

SS3D™ ShockSim Failure Analyses

UNDERSTANDING FAILURES PROVIDES THE ABILITY TO ENGINEER THEM OUT

Failure to understand what went wrong on your deepwater project can cost USD 100 million or the well itself. Understanding and predicting the dynamic shock-loading response of the completion and perforating gun strings can deliver the assurance and confidence to know you will be successful.

OVERVIEW

Operators and service providers have begun to recognize wells are pushing the limits of design and a new level of capability is necessary to truly understand and predict dynamic events. This risk of uncertainty has driven the industry to look for ways to quantify dynamic effects at zones of interest during the perforation event.

Understanding the dynamic shock loading response of the completion and perforating gun strings during detonation is critical to the development of better completion systems and optimal job designs with maximum reliability.

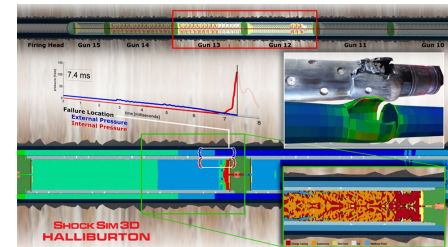
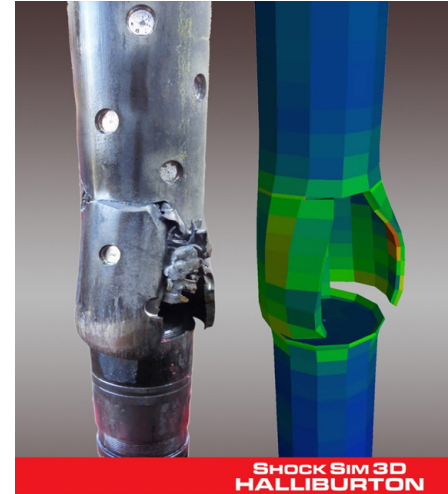
Halliburton has developed the SS3D™ ShockSim 3D model with the ability to provide advanced downhole modeling and perforating system dynamic response understandings for failure analyses. With this advanced modeling capability, Halliburton is able to conduct unique and complex failure analyses

for perforating operations, and enable them to be undertaken with high confidence for success.

The modeling software package was developed to simulate the 3D transient shock response of the bottomhole assembly (BHA) and wellbore to a perforating event. The front end of the package consists of a proprietary graphical user interface (GUI) and model preprocessor.

BENEFITS

- » The SS3D™ model can be utilized anywhere in the world due to its centralized processing facility.
- » The Halliburton modeling is now in 3D instead of a 1D model, which improves predictions of shock and impact on BHAs.
- » The proprietary GUI provides the user with a uniquely customized interface for efficiently defining the BHA, wellbore geometry, fluids, initial and boundary conditions, and other simulation parameters.
- » Centrally located native post-processor ensures the proper expertise is applied to each model.
- » The model provides intuitive 3D interactive visual representations during the perforation event.



FEATURES

- » Combinability with the Halliburton Advanced Perforating Flow Laboratory to verify the shock loading model's predictions
- » Multifaceted gun string failure investigation
- » SS3D modeling is a 3D structural and 2D fluid code
- » Parameter sensitivity studies enabled refinement and validation of fluid model approach
- » SS3D models that are the next step in quantifying dynamic response



For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com

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