quick to point out that interoperability comes not via the aircraft itself, but through tactics, communications, datalinks, and combined op's training.

Enter the Swordfish

Saab's 'Swordfish' proposal circumvents these problems. The Bombardier G6000 is an excellent special mission platform, chosen by Saab for its ultra-long range, patrol speed envelope, large cabin, power and growth potential. It is a mature aircraft with 600 examples having been built worldwide (including its G5000 sibling). Saab's GlobalEye AEW solution, also using a G6000 and systems commonality to the Swordfish, is set to make its first flight for the UAE by the end of March. The G6000 has also been used as the platform for the RAF's R1 Sentinel ASaC aircraft, and the USAF's E-11A ELINT aircraft. Saab has a history of successfully integrating its systems into third-party airframes, with its Erieye AEW system in service with ten nations.

Saab's Swordfish proposal enables a larger amount of high-tier airframes at lower purchase (around two thirds) and operating (around half) costs than the P-8 offering. Saab's aircraft also fits within the RNZAF's existing infrastructure. By comparison, the Australians are spending upwards of NZ\$700 million upgrading RAAF Edinburgh to accommodate their new P-8s (about the cost of two entire Swordfish aircraft). As well, Saab state that the RNZAF could operate 6-7 Swordfish for the price of 4 P-8s, with lower crew and support costs and higher availability making deployments easier and more affordable. Another hurdle for the P-8 is the availability of production slots that match the NZDF's timeline. Without jumping the queue, Boeing's backlog of orders threatens to push delivery out to almost a decade. Saab are confident that they can deliver within 36 months of an order being placed.

Although the P-8's MTOW is 85,820kg and the Swordfish is much smaller at 45,132kg, Saab stress that theirs is not a lower-tier solution to the FASC. Five fully-integrated workstations offer a "cutting-edge man-machine-interface and data-fusion with the combat management system", using a smaller footprint that requires fewer equipment racks and hardware. The Swordfish system utilises 'Commercial Off The Shelf' systems wherever possible, lowering risk and reducing support costs. An example is the 360 degree Selex Seaspray 7500E Active Electronically Scanned Array (AESA) radar installed in a dorsal fairing. This is capable of simultaneous 'track-while-scan' of over a thousand targets. It can detect oil slicks, periscopes and even individuals in the water. Its range is limited by line-of-sight to the horizon, but with the G6000's cruise altitude of 15,500 m that horizon is far away, with ship-size target detection out to 350 nm.

Saab is known for integrating NATO compatible communications suites, and its aircraft would come with state-of-the-art SATCOM, tactical datalink, and all the systems required for interoperability with our allies across the spectrum of land, sea and air operations.

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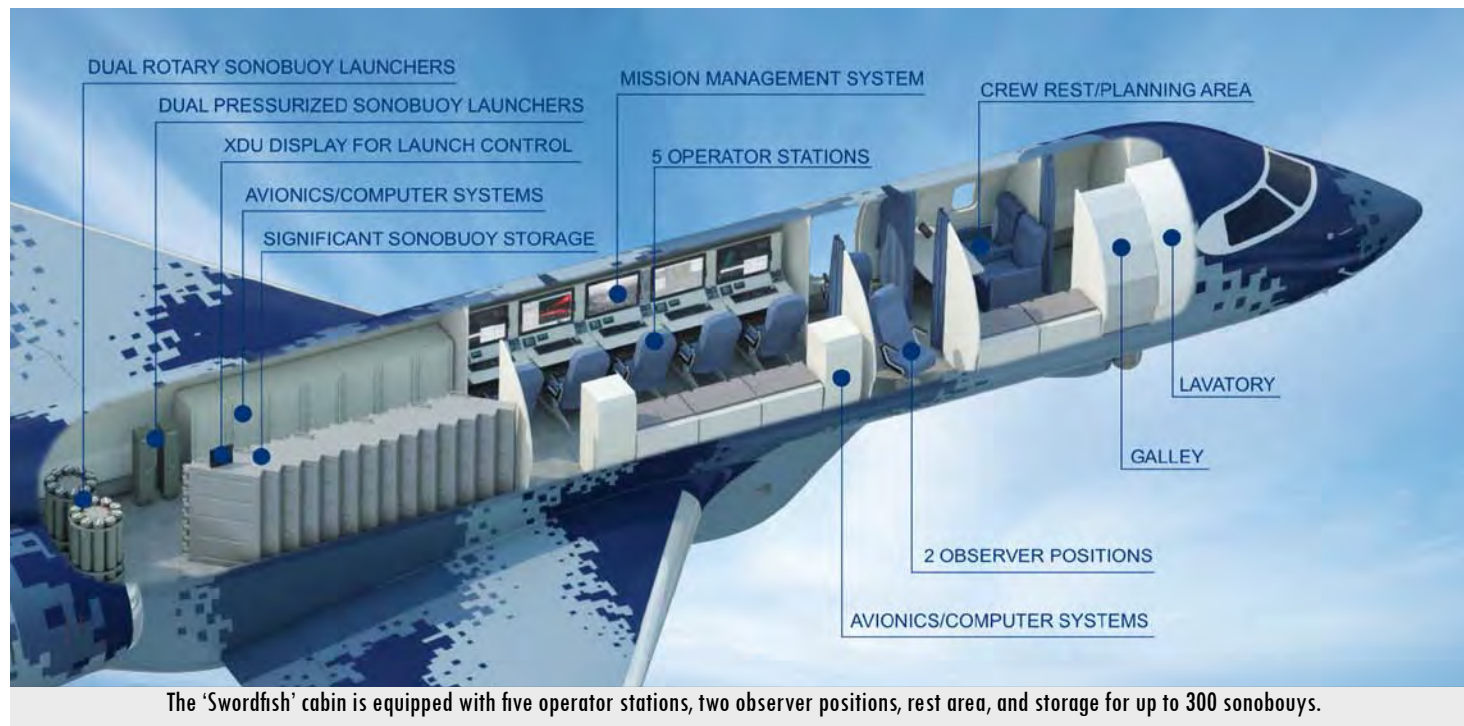
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Search and Rescue

Of course with the NZDF's area of responsibility covering nearly one fifth of the world's ocean surface, Search and Rescue capability is of great importance to the FASC requirement. The RNZAF's P-3K2 Orions have saved hundreds of lives over their time in service. As well as a solution to integrate the NZDF's requirement for a drop-hatch on the aircraft, Saab has also developed a method of dropping rescue packages through its sonobouy launchers, and can carry four SKAD (Survival Kit Air Droppable) pods externally.

The smaller size of the Swordfish offers another SAR advantage; an ability to self-deploy from a wide range of airfields, allowing closer operation to SAR areas with less transit and more loiter time on station. Lower logistics and crew demands are also of course very relevant for the NZDF.

Defence

More than 150 submarines are expected to be in operation throughout the Asia-Pacific region by 2025. The NZDF's anti-submarine capability is actually quite crucial, since even the suspected presence of a hostile submarine can close sea lanes to commerce and restrict the NZDF's ability to deploy sea-borne

humanitarian aid. Once an aircraft runs out of sonobuoys however, its mission is essentially over. The Swordfish has a typical payload of 200 sonobuoys, three times the capacity of the legacy P3, and double that of the P-8. The Swordfish uses a gravity (instead of heavy pressurised) launcher, supporting the latest generation of smaller sonobuoys which could allow up to 300 to be carried internally. The greater detection range of these means that less need to be dropped, all adding up to make the aircraft's ASW (anti-submarine warfare) endurance greater than other platforms on the market.

The Swordfish utilises a 'Multi-Static Active' system which allows ships, helicopters and other aircraft to share information from sonobuoys between them. A Magnetic Anomaly Detector (MAD) boom (ten times lighter than legacy systems) is installed, a capability that is not on the P-8. The MAD boom was removed from our P-3s as part of their 'K2' upgrade, but that capability has now come back into fashion for use as more than just an ASW tool. Saab's Electronic Support Measures (ESM) and Electronic Intelligence (ELINT) suites are proven, with new technologies leveraged from the Gripen E fighter and GlobalEye AEW&C programmes meeting Intelligence, Surveillance and Reconnaissance demands.

On patrol

The Swordfish excels on patrol with a max range of 11,112 km, versus the P-8's at 8,300 km. But in a 'high - low loiter - high' mission profile things look even better. In round numbers, the G6000 can travel 1,850 km at a cruise speed of 900 km/h, then loiter for eight hours, whereas the RAAF recently stated that their P-8s can travel 2,200 km at 842 km/h and loiter for four hours on an ASW mission. While the P-8 has greater payload capacity by weight over the Swordfish, with 10,000 kg of ordnance spread across 11 external and internal hard-points, the previous generation of torpedoes it carries must be carried internally otherwise their motors freeze. This is not the case with the Swordfish's EUROTROP Mu-90 torpedoes, allowing it to currently carry six on external pylons, as well as the RBS-15 anti-ship missile. The open architecture of the system will allow customising for NZDF needs, including precision strike ordinance should they go down that track - which is a possibility given that currently the P-3 Orion is our sole airborne strike platform aside from the Seasprite helicopter with its Penguin missile.

Generational change

While the P-8's 737 lineage is a generation beyond the legacy P-3, the Swordfish represents a new generation again. Its 'Vision Flight Deck' features the same Rockwell Collins Pro Line system as our King Airs, offering training compatibility across platforms. The G6000 comes with a system that projects images from a thermal camera in the aircraft's nose onto the pilots Head-Up-Display, allowing for safer below-minima and in-terrain operations. Indeed, the RAAF P-8 aircrew at the airshow, when asked about the G6000 as a choice for the NZDF, espoused that if the aircraft was chosen their jealousy would "overshadow any sporting rivalry".

Other issues might also help tip the scales towards the Swordfish. Saab have a history of delivering ownership and control of their product to customers. By contrast in the case of the P-8s, each aircraft would be identical to that operated by the USN. Arguably we would be buying an off-the-shelf product with sealed systems designed for someone else, by someone else, and no ability to adapt the platform. India's 'P-8I' purchase that



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retains its MAD boom and included some local systems was said to be a one-off deal. Saab is promising to deliver a Maritime Patrol Aircraft system that could even be for 'NZ eyes only' if required and says that discussions on possible partnerships with a range of Kiwi aerospace and technology companies have already taken place to deliver, sustain and evolve the platform on a long term basis.

The NZDF strategy around its FASC solution will by necessity differ from those of our allies. The P-8 was designed to work in tandem with the Northrop Grumman MQ-4C 'Triton' Broad Area Maritime Surveillance unmanned aerial vehicles. The Australians are planning on getting seven of these drones (which themselves are almost as big as a 737, have an endurance of 32 hours, and cost NZ\$250m each) to operate alongside the twelve P-8s they have on order. This won't be a capability the NZDF can afford. With Swordfish we would still be fully interoperable with the US and Australian P-8s, but retain the capability and numbers of airframes to serve our independent needs and foreign policy. Additionally, the USN has intended from the beginning to carry out its future ASW missions from high altitude, using a 'High Altitude Anti-Submarine Warfare Capability' which is still under development. This is a guided long range glider kit that takes a torpedo dropped from high altitude at a stand-off range, and releases it in the vicinity of a suspected submarine. It is unlikely that the RNZAF will be able to access or afford this technology, and according to various aircrew with ASW experience at the trade expo, the jury is still out as to whether the new generation of stealthy diesel-electric AIP submarines will be detectable from altitude anyway. They added that carrying out ASW operations from high altitude requires wide swathes of airspace to be secured against civilian air traffic for extended periods of time, which can be problematic.

Politics

The change of government in New Zealand may also give Saab confidence. The three-way coalition between Labour, New Zealand First and the Greens makes the narrative surrounding defence more complicated. Despite NZF's pro-military Ron Mark taking the Defence portfolio as part of the coalition deal, he may face fierce opposition from his Green colleagues to secure funds. Saab also possibly has on its side its credentials of not currently being active in the nuclear weapons business. If ethical considerations (including public perception) of defence acquisition are a factor, Saab's proposal may prove more palatable to the coalition Government than that of its competitors.

All that said, decisions such as these inevitably involve political machinations of some sort. Perhaps the best solution may indeed yet align with the politics of the day.

Chris Gee



Military hardware in abundance.



The ultra-maneuvrable Royal Malaysian Air Force Sukhoi Su-30MKM stole the show during the air displays.

Singapore Airshow highlights

The biennial Singapore Airshow, billed as the most significant aerospace trade and airshow in Asia, took place at the Changi Exhibition Centre in Singapore during the week of 6-11 February. Regular KiwiFlyer contributor Chris Gee attended and was very impressed with how much there was to see, including plenty of relevance to aviation in New Zealand. Chris reports:

Asia-Pacific airline demand increased by 9.4% last year, and the last few years has seen some serious 'up-gunning' by armed forces across the region - making the Singapore Airshow trades exhibition a fertile hunting ground for more business in the sector. As well as bringing actual aircraft to the show, many exhibitors employed Virtual Reality systems to showcase their wares, alongside models, full-scale mock-ups, and multi-media presentations. The event schedule was packed with press briefings and seminars. Exciting new technologies were on show,

alongside a terrifying array of emerging weaponry, with the global paradigm shift towards unmanned aerial vehicles and precision weapons obvious. All the companies competing for the NZDF's current acquisition projects to replace our C-130, B757 and P-3K2s were at the show. Boeing, Kawasaki, Embraer, Leonardo, Lockheed, Saab and Airbus all displayed models and brochures of their offerings, with some of the actual airframes, such as the P-8, A400M and G6000, appearing in the static display.

Aviation NZ

Four New Zealand companies joined forces with AviationNZ to form a NZ branded trade stand. These were ASPEQ, the Air New Zealand Aviation Institute, ATCANZ, and Oceania Aviation. The Asia-Pacific region is the aviation sector's fastest growing marketplace, and New Zealand's aviation industry stands to gain much. With around one aircraft per 1000 people, NZ has a far deeper integration of

aviation within its society (and the skills to match) than any other nearby population. Talent from here is in demand worldwide, and the quality of NZ pilots and our work ethic in general was echoed to this author repeatedly at the exhibition.

Airbus

Airbus had a huge presence, highlighted by their very long A350-1000 XWB in the static display. Multiple airlines signed up to the Airbus 'Skywise' Predictive Maintenance Service at the event. This collects and analyses 'big data' in real-time from subscribers to predict problems and produce maintenance strategies.

Airbus launched its 'Airbus Aerial Asia' drone business and demonstrated its 'Skyways UAV', with which it wants to break into the possibly huge 'Unmanned Aerial Delivery' industry.

Airbus also announced they are looking at a version of their A320neo as a surveillance and maritime patrol platform, mentioning NZ as an interested customer.

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Boeing

Boeing announced \$900million in orders for its engineering, maintenance, training and professional services at the event, yet most attention was on their NMA or 'New Mid-Market Airplane', a new concept aircraft likely to be called the 797 that offers high passenger capacity with high capability.

Boeing and Singapore's Defence Science and Technology Authority signed an agreement to collaborate in big-data analytics for support of Boeing systems across Singapore's Air Force operations.

Embraer

Embraer had an E190-E2 prototype in the static display. The hand-painted 'Tiger' livery was a nod to their bullish ambitions in the Asia region. Embraer announced one of the few actual new-airframe orders of the airshow in the form of six KC-390 Multi-Mission Tactical Transports to aviation services firm SkyTech who will acquire the aircraft to full NATO specifications then supply them to military customers under lease arrangements, with deliveries starting from 2020 - an interesting confluence of timing and airframe numbers given the RNZAF's need to replace its five Hercules from 2021. It's an arrangement that reduces start-up costs and permits upgrading at the end of the lease term.

ATR

The ATR stand was fawning over Air New Zealand and New Zealand's attitude to aviation in general. ATR has a long history with ANZ, with the airline in the process of replacing all its previous ATRs with new generation ATR 72-600s by 2020. As an aside, the ATR's award-winning 'Armonia' interior in use globally features NZ sourced leather.

ATR also confirmed they are in discussion with Air Chathams about replacing their Convair 540s. ATRs have been successfully converted to Freighter/Combi versions overseas, and will be one of the only modern and economic types that will be able to operate from the Chatham Islands if the planned runway extension does not go ahead.

Bombardier

The highlight of Bombardier's presence was the Air Baltic CS300 in the static display. Bombardier recently partnered with Airbus on the CS300 and announced at the event that integration with Airbus was going to be a top priority for the



Gulfstream line-up in the static display area.



Chinese P750XL UAV conversion.



Dassault Falcon 8X sophistication.



Embraer hand-painted tiger livery on their E190-E2.

company, as they look to build an assembly plant together in the USA or Canada. The partnership follows a legal battle and trade dispute that erupted after Boeing succeeded in getting a 300% import tariff applied to any of the Canadian manufacturer's aircraft sold to US-based carriers, citing government subsidies of Bombardier. Canada cancelled its order for Boeing F/A-18 Super Hornets over the fracas. Then they reached out to Airbus, who by siding with Bombardier absorbed a possible competitor while also 'sticking it' to their opposition.

Dassault

The French manufacturer Dassault brought its Falcon 8X and Falcon 2000 LXS business jets. These latest generation aircraft sport incredible performance specifications, with the flagship 8X capable of travelling 12,000 km at Mach 0.9, enough for London - Hong Kong direct. The Honeywell Primus Epic 'EASy' cockpit avionics resemble something out Star Trek, and takes so much workload off the pilot that their job was anonymously quoted as 'hardly like a job at all.'

Gulfstream

Gulfstream took up much of the static tarmac display with their recently certified G500 and G600 alongside their G650ER, G550 and G280. At their stand the company was profiling their Special Mission derivatives, boasting more than 200 aircraft in service with 40 countries.

China

Chinese companies displayed an impressive array of technology. In the static display were two Medium Altitude Long Endurance Unmanned Combat Aerial Vehicles (UCAV), the Wing Loong I and Wing Loong II. They were shown surrounded by, and loaded with, a formidable array of munitions and weaponry. The proliferation of this kind of technology globally is surely a concern. China has recently flown for the first time the world's largest amphibious aircraft, the AG600, which drew much attention from the other ASEAN nations since it will undoubtedly be used to service disputed territories in the South China Sea.

The most interesting Chinese item on display for New Zealanders, however, was a model of the 'Star' AT200 Cargo UAV, which is converted from our very own Pacific Aerospace P750XL aircraft. The company advertises fully automated operations with a 1500 kg payload into

unpaved landing strips of 300m, at day or night. The STAR representatives said they buy completed P750s and fly them to China, where they carry out the conversion to an unmanned platform.

Singapore Technologies

Singapore Technologies Group had an immense presence. The success of Singapore's rise from developing nation to first-world powerhouse, far exceeding its neighbours' standard of living and GDP per capita, was obvious at the ST stand. From ultra-modern high-end armoured vehicles and naval shipbuilding, through to advanced sustainable 'smart-city' and transport initiatives, leading-edge aerospace and cyber technology, the ST stand was a reminder of the nation's historically high investment into public education, suggesting it pays off down the line.

Republic of Singapore Air Force

This year's event coincided with the 50th Anniversary of the RSAF, who celebrated in loud and exhilarating fashion. A unique demonstration was put together comprising one F-15SG and two F-16C fighter jets. Such an intense, close and flare-heavy display by dissimilar fighter

jets was a sight to behold. The three-way 'opposing cross' manoeuvre was a highlight, with a vertical formation climb and long simultaneous flare release offering a brilliant finale. The RSAF section of the static display was impressive, with the aircraft loaded to the hilt with ordinance, and all with open cockpits that saw long queues forming as people got selfies taken by RSAF personnel in the aircraft.

Despite much prodding by myself, there was no talk from the Singaporeans as to whether their plan to base F-15 or F-16s at Ohakea has progressed any further. Given the limited airspace the Singaporeans have to use in their home nation, much of the RSAF is deployed overseas for training, some of it permanently.

Royal Malaysian Air Force

The RMAF Sukhoi Su-30MKM stole the show during the air displays. Its thrust-vectoring super-maneuvrability sent it dancing gracefully through the air more like a ballet dancer than an eighteen-tonne fighter-bomber. Whether that ability is operationally useful in the modern context may be contentious, but it is indeed impressive to watch. The aircraft was thrown through flips, tail-slides, falling leaf

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impersonations, somersaults and its signature 'cobra' manoeuvres all the while dispensing a vast number of flare IR countermeasures.

Airbus made good use of a RMAF A400M, corralling a stream of delegates through the aircraft as they attempted to sway more defence ministries towards it, with our NZDF high on that list.

Indonesian Air Force

The TNI-AU's Jupiter Display team performed daily formation aerobatic displays in their KAI KT-1B trainers. Their display was a huge hit with the audience on the public days. While we in NZ might be used to seeing this kind of flying, it was obviously new to many people, since you could hear them scream in fright every time the aircraft performed close head-on passes, and the common 'mirror' manoeuvre received something of a standing ovation.

USAF/USN

The USA loomed large this year, with a vast line up of hardware in the static display. A pair of US Marine F-35B Lightning II made their Asian debut, while the USAF brought two F-22 Raptors, an E-3D Sentry AWACS, KC135 tanker, C-17 Globemaster and RQ-4 Global Hawk UAV. The USN had a P-8 Poseidon. On Saturday afternoon a USAF B-52 from Guam performed a flyby as part of a non-stop flight. The US Pacific Air Force's F-16 Demonstration Team performed the same display daily they did at the RNZAF's Air Tattoo at Ohakea, flown by the same pilot, Major Smeeding, except this time flares were being released at each twist and turn.

RAAF

The Australians brought their E-7 Wedgetail AWACS and brand new P-8 Poseidon maritime patrol aircraft to the airshow. The P-8 crews were very forthcoming about how the platform differs from the P-3 Orion it is replacing. Interestingly, there is apparently little commonality in crew training and maintenance between the two platforms, despite them both being based on the 737. The crew train together for 6 months then go their separate ways, with each having separate maintenance regimes. This was a good reminder that commonality is achieved through sharing systems and tactics, not platforms.

The Airshow experience

The 2018 Singapore Airshow was undoubtedly world-class, offering a staggering array of aircraft. Yet aviation enthusiasts used to the style of airshow we have here in New Zealand might have been slightly disappointed. Operating out of a major airport such as Changi means that flying displays are restricted to just an hour each trade day, with two sets of 45 minutes each on the public days. The exhibition centre is off-airport, so the flying displays take place out over the water next to the venue, and occur substantially further away than they do in NZ. Singapore is a very expensive city, and sitting in long queues in a taxi wasn't cheap. It was unfortunate that the highly anticipated South Korean Black Eagles display team was forced to pull out of the flying display for the entire week. On the first day of the airshow, one of their KAI T-50 Golden Eagle aircraft skidded off the runway on take-off, flipped and caught fire. The pilot walked away with minor injuries, but it was enough to ground the entire team. The runway was closed for several hours, which caused intense travel delays that reverberated across the globe.

If you went for the trade expo however, it was a great show.

Chris Gee



Drones from from top down: Singapore, China, USA.



Bombardier G6000 (top), A350-1000, Falcon 2000LXS



Spectacular show from RSF F-15SG and two F-16Cs.

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ZK-PHD RANS S-12 Airaile



When Paul Henry Davis started looking for an aircraft to build he had definite requirements in mind. Firstly his wife wanted side by side seating as she had sat behind him on a motorbike for years. Secondly, he wanted a pusher and lastly it needed to have great visibility. The RANS S-12 Airaile ticked all the boxes so a kit was ordered and arrived in from the USA in April 2012. Work began in October.

The Rans S-12 Airaile comes in kit form and includes a welded 4130 steel tube cockpit, with a bolted 6061-T6 aluminium tube rear fuselage. The fuselage, wing and tail surfaces are covered in Dacron. The wings are folding or removable. Power for PHD is supplied by a Rotax 912UL turning a 3-bladed Warp Drive propeller.

Most of the assembly was done at Paul's property in Guildford, Port Levy, in a converted woolshed. Most of the assembly involved fitting, trimming, shaping and drilling holes in struts or sheets for bolts or rivets and then assembly. The largely completed fuselage including engine and instruments, along with the uncovered wing and tail frames, was removed from the woolshed, and after an initial trial rigging outdoor, was transported to a hangar at Ashburton airfield in March 2016. Wings and tail frames then returned to Guildford for covering before final assembly in January 2017. During the last year Paul has been completed ground running tests, sorting out a few matters in the process. A final inspection is now due ahead of the aircraft's first flight. Paul's S-12 should cruise at 85 mph, stall clean at 42 mph and with flaps at 35 mph. Endurance should be around 4 hours.

Event Guide

February 28th - March 3rd
Flying NZ Nationals
At Timaru. Including Australia/NZ Wings competition. See www.flyingnz.co.nz

March 3rd - 4th
Tiger Moth Club AGM & Fly-in
Whitianga. Annual summer fly-in, competitions, AGM and dinner. Contact Graeme Wood: 027 293 2318 or woodsyc@clear.net.nz

March 9th - 11th
SAANZ SportAvex
Waipukurau. Annual summer fly-in (North Island's turn). Full programme of competitions, AGM, dinner, Wings awards. Details at www.saa.org.nz/public_pages/events.php

March 21st - 25th
Balloons Over Waikato
Taking place at various locations around Hamilton. Night Glow at Waikato Uni on Sat 25th. Admission is free. More info at www.balloonsoverwaikato.co.nz

March 30th - April 1st
Warbirds Over Wanaka
International Airshow at Wanaka Airport. 30 years since the first WOW in 1988. RNZAF Black Falcons & past aircraft returning. Rides Day on Monday 2nd April. More information and tickets at www.warbirdsoverwanaka.com

June 1st - 4th
NZAWA Nauti Girls Fly-In
Annual gathering of the NZ Association of Women in Aviation, this year on Queen's Birthday weekend at Whitianga Aerodrome. Everyone is welcome, as the rally is also about our fantastic male supporters, honorary members, judges and organisers. More information at www.nzawa.org.nz or Julie 027 600 3967

July 6th - 8th
Marlborough Aero Club 90th Anniversary
Fly-in at Omaka. No Landing Fees. Civil, Military & Vintage Aircraft. Static Displays. Merchandise. Joy Rides. Height Guessing Competition. Friday Night Roast. Liquid Refreshments. Saturday Afternoon Tea. Saturday Night Dinner & Ball. Register at www.marlboroughaeroclub.co.nz

Jul 23rd - 29th
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TTSN 260 hours. Initial flight 2009. Owned by the present owner since 2010. Hartzell CSU. Aerosport Power O-360 balanced with crossover exhaust, one magneto and electronic ignition. Dynon EFIS, EI MVP50 engine monitor, Garmin VHF & Transponder, Trio Autopilot, Spidertracks.

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