



777
IMMERSION

USER MANUAL

V.002

Thank you

First and foremost, thank you for purchasing 777 Immersion. Lots of passion and hardship went into this project to develop a one-of-a-kind product. We hope you will have as much amazement and fun as we had developing the product. What follows is a comprehensive explanation guide of what is included in this package, along with the conditions in which the effects are displayed. Enjoy your beautiful flights with 777 Immersion

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vfx central

VFX Central is the best solution for Activating, Installing and Managing our products. It launches in parallel to your simulator to check for any changes made to the configuration, fixing potential issues on the fly so that everything is working on your next takeoff. The application also updates itself without any user interaction, so you can focus on what really matters in the cockpit!

Adding a product

To add a product, simply click the "ACTIVATE A SERIAL NUMBER" tile in the products grid of VFX Central. You can also do the same on the website.

Automatic Launch with your simulator

VFX Central will check the integrity of supported products when it is launched with your simulator. You can change your simulator configuration by going in the Preferences menu of VFX Central.

Automatic Updates

VFX Central will check and install updates automatically. You will be notified once a new update was installed.

Compatibility

Supported models

or now, 777 Immersion is compatible exclusively for the PMDG 777-200LR/F base pack and PMDG 777-300ER expansion pack available on the PMDG website (pmdgsimulations.com).

FSUIPC

777 Immersion requires FSUIPC to be installed. Make sure it is installed, or do so before or after the installation. Licensed version of FSUIPC is not required.

Compatibility with other Add-ons

This package works with other FSFX Packages products including PrecipitFX. It also works with common add-ons like Active Sky Next, ORBX products, REX products, FS2Crew products, common custom airports/sceneries and texture replacement packages.

Installing custom touchdown or contrails effects on a generic scale should not affect your 777 Immersion installation.

DirectX 10 (FSX)

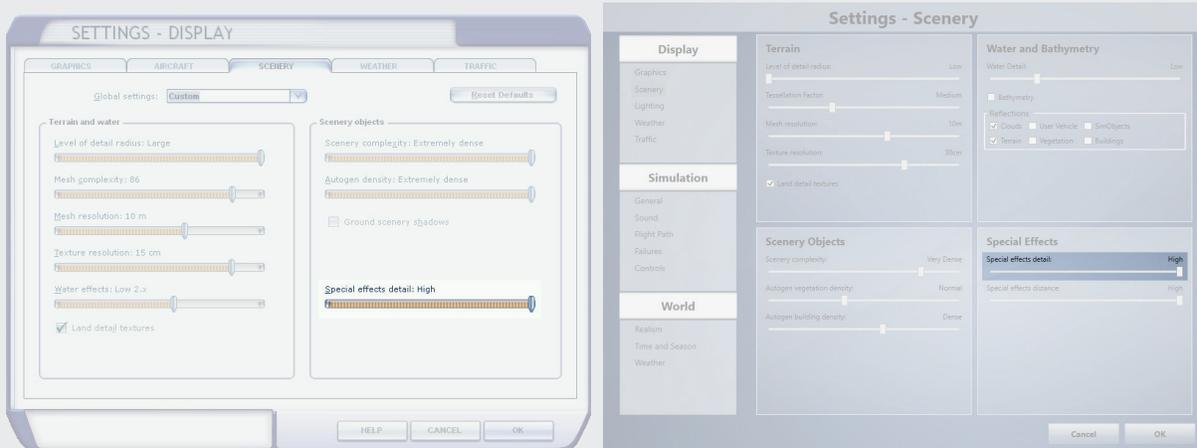
This package fully supports FSX in DirectX10 mode without conversions.

Optimal Settings (1/2)

Special Effects Slider

To ensure every effects are displayed as they are intended, make sure the Special Effects Detail slider in the Scenery tab is set to High in Flight Simulator X or Prepar3D v2, v3 settings.

Setting this slider otherwise, some effects might look dim, or even invisible.



Anti-aliasing and screen resolution

Anti-Aliasing and screen resolution are important factors affecting the performance of your sim, specifically when visual effects are visible close to the camera. Make sure you tune those to balance your need.

Optimal Settings (2/2)

DirectX 10 (FSX)

Using DirectX 10 in FSX will result in much smoother volumetric lighting.



HDR (P3D v2, v3)

Using HDR in P3D v2 and v3 will result in much smoother and brighter volumetric lighting.



Weather presets

Weather engines

To make your life easier, we compiled a list of METARs you can use to see various effects bundled in this package. You can replicate them in your Simulator's build-in weather engine or in any other third-party weather engine.

Cold Weather

GLOB 000000Z 12010KT 2SM -SN SCT030 M30/M34 A3015

In these conditions, you will be able to see low-level contrails after takeoff and cold start smoke when starting the engines.

Saturated air

GLOB 000000Z 36006KT 3SM -RA OVC007 02/02 A2943

Saturated air will trigger all the condensation effects around the aircraft, including wing condensation, engine condensation, lift vanes vortices and flaps' trailing edge vortices. temperature and dew points must less than 2°C apart for those effects to show.

Low Visibility

GLOB 000000Z 00000KT 1/2SM FG BKN018 OVC050 13/13 A2961

Low visibility will trigger volumetric lighting effects at dusk, night and dawn. This weather is often linked with saturated, slow moving air. You might also see various condensation effects with this weather.

Performance

Our tests

777 Immersion has been tested by several people using various hardware configurations. We developed each effect with the balance of quality and performance in mind. We always made certain the performance impact would be as minimal as possible. The VAS footprint is also very low, less than 5MB. Textures are compressed, and are no larger than necessary.

Limitations

Effects will not show if all engines are shutdown.

The technique used to display effects around the aircraft depends on the airplane's smoke system which does not work when all engines are off. This is a Flight Simulator limitation

Effects are not visible during instant replay.

Flight Simulator X's replay system is very limited and does not allow the replay of advanced effects systems. A great solution is to use FSRecorder (<http://www.fs-recorder.net>) with the smoke replay option turned off.

Support

AVSIM Forums

User-to-user support is offered through our official AVSIM Forums.

<http://www.avsim.com/forum/723-official-fsfx-packages-support-forum/>

Customer support

Support is also offered on our website. Frequent issues are listed with solutions. If nothing suits you in this list, it is also possible to contact us through this page.

<https://fsfxpackages.com/en/support/>

PMDG

Precision Manuals Development Group (PMDG) will not offer support for 777 Immersion.

Visual Effects (1/4)

Contrails

Our contrails can be observed when the air is saturated, and when the air is at very low temperatures, most of the time being at higher altitudes. With 777 Immersion, contrails are visible even at low altitude when the air is saturated and the temperature goes below -25°C (-13°F) or lower. Denser contrails can be observed at -35°C (-31°F) or lower. This contrail will remain visible for 200 seconds or 29 kilometers (18 miles) at 280 knots.

Engine cold start smoke

Igniting the engine in a cold environment may cause a condensation vapor cloud to occur when the temperature is below -5°C (23°F). The colder it gets, the more the effect will show.

Engine condensation

Engine condensation is caused by the rapid loss of pressure in the engines' air intakes when the air is close to, or reaches saturation. This effect is visible at 70% N1 or more, when the difference between the ambient temperature and the dew point is less than 2°C (4°F) and with an airspeed of less than 220 knots.

Vortices

Wingtip vortices are visible when the air is close to, or reaches saturation, with an angle of attack of more than 3° . Vortices will transition from the wingtip to the flaps' trailing edge when they are set to 15° or above. Longer and denser vortices can be observed with an increase in the angle of attack. Vortices are also visible on the engines' lift vanes, but they start at a lower angle of attack of 2° .

Visual Effects (2/4)

Raindrops from the Airframe

Raindrops will fall from the fuselage, the wings, and the engines when the aircraft is stationary and under rain. This effect is not visible at night to improve performance.

Engine Jet Wash Effects on Water and Snow

Engine jet wash effects can be seen under rain and snow conditions. These effects will change depending on the thrust applied to each engine. Custom water effects around the engines when using reversers are also included.

They will also change depending on the amount of reverse thrust used. Rain and snow effects are different since snow is more light than water.

Wheels Water and Snow Effects

Wheels effects on water and snow has been enhanced, dispersing water in case of rain, and leaving dry marks on the ground after the passage of the wheels.

Wing Condensation

Wing condensation is due to the rapid loss of pressure from the air flowing over the wing when the air is close to, or reaches saturation. In 777 Immersion, this effect is visible with an angle of attack of more than 5° when the air is saturated, with a temperature above -10°C (14°F) and with an indicated airspeed of less than 220 knots. Various intensities are displayed depending of the wing's angle of attack.

Visual Effects (3/4)

High altitude aerodynamic contrails

Aerodynamic contrails (also known as Rainbow Contrails) are very similar to wing condensation at low altitude. Water crystals formed by the low pressure area over the wings freezes and stays in the air, causing the contrail.

Volumetric Lights

Volumetric taxi, turnoff and landing lights can be observed at night, dusk and at dawn when the visibility is lower than 5SM, or when precipitation occurs. The effects will be more pronounced when the visibility drops below 3/4 SM. Moreover, these lights are fading in when turned on and fading out when turned off, just like the real aircraft lighting.

Volumetric logo lights can be observed on the vertical stabilizer at night, dusk and dawn when the visibility is lower than 1/2SM. Beacon lights will also be visible at 1/2SM or lower.

Volumetric strobe lights can be observed on each wing, and at the back of the aircraft at night, dusk and dawn when the visibility is lower than 2 statute miles (SM).

Volumetric wing lights can be observed along the fuselage in the FWD section lighting up the wing at dusk, night, and dawn when the visibility is lower than 3/4 statute miles (SM).

Volumetric beacon lights can be observed on the vertical stabilizer at night, dusk and dawn when the visibility is lower than 1/2SM. Beacon lights will also be visible at 1/2SM or lower.

Credits

Beta testers

Alex Farmer
Ryan Dunlop
William Leblond

Video producers

Jeroen Doorman (youtube.com/user/JerdooFlightX)
Jonah Snoei (youtube.com/user/JRSchiphol)

Effects development (visual & behavior)

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Website & Server management

Keven Ménard
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