

# *Straighten up and fly right*

Taking off is a very straight forward manoeuvre to learn. Continuing the theme of a .40 powered trainer with four channels and trike gear if you just hold a bit of up elevator and apply full power the model will get airborne very quickly. It is that simple, provided of course, you don't try and haul the aeroplane into a steep climb before it is ready or whack the rudder from side to side in an effort to stay straight.

There are pitfalls and some of them come from reading books on full sized flying techniques. Sayings such as "the runway behind is no longer of any use to you" is certainly true but not so important with model aeroplanes, particularly trainers. This is the system I have found works the best.

Taxi into position and stop the plane at a forty five degree angle from your self. Make a mental note about what rudder correction is needed if the plane veers towards you and apply that rudder a couple of times, to get some auto reaction going in the brain. Hold one quarter of up elevator, hit full throttle. Fifteen to twenty metres later the plane will be airborne. Most people can't believe how easy this is when shown how.

This system also has an inherent safety advantage, by the time the aeroplane established in the climb the chance of flying people in the pit area behind you is minimal. Another benefit is gained by holding up elevator, reduced traction and load on the nosewheel makes steering easier. The first thing to do is start from the same

*Start the take off  
roll at forty five  
degrees from  
where you stand.*

place each time. I do not believe there is any benefit to be gained from standing behind the model. As soon as the plane is airborne then you have to learn how to walk while flying at the same time.

As long as the aeroplane is generally heading along the intended path down the runway, the attitude at rotation is far more important and that is hard to see standing in the middle of the runway. Standing on the side from the word go means you do not have to learn it again later plus it reduces the likelihood of some one landing on your head.

Taxi out and turn into wind, stopping on the centreline when the plane is at a 45 degree angle to your position. Most model strips would have the centreline about five to ten metres out from the pilot area. Unless the grass is really long, the wheels are binding or you haven't applied full power believe me it will be ready to fly after fifteen metres, twenty tops.

Once you learn what a manoeuvre should look like then you can begin to realise when something is wrong. You will soon become confident that each time you take off the plane is ready to fly as it approaches the point right in front of you. Okay the plane is in position so the

next thing is to get it moving. Many people feel it is safer slowly advancing the throttle so they can get the feel of which way the rudder goes before it gets too fast, a common mistake. If the model starts turning off line by the time the student has applied the rudder correction the aeroplane has rolled a fair way.

When satisfied all is well the take off continues but the throttle has not been advanced fully open. I have seen that time and time again and taking off at half power requires a lot more skill. Just hitting the power means one less thing to concentrate on so go to the next thing, keeping straight.

Another no no is to taxi right to the end of the runway then thunder along gaining as much speed as possible. This is certainly full sized practice but that is for concern with opening up the engine too quickly. The higher speed puts greater load on the nose wheel making it very sensitive and often it veers to one side under the strain. If the incorrect rudder is applied the risk of heading straight for the pilot is high.

If the aeroplane is airborne before it gets to you and a wrong correction for a gust followed by up elevator before levelling the wing the model will certainly fly straight over your head and usually behind you is the pits area. Not realising there is crosswind drift, blowing you that way is another possibility.

At full power the slipstream really adds to rudder power making it more effective than the nose wheel so if the model starts to veer one way, just give it a quick dab, do not hold it until you see the model react, that is far too late. A blip of rudder, on and off quickly does the trick. Okay the plane is accelerating and going relatively straight so what is next.

Is it ready to fly? There is no air speed indicator so how do you know and



*Most trainers and  
sport aeroplanes  
will be ready to fly  
just as they pass in  
front of you, even on  
grass.*

the simple answer is to use the elevator. Just pull in some up, about a quarter, hold it and wait for the aeroplane to tell you. How does it tell me you ask? An experienced pilot will be able to see the nose wheel rise out of the grass slightly and the rest will soon follow. A beginner, concentrating hard will miss that vital piece of information but that doesn't matter. The plane won't fly until there is enough lift and when there is, it will lift off. Not ready to fly means it will just come back down of course. The important thing here is to keep holding the up elevator, it will land and continue along as normal until ready. Don't even think about worrying about a stall. We are talking about a trainer here, an aeroplane designed to cope and the only way it is going to stall is if a lot of up elevator is applied. If the up is reduced the nose will drop and the plane will plp back on, stopping the engine and probably breaking the prop.

What if it hits a bump and leaps into the air and I am holding up elevator? If there is enough lift it will fly and the bump has just helped it get airborne prematurely. Hold the elevator and the model will fly approximately level with the ground and as it accelerates it will climb. Another common misconception is the sooner the model gets height the safer it will be. Sure altitude can mean safety but as long as the plane is not coming down it is not going to hit the ground. Once it has started climbing gently then ease off the up, don't try for a

*It doesn't matter if it is electric or glow powered, even a glider, the model already is already five feet up. A flat throw allows the aeroplane accelerate to flying speed quickly. This is safer and more reliable than the conventional wisdom of throwing it up at an angle to gain altitude.*



steep climb. One of the hardest manoeuvres you will ever do is a steep climb from take off at low airspeed. Leave that for the hotshots or until you become one.

It's airborne, climbing away and the object is to get to about 100 feet up before turning. Try and stay along the centreline and if it starts drifting off line bump, the aileron slightly to lower the intended wing with the horizon. The idea is to only do gentle turns near the ground and this gives you more time to stop at the right time. The same technique for landing as outlined in the previous article. At 100 feet initiate a gentle climbing turn, twenty degrees is good but no more than thirty degrees. More than twenty you may have to ease in a touch of up to keep it climbing and by the time

the model has come around on a reciprocal heading downwind it should be 150 - 200 feet up.

Crosswind will make the model weathercock so you will be rolling down the runway holding some rudder. This is something that will always happen because there is always some wind and as the nose wheel loses traction during the lift off the aeroplane will immediately start turning more. Crosswind from the right means left rudder and vice versa. As stated earlier as long as the model is heading roughly in the desired direction my suggestion is to let the rudder off just before lift off. Technically incorrect but safer, if there is a sudden turn followed by an application of elevator the model can overfly the pits. Once they have a few take offs under their belt most students are capable of splitting the controls and holding the same amount of opposite aileron and easing that off with the rudder when airborne. Provided they practice that manoeuvre a few times of course.

Flying off long grass, wet grass or rough ground the best technique is holding full up elevator before opening the throttle. The slipstream over the elevator will immediately raise the nose and continue to do so as the speed builds up. Holding full up the aeroplane is likely to be quite slow and close to the stall angle if a bump launches the plane.

It will still let you know if it is ready to fly but to be safe, reduce the elevator



*This scene is typical during a Melbourne Winter. Mid week flying often means the grass has not been cut and the aeroplane needs additional persuasion to lift into the air. Holding full up elevator when hitting the throttle will lift the nose wheel and prop out of the long grass.*

**Do you go to the newsagent to find RCM News is sold out?  
Why not get it delivered to your door in a waterproof plastic wrapper.  
At \$35 for six issues you also save money.  
We need: Name, address and payment by: Cheque, Money Order, Visa,  
Mastercard or Bankcard.**

slightly perhaps to three quarter and the plane should either fly or settle back on. As a rule of thumb if it is going fast enough to actually bounce into the air it should be fast enough to fly. Anything less you probably would not notice the bump.

**HAND LAUNCHING.**

There are two parts to this technique, the mechanics of the actual launch followed immediately by flying the aeroplane away. If the launch is good the flying is easy and in many ways a hand launch is like hitting a bump and getting airborne prematurely. There is a slight difference in that the aeroplane will already have some altitude, depending on how tall you are. Depending on how hard it has been thrown or how much wind the model will have some airspeed. If the aeroplane has been launched and hitting the ground at a steep angle is not imminent, leave it alone and it will accelerate quickly and climb away. If it is descending slightly, ease in a small amount of up elevator perhaps one quarter stick maximum and the same should happen. If it is heading down at a steep angle, the launch was lousy so the best advice I can offer is to pull about one half up elevator and wait.

If more is applied the risk of exceeding the stalling angle increases dramatically. Even if the wheels contact the ground, with half up elevator there is still a good chance the plane will bounce and fly away.

The usual mistake with hand launching is releasing the model with a nose high attitude. People think by pointing it up away from the ground it will be safer but the risk of crashing is directly proportional to how high the nose is on launch. More important than speed is to throw nose level. The plane will gain speed very quickly but it won't if it is going uphill. Some people prefer to run and throw but often they run twenty metres, stop then throw. I think it is better to stand and concentrate on getting a good straight throw. Small low powered electric models like the Aerobird or Electrafun or an seven cell glider are easy because they have light wing loadings. You can basically toss them and they will fly away provided the elevator is left alone. More of a heave is needed for higher wing loadings such as small seven cell power models or gliders. This type can be lightly constructed so you need to find a place that can be squeezed when you grip it. I usually have part of

my hand pushing against the undercarriage if it has one. Try and hold the aeroplane either on or in front of the C of G, more skill is needed holding it behind this point.

A heavier model such as .40 powered trainer are quite easy to launch. Although the model weighs up to 3.5 kilograms they accelerate rapidly. I can throw them by holding the left wing and the tip of the fin and with a little push it into the air, they will fly away. Better to try the standard technique first.

On the take off run if you find yourself moving the controls wildly to keep under control, kill the engine and start again. Remember the golden rule of flying an aeroplane, more control after the event usually makes things worse, not better.

The worst thing you can do is too come off the ground holding lots of up with rudder or aileron. If the plane is very low it could stall then snap or worse, turn into towards you. Once you get comfortable taking off you will begin to notice that easing in a little bit of right rudder just as the nose wheel lifts off will keep the aeroplane on a straight line.

Stephen Green •



**Electro Dynamics EDR-111 Pow'r Bus Pro \$129**



Perfect for use in any model with lots of servos. The unit optically isolates the power for the servos from the power supply for the receiver. Suits Giant Scale, Jets and Helicopters.

**Parkzone F-27 Stryker \$269**

950mm span, full EPP, Speed 480 powered 7 cell RTF model includes radio, battery and 12V Peak Charger.



**ZDZ Engines**

ZDZ 40RV	\$899
ZDZ 50 NG	\$999
ZDZ 60RV	\$1039
ZDZ 80RV	\$1150
ZDZ 100NG	\$1895

**NEW LiPO Batteries**

KOKAM 2S1250mAh LiPo (15C)	\$74.50
KOKAM 3S1250mAh LiPo (15C)	\$99.95

**Parkzone Slo-V \$239**



This is a go anywhere Charge and Fly park flyer with a gear reduced Speed 400 motor, included RC, battery and 12V Peak Charger. Indoors or out, this model can maneuver in small areas.

**Twister CP micro helicopter with CCPM Collective Pitch**

The next step in micro helis. Collective pitch at an affordable price.

**Helicopter only (no electrics or RC) \$199**



**Twister CP package with JR Max 66 Tx, JR R610M Rx, 3 x Saturn S54 servos, GWS PHA-01 gyro/mixer, 11.1V 720mAh KOKAM LiPo, charger. \$649**

42 Maple Ave. Keswick. SA 5035. Phone: 08 8293 3674. Fax: 088 371 0659 email: info@modelflight.com.au