The Allegro Sport Plane

Introduction by Michael Coates

Deciding to import a new aircraft into Australia from the other side of the world is a daunting task. The efforts which are expended in bringing you the latest, most affordable aircraft to enjoy in our clear Australian skies are far greater than first recognized. With a large and varied selection of aircraft already available within Australia, finding the next generation of aircraft which meet your stringent requirements for speed, maneuverability, agility and affordability was a task that had me scouring many countries throughout Europe, knocking on the factory doors of more than 10 producers. After 12 months, I finally found Fantasy Air, a manufacturer located in the Czech Republic town of Pisek, where my quest was realized.

Upon approaching the factory I expected to meet the 50 or 60 year old owners, toiling away with their life long dreams of producing sport aircraft. Instead, I was greeted by an energetic and dynamic young husband and wife team who lead 25 or so craftspeople producing the Allegro aircraft. I was pleasantly surprised by their professionalism and enthusiasm for the product and also the respect shown by the craftspeople that they employed.

In typical Czech style, the manufacturing process is undertaken in multiple locations, with buildings scattered over a large area, and individual rooms allocated to different components or tasks. The factory workspaces are clean and well organized, with dedicated areas for wing assembly, elevator construction, fuselage finishing, etc.

After reviewing the manufacturing area, and asking all the usual questions while enduring the strongest coffee ever made - you know, the one where your spoon stays upright - it was time to continue our conversations on the way to Pisek Airport where we could test fly the Allegro.

Conditions were far from ideal with about 250 mm of snow on the ground and snow showers racing through the area fed by 15 knots of biting wind. My first thoughts of the aircraft were “I can fit !!”. Dressed like the proverbial Michelin Man – I do come from sunny Queensland after all - carrying 116 kilos of ballast and being 6’2” tall I could even get in and out of the plane with ease. The plane is larger than it looked in the factory and I would guess it’s around 40% bigger in the cabin than the Jabirus that I have flown. The plane handled well, even in the testing conditions, and I generally had a really good feeling about the plane and the people behind it. The decision was made. The Allegro was to be our latest addition to our growing fleet.

About 11 weeks later a container arrived into Brisbane with the first two aircraft, a factory built aircraft, RAA approved for training on the 24 register, and a 51% kit which was to be assessed for the Australian market.

All of the RAA paperwork was completed within a couple of weeks and we can now offer the Allegro Factory Built or Kit to the Australian public. The aircraft has been an immediate success, with several being sold in the first two weeks and many more interested customers saving their pennies for their ultimate purchase.

The Allegro is priced very favorably, especially when compared to similar aircraft available within Australia, with the kit being available for just over AU$32,000 ex Brisbane, including GST. The certified factory built aircraft, ready to fly with basic VFR instrumentation, is available for around AU$72,000, including GST, ex Brisbane. Prices do fluctuate marginally with variations in the exchange rates however, as many of our previous customers have found, this can benefit you by reducing the overall cost (Price correct at time of printing, please refer to website for latest pricing).

Full details are available through our website at http://www.mcp.com.au or by phoning Michael Coates on 07 5568 7770 or 0418 168 665.

In an effort to avoid the rumor mill and the general misconceptions of untruthful performance figures from the recreational aviation fraternity, we decided to have an independent flight review performed. We engaged a well known Brisbane pilot Mario Mayerhofer to perform an unbiased and honest appraisal of our new acquisition without any pressure from our team. We simply instructed him to put the aircraft through its paces in an effort to divulge every good and bad aspect of the aircraft in all configurations. Following is the result of that flight test.

Footnote: Fantasy Air has recently purchased the Pisek Airfield and the adjoining timber processing plant which has been closed for some time. The factory divisions will come together in coming months under the one roof and production is expected to rise from 4 aircraft per month up to an expected 10 aircraft per month by the end of this year.

Aircraft Flight Test Review - By Mario Mayerhofer

The FANTASY AIR Ltd. **"ALLEGRO 2000"** tested May 2004.

Following an invitation from X-Air's Michael Coates to test fly the latest addition to his range of high quality, high performance Ultralight aircraft, or more appropriate, light sport aircraft; I headed south of Brisbane to the privately owned Heckfield Aerodrome near Jacobs Well where the new Allegro 2000 is based.

The weather on this morning was perfect for flight testing. A crisp 18 degrees Celsius, a QNH of 1009 and a light and variable wind of 4-5 knots was reported on the Coolangatta ATIS. The wind was predicted to increase during the morning which would enable me to fully explore the Allegro's cross wind capabilities and handling, as well as anything else we could think of within the aircraft's performance envelope.

Arriving at the hanger, I was greeted by Michael and presented with a set of excellent and very detailed manuals to browse and become familiar with the aircraft before we took to the skies. The manuals contained everything - standard handling and technical data, complete operating check lists, general instructions, maintenance and rigging instructions - right down to explanations of how to anchor and clean the aircraft and carry out minor repairs. I found the documentation supplied with the Allegro very impressive and would even say they are probably the best manuals that I have seen for a light sport aircraft in this category.

The first walk-around and introduction to the Allegro showed the sleek, and relatively big, composite aircraft with large ailerons, generous flaps and a gorgeous T-tail empennage. When walking around this aircraft, your attention is immediately drawn to the superb workmanship of both the metal work and composite components. I guess the build quality is no real surprise since the Allegro composites come from the same factory in which Walter Extra's range of thoroughbred aerobatic planes, such as the Extra 300, 400 and other variants are manufactured.

Although the Allegro's configuration as a 2-seat, side-by-side, high wing aircraft is quite conventional, I was surprised to see conventional all-metal wings in conjunction with an all-composite fuselage. Also, the strut-braced wing assembly, which has a very similar geometry to a Cessna 152, shows exceptional workmanship throughout the entire metal construction and metal/composite joints. The attention to detail puts many western-world manufactured, factory built aircraft to utter shame.

The presence of a complete Allegro kit in the hanger, as well as the new factory built demonstration aircraft provided a great opportunity to see what was actually inside the airframe. Upon closer inspection, the entire airframe assembly appears to be very rugged and strong despite its sleekness and light weight. The undercarriage was the first area I wanted to inspect and I was very impressed by the main undercarriage mounting assembly and nosewheel design which will prove rugged enough for the roughest of Australian bush strips.

Removing the 2-piece composite engine cowling to have a closer look at the engine installation, revealed a very neat installation of the latest 100hp Rotax 912S swinging a fixed pitch, but ground adjustable, 3-blade Woodcomp composite propeller. There is a lot of attention to detail in the engine compartment, not only for looks but also for safety, with every lead, cable and wire meticulously and firmly secured. Somewhat unusual is the radiator mounting position and configuration. Normally the radiator is located at the front of the plane in the clean airflow. The Allegro is different, being mounted horizontally at the rear and bottom of the engine compartment. I first thought that's a rather silly place to put it, but it's actually highly effective and close to optimum position to ensure a constant and non-turbulent airflow through the radiator system.

During my first walk-around of the aircraft I wasn't quite sure whether the nose wheel assembly was slightly offset from the center line but it indeed is mounted off center to allow the optional use of a Rotax

582, with C-gear box and its associated rear mounted electric starter motor. The nose wheel-assembly is also a very well designed unit without any slop in its operation or obvious weak points.

Inspecting the cockpit and interior sections of the Allegro, one of the first things which is quite impressive are the cabin doors which show an exceptional fit and trouble free operation of the locking mechanism. Held open with a firm strut, they show no unwanted play or slop in any component. Ruggedly built, they can even be opened in flight.

Getting in and out of the aircraft is a breeze, even for a bigger and somewhat not so flexible guy like myself. The cockpit is very roomy in all aspects with plenty of leg room. There is ample room in the cabin for two, not really anorexic, fellows like Michael and myself. Looking at Michael, seated in the aircraft, I noticed good head clearance for a 6'2" pilot wearing a headset

Both seats are fully adjustable, sporting an unusual but ingenious design which uses a seat belt like harness system to adjust the seat backwards, forwards and also in height. The system is very effective and easy to use, therefore eliminating the need for the more complicated adjustable rudder pedals.

The instrument panel is positioned at a comfortable distance even with the seats all the way back and all the switches are within reach when seated and firmly strapped in. The primary control system is a conventional center-stick configuration. It is ergonomic to use and well positioned in all seating configurations. A special Y shaped control stick is available if the aircraft is to be used for training.

The dual throttle levers, which are located on either side of the seats, are comfortable but could be mounted a little further back especially in the full throttle position. If you were a little shorter or had your seat further forward then they would be perfectly placed. It really is a case of making an aircraft to fit a wide variety of pilots' shapes and sizes. The elevator trim is located in an easy to reach overhead position utilizing a choke-like lever which proved to be very effective and simple to use. The actual choke for the engine is located just in front of the door and also easy to reach.

The Allegro does not have the usual toe-brake system but is fitted with a very effective and easy to use control stick mounted brake lever as used on Yaks and other high performance aerobatic machines. The brakes are hydraulic disks, which look to be of very high quality and I found them to be very effective. I really liked the parking brake which is very easy to use. My initial concerns of a possible deficiency in ground handling, i.e. turning radius like a school bus, did not eventuate during the first taxi when the Allegro not only showed a firm but very good suspension and excellent tracking, but also an excellent turning radius.

Fuel management for the 55 litre fuselage tank is almost fool-proof incorporating a simple on/off lever mounted on the instrument panel in an easy to see position. The system is also very safe with all the fuel lines being either under the floor or in front of the firewall, eliminating the possibility of fumes or fuel leaking into the cockpit area. There is also a long-range fuel system available as an option which consists of two wing tanks boosting the fuel capacity to 105 liters. The wing tanks gravity feed into the main tank as required.

Instrument layout is conventional and the reviewed Allegro was well equipped with standard, good quality, day-VFR instruments on the left side of the panel, VHF radio and intercom in the centre and engine monitoring gauges arranged on the right side of the instrument panel, all were in easy view of the pilot and passenger.

There is a very large luggage compartment behind the seats which is capable of storing 20 kg of luggage and has been neatly fitted with a recessed storage compartment for the flight manuals. The area is really well thought out and large enough for some serious camping trips. There is also some additional storage under the seats, a perfect place for the heavier items like tie downs, oil etc as it's right on the CofG. I would guess there is more than a cubic meter of storage in the rear of the plane.

FLYING THE ALLEGRO 2000

After another thorough inspection of the airframe and engine compartment, I could find no more excuses not to take this very appealing aircraft where it belongs – into the air.

All of the flight checks are straight forward with only a handful of well labeled circuit breaker like push-buttons and easy to read instruments to review. After running through the pre-start checklist with Michael, we started the engine, set trim to neutral and, using a conveniently located selector in front of the control stick, checked the electrically actuated flaps in all positions before setting them to stage one, 15 degrees, for take-off.

A large and bright gauge displays the flap positions of 0, 1 or 2 and flashing LEDs indicate flap movement until the selected position is reached. As the flap traverses down, a red flashing LED lights and while moving up, a green LED flashes. It is a very simple system which is basically foolproof. I really like it.

During taxi, the Allegro tracks straight with very effective and comfortable nose-wheel steering. A brief application of the brakes every now and then keeps the taxi speed within a comfortable pace. The hydraulic brake system is very effective, holding the aircraft in position to almost full throttle during an engine run-up following the normal thorough warm up and standard engine/magneto checks.

Opening the throttle fully at the MTOM of 520 kg with 2 people and full fuel on board, the Allegro, which is Italian for “happiness”, certainly does put a grin from ear to ear on ones’ face. The Allegro has very brisk acceleration and, following a short take-off run to approx. 55 knots IAS, a light backwards pressure on the control stick has the plane settling at 1300 fpm climb with full throttle.

After getting the performance details I wanted at full weight, and after a thorough rundown by Michael on the aircrafts performance envelope, we returned to the airfield where I jettisoned about 100kgs of ballast at the edge of the runway by sending the proud owner for a relaxing walk back to the hangar (Was there a slightly concerned look in Michaels face?). I then headed off to conduct some thorough flight testing in the local area following the 5 page check list which I had prepared earlier to explore the aircraft’s characteristics throughout its entire performance envelope.

Initial attention was paid to the aircraft’s climb performance. Based on the recorded empty weight plus an 86 kg pilot and approx. 40 kg of fuel, I calculated that my take-off weight throughout the testing was between 382 kg and 401 kg. The initial rate of climb was in excess of 2000fpm immediately after take-off, settling in at an average of 1850fpm indicated at 55 knots IAS. This rate of climb appeared to be very accurate when cross-checked with ALT and time to climb. A cruise climb of 70 knots, in the above weight range, showed a sustained climb of 1400 fpm. Impressive!

Visibility during these operations (including ground operations) can be classed as excellent all round. As with almost any fixed wing aircraft, forward visibility at excessive nose-up attitudes or high angle of attack situations is somewhat limited however, in normal flight situations, the Allegro’s visibility can be classed as being excellent with the only blind spot directly to the rear of the aircraft. I would guess that the shadow zone extends from approx. 25 degrees on the pilots side to around 45 degrees on the passenger side. The large lexan roof panel also provides excellent visibility in tighter turns which is a welcome feature in the circuit area. The demonstrator aircraft had tinting on the roof panel which could also be painted to completely cover the roof if preferred.

Although the Allegro is a very responsive aircraft in all three axis, it is also a very stable aircraft throughout its flight speed envelope. No adverse characteristics concerning the aircraft’s stability were encountered throughout the normal operating envelope. Turbulence penetration was good without any tendency to require excessive control input.

Following another touch-and-go and confirming the Allegro’s climb performance, the aircraft was leveled out at 2500ft to explore its speed envelope and this is where the 3-blade ground adjustable propeller that Michael was raving about really did show its exceptional qualities.

At an estimated weight of just under 400 kg, I was **not** able to maintain a 75% power setting (5400RPM) at straight and level flight without exceeding the aircrafts Vne of 118 kts IAS!

Throttling the 100 hp Rotax back to 5200 RPM the IAS settled in at 107 kts. A further reduction to 5000 RPM still showed a respectable indicated airspeed of 101 kts. Going back further to reduce fuel burn, a power setting of 4800 RPM produced 95 kts and a mere 4600 RPM still maintained 91 kts.

Although there is no electronic stall-warning device fitted to the reviewed aircraft, the Allegro shows adequate aerodynamic stall warning, with a brief but pronounced stick shaker at approx. 2-3 knots above the stall. Clean and at idle power the aircraft briefly shakes at 44 knots IAS, followed by gentle simultaneous drop of the nose and right wing at 41 kts, which is easily recovered without significant loss of altitude by releasing back pressure and applying a little left rudder. By releasing stick pressure alone, and without the use of rudder, the aircraft recovered itself to trimmed position with a loss of approximately 100 feet of height.

Please note that flaps in clean cruise configuration are actually set at –4.5 degrees (negative), similar to the systems used on high performance competition gliders.

With flaps set either to 15 degrees (stage 1) or 48 degrees (stage 2), there is no notable difference in stall characteristics except for a further reduced stall speed to 39kts and 36 kts IAS respectively. Similar to the clean configuration, a pronounced buffeting is felt at about 3 knots above the actual stall.

Stall characteristics in the configurations above are docile and without any unusual characteristics but I still considered the aircraft showed enough movement to be suitable for training and give students the feelings of stalling without entering heart stopping and in some aircraft life threatening maneuvers.

Stalling the aircraft at 5400 RPM, or approx. 75% power, is slightly more exciting. The Allegro requires a frightening, near vertical, angle of climb at this power setting to reach a fully stalled condition which occurs at approx. 37 knots. In this highly unusual situation, there is no noticeable warning and as soon as the aircraft is stalled a rather pronounced wing drop is encountered. This is followed by a roll almost to the inverted position before dropping the nose through the horizon. As soon as the nose drops, with instant reduction of power to avoid over-speeding the green arc on the ASI, the aircraft is easily recovered without entering the yellow arc on the ASI.

It may sound like a rather nasty characteristic of the aircraft but be assured you will never enter this situation unless it is done on purpose. During normal operation, there is no possibility that the average / normal pilot will reach such a critical attitude. Although it is arguably the most popular aircraft for student training and club operations alike, the fully certified Cessna 150/152 will display similar characteristics if such a severe flight profile is attempted.

While trying out the characteristics at unusual attitudes, and as I still had sufficient altitude, I was keen to see how the Allegro would respond in a sideslip in various configurations of flap settings.
The aircraft is very easily brought into a steady sideslip due to its highly effective and large rudder. Even in a severe sideslip, there is plenty of control deflection on the ailerons left to maneuver the aircraft directionally. Staying within the green arc on the ASI (78 kt) a stable rate of decent of 1400 fpm can be achieved with ease. Maintaining the max. flap extension speed of 60 kts, the aircraft will achieve a 1000 fpm rate of decent with flaps set to stage one and 1100 fpm at stage two. During these maneuvers the Allegro does not show any sub-standard characteristics, maintaining very stable and controllable flight throughout.

Exploring the aircraft's roll rate with ailerons only it is noted that there is a considerable adverse yaw tendency which is easily compensated for with a bit of rudder. Although the adverse yawing tendency is quite noticeable when purposely entering an uncoordinated turn, the aircraft settles itself with the ball almost back in the middle within about 2-3 seconds maintaining a steady, stable and coordinated rate of turn. The Allegro likes a little rudder to be used with aileron to maintain a perfectly balanced and stable turn.

The Allegro's rate of roll from 45 to 45 degrees bank with no flap is approx. 2 seconds. There is little change when the flaps are set to stage one. At full flaps the roll rate from 45-45 degrees increases to approx. 3.5 seconds.

Another often neglected but important feature is the cockpit noise levels, especially for long, touring trips. Removing the headset in normal 95 knot cruise I noted the noise level is extremely low, so low in fact it would be possible for a normal conversation to be maintained without the use of the intercom. There are also no noticeable vibrations throughout the aircraft, adding greatly to the comfort of flying this remarkable machine.

The cockpit ventilation is excellent without any noticeable fumes or other running gear related smells. With the vents shut there are no drafts in the cockpit and the doors fit and seal extremely well. The fresh air vents located in the doors and floor of the cockpit offer full controllability of the airflow on either the pilot or passenger. There is a fresh air vent at the base of the windscreen, to minimize fogging, which is always on in flight but you don't get any draft in the face because the flow is not that strong. Our test aircraft was not fitted with a heater but Michael assures me that they work, having spent several hours flying the plane in the Czech Republic in below zero temperatures.

Unfortunately, the only thing left to do was to see how this little beauty performed in the all-important "engine out" situation. At 1500 ft above the airfield the throttle was cut to just enough increased idle RPM to neutralize the drag of the super-smooth and highly efficient propeller (yes, I really do like that engine/prop combination) in order to perform, or more appropriately "attempt", a simulated forced landing. That's where the Allegro really surprised me ! It has a superb glide ratio at around 55-60 knots, which I believe could be close to optimum glide-speed in a clean configuration.

During the glide approach while trying to hit the threshold I would have preferred manually operated flaps, which I am more familiar with, but the electric flaps can be easily fed in as needed by working the switch. Overshooting the threshold by about 150 feet I decided to try again, now knowing the excellent glide ratio of the aircraft. Once the aerodynamic quality of the aircraft is considered, it's a breeze to put it exactly where you want it.

It was then time for a few landings with different flap settings before bringing Michael his pride and joy back to the hangar. It was a brand new aircraft with unmarked wheel spats and a very good prop without a chip in it, and I wanted to keep it that way. The following landing distance figures are achieved without slamming the aircraft onto the deck or violently braking on the relatively rough dirt runway at the Heckfield aerodrome. However, if the need to reduce the landing distance arises, for whatever reason, there is still plenty of margin to bring the aircraft to a rapid halt using the efficient hydraulic braking system.

After playing with the elevator trim, which is very effective and easy to use, the aircraft was trimmed out in landing configuration by setting the flaps to 48 degrees at the maximum flap extension speed of 60 knots. The flaps are so effective that it initially feels like flying into a wall with the airspeed rapidly decaying upon application of full flap. Considerable power is needed to maintain an approach speed of 44 knots, which feels very stable and comfortable without any instability or tendency to wallow. The flap system is highly effective and with full flaps attention must be paid to the ASI not to allow the airspeed to decay!, you need to use a steep approach angle or a little power to keep the plane above the stall.

Touch down is very easy with no tendency to balloon or bounce. Once on the runway, the undercarriage proved to be sturdy without any rattling or vibration, it has a firm but comfortable ride with the aircraft tracking absolutely straight thanks to the steerable nosewheel. Landing roll with light braking and approx. 4 knots of wind on the nose was estimated to be about 130 meters.

The next approach was conducted with flaps at 15 degrees, or stage one, and resulted in a very easy 48 knots approach while still maintaining the Allegro's excellent visibility. As with full flaps during approach the landing roll is not considerably longer, however a lot less power is required to maintain a steady approach speed and flap position 1 would be my choice for all but the shortest of strips.

Flapless landings are very easy, maintaining a stable, but very shallow 56 knots approach due to the clean aerodynamics and low drag of the aircraft. Roll out distance in a flapless configuration with no brakes is approx. 200 meters. Not bad, considering the runway conditions.

Cross wind characteristics could only be established to a certain degree due to light and variable winds, however the experienced cross wind component of approx. 5-6 knots was hardly noticeable and did not require any considerable measure or compensation. I would consider the plane to be fully controllable in much higher cross wind situations.

Now on the final extended circuit I opened the left door in flight to see the potential for using the aircraft to take photos or filming. With only the left door open and the strut locked securely in place there was no sign of flutter or vibration at the tested airspeed of 78 knots IAS. To shut the door safely, I unlocked the strut and applied a bit of right rudder. The door shut slowly and steadily, allowing closing of the locking mechanism with ease.

A final text book landing and taxi back to the hanger concluded a very pleasant flight in this remarkable aircraft which not only looks great, but also lives up to what the manufacturer claims. I found that the Allegro actually exceeds the factory figures in some cases which is pleasantly refreshing because a lot of aircraft that I have tested don't meet the factory printed figures.

Even without the optional long range fuel system, the Allegro has more than enough range and endurance to be a safe and comfortable touring aircraft which is not only a lot of fun to fly, but also very economical to operate and maintain. Fuel consumption testing done the week following my flight test report confirmed consumption of 13 lph at 95 kts cruise. This gives the Allegro performance and economy which is hard to beat and with the Rotax 80 or 100 hp engine you also have low maintenance and secure reliability.

Although the Allegro likes to be flown a little bit less ham-fisted than some other classic trainers, it is most definitely a good aircraft for student training, not only because of its safe and good handling, but also despite its sleek looks - its ruggedness, almost fool proof systems, good range on cross country operations and easy entry and exit, which is a welcome feature when operated by busy flying schools.

Although looking very hard, there is really nothing I could fault on this aircraft throughout its envelope and features, and, as its name Allegro suggests, it certainly does put a big smile on your face when privileged to fly this remarkable machine.

Mario Mayerhofer May 2004.

Allegro Aircraft Operational Costs

Since aircraft utilization and operational costs can vary widely from owner to owner there is really no "one size fits all" figure that can be applied to all owners; however the information below is worked out for an average aircraft.

In this comparison we have estimated a 10,000 hour airframe life and written off the aircraft in this period. Manufacturers who quote unlimited airframe life for Sport Aircraft are not being realistic; make sure other comparisons have this figure included as it adds another $8 to the hourly amount.

The following table details the basic lifetime running costs for the Allegro.

Item	Period of Cost (Hours)	Overall Cost	Hourly Cost
Airframe	10,000	$80,000	$8
Engine Servicing	100	$80	$1
Engine Overhaul	1500	$8,000	$5
Fuel – 13lph	1	$12	$12
Oil	50	$38	$1
Total Hourly Costs			**$27**

The above figures have been overestimated. For example, the normal oil change is at 100 hours but I sometimes run Avgas and therefore change my oil at every 50 hours. Engine servicing at every 100 hours primarily consists of replacing the oil, spark plugs and oil filter but other components may need repair so I have allocated an average of $80. A full engine overhaul at 1500 hours ranges from $6000 to $8000 so I have included the higher amount in the calculations.

Most people would not keep an aircraft for the full 10,000 hours so the actual airframe costs may differ however, this will depend on the resale value achieved and the tax benefits, if any, realized over the effective life of the aircraft. As a result, I have only calculated total life costs.

Overall, although the initial cost of purchasing an Allegro may seem overwhelming, the actual hourly cost of flying this aircraft is still very cheap at less than $30 Australian dollars per hour.

Allegro Specifications

Airframe Dimensions	
Wing Span	10.8 m
Airframe Length	6.36 m
Total Height	2.05 m
Wing Area	11.37 m2
Aspect Ratio	9.5
Wing Chord-max	1.2 m
Wing Chord-min	655 mm
Airfoil Section	SM 701
Performance Details Rotax 912 80hp Engine	
Max Speed VNE	118 Knots
Cruise Speed	95 Knots
Stall Speed	35 knots
Rate of Climb	985 fpm
Max Range	600 kms 325 Nautical Miles
Take off run	150 m
Take off to clear 15m	250 m
Landing run	100 m
Landing over 15m obstacle	220 m
Aileron and rudder deflection	
Aileron Up	165 mm +/- 5 mm
Down	55 mm +/- 5 mm
Elevator Up	79 mm +/- 5 mm
Down	66 mm +/- 5 mm
Rudder Right	134 mm +/- 5 mm
Left	134 mm +/- 5 mm
Other Data	
Undercarriage tricycle	front landing gear
Main Wheel Track	1.55 m
Tyre Dimensions	
Main wheels	14 x 4 (350 x 100)
Nose wheel	14 x 4 (350 x 100)
Tyre Pressure	
Nose wheel	0.10 -0,12 Mpa (15 psi - 17 psi)
Main wheels	0.18 Mpa (26 psi)
Suspension	by flexibility in the laminated undercarriage leg
Wheel brakes	hydraulic brakes
Engines	

Rotax 912	80 hp
Rotax 912S	100 hp
Rotax 582	65 hp
Fuel tank volume	55 Litre /41 Kg fuel (100 Long Range)
Weights	
Maximum Take-off Weight	520 Kg
Empty Weight	275 Kg
Maximum useful load	245 Kg
Minimum Front-Seat Pilot Weight	55 kg
Max Weight of the Crew & Fuel	245 kg
Baggage Weight	20 kg
Standard Aircraft Equipment	
Compass	Climb Indicator VSI
Fuel Gauge	Tachometer
CHT	Engine Oil Thermometer
Engine Operating Hours	Oil pressure gauge + Booster
Airspeed	Altimeter
Towing Equipment	
Type	TOST S.No.
Maximum weight of towed glider	500 kg
Minimum length of tow rope	40 m
Maximum length of tow rope	60 m
Tow rope safety fuse	300 Kg

Operation Limitations			
Wing flaps	Lever position	Flaps Deflection	Never Exceed Speed
Cruise position	0	-4.5 degrees	VNE 118 Knots
Take-off	1	15 degrees	VFE 60 Knots
Landing	2	48 degrees	VFE 60 Knots
Stall speeds at MTOW 520 kgs - level flight			
Wing Flaps Position	Engine Power Output	IAS Knots	CAS Knots
0	Engine at idle	46 Knots	43 Knots
1	Engine at idle	40 knots	39 knots
2	Engine at idle	37 knots	35 knots

For the latest pricing please visit our website for details

http://www.mcp.com.au/allegro