



WATER OTTER

Kevin Crozier completes his review of XFly-Model's 1800 mm Twin Otter by flying it off water

Words **Kevin Crozier**

Photos **Kevin Crozier, Frank Skilbeck**

In the July issue I published my flying report of XFly-Model's 1.8 metre wingspan Twin Otter. Since then, I have flown this good-looking scale foamie many times and I have always been very pleased with its performance operating from my local grass strips. The twin 3541-KV550 brushless motors, fitted with realistic 3-blade 10" x 7" props, provide more than enough urge and it's great fun brushing up on circuits and bumps whilst using the large flaps.

However, one of the main attractions of the Twin Otter for me was that it comes supplied with a pair of large floats, so I was itching to try flying her off water. As has happened far too often this summer my plans were stymied by strong winds blowing crosswind across the fishing lake that we use for float flying but eventually they died down enough to allow float trials to begin.



Fitting the supplied float set and flying off water was the icing on the cake for me when completing this review.

"If you haven't been paying attention it's about now that you realise that the floats are handed"

FLOATS FIT

First things first though and that was to fit those long foam flotation devices! Obviously, you will need to hold the fuselage upside down while fitting the floats. I used a foam model cradle.

This is a simple and quick job, starting by removing the steerable nose leg assembly and its attached servo. This does leave a large hole in the underside of the aeroplane, which is not a good thing for a floatplane! Unfortunately, XFly do not supply a matching blanking plate but this was easily solved by cutting a matching panel from a recycled white plastic margarine tub and taping it in place, making sure all the gaps were well sealed.

Next, the main landing gear is removed and swapped for the rear float legs where the pre-bent wire is secured using the same mounting plate. The front float leg wire fits under a plastic panel just aft of the now covered over nose wheel bay. It's wise to keep the front and rear mounting plates loose for now, allowing for some fine adjustments when the floats are put in place.

The legs are a tight push fit into 'chocolate block' style terminal strips attached fore and aft of each float, where they are secured with countersunk hex headed screws. Again, the screws are best left a little bit loose to allow for squaring / lining up the floats. The second of each pair of terminal blocks is used to fit a pair of finer gauge spreader bars.

When assembly of the float set is finished the model can be turned upright again and the floats tweaked for square before nipping up each of the countersunk screws. If you haven't been paying attention it's about now that you realise that the floats are handed, with long dolphin graphics attached on each of their outer sides! Thankfully I was wide awake whilst assembling this float set, but I have been guilty of getting floats the wrong way around in the past.

The port float is pre-fitted with a large water rudder and an internal servo, the lead for which feeds through a hole in the rear mounting plate and up into the fuselage where it connects with the now vacant nose leg steering extension lead. I taped the lead to the side of the nearby wire leg and I also ran some tape over the above mentioned hole to seal it.

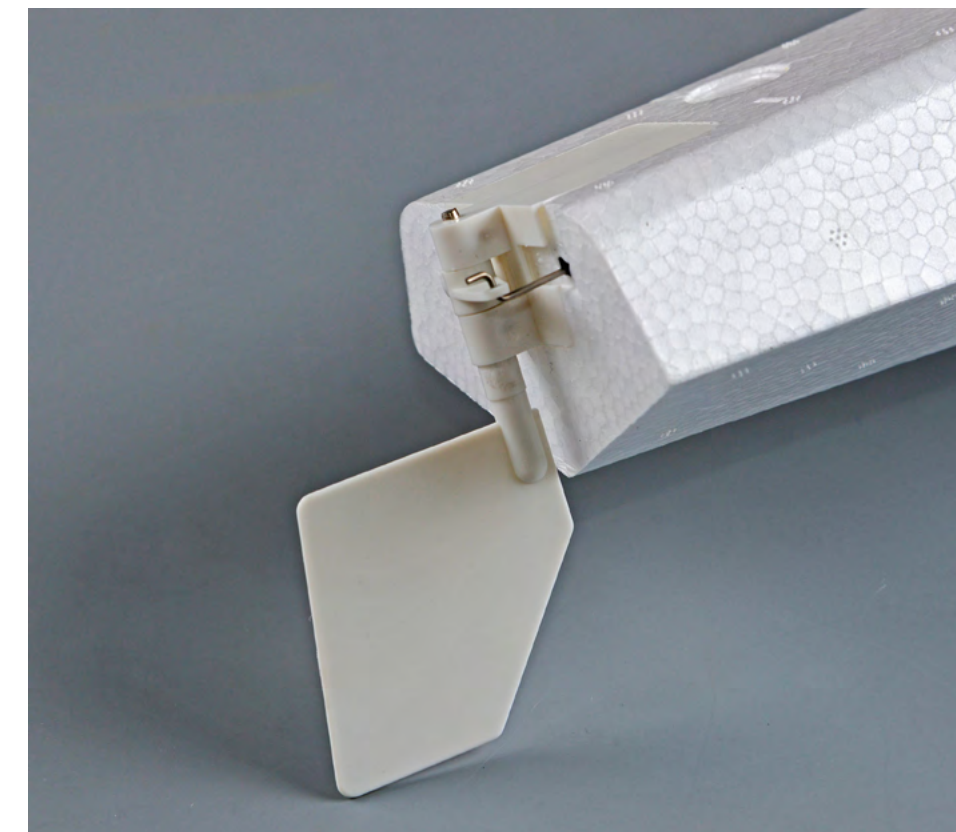
The floats were now fitted but something didn't look quite right...

FAIRED OFF

After a short while it dawned on me. When operated from land the main undercarriage legs come fitted with distinctive fairings which are wider at the top and taper down towards the



Dolphin graphics on the outside of each float help stop you from mounting them on the wrong side!



Port float features a large water rudder attached to an integral servo.

wheel hubs. But the rear float legs are missing these fairings, leaving the float set looking distinctly spindly, especially at the rear.

At first, I wondered if I could unclip the fairings from the wheel set and clip them back onto the float legs. But closer inspection revealed that they were probably glued or heat sealed on in some way, so once taken off there was no guarantee that they would clip

back on securely. Regrettably the leg fairings are not available as separate spare parts, but spare faired wheel sets are obtainable from XFly's distributor, CML. This does seem a bit of an extravagant way to get hold of a few bits of plastic but in the interests of finding out how the fairings work I did just that. With a bit of firm pressure on each side of the fairing it will pop off but there are no signs of any clips, →

nor any glue for that matter. So, I think they must be heat bonded in some way.

Offering up the fairings to the 'nude' rear float legs I pondered how to fix them on. The obvious answer is to glue them in place using a waterproof adhesive such as epoxy, taping them together while the glue sets. But hold on, what about the water rudder servo wire? This would need taping to the fairing so why not just tape the whole thing together anyway, trapping the rudder wire as I went along. Two bands of white electrician's tape did a neat job, replicated on the other leg to secure that fairing in place too. If I want to revert to the landplane then the tape can be taken off and the fairings retaped back onto the wheeled legs. Simple!

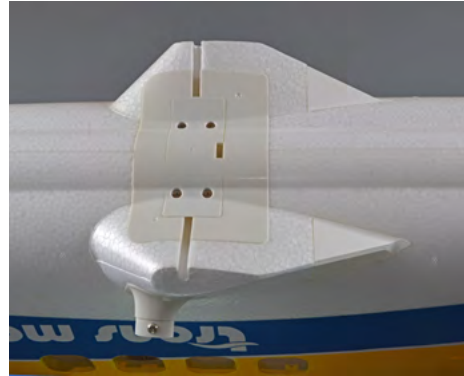
(Of course, I don't need to do that as I still have the original faired wheel set. If you want to keep your original main gear and sacrifice another to obtain another set of fairings then the part number is XF116-19.)

SPLASH PROOF

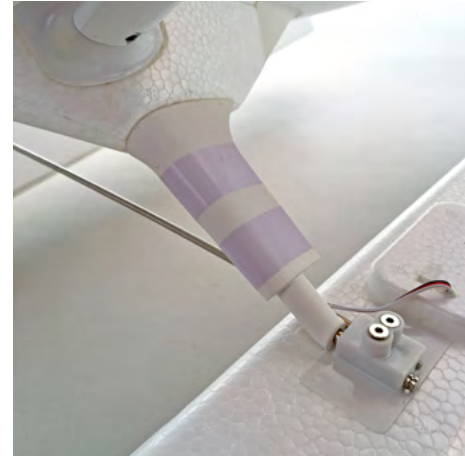
I couldn't find any indication that the 9G digital metal geared servos fitted to the Twin Otter are waterproof so it's probably best to assume that they are splashproof at best and so take precautions to stop them from getting dripping wet.

With my other ARTF foam floatplanes I have done this by cutting down suitably shaped recycled packaging to make see through blisters that are taped over the top of any visible servos. You can see an example of this in a nearby photo. The rear end is left exposed to allow any water that does find its way in to drain away and for air to circulate to dry off any remaining moisture before putting the model back into storage.

Both the elevator and rudder servos were given improvised covers, but the wing servos



After taking off the main wheel set the rear float legs are secured with the same plastic plate. The water rudder servo wire feeds through the hole in the middle.



Additional leg fairings are not supplied which is a shame as the float set looks too spindly without them. But you can pop the fairings off the main wheel set and tape them in place.



My improvised covers were a bit of a last minute bodge job but they did a good job of keeping spray off the tail servos.



Another mod was to use a round lolly stick to back up the magnets holding the nose in place. It pushes fully home but is easily pulled back out using fingernails under the screw head.



Twin Otter lakeside and ready for her first flights off water.



KC, in stylish flying garb (cough!), tests the water steering for the first time. All good but a little more throw was added for the final flight of the day.



Take offs are smoother and create less spray without using the flaps.



An early take off, with water pouring off the floats, showing the steep climb out at half flap.

“I cannot find any indication that the 9G digital metal geared servos fitted to the Twin Otter are waterproof”

are integral and already covered over so I did not need to worry about covering them.

A final modification was to secure the magnetically mounted nose cone with a wooden peg to stop any chance of it coming off whilst in the middle of the lake! This is probably overkill as the magnets hold the nose securely in place but better safe than sorry. I used a pointed lolly stick to ram out a hole through the side of the nose cone, through the foam mount inside and out through the other side until the point just started to break the surface. The stick was then cut to length and a small screw inserted in its end to give me something to pull on with my fingernails. This allows the stick to be easily removed and the nose cone put safely away for storage.

LAKE SIDE

I started this article by bemoaning the weather (sorry, it's a well-known British trait!), not helped by the fact that my local lake is orientated pretty much north south. So calm days with the wind lined up the length of the water are all too rare. But patience is a virtue they say and eventually the forecast swung in our favour and arrangements were made to meet my float flying buddy, Frank Skilbeck who came equipped with his camera, not forgetting a couple of aeroplanes too! Another local pilot, Tim, joined in the fun.

Typically, the weather had other ideas and by the time we arrived the wind had picked up and was blowing across the water. This lake is tree lined on two sides and they were acting as a bit of a windbreak, leaving areas of calm water for us to fly from. The temptation to abort loomed large in my mind but after waiting so long for a lakeside session we decided to give it a go, which turned out to be a good decision as we all ended up having several good flights.

Frank went first with his flying boat while I took a few lakeside pictures. Then it was the Twin Otter's turn on the water. With the water level being quite low I was able to take advantage of a narrow 'beach' from which to launch the Otter. With the wind blowing across the lake, I was a tad worried that the water rudder might have difficulty overcoming the model's natural tendency to weathercock into wind, especially with that large fin acting as a sail. I also wondered if some differential throttle to aid steering might be beneficial, but my fears were groundless and the water handling using just the water rudder proved to be very good. So, I powered the model up the lake, selected half flap and took a wide turn to line her up as best I could into wind and opened the throttle. For a few seconds all went well but then she ✈



Once I had my eye in the Twin Otter rewarded me with some lovely landings.

“As when flying from land, half flap is really all it needs and I rarely use full flap in either configuration”

hit the swell created by taxiing fast downwind and promptly disappeared in a large ball of water and spray. I wasn't expecting that (to put it mildly!) so I quickly shut the throttle and waited for her to reappear from the mist. Water can be very 'hard' when hit in unexpected ways (remember those belly flops as a child!) so I was relieved to see she had survived this encounter unscathed. Frank actually managed to take a pretty decent picture of this incident, which you can see if you turn to the Parting Shot page at the back of the last issue.

For the next take-off I was careful to make a slower downwind pass, so causing much less disturbance to the surface of the water. This time all went well and the Twin Otter lifted off, trailing droplets of water from the backs of her floats. However, the climb out was much steeper than I was anticipating, not helped by the large amount of elevator that was needed to help her unstick. Did I also detect a nod back towards the water at the moment of lift off, or was I imagining that?

In the air the Twin Otter seemed just as pleasant to fly as always, if a little tail heavy. I made a mental note to try moving the 6S LiPo forward a small amount for the next flight. As with flying from land, I kept half flap on during the circuit, lining the model up for an approach over the field adjacent to the lake. Juggling the throttle to maintain a steady glide path, she passed the threshold, at which point I eased back the throttle, but did so a little too quickly and she dropped heavily onto the water. It was not my best landing but she was down and safe, so I lined her up for another take off and circuit, this time performing a much better landing. After another couple of splashdowns, it was time to bring her back to the edge of the lake to check the battery's capacity. Over 50% remaining, so there was plenty of juice left in that pack.

FLAP OR NO FLAP

By the time my second flight had finished I had come to a couple of conclusions. Moving



Whilst flaps are not needed for take-off, half flap is a blessing to slow this large foam model down for a safe arrival.

the large LiPo forward had indeed all but eliminated that tail heavy feeling (not exhibited in landplane format at the recommended CG, by the way) but a little bit more forward movement would probably be wise.

I had also come to the conclusion that selecting zero flap on take-off was beneficial as the Twin Otter planed more smoothly without it, sitting more level on the water. At half flap the nose would rise quickly and the rear of the floats would settle deeply in the water creating more of a wake and lots more spray – I was glad I had fitted those servo covers at the back! Tim had also spotted that momentary dip towards the water as soon as the model lifted off but that disappeared as soon as I cleaned up the wing before making a take-off run.

On the flip side, on a couple of approaches I forgot to select my usual half flap and the now slightly heavier aeroplane, in its float configuration, zoomed over the edge of the lake, carrying far too much speed for a safe landing. So, to my mind half flap is a must to slow her down for a safe water landing. As when flying from land, half flap is really all it needs and I rarely use full flap in either configuration.

From my notes, made at the side of the lake that day, the only other thing I should mention is that despite my earlier comments regarding the effectiveness of the water rudder, I did increase the throw on low rates from the nose wheel setting of 55% to 70% as it did turn a little too slowly for my liking during one gusty phase. But on a calm day I don't think that would be necessary.

SUMMING UP

When the XFly-Model Twin Otter was offered for review I must admit that it was that big float set that really caught my eye. Flying off water on a warm summer's day is a truly fabulous way to go flying.

This model proved to be a bit of a pussycat when flown from grass and with half flap selected for both take offs and landings. She proved a little bit more demanding when first flown off water but after making some small



Cruising back after another successful scheduled flight. Not quite the Maldives though!

adjustments, detailed above, I now have her back to flying just as well as before. All I need to do is to tuck a clear note in that big battery bay to remind me to take the balance point a bit further forward and to leave those large flaps retracted when taking off from water. Other than that, all I can say is to repeat my final words from the original flying review...

What a lovely model aeroplane! ■

DATAFILE

Model:	1800mm Twin Otter
Model type:	ARTF scale twin
Manufacturer:	XFly-Model
UK importer:	CML Distribution https://www.cmlidistribution.co.uk
RRP:	£439.99 (no floats) or £499.99 (with floats)
Length:	57.4" (1.46 m)
Wingspan:	70.9" (1.8 m)
Flying weight:	8.82 lb (4 kg)
Wing loading:	87.5 g/dm ²
Wing area:	620 sq. in. (40 dm ²)
Motor size:	3541-KV550 x 2
ESC:	40A x 2
Props:	3-blade 10" x 7"
Servos:	13 g & 9 g digital MG x 5 (plus 1 in float set)
Functions (servos):	Ailerons, elevator, throttle, rudder/steering, flaps
CG:	61 mm from leading edge
LiPo:	6S 5000 - 6000 mAh