



“Add a touch of Accu-Sim to Flight Simulator X...”

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## System Requirements

If Microsoft FSX runs well on your machine, then it should run the same with Accu-Feel v.2 Air, Land, and Sea. However, there are some general requirements you should know about.

REQUIRES LICENSED COPY OF MICROSOFT FLIGHT SIMULATOR X

**MICROSOFT FSX SERVICE PACK 2 (SP2) or ACCELERATION REQUIRED**

**OPERATING SYSTEM** (supports both 32 and 64 bit systems):

Windows XP SP2

Windows Vista

Windows 7

Window 8

**PROCESSOR:**

2.0 GHz single core processor (3.0GHz and/or multiple core processor or better recommended)

**HARD DRIVE:**

250MB of hard drive space or better

**VIDEO CARD:**

DirectX 9 compliant video card with at least 128 MB video ram (512 MB or more recommended)

**OTHER:**

DirectX 9 hardware compatibility and audio card with speakers and/or headphones

## Designer's Notes

Back in 2008, A2A Simulations released an aggressive concept to Flight Simulator X add-ons with the Accu-Sim Boeing 377 Stratocruiser. Accu-Sim bypassed the entire guts of the aircraft systems, and replaced it with it's own coding. This provided a level of realism flight sim fans were not used too. We were concerned that most would not want this high level of authenticity, so we offered the aircraft in two packages: The Aircraft and it's Accu-Sim Expansion pack. This way, those who just wanted a beautiful airplane to look at and fly without the deep modeling, could have it. Those who wanted more, could have that too. We estimated 1 in 5 would opt for Accu-Sim. To our surprise, 4 in 5 did from the first day it was released. This started what we now call the “Accu-Sim Revolution.”

The biggest challenge we now faced was the demand for more Accu-Sim aircraft. The problem is, it was simply not possible to quickly deliver aircraft on this level of detail, however, our rate of delivery / quality of product is unsurpassed in the industry. This is a large reason why Accu-Sim has been so successful. Over the years, we released a P-47 Thunderbolt with a complete cockpit sound set, a Piper J3 Cub where you hand-start the engine, and the new core series of Accu-Sim birds (Supermarine Spitfire, P-40 Warhawk, and P-51 Mustang). We also released a later Captain of the Ship add-on to our flagship, Stratocruiser. Still, customers demanded more.

They asked “Can you Accu-Sim FSX?” and our answer was always “this is just not possible.” Well, over the years and now with all this technology behind us, we found a way to get, what we call “A touch of Accu-Sim” to FSX. In early 2012 we released this new concept, and called it “Accu-Feel.”

The name Accu-Feel was chosen because this best described what this product does. We managed to hook into the lower core of FSX using our Accu-Sim technology, and were able to make things happen without touching a single file in the FSX directory. This was critical because the program had to work in a way without interfering or altering 3<sup>rd</sup> party content. Our goal was to allow Accu-Feel to intelligently set itself up for any aircraft, yet also allow the customer the final say on everything by way of an easy-to-use in-game user interface.

Accu-Feel launched out of the gates unlike anything we have ever released before. It rocketed to #1 in online stores and just sat there for months. Today, almost one year later, it remains in the top ten. The reason is simple – customers / pilots were having fun with an all-new, powerful sound system and how it translated physics back to them. They also appreciated a program that worked hard for them, so they could just fly. And technically, Accu-Feel was solid and reliable. We had a winner.

Now we have the next generation of Accu-Feel, version 2, Air, Land and Sea. A quick read of this manual will show a lot of new and exciting features that we hope you come to love as much as we did in making it.

- The Accu-Feel Development Team

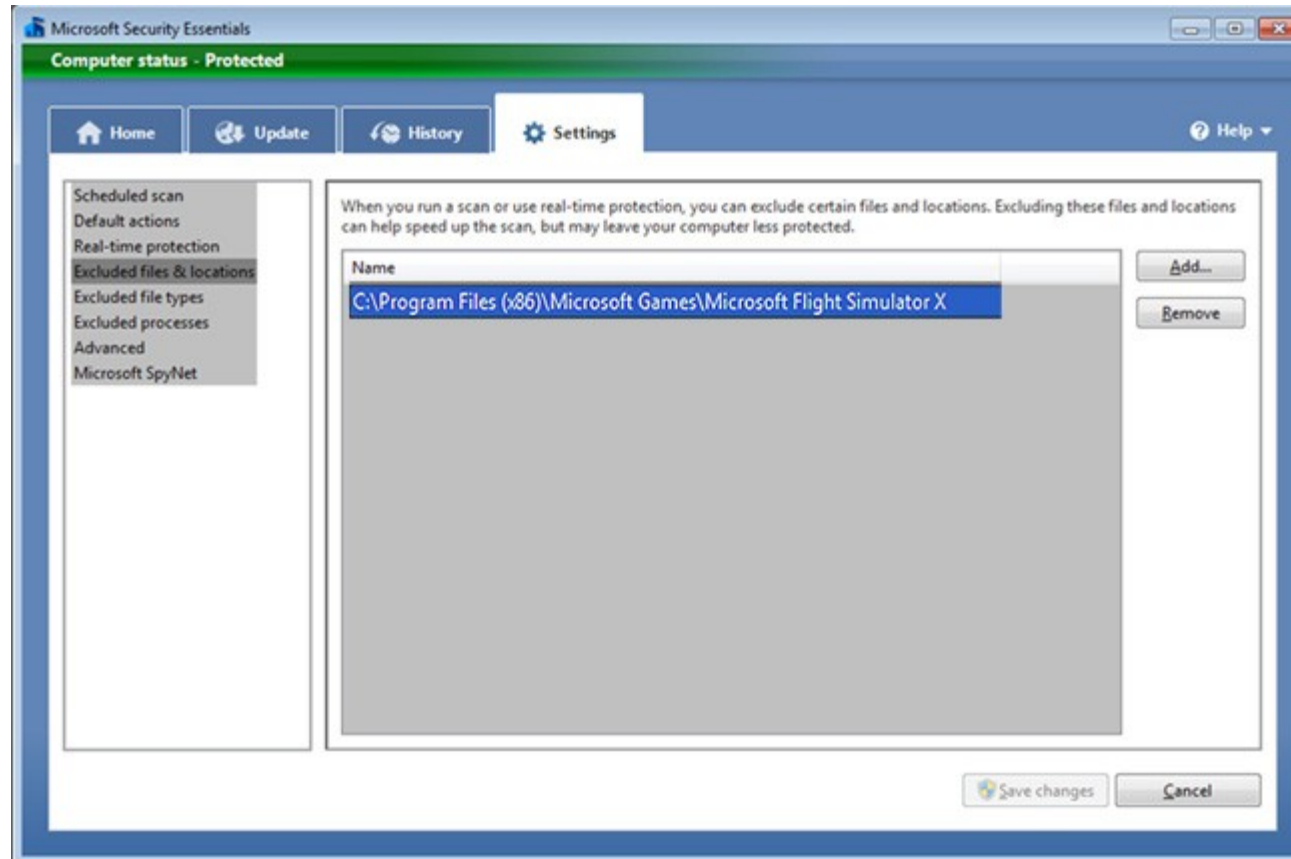


## Installation

Included in your downloaded zipped (.zip) file, which you should have been given a link to download after purchase, is an executable (.exe) file which, when accessed, contains the automatic installer for the software. To install, double click on the executable and follow the steps provided in the installer software. Once complete, you will be prompted that installation is finished.

### **IMPORTANT:**

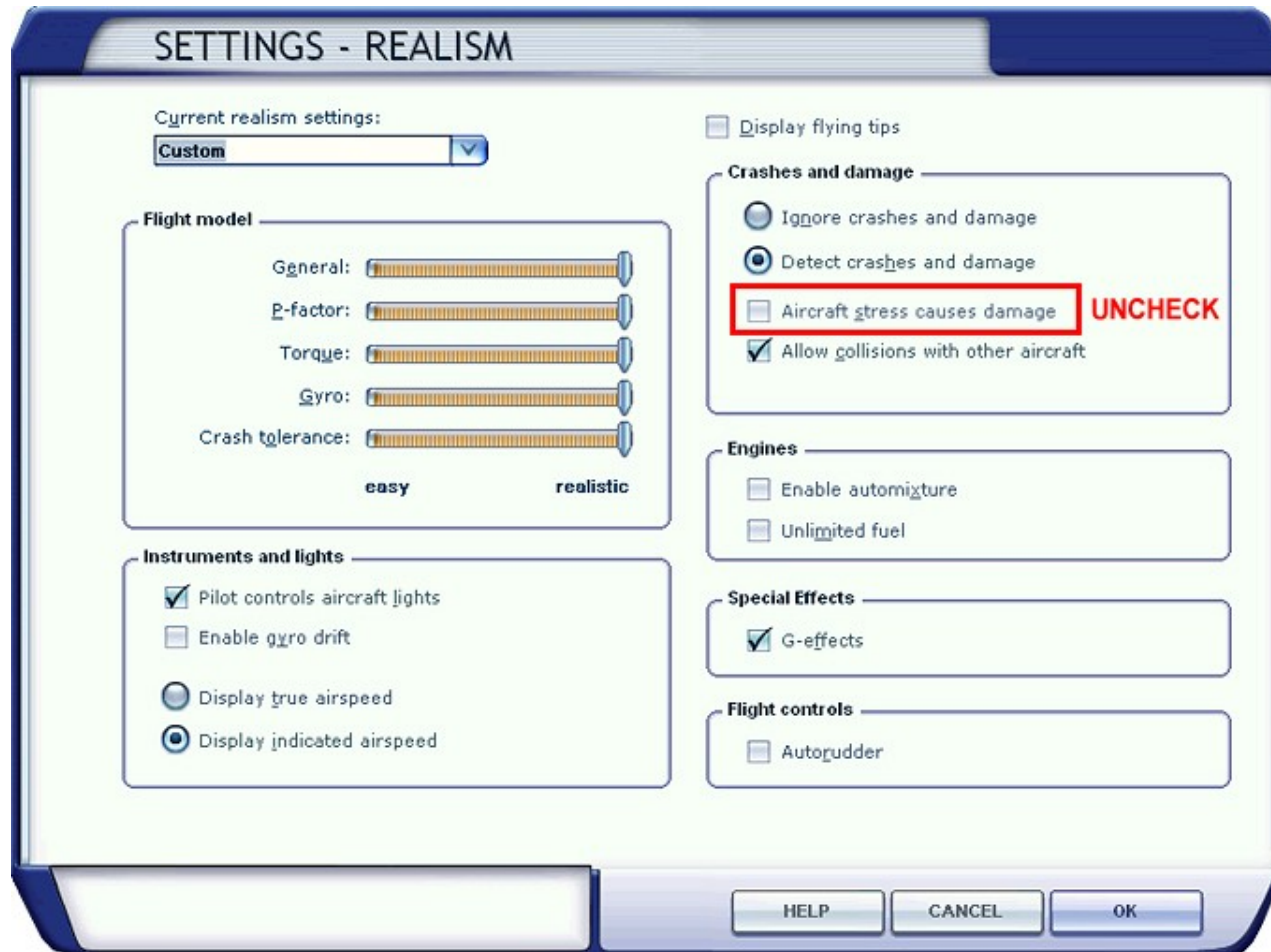
If you have **Microsoft Security Essentials** installed, be sure to make an exception for Microsoft Flight Simulator X as follows:



## Realism Settings

Have you ever experienced flying an aircraft too fast, only to have FSX suddenly freeze and end your flight? Well, in reality, you would usually have some indication the airplane is nearing it's structural limit, and Accu-Feel simulates some of these effects.

We therefore recommend turning this limit off, as it does tend to be set too low for most planes, and in our opinion, ultimately ruins immersion.



## Features

- **Simple, safe non-destructive design** leaves all of your aircraft directories untouched (aircraft.cfg, panel.cfg, etc. are not changed)
- **Works with almost all FSX aircraft.** Tested with both default and over forty 3<sup>rd</sup> party aircraft (helicopters not supported).
- **Easy to use GUI** (Graphical User Interface) allows for easy (and fun) customization of any aircraft
- **Saves aircraft** automatically
- **Built using the Accu-Sim sound system**, which is proven powerful and safe on thousands of FSX installations
- **Ground physics** for both on and off pavement for both tricycle and tail dragger airframes bucks your airplane around, making just taxiing a quality experience.
- **Dynamic tire screeching** and rub sounds tied into the physics of each tire, which makes every landing not just feel different, but sound different. You have more feel for exactly how well you are controlling your aircraft, both big and small. New side forces add even more dynamics when side-loading the landing gear.
- **Water physics** including dynamic wave size and speed, adds immersion for those who love to land on the water
- **Turbulence modeling** adds a feel based on our own experiences owning and operating aircraft
- **Runway / pavement seams** send dynamic jolts through your airframe that you can both feel and hear
- **Cabin sounds** from an old classic planes (bag of bolts) to the more modern, stronger pressurized tube liners, both on the ground and in the air
- **Dynamic wind** gives a strong sense of how your aircraft is flying, giving feel to everything from a glider to a commercial airliner
- **Fuselage drag rumble** is dynamically created, recreating the dropping of flaps, gear, or high pressures developed when approaching an airframe's Vne (Never Exceed Speed). Both IAS and Mach limits are simulated
- **Stall buffet** and sounds creep in *before* the airplane stalls, giving you better feel and control of the aircraft while flying “on the edge”
- Brake squeals and vibrations
- **Open cockpit experience**, which allows you to hear the suction of the wind, deep wind, propeller, or turbojet whine when opening a canopy or door



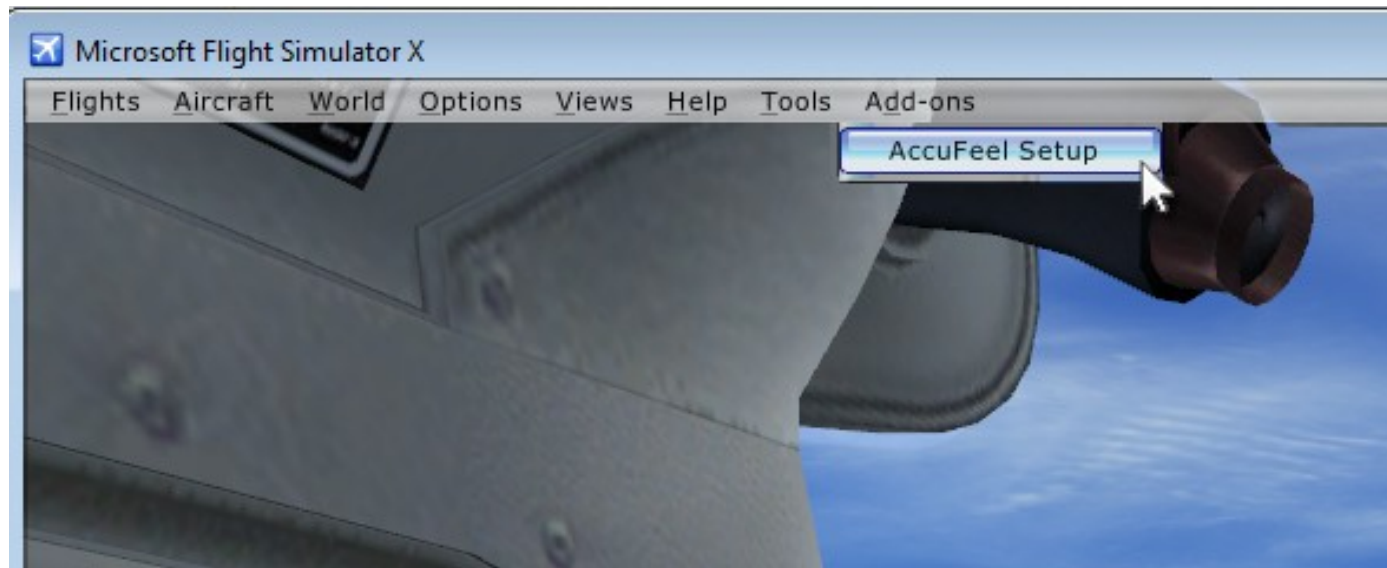
## Control Panel

To access the control panel, while in game, click on the “Add-ons” pull-down menu (if you don't see pull down menus in game, click the ALT key). Then click the “Accu-Feel Setup” link.

Before making edits, keep in mind that as each aircraft is loaded, Accu-Feel analyzes the aircraft and adjusts all parameters on the fly.

While this works quite well for most aircraft, you (the customer) can make adjustments while in game to your own personal preferences and system setups.

Any changes you make can be saved with a push of a button for each aircraft.



Global Settings

Aircraft Settings

Air Land & Sea

Save

**Accu-Feel Control Panel**

**Global Settings**

Toggle Accu-Feel On/Off

AIR  ?    Master Volume 0 \_\_\_\_\_ 100 ?

LAND  ?    Global Turbulence 0 \_\_\_\_\_ 100 ?

SEA  ?

**Aircraft Settings**

Cessna172SP    Aircraft On/Off    Aircraft Default    Aircraft Volume 0 \_\_\_\_\_ 100 ?

Open Cockpit  ?

**AIR  ?**

Stall AOA (°) 10 \_\_\_\_\_ 25 ?

Stall Instability 0 \_\_\_\_\_ 100 ?

Vne (Max Mach) 0 \_\_\_\_\_ 4.0 ?

Vne (Max IAS) 0 \_\_\_\_\_ 999 ?

Wind Volume 0 \_\_\_\_\_ 100 ?

Prop / Turbine Volume 0 \_\_\_\_\_ 100 ?

Drag Rumble 0 \_\_\_\_\_ 100 ?

NOTE: Accu-Feel turbulence works with FSX wind so in calm or smooth air, even with sliders activated, there will be no turbulence.

Turbulence Chop 0 \_\_\_\_\_ 100 ?

Turbulence Gusts 0 \_\_\_\_\_ 100 ?

Clear Air Turbulence 0 \_\_\_\_\_ 100 ?

**LAND  ?**

Cabin Integrity 0 \_\_\_\_\_ 100 ?

Shock Absorption 0 \_\_\_\_\_ 100 ?

Brake Squeal 0 \_\_\_\_\_ 100 ?

Tire Screech 0 \_\_\_\_\_ 100 ?

Side Forces 0 \_\_\_\_\_ 100 ?

**SEA  ?**

Water Drag 0 \_\_\_\_\_ 100 ?

Waves AUTO  ?

Wave Size 0 \_\_\_\_\_ 100 ?

Wave Speed 0 \_\_\_\_\_ 100 ?

Save and Exit    Cancel

v 2.0

## Global Settings

Everything in this section applies to ALL aircraft in Flight Simulator X.



### Toggle Accu-Feel On / Off

This allows you to completely enable or disable Accu-Feel with one button for all aircraft.

### Air

Toggles all effects relating to the aircraft's interaction with the *air physics*.

### Land

Toggles all effects relating to the aircraft's interaction with the *land physics*.

### Sea

Toggles all effects relating to the aircraft's interaction with the *sea physics*.

### Master Volume

Adjusts the master volume.

### Global Turbulence

Adjusts the turbulence effect. All the way left will disable all turbulence. Moving the slider to the right increases the turbulence strength.

## Aircraft Settings

Everything in this section *only* applies to the aircraft you currently have loaded.



### Aircraft On / OFF

This allows you to completely disable or enable Accu-Feel for any particular aircraft.

### Aircraft Default

Pressing this button sets the aircraft back to it's default settings.

### Open Cockpit Checkbox

When you check this box, this tells AccuFeel that this aircraft has an open cockpit for a more realistic opencockpit experience

### Aircraft Volume

Raise or lower the volume of all Accu-Feel sounds related to the particular aircraft.

## Air Section

### Air Checkbox

Toggles Accu-Feel features relating to air physics for just this aircraft.

### Stall AoA

This is the angle of attack (in degrees) at which the wing on your aircraft will stall. Airframe buffeting and shake usually occurs, and is caused by turbulence from the wing going over the elevator, and can be anywhere from mild to quite violent on some aircraft. Accu-Feel monitors the AoA and creates this turbulence as you approach your stall speed, allowing you to sense and feel the aircraft before it stalls. This value is taken directly from FSX, but you can adjust this to your liking.

### Stall Instability

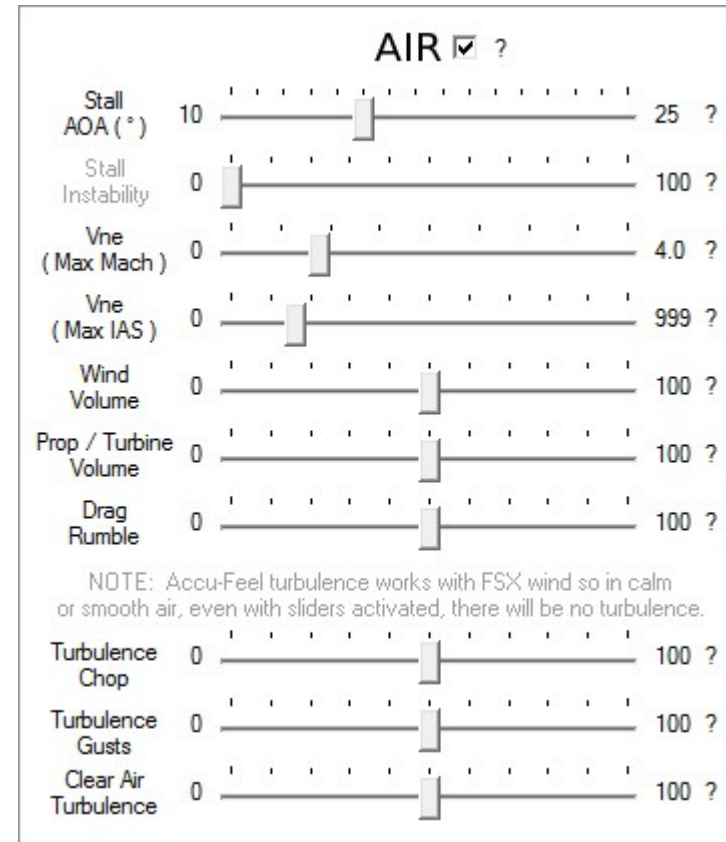
Slide more to the right to make stalls increasingly less stable once the stall occurs.

### Vne (Max Mach)

This is the max safe speed for your airframe in mach, which is mostly used for jets and very high performance aircraft. As your aircraft approaches this speed, you can experience a “mach buffet.” This tells you to be very careful pushing it any further. This value is taken directly from FSX, but you can adjust this to your liking.

### Vne (Max IAS)

This is the max safe speed for your airframe in IAS (indicated airspeed), which is used for all aircraft. As your aircraft approaches this speed, you will hear a rumble from the high pressures and friction on your airframe. This value is taken directly from FSX, but you can adjust this to your liking.



### Turbulence Chop

Controls the strength of the up and down chop as the aircraft cuts through this type of air.

### Turbulence Gusts

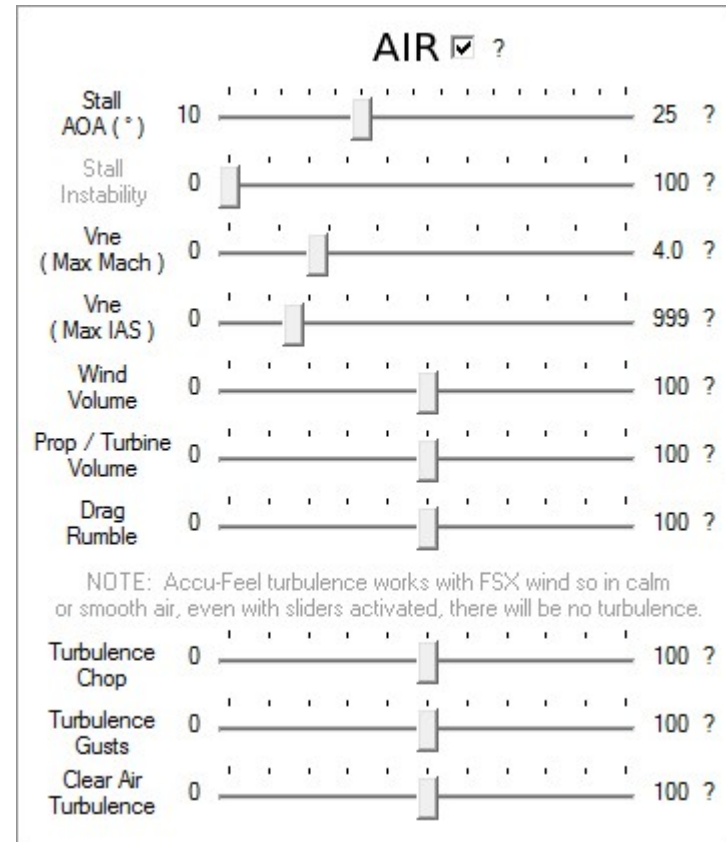
Controls the strength of wind gusts which can be responsible for knocking an aircraft around.

### Clear Air Turbulence

Clear air turbulence is a term used for unexpected pockets of turbulence in otherwise calm conditions. You will be flying along and suddenly, without warning, run through a pocket of turbulent air. A value of 50 means on average, you will encounter clear air turbulence once every 4 hours of flight. Moving the slider full right means an average of just under once per hour. All the way left, turns it off completely.

#### NOTE:

The turbulence effect in Accu-Feel works to enhance existing wind, so in calm or smooth air, even with the turbulence sliders activated, there will be no turbulence.



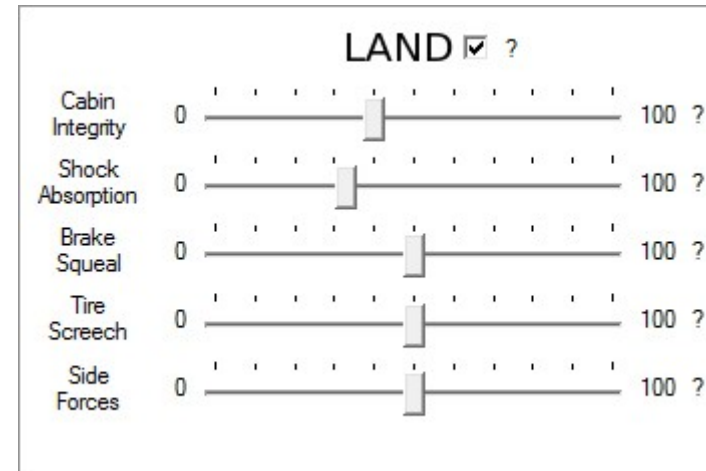
## Land Section

### Land Checkbox

Toggles Accu-Feel features relating to land physics for just this aircraft.

### Cabin Integrity

The higher this value, the tighter the cabin construction. The lower this value, the looser the cabin construction. The cabin integrity is dynamically created for each aircraft on the fly by Accu-Feel after analyzing the aircraft, but you can be the final judge and adjust as desired. Lower values are good for older, especially unpressurized aircraft that were built with older techniques, whereas the higher value is better for more modern planes with tight tolerances. Avoid using extreme values, because even the most modern airliners have a lot of loose parts that rattle and squeak.



### Shock Absorption

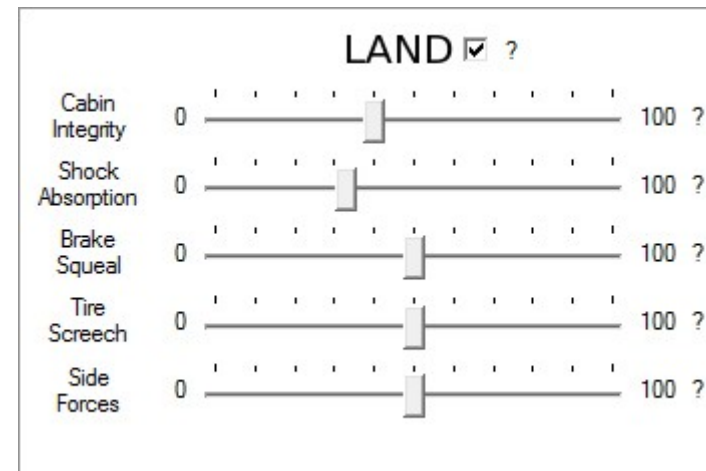
This models how well your undercarriage absorbs small ground bumps, shocks, and jolts. Higher values, mean more absorption, and a smoother ride when on ground, while lower values mean less absorption that results in more bounces, bucks, jolts, etc. Be careful when adjusting too low and taxiing fast off the pavement, as it's possible to scrape a wing or worse. Also, be careful with your brakes when on dirt or grass, as hitting an unsuspected large bump while braking hard can cause the aircraft to nose over. This value is dynamic in the sense that the bumps are constant, yet the aircraft is not. Hitting a 6" hole or depression with a Cessna 172 will create a larger reaction than in a large 4-engined aircraft. As usual, you can adjust as desired.

### Brake Squeal

Just like a car, aircraft brakes can squeal and vibrate when used. However, unlike a car, an aircraft has to be as light as possible, yet needs very powerful braking power, so these systems can generate a lot of noise. Accu-Feel analyzes the aircraft and adjusts these sounds based on the aircraft general size. You may want to turn these up for older aircraft, and perhaps down if you prefer to have quieter brakes.

## Tire Screech

The moment before any tire touches the ground on landing, once that still tire touches the pavement, it goes from being still to moving at a very high speed. The result is the rubber skidding along the pavement, usually making a rather loud screech or squeal. Also, if you hit the ground harder than normal, you can also hear some internal crunches, thumps, or squeaks. These sounds are all dynamically created by Accu-Feel, so the default value of 50% should work well for most aircraft, but you can adjust to your liking. Turning this volume up can really add to the feel on landings, especially when using aircraft that are loud, like a turboprop, where the tire sounds can be drowned out.



## Side Forces

Moving this slider to the right increases the effect of the body roll and associated sound with the tire scrub, giving a stronger sense of the side loading on the undercarriage while on the ground. Moving it full left turns off this feature.



## Sea Section

### Sea Checkbox

Toggles Accu-Feel features relating to water physics for just this aircraft.

### Water Drag

This controls the amount of physical drag on the floats while in the water. Moving it to the left will make takeoffs easier but it will take longer for the aircraft to come to a stop after landing.

### Waves AUTO

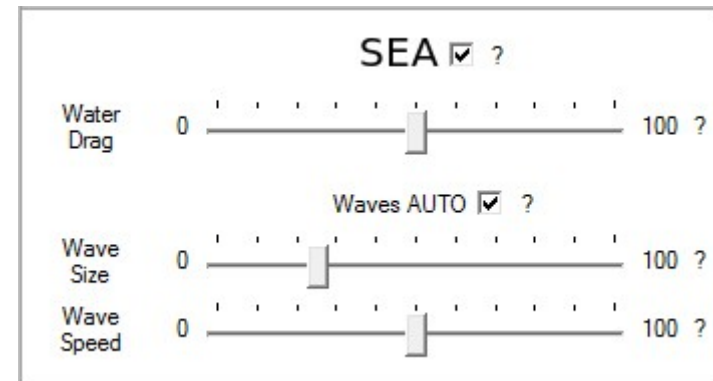
When CHECKED, Accu-Feel creates waves dynamically in FSX based on meteorological conditions. When UNCHECKED, the two sliders below are used to determine wave size and speed.

### Wave Size

Moving the slider to the right increases the size of the waves.

### Wave Speed

Moving the slider to the right increases the speed of the waves.



## Save Section



Clicking on the SAVE and EXIT button saves the aircraft profile to your Windows USER / DOCUMENTS / A2A folder.

## CREDITS

**Microsoft:** Creators of Microsoft FSX and its excellent open-architecture system

**Systems Programming:** Krzysztof Sobczak, Michał Krawczyk.

**Physics Programming and Audio:** Scott Gentile

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**Accu-Feel Logo:** Robert Rogalski, Lewis Bloomfield

**Public Relations, Web Design:** Lewis Bloomfield

**Manual:** Scott Gentile

**Quality Control Beta Team:** The world's most effective and knowledgeable flight simulation beta team, including Cody Bergland, Forest "FAC257" Crooke, Glenn Cummings (GlennC), Ryan "Hog Driver" Gann, Mitchell Glicksman, Darryl "KillRatio" Hackett, Jake "Captain Jakey" Gentile, Mark "Dagon" Kee, Matt "Mattgn" Newton, Krzysztof "Sundowner" Oleksy, Gunter "Snorre" Schneider, Erwin "Dutch 506" Schultze, Guenter "Guenseli" Steiner, Paul "Gypsy Baron" Strogen, Oskar "Lonewolf47" Wagner.

Thank you for being an A2A customer.



[www.a2asimulations.com/forum](http://www.a2asimulations.com/forum)

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