

BUILD YOUR OWN AIRCRAFT IN XPLANE 11- PLANEMAKER

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THIS DOCUMENT IS IN “BETA” – PLEASE FEEL FREE TO SUGGEST IMPROVEMENTS

BUILD YOUR FIRST AIRCRAFT IN PLANEMAKER

SIMPLY FOLLOW THE INFORMATION ON THE IMAGES TO REPRODUCE THE DEFAULT CESSNA 172 IN XPLANE. THE INTERFACE IS SLIGHTLY “UNWELCOMING” AT FIRST BUT YOU WILL GET THE HANG OF IT. FOLLOWING THIS EXAMPLE YOU SHOULD BE ABLE TO GRASP ALL THE CONCEPTS YOU NEED TO DESIGN A COMPLETELY NEW AIRCRAFT FROM SCRATCH.

REMEMBER TO SAVE OFTEN ..



PLEASE DO NOT EDIT ANY DEFAULT AIRCRAFT: LETS MAKE ONE YOU CAN HAVE FUN WITH

You might need to ZOOM IN on this document to see some of the details

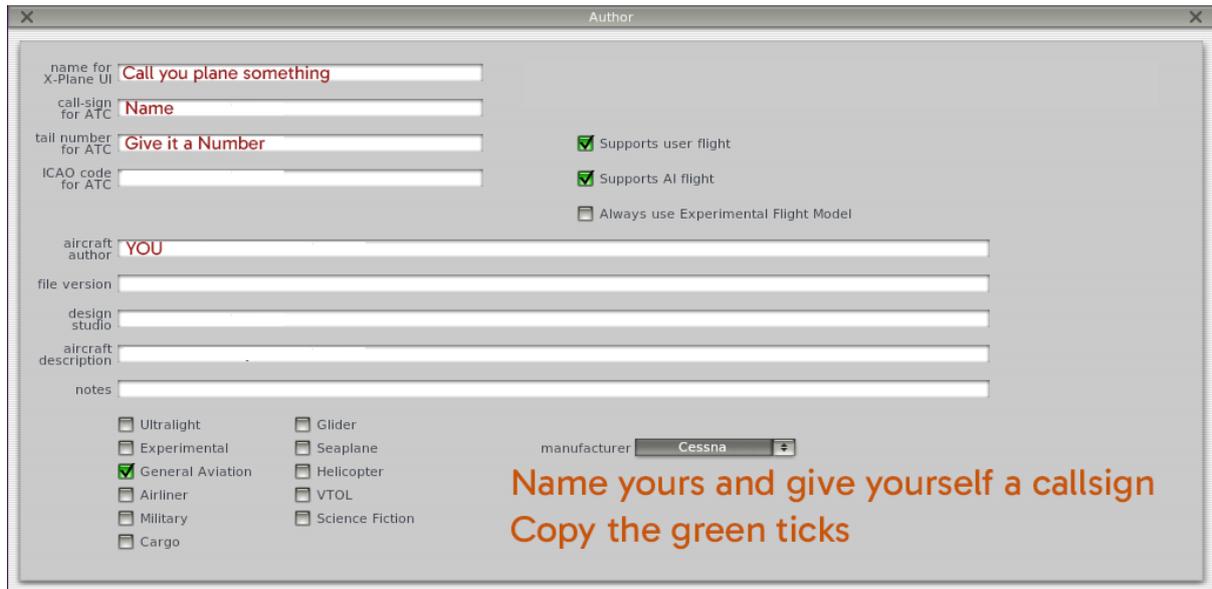
CTRL and ROLL your middle mouse button to ZOOM IN.

Planemaker can be found in the XPlane default folder. On Uni PC's that is on the C: Drive

Open Planemaker **IMPORTANT -- START A NEW PROJECT – FILE/NEW** and **SAVE AS --**

in **A NEW FOLDER** in the **EXTRA AIRCRAFT** folder ie: C:\X-Plane 11\Aircraft\Extra Aircraft\
YOURFOLDER (call it something unique to you)

OPEN THE AUTHOR TAB RENAME YOUR PLANE



The screenshot shows the 'Author' window in X-Plane. It contains several input fields and checkboxes. The 'name for X-Plane UI' field is filled with 'Call you plane something'. The 'call-sign for ATC' field is filled with 'Name'. The 'tail number for ATC' field is filled with 'Give it a Number'. The 'ICAO code for ATC' field is empty. The 'aircraft author' field is filled with 'YOU'. The 'file version', 'design studio', 'aircraft description', and 'notes' fields are empty. There are three checkboxes on the right: 'Supports user flight' (checked), 'Supports AI flight' (checked), and 'Always use Experimental Flight Model' (unchecked). At the bottom left, there are checkboxes for aircraft categories: 'Ultralight', 'Experimental', 'General Aviation' (checked), 'Airliner', 'Military', 'Cargo', 'Glider', 'Seaplane', 'Helicopter', 'VTOL', and 'Science Fiction'. The 'manufacturer' dropdown menu is set to 'Cessna'. A large orange text overlay reads: 'Name yours and give yourself a callsign Copy the green ticks'.

Your plane will ONLY be saved in that folder on that PC. If you want to keep it for another machine you will have to copy it across – SIMPLY COPY AND PASTE YOUR FOLDER

THERE ARE LIMITED UNDO FUNCTIONS SO SAVE OFTEN IF YOU MESS UP REOPEN THE MODEL WITHOUT SAVING

Press **SPACEBAR** to toggle between SOLID and WIREFRAME model use **WSAD** keys to rotate your model

DON'T BE put off by the complicated interface... you'll get used to it – CLICK THE STANDARD TAB to access the screens you see below you. This first bit is the hardest....

Build the **fuselage** first. Enter the numbers exactly as drag the nodes (dots) into place to copy the Cessna shape. A bit like moulding clay/carving wood USE THE COPY AND PASTE FUNCTION after getting a section right... SAVE IT then work on/reshape the next section. DONT press those silver L/R arrows. that ADDS a section. The numbers ABOVE the sections mark how the location of the fuselage segment. .take your TIME 😊 get one right, copy it, change it, rpt..

Click the numbers and type in the values - or use the grey up and down buttons...

ZOOM IN TO SAVE YOUR EYES

Do this section first

BODY LOCATION

aircraft has fuselage (might be no for flying wings)

number stations: 17 # number radii/side: 09 #

body radius: 0 0 2.8 0 (ft)

area rule ratio: 1.0 0 (supersonic drag fraction)

body coeff of drag: 0.15 0 (based on BODY FRONTAL AREA)

Possible Cd if this is a streamlined body: 0.051, based on wetted area, fineness ratio, and estimated cruise Reynolds number.

long arm: 0 0 0.0 0 (ft) heading offset: 0 0 0.0 0 (deg)

lat arm: 0 0 0.0 0 (ft) pitch offset: 0 0 0.0 0 (deg)

vert arm: 0 0 0.0 0 (ft) roll offset: 0 0 0.0 0 (deg)

BODY TEXTURE

use second for this aircraft texture part

texture top: 0.0 2.1 (ratio, left side of part) 0.0 2.1 (ratio, right side of part)

left: 0.0 0.6 (ratio) right: 0.0 0.6 (ratio)

texture bot: 0.0 0.4 (ratio, left side of part) 0.0 0.4 (ratio, right side of part)

*** copy/paste rpt as you progress**

starts with some minus numbers

CROSS-SECTIONS (Double-click on a node to 'LOCK' it, preventing smoothing operations from moving that node)

-0.03480 -0.03346 -0.02704 -0.01809 -0.00392 0.00230 0.01150 0.02399 0.04816 0.07068 0.08337 0.09140 0.13340 0.15350 0.17390 0.19750 0.19730

START BY CLICKING + HERE

DRAG NODES INTO POS

WHEN 2ND SECTION IS CORRECT

RPT...

THEN CLICK ELLIPSE

COPY PASTE

RESET EDITING OFFSETS (arrows and +/- to change)

part description: FUSEL

TOP

You can "tune" your shapes here

SIDE

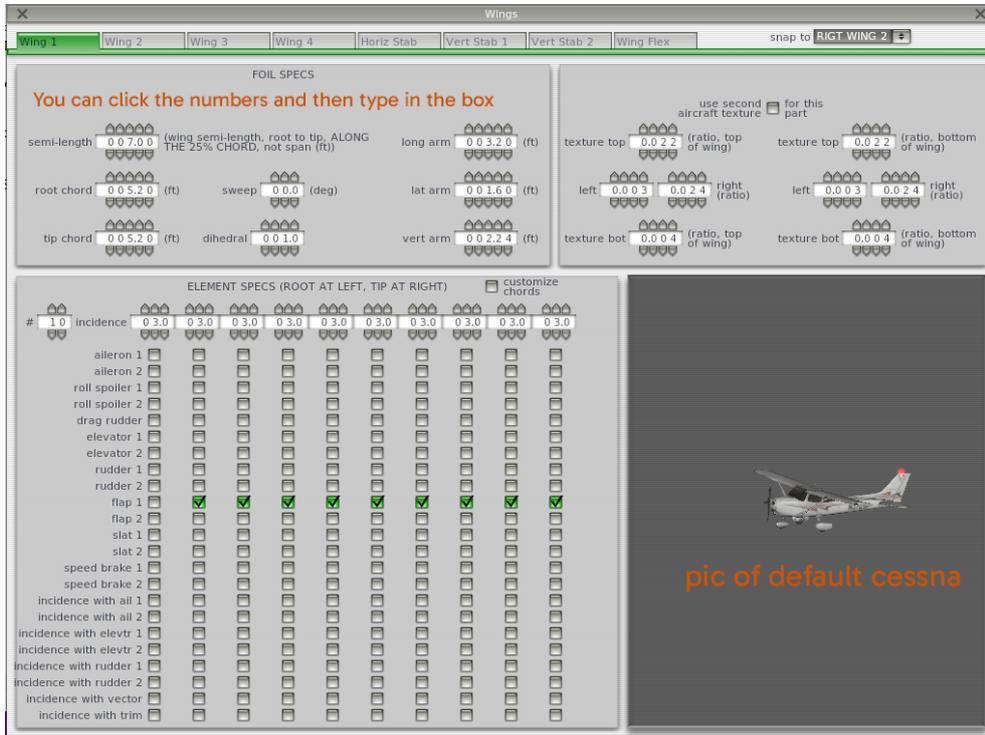
BOTTOM

FRONT

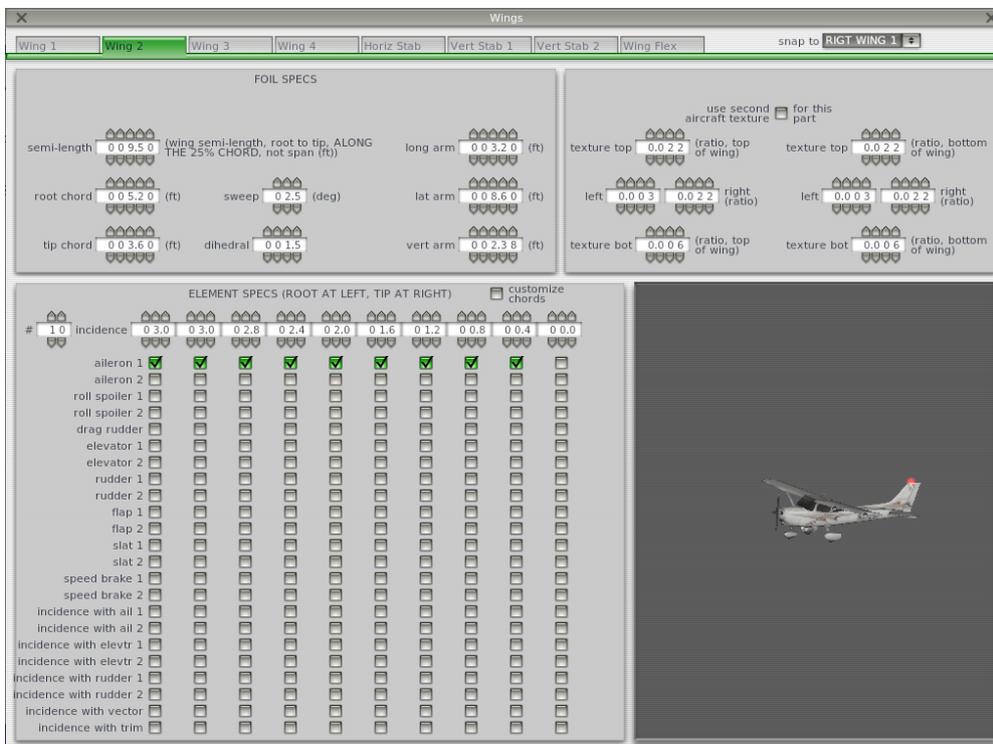
BACK

WINGS

This first wing section is where the FLAPS are situated – green ticks

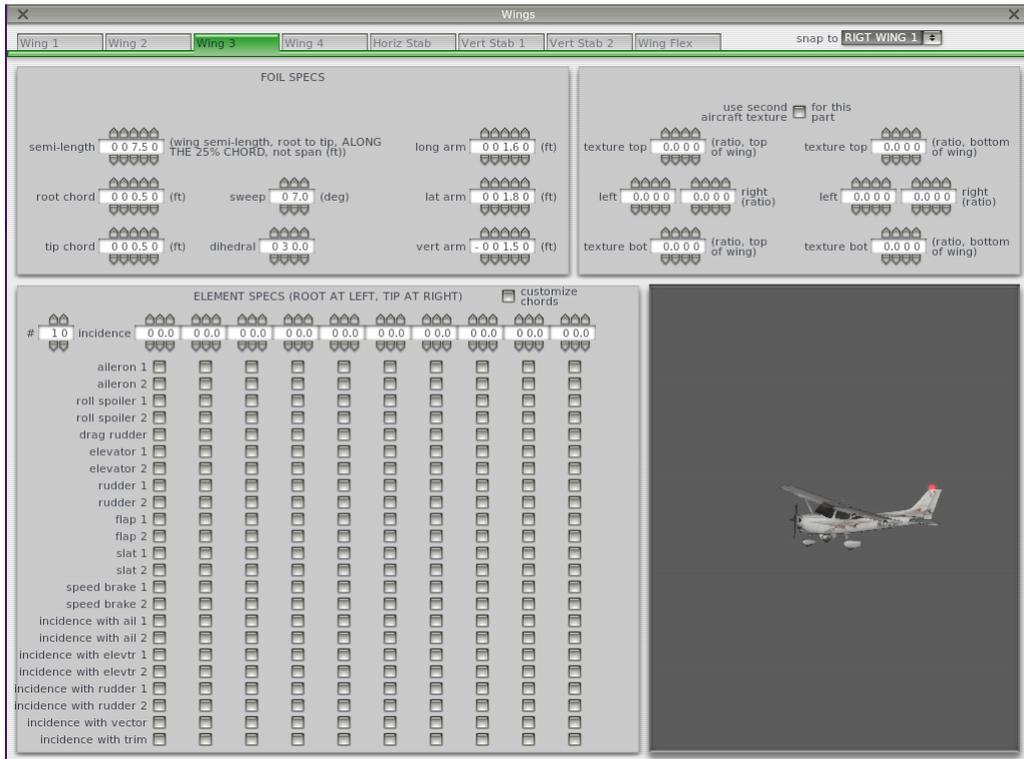


The second is where the ailerons are

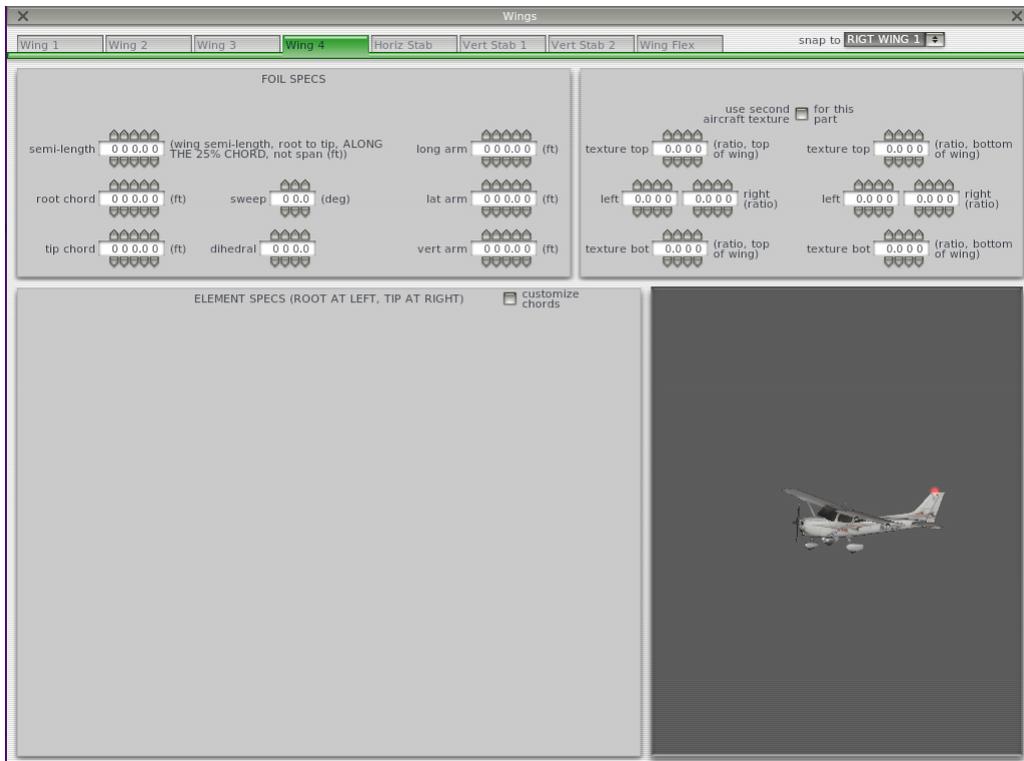


Wing 3 is the STRUT under the wings – they join on to Fuselage

WING 3



There is no wing 4..



HORIZONTAL STAB.

Wings

Wing 1 | Wing 2 | Wing 3 | Wing 4 | **Horiz Stab** | Vert Stab 1 | Vert Stab 2 | Wing Flex | snap to **RIGT WING 1**

FOIL SPECS

semi-length: 0 0 5.3 0 (wing semi-length, root to tip, ALONG THE 25% CHORD, not span (ft)) | long arm: 0 1 7.6 0 (ft)

root chord: 0 0 4.5 0 (ft) | sweep: 0 5.0 (deg) | lat arm: 0 0 0.3 0 (ft)

tip chord: 0 0 2.8 0 (ft) | dihedral: 0 0 0.0 | vert arm: 0 0 0.2 0 (ft)

texture top: 0 0 2.4 (ratio, top of wing) | texture top: 0 0 2.4 (ratio, bottom of wing)

left: 0 0 0.3 | 0 0 2.5 (ratio) | right: 0 0 0.3 | 0 0 2.5 (ratio)

texture bot: 0 0 0.4 (ratio, top of wing) | texture bot: 0 0 0.4 (ratio, bottom of wing)

ELEMENT SPECS (ROOT AT LEFT, TIP AT RIGHT) customize chords

#	1 0	incidence	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
aileron 1	<input type="checkbox"/>												
aileron 2	<input type="checkbox"/>												
roll spoiler 1	<input type="checkbox"/>												
roll spoiler 2	<input type="checkbox"/>												
drag rudder	<input type="checkbox"/>												
elevator 1	<input checked="" type="checkbox"/>												
elevator 2	<input type="checkbox"/>												
rudder 1	<input type="checkbox"/>												
rudder 2	<input type="checkbox"/>												
flap 1	<input type="checkbox"/>												
flap 2	<input type="checkbox"/>												
slat 1	<input type="checkbox"/>												
slat 2	<input type="checkbox"/>												
speed brake 1	<input type="checkbox"/>												
speed brake 2	<input type="checkbox"/>												
incidence with ail 1	<input type="checkbox"/>												
incidence with ail 2	<input type="checkbox"/>												
incidence with elevtr 1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>										
incidence with elevtr 2	<input type="checkbox"/>												
incidence with rudder 1	<input type="checkbox"/>												
incidence with rudder 2	<input type="checkbox"/>												
incidence with vector	<input type="checkbox"/>												
incidence with trim	<input type="checkbox"/>												



Wings

Wing 1 | Wing 2 | Wing 3 | Wing 4 | **Horiz Stab** | **Vert Stab 1** | Vert Stab 2 | Wing Flex | snap to **RIGT WING 1**

FOIL SPECS

semi-length: 0 0 5.3 5 (wing semi-length, root to tip, ALONG THE 25% CHORD, not span (ft)) | long arm: 0 1 7.0 0 (ft)

root chord: 0 0 5.0 0 (ft) | sweep: 3 9.0 (deg) | lat arm: 0 0 0.0 0 (ft)

tip chord: 0 0 2.3 5 (ft) | dihedral: 0 9 0.0 (RIGHT wing) | vert arm: 0 0 0.3 0 (ft)

texture top: 0 0 2.2 (ratio, top of wing) | texture top: 0 0 2.2 (ratio, bottom of wing)

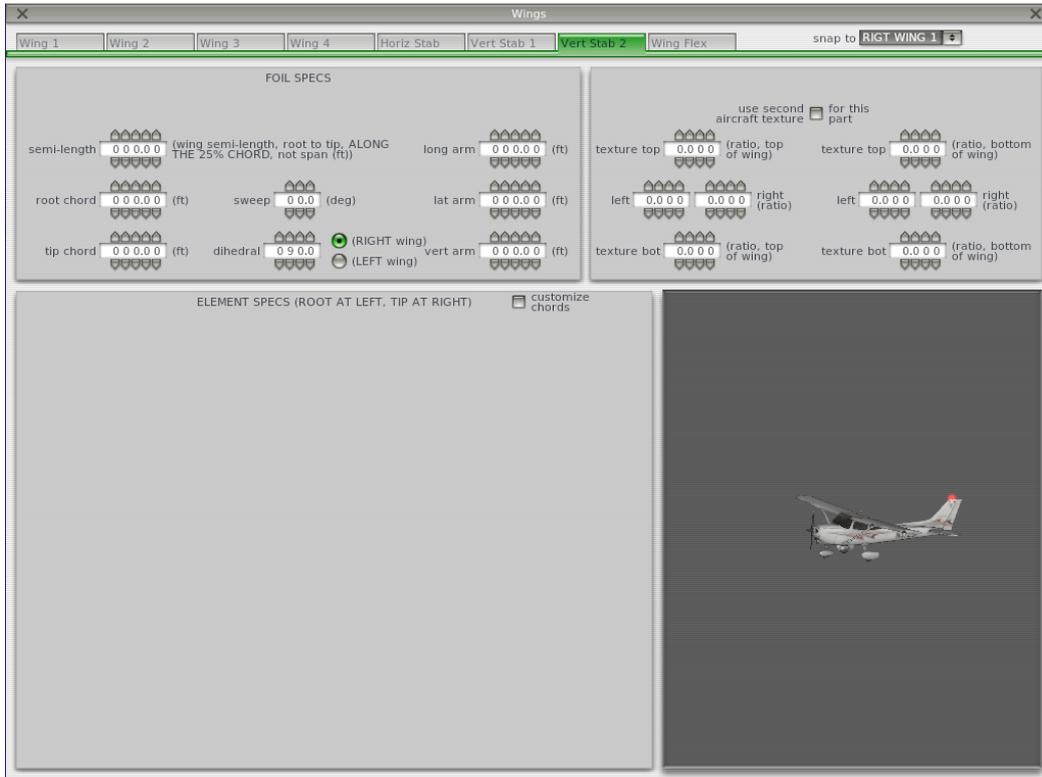
left: 0 0 0.6 | 0 0 2.4 (ratio) | right: 0 0 0.6 | 0 0 2.4 (ratio)

texture bot: 0 0 0.7 (ratio, top of wing) | texture bot: 0 0 0.7 (ratio, bottom of wing)

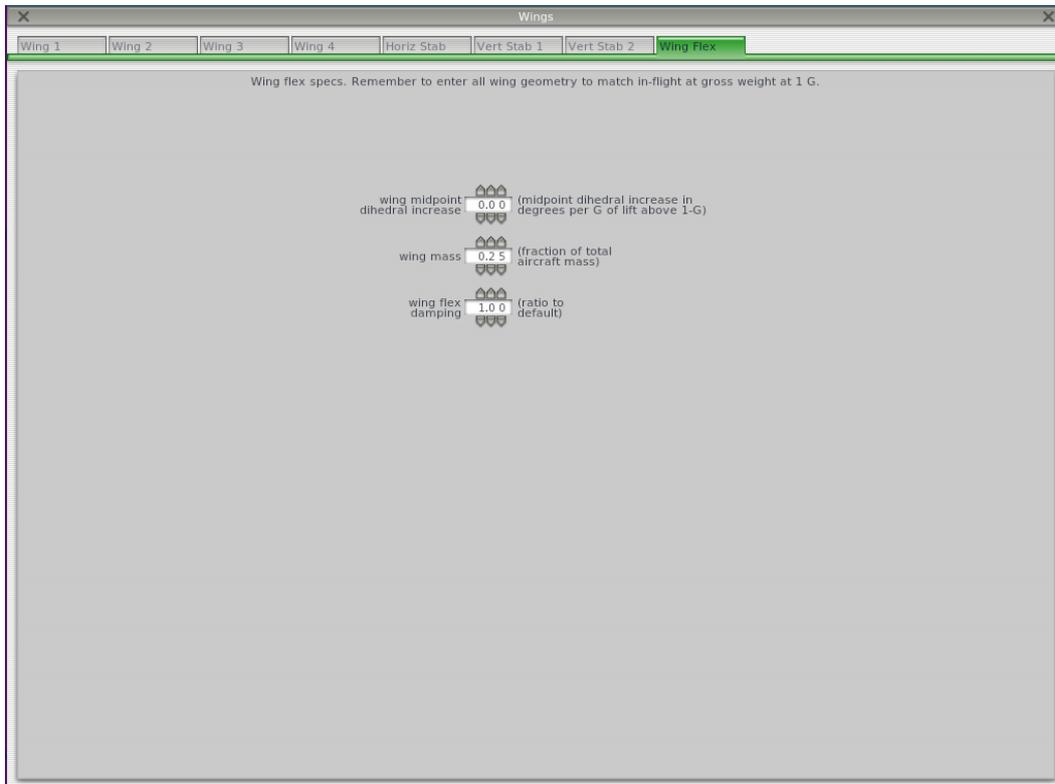
ELEMENT SPECS (ROOT AT LEFT, TIP AT RIGHT) customize chords

#	0 8	incidence	0 0.3	0 0.2	0 0.1	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
aileron 1	<input type="checkbox"/>												
aileron 2	<input type="checkbox"/>												
roll spoiler 1	<input type="checkbox"/>												
roll spoiler 2	<input type="checkbox"/>												
drag rudder	<input type="checkbox"/>												
elevator 1	<input type="checkbox"/>												
elevator 2	<input type="checkbox"/>												
rudder 1	<input checked="" type="checkbox"/>												
rudder 2	<input type="checkbox"/>												
flap 1	<input type="checkbox"/>												
flap 2	<input type="checkbox"/>												
slat 1	<input type="checkbox"/>												
slat 2	<input type="checkbox"/>												
speed brake 1	<input type="checkbox"/>												
speed brake 2	<input type="checkbox"/>												
incidence with ail 1	<input type="checkbox"/>												
incidence with ail 2	<input type="checkbox"/>												
incidence with elevtr 1	<input type="checkbox"/>												
incidence with elevtr 2	<input type="checkbox"/>												
incidence with rudder 1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>										
incidence with rudder 2	<input type="checkbox"/>												
incidence with vector	<input type="checkbox"/>												
incidence with trim	<input type="checkbox"/>												





Wing flex



Landing gear.

gear type:

long arm: (ft)

lat arm: (ft)

vert arm: (ft)

lon angle extended: (deg)

lat angle extended: (deg)

lon angle retracted: (deg)

lat angle retracted: (deg)

eagle-claw, leg length: (deg, ft)

tire radius, semi-width: (ft)

n-w steering, slow and fast: (deg)

retract axis, strut compress: (deg, ft)

cycle time: (sec)

brakes castors
 retracts faired

gear can retract on ground

start craft on water

nosewheel steering full deflection time: (sec)

left and right brake power to help with steering: (if no rudder pedals present)

tailwheel spring force: (lb, per degree offset)

castor limit: (deg)

additional gear flatplate area for retractable gear only: (square feet)

WHEEL AND TIRE GEOMETRY

wheel lateral separation: (for multi-wheel trucks, in tire widths)

wheel longitudinal separation: (for multi-wheel trucks, in tire radii)

WHEEL AND TIRE TEXTURE COORDINATES

texture top: (ratio, WHEEL)

texture top: (ratio, TIRE TREAD)

left: right (ratio, WHEEL)

left: right (ratio, TIRE TREAD)

texture bot: (ratio, WHEEL)

texture bot: (ratio, TIRE TREAD)

WATER RUDDER AND ANCHOR

long water rudder attach location: (ft)

long anchor attach location: (ft)

water rudder area: (square feet)

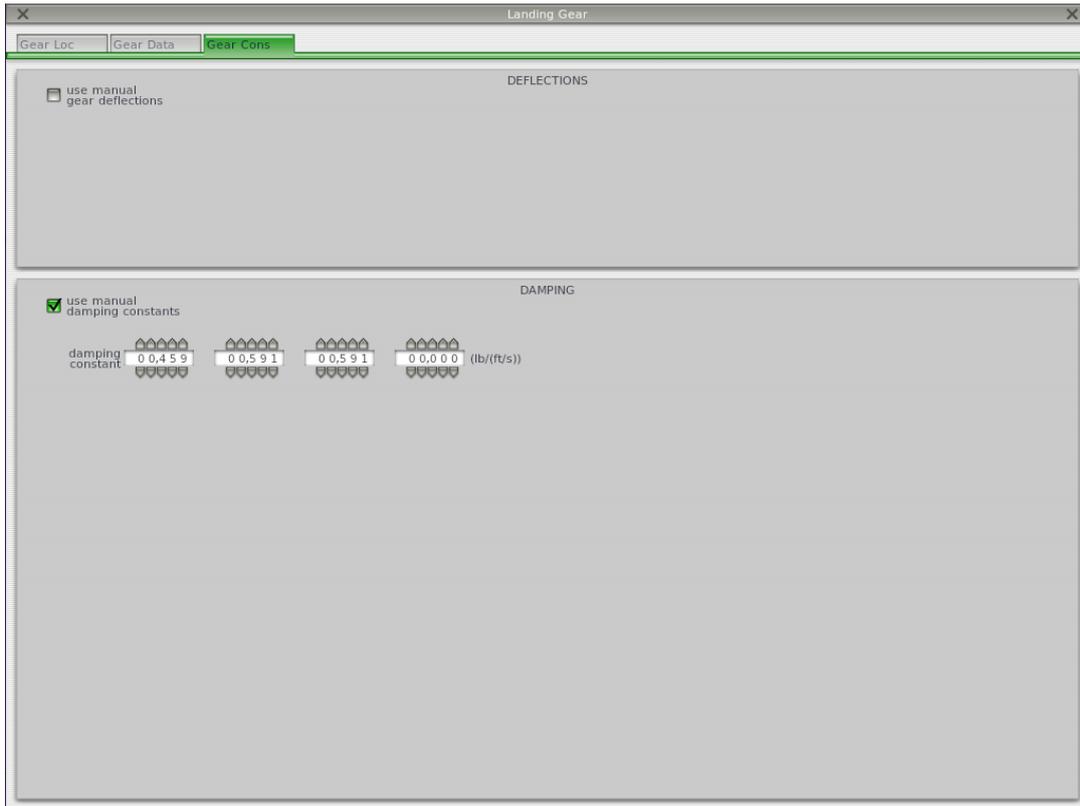
lat anchor attach location: (ft)

water rudder deflection: (deg)

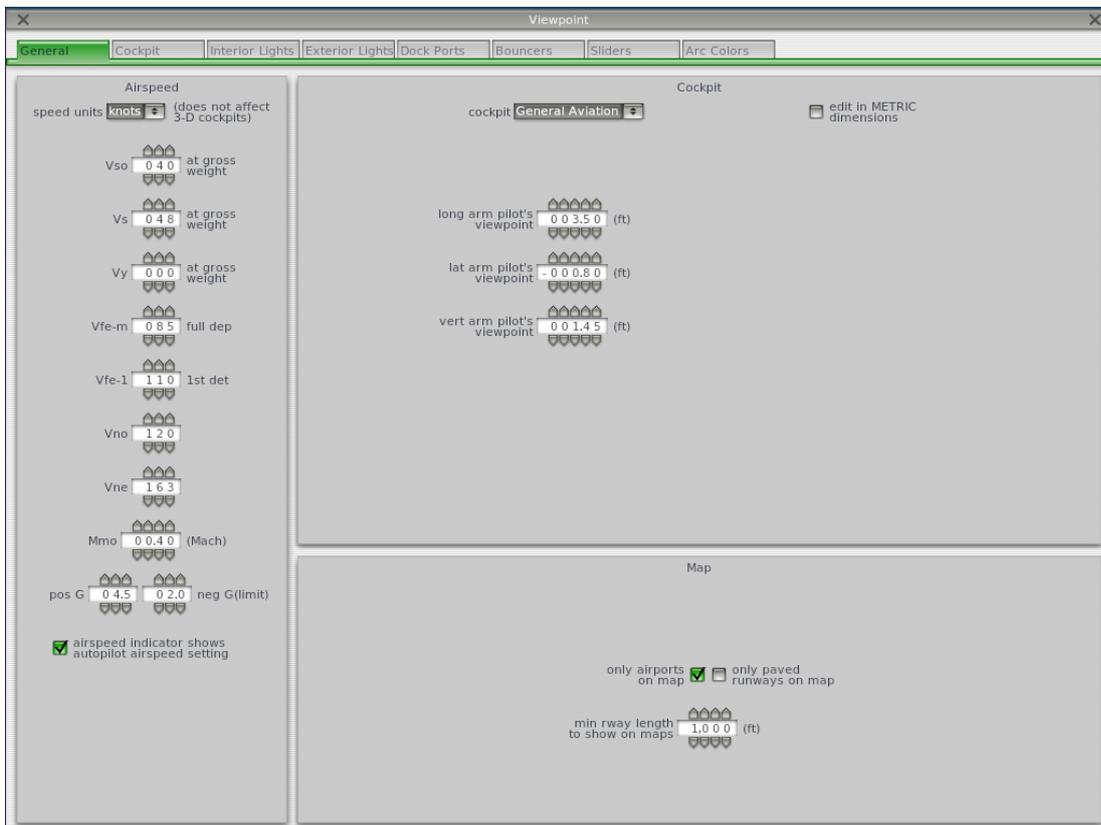
vert anchor attach location: (ft)

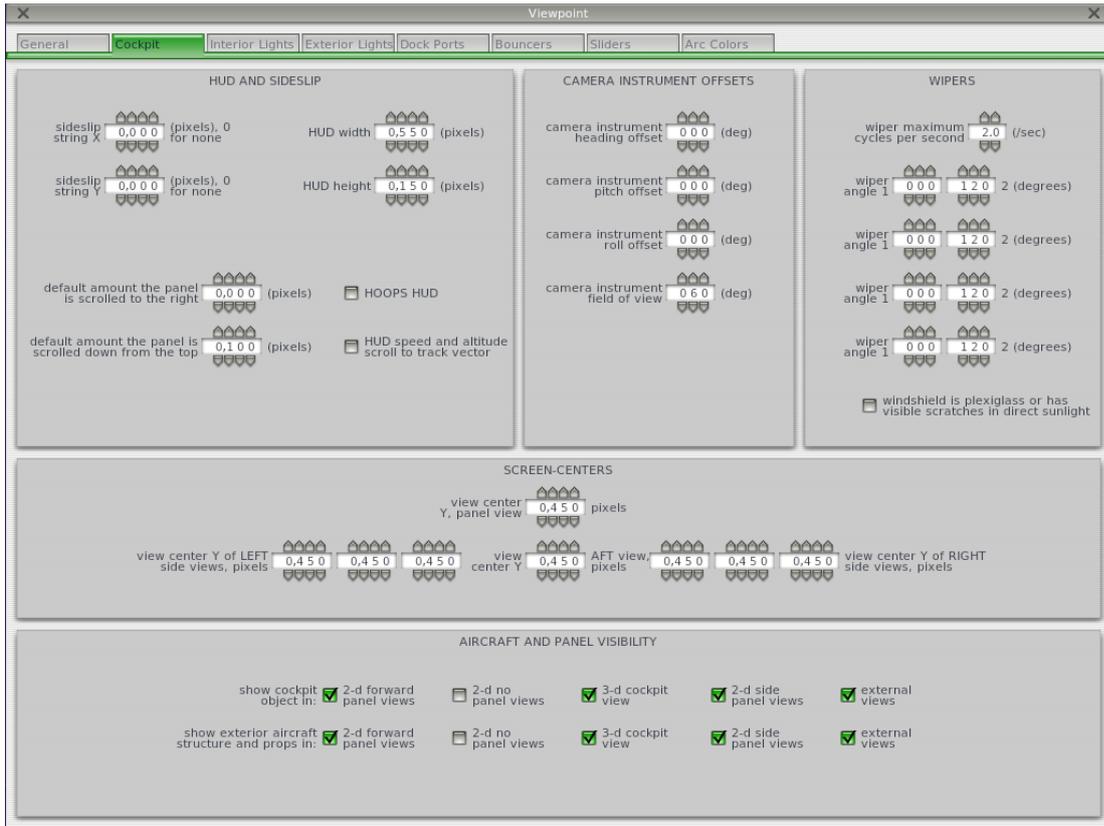
LANDING GEAR FRICTION COEFFICIENTS

rolling co friction: maximum co friction

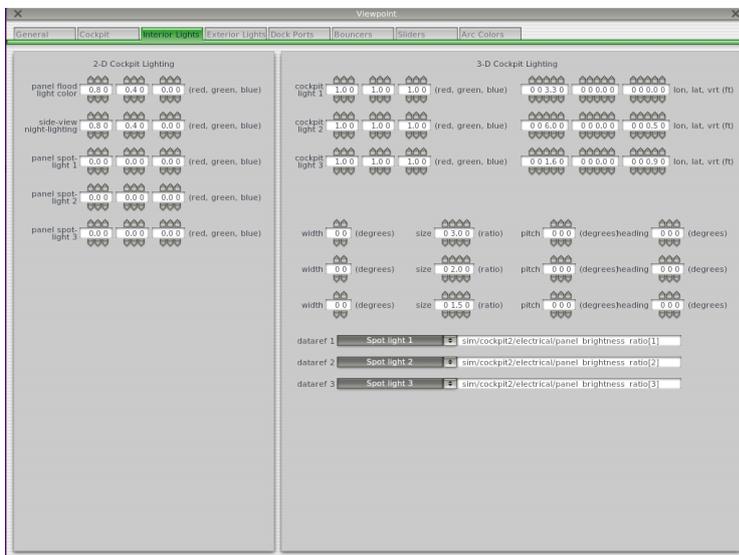


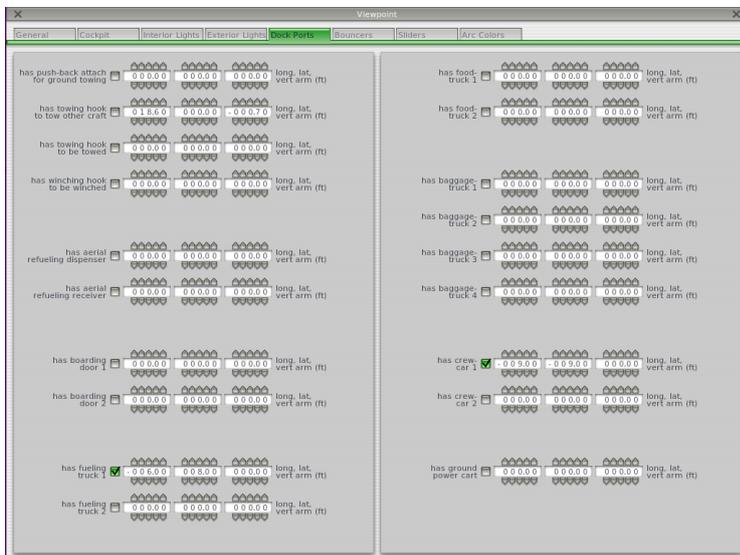
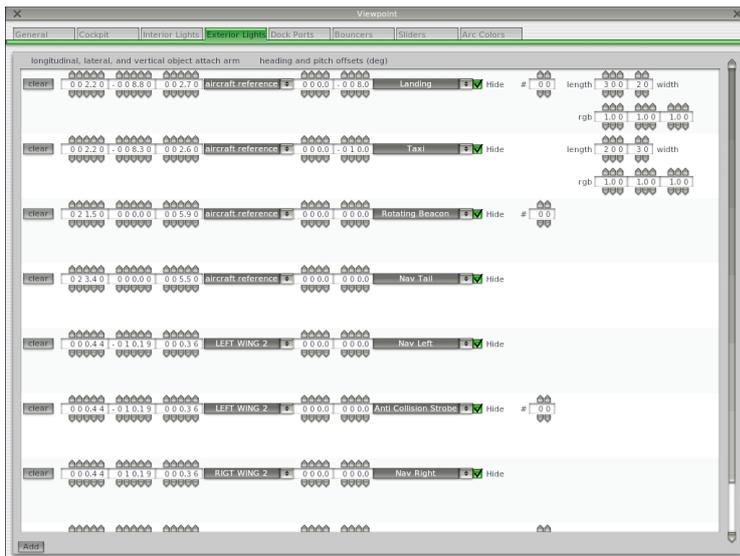
NOW THE VIEWPORT SECTION IN THE STANDARDS TAB



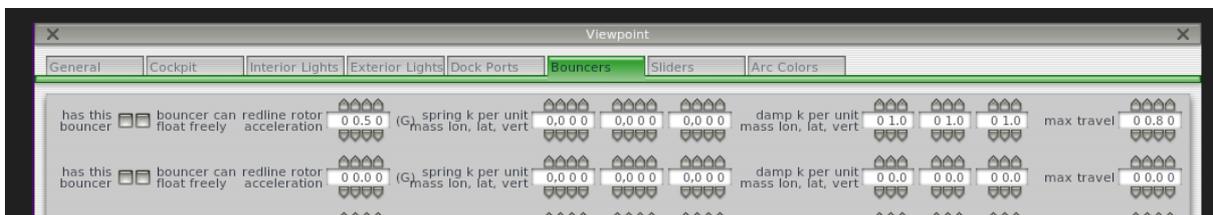


THESE NEXT THREE ARE NOT ESSENTIAL





Bouncers tab – just the top line



Sliders and ARC Colours can be ignored

ENGINE SPECS

Engines 1
Engines 2
Props 1
Props 2
Jets 1
Jets 2
Jets 3
Trans/Radiato
Start/Spoolup
SFC/Sound

GENERAL ENGINE SPECS

critical altitude (max altitude at which full power avail at zero speed)

FADEC automatically keeps engines from exceeding max allowable power or thrust

throttle available at max lever, one engine failed (throttle)

throttle available at max lever, all engines running (throttle)

hi idle fuel adjustment (fuel ratio)

lo idle fuel adjustment (fuel ratio)

go to low afterburner above this throttle

go to BETA PITCH below this throttle lever position beta available

go to REVERSE below this throttle lever position reverse available

throttle available at max reverse lever position (throttle)

auto-set RPM and throttle based on power lever

PROP ENGINE SPECS

maximum power (hp)

turbine and recip hp to exhaust to pounds of thrust (lb/hp)

redline (engine RPM)

top of green arc (engine RPM)

bottom of green arc (engine RPM)

minimum prop governor RPM (engine RPM)

idle (engine RPM)

tip weights on ROTORS, pounds, each

prop mass ratio to solid aluminum

RAM-inlet pressure recovery (fraction)

loss of oil press fails propeller

feathered pitch of prop, blue knob full aft (deg)

beta pitch of prop, throttle at idle (deg)

reverse pitch of prop, throttle full reverse (deg)

all engines: have throttle-governor for helos

FADEC limits RPM on all propeller engines

FADEC sets fuel-air ratio on recip engines

all propellers: feather when prop control at min

all propellers: feather when mixture control at min

all propellers: feather after engine failure

all engines: shut off fuel when prop control at min

JET ENGINE SPECS

maximum allowable thrust (lb)

compressor area (square feet)

fan RPM at 100% N1 (rpm)

afterburner thrust increase (lb)

reverser area (square feet)

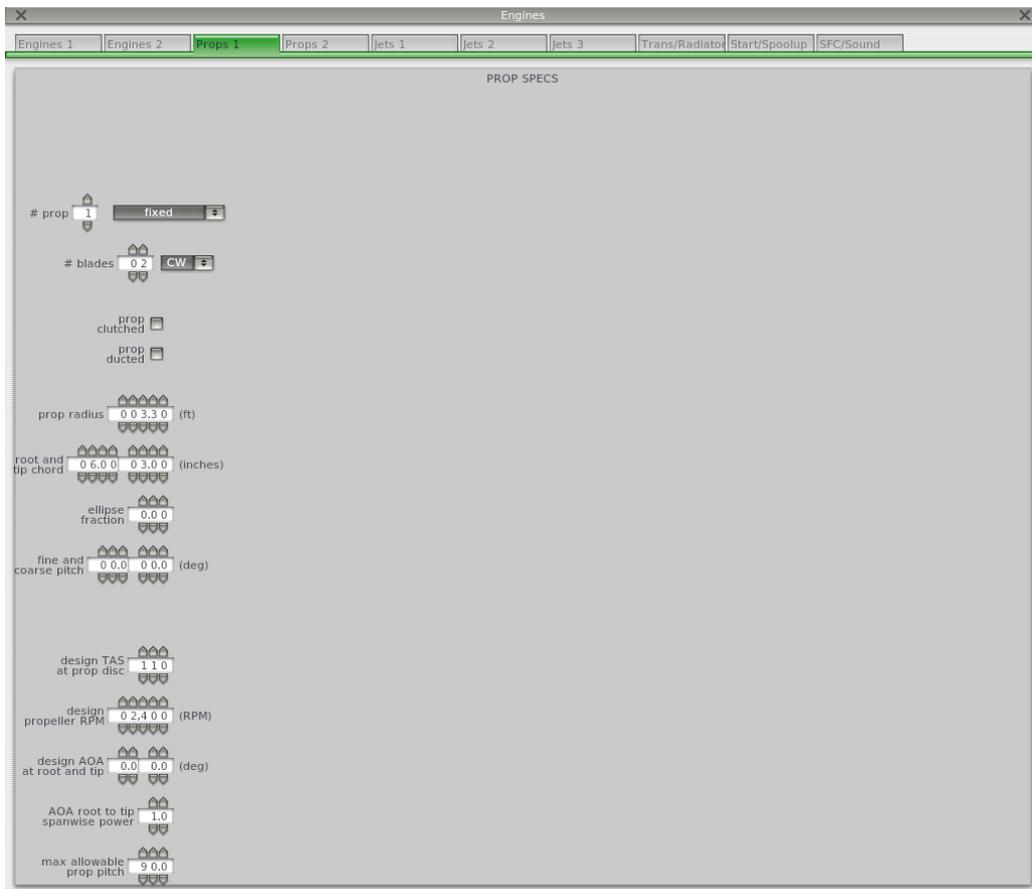
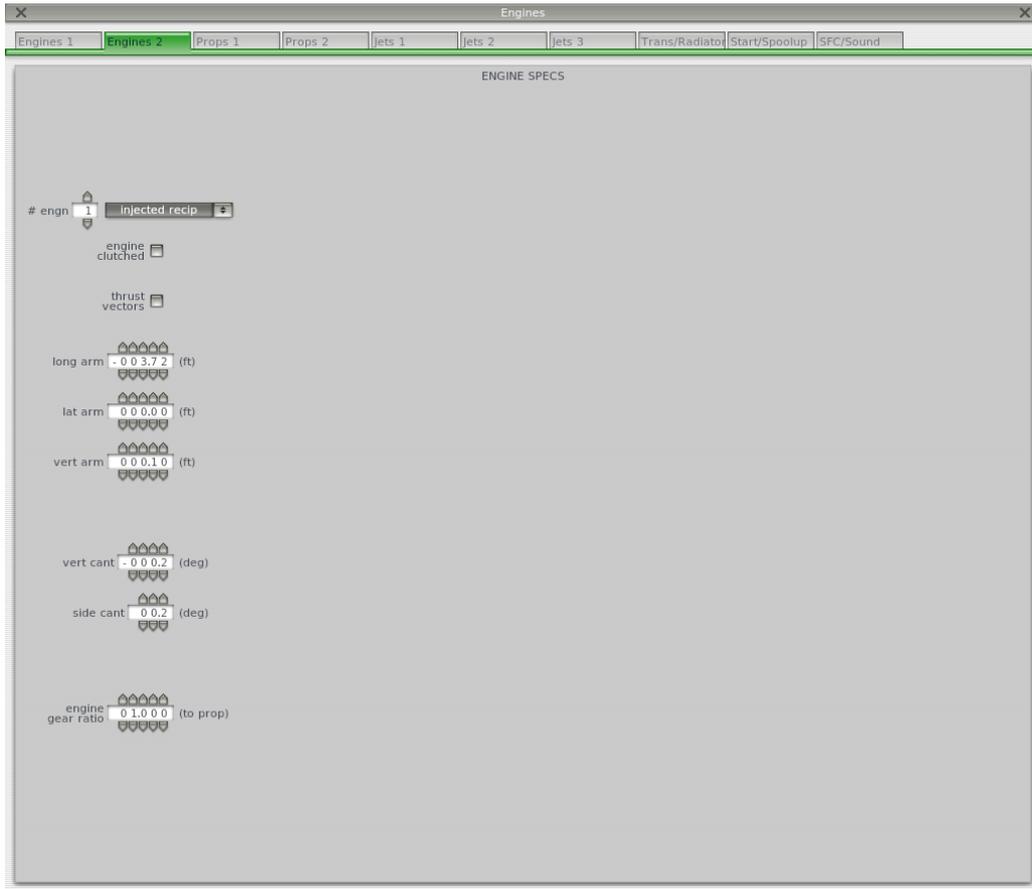
ROCKET ENGINE SPECS at sea level, optimum altitude, and vacuum

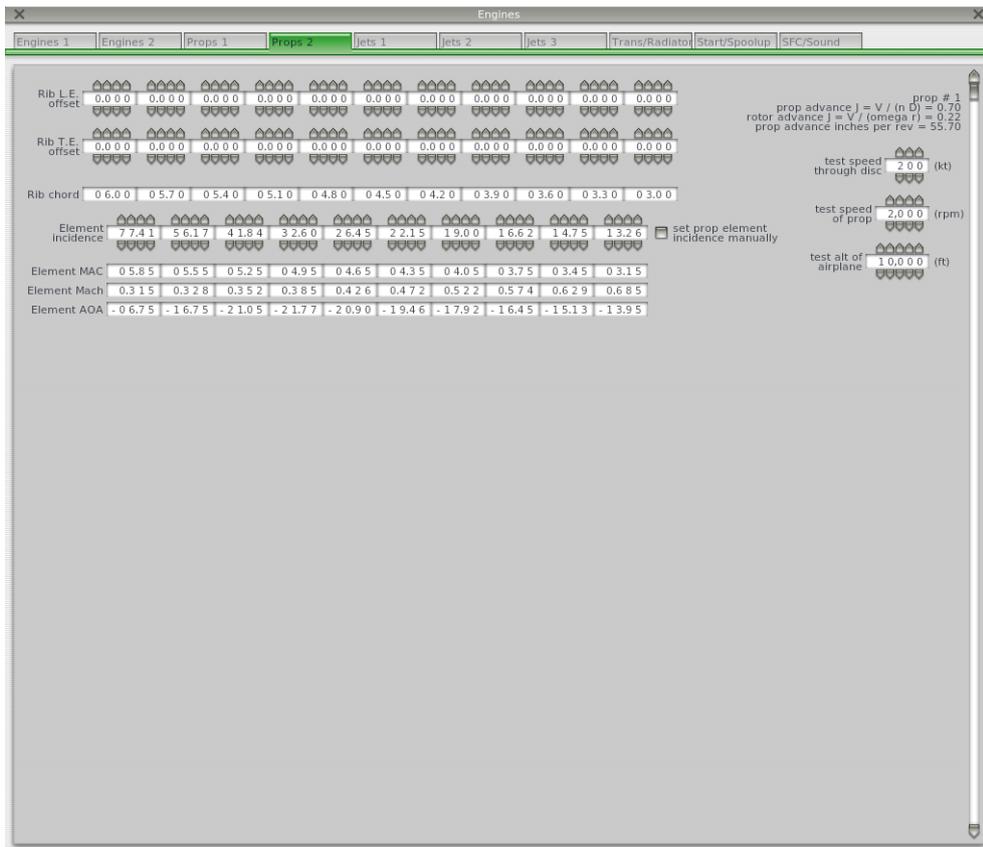
thrust (lb)

nozzle exit area (square feet)

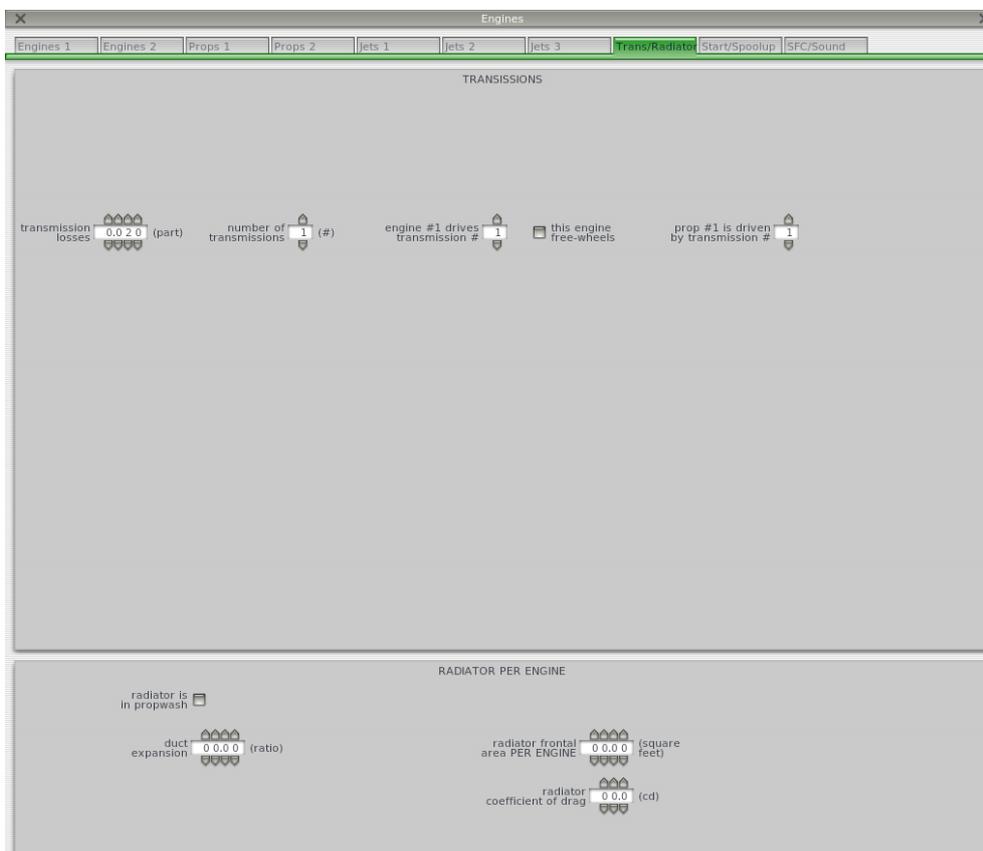
optimum altitude (feet)

SFC (/hr)





SOME OF THESE ABOVE NUMBERS WILL VARY AS YOU PROGRESS IN THE BUILD. THEY MIGHT BE UNEDITABLE AT THIS TIME



Engines

Engines 1 | Engines 2 | Props 1 | Props 2 | Jets 1 | Jets 2 | Jets 3 | Trans/Radiator | **Start/Spoolup** | SFC/Sound

PROP/TURBOPROP TIMES

auto-start fuel engage N _g <input type="text" value="0.0 0"/> % (auto-start only introduces fuel above this N _g during start to keep ITT within limits)	engine-start fuel intro time <input type="text" value="0.2 0 0"/> (sec)	propeller pitch rate for normal operations <input type="text" value="0.4 5"/> (degrees per second)
minimum fuel engage N _g <input type="text" value="0.1 0"/> % (manually introduce fuel above this N _g during start to keep ITT within limits)	fuel pump advance time <input type="text" value="0.5 0 0"/> (sec)	propeller pitch rate to un-feather <input type="text" value="0.4 5"/> (degrees per second)
	free-turbine compressor spoolup time <input type="text" value="0.1 0 0"/> (sec)	

JET TIMES

auto-start fuel engage N ₂ or N _g <input type="text" value="0.0 0"/> % (auto-start only introduces fuel above this N ₂ during start to keep ITT within limits)	engine-start fuel intro time <input type="text" value="1.0 0 0"/> (sec)	thrust-reverser deployment time <input type="text" value="0.0 1"/> (sec)
minimum fuel engage N ₂ or N _g <input type="text" value="0.4 6"/> % (manually introduce fuel above this N ₂ during start to keep ITT within limits)	fuel pump advance time <input type="text" value="0.1 0 0"/> (sec)	
	compressor spoolup time <input type="text" value="0.1 0 0"/> (sec)	

PROP AND JET BOOST

boost amount <input type="text" value="0.0 0"/> (throttle)	boost capacity <input type="text" value="0.0 0 0"/> (sec)
--	---

STARTER

starter torque as a ratio of max engine torque, for props and jets. starter is electric
 starter design rpm as a ratio of max engine rpm, for props and jets. starter is air-driven

Starter will output 105.1 ft-lbs at 107 rpm, which is 2.2 hp.

- hitting starter engages condition lever
- hitting starter engages ignition
- hitting starter arms igniters
- hitting starter engages igniters

Engines

Engines 1 | Engines 2 | Props 1 | Props 2 | Jets 1 | Jets 2 | Jets 3 | Trans/Radiator | Start/Spoolup | **SFC/Sound**

RECIPROCATING OR TURBOPROP SPECIFIC FUEL CONSUMPTION

hi altitude for prop engines <input type="text" value="1.0 0 0 0"/> (ft)	hi altitude max power SFC <input type="text" value="0.4 1 0"/> (lb/hp*hr)
	hi altitude half power SFC <input type="text" value="0.4 1 0"/> (lb/hp*hr)
lo altitude for prop engines <input type="text" value="0.0 0 0 0"/> (ft)	lo altitude max power SFC <input type="text" value="0.4 1 0"/> (lb/hp*hr)
	lo altitude half power SFC <input type="text" value="0.4 1 0"/> (lb/hp*hr)
effective power at idle for fuel flow <input type="text" value="0.2 5 0"/> (ratio to full engine power)	

JET ENGINE SPECIFIC FUEL CONSUMPTION

hi altitude for jet engines <input type="text" value="3.5 0 0 0"/> (ft)	hi altitude max thrust SFC <input type="text" value="0.5 5 0"/> (/hr)
	hi altitude half thrust SFC <input type="text" value="0.5 5 0"/> (/hr)
lo altitude for jet engines <input type="text" value="0.0 0 0 0"/> (ft)	lo altitude max thrust SFC <input type="text" value="0.5 5 0"/> (/hr)
	lo altitude half thrust SFC <input type="text" value="0.5 5 0"/> (/hr)
effective power at idle for fuel flow <input type="text" value="0.1 0 0"/> (ratio to full engine power)	

ELECTRIC ENGINES

electric motor drive efficiency <input type="text" value="1.0 0 0"/> (ratio)
electric motor re-gen efficiency <input type="text" value="0.0 0 0"/> (ratio)
electric motor re-gen torque <input type="text" value="0.0 0 0"/> (ratio)
solar cell wing coverage <input type="text" value="0.0 0 0"/> (fraction of total)
solar cell efficiency <input type="text" value="0.0 0 0"/> (fraction of total)

speed that wind sound was recorded at <input type="text" value="1.6 0"/> (KIAS, used for setting the sounds in X-Plane)	engine number to set <input type="text" value="1"/> #	exhaust offset long arm <input type="text" value="0.0 0 0 0"/> (ft, relative to the engine location)
rpm that the propeller sound was recorded at <input type="text" value="0.1 2 0 0"/> (rpm, used for setting the sounds in X-Plane)		exhaust offset lat arm <input type="text" value="0.0 0 0 0"/> (ft, relative to the engine location)
rpm that the recip-engine sound was recorded at <input type="text" value="0.1 6 0 0"/> (rpm, used for setting the sounds in X-Plane)		exhaust offset vert arm <input type="text" value="0.0 0 0 0"/> (ft, relative to the engine location)
N1 that the jet or turboprop engine sound was recorded at <input type="text" value="1.0 0 0 0"/> (N1, used for setting the sounds in X-Plane)		exhaust dirtiness <input type="text" value="1.0 0"/> (ratio to default)

ENGINE NACELLE – TRY THE “ELLIPSE” FUNCTION

Engine Nacelles

Section: Top/Bottom Front/Back copy geo from part # 8 Import Aircraft Body

aircraft has a nacelle over this engine

number stations: 0 8 # number radii/side: 0 9 #

body radius: 0 0 0 5 6 (ft)

area rule ratio: 1 0 0 (supersonic drag fraction)

body coeff of drag: 0 1 1 5 (based on BODY FRONTAL AREA)

Possible Cd if this is a streamlined body: 0.053, based on wetted area, fineness ratio, and estimated cruise Reynolds number.

long offset: 0 0 0 0 0 (ft) heading offset: 0 0 0 0 0 (deg)

vert offset: 0 0 0 0 0 (ft) pitch offset: 0 0 0 0 0 (deg)

roll offset: 0 0 0 0 0 (deg)

texture top: 0 2 4 7 (ratio, left side of part) texture top: 0 2 4 7 (ratio, right side of part)

left: 0 1 4 1 | 0 1 9 9 (ratio) right: 0 1 4 1 | 0 1 9 9 (ratio)

texture bot: 0 1 8 7 (ratio, left side of part) texture bot: 0 1 8 7 (ratio, right side of part)

CROSS-SECTIONS (Double-click on a node to 'LOCK' it, preventing smoothing operations from moving that node)

RESET EDITING OFFSETS (arrows and +/- to change) part description: serpra e

Engine Nacelles

Section: Top/Bottom Front/Back RESET THIS SECTION TO VERTICAL RESET ALL SECTIONS TO VERTICAL

TOP

SIDE

BOTTOM

SYSTEMS TAB

Systems

General 1 | General 2 | Electrical 1 | Electrical 2 | Bus 1 | Bus 2 | Limits 1 | Limits 2 | Warnings

AUTOPILOT

Preconfigured Autopilot: **STec 55**

AP heading: AHRS electric gyro vacuum gyro

HNAV course: GPS/LOC OBS HDG None

radio altitude: **0 1 0** (ft)
select step size: **0 1 0** (ft)

has altitude alert approaching 1000 feet from pre-select has altitude alert departing 1000 feet from select
 has altitude alert approaching 300 feet from pre-select has altitude alert departing 300 feet from select
 has altitude alert approaching 200 feet from pre-select has altitude alert departing 200 feet from select
 has altitude alert approaching 100 feet from pre-select has altitude alert departing 100 feet from select
 has altitude alert if autopilot engages altitude-hold mode has altitude alert if autopilot dis-engages altitude-hold mode

INSTRUMENTS

pilot auto adjust CDI to GPS DTK vacuum systems cross-tied
 copilot auto adjust CDI to GPS DTK venturi vacuum system

RADIO ALTIMETER

has radio-alt decision-height callout has radio-alt callout advance: **0 0 0** (ft)

STALL WARNING

has aural stall warning stall warning pitch and volume are controlled by angle of attack

stall warn alpha: **1 2 0** (deg)

GEAR WARNING

gear warning horn equipped

activate if speed below: **0 7 9** (kias)

if below warning speed, activate if throttle below: **0 5 0** (%)

if below warning speed, activate if flaps beyond: **0 5 0** (ratio)

Systems

General 1 | General 2 | Electrical 1 | Electrical 2 | Bus 1 | Bus 2 | Limits 1 | Limits 2 | Warnings

HYDRAULIC SOURCES

electric hydraulic pump system A/B

ram air turbine hydraulic pump system A/B

engine-driven hydraulic pump system A/B

rotor-driven hydraulic pump system A/B

HYDRAULIC SYSTEMS

Check boxes here for any systems that depend on the hydraulic sources declared at left.

hydraulic flight controls
 hydraulic nosewheel steering
 hydraulic flaps
 hydraulic landing gear
 hydraulic brakes

manual reversion: **0 0 0** (ratio, if hydraulics lost)

hydraulic landing gear failure: fail up
 hydraulic landing gear failure: fail down
 hydraulic landing gear failure: fail down below

0 0 0 (kias)

manual gear pumps: **0 1** # to extend

manual flap pumps: **0 1** # to extend

PRESSURIZATION

maximum allowable pressurization: **0 0 0 0** (psi)

emergency pressurization altitude: **0 0 0 0** (ft, cabin)

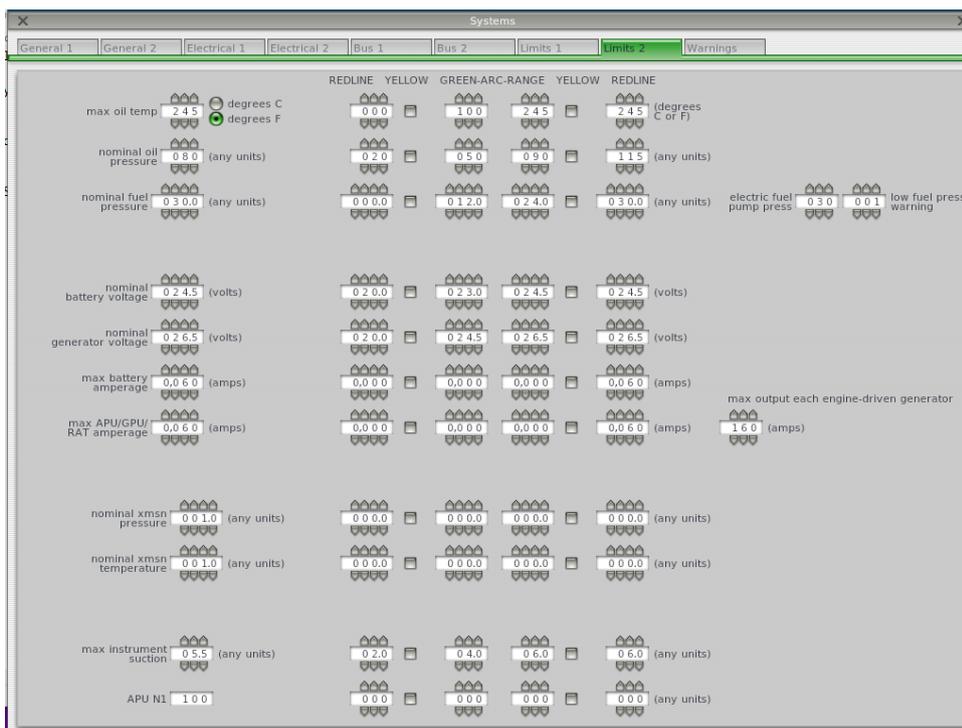
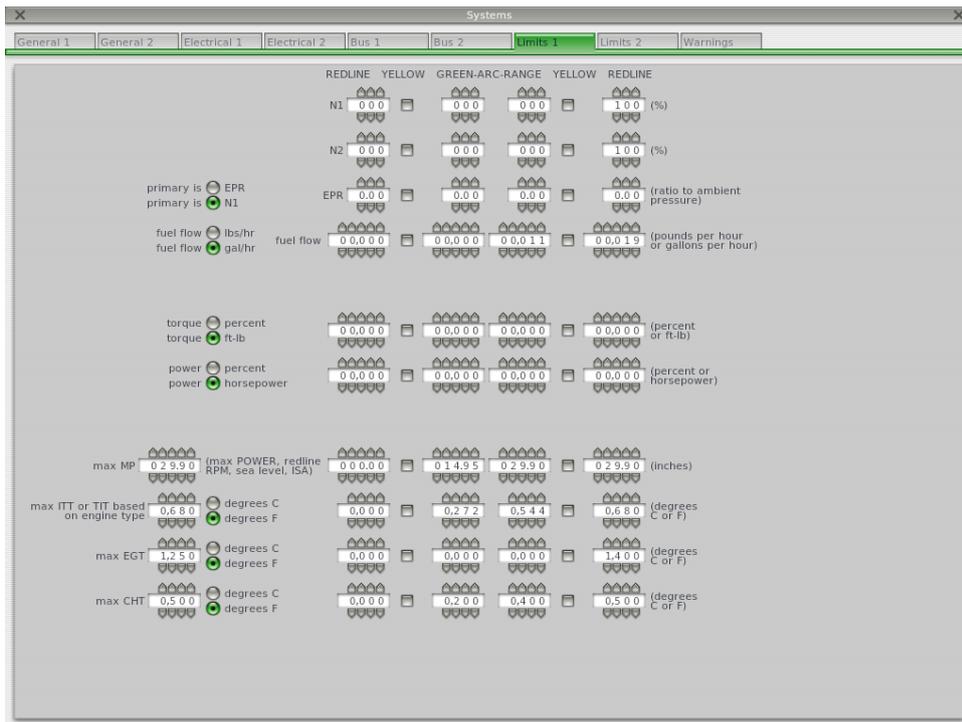
auto-manage pressurization (automatically hold 7,500 ft to max allowable pressurization)

dump pressure below 1000 ft (automatically, radio-altitude)

dump pressure with squat switch (automatically, weight-on-wheels)

Crew Oxygen bottle capacity: **0 0 0 0** (liter)

GO TO LIMITS 1 AND 2 TAB



WARNINGS TAB IS NOT REQUIRED.

WHO NEEDS WARNINGS EH?

Some of the tabs have been missed out to keep it simple at this stage. I have all the slides if you need to get more complex. . but at this level you won't need that info.

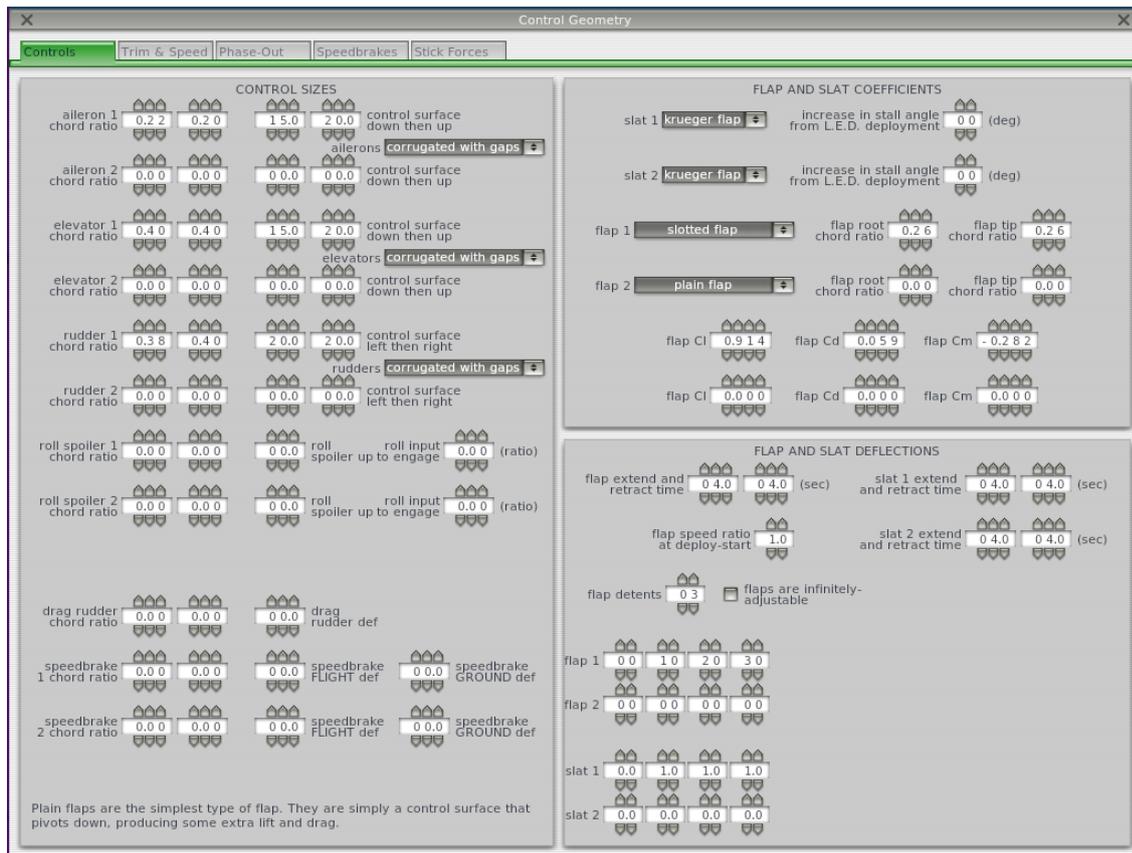
Time for some wings

CONTROL GEOMETRY is next...

This is an important bit

Oh and save regularly .. if you haven't been

SPECIAL/ select show with STILL/MOVING controls – your plane will come to life..



Control Geometry

Controls | Trim & Speed | Phase-Out | Speedbrakes | Stick Forces

TRIM DEFLECTIONS FOR AIRPLANES

all-moving stabilizer trim trailing-edge down then up	0 0 0	0 0 0	(degrees surface deflection elevator or stabilator or stabilizer)
aileron trim surface down then up	0 6 0	0 8 0	(degrees surface deflection)
elevator trim surface down then up	1 2 0	1 4 0	(degrees surface deflection elevator)
rudder trim surface left then right	1 7 0	1 7 0	(degrees surface deflection)
aileron trim full-deflection time	2 0 0		(sec. from center to either extreme)
elevator trim full-deflection time	2 0 0		(sec. from center to greatest extreme)
rudder trim full-deflection time	4 0 0		(sec. from center to greatest extreme)
aileron trim tab adjust	0 0 0	0 8	
elevator trim tab adjust	0 0 0	0 0	
rudder trim tab adjust	0 0 0	0 5	
takeoff trim	0 0 7		(ratio to max trim)

TRIM DEFLECTIONS FOR HELOS

cyclic trim left then right	0 5 0	0 5 0	(fraction of total cyclic travel)
cyclic trim down then up	0 5 0	0 5 0	(fraction of total cyclic travel)
tail rotor trim left then right	1 0 0	1 0 0	(fraction of total tail rotor pitch)
helicopter rotor RPM trim slow then fast	0 0 0	0 0 0	(rpm difference from redline)
cyclic trim full-deflection time	2 0 0		(sec. from center to either extreme)
cyclic trim full-deflection time	2 0 0		(sec. from center to either extreme)
anti-torque trim full-deflection time	4 0 0		(sec. from center to either extreme)
rotor trim full-deflection time	0 5 0		(sec. from center to either extreme)

CONTROL DEFLECTIONS RATES

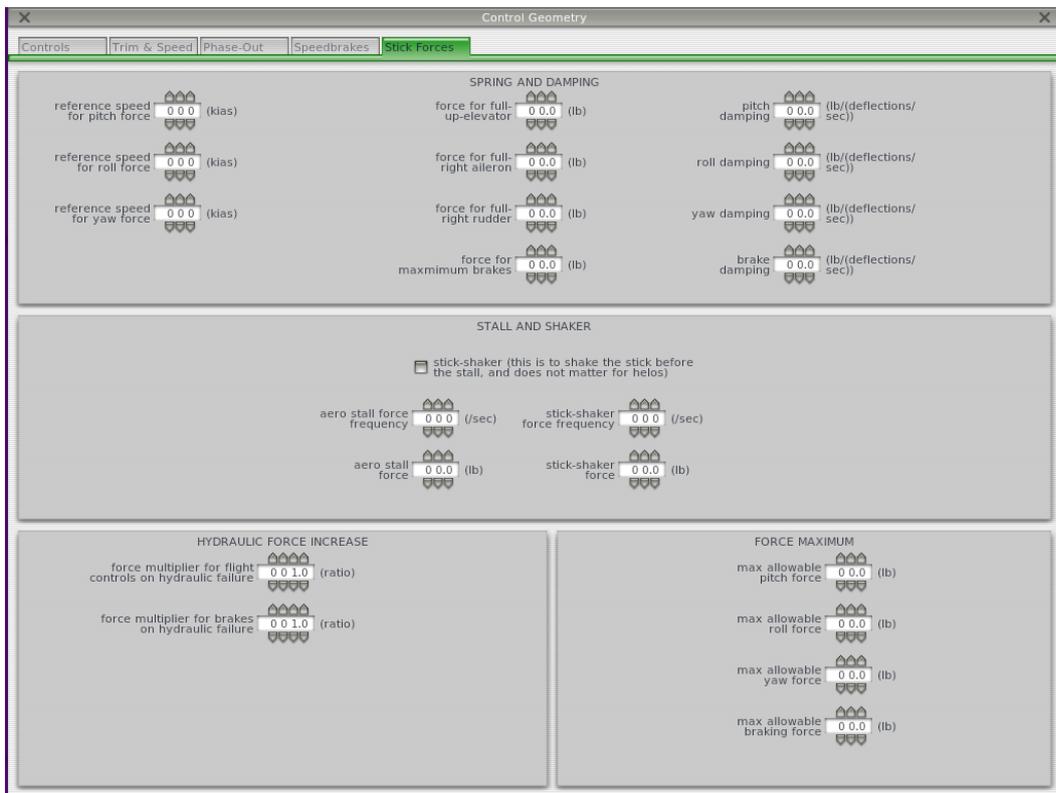
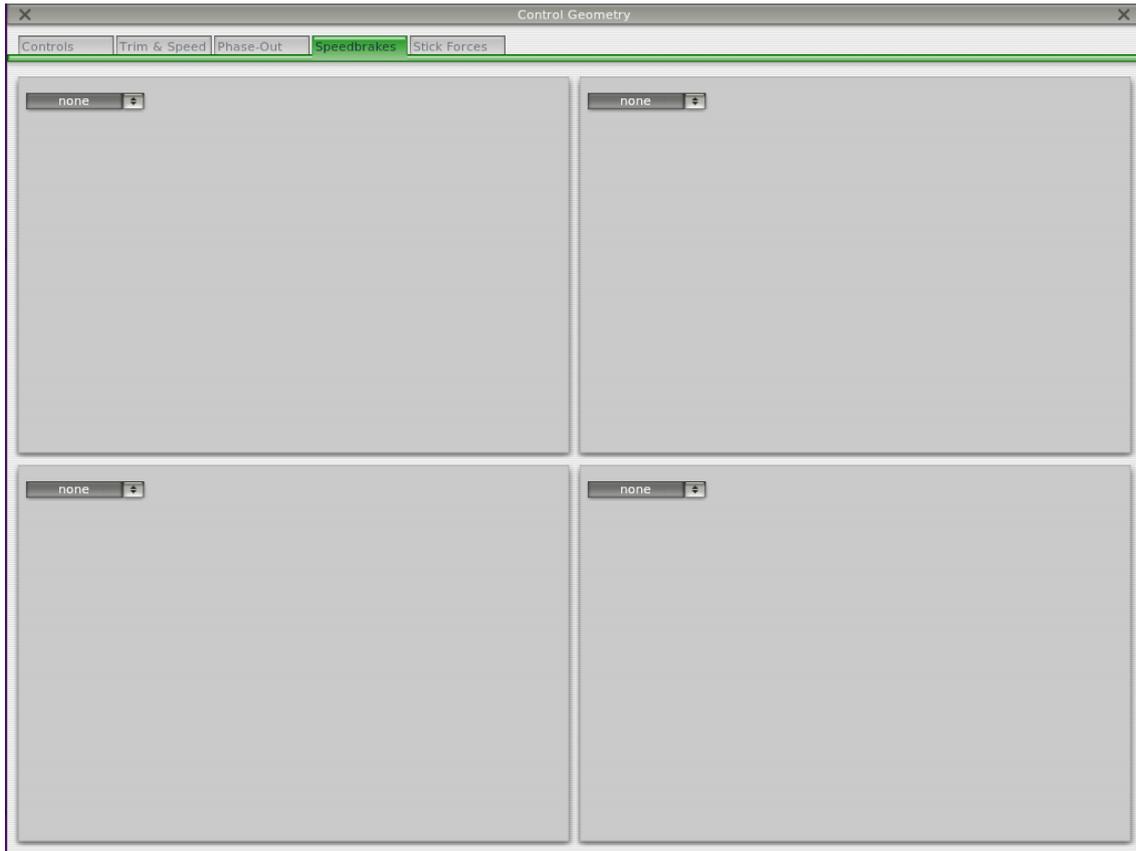
minimum aileron deflection time (same in each direction)	0 0 0	seconds
minimum elevator deflection time for largest-deflection direction of travel	0 0 0	seconds
minimum rudder deflection time for largest-deflection direction of travel	0 0 0	seconds
speedbrake time to extend	0 1 0	(sec)
speedbrake time to retract	0 1 0	(sec)

Control Geometry

Controls | Trim & Speed | Phase-Out | Speedbrakes | Stick Forces

AILERON 1: low-end speed (kias)	0 0 0	1 0 0	low-end control travel (ratio)	hi-end speed (kias)	1 3 0	0 5 0	hi-end control travel (ratio)	1 0 0	lock out beyond this sweep (ratio)
AILERON 2: low-end speed (kias)	0 0 0	1 0 0	low-end control travel (ratio)	hi-end speed (kias)	9 9 9	1 0 0	hi-end control travel (ratio)	1 0 0	lock out beyond this sweep (ratio)
ELEVATOR 1: low-end speed (kias)	0 0 0	1 0 0	low-end control travel (ratio)	hi-end speed (kias)	1 3 0	0 5 0	hi-end control travel (ratio)	1 0 0	lock out beyond this sweep (ratio)
ELEVATOR 2: low-end speed (kias)	0 0 0	1 0 0	low-end control travel (ratio)	hi-end speed (kias)	9 9 9	1 0 0	hi-end control travel (ratio)	1 0 0	lock out beyond this sweep (ratio)
RUDDER 1: low-end speed (kias)	0 5 0	1 0 0	low-end control travel (ratio)	hi-end speed (kias)	1 3 0	0 5 0	hi-end control travel (ratio)	1 0 0	lock out beyond this sweep (ratio)
RUDDER 2: low-end speed (kias)	0 0 0	1 0 0	low-end control travel (ratio)	hi-end speed (kias)	9 9 9	1 0 0	hi-end control travel (ratio)	1 0 0	lock out beyond this sweep (ratio)
SPOILER 1: low-end speed (kias)	0 0 0	1 0 0	low-end control travel (ratio)	hi-end speed (kias)	9 9 9	1 0 0	hi-end control travel (ratio)	1 0 0	lock out beyond this sweep (ratio)
SPOILER 2: low-end speed (kias)	0 0 0	1 0 0	low-end control travel (ratio)	hi-end speed (kias)	9 9 9	1 0 0	hi-end control travel (ratio)	1 0 0	lock out beyond this sweep (ratio)
YAW-BRAKE: low-end speed (kias)	0 0 0	1 0 0	low-end control travel (ratio)	hi-end speed (kias)	9 9 9	1 0 0	hi-end control travel (ratio)	1 0 0	lock out beyond this sweep (ratio)
<input type="checkbox"/> FLAP extension overspeed-protection				FLAP 1	1 0 0			1 0 0	lock out beyond this sweep (ratio)
<input type="checkbox"/> FLAP retraction overspeed-relief				FLAP 2	1 0 0			1 0 0	lock out beyond this sweep (ratio)
<input type="checkbox"/> SWEEP lockout with flaps				auto-SWEEP full-FORWARD	0 0 0			0 0 0	(Mach)
				auto-SWEEP full-AFT	0 0 0			0 0 0	(Mach)

NO SPEEDBRAKES.. who needs SPEEDBRAKES?



WEIGHT AND BALANCE.

Weight & Balance

Weight & Bal Tanks CG Set CG Check

CENTER OF GRAVITY

long CG (forward, default, aft limit)

vert CG (ft)

WEIGHTS

empty weight (lb)

fuel load (lb)

JATO weight (lb), from 'Special Controls' screen

jettisonable load (lb)

maximum weight (lb)

weight-shift weight (lb)

displaced weight (lb), for blimps and dirigibles

use your own radii of gyration

jett load is SLUNG
 jett load is WATER
 jett load is FIRE-RET
 jett load is OTHER AIRCRAFT

SLUNG LOAD / WATER / RETARDANT / OTHER AIRCRAFT LOCATION

RADII OF GYRATION

WEIGHT-SHIFT

AIRSHIP DISPLACEMENT

Weight & Balance

Weight & Bal Tanks CG Set CG Check

<p>tank #1 ratio <input type="text" value="0.5 0 0"/></p> <p>full tank long <input type="text" value="0 0 3.7 0"/> (ft)</p> <p>fuel pump pressure <input type="text" value="1 0"/> (psi)</p> <p>Role Normal</p>	<p>lat tank CG location <input type="text" value="-0 0 2.0 0"/> (ft)</p> <p>empty tank long <input type="text" value="0 0 3.7 0"/> (ft)</p> <p>vert tank CG location <input type="text" value="0 0 2.3 5"/> (ft)</p> <p>Role Normal moves with NONE</p>	<p>tank #2 ratio <input type="text" value="0.5 0 0"/></p> <p>full tank long <input type="text" value="0 0 3.7 0"/> (ft)</p> <p>fuel pump pressure <input type="text" value="1 0"/> (psi)</p> <p>Role Normal moves with NONE</p>	<p>lat tank CG location <input type="text" value="0 0 2.0 0"/> (ft)</p> <p>empty tank long <input type="text" value="0 0 3.7 0"/> (ft)</p> <p>vert tank CG location <input type="text" value="0 0 2.3 5"/> (ft)</p> <p>Role Normal</p>	<p>tank #3 ratio <input type="text" value="0.0 0 0"/></p> <p>fuel pump pressure <input type="text" value="1 0"/> (psi)</p> <p>Role Normal</p>	
<p>tank #4 ratio <input type="text" value="0.0 0 0"/></p> <p>fuel pump pressure <input type="text" value="1 0"/> (psi)</p> <p>Role Normal</p>	<p>tank #5 ratio <input type="text" value="0.0 0 0"/></p> <p>fuel pump pressure <input type="text" value="1 0"/> (psi)</p> <p>Role Normal</p>	<p>tank #6 ratio <input type="text" value="0.0 0 0"/></p> <p>fuel pump pressure <input type="text" value="1 0"/> (psi)</p> <p>Role Normal</p>			
<p>tank #7 ratio <input type="text" value="0.0 0 0"/></p> <p>fuel pump pressure <input type="text" value="1 0"/> (psi)</p> <p>Role Normal</p>	<p>tank #8 ratio <input type="text" value="0.0 0 0"/></p> <p>fuel pump pressure <input type="text" value="1 0"/> (psi)</p> <p>Role Normal</p>	<p>tank #9 ratio <input type="text" value="0.0 0 0"/></p> <p>fuel pump pressure <input type="text" value="1 0"/> (psi)</p> <p>Role Normal</p>			

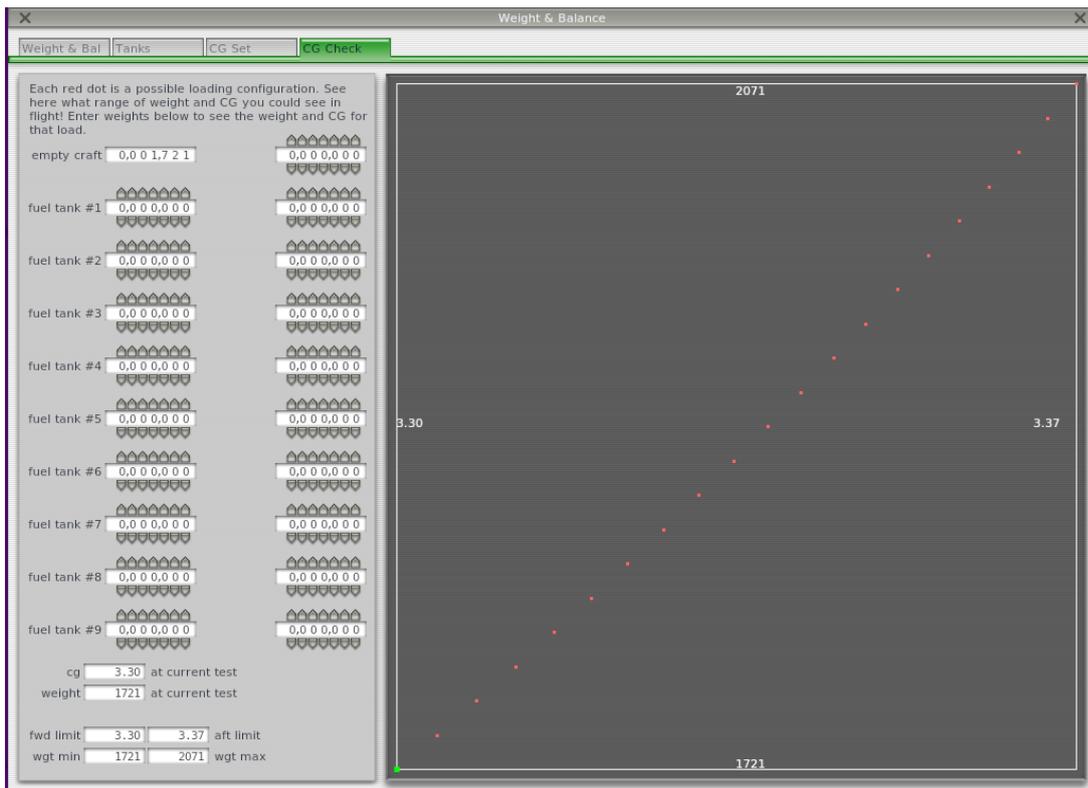
Weight & Balance

Weight & Bal Tanks **CG Set** CG Check

Enter the arm and maximum weight of the passengers and cargo that you expect to carry here. Then go to the next tab over to see the range of weight and balance you could encounter in flight!

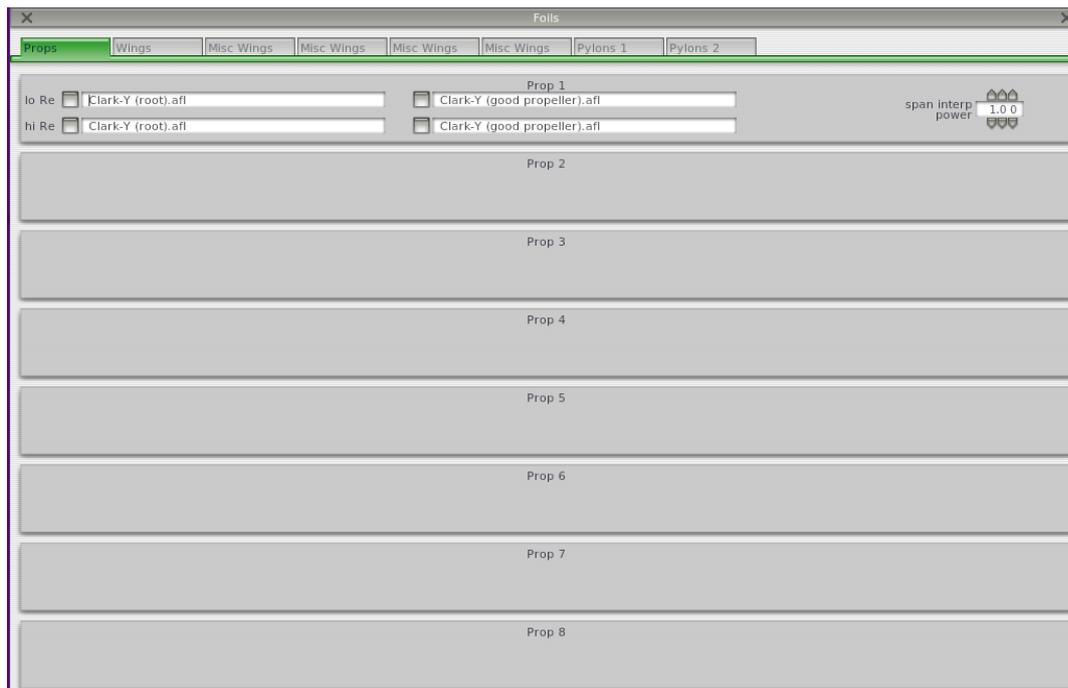
NOTE: THIS IS ONLY FOR WEIGHT AND BALANCE INVESTIGATION FOR YOU, AND DOES NOT AFFECT X-PLANE IN ANY WAY!

0 0 0 0 1 7 2 1 0 (lb)	0 0 3 3 0 (ft)	empty craft	0 0 0 0 0 0 0 0 0 (lb)	0 0 0 0 0 (ft)	
0 0 0 0 0 1 7 5 0 (lb)	0 0 3 7 0 (ft)	fuel tank #1	0 0 0 0 0 0 0 0 0 (lb)	0 0 0 0 0 (ft)	
0 0 0 0 0 1 7 5 0 (lb)	0 0 3 7 0 (ft)	fuel tank #2	0 0 0 0 0 0 0 0 0 (lb)	0 0 0 0 0 (ft)	
0 0 0 0 0 0 0 0 0 (lb)	0 0 0 0 0 (ft)	fuel tank #3	0 0 0 0 0 0 0 0 0 (lb)	0 0 0 0 0 (ft)	
0 0 0 0 0 0 0 0 0 (lb)	0 0 0 0 0 (ft)	fuel tank #4	0 0 0 0 0 0 0 0 0 (lb)	0 0 0 0 0 (ft)	
0 0 0 0 0 0 0 0 0 (lb)	0 0 0 0 0 (ft)	fuel tank #5	0 0 0 0 0 0 0 0 0 (lb)	0 0 0 0 0 (ft)	
0 0 0 0 0 0 0 0 0 (lb)	0 0 0 0 0 (ft)	fuel tank #6	0 0 0 0 0 0 0 0 0 (lb)	0 0 0 0 0 (ft)	
0 0 0 0 0 0 0 0 0 (lb)	0 0 0 0 0 (ft)	fuel tank #7	0 0 0 0 0 0 0 0 0 (lb)	0 0 0 0 0 (ft)	
0 0 0 0 0 0 0 0 0 (lb)	0 0 0 0 0 (ft)	fuel tank #8	0 0 0 0 0 0 0 0 0 (lb)	0 0 0 0 0 (ft)	
0 0 0 0 0 0 0 0 0 (lb)	0 0 0 0 0 (ft)	fuel tank #9	0 0 0 0 0 0 0 0 0 (lb)	0 0 0 0 0 (ft)	



Go to the EXPERT TAB – select AIRFOIL

You only need the first two tabs – props and wings



BACK THIS PLANE UP!! BEFORE YOU ALTER IT/ CHANGE ITS PARAMETERS.

Save it one last time and open XPlane. Select new flight and try out your creation

Would be best to see if it works as you expected. you might have to tweak a few things but if you want to TOTALLY alter some of the settings, SAVE AS and make A COPY of your aircraft. . changing the AUTHOR settings etc. you can then alter power/cg/wings etc

HAPPY EXPERIMENTING – Dave Rothwell