
AM Bracket

EASA-FAA, WG1

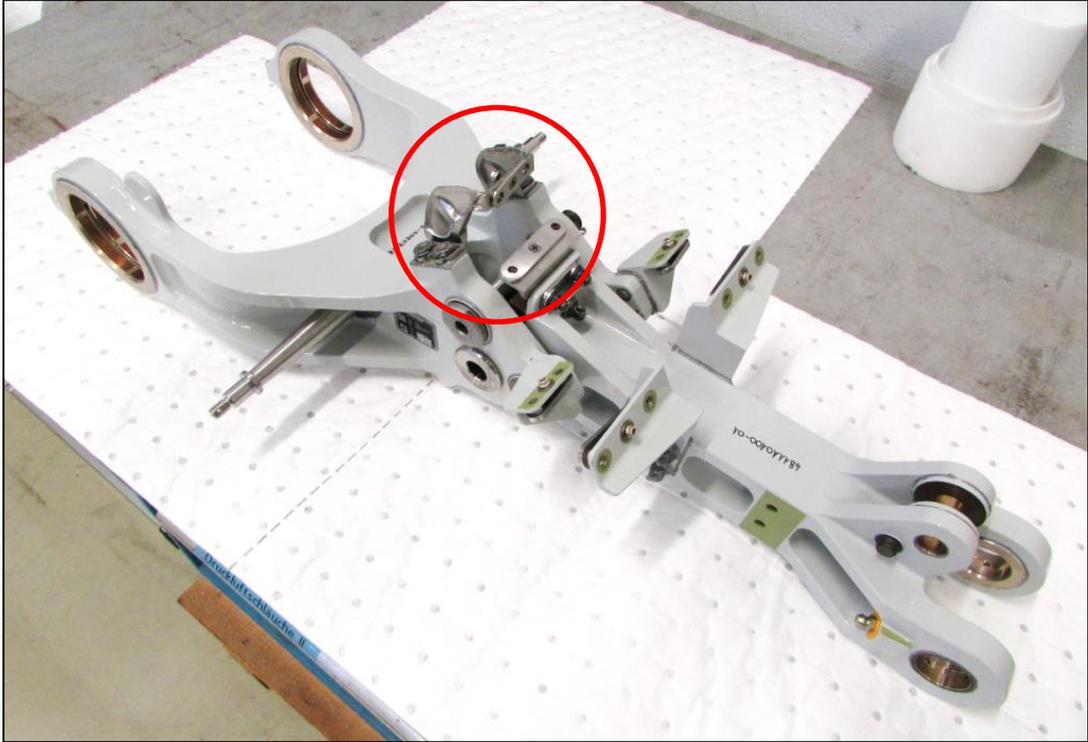
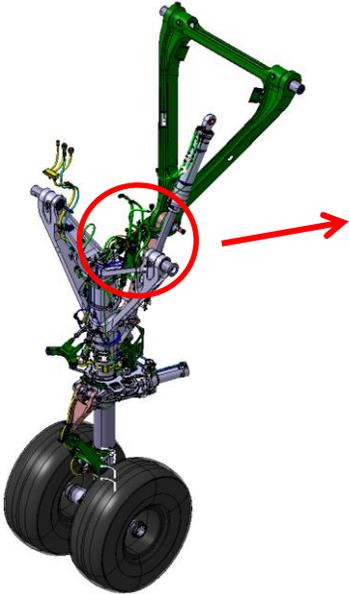
André Danzig, 11/2021

LIEBHERR

Liebherr-Aerospace Lindenberg GmbH



A350XWB NLG Lock Stay Bracket



Bracket for target of proximity switch

Some details

AM Bracket

- Material of substituted conventional part: Ti6Al4V
- AM material: Ti6Al4V
- AM process: L-PBF/M
- Dimension 9cm x 6cm x 3cm, thickness 1cm
- Weight 40g (-40%)



conventional part



AM part

Some details

AM Bracket

- AM design restriction: build envelope and interfaces unchanged
- AM design goal: weight reduction, same static and dynamic behaviour
- criticality classification of product remains unchanged- class 2
- Main load & potential failure: Vibrations, operational shock causing missing signal
- Redundant (non AM) sensors exist

Test effort

AM Bracket

| | Test effort |
|-----------------------|--|
| Process Qualification | A few hundred test samples (static and dynamic properties, porosity and microstructure and chemistry) |
| Part Qualification | Vibrations and operational shock tested |
| FAI | 100% NDT and dimensional inspection, few parts in critical position on building platform cutted and analysed |
| Serial Production | 100% dimensional inspection, witness samples for tensile and porosity/microstructure |

**Thank
you.**

