



Mike Slack and David Cranna scored 3rd and 1st respectively in the Intermediate category flying David's Zlin Z-50.

# 2019 NZ Aerobatic Club Nationals

## Confessions of a Newbie

The 2019 NZ Aerobatic Club Nationals took place in the beautiful skies of the Southern Wairarapa, just after Wings Over Wairarapa in late-February, hosted by the Wairarapa Aero Club. Of course KiwiFlyer Aerobatic (and more) contributor Grant Benns was there. Grant provides an introduction below and then hands over to aerobatic competition newbie Paul Carran to explain the event from a first timer's perspective.

**Whilst** numbers were down a little this year due to aircraft unserviceability, most categories were flown, with the usual suspects present. Of note: Morris Tull and David Cranna continued their winning ways, Trish Stevens flew the flag for our female competitors, RV-series aircraft showed what a great all-round aircraft they are, and the results proved that practice pays off.

### 2019 Nationals Results

Here are the Category results. Note the percentage score is the percentage of the maximum total available points for that category.

#### Advanced:

- 1st Morris Tull / Pitts S1 62.9%
- 2nd Grant Benns / Laser 230 and Zlin Z-50 58.9%
- 3rd Steve Geard / Yak-55 56.9%

#### Intermediate:

- 1st David Cranna / Zlin Z-50 74.1%
- 2nd Andrew Love / Pitts S1 73.9%
- 3rd Mike Slack / Zlin Z-50 69.9%

#### Sports:

- 1st David Cranna / RV-7 78.3%
- 2nd Chris Schadler / RV-3 77.1 %
- 3rd Grant Benns / RV-7 75.1 %

#### Recreational:

- 1st Trish Stevens / RV-6 70.8%
- 2nd Paul Carran / RV-8 65.1%

Congratulations and thanks to all involved for a safe, well run and FUN event.

### The Newbie

This year we introduced a new member/competitor to our ranks – Paul Carran from North Shore Airfield, flying his newly acquired RV-8. Being new to aerobatics with the ink still drying on his aerobatic rating, and thus very new to the sport of competition aerobatics, I thought it appropriate to ask him to write up his experiences, thoughts and feelings of rocking up for his first competition. The RV-series is a lovely aircraft in-general

and is also very capable of being flown competitively in any of the lower three categories – Primary, Recreational and Sports. Paul chose to fly the Recreational sequence (with some encouragement!) and he also accepted my offer to initially fly with him as safety pilot in order to learn the routines and flow of an aerobatic competition flight – something I would encourage all ‘newbies’ to seek out. After that, he was on his own. His story of his first Nationals follows:

*Grant Benns*

## Paul's Story

Descending from 8000 feet over broken cloud on approach to Hood Aerodrome, Masterton, I could see clear sky ahead. At 2000 feet and a couple of miles out I was nicely positioned on the western side of the town and, with the plate torn out of the Supp with the non-standard right-hand circuit direction on my knee pad, I joined for runway 24. A brisk cross wind tried hard to lift the wing but my RV-8 wheeled on smooth - I had arrived!

From regaining my PPL after a 35-year break only four years ago to getting an aerobatic rating in January 2019, it had been, and continues to be, a wonderful journey. However, it was with some trepidation that I agreed with my aerobatic instructor Grant Benns to join him and others at the Nationals. I should not have worried - it proved to be a fantastic experience and one that I would recommend to all pilots.

### My welcome

The first impression was that, despite being a newcomer, I was welcomed by all and enthusiastically included into the activities. When not flying, I assisted the five judges by ‘scribing’, which is the writing down of a judge’s scores and comments of the competition sequence being flown. I found this assistive in understanding what judges are looking for and how they score the sequences. It was also a time to get to know a few people and chat between breaks before the next pilot was ready. Later in the



First time aerobatic competitor Paul Carran.

Clubhouse, members freely offered both congratulations for giving it a go but also useful feedback on my flying, and clarification of various rules and judging criteria.

The Club has been operating for 35 years and its main annual event is the National Championships. Prior to this event, aerobatic pilots network and gather throughout the year at various regional events to practice and improve their skills. Two weeks earlier, I flew down from North Shore with Ian Young, ex CFI at North

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Shore and now a senior captain at Cathay based in Hong Kong, to fly and tidy up our routines. Such is the draw of this competition that members like Ian and Morris Tull, a Dubai-based Emirates Captain, return year after year to have a load of fun in cool aeroplanes.

### Preparation

Over the previous few months I had been attempting to master the recreational sequence by myself, and over a couple of dual flights it took Grant a while to correct some of the errors in my routine, all of which was gratefully received by me. The great thing about aerobatic pilots is that they critique and feedback to each other on how to improve. More on that later. Because this was my first experience of competition aerobatics, Grant walked, well flew, me through how to go about it. Operating not lower than 1500 feet AGL means starting the sequence between 2500 feet and 3500 feet. From 2500 feet, the 1000-meter square area called 'The Box', in which one flies a sequence, looks like a postage stamp. And at 25 squared, the O-360 powered RV-8 happily cruises at 170 knots; so straight and level, its roughly a 10 second flyby. Lots of energy to play with on up lines but this also requires concentration of down lines as speed builds up very quickly in such a slippery aeroplane. But that is the fun of it, is that not true?

### Docs check

After arriving at Hood Aerodrome early on the Wednesday morning, and emptying the plane of everything, prior to flying a practice run Morris (Mo) Tull came over and gave the aircraft a thorough technical inspection as well as checking with me about my prepping the plane for flight. This was but one example of how professional and safety conscious the organisers and participants are in managing and flying in the competitions. Before I could fly, I had to go through paperwork with the Contest Director, Mike Slack, whose diligence was laudable. Key items were sighting the pilot's license, aerobatic rating, current BFR and not less than \$2m third party insurance, as well as confirming knowledge and understanding of the event operating procedures. As an 'Aviation Event', the competition is run strictly in accordance with a Procedures manual approved by NZ Warbirds. Furthermore, all pilots had to attend the obligatory daily safety briefing.

### Starting

Prior to all flights, a line safety person called 'The Starter' interrogated every pilot once he or she was strapped in their cockpit. IMSAFE had to be answered, as well as confirmation of setting QFE, reporting fuel drains checked, and adequate fuel

quantity was on board. The goal is to have as small a quantity of fuel as required for the aerobatic flight plus a safety margin, in order to keep the weight down and not over-stress the airframe. Once satisfactorily completed it was "prop clear" and start up to taxi.

### Holding

With Grant in the back to show me the ropes for this first official practice flight, we took off and climbed to 3000 feet over the 'Ponds' holding point. This was the designated holding area prior to entering the Aerobatic Box, over the Masterton sewage ponds. Whilst holding, the HASELL checks were carried out: HEIGHT, not below 1500 feet and not above 3500 feet; AIRFRAME, VA 123kts, VNE 200kts, fuel caps on, flaps up; SECURITY, harness, hatch and no loose objects; ENGINE, power set 25/25, mixture rich, fuel pump on, fuel left tank with flop tube, Ts and Ps green; LOCATION, checked clear; LOOKOUT, traffic.

### The Box, The Box!

The local radio frequency is 119.1 which was used to vacate Hood Aerodrome and fly to The Ponds hold. Once vacating The Ponds, pilots changed to the designated chat frequency, which was monitored by the Chief Judge. Once the preceding competitor had confirmed they had vacated The Box, a quick call was made to advise we were now entering The Box, all the while a spotter on the ground, with a handheld radio on 119.1, was scanning the skies for other aircraft to ensure they kept clear of the aerobatic airspace. This proved to be vital when an aircraft on a later day wandered into the aerobatic area. The lesson is that you can never assume that other pilots have read the SUPPs or NOTAMS containing information about the competition.

### Low-Lines

Now was time to locate The Box and think about the approaches to it. But first, two perpendicular straight and level flights at 1500 feet were required to establish the 'Low-Line', first in the direction of flight (into wind) and over the centre marker from edge to edge of The Box, then at right angles to that line and over the judges seated 200 metres from the edge. This was done at 1500 feet, being the Recreational category lower altitude limit, in order to assist the judges in getting their eye 'in' for assessing the lower limit. Also, a wing waggle was required at the entry, middle and exit points in each direction. It sounded easy but I duffed it and so I had identified the first thing I need to practise before the next time! Always learning - that was my mantra for the entire competition.



The contenders' flight line.

NZAC Recreational Known Compulsory										Form A	
Pilot ID										Flight #	
No	Symbol	Cat. No.	K	Total K	Marks	Remarks	Pos	Item	K	Grade	
1		7.2.2.1 9.1.3.2	6 4	10				Pos.	6		
2		2.2.1.1	4	4				Fig K	93	Total K 99	
3		1.1.6.3 9.11.1.4	10 5	15				<b>Penalties</b> Too Low Too High Interruptions Insertions Trg Violation Wing Rocks Disqual Fig Other (note...)			
4		5.2.1.1	17	17				<b>Final Freestyle</b> Duration Min Sec			
5		8.4.1.1	13	13				<b>Judges Details</b> Signature			
6		8.5.6.1 9.1.4.2	10 4	14				Name Number			
7		7.4.1.1	10	10							
8		1.1.1.1 9.1.3.4	2 8	10							

The Recreational Known category that Paul competed in.

### Safety Manoeuvres

After leaving the Box, we climbed back to 3000 feet before returning to carry out safety manoeuvres. Two are allowed, to make sure the aircraft is performing satisfactorily and that there are no loose FOD, as well as for assessing the effects of the wind at competition altitude. A stall turn and a roll, holding inverted for a second or two, was the ticket for the FOD check. My RV-8 has a 'half' inverted oil system, which captures oil on the vertical up and down flight-lines rather than spurting it out the breather. The O-360 engine is also carburetted rather than fuel-injected, so without a fully inverted fuel and oil system my RV has limited inverted capability. Nevertheless better than my present skill level.



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### That was it?

The third entry into the Box was for the sequence-proper and in what seemed to be the blink of an eye, it was all over and I was exiting to gather myself up and settle down before joining to land. After a debrief and tying the plane down for the night it was off to town for pizzas for dinner.

### The rubber hits the road

Thursday was the first day of the competition for my category, and for my first flight I elected to have Grant sit in the back as a safety pilot. Once I commenced the Box entry he didn't (and couldn't) say a word, and I did my thing.

Aerobatics is like an aerial ballet and timing becomes important. Counting between manoeuvres and during them assists but doesn't save you from a poorly executed entry, exit or manoeuvre itself. On my second competition flight, which I did solo, instead of being slow enough in the middle of The Box for the spin, I was almost to the upwind edge, so I broke away and came back to try it again rather than doing the stall turn that followed the spin well outside The Box. Good move, but the problem was I didn't warn the judges I was 'breaking' from the sequence by doing a wing waggle... silly boy. I can now confess that I also forgot to do my safety check stall turn and roll and didn't waggle my wings on entry either. More things to practise.

### Flying my Recreational Sequence

The most basic level of aerobatic competition is Primary, but no one flew that this year. A couple of us flew Recreational and as this article is mainly for the benefit of those interested in starting aerobatics, I'll run through the sequence as follows:

1. Flying to the upwind end of the Box with a quick check of Altitude (2500'), Instruments (170kts) and Position (The Box), pull up into a 4G half loop, keeping in balance, arrest with forward stick before the nose goes through the horizon, full left aileron and plenty of rudder to gain about 500 feet and be heading towards the downwind aiming point in the distance.
2. Down to the other end of The Box, to execute a 180 degree turn, briskly rolling to 60 degrees angle of bank, a big pull and plenty of top rudder to hold altitude. This is a seemingly simple manoeuvre that I have yet to completely master. Who would have thought a turn is an aerobatic manoeuvre but a barrel roll isn't (at least in competition)?
3. Now it's time to check altitude for the spin. 3000 feet minimum is good. At 60 knots it's getting mushy. Flying solo, I was wishing Grant was in the back to assist with giving the RV-8 a more aft C-of-G - the RV8 doesn't like to spin when flown solo. A burp of power with stick hard back and full left rudder and it goes into the spin. Or is it a spiral dive? The mind is racing and then it is recovery - forward stick to get a vertical down line and pull out with power going full-on established on the downline before settling it back to 25 squared to gain speed for the pull up into the stall turn.
4. Look at the left wing, then right and back to left. Straight? Vertical? Still climbing? Glance at the ASI. Under 40 knots. Time to give it full left rudder and right aileron with forward stick. If I get it right my RV-8 yaws over nicely, otherwise I'm flying it over - not so good. Pull the throttle a little going down over 80 knots. Push the stick forward to get the vertical down line, watch the airspeed, recover, pull up to horizontal and count to 3 while doing 'A-I-P' (see point 1 above).



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5. Quick! A Humpty-bump. Pull to vertical. Is the left wing vertical? Count 2 seconds. Pull over top, release pressure, increase pressure on the stick to make a nice round dome then establish the down line. Get that stick forward so that the wing shows vertical, whoa, airspeed is building up, pull to horizontal. What's next? Where am I? That's right, a half Cuban.
6. Pull 4G, ease over the top and spot the 45-degree down line. (Still struggling to perfect that...). Stick forward then arrest. Hold 2 seconds, full aileron and plenty of rudder. Blast (I said something stronger to myself) - didn't hold the stick forward enough and yawed. Rudder it back on line.
7. On the home run now. A simple loop and a roll. Ha! -more easily said than done. A round loop is a work of art. And seldom achieved. The egg-shaped loop is as common as sparrows. And so it was for me. I didn't push and float over the top as well as I have done in practice. Excuses, yes but also the reason we were all there. To test ourselves in a safe environment with like-minded people and to have fun doing it.
8. And as for the roll. Not bad but in my elation at having finished my first solo aerobatic sequence I scooped the rollout. So many things to practice before next year.

So, I have completed my first Aerobatic Competition. I didn't win but I did have a fantastic time and will be back. Do come join us. It's highly recommended.

Paul Carran



Bottoms up. Grant Benns helping Steve Geard bleed the brakes on his Yak-55.



Paul Carran's RV-8.



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