

6D in 60 Seconds

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ENGINEERING ANSWERS through TESTING & ANALYSIS

In this business you have to get your hands dirty. From the test lab to ocean oil platforms, underground mines, and everywhere in between - we collect, analyze and interpret the data to drive simulation and provide answers to complex and costly mechanical engineering challenges.

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Durability Validation: Off Highway & Specialty Vehicles

Ensuring that performance, durability and business targets are met for any new or redesigned product begins well in advance of any preliminary drawings, material, tooling or other manufacturing decisions.

From the outset, it is critical to understand how the product will be used (and abused) in the real world while identifying the business goals and parameters driving the project. This information helps ensure that the design will meet durability, performance and ROI targets and determine the optimum product design validation approach. For designers and manufacturers of specialty vehicles or off-highway equipment, durability validation is a critical step and poses some unique challenges.

[Read the Article](#)

Does Your Organization Have a Formal Product Validation Process?

A formal product validation process helps ensure that steps are well-defined, documented and rooted in proven fundamentals. Some may strive to validate via testing or simulation alone. Six D recommends a testing *and* simulation approach where real-world operating data (encompassing expected and unanticipated usage scenarios and conditions) feeds and verifies engineering analysis/simulation. In this way models are correlated by matching FEA, test frequencies, and mode shapes to ensure that strong operating forces do not coincide with resonance frequencies.

Product Validation Challenges

- Overly Reliant on Technology
- Not Designing for the Real-World
- A Lack of Understanding

This paper presents a recommended approach to developing and implementing a product design validation process. We address key obstacles, common pitfalls and provide industry case studies focused on: Rotating Equipment, Rail, On-Road, Off-Highway and Mining.

[Read the Paper](#)

Take 5 with: Bob Hales



Did you know that Bob is a certified scuba instructor; or that he is gaining hands-on expertise in 3D printing? Over the last fifteen years he has led marketing, business development, and sales teams in various industries. Today Bob leads our business development activities. Let's take five, grab a cup of coffee, and learn a little more.

1. Can you tell us a little about your professional background?

I'm a Structural Engineer by training, but I spent my early career developing software to support engineering design. That led to many years of consulting with, and training, cross-functional teams in product definition. Today I work in business development for 6D.

2. What would you say are some of the biggest challenges facing manufacturers today?

In my mind, one of the biggest challenges is inertia. In my Business Development role, the hardest battle I fight is to overcome the inertia of organizations. Lots of people pay lip service to Continuous Improvement, but relatively few enjoy changing the way they work - even if intellectually they know that it is the right thing to do.

3. What's one thing that readers should know about 6D?

I have been extremely impressed by the integrity of the people at 6D. They are not prone to exaggeration or embellishment. They have seen a lot, but recognize that they have not seen everything and they are always learning.

4. Can you tell us about your family?

I grew up in Valley Forge, Pennsylvania. My wife and I raised five kids and are now enjoying 19 grandkids! With that many people running around I came to view myself as a problem solver - I was always having to fix something. I also learned persistence - to never give up. Sometimes problems take a while to solve, but you might as well solve it or you are going to have to do it all over again later.

5. Ok Bob, last question. What do you like to do in your spare time?

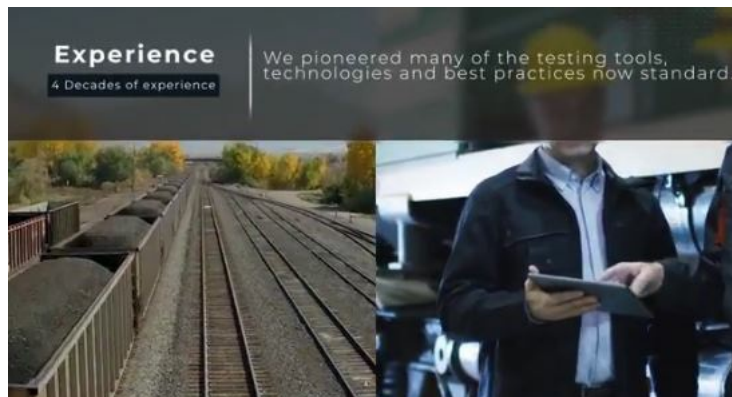
My family is my top priority, but they are scattered across the country so I really do not get to spend much time with them. I am actively involved with my church where I help teach a class of 8 and 9 year-olds. For fun, I play the guitar, teach scuba diving, do genealogy research, and I am experimenting with 3D printing.



Some say talk is cheap...
We say its free

Do you have a question or just want to discuss your specific issues? Give us a call - no cost or obligation. If we can offer some advice or recommendations we're happy to do so!

[Contact us here](#)



Are you curious about 6D and how we assist companies like yours? Do you have a minute? (Actually a minute and twenty-eight seconds.) If so, click the link below and see for yourself.

[Check out our Video!](#)

**IN CASE YOU
MISSED IT**

From our previous issues...

Troubleshooting Rotating Equipment. [Read more](#)

Unattended Testing monitors equipment around-the-clock ensuring that all events are captured and analyzed.

View past newsletters [here](#)

Explore our Web Site!

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