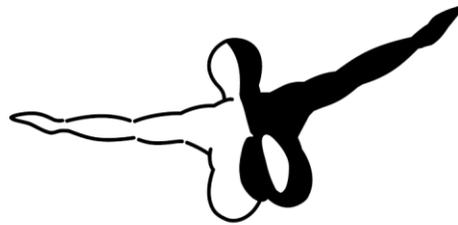


HUEY X



aerOSOFT™



CONTENTS

COPYRIGHTS 3
CREDITS.....4
SYSTEM REQUIREMENTS4
CONTACT SUPPORT4
INSTALLATION AND REMOVAL5
IN FSX5
 MODELS AND LIVERIES5
 COLD DARK / READY TO GO5
 LIMITATIONS.....5
 FLIGHT MODEL.....5
 TURBINE.....6
 ROTOR BRAKE6
 FSX SETTINGS.....6
 CONTROL HARDWARE6
 AEROSOFT SOUND MODULE6
FLYING THE HUEY7
SYSTEMS8
 CAUTION SYSTEM8
 ICE AND RAIN REPELLENT8
 DOORS AND WINDOWS.....8
 LIGHTING9
 OIL SYSTEMS9
 ELECTRICAL SYSTEM9
 ENGINE VIBRATION INDICATOR.....10
 FUEL SYSTEM10
 HYDRAULIC SYSTEM.....10
 ENGINE AND POWER TRAIN SYSTEMS.....11
 PILOT CONTROLS11
 ANTI-TORQUE PEDALS11
 COLLECTIVE PITCH LEVER11
 CYCLIC STICK11
 GYRO.....12
 AVIONICS12
 TRANSPONDER12
 COMMUNICATION AND NAVIGATION RADIOS12
PANELS AND GAUGES13
 LEFT MAIN PANEL14
 RIGHT MAIN PANEL15
 CENTER CONSOLE AFT16
 CENTER CONSOLE FRONT17
 ENGINE INSTRUMENTS18
 OVERHEAD PANEL19
 CIRCUIT BREAKER PANEL20
 MISCELLANEOUS.....21
OPERATING LIMITATIONS.....22
 TYPE OF OPERATION.....22
 AMBIENT AIR TEMPERATURE LIMITATIONS22
 ALTITUDE LIMITATIONS22
 MAXIMUM GROSS WEIGHT.....22



CHECKLISTS23
 INTERIOR CHECK23
 ENGINE PRE-START24
 STARTING24
 ENGINE RUN-UP24
 BEFORE TAKE-OFF25
 ADDITIONAL FOR IFR FLIGHTS, CHECK IN HOVER TAXI25
 BEFORE DEPARTURE25
 AFTER TAKEOFF / CRUISE26
 DESCENT / BEFORE LANDING26
 AFTER LANDING26
 SHUTDOWN26
APPENDIX A: THE AEROSOFT INSTALLER AND LAUNCHER27





THE BELL UH-1H (UH-1D) / BELL 205A-1

The Bell UH 1(Bell 205) is without a doubt one of the most famous helicopters. The first versions were produced in 1956 and it is still manufactured today. Bell named it UH-1 Iroquois but it became better known under the Huey nickname. Without a doubt the Vietnam War played an important role in the development and fame of the aircraft. For the first time infantry were highly mobile and could operate anywhere in the range of the Huey. Casualties could be med evacuated fast. It changed the face of war from fixed fronts to a series of skirmishes and a far better chance of survival when you got wounded (assuming you were on the side that had helicopters).

The UH-1H was a development on the UH-1D model, with the main difference of a stronger engine. The 1,400 shp Lycoming T-53-L-13 however was soon shown to be a bit too powerful for the gear box and it is almost always limited to a lower output (often 1,100 shp).

The civilian version was called the Bell 205 and although not as successful as the military version they were produced in the thousands and are certified for nearly any role a helicopter can perform.

Please note that the German Bundeswehr Hueys are built in Germany by Dornier and use the UH-1D designation although they are in fact identical to the UH-1H as flown by the US armed forces. Please note that we use the UH-1D designation.

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Aerosoft GmbH
Lindberghring 12
D-33142 Büren
Germany
www.aerosoft.com



CREDITS

Concept:	Joachim Schweigler (SPECIFIC - 3D - DESIGN) & Aerosoft
Modeling/Texturing/Animation:	Joachim Schweigler (SPECIFIC - 3D - DESIGN)
Project Management:	Mathijs Kok (Aerosoft)
Manual, documentation:	Mathijs Kok (Aerosoft) & many others
Manual corrections:	Christoph Beck
XML coding:	Finn Jacobsen (Aerosoft)
Flight modeling:	John Cagle & Aerosoft
Sounds:	Andriano Martoni & William Lennox (Aerosoft)
Installer:	Andreas Mügge
Testing:	Several good folks who will all be getting a copy

Special thanks to Mr. Mallwitz and Mr. Schröder at Bückeburg airfield and Mr. Sarmann and Mr. Buckschad at Celle Faßberg airfield for the assistance. In general, the German Bundeswehr has been most helpful.

SYSTEM REQUIREMENTS

- Intel Core 2 Duo E6850 CPU (Core 2 Quad advised)
- 2 GB RAM
- Direct X 9 compatible Graphics Card with minimal 512 MB
- Microsoft FSX (with SP2 or Acceleration)
- Windows XP, Windows VISTA, Windows 7 (fully updated)
- Adobe Acrobat® Reader 8 minimal to read and print the manual ⁽¹⁾
- This product is compatible with DX10 as much as it possible (note that Microsoft does not document or officially support the DX10 mode)

⁽¹⁾ Available for free, download at: <http://www.adobe.com/prodindex/acrobat/readstep.html>

CONTACT SUPPORT

Support for this product is done by Aerosoft. We prefer to do support on the support forum for one simple reason, it is fast and efficient because customers help customers when we are sleeping.

Aerosoft forums: <http://www.forum.aerosoft.com/>

We feel strongly about support. Buying one of our products gives you the right to waste our time with questions you feel might be silly. They are not.



INSTALLATION AND REMOVAL

This product uses the Aerosoft Installer and Launcher combination. That means that you will have to activate the product online after installing it. This is very simple -- however, if you need assistance check Appendix A where it is explained step-by-step.

After installing it can help to defragment your hard disk (unless it is a SSD drive that should not be defragmented). Do note that after installing you will be presented with a warning the first time you start FSX. Just accept what is offered.

Removal should **never** be done manually but only using the software removal applet you will find in the Windows Control panel.

IN FSX

MODELS AND LIVERIES

Included are Bell 205 (civil) and Bell UH-1D (military) models and five different liveries. You will find them in FSX under the Aircraft Type *Rotorcraft* (for the 205 models) and the Aircraft Type *Military Rotorcraft* (for the UH-1D models). Do make sure you activated the [Show all variations] option.

We expect more liveries available soon as a complete paint kit is available.

COLD DARK / READY TO GO

When [shift]-[2] is pressed the user can configure the helicopter with a single click in a 'Cold and dark' state where all systems are off, or in a 'Ready to go...' state where the helicopter is fully configured for take-off. Please note that as systems initialize all at the same time some alarms might be triggered. If there is any system that does not seem to initialize correctly we advise to select the 'Cold and dark' state, and wait five seconds before selecting the 'Ready to go...' state.

LIMITATIONS

Helicopters (and especially turbine helicopters) are not ideal in FSX because some functions are just not possible. We would like to explain how we handled those.

FLIGHT MODEL

The biggest problem of helicopters in FSX is the simple fact that the flight modeling is very limited. We solved this by including a separate module that corrects many (if not all) of these problems.

- Torque-induced yaw added
- Stabilized rotor head simulation added
- Control travels in hover and cruise flight corrected
- Tail rotor effectiveness corrected



- Retreating blade stall
- Control effectiveness depending on hydraulics pressure

The Huey has been tested by four pilots who in total have thousands of hours at the controls of this helicopter. They assure us the behavior in flight is very accurate. Please note that **vortex ring state** (VRS) is NOT included because the Huey does not suffer from this dangerous condition.

TURBINE

We decided against adapting the strange turbine implementation of FSX to maintain full compatibility with other add-ons and hardware. This means the start-up procedure is not fully accurate.

ROTOR BRAKE

Although all the rotor brake controls and feedback systems are all functional and animated, there is no actual rotor brake. This is because the helicopter base model in FSX that we decided to use does not have this function.

FSX SETTINGS

We strongly advise the fully realistic settings in the Aircraft | Realism as in any other setting the systems might not function as they should do. Note that for some other helicopters different settings are advised.

A good frame rate is more important for helicopter flying than it is for flying aircraft because you depend so much on visual input. Try to keep a steady frame rate.

CONTROL HARDWARE

As flying a helicopter in FSX involves an almost constant input of small commands it helps to have a joystick that is precise and has a very small 'dead zone'. The use of a separate rudder is highly recommended.

AEROSOFT SOUND MODULE

Included in this product is a special sound module that adds many sounds to the Virtual Cockpit. These sounds cannot be used by FSX and this module is needed. You might notice that these sounds work a bit differently than the standard FSX sounds. They will keep playing when the simulator is paused or in slew because they are handled by the Operating System and not by FSX. The big advantage is that they have no impact on the frame rate of FSX on a multi core computer. Sound volumes in FSX should be all at maximum to get the best sound environment.



FLYING THE HUEY

As helicopters go the Huey is one of the easiest to fly. It is very stable and not as nervous on controls as many other helicopters. As the helicopter has been manufactured for many decades and has been improved as time went on all the nasty behavior has been corrected. It is very predictable in all conditions.

To get acquainted with the Huey we advise you to position the helicopter on a wide long runway in perfect weather conditions (no wind) with full tanks. Make sure you are running a good frame rate, at least 20 fps. Now slowly pull the power control lever (you would use the throttle for that) until the helicopter lifts off. Immediately reduce power a fraction. The helicopter will move forward slowly. Reduce throttle even more and pull the cyclic to slow down and land. Keep making these small hops to the end of the runway.

At the end of the runway turn around and repeat the process, but try to make the jumps a bit longer every time. Try to stay between 5 and 10 feet. Also try to come to a complete stop before touching down. When you arrive back at your starting position you might even be able to hover in a stable attitude for a few seconds. It's hard, but it will get easier. Now turn around and take off one more time but keep climbing. Use the runway to keep you in a straight line. Correct any unwanted movement as early as possible but with very light forces on the controls. Try to maintain speed around 90 knots in the climb and keep the torque at 2.

As you reach 500 feet AGL pull the cyclic forward to level off and stay at 90 knots (that's the correct cruise speed at any altitude). Maintain speed, altitude and direction. You will have to power down to 1.5 torque to get into a fully stable cruise flight. When you feel comfortable try making a few turns. Maintain altitude and speed. Increase the rate of turn as you get more comfortable. When it is time to land approach the airport on the extended runway center line. Reduce power, but do not let the nose drop, it should remain in the same attitude. Do not pick up more speed with every power change. As you get close begin reducing the speed. Aim for the runway threshold. When speed is reduced to around 20 knots you will have to increase power as you are losing 'transition lift'. You will also need to use more anti torque at lower speed. Ideally you should arrive over the threshold at 10 feet and with very low speed. Now slowly reduce speed while staying above the runway. When speed is almost zero, power down and land. Some (very little!) forward speed is acceptable when you are learning and makes landing a bit more stable. But a perfect vertical landing is of course much better.

The biggest problem any beginner has with helicopter is balance and over-controlling. A helicopter, unlike most aircraft, always needs to be flown, you can never 'let it fly itself' as you search for a chart or a soft drink. But after a few hours you will not even notice the small control inputs you make. It's like riding a bike or driving a car. It becomes natural. But always try to correct any behavior you do not want as early as possible and with a control input as lightly as possible. Stay with the aircraft; do not fall behind until you have to make big control inputs. It's very easy to get into a situation where too much control input leads to an even bigger opposite input.

Note that there are people who feel that it is best to start with learning to hover and not with the small hops advised above. This makes the learning curve steeper but when you master the hover stage all other stages of the flight will be much easier.

Flying a helicopter is without a doubt more challenging than flying an aircraft and the learning curve is different from an aircraft. The first hour is the hardest. But everybody can learn it.



SYSTEMS

The UH-1 has simple systems compared to modern helicopters. This makes it easy to maintain and highly reliable.

CAUTION SYSTEM

The caution panel will have lit sections when systems are not working correctly. This can be because they are not switched on (for example when the engine is not running) or because there is a failure. Any lit indication will also illuminate the MASTER CAUTION light. The TEST/RESET switch will reset the MASTER CAUTION light and will light up all segments when in test setting.

ENGINE ICING	Icing conditions	De-icing systems - ON
ENGINE ICE DET	Engine ice detector failure	
ENGINE DE-ICE ON	De-ice system is on	
LEFT FUEL BOOST	Pump pressure low	Reduce flight altitude if practical
RIGHT FUEL BOOST	Pump pressure low	Reduce flight altitude if practical
ENG FUEL PUMP	Pump failure	Land as soon as possible
FUEL LOW	10 minutes of cruise left	
FUEL FILTER	Filter partially clogged	Correct for next flight and land within 30 minutes
GOV EMER	Governor in manual mode	
HYD PRESS NO. 1	Hydraulic system 1 low pressure	Check HYDR SYS NO.1 switch is ON Toggle hydraulic system circuit breaker Land immediate if pressure is not restored
DOOR LOCK	Aft cabin door unlocked	Correct

ICE AND RAIN REPELLENT

The Huey is designed to operate in harsh conditions and is equipped with a simple yet efficient system to prevent icing. The HTR switch on the overhead panel controls the pitot heating system. The defrost switch on the right top of the center console activates the window defrost systems, this also prevents fogging of the windows. On the overhead panel the CABIN HEATING BLEED AIR controls the flow of hot air to the cabin. The AFT OUTLET controls the heating in the cabin section behind the cockpit. Engine anti-ice is controlled with a switch on the engine panel.

The two wind shield wipers can be activated individually but will both run at the same speed (OFF/LOW/MEDIUM/FAST). Note, that the circuit breakers must be active!

DOORS AND WINDOWS

The passenger / cargo doors consist of two sections. The small forward section can only be opened when the larger aft section is opened first. The crew doors and windows can be opened.



LIGHTING



The internal lighting system consists of overhead dome lights that can be white or green and panel lighting in green. In flight only the panel lights are used. Note that the white dome lights are useful if you find the whole cockpit too dark, even during daylight hours. Do note that like many military cockpit the Huey panels are dark and offer little contrast.



External lights include position (navigation) lights that can be set steady or blinking and bright or dim, the latter to be used with night vision equipment and anti-collision (strobe and beacon) lights. The landing light can be extended and retracted and accidental activation is prevented with a switch guard. The powerful search light can be retracted when not used and steered with the thumb switch

OIL SYSTEMS

The engine oil system includes an oil reservoir, valves, filters, coolers and pumps. It is one of the most vital systems on the helicopter and pressure and temperature should always be observed. On the main console there two gauges that show the oil pressure and oil temperature. The caution panel will show low oil pressure and oil temperature cautions when appropriate.

The transmission oil system includes a sump that serves as the reservoir, valves, coolers, filters and a pump. It not only lubricates the transmission system but also cools it. On the main console there are two gauges that show the oil pressure and oil temperature. The caution panel will show low oil pressure and oil temperature cautions when appropriate.

ELECTRICAL SYSTEM

The electrical system includes a 115 volt AC system and a 28 volt DC system. Two engine-driven generators (MAIN GEN and STARTER GEN) provide the power to two inverters that convert the 28 volt DC electricity to 115 V AC and feed the essential and non-essential bus. A 24 volt battery provides backup power and is used to start the engine.

On the main console a DC and AC voltmeter show diverse voltages (depending on the switch settings), load meters show the load on the electrical system and two indicator lights show generator failure. Depressing these lights will test them.





AC Power Panel

INVRT 1 & 2	OFF	Inverter off
	ON	Inverter on
	RESET	Resets the inverter
VOLTMETER	BUS 1	Voltmeter shows BUS 1 voltage
	BUS 2	Voltmeter shows BUS 2 voltage

DC Power Panel

MAIN GEN & STARTER GEN	ON	Generator online
	OFF	Generator offline
	RESET	Resets the gen
VM	BAT	Voltmeter shows battery voltage
	ESS BUS	Voltmeter shows Essential bus voltage
	NON ESS BUS	Voltmeter shows Non-Essential bus voltage
NON ESS BUS	MANUAL ON	Connects NON ESS BUS to STARTER GEN
	NORM ON	Disconnects NON ESS BUS from STARTER GEN
BAT	ON	Battery connected to buses
	OFF	Battery disconnected from buses

ENGINE VIBRATION INDICATOR

The Engine Vibration Indicator, located on the main dashboard, shows the vibration level of the engine. This is of vital importance as vibrations can weaken and even damage the components of the engine. Unlike an aircraft where mechanical failures can cause the loss of propulsion, in a helicopter they can also cause the loss of lift and make an emergency landing impossible. The display will show the level of vibration and will illuminate a warning light when the vibrations exceed 3.7 mils.



FUEL SYSTEM

The fuel system includes three fuel tanks, valves, in-tank jet pumps and two engine driven pumps. The engine pumps the fuel from the two underfloor cells to the engine while the center tank feeds the underfloor cells using gravity. Two fuel boost pumps in the underfloor tanks pressurize the fuel as it leaves the tanks.

On the main panel there are two gauges that show the fuel pressure and fuel quantity. The caution panel will show low fuel pressure (indicating a problem with the boost pumps) and fuel low quantity when appropriate. Next to the fuel quantity gauge there is a test button. Keep this depressed and the fuel indicator should slowly rotate counterclockwise.

HYDRAULIC SYSTEM

The simple hydraulic system is used to lower the control forces needed to control the helicopter and to power the rotor brake system (inop in the simulation). It consists of a dual system powered by an engine-driven pump. At the top right of the center console the HYD CONT (Hydraulic Control) switch connects/disconnects hydraulic pressure to the control system. If it is switched off the controls will be nearly impossible to move.



ENGINE AND POWER TRAIN SYSTEMS

The 1,400 shp Lycoming T-53-L-13 turboshaft engine is made up with a 5-stage axial compressor and a 1-stage centrifugal compressor. Although it is not a modern engine it is light, powerful and highly reliable. In many UH-1H's it is limited to a lower maximum power output to reduce wear on the other components.

The engine is connected by the main drive shaft to the transmission. From the transmission the main rotor mast drives the main rotor and the tail rotor drive shaft drives the tail rotor.

PILOT CONTROLS

ANTI-TORQUE PEDALS

The pilot controls the yaw of the helicopter with the Anti-Torque pedals. They are connected to the tail rotor where they control the pitch of the two tail rotor blades.

COLLECTIVE PITCH LEVER

The pilot controls the collective (both blades are controlled at the same time) pitch of the main rotor blades by moving the power control lever up and down. This increases or decreases the total lift of the main rotors. By twisting the lever the engine throttle is controlled.

ENGINE THROTTLE AND GOVERNOR

As the main rotor blade changes pitch it has more or less drag. The governor system controls the throttle and keeps the engine rpm steady. The pilot does have control that via the throttle, but in FSX this just does not function well and it is strongly advised to keep the throttle (the throttle in the helicopter, not the throttle control that is part of your joystick) at 100%. This does NOT mean the engine will run at 100% rpm, it just means the governor can use the full throttle range. A small knob on the power control lever can be used to set the governor, but only by a small amount. In a normal flight in FSX the pilot can more or less totally ignore the throttle; it is only needed in startup and shutdown.

CYCLIC STICK

The cyclic stick is used to control pitch and roll by changing the thrust vector of the main rotor. When the thrust vector is pointed backwards the helicopter will move forwards, when it is pointed to one side the helicopter will move sideways. It does this by changing the pitch of the blades. One of the nicest aspects of the Aerosoft Huey X is that the animations of the rotor are very accurate and by looking at the rotor head you can actually see how this functions. A synchronized elevator on the tail boom assists in stabilizing the pitch axis.



GYRO

The C-2G compass panel allows you to put the gyro in DG and MAG mode and the aligning of the gyro compass. The system is normally in MAG mode where the compass corrects the drift of the gyro. The DG mode is only available as backup.

AVIONICS

TRANSPONDER

The IFF/ Transponder will respond to enquiries from the traffic control systems in civil mode and will avoid being fired on by friendly forces in military mode.

- OFF/STBY/NORM/EMER switch
 - OFF: Transponder inoperative
 - STBY: Transponder in standby mode
 - NORM: Transponder activated
 - EMER: *Transponder transmits Emergency code (7700)*
- DIAG/OFF/TEST switch
 - DIAG: Starts a complete test cycle
 - OFF: Normal operation
 - TEST: Lamp test (all lights on)
- [0]...[7] digits: Used to enter codes. Enter 4 digits plus [ENT] to set MODE 3/A directly or 2 digits plus [ENT] to enter a MODE 1 code shown in the left display.
- [CLR]: Deletes last entered digit
- [ENT]: Activates the entered code
- [MODE]: To change mode press [MODE] and the [1]...[0] key to toggle one of the available modes.
- ALL OTHER: all switches can be operated but do not have any function in FSX.



COMMUNICATION AND NAVIGATION RADIOS



When Cockpit ToolTips are activated the tool tip will show the active frequency.

There is a simple communication (COM1 in FSX) and navigation radio (NAV1 in FSX) on the center console. The power and volume knobs are used to set the frequencies. The fastest way to set a frequency is to use the mouse wheel. A separate ADF receiver on the lower center console is used to set the ADF frequency. Please note that decimal frequencies are not shown but can be tuned. When Cockpit ToolTips are





PANELS AND GAUGES

In the virtual cockpit the [a] key cycles through the diverse views (note there is no 2D panel)

- Pilot View
- Center Console (front)
- Center Console (aft)
- Overhead Panel (front)
- Overhead Panel (aft)
- Copilot View
- Observer View
- State Selector panel

All controls, knobs and switches can be operated with the mouse using the following logic:

- When a switch can only be toggled this is done with the left mouse button.
- When a switch has more than two settings left mouse click moves to one side, right mouse click to the other side. The mouse wheel will function here as well.
- All frequency setting knobs can be left clicked but the use of the mouse wheel is strongly recommended.





RIGHT MAIN PANEL



- | | |
|---|--|
| 1. Clock/Stopwatch | 16. Torque indicator test switch (left click) |
| 2. Clock set (mouse wheel)
Stopwatch START/STOP/RESET (left click) | 17. Radar altimeter |
| 3. Low RPM warning light | 18. Radar altitude warning light |
| 4. Fire warning light | 19. Radar altimeter power and warning light
setting knob (mouse wheel), press to test
(left click) |
| 5. Battery hot warning light with push to test
(left click) | 20. Not used |
| 6. Fire warning test button (left click) | 21. Gyro compass with VOR and ADF needles |
| 7. Cargo release armed warning light with push
to test left click) | 22. Gyro compass heading knob (mouse wheel) |
| 8. Rotor / Engine RPM indicator | 23. Vertical speed indicator |
| 9. Master caution warning light | 24. Marker beacon knob (left click) |
| 10. Airspeed indicator | 25. Gas producer N1% |
| 11. Artificial horizon | 26. Engine exhaust temperature |
| 12. Artificial horizon cage knob (left click)
Wing symbol adjustment (mouse wheel) | 27. VOR Indicator |
| 13. Altimeter | 28. VOR course setting knob (mouse wheel) |
| 14. Barometric setting (mouse wheel) | 29. Homing light with push to test (left click) |
| 15. Torque indicator | 30. Turn and bank indicator |
| | 31. Whiskey compass |



LEFT MAIN PANEL



1. Airspeed indicator
2. Artificial horizon
3. Artificial horizon cage (left click)
Wing symbol adjustment (mouse wheel)
4. Altimeter
5. Barometric setting knob (mouse wheel)
6. IFF code warning light with push to test (left click)
7. Radar altimeter
8. Radar altitude warning light
9. Radar altimeter power and warning light setting knob (mouse wheel)
10. Gyro compass with VOR and ADF needles
11. Vertical speed indicator
12. Turn and bank indicator
13. ILS indicator with course and glide slope indication
14. ILS test light with push to test (left click)
15. Homing indicator (not used)
16. Homing test light with push to test (left click)



CENTER CONSOLE AFT



1. ADF frequency setting
2. ADF power knob (left click)
3. 100 kHz setting knob (mouse wheel)
4. 10 kHz setting knob (mouse wheel)
5. 1 kHz setting knob with 0.1 kHz steps (mouse wheel)
6. Gyro compass source (left click)
7. Gyro compass align knob (mouse wheel)



CENTER CONSOLE FRONT



1. Transponder
2. Transponder power and mode (mouse wheel)
3. COM radio frequency setting
4. COM radio power (left click on bottom of knob)
Frequency setting knob for whole MHz (mouse wheel)
5. COM radio frequency setting knob for fractional MHz (mouse wheel)
6. NAV radio frequency setting
7. NAV radio Power (left click on bottom of knob)
8. Frequency setting knob for whole MHz (mouse wheel)
NAV radio frequency setting knob for fractional MHz (mouse wheel)
9. Chip detect selector (left & right click with spring return)
10. Cable cutter Guard (right click) and switch (left click)
11. Force trim (left click)
12. Hydraulic Control (left click)
13. Defrost lever (left click)
14. Warning lights
15. Master warning light acknowledge (right click) and Warning light test switch (left click)
16. Low RPM sound switch (left click)
17. Main fuel valve (left click) guard (right click)
18. Start fuel valve (left click)
19. Left internal aux fuel switch (left click)
20. Right internal aux fuel switch (left click)
21. Engine de-ice switch (left click)
22. Governor emergency switch (left click)
23. Search light power and stow switch (left / right click)
24. Search light position control hat switch (left click up, down, left and right)
25. Landing light Guard (left click)
Power switch (left click)
26. Landing light extend / retract switch (left click)
27. Governor RPM increase / decrease switch (left click and drag)
28. Idle release button (left click)
29. Starter - hidden beneath the collective (left click on marked position)
30. Throttle (mouse wheel / hardware controller propeller lever)



ENGINE INSTRUMENTS



1. Engine vibration monitor readout
2. Engine vibration monitor warning light
3. Engine vibration monitor mode STBY / ON / TEST (left / right click)
4. Fuel pressure indicator
5. Fuel quantity indicator
6. Fuel quantity indicator test button (left click)
7. Engine oil pressure indicator
8. Engine oil temperature indicator
9. Transmission oil pressure indicator
10. Transmission oil temperature indicator
11. Main generator warning light with push to test button (left click)
12. Starter generator warning light with push to test button (left click)
13. DC ampere meter
14. DC voltmeter
15. AC ampere meter
16. AC voltmeter



OVERHEAD PANEL



1. Dome lights (left / right click)
2. Pitot heat (left click)
3. Instrument lights (left click)
4. Position (NAV) lights STEADY / OFF / FLASH (left / right click)
5. Position (NAV) lights BRIGHT / DIM (NVG) (left click)
6. Anti-collision lights (strobe and beacon) (left click)
7. Wiper select switch PILOT / BOTH / CO-PILOT (left / right click)
8. Wiper speed selector (left / right click)
9. Cargo release arming (left click)
10. Bleed air switch for cabin heating (left / right click)
11. Aft outlet selectors for cabin heating (left / right click)
12. Inverter 1 (left click)
13. Inverter 2 (left click)
14. AC voltmeter selector Bus1 / Bus 2 (left click)
15. DC Voltmeter selector (left / right click)
16. NON ESS power mode (left click)
17. Main Generator switch (RESET / ON / OFF) (left / right click)
18. Starter generator switch (RESET / ON / OFF) (left / right click)
19. Battery switch (left click)
20. OAT (outside temperature indicator) (20 not visible here)



CIRCUIT BREAKER PANEL

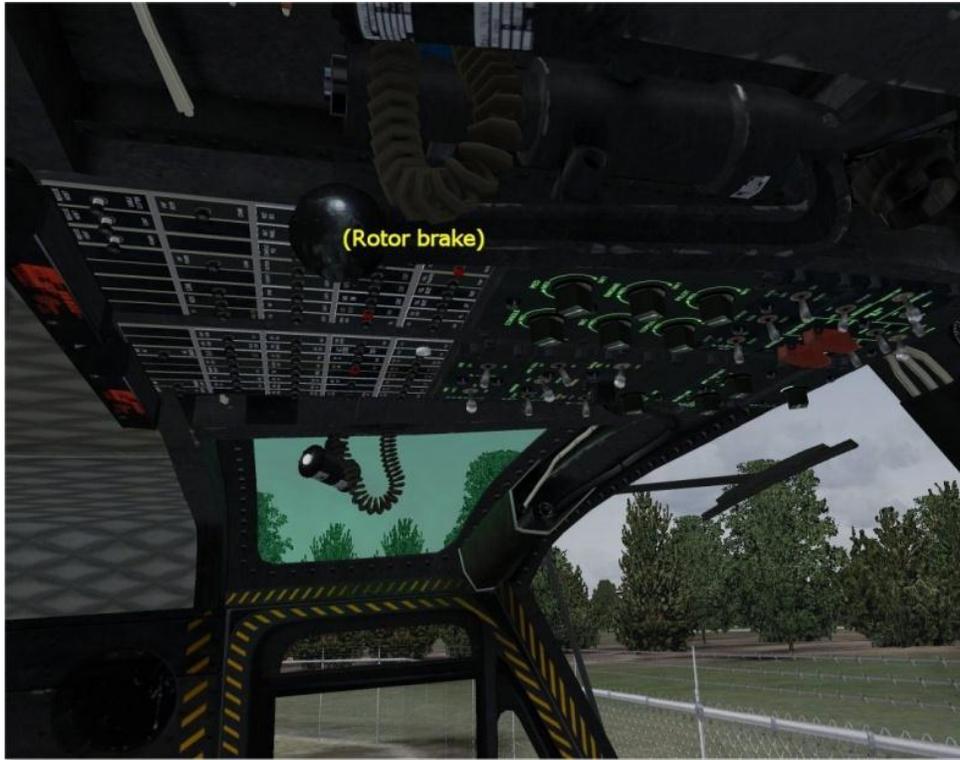
There are four circuitbreakers operational because they are used in the checklists.



1. Circuit breaker for Co-pilot windshield wiper (left click)
2. Circuit breaker for Pilot windshield wiper (left click)
3. Circuit breaker for Left fuel boost pump (left click)
4. Circuit breaker for Right fuel boost pump (left click)



MISCELLANEOUS





OPERATING LIMITATIONS

TYPE OF OPERATION

The helicopter is certified for day and night operations in known non-icing conditions. The equipment in the models we provide allows day and night IFR operations

AMBIENT AIR TEMPERATURE LIMITATIONS

The maximum sea level ambient temperature for operations is +53°C. The minimum sea level ambient temperature for operations is -52°C. Engine de-icing and pitot heat has to be turned on at temperatures below 5°C for flights in visible moisture. At temperatures above 5°C engine de-icing should not be used.

ALTITUDE LIMITATIONS

Maximum operating altitude is 20,000 feet pressure altitude. As oxygen equipment is not standard any operation over 8,000 feet should be considered non-standard.

MAXIMUM GROSS WEIGHT

Maximum gross weight is 4,310 kg (9,500 pound) up to 2000 feet pressure altitude.





CHECKLISTS

Please note that the checklists are also available in formats suitable for tablets and smartphones.

INTERIOR CHECK

1. Flight Controls FREE
2. HYD EMER OVER sw CHECK CLOSED COVER
3. SEARCH & LDG Lt sw OFF
4. Avionics equipment OFF
5. C-2G compass slaving MAG
6. INT AUX FUEL sws OFF
7. DE-ICE sw OFF
8. GOV sw AUTO
9. START FUEL sw ON
10. MAIN FUEL sw ON
11. HOIST CABLE CUT CHECK CLOSED COVER
12. FORCE TRIM sw ON
13. HYD CONT sw ON
14. DEFROST lever OFF
15. MARKER BEACON VOLUME knob OFF
16. Engine vibration indicator STBY
17. Clock CHECK / SET
18. BIV-NORM-TEST sw NORM
19. Radar altimeter OFF
20. Attitude indicators UNCAGED
21. Altimeter SET
22. OAT gauge CHECK
23. BLEED AIR selector OFF
24. Wipers OFF
25. POSITION LIGHTS AS REQUIRED
26. ANTI COLLISION LIGHTS AS REQUIRED
27. DOME LIGHTS AS REQUIRED
28. PITOT HTR sw OFF
29. DC CB IN (EXCEPT RESCUE HOIST AND WINDSHIELD WIPERS)
30. INVTR 1 sw OFF
31. INVTR 2 sw OFF
32. AC BUS sw BUS 1
33. MAIN GEN sw NORMAL (cover closed)
34. MAIN GEN CONTROL sw OFF
35. STARTER GEN sw START (cover closed)
36. STARTER GEN CONTROL sw OFF
37. DC NON-ESS BUS sw NORMAL ON

**ENGINE PRE-START**

1. BAT sw ON
2. ICS control panel CHECK
3. Engine vibration indicator check TEST
4. BAT-HOT It TEST
5. FIRE detector It TEST
6. CARGO REL ARMED It TEST
7. Torque meter indicator TEST
8. MAIN & STARTER GEN FAIL CHECK ILLUMINATED
9. Rotor brake CHECK
10. CAUTION Its TEST & RESET
11. Throttle CHECK TRAVEL & SET IDLE
12. GOV RPM INCR/DECR Sw DECREASE FOR 10 SEC

STARTING

1. EGT CHECK
2. Rotor blades FREE & CLEAR
3. Starter switch DEPRESS UNTIL 40% N1
4. Clock START
5. HYD CONT sw OFF/ON - controls stay in position
6. Throttle INCREASE UNTIL N1 70%
7. MAIN GEN control sw RESET, THEN ON
8. MAIN GEN FAIL It CHECK OFF
9. INVTR 1/2 ON
10. ENGINE / TRANSMISSION OIL PRESS CHECK
11. Throttle INCREASE TO FULL
12. RPM 6000 RPM
13. START FUEL sw ON
14. Engine / Transmission gauges ALL GREEN

ENGINE RUN-UP

1. FUEL GAUGE TEST sw DEPRESS TO TEST
2. PITOT HTR CHECK OPERATION
3. AC power check PERFORM
AC VOLTMETER BUS 1/2 sw CHECK 115 V
remain in position BUS 2
4. DC power check PERFORM
DC VOLTMETER sw ESS BUS CHECK 28 V
DC VOLTMETER sw NON ESS BUS CHECK 28 V
5. STARTER GEN control sw RESET THEN ON
6. MAIN GEN sw TRIP
7. MAIN GEN FAIL It CHECK ILLUMINATED
8. Load meter MAIN GEN ZERO
9. DC Voltmeter ZERO
10. DC NON-ESS BUS sw MANUAL ON
11. DC Voltmeter 28 V
12. DC NON-ESS BUS sw NORMAL ON
13. DC Voltmeter sw ESS BUS
14. MAIN GEN control sw RESET THEN ON



- 15. FUEL BOOST pump check PERFORM
- 16. DE-ICE PERFORM
- 17. DE-ICE sw..... ON
EGT CHECK INCREASE
- 18. DE-ICE sw..... OFF
EGT CHECK DECREASE
- 19. Engine / Transmission gauges ALL NORMAL
- 20. GOV RPM INCR/DECR test PERFORM
GOV RPM INCR/DECR sw..... MOVE THROUGH FULL RANGE
GOV RPM INCR/DECR sw..... SET TO 6400-6600 N2 RPM
- 21. C-2G COMPASS SYNCHRONIZE
- 22. Avionics check PERFORM
IFF/SIF CHECK OPERATION
VHF COM CHECK OPERATION
VHF NAV CHECK OPERATION
UHF/ADF CHECK OPERATION
MARKER BEACON CHECK OPERATION

BEFORE TAKE-OFF

- 1. Engine..... 6400-6600 N2 RPM
- 2. FUEL QUANTITY CHECK
- 3. Instruments CHECK
- 4. Radar altimeter ON
- 5. Caution panel CHECK (&reset)
- 6. OAT CHECK
- 7. PITOT HTR..... AS REQUIRED
- 8. BLEED AIR selector AS REQUIRED
- 9. DE-ICE sw..... AS REQUIRED
- 10. FORCE TRIM..... AS REQUIRED

ADDITIONAL FOR IFR FLIGHTS, CHECK IN HOVER TAXI

- 11. Turn needle, heading compass..... CHECK
- 12. Vertical speed, altimeter CHECK
- 13. Attitude indicator CHECK
- 14. Turn and slip indicator..... BALL FREE
- 15. Airspeed indicator CHECK

BEFORE DEPARTURE

- 1. Avionics SET/ ON
- 2. Navigation SET
- 3. Hover power / takeoff power..... CHECK
- 4. Fuel quantity CHECK
- 5. Attitude indicators..... SET
- 6. Takeoff time NOTE



AFTER TAKEOFF / CRUISE

1. Power and trim.....SET FOR CRUISE
2. FORCE TRIM sw ON
3. Attitude indicatorSET
4. AltimeterCHECK
5. OATCHECK
6. PITOT HTR / DE-ICE.....AS REQUIRED
7. Fuel consumption.....CHECK

DESCENT / BEFORE LANDING

1. Engine.....6400 / 6600 N2 RPM
2. FORCE TRIM sw ON
3. BLEED AIR selectorAS REQUIRED
4. Search and landing lights.....AS REQUIRED

AFTER LANDING

1. Collective pitch FULL DOWN
2. FORCE TRIM sw CHECK ON
3. Search and landing lights..... OFF
4. Exterior lights AS REQUIRED

Extended ground running (more than 3 minutes) should be done with N1 speeds between 75% and 80%

SHUTDOWN

1. GOV RPM INCR/DECR sw..... FULL DECREASE
2. AVIONICS ALL OFF
3. Throttle..... SLOW DECREASE TO FLIGHT IDLE 70 TO 72%
4. EGT STABILIZE
5. Throttle..... CLOSE
6. MAIN/START FUEL sw..... OFF
7. INVRT 1/2 sws OFF
8. MAIN / STARTER GEN control sws..... OFF
9. EGT CHECK DECREASE
10. External lights..... OFF
11. BAT sw OFF

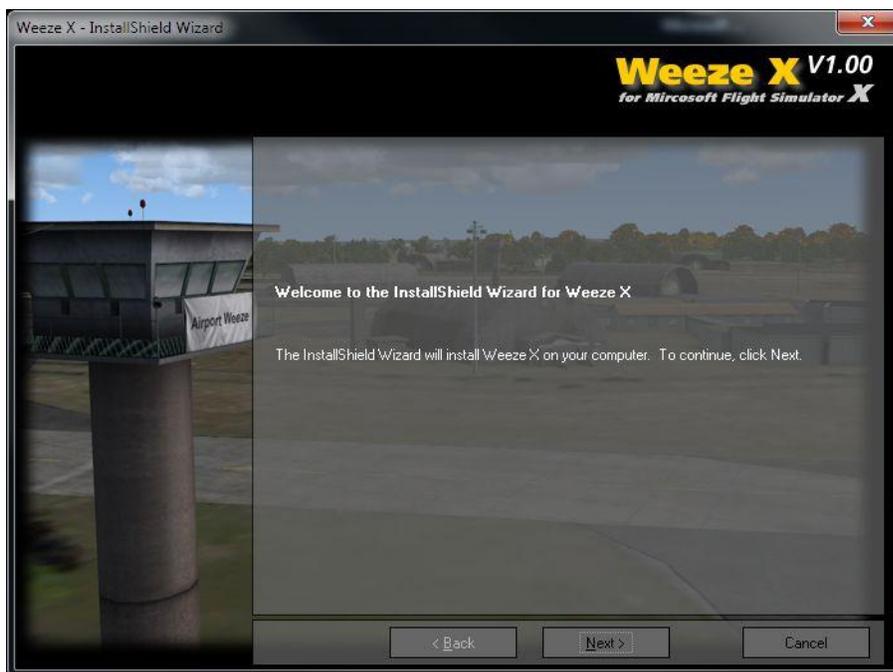


APPENDIX A: THE AEROSOFT INSTALLER AND LAUNCHER

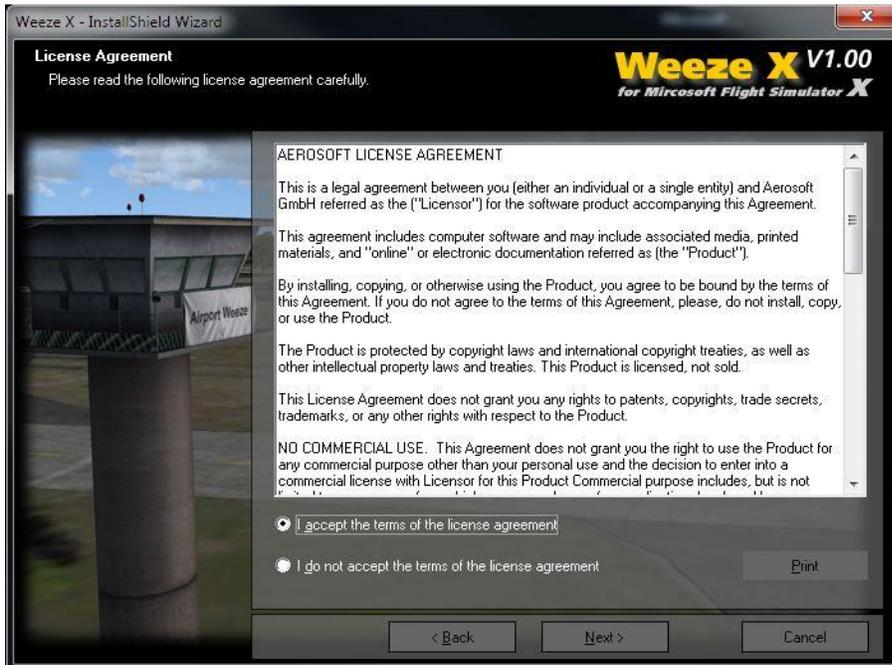
The new installer and launcher system has advantages for Aerosoft (it protects our copyrights better) and for the customers (makes it easier to see what is installed and which updates are available. Using the new system is simple and only adds a few steps to what was used before. However, there are four things that you have to keep in mind.

- You need to **be connected to the Internet while the installation and activation takes place** (there is an offline option via email, more on that later).
- You need to be **logged on as Administrator** on your system.
- You need to understand that **the product needs to be activated before it can be used**. Scenery products will just not show until the files are activated and aircraft products will have other limitations.
- You need to know **the installed files are customized** to your order. Multiple files of the product will be marked so if they ever ended up on the Internet we know where they came from.

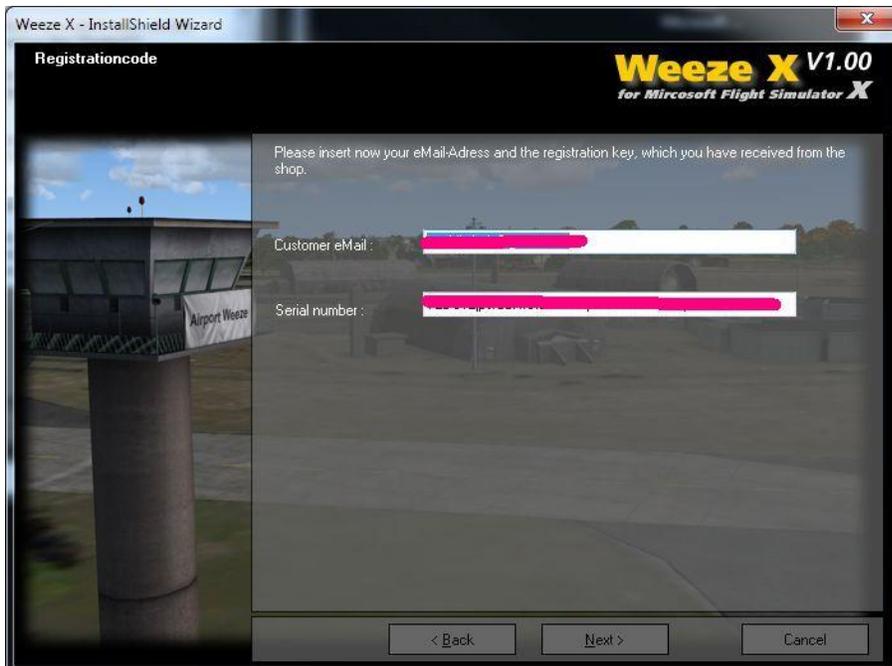
After the SETUP.EXE is started you will see this screen (of course the actual product might differ):



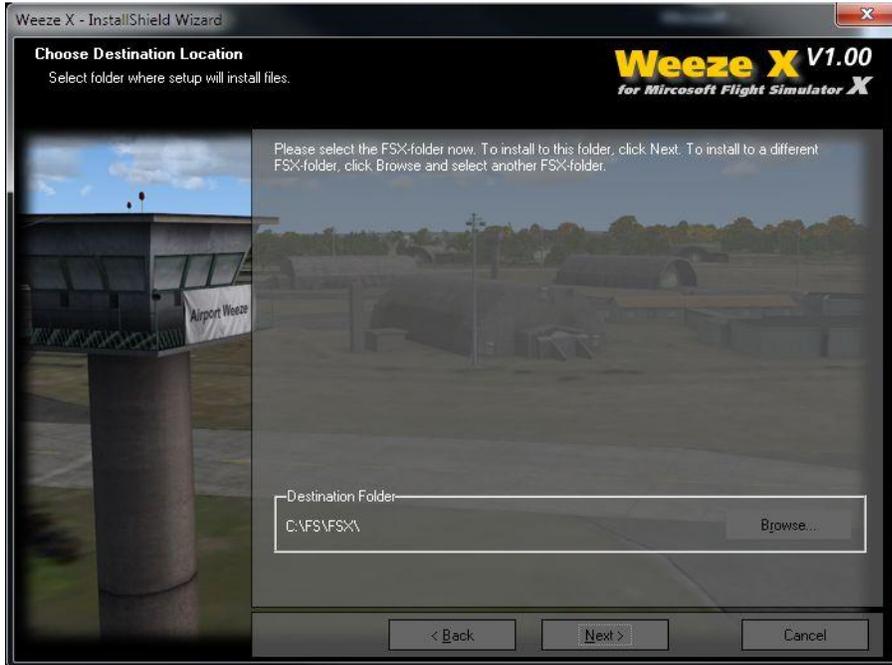
Click [Next] to continue, you expected that right?



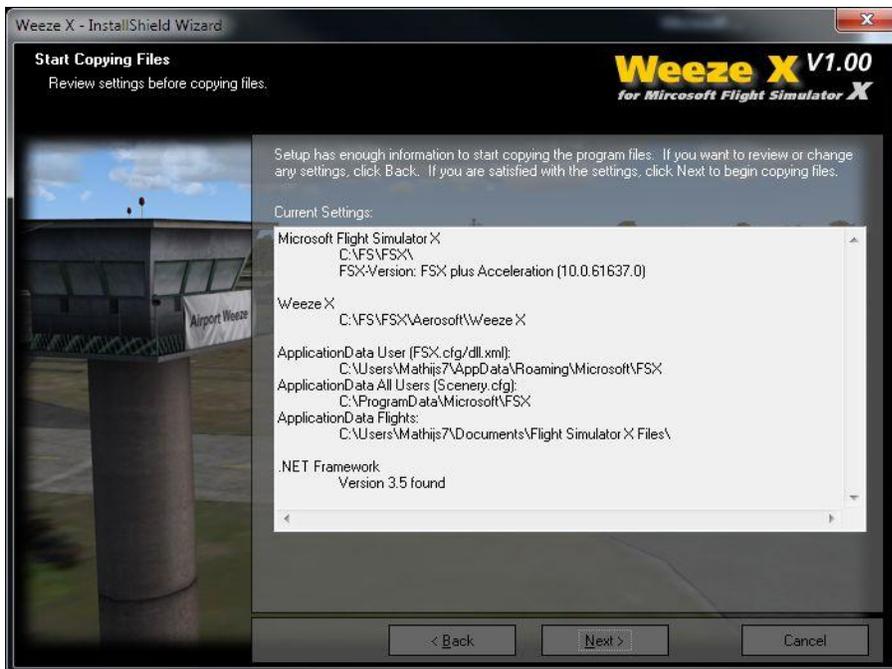
Now you have to accept the license agreement. Easy to click [I accept....] but you might like to read the text at least once, okay?



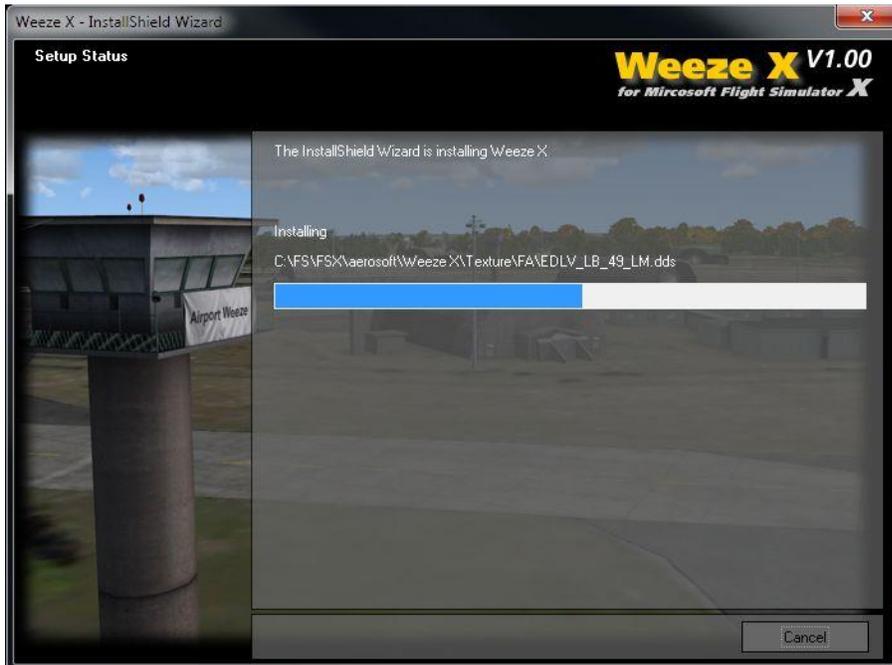
Enter your email address and the serial code we have sent you.



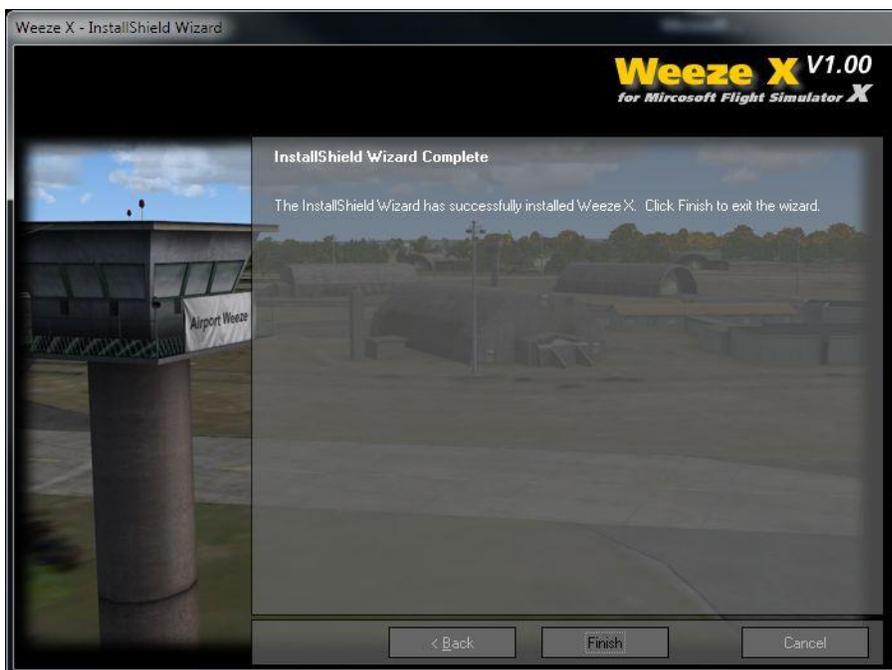
A few screens that tell you what will happen. Click [Next] unless you see an obvious issue.



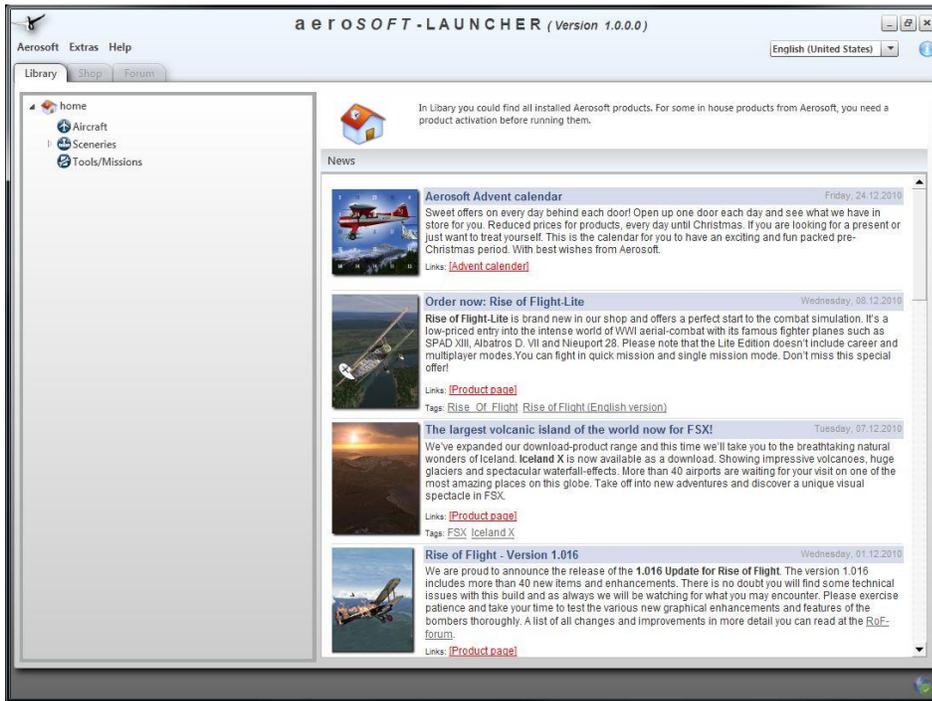
One more...



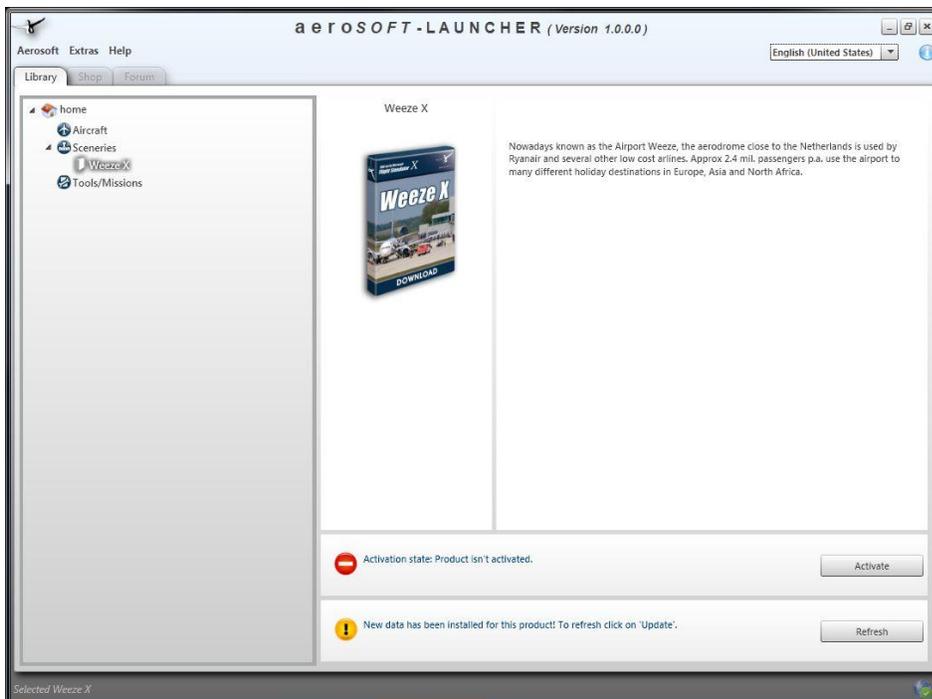
The files are now installed. It will take a few seconds.



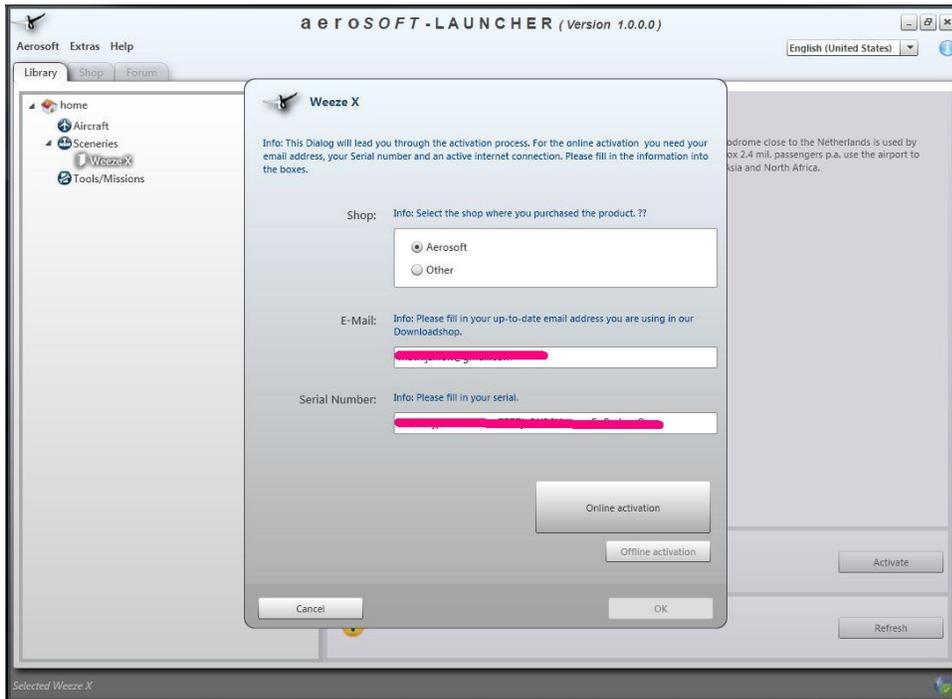
And you're done. Click [Finish] to close the installation part of getting the software in FSX. Now Aerosoft Launcher will start and you will see this.



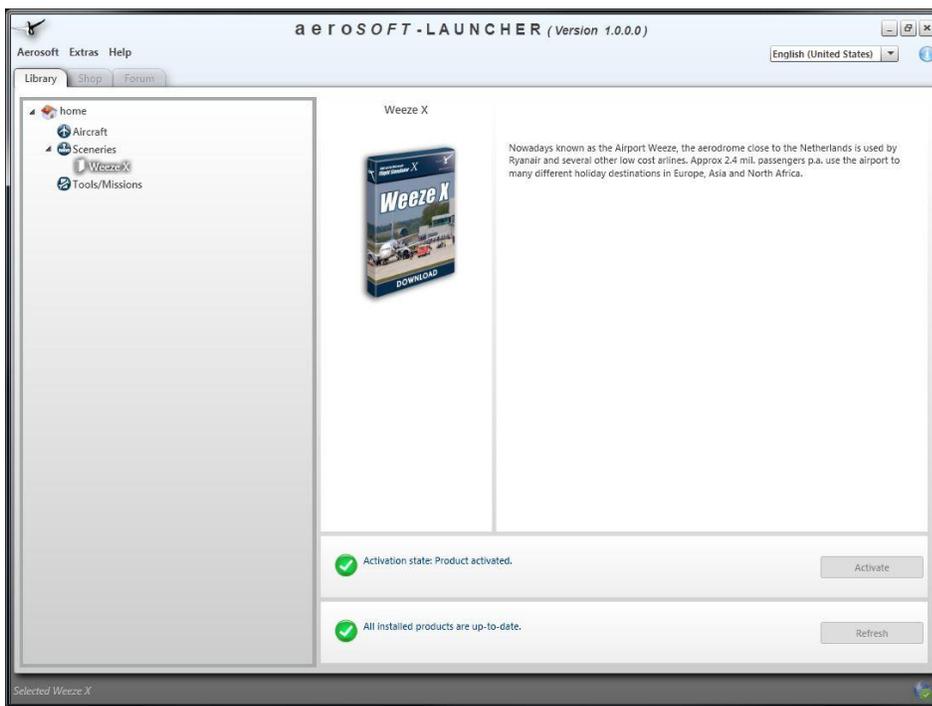
Click on the [Sceneries] to open that section of the product tree.



And there is the product we have just installed. By clicking on the [Activate] button the launcher will activate the software.



Select the download shop you used, enter the email address used when buying and the serial code and click [Online activation]. You will see the program contact the server and do its work. Note that only appropriate information is sent. Product code, email address etc.



Eh voila, the product shows in green and you can now start FS to start enjoying the product.