

APPLIED FEA

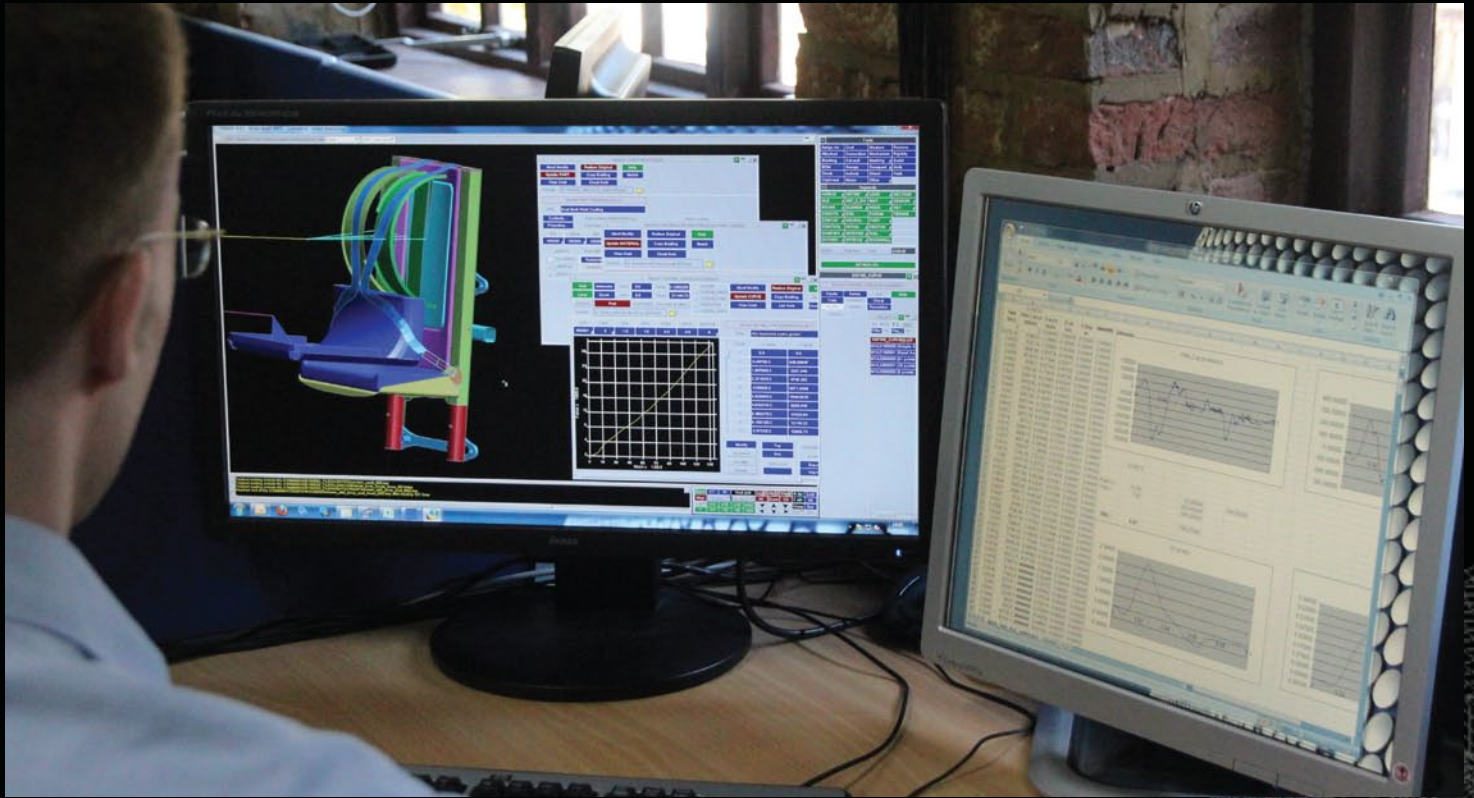
F I N I T E E L E M E N T A N A L Y S I S

JANKEL

A background image showing a crash test dummy seated in a vehicle seat, wearing a green helmet and a blue safety harness. The dummy is positioned in a car-like seat with a steering wheel visible in the foreground. The image is faded to serve as a background for the text.

LEADING PREDICTION CAPABILITY

Calibrated using a proprietary database that has been built from years of material and full-scale platform trials, Jankel offer a leading in-house FEA expertise. The ability to accurately predict blast test results, occupant survivability and structural weaknesses is regularly proven to mitigate catastrophic failures and to optimise designs, thus reducing overall project risk, mass, timing, live testing and significant programme cost.



- Established calibration and modelling techniques
- State-of-the-art industry leading LS-DYNA application
- Expected correlation to over 95 % accuracy
- Contracts undertaken for leading NATO militaries and OEMs
- In-house performance assessment standards

BLAST SIMULATION

- Occupant survivability prediction
- Data outputs to AEP55/ITOP
- Structural integrity analysis
- Correlated to 30 + live blast trials
- Calibrated Hybrid III and charge models
- Pressure mapping

STRUCTURAL ANALYSIS

- Pull test (FMVSS 207/210)
- Roll over protection (FMVSS 216+)
- Structural blast loading
- Structural performance of chassis

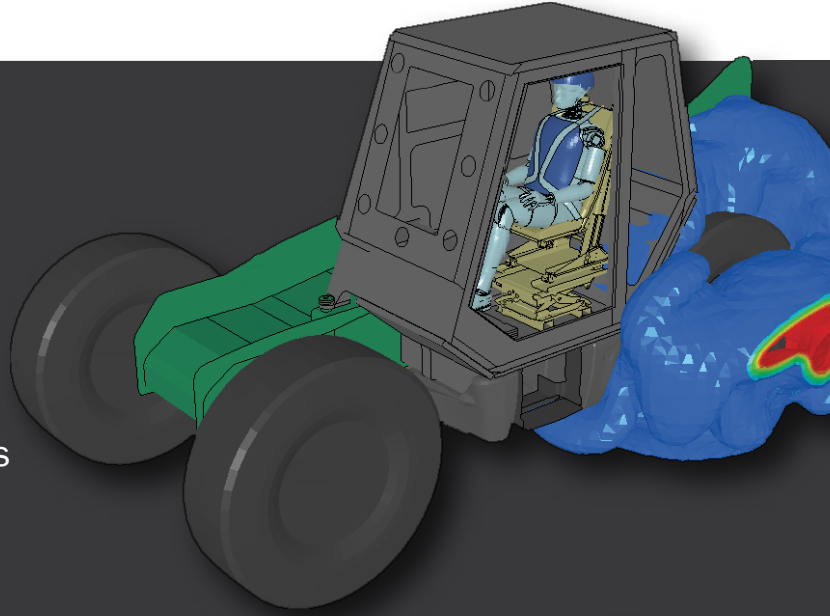
DESIGN OPTIMISATION

- Improved mass and performance
- Graceful performance degradation
- Overmatch scenarios
- Sensitivity studies

EXAMPLE APPLICATIONS

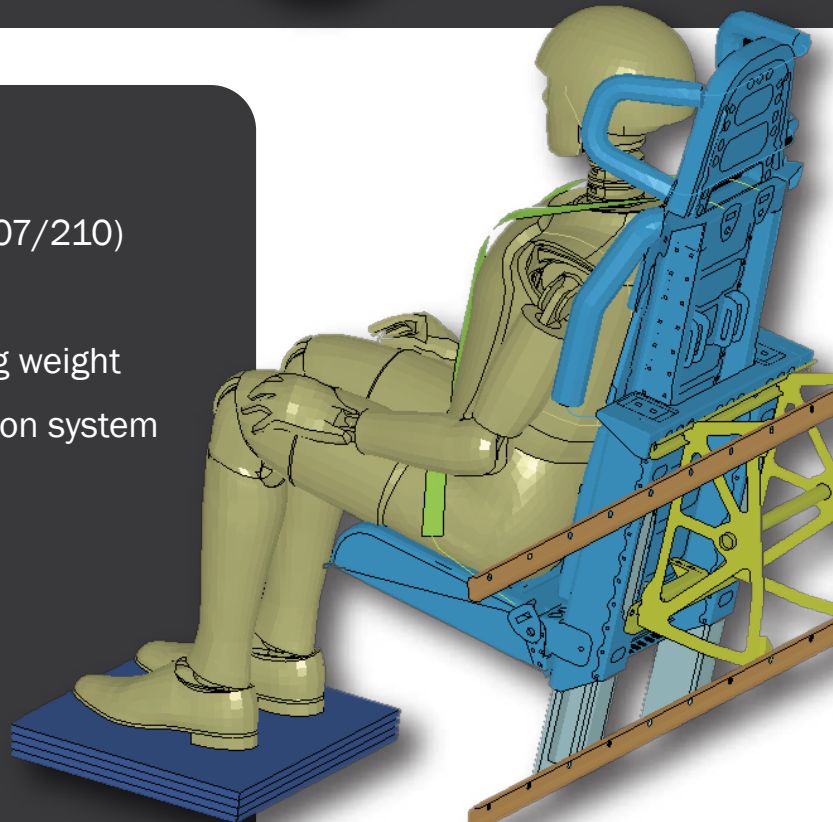
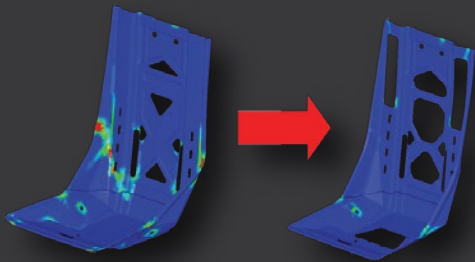
SURVIVABILITY SOLUTION

- Decreased overall project cost
- Reduced project timescales
- Potential issues identified in design
- Avoided multiple live fire blast tests
- Reconfigured charge / Hybrid III models
- Pressure mapping
- Increased blast threat (overmatch)



BLAST MITIGATING SEATING

- Seat belt pull test modelling (FMVSS 207/210)
- Issues identified in seat pan design
- Structure strengthened whilst removing weight
- Drop / sled tests used to prove mitigation system
- Critical failure point analysis



JANKEL

Jankel Armouring Ltd

UK Office

T 44 (0)1932 857766

E info@jankel.com

www.jankel.com

Applied FEA

Mar 2012 v2.0

Jankel believes the content of this brochure to be correct at the time of printing, but makes no warranty as to this.

Jankel continuously strives to maintain their technology to cutting-edge, market-leading standards and therefore reserves the right to alter specifications at any time, without notice.