

How to fly off the water.

Stephen Green

Operating a model aeroplane off the water is another of the many fabulous flying activities our hobby offers. If you ever imagine what it is like to skim along the waves, gently lift off and watch large droplets fall into the reflection as you climb away, read on. Do you fancy a fast approach, killing the throttle to skim 10cm above the surface bleeding off speed until a little splash tells you have kissed the water. A radical alternative to this landing scenario is to pull in full up to stall the model with the nose vertical two metres above the lake? Why would anyone want to do an awful thing like that to an aeroplane you ask? That's what I thought until Graham Scott at The Melbourne Club Float Day offered me a go at it with his model.

When Graham flew this manoeuvre the model would almost completely submerge right in front of him and then pop out again with the engine still running. My attempt resulted in a certain quantity of brown nosing and I had to do a "what went wrong, what went right and how can I do better next time (WWW)" My approach was a little too fast and the extra speed carried the model closer to the edge of the lake than I would have preferred. Yanked back the elevator to a vertical nose high stall at three metres. Oh oh it should have been two metres. Flipped out of the stall and submarined his plane into the soft brown mud and the model stayed there until retrieval was actioned by the search and rescue division. Although Graham got all the brown mud off the nose the scratches are still there and he reminds me of it constantly.



Original fibreglass undercarriage flexed too much without the support between the floats. A rotor blade off a 30 helicopter is an easy way to add an aerodynamic strut



Watch the reflection as you grease onto the surface. Simply awesome.

This article offers a few simple tips on setting up the model before you get to the water and there are a couple of techniques you can employ to actually alight from and return safely back on top of the water. Also included is a fairly comprehensive section if your floatplane ends up either in or under the water you were attempting to land on. This section is known as (WWW).

You can add floats to most types of aeroplanes and once set up they can be easily removed when you go flying off the land again. You can buy ARF floats in various sizes or you can build your own from a kit or plans. There are dedicated water designs such as the Seamaster, Wavemaster, Laker and of not forgetting the ultimate show off machine of all time "The Northstar." I have flown high wing, low wing, biplane, twins, deltas, old timers and helicopters and they have all been great fun so I think you should just get one and try it.

Installation is pretty simple for high wing trainer and low wing sport models. All you have to do is glue a plywood undercarriage brace on the bottom of the tank compartment in front of the leading edge of the wing. Another brace is required behind the rear bulkhead at the trailing edge and the float struts screw on with either blind nuts or self tappers. You can use a standard dural or fibreglass undercarriage as per the photo or bend some aluminium strip. The floats can then be installed and removed as a single unit ready for the float plane season. In Melbourne that means Summer and Autumn.

I recommend installing a wider track than the standard wheel set up as the water

taxiing can be a lot more difficult if the wind gets up. If you have a choice between high or low wing or low of aeroplanes choose the low wing as I have found them better to fly when you hang two big feet underneath and they usually roll a lot better. The main advantage is more predictable and manageable crosswind characteristics during take off and landing and absolutely when taxiing. Not going to fly crosswind you say? Well you can exclude flying from a river most of the time. Once the wind is over ten knots it is fairly common occurrence for high wing planes to tip over as you turn into wind from the downwind taxi.

Water rudders are an essential item to make float-planing a relaxing pursuit. I have test flown a few models for people who wanted to see what was like before going to the extra effort and you can get by without them if there is no wind at all. Successful taxiing becomes an art form as soon as there is any wind. You have to hold full rudder and steer with blips of throttle and once the wind is over five knots you



Simple trainer conversion with standard dural undercart. Go for a wider track if possible.

hold some up elevator as the speed builds up.

The other important point to touch on is water proofing the radio. I have seen a totally water proof radio, servo installation in the fuselage which consisted of a Tupperware container with all pushrod sealed with silastic. I have found the amount of water flying time accrued is directly proportional to how water proof your radio installation is. I admit, never having the patience to do a waterproof installation has cost me flying time and caused me to watch other people enjoying themselves while I dry out the radio but there is a system that offers a good compromise. Wrap the receiver and battery pack in plastic and silastic the end where the wires exit. This will protect these items from water that just seems to get in and maybe be enough to keep them dry if you tip the model over provided you get to it quickly. If you are really serious then set up another model so you can take two aircraft for the day.

If a servo gets wet it will usually start to jitter about the neutral position. If it gets really wet it will just drive around to the stops on the gear train and just groan. If all the servos are jittery it is most likely water in the switch or the receiver. You can take the cases off the radio and dry the circuit boards on the floor of the car with the heater on. If in doubt just don't fly and give the gear to a model radio technician to sort out. If you are flying off salt or brackish water and you dunk the model you must pull the cases off. Completely wash the salt water off under a tap or drop the lot into a bucket of fresh water and swish it about for a while. If you don't you will probably have to junk the radio. The engine is easy to sort out if you fill it with water. Take the glow plug out and spin it over with the starter. When all the water has sprayed out install the plug and run it for a few minutes. If the radio will not work you can still run the engine, just set the throttle servo above idle and start it up.

The main difference in flying a floatplane is a slightly different landing technique and more use of the throttle when taxiing. If you have fitted floats to an existing model the take off run is just a lot longer with a reduced angle of climb. The floats create a lot more drag so start with quarter throttle during the landing approach and see how you go. It is easier to get a smooth arrival if you fly on to the water at a shallow angle and then cut just before touchdown. If you over flare or bounce off, the air speed is too high so try a little slower next time. Landing like as you would on wheels with a conventional flare more often than not results in a flop

on to the water as the back of the floats hit first. You can even dig a float and have to go swimming.

If you have the water rudders as per my set up, taxiing is easy although you will find there are times the plane will just not go where you want it to. The wind is usually the cause although if on a river it can also be the current. As soon as the model is released it will start moving even at a dead slow idle. Apply a little bit of power to get it moving but not too fast. Every plane will have speed where it is easy to taxi and a good rule of thumb is if water is spraying into the prop its probably too fast. If you have full rudder and it will not turn persist with rudder and try one of two things. Pull in full up elevator and if that doesn't work try full down. I cannot explain why this helps but it does and up is usually good for one way and down for the other. If that doesn't help vary the speed a little. If taxiing downwind for take off a simple way of turning into wind is the move the rudder then cut to idle. The plane will start to turn and as it slows down will simply weathervane in to wind.

While on taxiing, if you intend flying a helicopter off the water let it drift away from the bank before you run it up. You have no directional control until you achieve some rotor rpm and until then the chopper will pirouette until the rotors become effective. I find it looks better if you take off from the land and then alight on the water.

What Went Wrong - What Went Right - How can we do better next time. WWW
A = Incident. B = Cause. C = How can we do better next time.

A: Model went into a spin, completely submerged and resurfaced intact. B: Water in radio. C: Sealed up push rod exits and replaced foam wing seating tape with silastic.

A: Fin fell off in hand when cleaning model after full day flying. B: Water dissolved the PVA Glue. C: Epoxy used in all water craft ever since.

A: Lost left hand water rudder and attempted take off. B: Model veered to right on rotation, dug in a float then I went for a swim. C: Installed water rudders on transom that were flush with bottom of float.

A: Engine stopped during taxi at Lake Eppallock with off shore breeze. B: Swam for model but was getting too far from shore, waited for guy with boat and boat hook. C: Move throttle trim up for higher idle position and took a surf board.

A: Dug a float in at Lake Eildon stopping engine and swam for model in really cold water and got a leg cramp. B: forgot about high speed idle trim and did not have surfboard. C: 40 size model on floats has

enough buoyancy to support a man.

A: Dunked high wing trainer in Lake Eildon attempting to fly from boat that was bouncing up and down severely. B: Pilot error. C: Found driver who could correctly operate power trim on outboard motor.

A: Dunked FAI pylon racer on floats attempting knife edge flight passing motor launch in middle of Gippsland lakes. B: Pilot Error. C: Things sure look different when flying from a moving vessel.

A: Flying the Ugly Stick in severe chop. B: Wing lifted on rubber bands and water went into aileron servo. C: Use more rubber bands in rough water.

A: Tor one float off Dragon Lady attempting high speed circle on water. B: Too much down elevator causing nose to dig in attempting to lift rear of floats out of water for tighter turn. C: Only try this with a flying boat or a NorthStar.

A: Ripped the tip float off Seamaster Flying Boat attempting high speed circle on water. C: Only try this with a Northstar.

A: Hit the bank at high speed while attempting high speed figure 8 on water with Northstar. B: Speed too high for size of lake. C: Get own Northstar.

A: Nearly crashed after take off as twin engine Islander became pitch unstable. B: ARF floats filled up with water which flowed to rear when nose was raised. C: Do a better job of checking for leaks.

A: Completely submerged and ruined high wing trainer and spent the rest of the day watching others fly. B: Got through flight okay and after landing attempted to taxi back. C: You should only fly in 40 knot winds with a low wing floatplane or a flying boat or a Northstar.

A: Test flew a .40 size Bellanca Decathlon with improper float set up without water rudders. B: Re-rigged floats as best we could on the day to the correct set up. C: Even with a better set up this would have to be the worst plane I have ever flown. If you can enjoy flying a Bellanca Decathlon on floats you are a better man than I am Gungadin!

A: Cannot get plane to lift off when water is like glass. B: Too much suction on bottom of floats. C: Taxi up, down and around a bit to make some ripples. This will help you unstick.

This is the big one.

A: Crashed the model. B: No control due to water in switch. C: Cover switch knob with Plasticine or reinstall with internal remote switch mount ●

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