

by Norman Lee

## ALLEGRO 2000 SPORT AVIATION AIRCRAFT



Like a growing number of private pilots, I have become disillusioned with general aviation due to the constantly changing regulations, the NAS fiasco, increasing costs, and the government's lack of concern at the downward spiral in activity in this important aspect of aviation in Australia.

As a consequence, after 55 years of naval and private pilot flying, when my biennial flight review came up, I thought perhaps it was time to hang up my headset. However, after several months I found myself suffering from BLDS; for those who don't know, BLDS stands for Backside Levitation Deprivation Syndrome in other words, the urge to fly!

By chance I then discovered that my old friends, Mike and Liz Apps, had established the Snowy Aviation Academy for recreational and sport aviation pilots at their airfield, Polo Flat, the old Snowy Mountain Authority airfield at Cooma. The aircraft they chose to set up the new school is the Czech Republic Allegro, which, I was to discover, had been specifically designed as a sport and recreational aircraft. It sounded to be what I was looking for, fun flying without the heavy hand of the aviation bureaucracy.

My next move was to re-establish contact with what used to be known as the ultralight Federation, which I knew had had a name change to 'Recreational Aircraft Australia' (RAA). I had been a member

and instructor on Drifters some eight years previously but had then returned to GA. I had started Ultralight flying in the wire braced Drifter, moving on to the strut braced version in which I did a fair amount of instructing. My only other experience in this form of flying was a couple of trips in a Sapphire.

Paul Middleton, the executive director welcomed me back, my file was soon produced from the archives and, after handing over the appropriate sum, I was a member again. All that was then necessary was to undergo a flying check and I would once more be an active member of the fraternity.

I duly presented myself at Polo Flat and after a study of the handling notes and a dual check by Mike, I was back in the air enjoying myself. My immediate reaction to the aircraft was that clearly there had been a quantum leap in the performance of ultralights since I had last been involved in this form of flying.

Now to the Allegro. It is a quite handsome two seat, side-by-side, high wing, T tail, tricycle undercarriage, tractor aircraft, which to the uninitiated eye could be mistaken for a small modern GA aircraft.

Maximum takeoff weight is 520kg and with an empty weight of 275kg, this provides a useful maximum load of 245kg. Full fuel of 55 litres equates to 41kg, which means that a crew weight of 200kg would still leave 10kg for baggage. Because of its 520kg maximum weight, the Allegro can be either RAA or VH registered.

Power is provided by a Rotax four cylinder four stroke 912S, developing 100hp (75kW) and driving a three bladed Woodcomp composite propeller. The wing is of all metal construction incorporating three-position electric flaps which are operated via a switch on the centre console. Position zero has the flaps at a negative setting of -1.5 degrees, position one, 15 degrees and position two, 48 degrees. The negative position is a carryover from glider technology to improve cruise speed. Position one is the setting for takeoff and two for landing. The flap limiting speed is a low 60 knots, but more on this later.

Interestingly, when checking the aileron movement on the preflight, Mike pointed out that the differential movement has an odd characteristic. When the down-going aileron has reached full deflection, the opposite aileron has a further noticeable upwards movement. This is due to the configuration of the bell-crank in the overhead of the cockpit which at this point in its rotation, translates the motion of the pushrod for the down going aileron to up and down rather than in and out (it does make sense if you can see it!)

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The fuselage is of all composite construction, apart from the centre section, which is a welded tubular structure to mate with the wings. All three wheels, which are of the same size, are spatted, with the brakes being hydraulically operated. Suspension for the main undercarriage is obtained by flexibility in the undercarriage legs.

The cabin doors open upwards, being hinged on their upper edge, and are held open by a strut, which locks in place. Entry to the cabin is then achieved by backing in and lifting your legs in after you. Both seats are ground adjustable but since I had no need I didn't try the system out.

The flight controls consist of a central stick, conventional non-adjustable rudders and twin throttles, one on either side. Trim is provided only on the elevators and is achieved via a lever mounted on the left hand side just under the cabin roof. Braking is achieved via a hand lever on the control column, and there is the smallest parking brake lever I've ever come across, one has to really look for it, but once found, it's easy to operate.

For those not familiar with the Rotax 912 series of engines, or with height compensating carburetors (or carburetors for that matter) the provision of a choke for starting might require a little study.

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Starting is simple, full choke, twin ignition switches on, and turn the key. The start is instant and as the engine settles down, the choke is eased forward to maintain 2500 rpm for warm up. Mike has fixed a list of all the checks on the central console, which takes you through engine warm up, pre takeoff etc, to shutdown post flight, making handling in the early stages of unfamiliarity easier.

I found the aircraft easy to taxi with good control through the nosewheel steering and the hydraulic brakes. I had been cautioned to be careful not to exceed the flap limiting speed on takeoff and found that it was necessary to maintain a very steep pitch attitude to achieve this as the aircraft accelerates very rapidly. In subsequent discussion after my dual check I queried the need to use flap, particularly if the aircraft suffered an engine failure immediately after takeoff. With its relative light weight and hence lack of inertia it would rapidly run out of airspeed if the stick wasn't rammed into the instrument panel. In any case the aircraft fairly leaps into the air without flap, hence I can't see the need.



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There are a couple of minor handling traits that need to be mentioned. The first is a tendency for the skid ball to have a mind of its own, requiring a fair amount of attention. As an old hand with over a thousand hours in that splendid old bird, the Fairey Firefly, I am well aware of the need to pedal the pedals to keep the aircraft in trim. However, it is not really a problem and having to keep an eye on the skid ball is not a bad thing, particularly in an aircraft being used for training. I found that I was not alone in noting the skid ball characteristics, and wondered whether a larger fin fillet might smooth things out.

The second handling matter is the aileron breakout force required when initiating a turn. It is a little heavier than I had expected, but the aircraft has a good roll rate and can be readily whipped round in a steep turn.

Stalls clean and dirty were straightforward; the published figures are 46 knots and 37 knots, but that is at maximum AUW. In fact I had the aircraft down to 30 knots and still flying in the full flap configuration.

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I then tried the handling at full power and noted an indicated 110 knots, which is a measure of the cleanness of the airframe; cruise of 95 knots at about 75% power is achievable for a fuel burn of 13 lph.

On return to the circuit I found the flap limiting speed a bit of a nuisance on the base leg, needing more attention than it should, requiring me to pay too much attention to the power. On subsequent circuits I reduced the circuit height which improved the situation but I think it might present a problem for students. I was flying the approach at the recommended speed of 55 knots so perhaps a slower speed and hence more altitude and hence more drag might be the answer; I will certainly try a lower approach speed next time I fly the aircraft.

Summarising my appreciation of the Allegro, it is certainly a quantum leap from the ultralights I first experienced some eight years ago and I thoroughly enjoyed flying it.

The performance and comfort is in the GA category, yet it can be flown under rules which take you back to what flying use to be about, the sheer joy of getting airborne, without high costs and heavy rules and regulations. Unfortunately, as is the case with all things in life, there is always a snag in the system, and in this case it is the cost of insurance. Without going into details, where once the excess was in the order of \$1000, it is now some four times that. This could present as a deterrent to private hire.

Interestingly, as I was writing this article I reviewed the recently introduced rules for 'light-sport' aircraft in the USA. The new category is in recognition of the demand for recreational flying, just as we are experiencing here in Australia. 'Light-sport' aircraft will weigh less than 1320lb (600kg), carry a maximum of two people, be powered by a nonturbine, have a fixed pitch propeller and a fixed undercarriage. Sounds familiar?

A further couple of points worth mentioning on the Allegro, firstly a Quick-Built Kit (QBK) is available, with a quoted time to complete in as little as 250 hours, and secondly the aircraft can be used for glider towing though whether this will be approved in Australia remains to be seen.

Finally, with so many first class recreational aircraft now on the market, it will be interesting to see how the Allegro rates with the competition. →