Introduction

One of the greatest aids in learning to fly has been the wide spread use of simulators both as a tool for learning, and as a bit of fun when you need to relax. I see simulators very much in the former role as it significantly cuts down the time an instructor needs to spend with a beginner if they have done the groundwork before trying to fly for real. Beginners only need to focus on the basics namely taking off, flying a basic rectangular circuit, then landing ON THE RUNWAY and not in the field next door as this will focus your attention.

You need to have a separate model on the tranny for each model you fly on the simulator i.e. the Tutor 40, the IMAC model, The freestyle model and the F3a model are 4 different setups on the tranny.

Circuit using Phoenix: https://youtu.be/wCVLQG9FfmM

Circuit using Real Flight Basic: https://youtu.be/pWByFDJdNWQ

Circuit using Real Flight 5.5: https://youtu.be/TStZxvKCi8s

Cross-wind Landing Exercise: https://drive.google.com/open?id=1yTdcsrRSzd2cAW2jVMi_bcaGQnEiwZwt

Video: https://youtu.be/AO_4kf0CqJA

The schedules for Bronze, Bronze Plus, Silver, F3a, IMAC,etc can be found here:

https://www.youtube.com/channel/UCmGq9GmJ1zg_8RicUCmC8fw

If you want to practice your schedules using the West Calder scenery file then here is the link:

https://drive.google.com/open?id=185mYY460ldTybTDB6oR1OCo0c6fMSf6v

Download it, launch Phoenix and go to "Advanced / Install an Update" and select the file you just downloaded.

When you re-start Phoenix the West Calder site will appear in your list of airfields.

Simulator Set-up

It is important the controls reflect reality. All movements are looking from behind the model:-
Left Lever - pushing away from your body increases the throttle
Left Lever - pulling towards from your body decreases the throttle
Left Lever - pushing left moves the rudder to the left
Left Lever - pushing right moves the rudder to the right
Right Lever – pushing away from your body moves the elevator down
Right Lever - pulling towards from your body moves the elevator up
Right Lever - moving to the right moves the right hand aileron up and the left hand one down
Right Lever - moving to the left moves the left hand aileron up and the right hand one down

Essential Modifications:
There are a number of in-built constraints which hamper the model's performance. For beginners the biggest issue is the lack of elevator throw to assist with landing so here is a video showing the "before and after" of changing the elevator throw on the Tutor 40:
https://youtu.be/wCVLQG9FfmM

And here is how to change it:
https://youtu.be/ePGwg2Cv_7M

At the advanced level there are further changes. For the PA Addiction I changed the thrust, throws, servo speed and expo. You can also play with changing the motor, throttle curve and weight if you are not getting the correct response from the model. I also changed the max RPM to 15,000:

https://youtu.be/6Y9tvYjaDlw

For an F3a aerobatic model (e.g. the Integral) you need to increase all the throws to at least 45 degrees to get it to snap. I also set a 125% Rudder to Rudder mix, activated when the throttle goes below 5% to help with the stall turns.
I have a Rudder to Elevator mix set at +/-70% to help with knife edges but that could change depending on your radio.
I don't have a throttle curve set of this one as it is not an electric model.
All 4 snaps are set in the transmitter (JR) but that depends on which one you have.
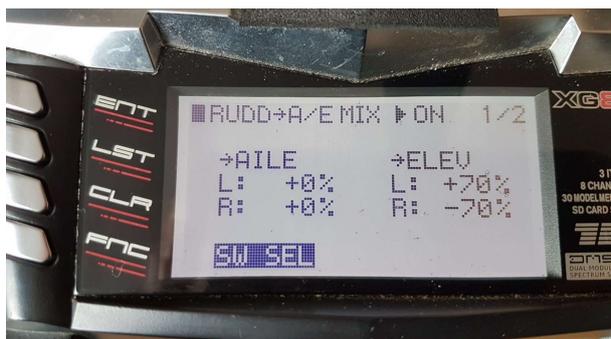
Aileron

Input	Left Aileron
Length	0.78 m
Tip distance	0.0 m
Root chord	0.1 m
Tip chord	0.075 m
Min travel	45.0 °
Max travel	45.0 °

Elevator

Input	Left Elevator
Length	0.5 m
Tip distance	0.0 m
Root chord	0.1 m
Tip chord	0.073333 m
Min travel	45.0 °
Max travel	45.0 °

Rudder

Input	Rudder
Length	0.67 m
Tip distance	0.0 m
Root chord	0.16 m
Tip chord	0.11 m
Min travel	45.0 °
Max travel	45.0 °

For the Yak 54 I reduced the expo from 50/30 to zero / zero and increased the servo speed from 35ms to 5ms

Aileron

Low-rate	50.0 %
Expo	30.0 %
Expo (low-rate)	0.0 %
Adv. Expo	0.0 %
Adv. Expo (low-rate)	0.0 %
Servo speed	25.0 ms
Servo dead-zone	0.0 %
Trim	0.0 %

Aileron

Low-rate	0.0 %
Expo	0.0 %
Expo (low-rate)	0.0 %
Adv. Expo	0.0 %
Adv. Expo (low-rate)	0.0 %
Servo speed	5.0 ms

Phoenix is no longer sold but there is a good Facebook page here:
Https://www.facebook.com/groups/rcsimulation

Updates and models can be found here:
https://www.rc-thoughts.com/phoenix-sim/?fbclid=IwAR3ttiq4W1osIdec8SDa0I7vzH2SFMjsNwoKHi3VCAFX8F7VZRZqQOm4GF4

If you are a RealFlight user then I can offer you this scenery file for West Calder:
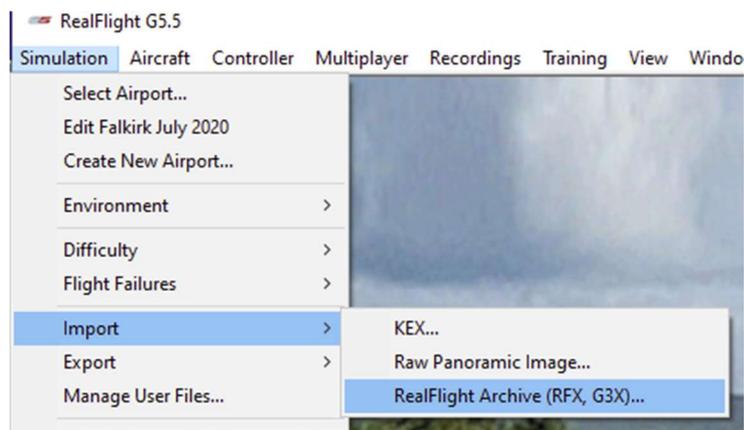https://drive.google.com/file/d/1Qv8xTt1_UgwKFKJxiw3oy6CmUDOFDkEi/view?usp=sharing

YouTube: https://youtu.be/TStZxvKCi8s

If you want the Falkirk scenery file then this is the best I have at the moment.
https://drive.google.com/file/d/1uysPMuXJVBu_JRa3KayfYU0bPUwLfwyI/view?usp=sharing

YouTube: https://youtu.be/--HP0Onzo3E

Download then use the import function:

Reflex:

I don't own Reflex so I cannot do you a scenery file, but if you are West Calder or Falkirk member I can assist you in generating one. Reflex is available on a 1 month free trial from here if you want to try it:

Tom's video: https://youtu.be/3Ngkby_2E8s though I'm sure there will be plenty of others on YT.

Web Site: https://www.reflex-sim.net/

Pica Sim:

http://www.rowlhouse.co.uk/PicaSim/

This is an excellent free sim and will work with most USB controllers. I have not created a scenery file but happy to assist if you want to try it.

Tom's Video: https://youtu.be/ZsCzcZ5_BE4

Web site: https://www.tapatalk.com/groups/picasim/

Facebook: https://www.facebook.com/PicaSim

Rev	Date	Details
1	21/1/2020	New Doc, 1st release
2	10/2/2021	Major re-write