LEARFAN LF2200 TURBOPROP

By Lionheart Creations Ltd.

OWNERS MANUAL

FOR MSFS

BUILD EDITION 1.0

LearFan 2200 Owners Manual

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THESE ARE CLICKABLE JUMP POINTS CENTER TO SECTIONS OF THIS MANUAL

CURRENT BUILD VERSION OF THE LHC LEARFAN 2200 IS BUILD 1.0.0

INTRODUCTION

LearFan 2200 Owners Manual

The LearFan was the concept of famed aircraft and inventor and famous manufacturer of the 1960's and 70's and into the 80's. Bill Lear of LearJet fame and automobile radios and other many inventions. The LearFan was his 'next' idea for affordable Executive aviation, where the new turboprop would fit a 'new' niche of 'lower cost' and better 'economy' ownership of a high end executive or personal plane. You could go farther and nearly as fast as some small jets at a far lesser price.

Bill Lear envisioned the sleek design to be made entirely of Carbon Fiber, which was a radical concept back in the day, but is now common in the aircraft market now, including the military sector who made the futuristic B2 Flying Wing entirely of Carbon Fiber also.

INTRODUCTION

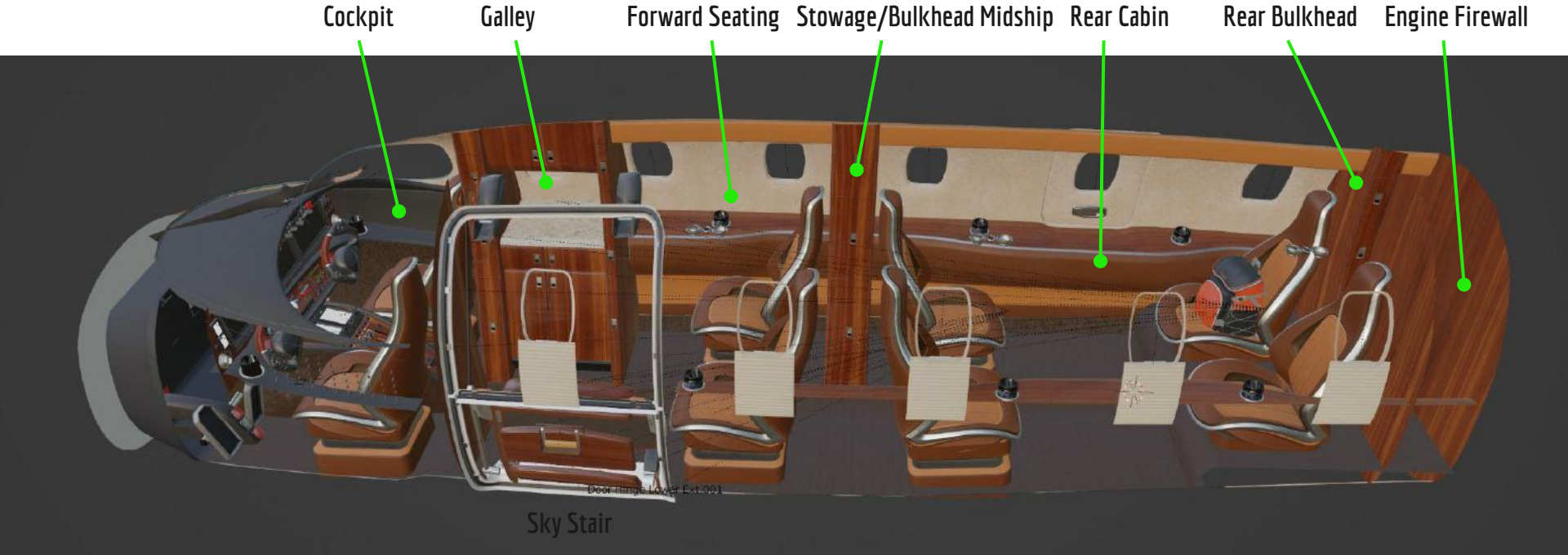
The design that Bill Lear set out to make featured twin jet turbines that were connected to a 2-to-1 transmission system via drive shafts, which went to the propellor. The idea was that if a turbine failed, the plane had a secondary. The FAA didnt approve of the system, but yet oddly, this same system is featured on helicopters, a failsafe backup system for a single rotor using 2 jet engines.

The original design of the LearFan featured 7 seats total, 2 of them being the crew up front. The range of the LF2100 was just under 1800 Nautical Miles and had a maximum speed of 390 Knots TAS at high altitude, and at cruise, she would do 280 Knots TAS nicely and yield a low burn rate of fuel for the projected 1780 NM range. Ceiling of the sleek LearFan was 40,000 feet.

The LearFan was to be built in Ireland as England was seeking to bring in industry for the people of that Land and were offering incentives and investment to companies interested in building in Ireland. Another such company was the famous DeLorean car company, making their cars also in Ireland.

INTRODUCTION

The original LearFan 2100 aircraft were all prototypes and never finished on the interiors, sadly. In this unique 'flight simulator' Vision of the LearFan and what it would be like today, you see an interior that is lavishly laid out in beautiful wood veneers and leather, much like other well built executive planes. This 'Vision' of the LearFan features a Garmin touch screen system, the Asobo AS3X glass screen Suite complete with mini TSC screens for managing radio's input and navigation. The seats are created by an actual car designer, a work of art. The interior features a mini Galley, bulkheads that feature small door and cabinet modules in them, and is designed to have access to the front of the PW127XT turbine in the back of the plane for ease of access when maintenance is required.

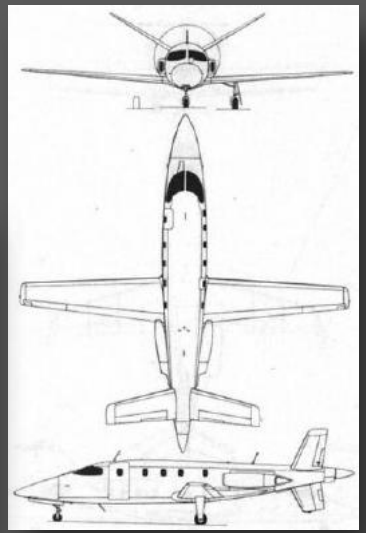


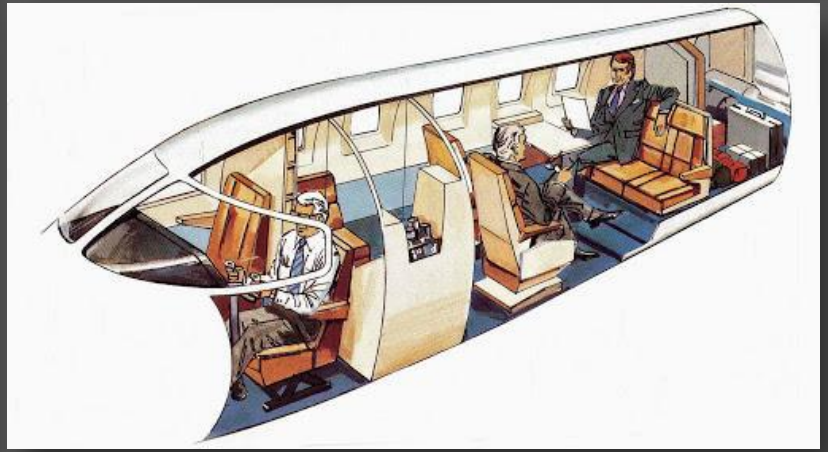
The Buttons on the LearFan are laid out in groups and also by colors. Blue will represent Deicing systems. Red will be Electrics, Starter, Battery, Avionics, etc. Gray will be other systems, such as door, Park Mode features, Sun Shades, Tablet, Placards, and inop-dummies. The Door has a 'Door Seal' switch to enable a pressure seal for high altitude flights. When on, it has a green halo light above it. Make sure it is active at 8K to 10K plus altitudes.


LearFan 2200
N21LF

Design of the Actual LearFan 2100

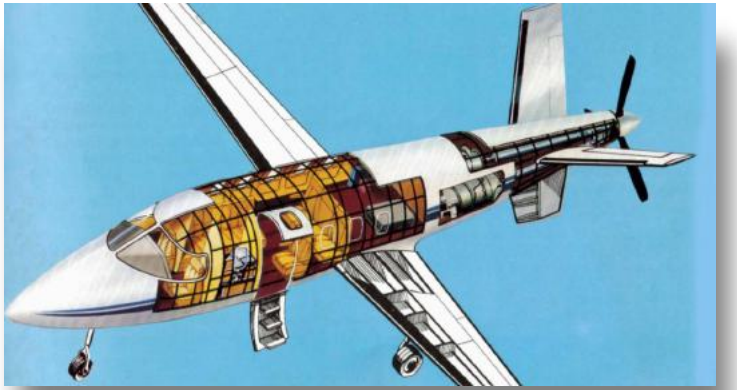
Photographs of the actual LearFan 2100 back in 1981 doing flight testing. Several planes were built. Several paint schemes were created.





THE ORIGINAL DUAL TURBOJET SYSTEM

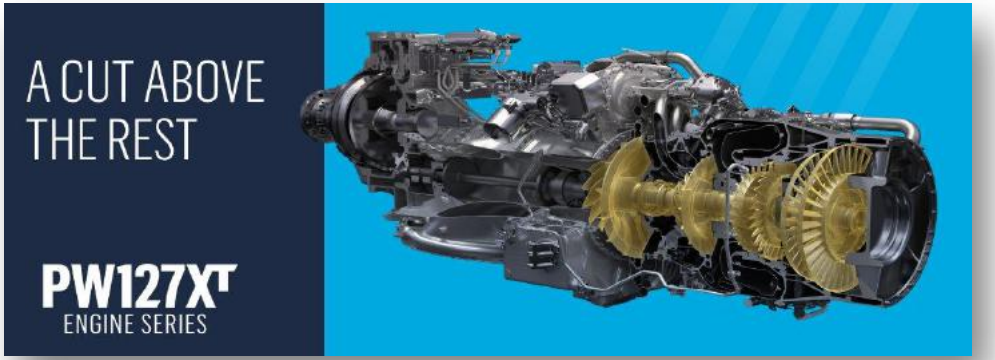
The original prototype LearFan aircraft were powered by a helicopter originated twin turbine layout with their drive shafts meeting at a gearbox in the tail by the propeller. The propeller was a constant speed prop and with twin engines, you had a backup engine if one gave out mid-journey. However, though the engines layout was used in helicopters, the FAA deemed the system dangerous and refused to allow this layout to go into productions. This was one of the primary reasons the LearFan did not go into production was this transmission layout. On the 'concept' version LearFan 2200 (my version) I use a single, large version PW-127XT that produces over double the HP output of the twin turbine version and has no transmission system. Its liter weight and designed for very low fuel burn, and is an extended-range engine.



Design of the Actual LearFan 2100

Photographs of the actual LearFan 2100 back in 1981 doing flight testing. Several planes were built. Several paint schemes were created.

THE NEW LF-2200 PROPULSION SYSTEM
PRATT AND WHITNEY PW127XT



Note: In doing this project, I went for a modernized version of the LearFan, a possibility of what one would be like today with our available technologies. One part of this design exercise was to re-envision the powerplant, simplifying it to a single engine 'Jet' turboprop and increase its power by over double, and use an amazing new engine by Pratt and Whitney, the PW127XT capable of 2600 SHP, giving this sleek 8 seater plenty of horsepower needed for fast flight.

Pratt & Whitney Canada Announces New PW127XT Engine Series: Setting a New Benchmark for Regional Turboprop Engines

- The PW127XT engine series is the new standard for operating economics, maintenance and sustainability for regional aircraft
- Offers 40% extended time on wing, 20% lower maintenance costs and 3% improvement in fuel efficiency, due to engine improvements making the regional turboprop even more sustainable
- Regional turboprops currently boast up to 40 percent improvements in fuel efficiency compared with similar missions for the 30-70 passenger regional jet aircraft market

MSFS Sim Plane Features

These are some of the nice features of the LearFan 2200 modern 'Ultimate' single-jet Turboprop. I sought to make the LearFan as close to original on the outside as possible, but I then went bananas on the interior with a very nice, ultra modern cabin, ranging from nice leather seating and carpet, to beautiful wood veneer and brushed metal trim. Even the instrument panel gets first rate treatment with wood veneer, making it more like a luxury, high end Euro-car style interior. This is a classic Executive concept taken to the max for this class of single engine, 6 passenger turboprop aircraft.

1 INSTRUMENTS FEATURES

- Asobo award winning AS3X Avionics 'touch screen' Suite complete with mini TSC screens for radios and Avionics.
- Emergency AUX gauges.
- Autopilot System as like the Beech KingAir
- Fully adjustable dimming knobs for internal lighting systems.
- Defrosting window when under icing conditions.

2 EXTERIOR FEATURES

- 8 different exterior Paint schemes in 4K resolution
- 6 different color themes of cabin colors
- Extreme mini details inside and out
- High detail fuel hoses that link up to the Asobo MSFS fuel delivery truck
- Electrical 'charge' cable link that ties into the Ground Power Unit truck
- The LearFan LF-2200 has beautiful, high detail legs (Landing Gear) and nicely detailed gear stowage bays made in carbonfiber
- Amazing camera views, inside and out

3 ADDED FEATURES

- Famous Asobo Rain Effects on the windshield perspex for high realism rainy day flights
- Plexiglass has small, fine scratches and scuffs for a nice touch of realism
- Park Mode which adds wheel chocks and intakes / scoops plug covers.
- Luggage Mode which adds 2 sets of luggage, waiting to be loaded aboard or picked up.
- Sun Shades 'up and closed' mode for when your plane is parked for a long duration outside in the elements.

LearFan 2200

Specifications and weights

Crew: Two Pilots
Capacity: Eight Souls (8)
Length: 40 ft 7 in (37.57 m)
Wingspan: 34 ft 4 in (35.08 m)
Height: 12 ft 2 in (11.76 m)
Wing area: 162.9 ft² (15.13 m²)
Empty weight: 1860 KG / 4,100 LB
Max. takeoff weight: 1860 KG / 7,350 LB
Powerplant: PW-127XT Turboprop 2600 SHP
Max. RPM: 4500 RPM
Cruise RPM: 3500 RPM

Performance
Never exceed speed: 763 KPH / 412 Knots / 474 MPH
Maximum speed: 730 KPH / 394 Knots / 453 MPH
Cruise speed: 520 KPH / 280 Knots / 322 MPH
Stall Speed: 140 KPH / 75 Knots / 86 MPH
Range: 3300 Kilometers / 1783 Nautical Miles
Rate of climb: 2,000 ft/min
Ceiling with PW-127XT Jet = 12.2 Kilometers / 40,000 Ft
Total Fuel: 445 US GAL / 1684 Litres (190, 190, 44) 2,670 lbs

Inconsistencies with the real LearFan 2100

There are quite a few things changed on the MSFS version of the LearFan compared with the original aircraft. For one, this one is fitted with a modern, state of the art Avionics Suite; a touch screen Garmin glass panel. Second, is the interior is fully furnished in the finest materials for this market sector. Third, she is a single engine now, in this 'vision' of what a LearFan would be like today. Here are some notes below that are more precise on the two versions.

1

The LearFan 2100 Original had two turbine engines mid-ship connected by a dual shaft transmission, similar to helicopters with twin turbines.

The LearFan 2200 uses a larger single turbine with much more power, a very large PW-127XT jet turbine.

2

The LearFan 2100 featured older style steam gauges and was said to be quite similar to early Learjet panels.

The LearFan 2200 uses the new AS3X modern touch screen Avionics Suite with mini TSC screens for radios tuning.

3

The original LearFan 2100 featured exterior door hinges connected to the exterior carbonfiber aeroshell.

The LearFan 2200 features extending dual linkage hinge assemblies that mount inside the aeroshell, enabling the door halves to have hidden hinges from the exterior and non-stressing to the aeroshell.

4

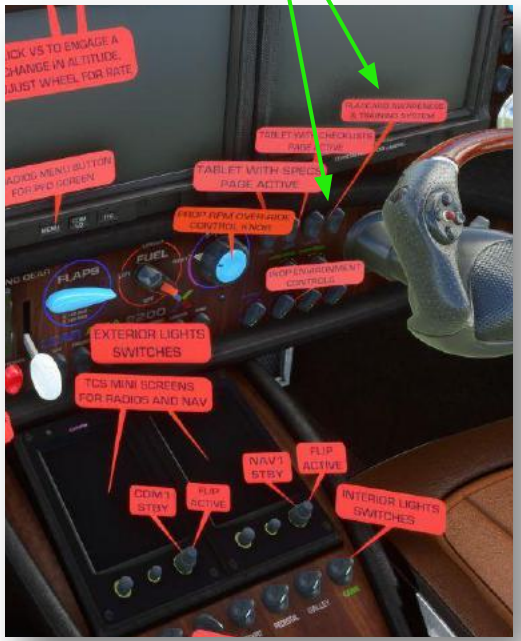
The LearFan 2100 featured 7 seats, the 4 seats in the back facing each other like a meeting room.

The LearFan 2200 features 8 seats with the first row seats facing forward.

LearFan 2200

Training Placcard Flags

This is a feature that is for training the new owner of the LearFan 2200. Its the Placcard Training Popup Flags. Click the rocker switch beside the Tablets switches, just above the AC and Heater knobs and you will be presented with department and switch identification flags that point out the important things on the panel.

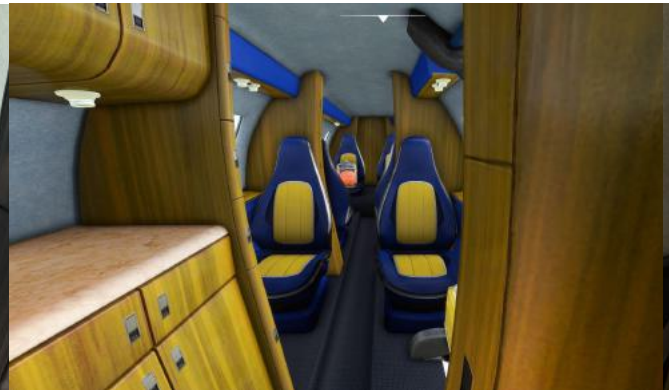


Nine Different Exterior Paintschemes

The LearFan 2200 comes with 8 custom paint schemes, from originals to new, more modern versions. There is a second blue stripe with a diff Interior theme.

7 Different Interior Themes

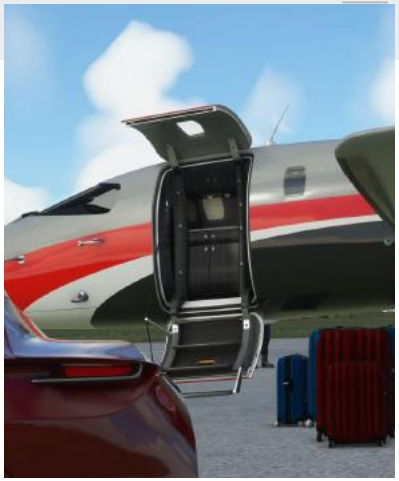
There are 7 versions of interiors, ranging from reddish brown to light brown to green to blue, 2 versions of gray interior, one having red pin-striping, and also one with yellow and blue, the colors of the Ukraine flag.



Sky Stair

The main hatch or sky stair is operated by a switch near the pilots yoke, left side, center switch marked ‘Left Door’.

On the right side of the door switch is the Air Seal Door Pressurization switch which should be ‘on’ when in flights over 8,000 feet.



The Sky Stairs use European Hidden telescoping hinges which enable the doors to link to structures inside of the aeroshell so the shell (fuselage) isn’t ‘stressed’ when opened on the ground.

Park, Luggage, and Shades Modes

The LearFan comes with two sets of nice flight luggage, wheel chocks and intake covers, all which automatically appear when you boot up on the flight ramp, cold and off.

Note that your passengers windows will have their slides up, blocking the sun when booting up into a cold and dark start-up on the tarmac. All of these systems are actuated by the 3 switches at top right of the instrument panel.

Luggage Mode; 2 Sets of Luggage


PARK MODE
N327ML
Engine Inlet Plugs
LearFan 2200
Wheel Chocks
Photo by Bill Ortis

LearFan 2200

Photo by Bill Ortis

Deicing Systems

PROP DEICE
Turn on and leave on

STRUCTURE DEICE
Pulse via mouse dragging the switch. Equals one pulse per mouse drag, pressurizes the deicing boots to brake off ice.

WINDSHIELD DEICE
Turn on and leave on in icing conditions. Heater blowers on windscreen heat glass and keep the ice from forming

PITOTS LEFT AND RIGHT
Switch on at high altitude flights and snow / ice conditions.

ENGINE DEICE
Switch on and leave on during ice conditions.

NOTE: All Delce systems will be blue switches.
Heaters and deicing system controls. These include prop and engine deicing.

LearFan in Stormy Skies

Rain drops and rain sounds show up on the Perspex when in rainy weather.

Rain drops on the Plexi

NOTE !!!
If you do not see rain drops on your perspex in MSFS in the rain, make sure its activated in your Settings in MSFS.

The LearFan was not equipped with wipers but did have heater blower boxes mounted on the nose.

Frost and Icing effects

LearFan 2200

Cabin Features and Details

Instrument Panel

FLIGHT TIMER

POPUP RADIOS MENU BUTTON

PARK, CAR, SHADES, LUGGAGE MODE CONTROLS

WARNING ANNUNCIATOR

PFD SCREEN; AS3X TOUCH SCREEN AVIONICS SUITE

AUXILIARY GAUGES (2)

AUTOPILOT ON LIGHT

ELEVATOR TRIM INDICATOR

DUMMY HAND GRIP BUTTONS

DOOR OPEN SWITCH

DUMMY BUTTONS

DUMMY CLIMATE CONTROL

PANEL LIGHTS DIMMER KNOB

DOOR SEAL SWITCH

BATTERY-MAIN-STARTER

TCS

EXTERIOR LIGHTS

INTERIOR LIGHTS

FUEL SELECTOR

Ground Services Modes

Fuel Refueling

When you call the fuel truck to be topped off with jet fuel, two fuel lines should show up Though I found sometimes only one will show and the truck will leave. But fuel lines Should appear in the scene linked up to the fuel truck.

Ground Power Unit

There is a ground power unit 'power cable' that links up to the truck when you call ground services for a Ground Power Unit, which is a generator truck.

LearFan 2200


HDG 360°
331°
CRS 352°
GPS
ENR
LearFan 2200

Quirks and Odd Things about the LearFan

The LearFan is not your average Turboprop aircraft. Here are some interesting points about this sleek V-Tail prop-jet.

1. The first thing you notice about the radical LearFan is the V-Tail. Two giant rudder-vators at the back end with a very small rudder fin hanging down, which has a skid on it. This little rudder primarily is for protecting the large 4 bladed prop at the tail when landing or taking off at high nose pitch, protecting the fan from ground strike.

2. The LearFan 2200 and 2100 are able to do a top speed of 390 Knots at flight level FL-30,0 to FL-40,0 feet TAS. Extremely fast and competitive with some jets. The concept 2200 'Vision' has a powerful, high economy design turbine jet by Pratt and Whitney, the PW-127XT. The range of the original LearFan 2100 was at 1800 NM, and I have kept that range with this plane and used a bigger 'single' engine to reduce weight and increase performance and also reduce cost.

3. The LF2200 has 3 fuel tanks; left and right wing tanks, and a small center tank mounted low in the belly amid ship near the gear bay. The jet carries a total of 424 US Gallons and will give you a range of about 1800 NM at cruise, 280 knots between FL-20,0 and FL-40,0.

4. The interior of the 2200 'Vision' is outfitted richly with a range of leather, fine wood veneer's, various colors, nice trim throughout, including in the front cockpit. The yokes are a radical design that help to bring a partial amount of ergonomics including being able to grip the top of the yoke on its cross bar like one can do in an automobile. Wood trim can also be found on the instrument panel and the center pedestal. It is created to be a fine, extremely luxurious ride, an amazing experience. And with all of those features, it is still a small plane, not overly large or tall, able to fit in medium hangers and not heavy on the fuel bills. A very fine medium sized executive turboprop for the 2020's.

LearFan 2200

TIPS and TRICKS and things to NOTE

Some things you should note about the LF-2200 'Vision' and flying it.

- When you turn on your autopilot (AP button), your plane goes into Level flight mode and will hold Pitch. You must then set your ALT and HDG when ready. It can streamline things if you pre-set your heading and altitude settings before you need them, so that after take-off, you can just switch things on and you are heading up and out to where your course is set.
- The Parking Brake is a T-handle next to the white Landing Gear knob.
- Start-up of the LearFan is terribly easy. Brake on, Battery on, wait for the PFD screen to boot up. Then turn on the starter motor and wait for fire to show in the turbine ITT readout. When at ITT-300, you can turn off your Starter motor and switch on Generator and then Avionics. Your bird will come to life. Flip on your exterior needed lights and start prepping your plane for flight.
-
- There are quite a few saved Camera Views for the interior and also the exterior. See the Camera Views pages in this manual to see your options on those.
- You can sit as a passenger with one of the quick Camera Views, back in the last row looking forward, left side. Control-8 places you in that seat.
- Your LearFan's airspeed is in TAS, (True AirSpeed). At higher altitudes, your readout on 'indicated' airspeed will be lower, but actual 'TAS' will be much higher. Its a 'thin air at high altitude thing'.
- When taking off, especially on fully laden load-outs, you might experience a moment where the nose gear doesn't want to raise. This is because the prop center is much higher then the center of gravity, and so the prop can sometimes hold the nose down in some circumstances. Simply back off the throttle very slightly, not a lot, and the nose gear will immediately raise up. BD-5 experimental aircraft do that also. The prop is up high compared with the rest of the mass of the plane, producing a nose-down 'push'. It only happens on acceleration. The rest of the flight will be fine.
- The prop control is mainly for over-ride. Your plane should need no attention to the prop setting. The prop uses a dial-like knob instead of a normal prop lever, and it is located on the panel next to the fuel selector. I thought it is best to have it in sight rather then down on the pedestal out of site.


LearFan 2200
G-BAFM

INTERIOR PRESET CAMERA VIEWS

If you do not use pre-programmed quick views (Camera Views), you are really missing out. Memorize them, it will come in handy. For instance, you can go to MFD full screen with just Control-2. Done. Work the Nav controls, etc, then Control-2 brings you right back. To see the small TSC screens better, Control-3 brings you face to face with them, full screen. Try some. Autopilot is also a good one. No need to zoom around. Just type in the position you need and done.

CONTROL-5
Pilots PFD Screen

CONTROL-1
PFD SCREEN

CONTROL-2
MFD SCREEN

CONTROL-3
TCS MINI SCREENS

CONTROL-4
AUTOPILOT VIEW

CONTROL-6
MAIN SWITCHES PANEL

CONTROL-7
AUTOPILOT VIEW

CONTROL-8 REAR LEFT
SEAT LOOKING FORWARD

CONTROL-9 LOOKING
REARWARD FROM FRONT

EXTERIOR PRESET CAMERA VIEWS

These are the various external preset camera views. Control-Alt keys show you these. You can also over-ride to interior shots via Control 1-9, and blip back to exterior, and vice versa.

CONTROL-SHFT-9
LEFT GEAR VIEW FORWARD

CONTROL-SHFT-1 LEFT SIDE
LOOKING FORWARD FROM TAIL

CONTROL-SHFT-2
FRONT LEFT QUARTER

CONTROL-SHFT-3
RIGHT REAR QUARTER

CONTROL-SHFT-4
BELLY TAIL VIEW

CONTROL-SHFT-5
REAR TOP TAIL FORWARD

CONTROL-SHFT-6
FRONT RIGHT QUARTER

CONTROL-SHFT-7
LEFT FRONT NOSE VIEW

CONTROL-SHFT-8
PROP VIEW

LearFan 2200

Fuel Stats

Fuel system and average fuel range layout

The LearFan 2200 carries 1605 Liters or 424 US Gallons of fuel

LEFT TANK.....190 GAL
RIGHT TANK.....190 GAL
CENTER TANK.....44 GAL

Total Fuel

424 Gal

Front Center Tank: 424 US GAL
1605 Liters = 2544 LBS JET FUEL

Altitude

40K FT

40K feet
280 KNOTS

Average Range

1780 NM

You should be able to make just over 1800 NM.

Speed Stats

Rotation Take-Off	Traffic Speed / Flaps Up	Cruise Speed	Max Speed	Touch Down	Stall
95	125	280	390	85-75	70
Normal Conditions Rotation for Take-Off. Fully Laden and hotter days will require higher speeds.	Flight Speed for traffic pattern with flaps up.	Cruise Speed from FL 20,000 to 30,000 FT	This is usually flown at FL 30,000 to 40,000 FT	Approach at 85, Knots full flaps, gear down. She should descend at 75 Knots and up nose, throttle off.	Stall Speed, full flaps, gear down, 70 knots


LearFan 2200

Custom Registration Numbers System

The LearFan has customizable Registries for all planes. The 'Panel' folders have the custom Font 'Colors' assignments. You can create a new panel 'color' folder by duplicating one and changing the font inputs in the files, then assigning that new panel folder to the paint scheme you want it on. Colors are assigned in the panel.config

1. Custom N-Numbers are entered in the Aircraft.config. Open with Windows Notepad or Notepad++, find;
atc_id= and put in the N-Number you wish

2. Either use one of the existing panel folders 'colors' that you want to try, or create a new one by cloning the panel folder of choice and editing the files within to the one you wish.
You then add that new panel folder 'color' to the panel assignment on the aircraft's Registry information block in the Aircraft Config file.

3. You can also change the color of the registration font inside the plane. Hex Value colors are what is needed. They begin with 0x..... This is entered in the Panel Config. Look for VPainting01, bottom string, near the end.
painting00=Registration/Registration.html?font_color=***white***, 0, 0, 256, 64
In the above line, white is also where you would put in the Hex 0x number for custom colors.

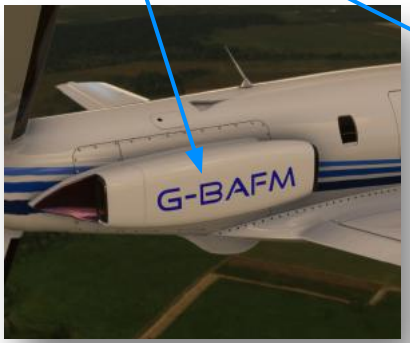
Custom Registration Numbers System

1

This is the Aircraft Config which you can open with either Notepad or Notepad++. atc_id_font adn atc_id_color are presently non functioning entries.

Color of font

Registry Number

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;====================== FLTSIM ======================



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KB_Reference=""
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ui_type="Q200"
ui_variation="Blue Stripe"
ui_typerole="Single Engine Prop"
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isFlyable=1
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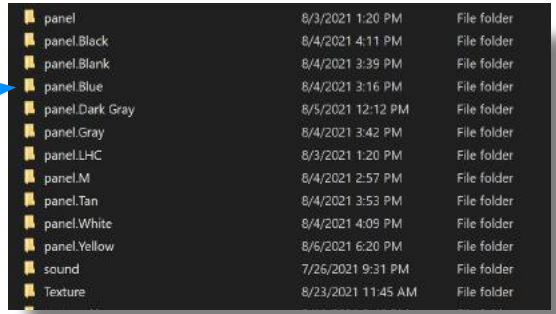
2

Various Panel Folders 'Colors' are for Registry Fonts/colors, not panel colors.



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panel.Black	8/4/2021 4:11 PM	File folder
panel.Blank	8/4/2021 3:39 PM	File folder
panel.Blue	8/4/2021 3:16 PM	File folder
panel.Dark Gray	8/5/2021 12:12 PM	File folder
panel.Gray	8/4/2021 3:42 PM	File folder
panel.LHC	8/3/2021 1:20 PM	File folder
panel.M	8/4/2021 2:57 PM	File folder
panel.Tan	8/4/2021 3:53 PM	File folder
panel.White	8/4/2021 4:09 PM	File folder
panel.Yellow	8/6/2021 6:20 PM	File folder
sound	7/26/2021 9:31 PM	File folder
Texture	8/23/2021 11:45 AM	File folder

Bügs and Issues

Every creation I make tends to have a couple of bothersome bugs here and there. Here are the present bugs found in the LearFan that will hopefully disappear in the very near future.

1 BUGS LIST

- At times, especially on reloads into different Liveries, the LearFan switches and selectors stop animating. It could possibly be a bug in the simulator as it turns up on people that reload planes over and over. The issue usually is healed by exiting the flight to the Main Menu Screen in MSFS, then reloading the flight. When the aircraft does this, the switches still 'actuate' systems. The switches simply do not move.

LearFan 2200

Flying the LearFan 2200

This is a flight instruction on the basics of flying the sleek LearFan 2200.

LearFan 2200

Take-Off

Photo by Bill Ortis

Take-Off

The 'Modernized' LF-2200 by LHC features a VERY POWERFUL PW-127XT with 2600 SHP. That said, if you 'try' to use full throttle, bad things can happen. You should only need 'full throttle' at high altitude when going for maximum cruise speeds.

Note that the LearFan has a high prop pushing from the back, its line of thrust is high over its CG. With that, when you are fully laden and taking off, accelerating, you might need to let off the throttle slightly to allow the nose to come up for take-off. The line of thrust can be great enough to hold the nose wheel down.

Precheck

Park brakes on, check area behind aircraft, switch on Battery, wait for PFD bootup, then top click Starter switch to start mode, wait for ignition and climb to 220 to 300 TT. Turn off Starter, turn on Avionics switch, turn on Generator, turn on exterior lights.

Launch

You must only use approximately 60 to 75% Throttle 'Maximum' for take-offs. The airframe, on the ground, accelerating, is dangerous to handle. Software to manage throttle limiting is not installed on this airframe. You must learn to only use just over half throttle at take-off. Fully laden take-off's might use 60 to 75% throttle. With 50% fuel and 2 souls on board, the LearFan is literally a dragster on a race track, a rocket on a launch pad.

Climbout

Your climbout should put you at about 1500 to 3000 FPM. She can climb like a rocket, but will spend your fuel. Your jet is a powerful PW-127EX with 2600 SHP. You are now rocket-powered. :)

LINEUP

ROTATION

PRECHECK

LAUNCH

CLIMBOUT

Lineup

Set flaps for one notch down
Turbine red Control Knob to full/forward
Trim to neutral / zero point

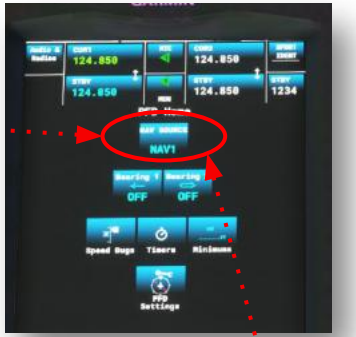
Rotation

The LearFan's prop thrust center is higher then the CG. It can push the nose down at times on acceleration. You 'might' need to reduce throttle at rotation point to get the nose tire to rise, mainly only on heavy loadout flights with full fuel and people.


LearFan 2200

Flights

GPS / NAV 'Source' Selection



Climbout

Average Climbouts are about 1800 to 2200 FPM depending on loadout. Half tanks and crew of two only (lite loadouts) can yield sometimes up to 3500 FPM with nice conditions

High Altitude

The LearFan 2200 runs best between FL20,0 and FL40,0 feet, with 30K to 40K feet being the best zones for speed and engine efficiency. There, you can get speeds up to 390 knots TAS.

Descending

Descent is pretty similar to most aircraft. She will not rocket downwards on descents like some of the other planes (jets) that are heavy and metal in construction. She doesnt have spoilers but truly doesnt need them as she is lite enough to counter descent acceleration. If you are going slow enough, you can give the aircraft one notch of flaps if you need to do a steep emergency descent.

CLIMB — LEVEL — HIGH FLIGHT — AUTOPILOT — DESCENT

Level Flight

The LearFan flies very nicely when trimmed out well. You can fly her with your fingers, usually. On a windy day and doing 250 knots at low altitude, she might get a bit bumpy.

Autopilot

The LearFan is equipped with the same Autopilot system as the KingAir and does very well. It is preset to 'lock' in your Pitch and 'Wing Level Mode' when you engage Autopilot (AP button). From there, you can then setup your HDG, ALT, VS, etc.
Note that your Autopilot Navigational 'Guidance' Source is setup at the TSC screens, where you can use GPS, NAV1, NAV2 for Guidance sources. (Think GPS / NAV button from older FS days)

Landings

LearFan 2200

Photo by Bill Ortis

Landings

The LearFan 2200 with half fuel and just the pilot and copilot on board is 'very lite' and can land at slower speeds then normal, while fully laden landings will require full flaps and upper end approach speeds.

Pattern

The LearFan is not a heavy bird and can manage 120 KNOTS fine on pattern flights. If you are a bit heavy, a notch of flaps might assist you, as well as 125 KNOTS.

Over the Fence

When you are coming in, crossing the fence, you should be at 90 knots and slowing. Over the fence point is where you should already have your flaps fully deployed and gear is down and locked. A good point to verify your gear locks and your flap switch setting. 2 to 3 notches of flaps for landings.

120-130 KNOTS

100 KNOTS

90 KNOTS

85 KNOTS

Final

100 KNOTS is good for entering final, then beginning your slow down as you get near the fence. Gear down as you enter Final, Flaps should be at full, three notches down, at half-way point to the runway.

Touchdown

At 75 to 80 KNOTS, the LearFan will begin to come down. Pull back gently to create a nose up attitude. She should slowly come down. Once down, allow her nose to slowly come down on its own. I usually try to use nose up attitude to also bring down her speed for a clean flare and touch down. She lands so nicely. Remember though, you have a big fin on the tail hanging down. Too high of a attitude and you will hear a loud scrape as you drag the skid on the runway.


LearFan 2200
G-BAFM

Autopilot Management

An extremely basic, bare bones hidden autopilot system for your long flights in MSFS.

AUTOPILOT MASTER

When you turn on the AP master, your plane automatically goes into 'Attitude Hold' mode and also 'Wing Level' mode. You should not turn on AP until your attitude of climb or descent is where you want it. Then click AP. You will see about a 200 fpm climb. I do not know why.

WING LEVEL MODE

This AP system is setup to go into Wing Level Mode when AP is switched on but no guidance options are active. She should automatically level her wings. (Roll only, not Pitch).

HEADING MODE

Note your Heading Bug indicator and adjust if necessary if needed. You can Left+Right click the top of the HDG knob to engage 'HDG' to lock in your forward direction.

ALTITUDE HOLD MODE

When you activate ALT mode, sometimes the AP system will take its time to 'adjust' its pitch. At times, you may need to activate VS mode to 'nudge' the AP system to go to its assigned altitude. You can adjust VS rate with the small VS thumbwheel on the AP panel.

HEADING ADJUSTMENT SETTING

This allows you to set your heading through the mouse readout. You can hold down Left Mouse button on it and see your heading setting. Then slide mouse left and right to adjust your heading.

Autopilot Management

Page 2

TIPS AND TRICKS

The LearFan uses the same Avionics Suite as the Beech KingAir in MSFS. If you are fluent in its avionics, you will fit right in with the LearFan 2200 AP system.

AUTOPILOT: GPS / NAV Mode

Page 3

TIPS AND TRICKS

HOW TO SET UP NAV OR GPS AS AP SOURCE

In the mini TSC screens, you will see in the top of the Christmas tree of graphics buttons, your 'NAV SOURCE'. Tap that to scroll through your various Navigation computers 'sources' that it would use for its flight guidance system. NAV1 and GPS are common.

COM1 and NAV1 in TCS Knobs

I coded the two part knobs on the Mini TCS Screens to operate COM1 and NAV1 Adjustments in Standby. You can click the top of the two stage knob to 'flip' the radios from Standby to Active.

GPS MODE SOURCES NAV1 MODE

LearFan 2200

THE LEARFAN 2200 TEAM

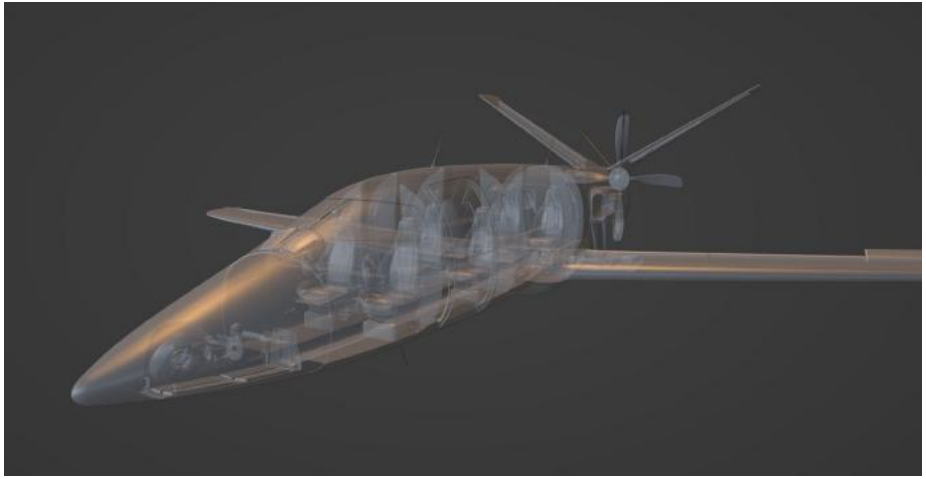
Bill Ortis……Team Leader, Owner, Mesh/model craftsman, Coding, Graphics, Photography, Flight Model design, Test Pilot
RonH……Coding, Animation, Calibration, Diagnostics, Blender to MSFS SDK Systems Specialist, Flight Model design, Test Pilot
Otmar (Vitus)……Blender and Substance Painter teacher
Kevin (Leprechaun)……Blender and Substance Painter teacher
BeeJay from Big Radials……..Blender and Coding help
Jim Goldmann…….Test Pilot, Test Pilot, and Graphics Artist
The guys at the Discord MSFS design center
Sylvain the Flying Raccoon from Team Asobo
Seat Models by GGaithGM

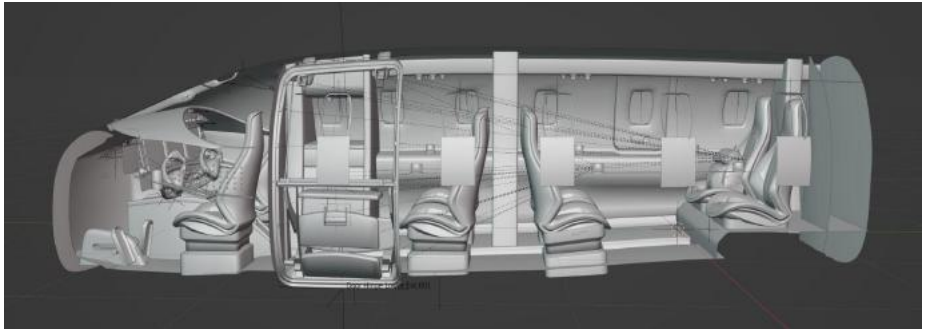
CREATING THE LEARJET 2200 PROJECT

I constructed the model of the LearFan in Blender. I was learning Blender, having been convinced by others that it was far superior to Max, I decided to do it. I was tired of Max 2020 and its buggy problems. Blender handles scenes much more easily, and amazingly, its free.

The custom designed LearFan yoke

I highly recommend Blender. It has come far and is an amazing program for making planes with.

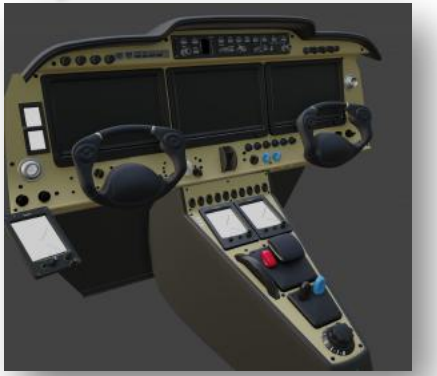


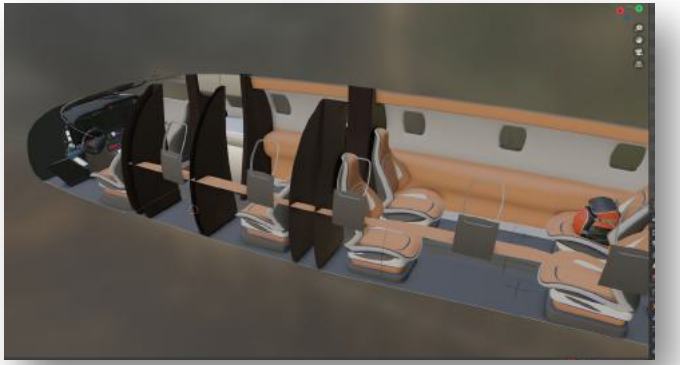


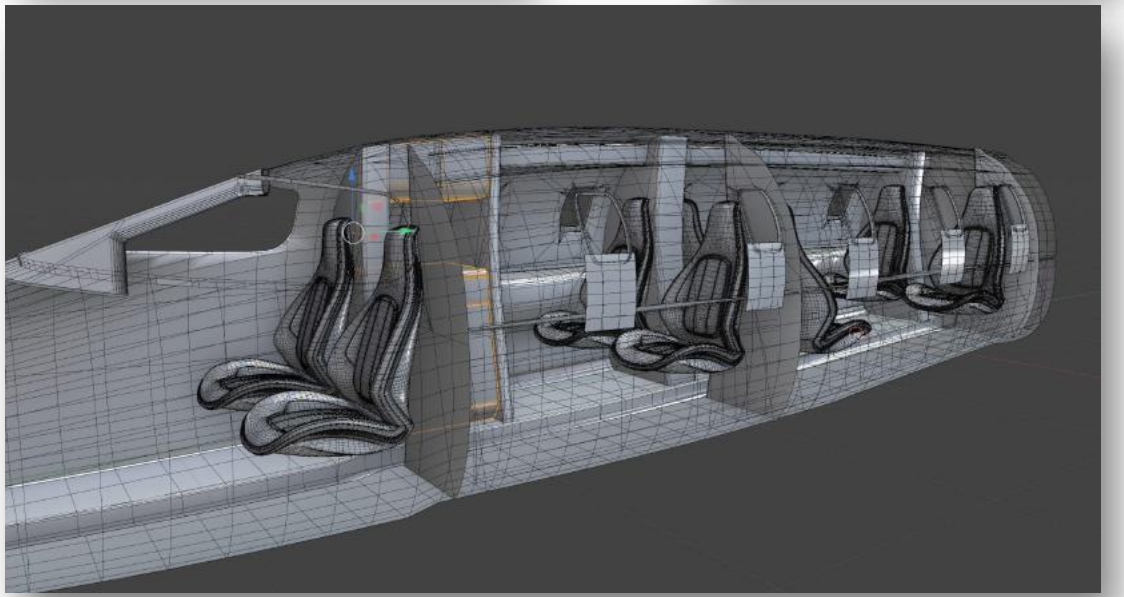
CREATING THE LEARJET 2200 PROJECT

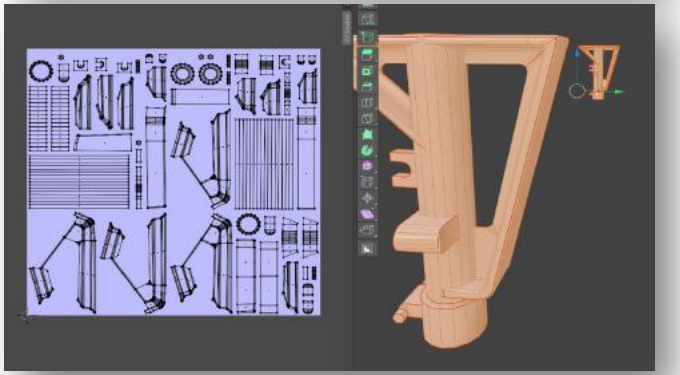
Seats are by a very good GM Designer who sells work at CGTrader. GGraithGM is his call sign there. Amazing work.

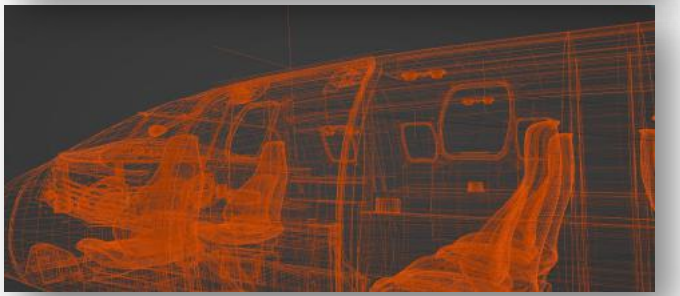
3D MESH WORK











Thank you.

Without your support, I could not bring this to you. Thank you for your purchases. God bless you.

For more products, you can find my website at **lionheartsimulations.com**

OTHER LIONHEART CREATIONS AIRCRAFT FOR MSFS FLIGHT SIMULATOR

Trinidad TB21 GT

Quickie Q-200

Bucker Bu-131 Jungmann

Lionheart Simulations presently have 3 other aircraft in our fleet that work excellent in Microsoft Flight Simulator MSFS.

Dreams, Visions, and Prayer

Jesus

A lot of people in this world who pray do not know that it is also when the Lord talks to us. Some do not realize that The Lord might be saying something to us in the midst of prayer, something that comes in so subtly, so softly. It can be so gentle at times that it is nearly undetectable. At first, hearing the voice of the Lord or the Holy Spirit can seem impossible. But in prayer, if you learn to 'listen' in your thoughts, as well as praying, you will begin to see things, hear things. Thoughts will come to you, sometimes unique little videos, that will show you how something is done. You might hear something like a single word, like 'caution' or 'gentleness'.

Mind you, the enemy, the forces of evil and darkness also use this zone, the mind lands, as a place of communication and launching attacks of lies, temptations and dark thoughts. Dismiss them, rebuke them, refocus back on the Lord.

Apostle Paul taught that we should pray unceasingly. It is so true. Whether you are driving somewhere, standing in line at a store or restaurant, sitting somewhere, walking, shopping, you can be saying little prayers. I do this. I'll send out a prayer for the Ukraine, or for my brother who needs healing. But when I send a 'special' prayer, a heavy prayer, like after Bible Study or before bed at night, I'll take it as a 'important phone call' to the King of Kings, someone of great importance. Imagine, or rather realize, you are phoning up the owner of Earth and all its people, who is in Heaven, another world. You are placing a phone call, a communication, a conversation, with someone so huge and important. Those times, you should perhaps take a moment and get your prayer requests in order. When you pray, tell Him about how thankful you are about your blessings. Then let Him know your requests. Learn to talk with the Lord. And listen, for sometimes He will talk back. He might send you some amazing inspiration, tell you what's wrong with something, let you know about something you forgot, and the list goes on.

The Scripture says that the Lord wants to be part of ALL of our lives. All of it. Share it with the Lord and tell him what you need, or what a person needs, a person that needs healing, etc. Let Him know. Remember, you too are like a messenger and you can let Him know about the needs of others as well as yourself.

Prayer is amazing. Prayer is your link with God. Build it up. Be powerful in prayer. Seek Him and you will find him. Pray in times of emergencies. Pray in times of thanks giving. Pray always, pray unceasingly. As you come close to the Lord, so also the Lord will come closer to you.

God bless and stay strong.


Jesus
Peace be with you in your Journey through life...
PHOTO FROM AMAZON FIRE SCREENSAVER COLLECTION