TUTORIAL VIDEO 13

13 SPH Generator: a bird strike in four steps

Set up a bird strike in four steps with the SPH Generator: the bird's size, its speed, what it hits and where it aims -- BeidPrep creates the bird, its material, the contact and the force output.

Tutorial files	folder `13_SPH_bird_strike` — open `beider_wing_bay_0000.rad` first
Video	Watch video 13 on YouTube
Download files	Download the tutorial files (97 MB)

1 Opening, Open

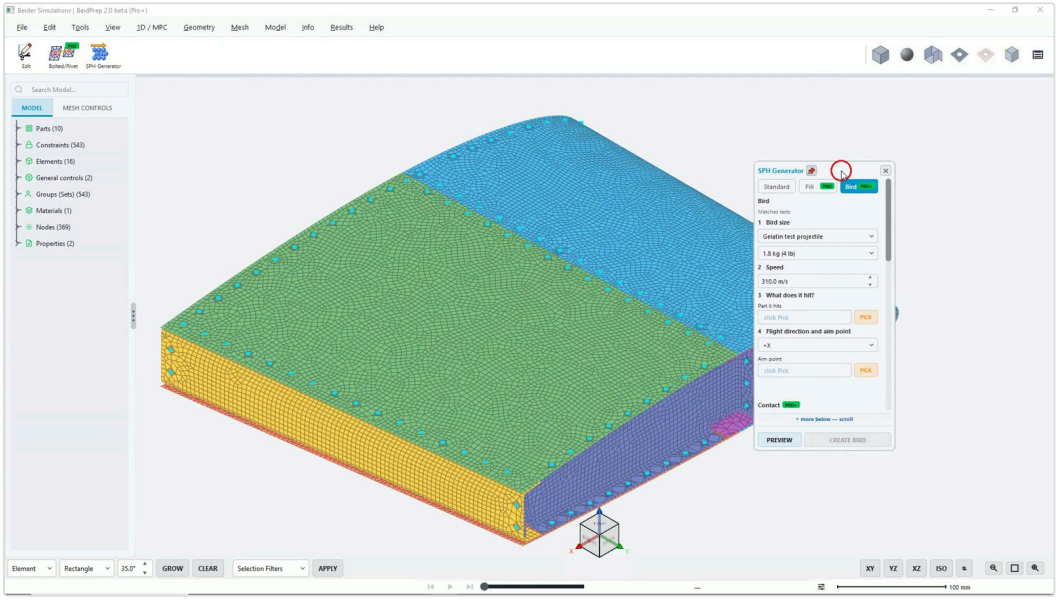
video 0:00

This video sets up a bird strike on a wing with the SPH Generator.

It takes four steps.

1. On the Model tab, click SPH Generator.

The panel opens over the 3D view. Drag it aside by its title.



The screen at 0:15 in the video.

2 Bird tab, Size

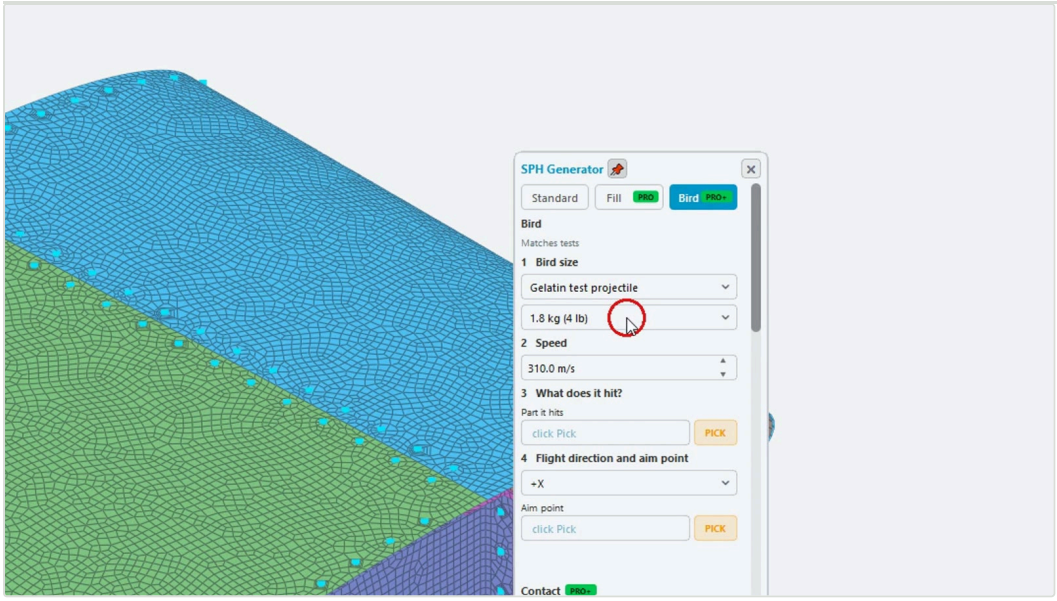
video 0:15

The Bird tab is already open.

It creates the bird, its material, its speed, the contact and the force output.

Step one is the bird's size.

1. Keep one point eight kilograms, the bird that matches tests.



The screen at 0:28 in the video.

3 Speed, Target

video 0:29

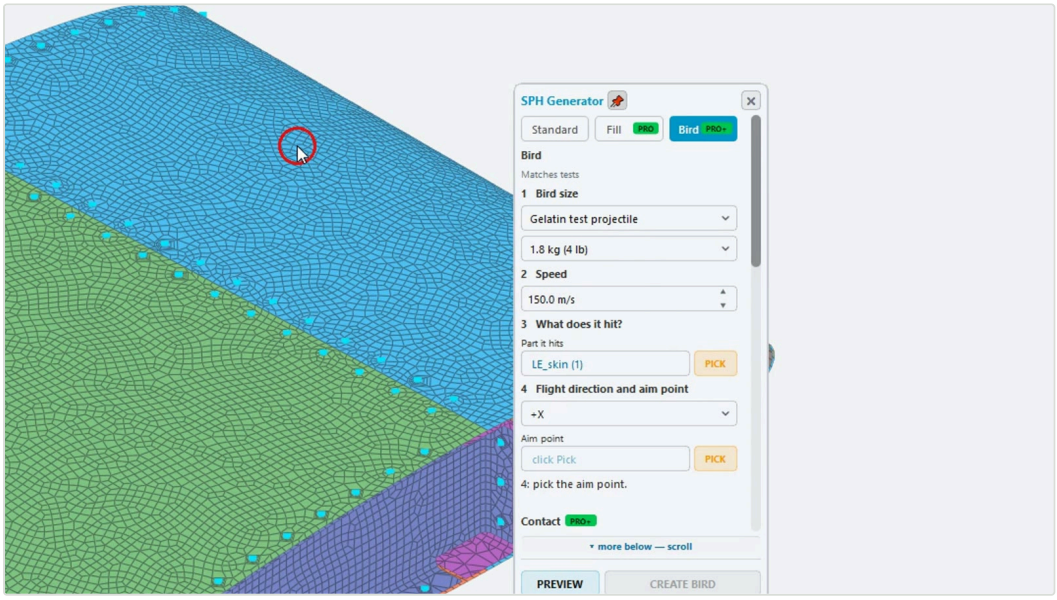
Step two is the speed.

1. Type one hundred fifty metres per second.

Step three: what does it hit?

2. Press Pick, and click the leading edge skin.

In the video: **150** in Speed.



The screen at 0:39 in the video.

4 Direction, Aim, Hits line

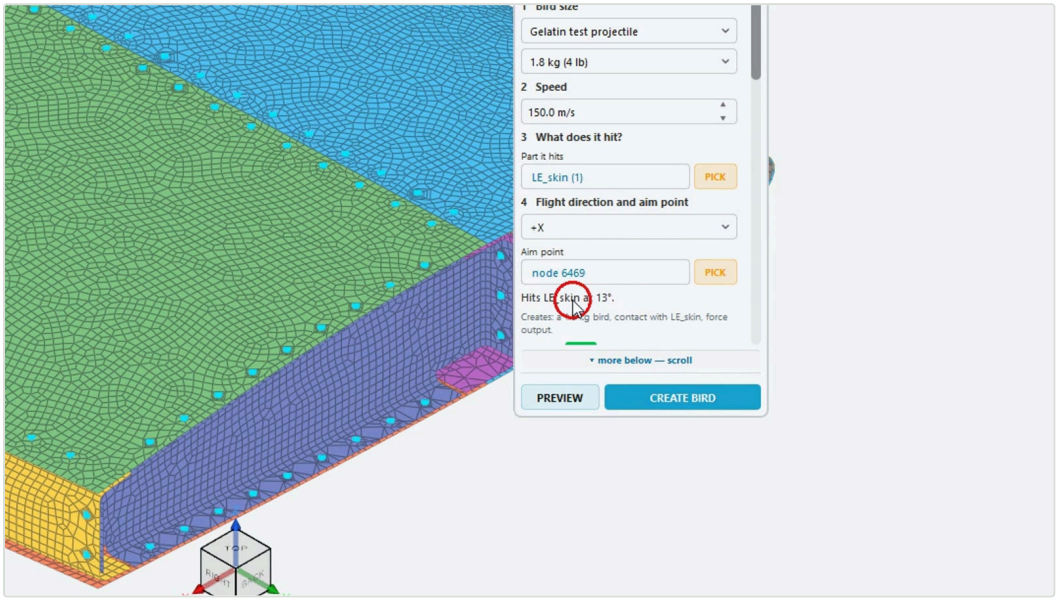
video 0:39

Step four is the flight direction and the aim point.

The bird flies along plus X.

1. Press Pick, and click the node to aim at.

   The panel now says what the bird hits first, and at what angle.



The screen at 0:51 in the video.

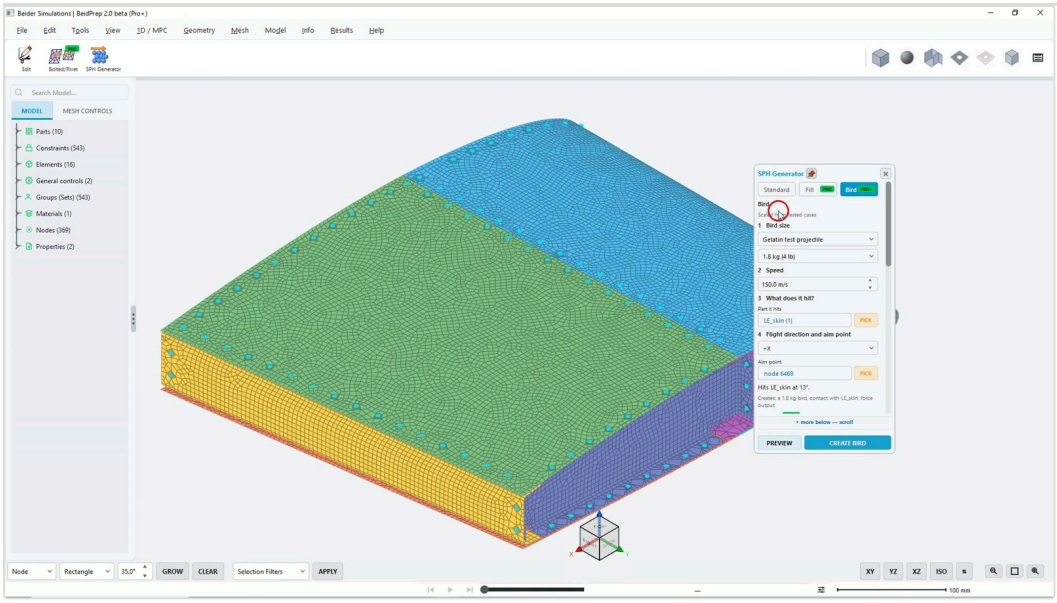
5 Summary, Status

video 0:51

It also lists what Create bird will make.

The status now says Scaled from tested cases.

The bird is set up from published bird strike tests, scaled to this case.



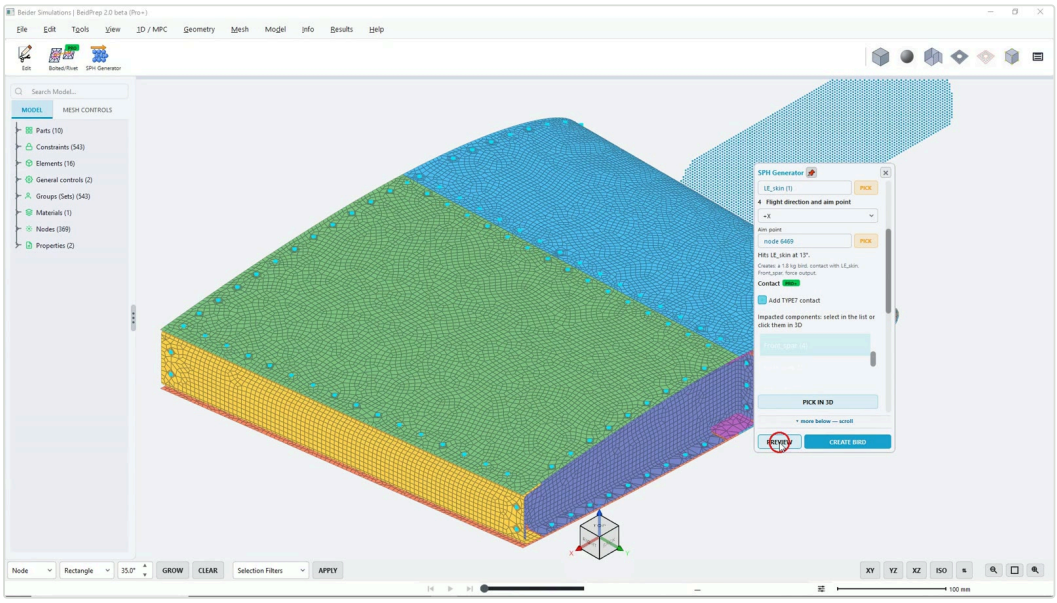
The screen at 1:01 in the video.

6 Contact, Preview

video 1:02

The contact is already on, with the leading edge skin in it.

1. Add the spar, which the bird can reach behind the skin.
2. Press Preview to see the bird in the 3D view.



The screen at 1:12 in the video.

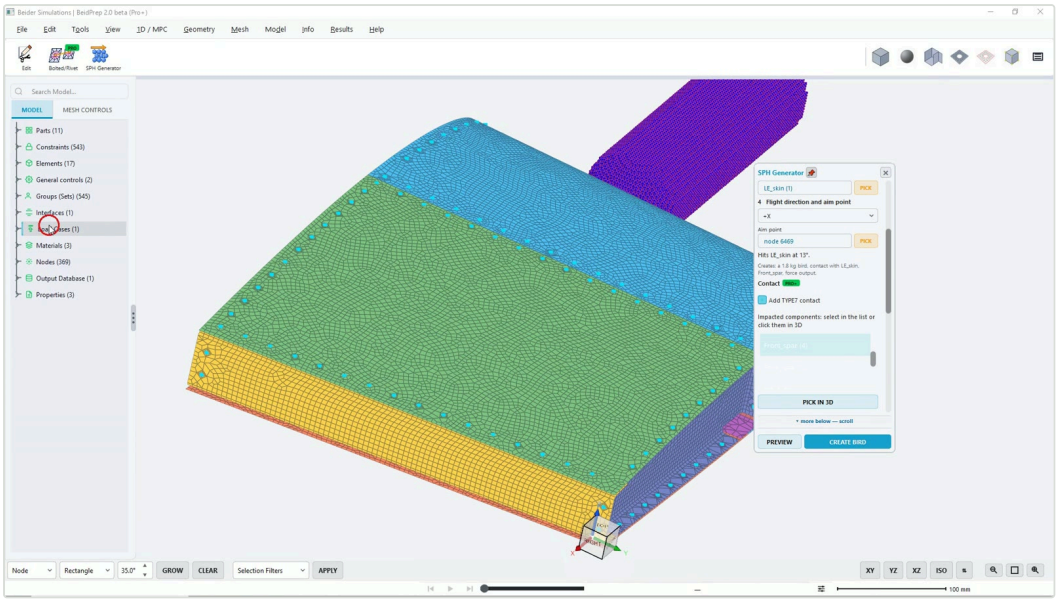
7 Gap, Create, Tree

video 1:13

The bird is placed just before the first surface it would touch, so it never starts inside a part.

1. Press Create bird.

The bird and every card it needs are now in the model tree.



The screen at 1:23 in the video.

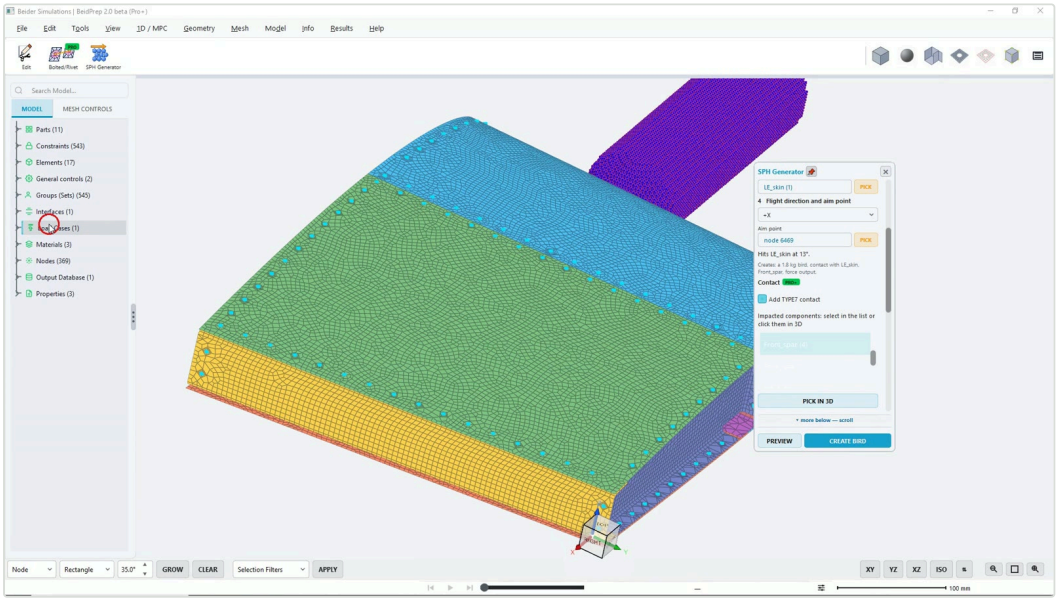
8 Undo, Close

video 1:23

One Create bird is one step.

Control Z removes the bird and all its cards.

That is the Bird tab: size, speed, target and aim, in four steps.



The screen at 1:26 in the video.

Steps and pictures are taken from tutorial video 13. Every picture is a frame of the video.