



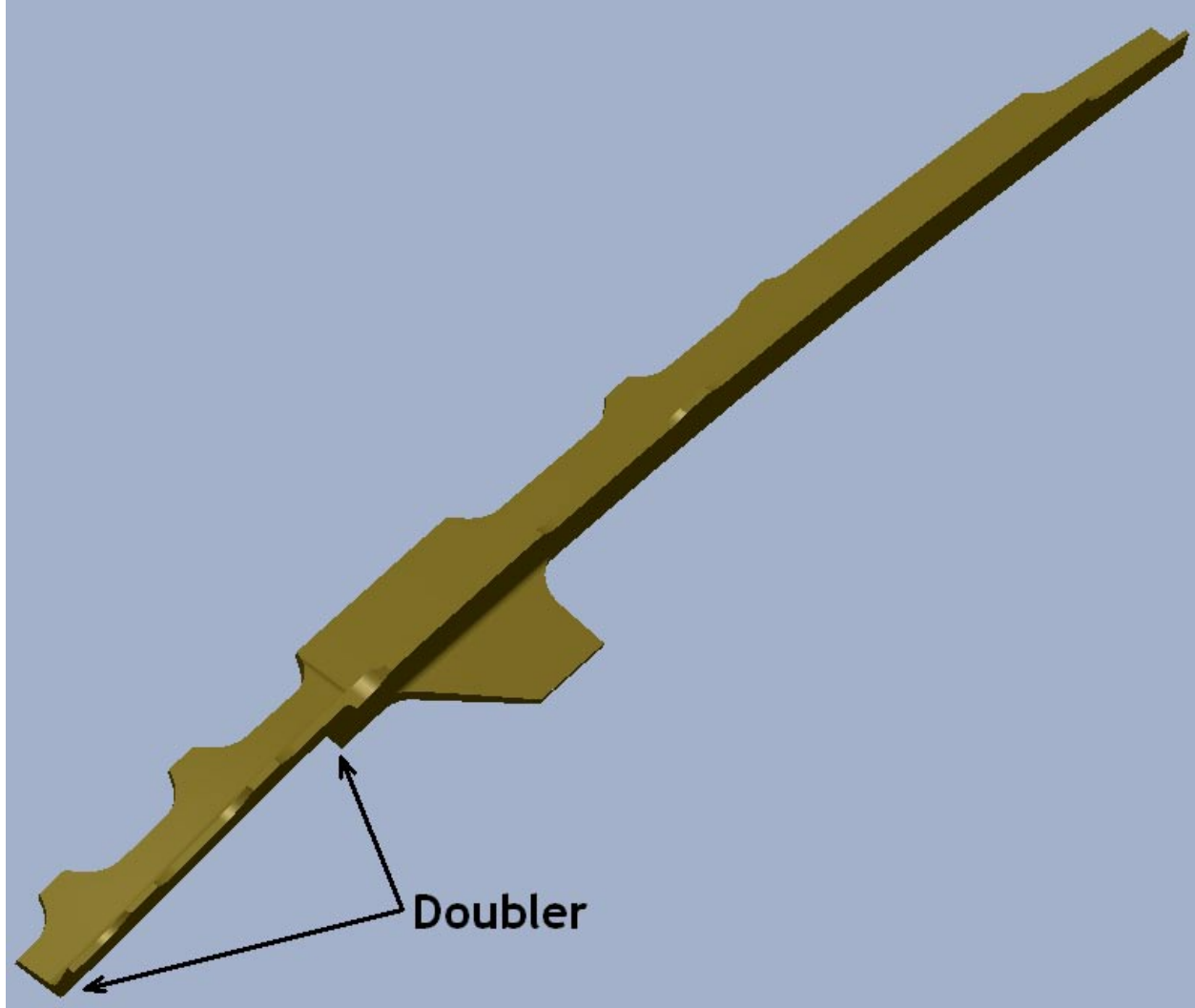
### Scanning and Fabricating a Replacement Longeron

Using a ZScanner 800 3D laser scanner and Rapidform<sup>®</sup> software, Reverse Austin designed a replacement section of a longeron with integral doubler (splice).

Shown above is the removed 4' long section of cracked longeron alongside a pre-machined blank. Not shown is a 2' long plaster cast of the inside of the longeron made prior to removal. The plaster cast spanned a 1' section to either side of the cut made to remove the longeron piece.

The longeron section, the plaster cast and the pre-machined blank were all scanned with the laser. The data were imported into Rapidform<sup>®</sup> where CAD models (solid models) were created for each piece.

The models were used to design the replacement longeron with integral doubler (below).



Using Solid Edge® CAD software, the replacement was best fit inside the pre-machined blank to insure 100% cleanup. The CAD assembly was exported as a Parasolid file and used to program the CNC machine tool that machined the finished part.

The project was very successful, completing the replacement in a fraction of the original time estimate and the replacement longeron “dropped right in”. This was a POG (plane on ground) project and the customer was very happy with the turnaround time.

The project could have been further improved by scanning the longeron in place, but at the time the customer was not aware of the capability.

If you need CAD models for design or manufacturing, or if you need a turnkey solution contact Tom Waits at Reverse Austin for a free consultation.

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