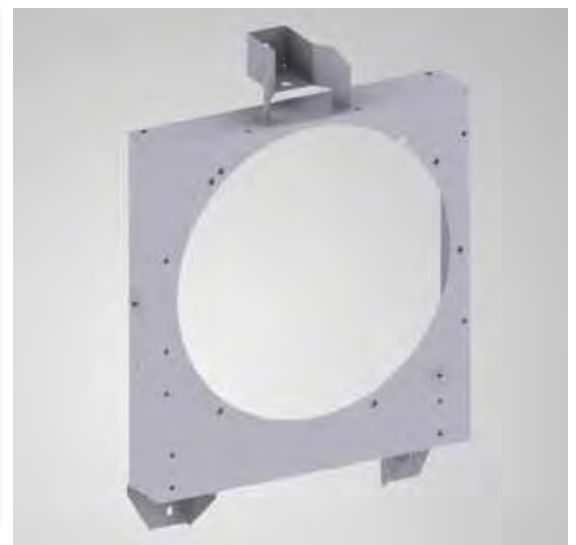


# Rolls Royce Fan Cowl

Sheet Metal

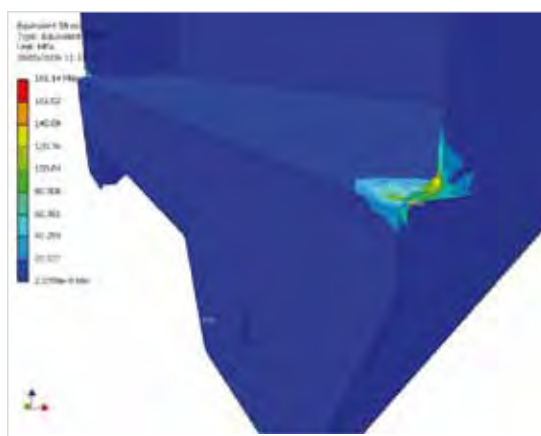
- The design changes gave a 5% reduction in component price, due to reduction of labour content in welding, dressing and bending operations
- The results of the stress analysis showed that the maximum stress under load of the revised design was half that of the original design



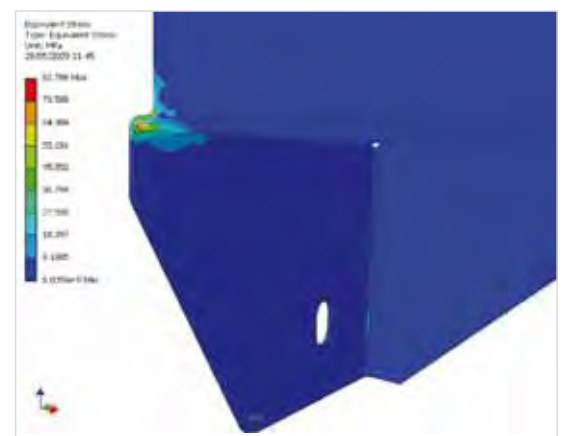
## Background

Tharsus were selected as Rolls Royce DSG's approved metalwork supplier with part of the future remit being to design sheet metal product.

Tharsus reviewed a current Fan Cowl design with the result of 5% price reduction and a reduction in the stress within the product under load.

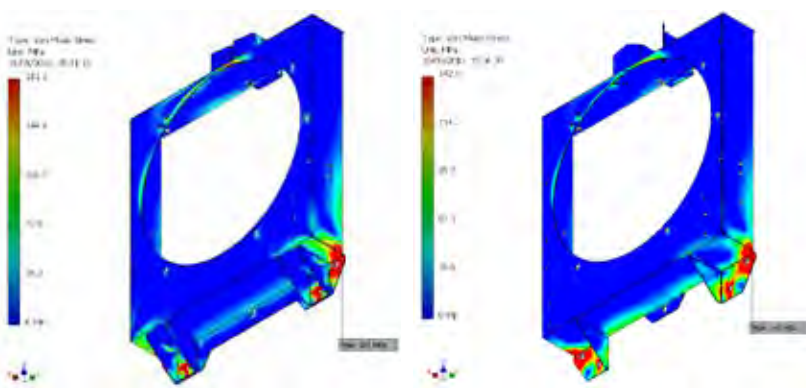


Analysis of current design.



Analysis of revised design.

## Solution



Example of FEA Analysis

Revised mounting bracket designs were used to improve location, retention, and reliability of attachment. Design changes were identified and implemented to the structure of the fixing brackets to remove manufacturing content. Shroud corners were welded internally to remove the need for dressing external surfaces, and to improve the weld integrity.

The design modifications were modelled in AutoCAD Inventor and static structural FEA (Finite Element Analysis) performed. The existing and proposed designs were analysed under load to prove that manufacturing changes improved the product.

**THARSUS**

Sheet Metal



One of the main reasons Rolls Royce selected Tharsus to supply their metal work was their ability to provide design and development support.

#### The Service:

Tharsus Sheet Metal engages with customers to provide a reliable source of good value high quality sheet metal products and components.

In the modern world most customers take component quality and delivery for granted, but Tharsus is still able to differentiate its service through the real value we add to customer projects by engaging with them on the component design, in order to reduce cost and improve their overall product quality.

This approach proves very successful, as it is repeatedly mentioned as a valued service and key differentiator by customers during our annual customer satisfaction survey.

Our teams is committed to delivering results.

#### Manufacturing Processes:

- Design feedback
- Profile
- Forming and pressing
- Welding
- Finishing
- Assembly
- Logistics

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Sheet Metal