

Recent Updates – Generic XSec

Generic XSec

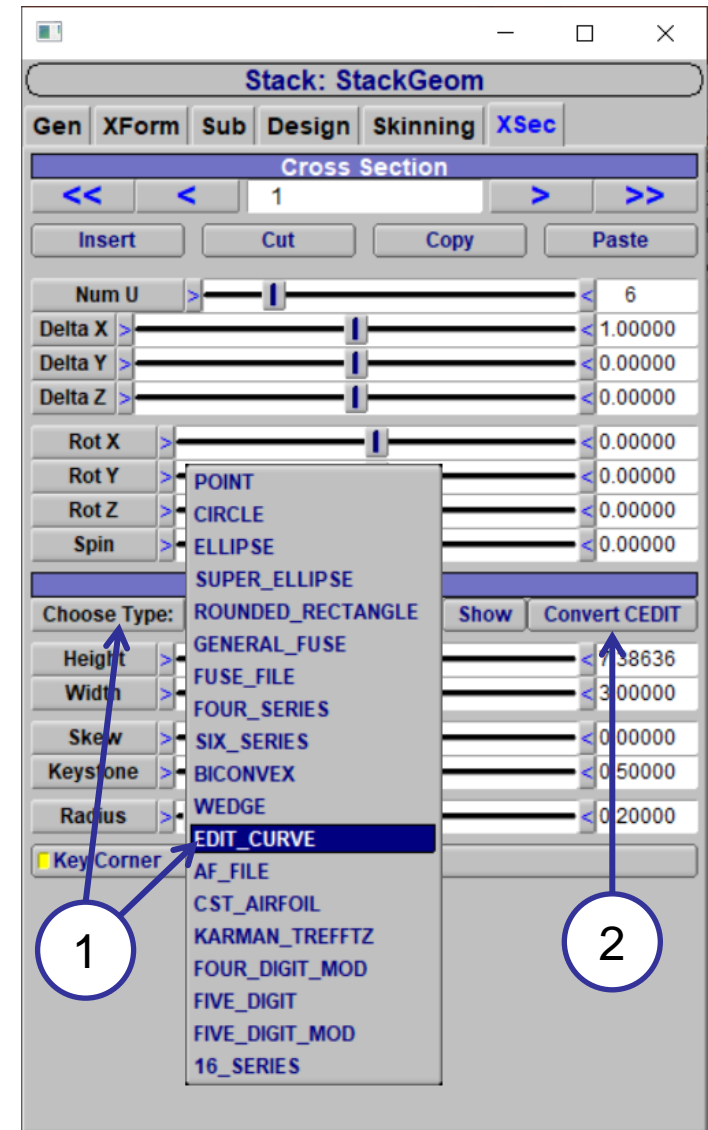
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Overview:

- Provides direct control of a cross-section's Bézier spline
- Enables highly complex and non-traditional XSec shapes
- Available for any XSec Geom – Wing, Fuselage, Stage, BOR, & Prop
- Most advanced XSec type – only use when alternative XSec types can't capture desired shape

2 Ways to Use:

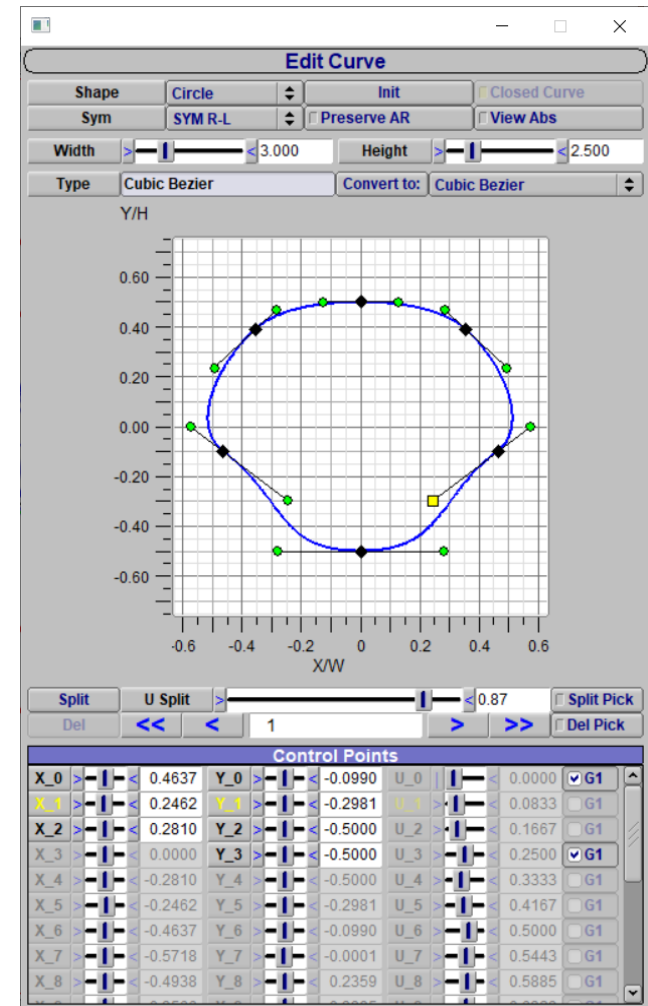
1. Change XSec type to “EDIT_CURVE” – initializes to Cubic Bézier circle
2. Convert current XSec to Generic XSec – maintains previous XSec shape



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Released in 3.23.0:

- OpenGL window replaced FLTK “Canvas” XSec editor:
 - Zoom and pan support
 - Resizable window – editor scales appropriately
 - Direct background image support
- Additional background and curve drawing options:
 - Line width and color
 - Point size
 - Axis, border, and grid toggles
- Added equal arc length reparameterization option
 - Can help fix parameterization issues automatically
 - Can be done for entire curve or sections defined between “fixed” U values
 - API support included
- More user-friendly reorganized GUI
 - Wider section for control points list – sliders are much more useable
 - 2-way highlighting of selected point
- Individual display settings with XML (*.vsp3) support



2020 OpenVSP Workshop Version

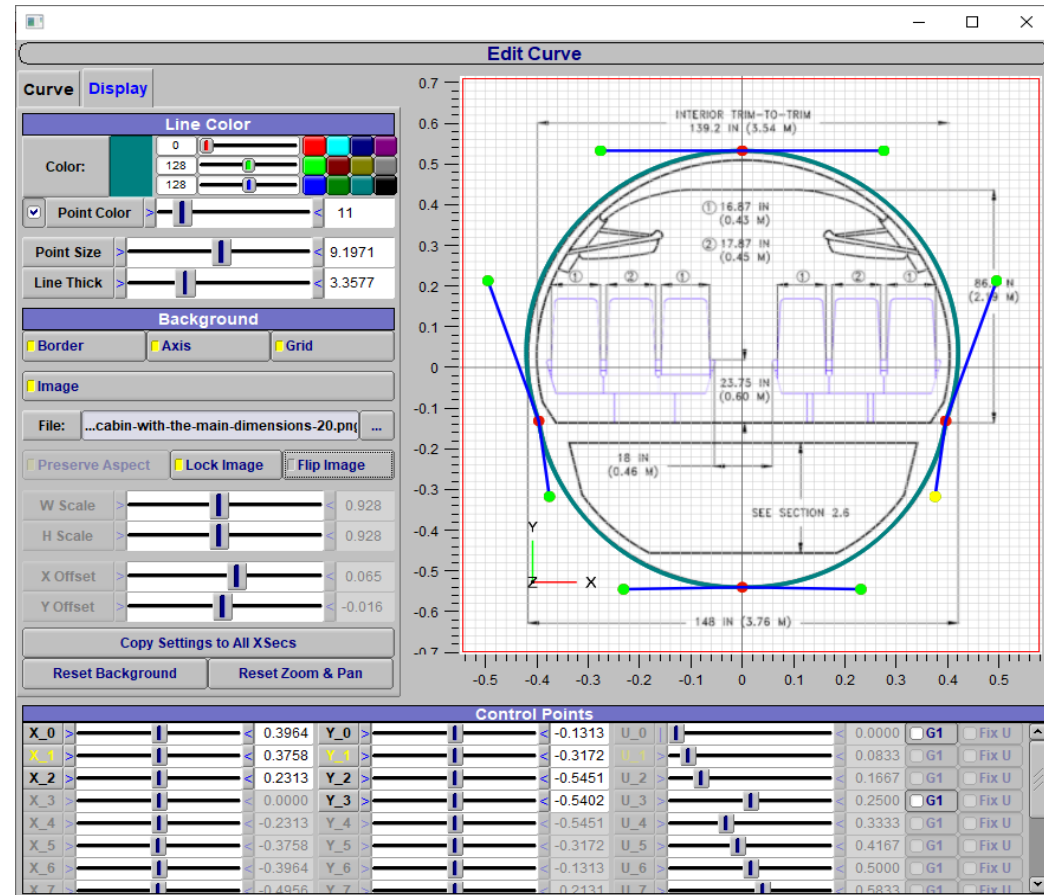
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Released in 3.24.0:

- Fixed issue with middle mouse button (zoom operation) moving control points
- Support for higher resolution displays
- Added option to flip XSec background image
- Fixed some GUI update/activation issues
- Added parameter for point color
- Drawing parameters to saved to XML

Other Updates:

- Wiki documentation updated:
<http://openvsp.org/wiki/doku.php?id=genxsec>

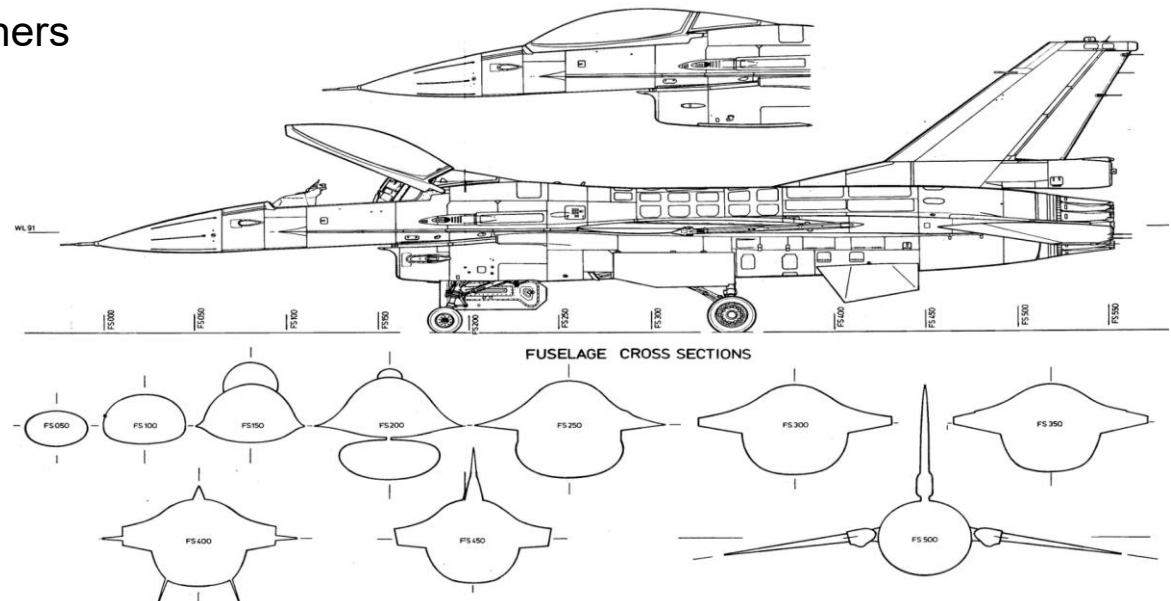


Latest Version (3.25.0)

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Best Practices:

- Only use Generic XSec only when less-complex type can't capture shape
 - Start with a less complex XSec type (i.e. Rounded Rectangle), then “Convert to CEDIT”
 - Use for unconventional shapes and highly detailed modeling
- Use the width and height sliders to scale, not the control points themselves
 - Nondimensionalized X & Y values should remain within range [-0.5, 0.5]
- Use as few control points as possible to achieve the desired shape
- Turn off symmetry when performing equal arc length reparameterization
- Do not model excessive number of XSecs – Use skinning
- Enforce G1 for smooth corners
- Save as often as possible



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Demo

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Questions?