

Optica – Eye in the Sky

John Edgley conceived his insect-like Optica as a fixed-wing observation platform that could operate in a similar role as a police helicopter support unit, at considerably lower costs. The Edgley Optica prototype G-BGMW first flew at Cranfield on 14 December 1979. The type has had a long and complex history, as summarised below (from my *British-Built Aircraft* series).



Optica G-BMPL being displayed at an earlier Farnborough Air Show

Edgley Aircraft Co. Ltd, which was formed in 1974, chose Old Sarum as a production site for the Optica observation aircraft. The first production aircraft G-BLFC flew on 4 August 1984. The company ran into financial problems and production was halted when the company entered receivership in October 1985. Optica Industries Ltd took over Optica production from Edgley, restarting production in January 1986, only for the production line to be destroyed as a result of arson on the night of 16/17 January 1987.

Optica Industries became the Brooklands Aircraft Co. Ltd (later Brooklands Aerospace Ltd) on 14 April 1987, after the hangar fire. Brooklands continued Optica production. Brooklands Aircraft entered administration on 23 March 1990, following which the Optica project was taken up by FLS Lovaux at Hurn. Optica production comprises the initial prototype, fifteen aircraft built by Optica Industries, five built as the Scoutmaster by Brooklands Aerospace, and two OA7-300 constructed by FLS/Lovaux. In 1996 it was reported that a memorandum of understanding had been signed with Gegasi Industries of Malaysia which would lead to production in that country.



Optica G-BOPO at Henstridge on 31 July 2014

At this year's Farnborough Airshow, Optica G-BOPO formed part of the static exhibition, being flown to and from the show from Thruxton by Annabelle Burroughs. I had arranged with Annabelle that she would give me a flight in one of Kevin Crumplin's superb restored Tiger Moths, this being in exchange for our donating two flying suits and a sheepskin flying jacket to Tiger Moth Training Ltd. I flew in the Tiger on 31st July, noting that it was just 30(!) years since I had last flown one solo.

Annabelle had told me on the previous Friday that the Optica would be at Henstridge, as she was due to fly two displays in the aircraft on the next weekend and the plan was to obtain a display authorisation from Jez (of the Yakovlevs display team) before doing the display flying. This prompted Annabelle to ask if I had any views on what made a good display from a photographer's point of view. My comments were along the lines:

"Well, it's a unique shape from every angle, so you need to present it from every aspect. Turning the aircraft so that its top surface is visible makes a better and more active-looking photo than turning away from the crowd, where the aircraft is often silhouetted against the bright sky and looks less interesting". I also said that "As the Optica is designed for slow flying, a slow flypast needs to be included" and finally that "keeping the aircraft close to the crowd (within appropriate height and safety limits) was always a good thing".

Annabelle planned her display with this advice in mind and let me know that she would be flying a practice display at 1415 on Friday August 1st.

After flying in the Tiger Moth, I took a few ground photos of the Optica. I headed back to the airfield the next day, arriving slightly later than intended – Annabelle was already in the aircraft with the engine running. I headed for the south side of the field and, wearing a high visibility vest, positioned myself around the centre of the field. I then had the delight of seeing my own private air display.

All the planned elements were there and from a spectator's viewpoint, it was a lovely display of the aircraft. My only criticisms were that even with a high quality telephoto, the views showing the aircraft's upper surfaces were some way away. "Perhaps a dumbbell turn at each end of the crowd line would allow the aircraft to make a wing down turning pass from each direction in front of the crowd line?" I also commented that "the slow pass and the wing rock pass at the end of the display would be great for anyone videoing the event".

Display Practice Gallery



Row 1: Left: Take Off; Right: Turning to show the top view of the Optica.
Row 2: Left: Flying directly away; Right: Slow pass.



Row 3: Left: Head on view during wing-rock pass; Right: Final fly past
 Row 4: Left: Turning to join circuit at end of display; Right: Landing roll out.

On August the 4th, I was even more delighted when Annabelle asked me if I would like to fly with her in the Optica when she returned it to Thrupton. Needless to say, I did not need to be asked twice.

The aircraft was easy to get into with no wing walk or propeller to be concerned with. The cockpit is configured with a bench seat for three, the instrument panel taking the form of a pedestal displaced to the left in front of the pilot. Dual controls are provided to left and centre seats, with the right-hand seat provided with an almost totally unobstructed view.



Initial ground roll at Henstridge

Power is provided by a 260 hp Lycoming IO-540 engine driving a five blade ducted fan behind the cockpit, with the engine exhaust being directed to the rear. With this unusual installation, the cockpit is outstandingly quiet, the fan providing a background noise, rather like an air conditioning system on steroids. The only time the piston engine sound was apparent was as the individual cylinders picked up and ran on start-up.

Annabelle lined up for take-off and the aircraft accelerated briskly, rather than dramatically, with some 'clonking' from the offset nosewheel being felt through the cockpit floor. Climb out was smooth with an outstanding view from the centre seat, where I was sat.

Turning to the east, we settled into a transit at 90 kt (limited to this speed by having the large hinged direct vision panels open). With these secured, a 110 kt transit speed would be more normal. We flew low, at between 1,200 and 1,400 ft, all the more to appreciate the clear view of the land flowing beneath the aircraft.

As we passed abeam Shaftesbury, Annabelle handed control of the aircraft to myself. Small imperfections in the canopy where it joined the central glazing bar provided sufficient reference to maintain the aircraft fore and aft in level flight. Staying wings level in roll was another matter, however. There seemed to be a dead region in the centre, so that small control movements had little effect. The result was a tendency to chase the aircraft in roll. Annabelle said that this was due to the linkage mechanism that provided a degree of aileron and rudder interconnection. She said that the aircraft was very much better when manoeuvring.

And so it proved. After a straight and level transit past the Middle Wallop zone, a significant course correction was needed to head for Chilbolton. I turned the aircraft briskly in a well-balanced turn and all the lateral control issues instantly disappeared.

Annabelle flew a tight orbit over Chilbolton and we then routed via Andover to Thruxton, landing smoothly on 25 Hard with some more nose wheel clonking during the roll-out. The relatively large wingspan required care when taxiing and when organising the aircraft into its hangar.



Annabelle during the climb out from Henstridge



*Left top: Instrument panel; Right: unobstructed forward view
Left bottom: turning over Chilbolton*



Short Finals to land at Thruxton

All in all, a delightful experience. Short of a helicopter, the Optica has the most original cockpit interior of any type I have flown in.

It is not, perhaps, quite as extraordinary as the RLU Breezy, but that is more an exterior cockpit than a cockpit interior!