

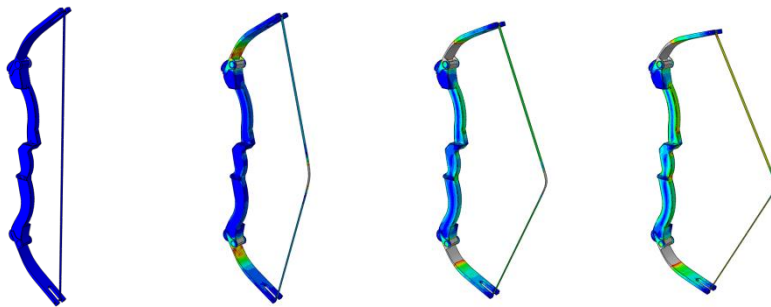
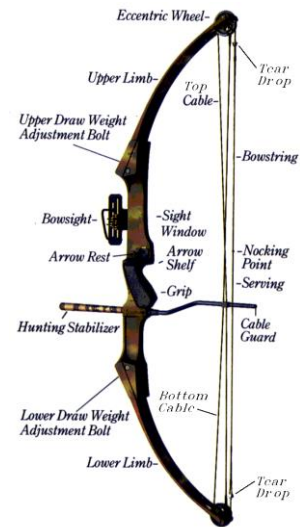
GRM Engineers Week 2015

The great thing about engineering, design and GRM’s speciality of Design Optimisation is that it can be found in so many walks of life. Using GRM’s optimisation tools, VR&D [Genesis](#) or one of our [TruForm](#) range, designers and engineers can quickly understand the optimal form of their designs, ensuring maximum performance for minimum mass can be developed.

For further information on how GRM’s optimisation products and services can provide your company with that competitive advantage contact us at info@grm-consulting.co.uk.

Using TruForm to Optimise a Compound Bow Frame

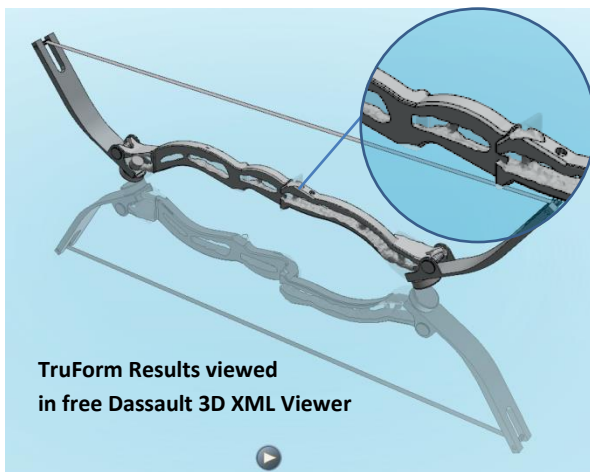
Demonstrating a less common, yet very interesting application of Topology Optimisation is the development of the main frame of a compound bow. The loading of the bow frame derives from the retracting of the bowstring, which results in a significant bending of the upper and lower limbs of the frame. Such a loading requires the advanced analysis capabilities of a solver such as Simulia Abaqus, supporting complex contact analysis, incremental solving and large displacement theory. Coupling the advanced solver to TruForm’s optimisation engine, the bow frame was optimised, taking only 5 Abaqus non-linear analysis calls to achieve the optimal form.



Bow Loading Simulation using Abaqus Standard 6.14-1

TruForm – Topology Optimisation for Abaqus

TruForm is an integrated Topology optimisation solution for Abaqus/CAE users. Powered by an embedded version of the industry leading optimisation solver, VR&D GENESIS, TruForm provides a powerful optimisation method in an extremely simple and straightforward user interface.



Requiring no pre-preparation of Abaqus models, TruForm can be set-up and submitted within less than 1 minute, enabling users to perform mass reduction studies or optimal load path analysis.

With the latest features available in TruForm v3.0, users benefit from the delivery of optimal designs, with a minimal number of Abaqus simulations.