

No doubt you've heard the expression "If it looks like a duck, swims like a duck, and quacks like a duck, then it probably is a duck"? So, when considering the Scottish Aviation Bulldog which might indeed look very like a Beagle Pup and fly very like a Beagle Pup, you'd very probably think that two such outwardly similar aircraft would be treated much the same in terms of regulatory requirements, both for pilot licensing and aircraft maintenance.

Well, while that may well have been true in more enlightened times, sadly it won't be true for much longer thanks to EASA's rulemakers, as I will later explain.

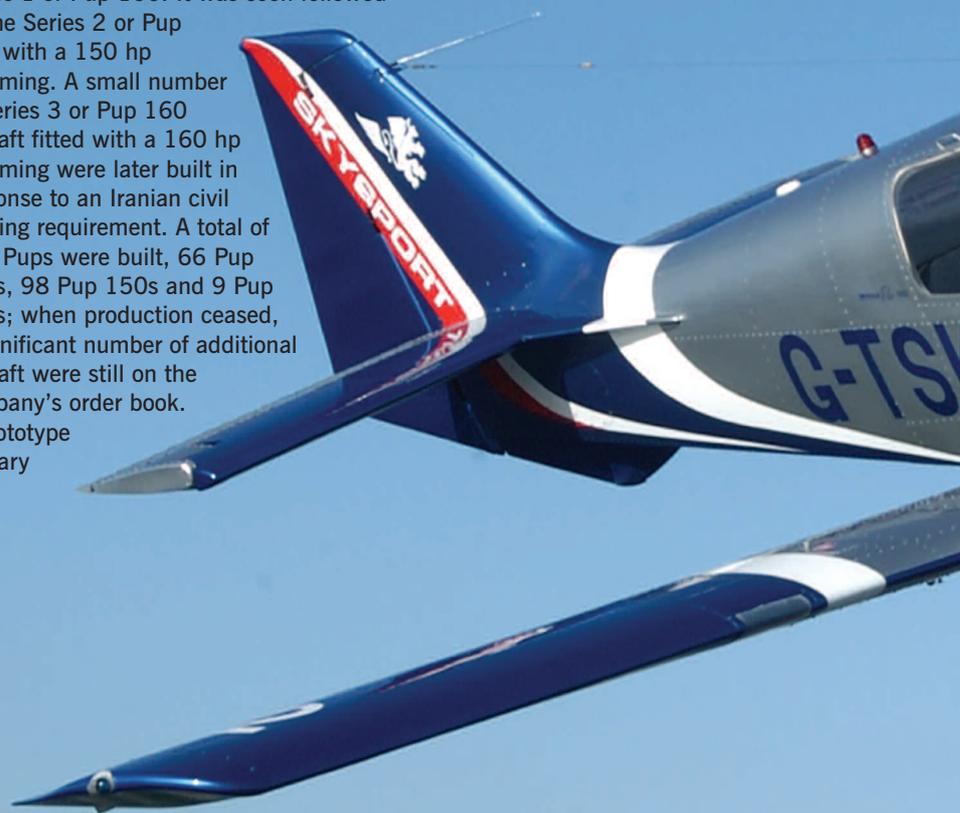
In the early 1960s the aviation side of F G Miles Ltd combined with Auster Aircraft Ltd and the Pressed Steel Company, to form British Executive and General Aviation Ltd. Originally operating independently, BE&GA Ltd. subsequently merged to form Beagle Aircraft Ltd, based at Shoreham. Financial support was sought from the British Government, which later bought the company. Sadly, at the end of the 1960s the company required further investment; however, this was an era of sterling devaluation and the balance of payments crisis. As a result, no further investment was forthcoming and the Government called in the receivers. Efforts to sell the company were unsuccessful and aircraft production ceased in early 1970.

First known for its legacy Auster designs and the B.206 twin, today Beagle is perhaps best known for its delightful Pup and Bulldog designs. Industry survey had identified a significant demand for a

light 2/4 seat aircraft with good all-round flying and aerobatic characteristics to replace the ageing aircraft in use by flying clubs of the time, so Beagle decided to design an aircraft to meet this need. The required characteristics were for an all-metal low-wing monoplane with side-by-side seating in a wide cabin, with plenty of elbow room and easy access from each side. The new aircraft was required to possess good performance and rate of climb with faultless stability and manoeuvre characteristics and to be capable of unrestricted spinning and aerobatics in the semi-aerobatic category. It was also to have first-class ground handling and to be very reliable with ease of servicing and maintenance a high priority.

In response to these demanding criteria, Beagle designed the B.121 Pup, which first flew in 1967 with a 100 hp Rolls-Royce Continental engine as the Series 1 or Pup 100. It was soon followed by the Series 2 or Pup 150 with a 150 hp Lycoming. A small number of Series 3 or Pup 160 aircraft fitted with a 160 hp Lycoming were later built in response to an Iranian civil training requirement. A total of 173 Pups were built, 66 Pup 100s, 98 Pup 150s and 9 Pup 160s; when production ceased, a significant number of additional aircraft were still on the company's order book. A prototype military

derivative of the Pup, the B.125 Bulldog, was built by Beagle; however, Scottish Aviation took over the design after Beagle ceased trading. The Bulldog won many export orders and a total of 320 were built for a number of military customers. The RAF ordered 130 Bulldog T Mk 1 aircraft, the first of which entered service in early 1973 with the Central Flying School. No. 2 FTS re-equipped with the Bulldog in June 1973, followed by the 16 University Air Squadrons. Naturally, as the RAF's premier UAS, the University of London Air Squadron was selected to be the first to receive the new aircraft at RAF Abingdon in October 1973. The Bulldog served the RAF well for over 25 years before being sold off to lucky civil owners, as were many Bulldogs imported from former export customers. Following the success of the Bulldog, a 4-seat retractable undercarriage version with a



One plane, two sets of rules

plug-type canopy was developed as the Bulldog 200 for military customers and as the Bullfinch for the civil market. The prototype G-BDOG first flew in 1976 and is still airworthy today, although it has

been somewhat modified from its original configuration. However, little customer interest in either the Bulldog 200 or Bullfinch was forthcoming and the programme was eventually cancelled after

Scottish Aviation became part of British Aerospace in 1977.

Over 100 Pups and Bulldogs remain on the UK register, most of which are either Pup 150 or ex-military Bulldogs; a thriving enthusiasts' club the aptly named Beagle Pup and Bulldog Club has, since its formation in 1993, provided effective product support through strong links with the design authority and has, in the Club's own words, also become 'the network centre for self help, social, sporting and engineering activities associated with these aeroplanes'.

Outwardly very similar, the Bulldog is slightly larger and heavier than the Pup and has a 200 hp Lycoming engine with an injector-carburettor and constant-speed propeller; however, its most noticeable visual feature is the large sliding canopy which replaced the conventional doors fitted to the Pup, providing excellent visibility.

Both aircraft are aerobatic and have light, well-harmonised controls and excellent handling characteristics, made the more so by the fact that both aircraft are fitted with 'joystick' control columns rather than the more familiar control wheels fitted to aircraft such as the PA-28 and Cessna 152. Pilots more used to the somewhat erratic pitch control stiction of an inadequately-maintained PA-28 will realise what they've been missing when they first experience the markedly superior control response of any Pup or Bulldog.

One of AOPA's many objectives is to encourage pilots to improve their flying skills once they've gained their PPLs. The AOPA wings scheme encourages structured self-development and the AOPA/BAeA Basic Aerobatic Certificate aims to provide pilots with a safe grounding in dynamic flight beyond the scope of the PPL syllabus. Although some basic aerobatic manoeuvres are included, considerable emphasis is also placed upon confidence manoeuvres such as recoveries from controlled flight and maximum rate turns as well as the self-discipline essential for safe aerobatic flight. Currently we are making some small amendments to the Basic Aerobatic Certificate syllabus so that, with the CAA's support, it will also meet the requirements of the forthcoming EASA Aerobatic Rating. Both the Pup and Bulldog are ideal aircraft in which to train for the AOPA Basic Aerobatic Rating – certainly far more so than that aeronautical oxymoron, the Cessna 'Aerobat'!

In addition, the basic core skills to cope with dynamic events such as extremes of attitude and imminent speed excursions are not taught during JAR-FCL flight



Spot the dog... the Pup's in the foreground and the other two are Bulldogs, so EASA has plugged its cash machine into the blue one

Beagle Pup and Bulldog illuminate EASA's shortcomings, as Nick Wilcock reports

training, whereas they are an integral part of all military flight training. The FAA requires that commercial pilots are taught manoeuvres such as ‘chandelles’ and ‘lazy eights’, but EASA does not. However, in the wake of certain high profile fatal loss of control accidents involving civil airliners, a number of training organisations have now decided to include upset prevention and recovery training in their syllabuses. So there is clearly an increasing demand for such advanced training. I should perhaps point out this doesn’t necessarily mean the sort of thing you might see at unlimited-level aerobatic competitions; however, as well as improving general piloting skills, this type of flying is also great fun!

Skysport UK

Amongst the organisations now providing an advanced flight training course is Skysport UK. Based both at North Weald aerodrome and Cotswold Airport, formerly Kemble aerodrome, Skysport UK operates two Pup 150 aircraft (G-IPUP and G-TSKY) and one ex-Ghana Air Force Bulldog (G-BCUS).

On behalf of AOPA, I recently visited Skysport UK at Cotswold Airport, to find out more about Skysport UK’s activities from Chief Pilot Roger Hayes. Incidentally, those of you who haven’t visited this superb aerodrome for a while will be delighted to learn that road access to the north gate has been vastly improved over the last year – there’s even a proper sign off the Tetbury road nowadays!

Currently, G-IPUP is at North Weald,

Right: although more basic than the Bulldog, the Pup is an EASA aircraft
Lower right: Pup in the background, Skysport’s Bulldog to the fore

Keith Wilson



with G-TSKY and G-BCUS at Cotswold. Parked right outside the excellent AV8 restaurant, both aircraft looked very smart indeed in Skysport UK’s new colour scheme. The plan had been to go for a quick trip in each aircraft, but weather conditions weren’t particularly conducive on the day. So instead we were obliged to discuss the differences between the Pup and Bulldog in quantitative rather than qualitative terms.

G-TSKY is fitted with the long range tank option, giving 36 imperial gallons, whereas G-IPUP has the normal 24 Imperial gallon Pup 150 fuel capacity. At normal cruise using 2350 rpm, Roger reckons to see about 7 imperial gallons per hour fuel burn at around 90 KIAS for the Pup 150. The Bulldog has a similar fuel capacity to G-TSKY, but the bigger engine, higher weight and extra drag of the aircraft results in a significantly higher fuel burn. Cruising at 24” manifold air pressure and 2400 rpm with best economy mixture, G-BCUS uses about 8.5 imp gph at 115 KIAS. But fly it



	Pup 150	Bulldog
MTOW	1925 lb	2350 lb
Powerplant	150 hp Lycoming O-320	200 hp Lycoming IO-360
Wingspan	31ft 0in	33ft 0in
Wing area	119.5 ft ²	129.4 ft ²
Wing loading at MTOW	16.1 lb/ft ²	18.2 lb/ft ²
Power loading at MTOW	12.8 lb/hp	11.8 lb/hp
Max speed at SL	120 KIAS	130 KIAS
Max rate of climb	800 ft/min	1034 ft/min



Keith Wilson
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as it was flown in military service, with 2600 rpm and best power mixture at 120 KIAS and the burn rate can be over 10 imp gph at low level. G-TSKY is fitted with a rear seat for a single passenger, whereas G-BCUS is limited to just the 2 front seats.

Ground handling procedures are virtually identical and both aircraft have been fitted with the more effective Cleveland brake modification. The only additional procedure needed in the Bulldog is to exercise the propeller CSU during the run up checks. Take-off performance is virtually identical; the normal climb speed for the Bulldog is 80 KIAS, whereas for the Pup it is 70 KIAS. In flight, the smaller wingspan and slightly lower wing loading of the Pup give it a slightly nimbler feel than the Bulldog, but both aeroplanes handle superbly. Both aircraft are fitted with stall warning strakes, allowing pilots fine judgement of the 'buffet nibble' at CL max, an essential need for advanced flight training. In the circuit, operating speeds are similar, with a full flap approach speed of 70 KIAS being used in both aircraft; however, touchdown speed for the Pup is slightly lower than for the Bulldog.

The avionics fitted to Skysport UK's Bulldog are very comprehensive. When I first flew the Bulldog with the RAF, we had a single Bendix VHF radio and an ancient 12 channel UHF radio. And that was all! No SSR and no radio navigation aids whatsoever. Position fixing above cloud was achieved by UDF/VDF, always assuming you could actually find a suitable DF station and instrument approaches were limited to SRA and PAR. Fortunately, the aircraft received an avionic update programme in the 1990s. The old 12 channel UHF museum piece was replaced by a modern UHF radio; VOR/DME, ILS and SSR were also fitted. However, Roger's

Above: non-EASA Bulldog has constant speed prop and better avionics
Above right: Pup entry is via a door rather than a sliding canopy

G-BCUS is in a different league altogether, being fitted with a very neat avionic stack which includes a Garmin GNS 430 system and a Garmin SSR plus Narco VHF, DME and ADF.

Avionics fitted to Skysport UK's Pup 150 G-TSKY are less exotic, but entirely adequate for the aircraft's primary purpose:

A Garmin GPS 296 can also be fitted to the mounting cradle immediately above the artificial horizon, providing the Pup's pilot with good spatial awareness, particularly in marginal weather conditions.

Elite Advanced Training

Roger explained that the purpose of Skysport UK's Elite Advanced Training Programme is to enable qualified pilots to leave the course with general handling skills of a higher standard than those they had when starting the course. The course itself is tailored to an individual pilot's preference but must include the three core elements of stall avoidance and awareness, precision circuits and forced landings without power. Other elements include precautionary landings, unusual attitude recovery, steep and maximum rate turns, plus specialised training in subjects such as VFR navigation, formation flying training and air racing. As one of Skysport UK's pilots, ex-RAF fighter pilot and QFI Derek Sharp, confirmed over our coffee and sandwich lunch, formation flying training is conducted to RAF standards. Air racing training is to Royal Aero Club Records, Racing and Rally Association

standards and culminates in a check ride.

Pilots who successfully complete at least five general handling elements of the Advanced Training Programme to either Standard or Elite grade will receive a pilot validation certificate; this will also be accepted towards an AOPA Wings Award. 'Standard' grade is equivalent to average PPL Skill Test standard, whereas 'Elite' equates to an above average standard. This excellent course should therefore appeal both to enthusiastic private pilots and to prospective airline pilots seeking upset prevention and recovery training.

In addition to their Elite advanced flight training course, Skysport UK also offers ab initio PPL and NPPL flight training. Qualified pilots may join Skysport UK's Bulldog and Pup Pilots' Club, membership of which entitles them to fly any of Skysport UK's immaculate aircraft from either aerodrome at extremely competitive rates.

EASA....

But now, the cloud on the horizon. The European Aviation Safety Agency has decided that, in contrast to the ducks mentioned earlier, the Pup and Bulldog are, to their eyes, quite different aircraft. The Pup is now an 'EASA' aircraft subject to EASA maintenance regulation, whereas the Bulldog, being an 'ex-military' aeroplane, is now a 'non-EASA' aircraft. Until recently, the Type Certificate Holder for the Bulldog was de Havilland Support Limited; however, DHSL considered that it was becoming increasingly unrealistic and disproportionate for them to follow all the maintenance protocols now implied by a Standard Category Certificate of Airworthiness. As a result they intend to rescind the Type Certificate for the Bulldog and instead to enter into a Type

Responsibility Agreement with the CAA; this means that owners may then have the option of operating under a Permit to Fly rather than a Certificate of Airworthiness. However, operators who require a Certificate of Airworthiness in order to facilitate 'operation for valuable consideration' will need to become members of the Type Responsibility Agreement which will incur a fee, the scale of which is as yet to be determined. Roger is working closely with DHSI to minimise the financial impact on Bulldog owners; interestingly the overwhelming majority of owners polled to date have expressed a strong desire to continue to operate under Certificates of Airworthiness.

The 'EASA' and 'non-EASA' categorisation of these essentially similar aircraft means that the Byzantine complexity of EASA pilot licensing requirements will also become a significant factor in the near future. Currently, in the UK we have the pre-JAA old-style UK PPL, the JAR-FCL PPL(A) and the NPPL. Either aircraft may be flown using the relevant Class Ratings included in these licences; either aircraft may be flown in IMC if a UK IMC Rating or an Instrument Rating is included in a CAA-issued PPL, whereas the NPPL is strictly day VFR. The UK's rules are well understood and are reasonably straightforward and sufficiently flexible to meet the needs of virtually all Pup and Bulldog pilots.

However, EASA has ordained that you will need an EASA pilot licence to fly the Pup after Apr 2015, although the CAA have stated that the Bulldog may also be flown on an EASA licence. Or, if you prefer, you will still be able to fly the Bulldog on a UK PPL or NPPL after Apr 2015, but not the Pup. To make things even more complicated, between Apr 2014 and Apr 2015 if you haven't already converted a UK non-JAA licence to an EASA licence, you may only fly the Pup within the scope of the LAPL.

Now consider instrument flying. The future of the UK IMC Rating has yet to be determined as regards EASA aircraft such as the Pup, but is at least assured for the Bulldog. If the proposed En-Route IFR Rating is agreed, it may be included in an EASA PPL and you will be able to exercise its privileges on either aircraft. You will not, however, be able to include an EIR in a UK PPL.

Even visual flight rules are going to be affected by the complexity of EASA regulation. If we simply consider UK Class G airspace alone, with a UK PPL or JAR-FCL PPL(A) unless you have at least an IMC Rating, your licence privileges are restricted by the UK Air Navigation Order to an absolute minimum of 3 km in-flight visibility and you must remain in sight of the surface. For the NPPL with SSEA Class

Rating, make that 5 km. But, it seems, for the EASA PPL(A) or even the LAPL(A), the restrictions of the UK ANO will not apply in this respect. So if you are flying at no more than 140 KIAS below 3000 ft amsl and are clear of cloud and in sight of the surface, with an EASA pilot licence you will only need 1500m in-flight visibility no matter whether you are flying a Pup or a Bulldog. Assuming you can find suitable holes through which to climb and descend, you will also be able to cruise on top of 8/8 cloud within VFR criteria with no IMC qualifications whatsoever. European Aviation Safety Agency?

Then there's the Aerobatic Rating. EASA defines 'aerobatic flight' as '*an intentional*



RAF introduces aerobatics early in pilot training

manoeuvre involving an abrupt change in an aircraft's attitude, an abnormal attitude, or abnormal acceleration, not necessary for normal flight or for instruction for licences or ratings other than the aerobatic rating.' So, of course, they've decided to include rules for such activity; hence if you want to turn a Pup upside down after Apr 2015, you will need to include an EASA Aerobatic Rating in your EASA pilot licence. But if you use an EASA licence to fly the Bulldog and wish to conduct aerobatics, technically you won't need any formal aerobatic qualification whatsoever. Although of course you would be well advised to train for the AOPA Basic Aerobatic Certificate, which will also meet the EASA Aerobatic Rating requirements. However, whereas you only need to hold a valid pilot licence in order to start training for the AOPA certificate, for the EASA Aerobatic Rating, EASA's rulemakers have decided that you must have achieved 40 hrs as PIC since licence issue before you can apply for the rating. The CAA doesn't agree with this, neither does the FAI nor Europe Air Sports nor IAOPA (Europe). So we are pressing for this absurd prerequisite to be deleted. But things happen very slowly at EASA, mañana being a concept obviously considered by some to be unacceptably urgent. So if you wish to

learn to fly aerobatics in the near future, your best bet is to take the AOPA Basic Aerobatic Certificate course, because the CAA intends that this may later be converted to an EASA Aerobatic Rating under 'grandfather' rights. Additionally, to provide flight instruction for the EASA Aerobatic Rating, a Registered Facility will need to become an EASA Approved Training Organisation which will, yes, you've guessed it, also require an approval fee. So, in the short term, it will hardly been in an RF's interest to become an ATO in order to offer the EASA Aerobatic Rating course, particularly when there is no requirement for such expensive bureaucracy if the RF wishes to provide the AOPA Basic Aerobatic Certificate course.

As Skysport UK's CFI Roger Hayes remarked, from his considerable experience of the law through his earlier career with the Metropolitan Police, complex regulation is never 'good law'. If such law is too complicated for the average person to understand, then it is flawed. AOPA shares this view; we are increasingly concerned about the impact of the unnecessarily complex EASA Aircrew Regulation on basic PPL pilots and have grave doubts about the overall wisdom of such legislation, particularly since it will do nothing to improve safety. There will undoubtedly be pilots in the none too distant future who, despite our best endeavours, may well be flying in contravention of the new regulations because they simply cannot understand them.

Nevertheless, despite the impact of EASA, organisations such as Skysport UK have recognised the need for pilots to be given the opportunity to improve their general handling skills through the availability of advanced flight training programmes. The Beagle Pup and Scottish Aviation Bulldog are ideal aircraft for this purpose; currently there are 52 Pups and 61 Bulldogs on the UK register and with the sterling efforts of both the Beagle Pup and Bulldog Club and de Havilland Support Ltd, these thoroughly delightful little aeroplanes will undoubtedly continue to grace the UK's skies for many years to come. ■

Contacts:

Skysport UK:

<http://ds.dial.pipex.com/skysport/index.shtml>

Beagle Pup and Bulldog Club:

<http://www.beaglepupandbulldogclub.co.uk>

Cotswold Airport:

<http://www.cotswoldairport.com>

AV8 restaurant:

<http://www.av8-cotswoldairport.co.uk/Av8.html>

Royal Aero Club Records,

Racing and Rally Association:

<http://www.airraceuk.co.uk>

de Havilland Support Ltd.:

<http://www.dhsupport.com>