

PW-6 put through its paces



The PW-6 proves to be a delight to fly with no obvious vices and is able to perform any of the ab-initio exercises when asked to do so

(Mike Weston)

THE telephone rang; it was Susan Newby, our new S&G Editor returning my call concerning an Airprox article. "By the way it would be nice to get a test of the new PW-6. I gather Aston Down have just taken delivery of one." "So I gather, who are you going to get to fly it?" "Well, we were rather hoping you..."

The following day I made my way over to find the Cotswold GC chairman and ask if I might borrow it to test and we negotiate a suitable time, winch and aerotow facilities.

While I am there I decide have a look at the PW-6 parked on the winch line. Instructors are learning all about it before it joins the fleet for club instructional flying. Already I hear stories from those who have flown it but do not generally dish out much praise of how surprised they have been with its performance and handling.

I am told of comments from those who haven't yet flown it but are given to voicing opinions none the less. "We had an SF34 that was the same as this that didn't soar... with little wings like that ... it's Polish..."

Interesting, I thought, I shall look forward to seeing what it really does in a week's time!

Matching requirements

If you are a club chairman looking to replace your aged *ab-initio* two-seat fleet, the choice available to you is quite limited. Cotswold, like many clubs, has standardised on KA-13s for basic training for the past 15 years and they have served the club very well. However, they have found an ever-widening gap between the flying characteristics of the KA-13 and the gliders new members are likely to buy or those that private owners now fly. Additionally, the market has moved on,



The PW-5 had its detractors, but how does the PW-6 shape up to the many challenges faced by a basic trainer? Hugh Woodsend takes the controls to see if it ticks all the right boxes

and many prospective members demand more modern gliders on which to progress.

The requirements for a basic trainer are challenging. It must be comfortable and fun to fly, easy to operate, even from demanding sites. It must be able to soar well to teach the pupils good techniques for the future. It should be possible for instructors to demonstrate flying exercises correctly without frightening themselves or pupils. Ideally it should have a good speed range, winch and aerotow easily, have no nasty or unusual habits, and be sufficiently strong and easy to repair. Oh and not too expensive to buy.

So how well does the PW-6 stack up to this challenge?

Testing the PW-6

The day of the flight test was blustery and showery, more like an April rather than June day. The glider lives in a hangar so no chance to rig it, although I believe it takes only three to do so as the components are quite small and light. I note the captive main pins clearly visible in the rear and the overall clean finish.

Simon Buckley has volunteered to accompany me on the tests. He explains the club tried the demonstrator, and suggested a number of modifications (nearly all of which have been carried out), before making a purchase. From the outside, the glider appears

quite small – it is obvious it has been designed with quality in mind. A large fixed main wheel gives it good ground clearance, manoeuvring on the ground is a delight as it's a one-handed exercise to lift the substantial nose wheel to pivot the fuselage.

The 16m span looks smaller than it actually is, with large single paddle brakes set in the upper surface, a mean chord just over one metre and an aspect ratio of 16.8. The tailplane sits low but well away from the ground during landing and take-off. The rudder on the 7.85m fuselage is purposeful. Everything is easy to inspect on the ground. Two good-sized cockpits with lifting canopies complete the picture.

I decide to start with aerotows. To get an



Visibility from the cockpit is superb

Sailplane & Gliding

air-to-air photo of the PW-6, we shall be two up in both tug and glider. Minimum cockpit seat load with a solo pilot (and parachute) is 55kg and max 110kg, and not more than 200kg cockpit payload.

I will fly it from the back. The seat back has a combination of upper and lower positions; the rudders in the back are not adjustable. Getting into the rear with a parachute on is easy, grasping the hoop in front with both hands, leaning slightly forward and then lowering into the quite deep cockpit. Strapped in conventionally, controls fall readily to hand. The stick is quite long but almost completely friction free and light to move.

The air brake/wheel brake lever is mounted to the left with a very positive trimmer with numbered positions on the same side. Canopy catches are large and obvious in the back. It's a similar story for the front, but here the canopy catches are more difficult to check, however the visibility is superb. The wings are well behind but otherwise the effect is that of a very modern single-seater.

Instruments are up to the purchaser and Cotswold has elected to fit good quality LX varios, radio plus additional fittings for add-on PDAs, Flarm etc in the future.

The glider sits on its nose-wheel and therefore tracks straight ahead on the takeoff run. A positive but not demanding effort is required to get the PW-6 to sit comfortably on its main-wheel before lifting off. Immediately the well-harmonised and light controls make it easy to follow the tug. Recommended speeds are 65kts normal, to 81kts cross-country with a max of 88kts. Our combination climbs well, despite being four up.

Deviations from the centreline require positive effort as the glider will fly itself neatly back to the centre. The cockpit is quiet, just the forward ventilator intrudes and I note it could do with more air in the rear cockpit. Forward visibility from the back is adequate if not remarkable, but there are several head positions that can be used to see past the front occupant. Sideways and rearward views are excellent. There are no footrests in the back, but cocking the feet sideways in the middle achieves the same result. Later when I flew it from the front, the all-round visibility and overall comfort proved very good indeed.

Releasing, we explore the handling. The trimmer indentations give 2kts per notch, max glide 55kts, the balance between the controls is just right, and I measured the 45 to 45 degree roll rate as marginally better than the

book value of 4.3 seconds. Vne 141kts, with a rough manoeuvring speed of 89kts giving the glider a wide speed range. Quoted L/D is 34, but it does not appear to descend quickly at higher speeds. G limitations are +5.3 to -2.6 at manoeuvring or +4.0 to -1.5 at Vne.

Pretending to be a rough handling solo pilot used to flying a glider with less precise controls, I move the stick about all axis. Every move was instantly translated, thereby encouraging smooth handling. Releasing the controls the glider settles immediately.

I try the stalling exercises and note at our weight it stalls at 38kts, having given lots of warning through the controls, without a wing drop providing the rudder is central. Recovery is predictable and precise. Exploring this further, I find with a little rudder held, the nose falls away, and with 1/3 travel a wing drop can be demonstrated. Recovery from both is easy. The PW6 can be held at the stall, even in a turn, providing there is no slip present, demonstrating a rapid rate of decent but without dropping a wing or spinning.

'The glider climbs well, happy between 47 and 50kts, positively leaping upwards when I finally centre it correctly. So much for the comment it won't soar!'

Incipient spins are easy to demonstrate, the process is quite gentle, leaving lots of time to recover. If left to develop, the glider will roll gently into a full spin, recovery of which requires the stick to be moved forward to stop the spin. Exit speed was measured at 100kts. Less rudder does not prevent recovery. The spin is positive, no over-pitching, not too fast and not frightening, and a good trait when teaching nervous pupils.

I tried a high-speed stall, from a mishandled recovery, and the burbling of the stall was obvious and extended, making it easy to demonstrate. Sideslipping was achieved as per the book with 20-25 degrees offset. This takes a while to settle, but once there stabilises into an easily controlled attitude.

The PW-6 is certified under the utility category to include the normal positive manoeuvres including stall turns. I tried a loop, recommended up to 3.5g, mine was much less at about 2.5g, starting horizontally at 100kts, achieving 45kts at the top and 100kts at the bottom. A stall turn, including positive pauses up and down, was easy to accomplish, the exiting at 90kts. Steep ➤



The glider appears small but is designed with quality in mind



Captive mains pins clearly visible in the rear

Why a PW-6U?

THE club was in the process of upgrading the fleet after purchasing a DG-500 in March 2006 for advanced training, writes Cotswold chairman Mike Weston. We had started looking at options for replacing the three K-13s used for basic training. The main reasons for the review were concerns about the longevity of the K-13 and its suitability for training pilots who, following solo, often moved into a syndicate or purchase of a glass glider.

An opportunity arose in December 2006 as Roger Hurley of C P West Ltd had a PW-6U in the UK for evaluation and, as Talgarth was waterlogged, asked if he could bring it to Aston Down for the weekend. A number of instructors evaluated the glider over the weekend using both winch and aerotow and the general comments about the PW's performance were very positive. We noted a number of ergonomic improvements and these were passed back to Roger. We had a further opportunity to evaluate the glider in February 2007 when we hosted a visit of instructors from North Hill.

Evaluation

Following this evaluation and taking note that there were not too many options in glider types available the committee decided to order two PW-6Us with expected delivery in March and April 2008. While a popular decision with most of the club, it also had its detractors – some of whom I am glad to say have changed their mind now that the first of the two gliders has been delivered.

The demonstrator was a four-year-old glider that had been in club use and we requested a number of improvements, which included changes to the trimmer to give finer graduations, modifications to the rear canopy to allow easier access, isolation of the wheel brake lever between each cockpit, relocation of the release to the side cockpit wall and easier access to the control connections. We were very pleased to see that ZSJ had incorporated all these changes into their latest production gliders.

We took delivery of G-CKRU on 1 June, slightly later than planned, together with a new UK-manufactured trailer and have been extremely pleased with the quality and performance of the glider. Our second PW was due to be delivered around the end of June when we will start to migrate basic away training from the K-13s.

This was rather a big decision for the club but having received and flown the first PW-6U we are absolutely sure that we have made the right decision. This significant improvement to the fleet puts the club in a great position to attract members and provide training on modern equipment.

FLIGHT TEST: PW-6U

➤ turns are easy to fly, with good positive elevator control.

Back to the field, for a landing, we elect to use 60kts for the approach. Still air at max weight is marked on the ASI at 53kts. The airbrakes are very powerful, something just under half being more than adequate for normal approaches. Lowering the nose seven degrees or so will cause the speed to rise instantly by 10kts only to return immediately the correct attitude is selected.

Landing is easy, the normal landing attitude allows the glider to touch down gently on the main wheel only, and even with positive elevator lower itself on to the nose-wheel fairly soon afterwards. Rudder is adequate for crosswind handling and the ailerons remain working down to standstill. Nose-wheel rumbling is evident during the roll from the front cockpit but is not unpleasant.

We try a winch launch, me flying from the back. The PW-6 launches on a black link, with a max speed of 65kts. Even with a fast all-out the tail does not come down hard, merely a

slight touch, before climbing away in perfect control. From the back the reference points for the climbing attitude are less obvious due to the cockpit sides, but I didn't find it difficult. We achieved 1700ft on the first, and 1800ft on the second (flown from the front) – creditable launches for conditions on the day.


We find a very rough thermal and I emulate a pupil, in and out of the lift and too little bank. Nevertheless the glider climbs well, happy between 47 and 50kts, positively leaping upwards when I finally centre it correctly. So much for the comment it won't soar!

The last landing back gives me opportunity to explore the kind of conditions often experienced on demanding hill sites. Pupil too high and in the wrong place. Full airbrakes give very positive positioning back on to the glide path and a normal landing.

Conclusions

In conclusion, this glider ticks all the boxes on our set of requirements and demonstrates a rare quality in being both delightful to fly

and with no obvious vices and yet able to perform any of the *ab-initio* exercises when asked to do so.

There are a few small things that require modifying over time. Ventilation improvements, the front canopy catches require marking to ensure they are fully shut, and the emergency release handle needs to be less prominent, but these should be easy to fix. The engineering looks good, although that will need checking after a few years' service, but the PW-6 deserves to succeed as pupils, instructors and chairmen should all be content. 

■ **Hugh Woodsend is a freelance test pilot on fast jets with over 20,000 hours total experience on more than 500 types of aircraft. He has been gliding for 30-plus years, with around 3500hrs total time. Hugh is a Full Category Instructor and flies a Ventus 2C and a Duo Discus. He is a member of the BGA Airspace team and is a board member of the UK Airprox Board with special responsibility for GA and gliding matters.**

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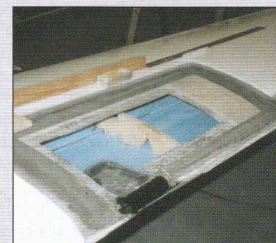
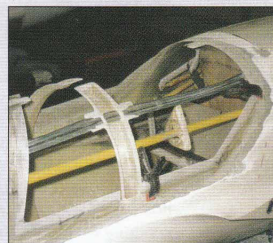


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