

Diamond DA20-C1 Eclipse arrives in NZ

THERE has been a trend developing among many of New Zealand's flight training schools to either adopt new LSA category aircraft for flight training or to simply keep older aircraft airborne. CTC and Massey University School of Aviation are two of the obvious exceptions, both operating large fleets (19 and 14 respectively) of Diamond aircraft. Joining them in the Diamond camp is Eagle Flight Training at Ardmore who have just taken delivery of a new Diamond DA20-C1 Eclipse equipped with Garmin G500 avionics.

This is the first DA20 for New Zealand with the G500 cockpit which Hawker Pacific's Diamond Sales Executive Stephen Pembro says provides an ideal platform for seamless transitioning to a full glass cockpit, particularly if stepping up through the Diamond family to a DA40 (G1000 and IFR) and then DA42 (twin).

Proven and Popular

Stephen describes the DA20 as being loved by students, instructors and engineers. He says that after a fairly slow acceptance by the engineering fraternity, many of whom had to become familiar with composites maintenance, he often hears that the same people who expressed reservations now have no desire to go back to older technologies.

The Diamond airframe has no defined life and rather than being built to a weight, has been built to a purpose, that being of training. Stephen says that the aircraft is more than capable of withstanding ab-initio training all day every day. First released 10 years ago and now counting more than 1000 customers, the DA20 is very well proven, particularly in New Zealand with one of CTC's DA20s now up to 7,500 hours. The highest time DA20 in the world has 15,000

hours logged. As Stephen says, CTC for example have been flying Diamond aircraft for a long time now, and they keep buying more.

The US Air Force uses a fleet of 48 Diamond DA20s for their 25 hour initial flight screening of up to 1700 pilot candidates yearly. Diamond aircraft are also very popular in Australia and last year (March to March) they out sold all their competitors combined.

There were 11 brand new Diamond registrations compared to 3 each for Cessna, Piper and Cirrus.

Handling and Performance

Equipped with a Continental IO-240 of 125hp and a 69" Sensenich prop., the DA20 offers a useful load of 600lbs and is known for its lack of vices, being a very friendly and stable aircraft to fly. With fuel injection as standard, there is obviously no need for carb heat management, a plus for safety as well as performance.

All Diamonds are noted for flying very well fast and slow. The DA20 has an approach speed of 55kts, stalls at 45kts and cruises at 138kts with outstanding fuel economy due to a very efficient (and thanks to the composite fuselage) slippery design. Stephen says that in

the training environment, when properly leaned (a clear EGT gauge is fitted), operators can expect to fly on just 18-20 litres per hour.

These characteristics also make the DA20 a great private aircraft. It can be configured with a cruise prop. with which at 2500rpm, staying below 120kts will likely be difficult. It glides at 11:1 and climbs at 1000fpm with very good hot and high performance. It also has a demonstrated 20kt crosswind landing ability. The aircraft will comfortably carry 2 adults and full fuel of 83 litres.

The DA20 is non-aerobatic but it is spin certified, offering a big plus compared to many other training aircraft. Stalls are gentle and



Stephen Pembro, Hawker Pacific Diamond Aircraft Sales Executive (right) and Fernando Villalon, a pilot from Hawker Pacific Flight Operations, delivered the aircraft to Eagle Flight Training.

forgiving, unless you are in fact determined to spin the aeroplane, from which recovery is traditional and straight forward.

Safety Enhancements

Diamond Aircraft identify a number of safety enhancements in their designs and back up their record by referring potential customers to NTSB statistics that show fatal accidents per 100,000 flight hours in Diamond aircraft as being but a tiny fraction of the GA average.

Stephen explains that the aircraft has a lot of passive safety features, much of which have been derived from the motor industry. These include a 'safety cell' cabin with unobstructed headstrike zones and rollover protection, plus protected fuel systems that include TSO stainless steel braided lines. Fixed seats offer protection to 26G and are designed to prevent occupants sliding under lap belts. The company also uses instrumented crash test dummies in full scale impact testing of the aircraft.

Critical structures and joints, including control surface hinges, are designed such that the complete failure of a single element will still allow safe flight. The larger DA40 and DA42 models feature dual redundant spars in the wings and tail surfaces, and dual connections for all critical joints.



ZK-DAB out over its new home patch of the Hauraki Gulf east of Ardmore.

First Impressions

The design and level of finish on the DA20 is first class. Everything looks robust, well engineered, and as though someone took a lot of time and care to make it just right. KiwiFlyer spoke with Eagle Flight Training CFI David Woodington shortly after their acceptance flight of the new aircraft. Needless to say, he was very pleased with Eagle's new acquisition and expects that it will "captivate their students". David says that as expected, the DA20 was very stable throughout the full

flight envelope including stalling. "It was the same with application of flap, for which there was no marked pitch change such that finger-touch control is all that is required (helped also by control systems being by push-pull tubes rather than cables). We approached 03 in a crosswind on idle and full flap at 55kts felt very comfortable – we had no hesitation to land rather than extend."

The 45" wide cabin provides ample comfort and David says that the canopy design affords a great view and ability to



Top: A well thought out panel including Garmin G500 MFD. Bottom: Sheepskin seats (fixed) are standard fitment. Pedals adjust easily.



After releasing a latch on each side, the canopy easily lifts on struts to provide excellent access.



A parcel shelf provides space for headsets, jackets or other small items.



Tail bump protection is provided by a skid with replaceable wear strip.



High intensity lights are incorporated on the port side wing.



Optional external power connection, useful for ground training on the Garmin 500 avionics.



Fueling is straight forward with easy access. The single tank is in the aft fuselage.



About Eagle Flight Training

look out of the aircraft, adding that access and exit is very easy and much better than for most light trainers. "Ventilation is also very good with adjustable left and right ports which will make a huge difference to comfort on a hot day." He also said that the aircraft is very quiet inside, with excellent voice clarity on the intercom and radio when using traditional headsets.

David also mentioned how well placed the instrumentation was, with the ASI and altimeter being very visibly located above the G500 rather than tucked away in a corner as is often the case with glass cockpit designs, making them much easier to work with in training especially for occasions when the the G500 won't be in use.

David says that the DA20 is going to be a delight to fly and a great stepping stone to larger, more advanced aircraft.

For more information

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The Diamond Aircraft website is at www.diamondaircraft.com

EAGLE Flight Training was established at Ardmore in 2004. In 2010, new management took over and have been developing the school since, achieving good brand awareness outside of New Zealand and becoming very popular with overseas students. The company now counts more than 26 nationalities amongst its alumni and is on to its third intake of ATC cadets from Hong Kong. Eagle Flight Training graduates are flying for several major airlines around the world, including Cathay Pacific and Air New Zealand.

Currently training more than 30 students (most full-time), CEO Alexander Zapisetskiy is proud to say that their growth has been achieved independently, being funded by operations rather than grants or any other external assistance.

Eagle's new Diamond DA20-C1 Eclipse joins a fleet of Piper Warriors, two Cessna 172s, a Partenavia and a Duchess. The company can now cover all aspects of glass cockpit training, offering a logical progression from the Garmin 500 in the Diamond, through to Garmin 1000 on a Redbird simulator, and then onto an Aspen suite in the twin, used for single pilot multi engine training and ratings.

Training accreditations

NZQA accredited and Part 141 certified, Eagle Flight Training can deliver the NZ Diploma in Aviation, provide BFR renewals, and offer GPS endorsements including GPS ground classes run by Flight Examiners. There are three A-cat instructors on staff (Michael Foster, Murray Pope and David Woodington). Headquartered at Ardmore with modern lecture and briefing rooms, the company also maintains a base at Palmerston North.

New Zealand students are welcome and several self-funded

students can be found training with Eagle at any time. Those considering obtaining C-cat instruction ratings should be interested to know that Alexander says he has a policy of endeavouring to 'look after' such students with a first job and 100+ hours of instruction until their supervision period is finished.

Fast track PPL study

Eagle also offers niche courses for busy professional people who want to achieve their PPL in the shortest time practical. Specially designed courses can allow the achievement of a PPL in just 8-10 weeks providing the student is committed to fly and study intensively during that time.

It is fair to say that there is a good deal of excitement and anticipation for the Diamond's arrival at Eagle Flight Training. CFI David Woodington says that it's not just the students looking forward to flying the new aircraft either, the instructors are forming a queue as well.

For more information

Contact Ritika Singh at Eagle Flight Training on 09 296 1839, email: ritika.singh@aviationschool.co.nz or visit www.aviationschool.co.nz



DA20-C1 Eclipse Specifications

Engine	TCM IO-240-B3B
Horsepower	125 hp
Propellor	Sensenich 2 blade fixed pitch
Category	Utility, spin certified
Length	23' 6"
Height	7' 2"
Wingspan	35' 8"
Max takeoff weight	1,764 lbs
Useful load	600 lbs
Usable fuel capacity	89 litres
Takeoff distance	1,280 feet
Landing distance	661 feet
Rate of climb	1,000 fpm
Max operating altitude	13,120 feet
Cruise speed at 75%	138 kts at 5.5 gph
Stall speed, full flaps	45 kts
Max demonstrated x wind	20 kts
Range, 30min reserve	547 nm



Aircraft Sales

Local Presence, Global Reach.

DA40 & DA42 AVAILABLE WITH CHOICE OF JET-A1 OR AVGAS LYCOMING ENGINES.

Discover the Joy of Flying!



DA20-C1 from US \$188,800

Imagine taking your favourite sports car and adding wings. That's the feeling you get when you strap into the DA20 and take to the skies. Sporty, sleek and exciting - yet surprisingly affordable, the DA20 offers outstanding performance and impressive economy.

Standard Cockpit from US \$188,800
Garmin G500 Glass Cockpit from US \$198,800



DA40-CS from US \$293,800

No two pilots are alike. Different missions mean different equipment needs - which is why you can spec your DA40 CS just the way you want it. Well equipped as a base model with avionics such as the industry leading Garmin G1000 glass cockpit, you can add a wide range of options to make this the perfect airplane for you and your missions.

This is your airplane.



DA40-XLS from US \$377,800

Whether you're new to aviation or a seasoned IFR pilot, the DA40XLS is the first choice for discerning pilots. No matter how much flying experience you have, you'll be impressed by the DA40 XLS - its quickness off the runway, the crisp response of the pushrod actuated controls, and the stunning panoramic visibility out of the bubble canopy.

Impressive from any Angle.



DA42-L360 from US \$655,725

When you take control of the DA42 you are in command of the most technologically advanced twin today. Representing the latest in airframe design, avionics capability and new engine technology, the DA42 is designed for pilots who truly want to go places - safely and in style. It takes a lot to redefine a market, yet this is what the category defining DA42 has done.

Superbly Capable - With Lycoming Engines.



DA42-NG from EURO 562,460 Ex Factory Austria

An aircraft that will determine the future of diesel-engined aviation. With the DA42-NG you will enjoy lower operating costs, lower fuel consumption with an increase of comfort, power and performance. The DA42-NG is renowned for its extreme range, equipped with twin Jet A1 powered engines produced by Austro Engines, making it perfectly suited for cross country travel.

Featuring the Austro Jet-A1 twin engine.



Used Diamond DA-40 Aircraft Available! Call now for more details!

For more information, please contact Hawker Pacific to begin your Diamond experience.

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