

# MsfsLegacyImporter how-to

or how-to have FSX aircraft models in FS2020

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@date 2020-10-23

@version 1.0

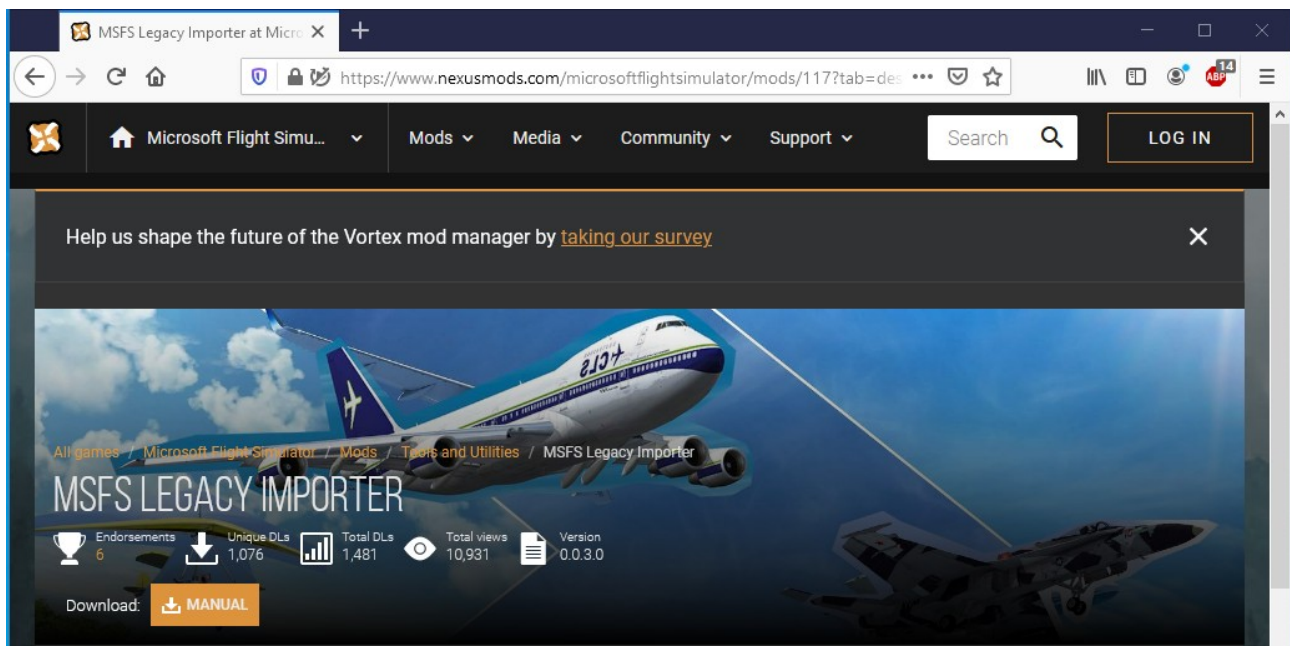
@brief The Microsoft Flight Simulator 2020 (FS2020) has very nice graphics, but no sailplane or ultralight models. You can convert Microsoft Flight Simulator 10 (FSX) models to FS2020 using the very nice tool msfsLegacyImporter from Alex Marko.

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## Download msfsLegacyImporter

Go to [www.nexusmods.com](http://www.nexusmods.com) and search for „msfs Legacy Importer“ or go directly to <https://www.nexusmods.com/microsoftflightsimulator/mods/117>

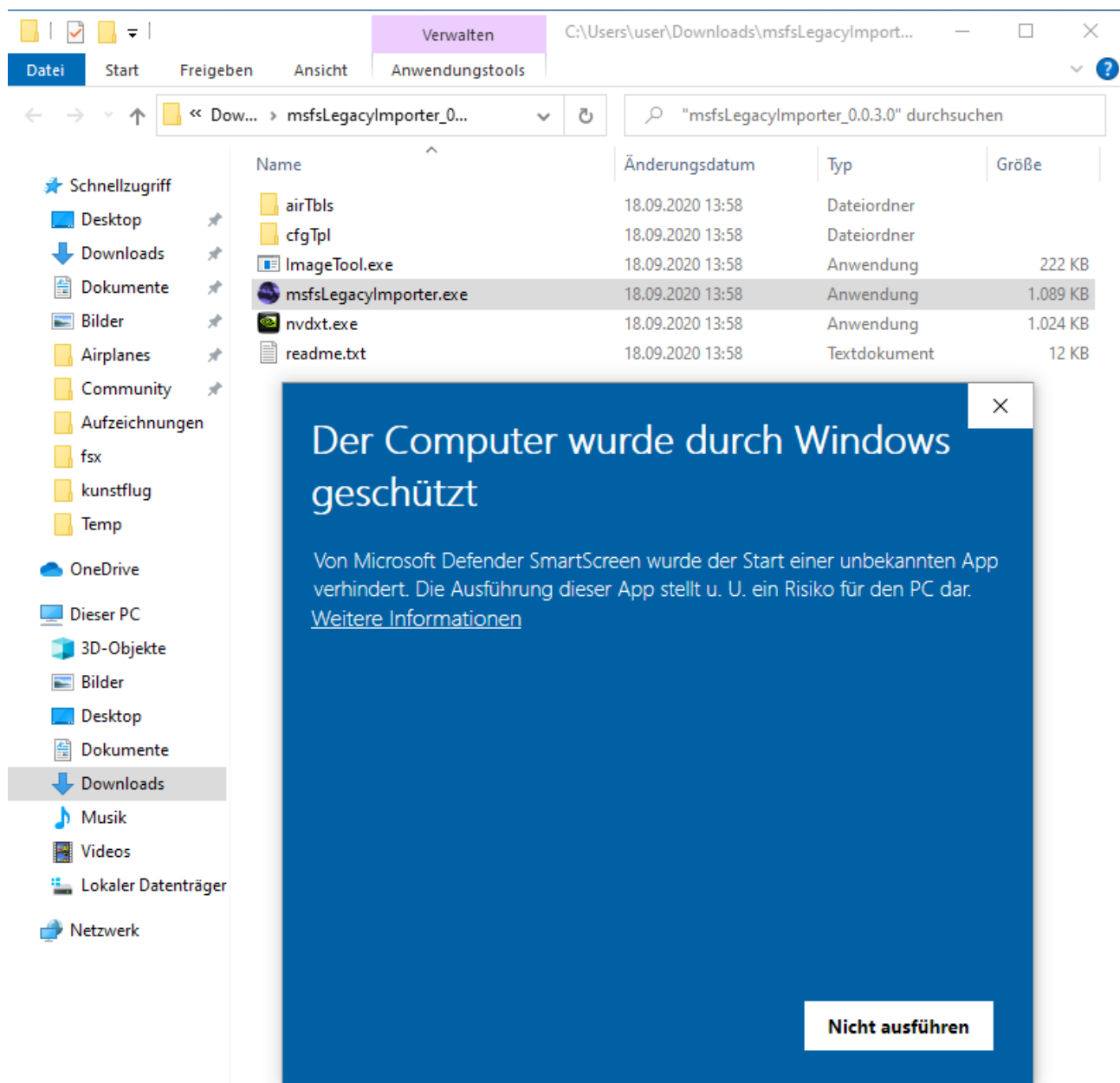


You have to log in to NexusMods. Download the latest version of the program. At time of writing this how-to it was version 0.0.4.9.

## Install msfsLegacyImporter

By default the file msfsLegacyImporter\_0.0.3.0.zip goes to the Downloads folder. After you double click on the Zip-file, you see the contents. After you double-click on msfsLegacyImporter.exe you get a popup that informs you that the Zip-file will get extracted before you can install, just agree to

your computer. A new window pops up and now double-click `msfsLegacyImporter.exe` again. Another popup appears to show you how much Microsoft cares:



If you feel adventurous or just want to install the software, you have to click the underlined text “[Weitere Informationen](#)” and finally you get a button for execution.

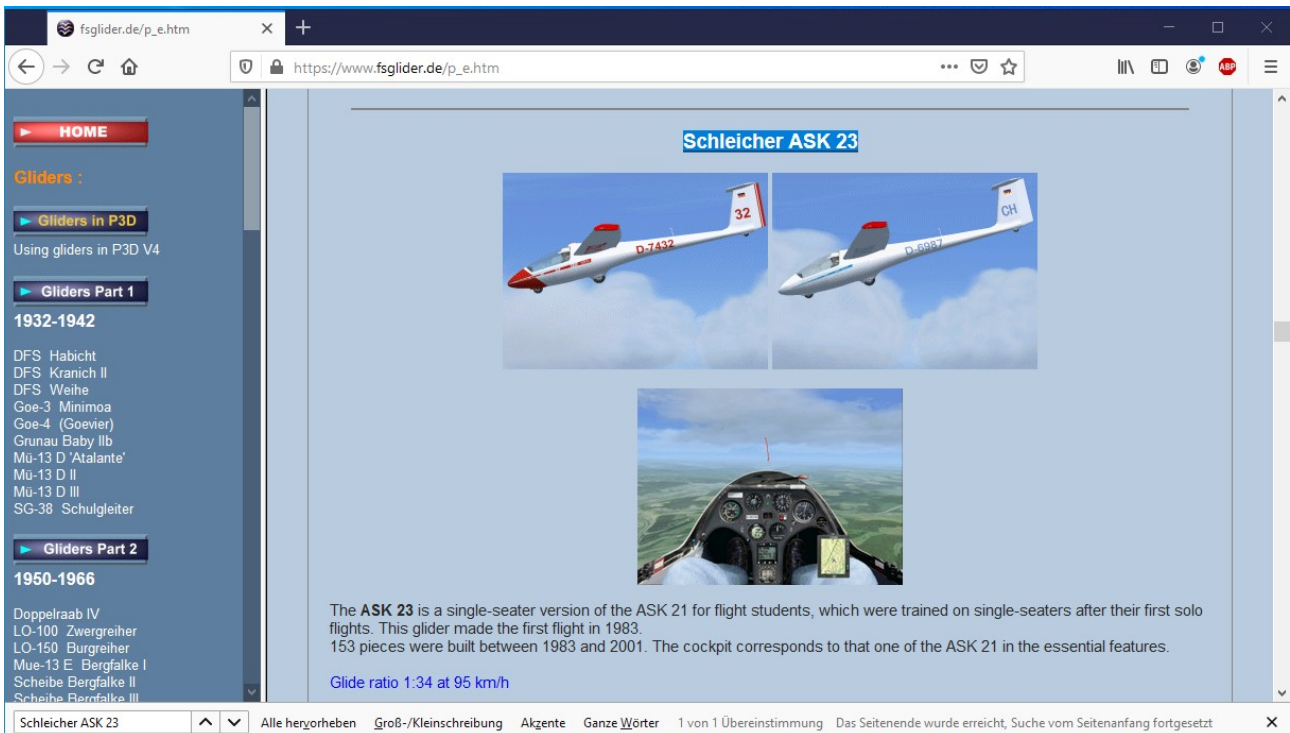
In strict terms, there is no program installation. The steps so far have created a folder “`msfsLegacyImporter_0.0.3.0`” in the folder “Downloads”. Older people just say the program `msfsLegacyImporter.exe` is in

`C:\Users\user\Downloads\msfsLegacyImporter_0.0.3.0`

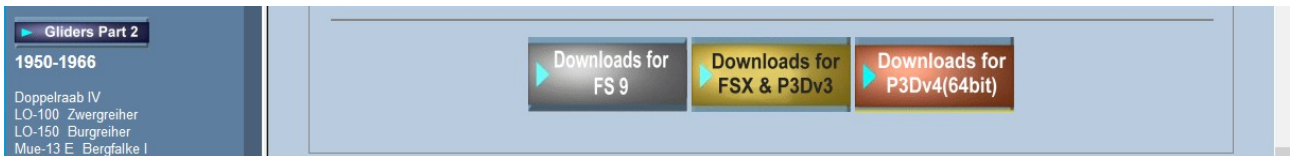
## Install an aircraft model

Wolfgang Piper provides many sailplane models for FSX and other flight simulators. We install the “ASK23” sailplane, because it shows up in the FS2020 aircraft selector. Go to [www.fsglider.de](http://www.fsglider.de)

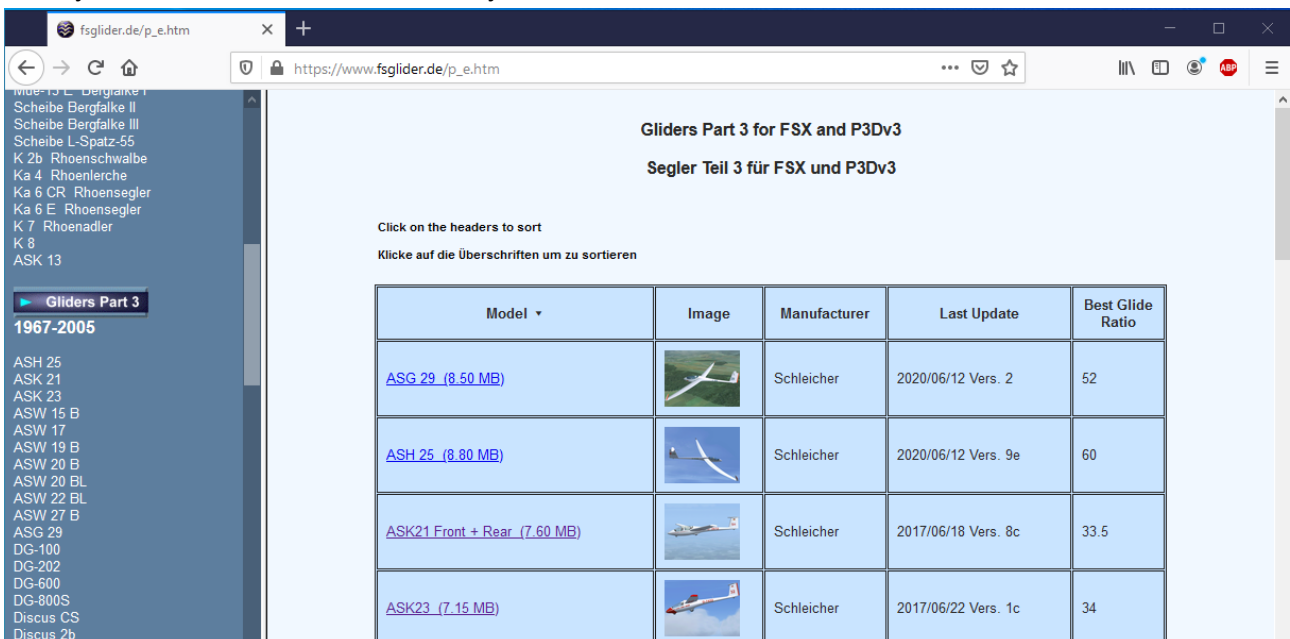
First select your language. For this how-to I choose the UK flag. Our ASK23 is in section “Gliders Part 3”. Click on this entry. We search for “Schleicher ASK 23” and find picture and description, but no download:



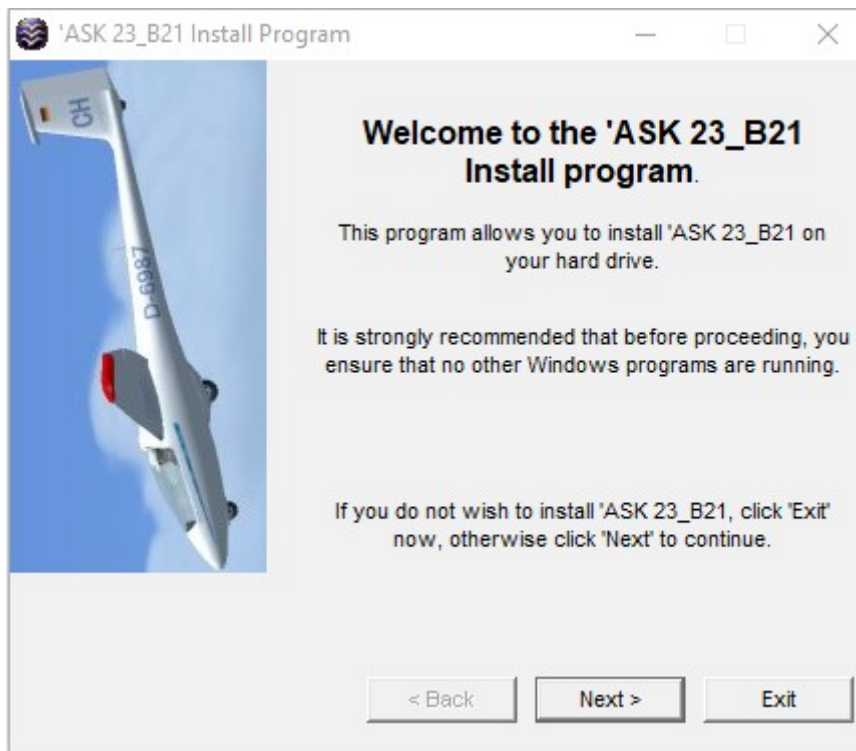
For download you have to scroll down the page and click the “Downloads for FSX & P3Dv3” button:



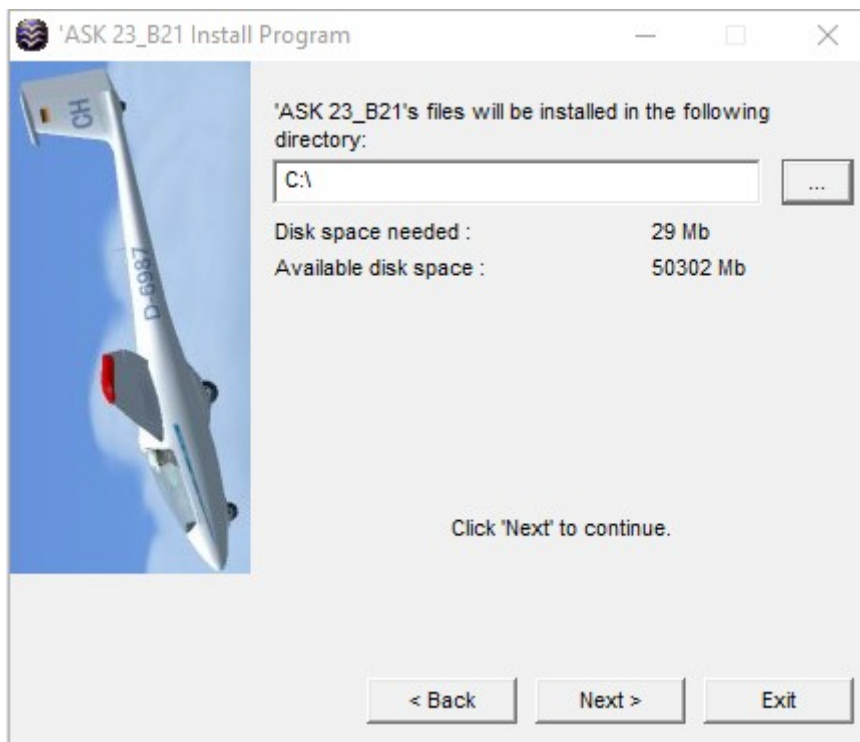
Finally we can download the 7.15 Mbyte ASK 23 file:



Install the file in folder "Downloads". Go to folder "Downloads" and double click the file ask23\_b21.zip. Now you see another file, called "ASK 23\_B21\_install.exe". Double click on this executable. You have to give the admin password and then the installer popup appears:

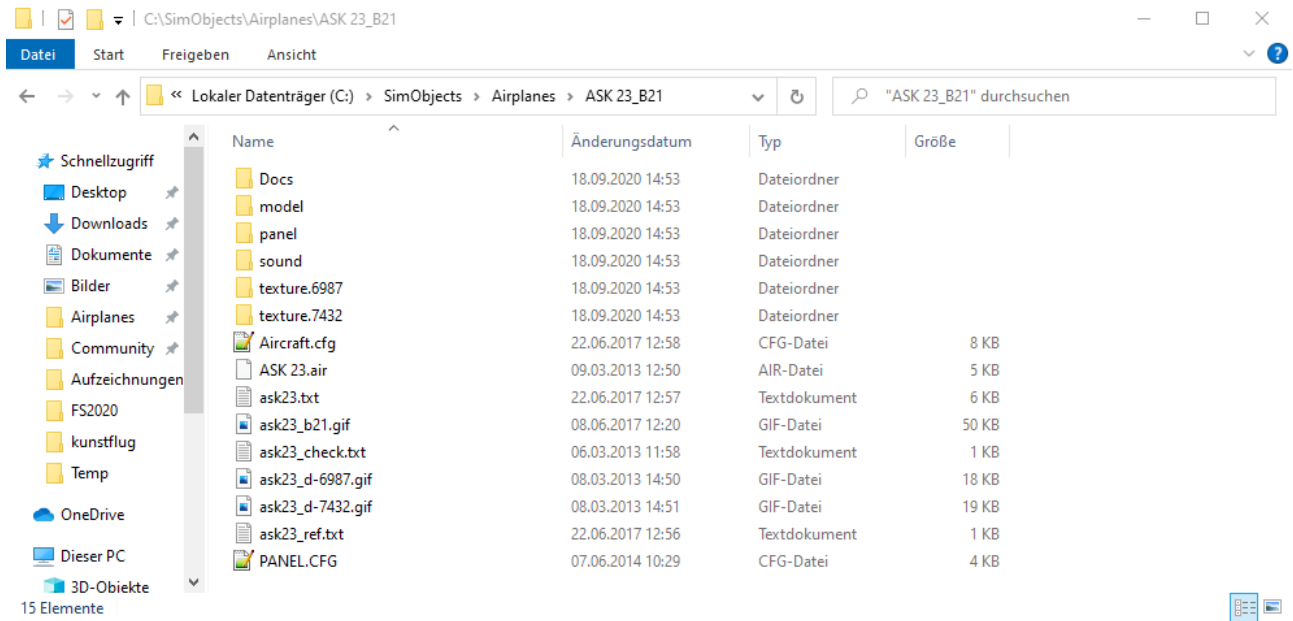


Click button "Next", agree to the freeware license. If you have FSX installed, the install directory fits to FSX. For this how-to I assume no FSX and therefore click the three dots button "...". I click the "Lokaler Datenträger (C:)" entry, then button OK. My install popup looks now:



In "File Explorer" we click the entry "Lokaler Datenträger" and see a new folder "SimObjects". If we "click down" the directories we will find the file "ask23.txt":

(Older people will say path is C:\SimObjects\Airplanes\ASK 23\_B21)

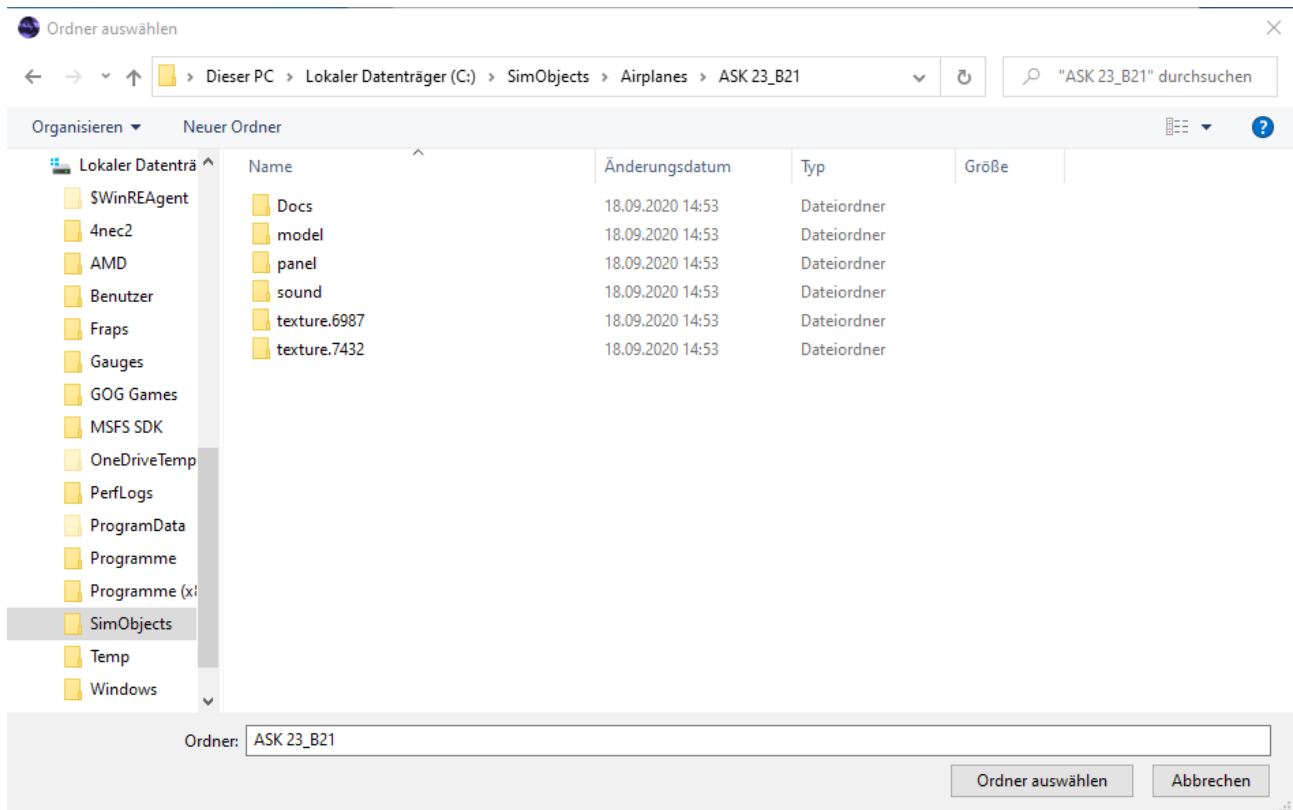


## Convert Aircraft model

Preparation work is done. We have the converter msfsLegacyImporter and the model ASK23. We even have a FS2020. After we start msfsLegacyImporter.exe, we see:



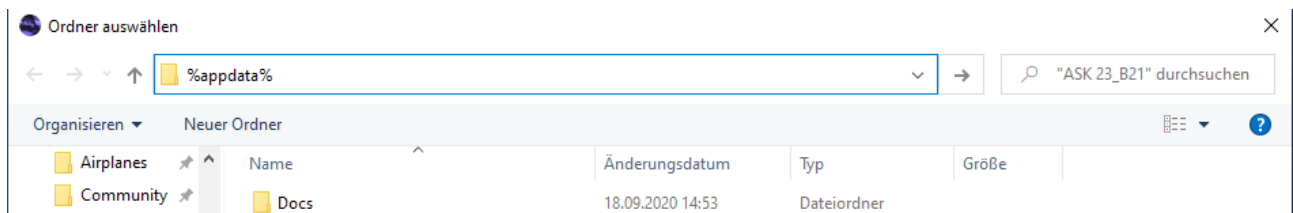
First we click on “FSX aircraft directory”. In the “File selector” window we click “Lokaler Datenträger”, “SimObjects”, “Airplanes” and “ASK\_23\_B21” or short  
C:\SimObjects\Airplanes\ASK\_23\_B21



Click Button “Ordner auswählen”.

Second we click on “MSFS Community directory” and see (the same) “File selector” window. **DO NOT click “Ordner auswählen”!**

This is a tricky part. Enter “%appdata%” in the “folder entry field” of the File Explorer:



After “Return key” the File Explorer will jump to some directory. The exact directory depends on your user (admin or other user) and maybe some other details:

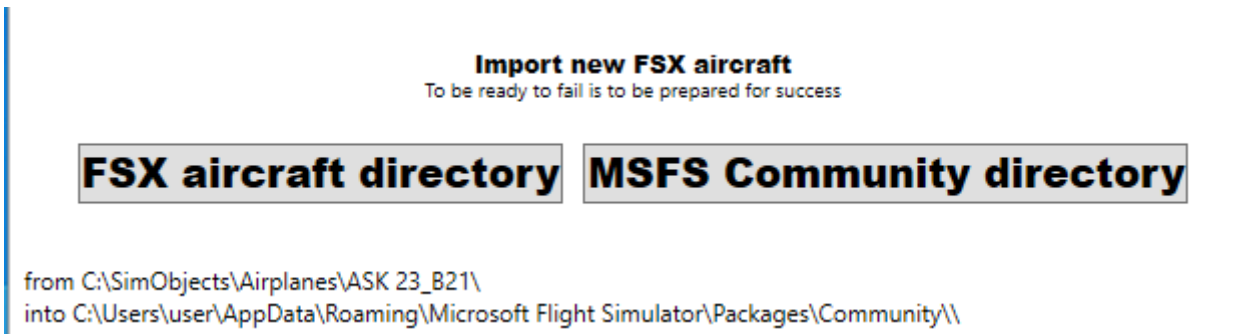


Follow the entries “Microsoft Flight Simulator”, “Packages” and “Community”.

(Go to C:\Users\user\AppData\Roaming\Microsoft Flight Simulator\Packages\Community with “user” dependent on your computer)

Your “Community” folder should be empty. But still, click button “Ordner auswählen”.

Now we are again back in the msfsLegacyImporter window, but we see “from” and “into” information:



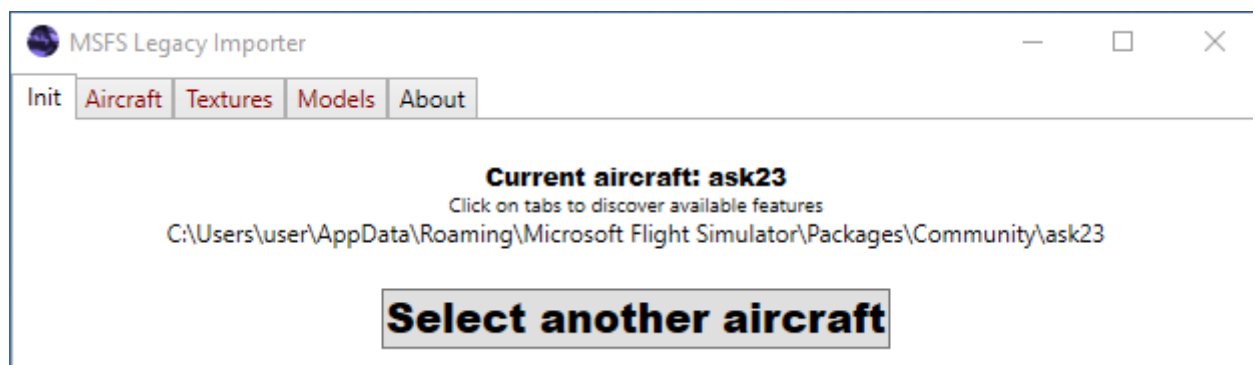
**Verify that “from” and “into” are different!** I ruined some models in FSX being careless in this step!

It's time to give the aircraft model in FS2020 some information:

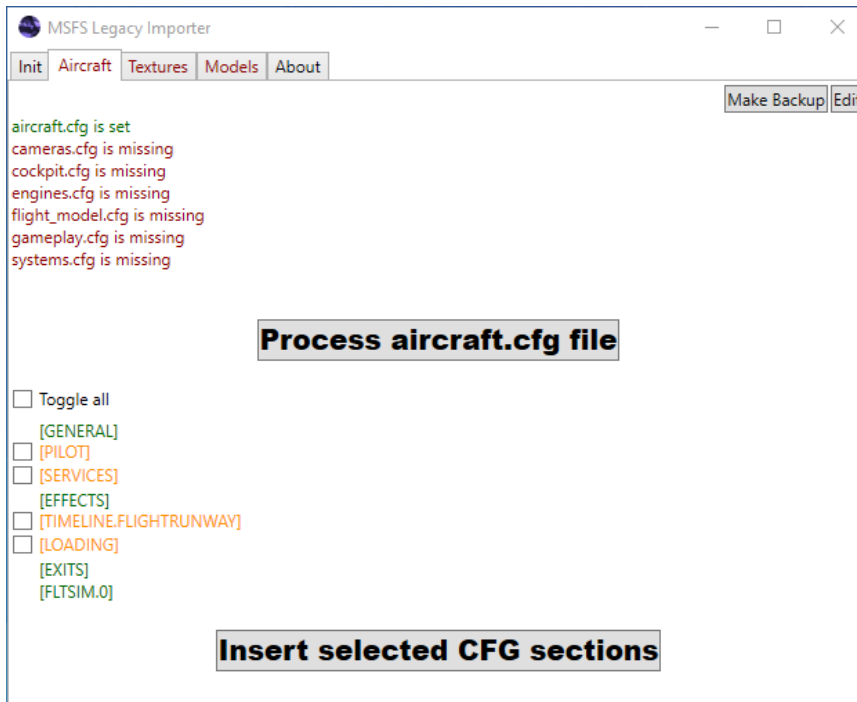
from C:\SimObjects\Airplanes\ASK 23\_B21\  
into C:\Users\user\AppData\Roaming\Microsoft Flight Simulator\Packages\Community\ask23\

Title	<input type="text" value="ASK23"/>		
Directory name	<input type="text" value="ASK23"/>		
Manufacturer	<input type="text" value="Schleicher"/>		
Author	<input type="text" value="Wolfgang Piper"/>		
Package version	<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Min game version	<input type="text" value="1"/>	<input type="text" value="17"/>	<input type="text" value="10"/>

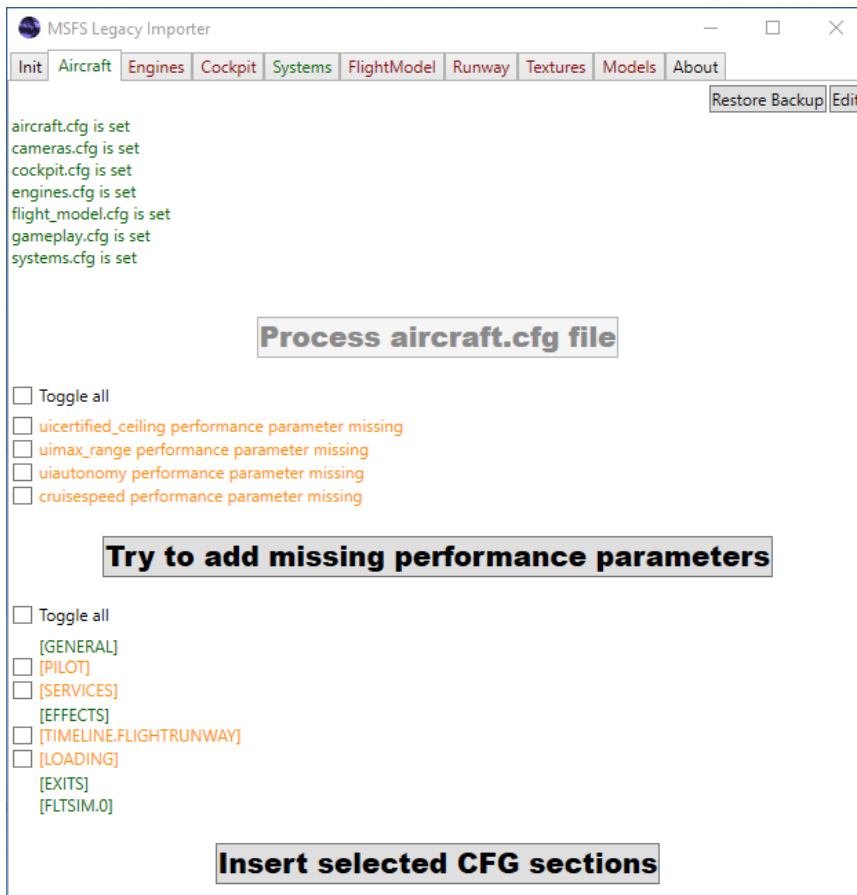
Click button “Import” now. Nothing spectacular happens, but you have new tabs in the window:



We click tab "Aircraft" and see:

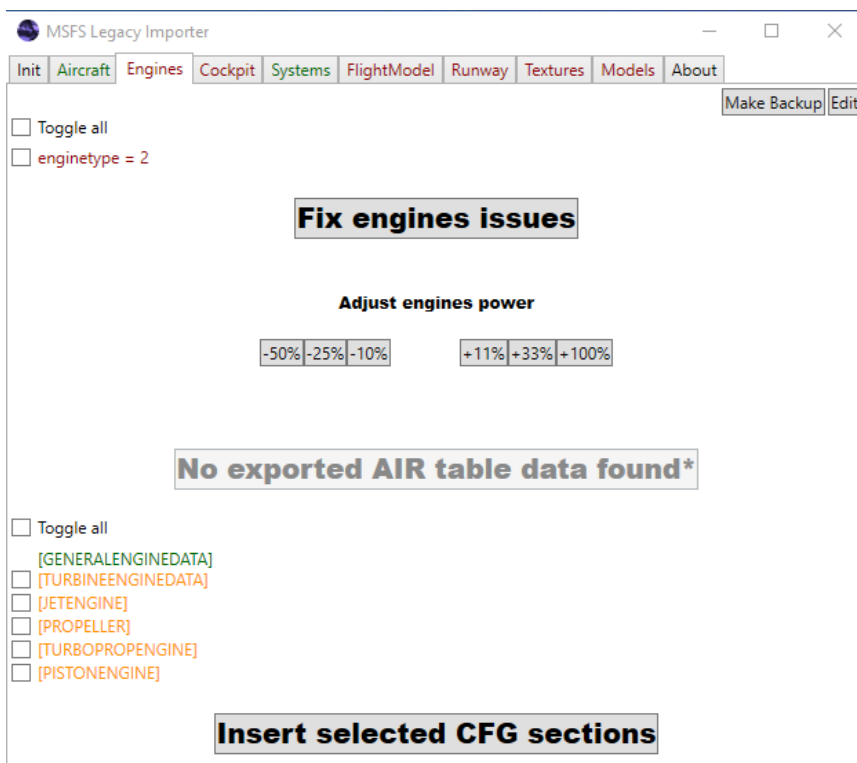


We click button "Process aircraft.cfg file" and get a different window contents:



Click on the top "Toggle all" check box and click button "Try to add missing performance parameters".

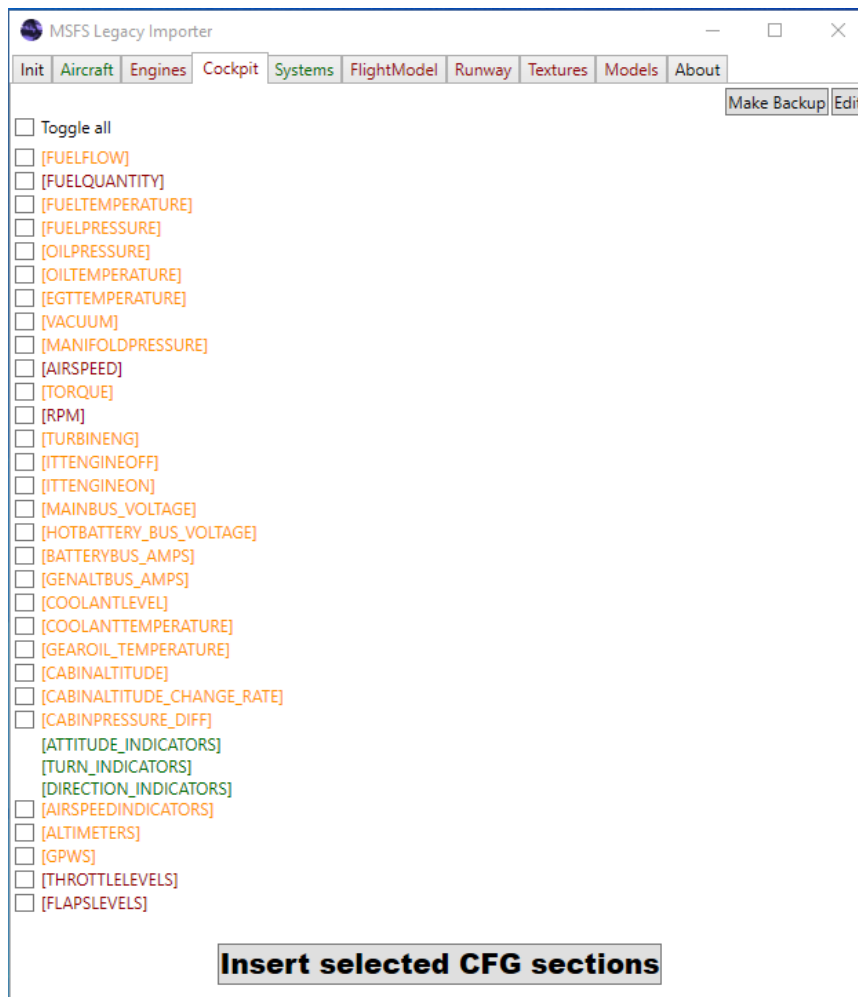
This was all for "Aircraft". Now click tab "Engines":



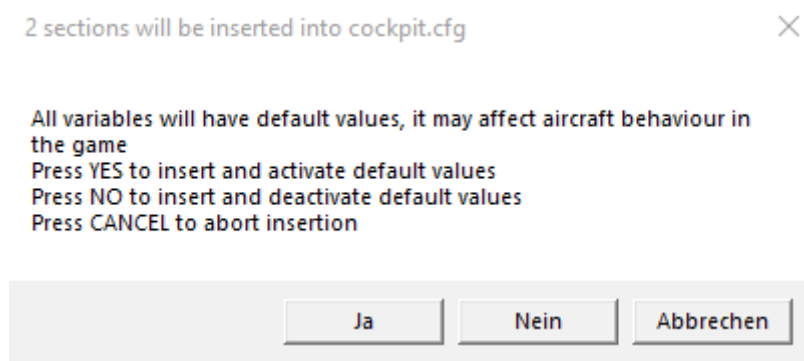
We click upper "Toggle all" and button "Fix engines issues".

Note: FS2020 version 1.8.3.0 and before does not understand an aircraft without engine. With the fix we create a sailplane/glider with a fake, non-working engine.

We click tab “Cockpit” and see:



I click check boxes “AIRSPEED” every time. Click button “Insert selected CFG sections”. You get a popup:



I click button “Ja”.

Note: If the airplane has flaps in FSX, don't select “flaps” because this will create two flaps.0 entries. The “airspeed” display is a good thing to have in the non-cockpit view.

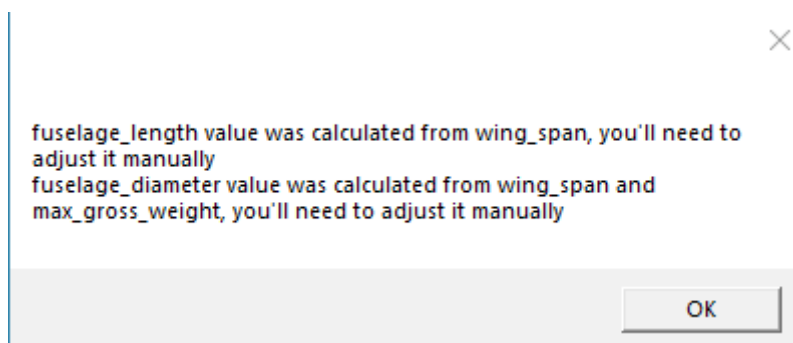
Click tab “Systems”. There is nothing interesting for me.

Click tab "FlightModel":



Note: Often the one main wheel of the sailplane has two entries for "Gear Main" in the [contact\_points] section with the only difference of left brake and right brake. No need to fix this.

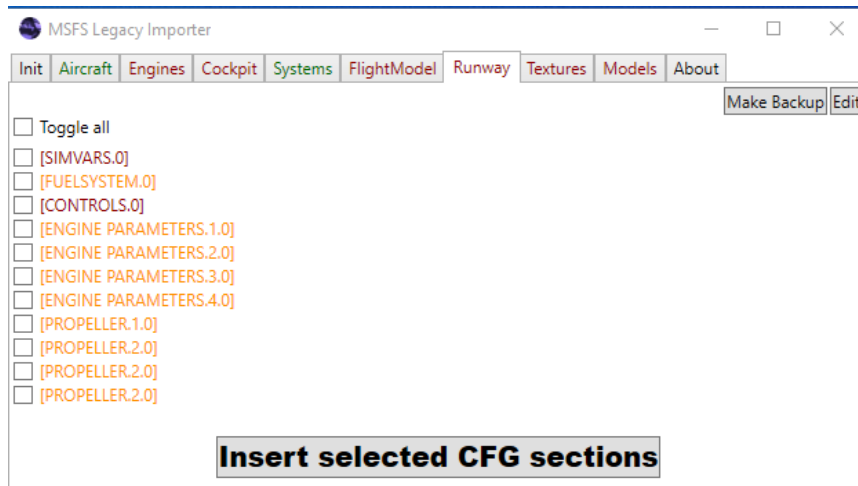
Click again on the (new) top checkbox "Toggle all" and on button "Fix flight model issues". You get another popup:



I click button "OK".

Note: I can read the prose, but without understanding. At the moment I do not "adjust it manually".

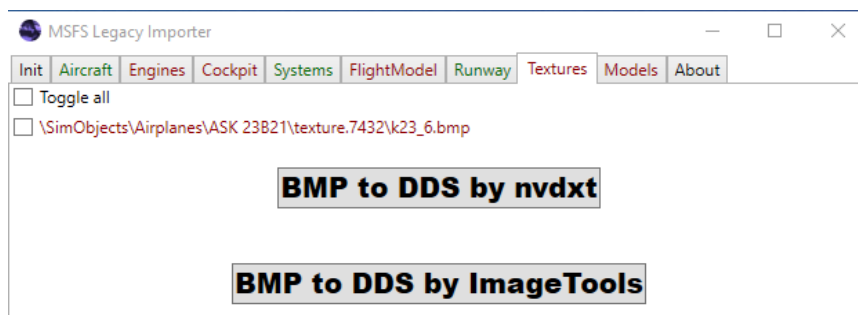
Click tab “Runway”:



I click no checkbox.

Note: For the record, I have a high IQ, I even found the “upward spin bug” in FS2020 – see [https://youtu.be/9gFFLTq\\_ljE](https://youtu.be/9gFFLTq_ljE) - but I feel like a monkey at the keyboard.

Click tab “Textures”:



I click checkbox “Toggle all” and button “BMP to DDS by nvdxt”. The textures that are not converted by nvdxt, I try to convert by ImageTools.

Note: Again don’t know the difference between the tools. My experience is, either both work or none works. “ImageTools” converts faster.

Click tab “Models”:

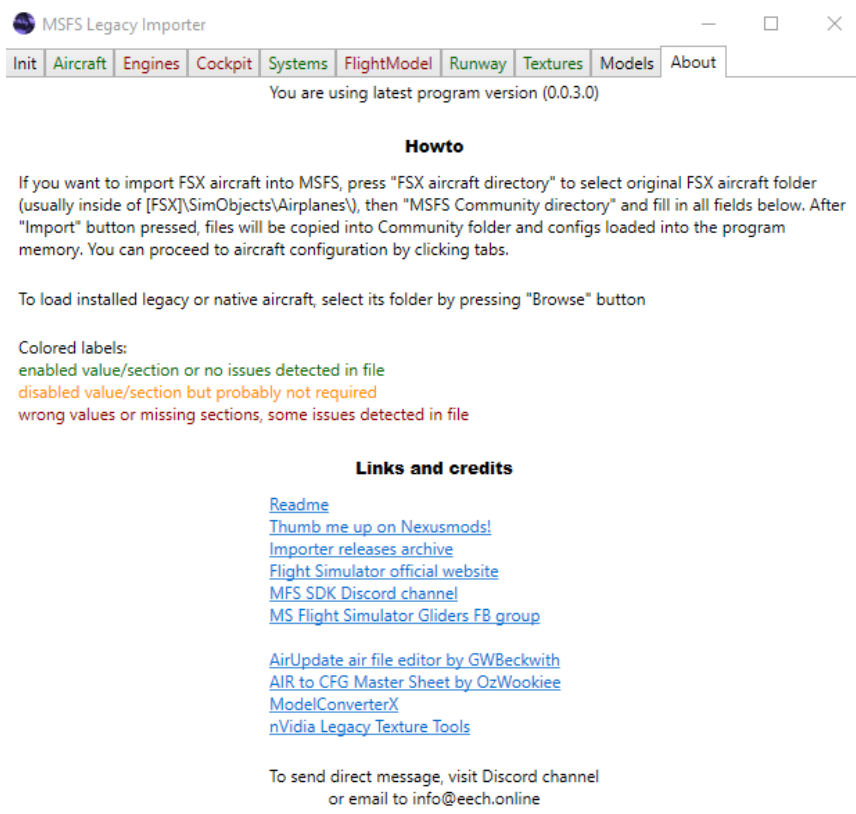


I click checkbox “Toggle all” and button “Remove interior clickable switches”.

**Attention: FS 2020 will silently crash if there are “clickable switches”.**

Note: Sometimes program msfsLegacyImporter just terminates after I press the button. But the model is working in FS2020.

You don’t need the last tab “About”. But there are some links and the program version information:

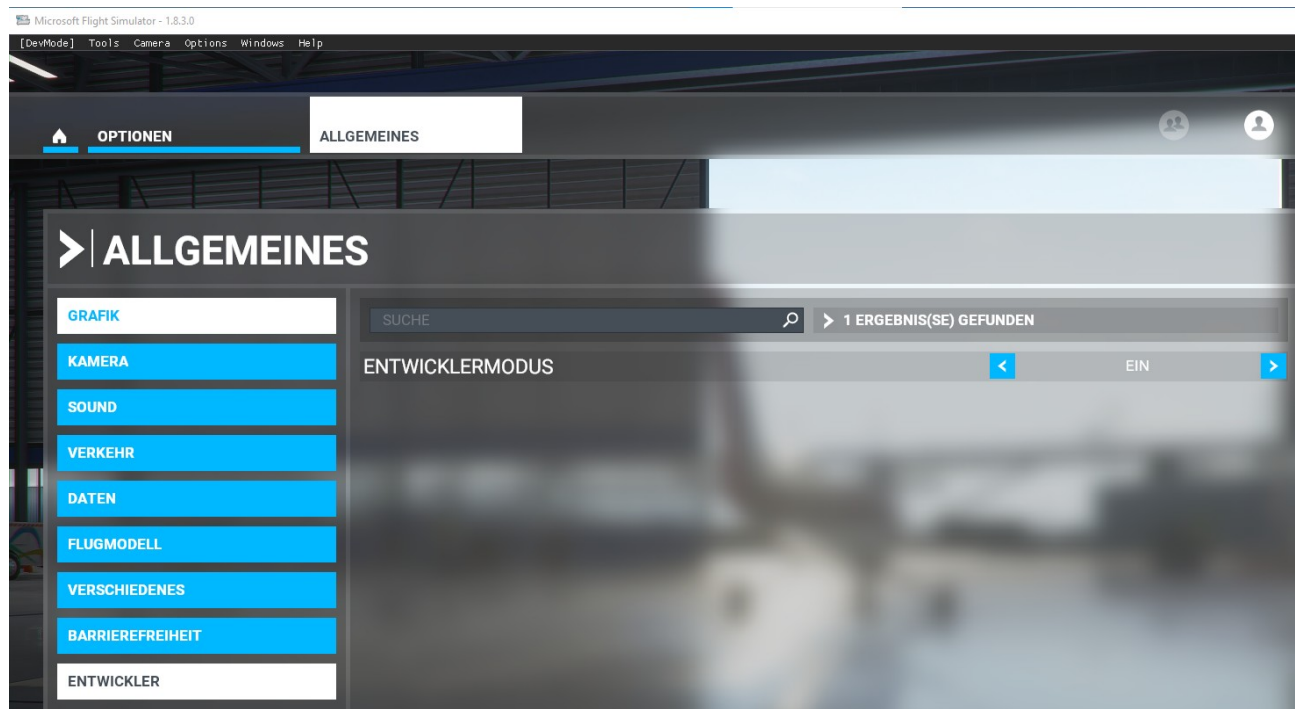


Note: First action was to send this how-to to Alex Marko. Good job man, and thumbs up to Wolfgang Piper, too!

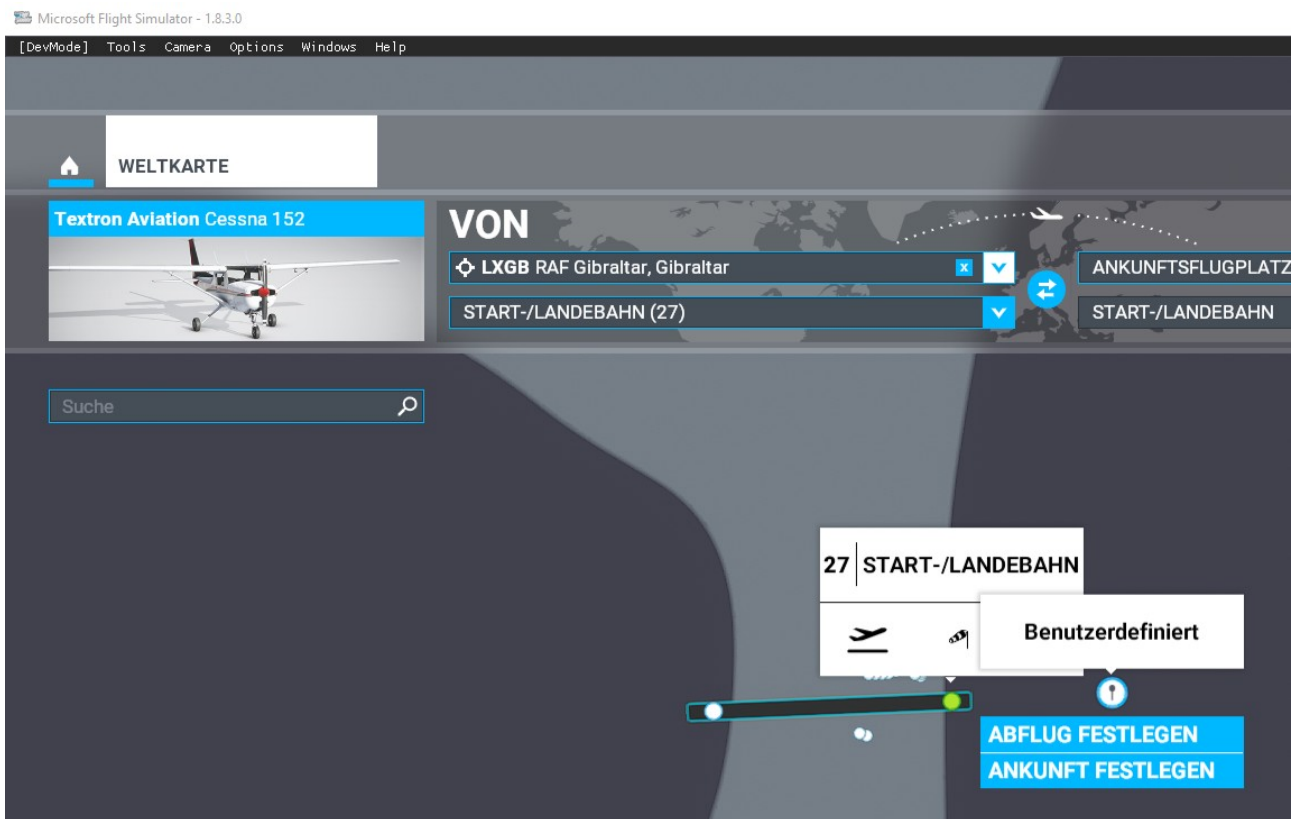
## Use model in FS2020

In some cases you can select the new model through the “aircraft selector”. But in most cases you have to switch on “developer mode” and use “developer menu”.

For developer mode we go to “Optionen”, “Allgemeines”, “Entwickler” and switch “Entwicklermodus” on:



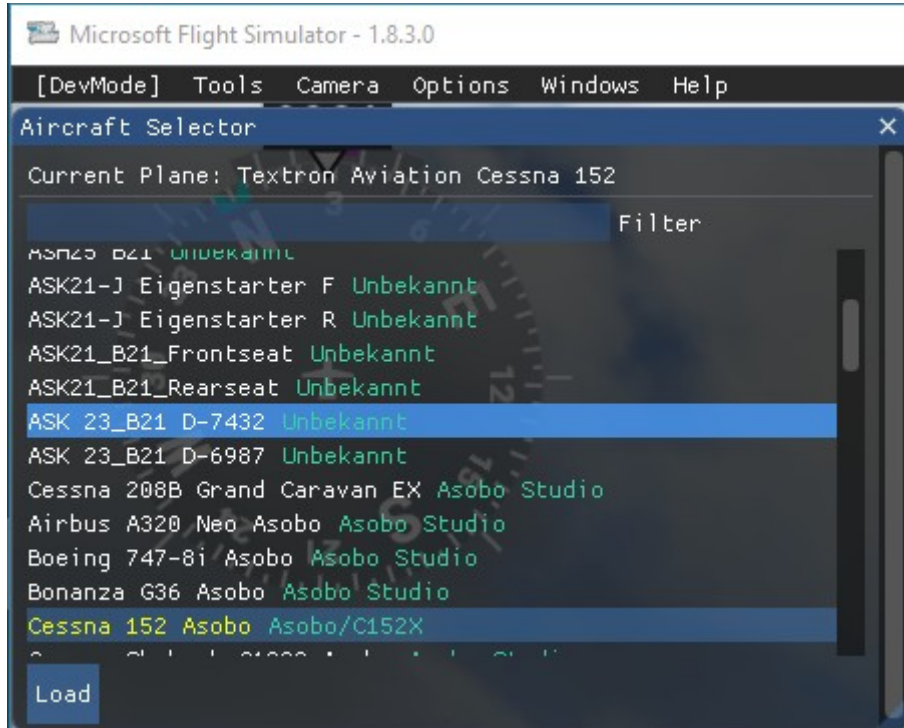
Next we select “Cessna 152” as aircraft and as departure a spot near to LXGB Gibraltar, because the rock gives us easy ridge lift:



If you fly Cessna, you can change to ASK23. Click developer menu “Windows” and click “Aircraft Selector”:



In the list select “ASK 23” and click button “Load”:

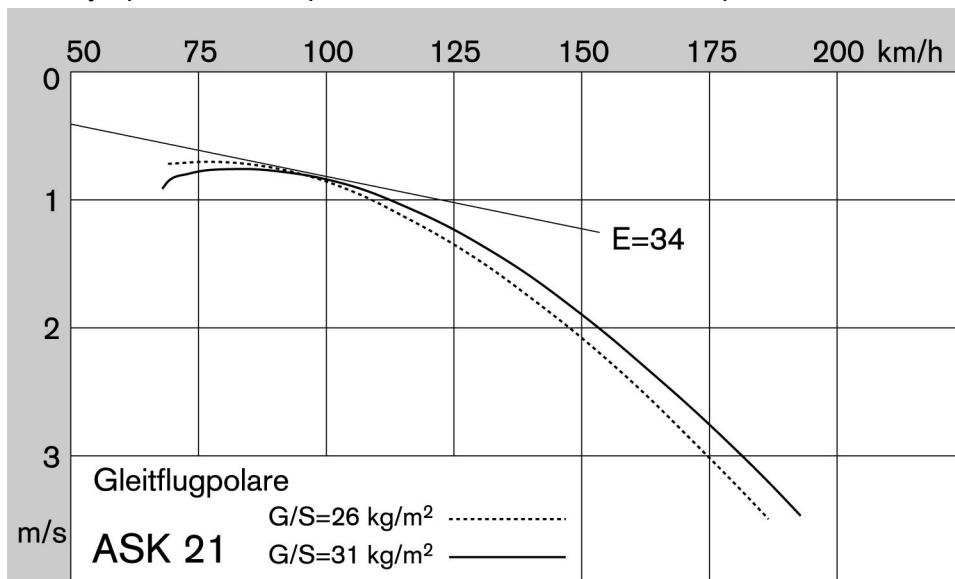


**Attention: The aircraft starts to fly “nose down”. Catch it or crash it!**

The trim is wrong for most imported aircraft. The AS23 flies “level” with trim 1.

## Sailplane cruise speed

Two performance parameters of a sailplane are the “(minimum) rate of sink” and “maximum glide ratio” speeds. In my opinion these speeds are not useful as cruise speed.



The polar curve above of a Schleicher ASK 21 sailplane shows airplane speed from left to right and vertical speed from top to bottom. Cruise speed is at the vertical speed = 1 m/s (meter per second) point using lower wing loading ( $G/S$ ) value. The Schleicher ASK 21 cruise speed is 110 km/h or 59 kn. Using the configuration files parameters below I can adjust the airplane to fly cruise speed if

there is no control input. Elevator trim shall allow flying minimum rate of sink speed without control input.

## Aircraft Configuration Files Parameters

FSX has one configuration file aircraft.cfg. The contents of this file is split in several files in FS2020. The Prepar3D web page

[http://www.prepar3d.com/SDKv3/LearningCenter/simobjects/aircraft\\_configuration\\_files.html](http://www.prepar3d.com/SDKv3/LearningCenter/simobjects/aircraft_configuration_files.html)

documents the FSX parameters (variables). The configuration files of the Asobo airplane models give documentation, too. See for example

C:\Users\user\AppData\Roaming\Microsoft Flight Simulator\Packages\Official\Steam\asobo-aircraft-c152\SimObjects\Airplanes\Asobo\_C152

The configuration files have a structure. There is section and below section is parameter. The section-name is enclosed in [ ], like [GENERAL].

The following parameters are useful to set the “default speed” of an airplane. This default speed for a sailplane is defined as the speed without control input in calm air.

### File aircraft.cfg section [FLTSIM.0]

ui\_typerole = "Single Engine Prop" ; e.g. Single Engine Prop, Twin Engine Prop, Rotorcraft, etc

For a sailplane this variable should be deleted. In FSX the contents is “Glider” sailplanes. This value creates a new airplane type Glider in the Aircraft selector. Without ui\_typerole the airplane appears in “Legacy”. But FS2020 behaviour is different. FS2020 can not create a new airplane type. An airplane without ui\_typerole appears in the airplane type “Andere”.

ui\_createdby = "Wolfgang Piper"

Wolfgang Piper’s aircraft.cfg files often have a missing = character in the ui\_createdby line.

### File flight\_model.cfg section [REFERENCE SPEEDS]

The reference speeds control “overstressed” and (“stall”). The units are kn (nautical miles per hour, 1 nm = 1.852 km) and mach (1 mach @ 20°C = 667 kn = 1235 km/h).

flaps\_up\_stall\_speed = Knots True (KTAS)

full\_flaps\_stall\_speed = Knots True (KTAS)

The full\_flaps\_stall\_speed can be estimated as flaps\_up\_stall\_speed \* 0.9.

cruise\_speed = Knots True (KTAS)

I use the Polar==1 speed (Polar==2 for SG-38)

max\_indicated\_speed = Red line (KIAS)

max\_mach = max\_indicated\_speed in mach (max\_indicated\_speed / 667)

At 20°C 1 mach is 667 kn.

spawn\_cruise\_altitude = Spawn Altitude (ft)

3000ft is a good value for Spawn Altitude.

### File flight\_model.cfg section [CONTACT\_POINTS]

gear\_system\_type = gear system type 0 = electrical, 1 = hydraulic, 2 = pneumatic, 3 = manual, 4 = none, 5 = undefined

Note: Use gear\_system\_type = 3 for sailplanes with retractable gear, 4 otherwise.

## File flight\_model.cfg section [FLAPS.0]

system\_type = Flap system type 0 = electrical, 1 = hydraulic, 2 = pneumatic, 3 = manual, 4 = none

Note: Use system\_type = 3 for sailplanes with flaps, 4 otherwise.

damaging-speed = Speed at which the flaps begin to accrue damage (Knots Indicated Airspeed, KIAS) = max\_indicated\_speed \* 1.1

blowout-speed = Speed at which the flaps depart the aircraft (Knots Indicated Airspeed, KIAS) = max\_indicated\_speed \* 1.2

## File flight\_model.cfg section [FUEL]

engine\_driven\_pump = Set to 0 if the pump is engine driven (1 is the default).

Note: Without a pump. The engine starts, but stops soon.

## File cockpit.cfg section [AIRSPEED]

The airspeed gauge in FS2020 is controlled here. The unit is kn (nautical miles per hour). There are green, yellow and red speed ranges at the gauge and additionally a white speed range. I use the white speed range for the range from "stall speed" to "Maximum glide ratio". Green is from "Rate of sink" to "Never exceed speed on winch launch". Yellow is from "Never exceed speed on winch launch" to "Polar=1 speed" and Red is from "Polar=1 speed" to "Never exceed speed in smooth air". The variable "highLimit" and "max" gives the maximum speed of the gauge. For example the values for Schleicher ASK23:

```
min = 0
lowLimit = 0
white_start = 31      ; flaps_up_stall_speed
white_end = 49       ; max aerotow speed
green_start = 35     ; flaps_up_stall_speed
green_end = 67       ; cruise_speed
yellow_start = 67    ; cruise_speed
yellow_end = 116     ; max_indicated_speed
red_start = 116      ; max_indicated_speed
red_end = 130; larger than max_indicated_speed
highLimit = 130      ; larger than max_indicated_speed
max = 130            ; larger than max_indicated_speed
```

## Contact

Write to Paul<dash>Falke<at>gmx<dot>net. Replace <dash>, ... with the proper symbols. Please add "msfsLegacyImporter" to your subject.



Picture: ASK 23 flying near LXGB Gibraltar.

Some glider/sailplane FSX models from Wolfgang Piper that work well after conversion to FS2020:

Airplane	Ratio	Spd	Comments
SG-38 Schulgleiter	1:10	32	An ultralight – long before the word was invented, 8750 build in factory. First flight was in 1938.
Doppelraab	1:20	?	A two seat trainer from the 1950s, with only one stick, 220 build.
Lo-150 "Burgreihner"	1:34	?	A sailplane from the 1950s, based partial on a 1930s design.
Ka 6E	1:34	57	The single seat 15m Ka 6 E was the last and best wooden sailplane produced by Schleicher. First flight was in 1965.
K 8	1:27	47	A training sailplane from the 1960s, 1180 build.
ASK 23	1:34	59	A single seat 15m Schleicher sailplane. This one uses glass-fibre reinforced plastic. First flight was in 1983.
ASK-J	1:34	61	ASK 21 two seater, glass-fibre reinforced plastic. In production since 1979, 650 build. This model has a working jet engine. Kill the engine with Shift-Ctrl-F1, or rocket away!
ASW 20 B	1:43	69	Performance 15m single seat sailplane. 905 build from 1977 to 1986. Has winglets, flaps and retractable landing gear.
ASW 27 B	1:48	78	High performance 15m single seat sailplane. 237 build from 1995 to 2009. It has plain flaps, winglets, a retractable landing gear and a water ballast system.
DG-800S	1:52	74	Performance 18m single seat sailplane. Has flaps and retractable landing gear.
ASW 22 BL	1:62	62	1991 high performance sailplane. Water droplets or dead insects ruin the glide ratio. Always have a hanky handy to polish it!

Spd is cruise speed in kn.

You can download some FS2020 models from  
[http://www.andreadrian.de/FS\\_2020\\_sailplanes/index.html](http://www.andreadrian.de/FS_2020_sailplanes/index.html)

Some other converted FSX models sink in the ground after landing. Other have a canopy you can not see through. And the worst of all just freeze or crash FS2020.