



Better Together – How Collaboration and Sharing Have Benefitted Us

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I regularly work across disciplines and production areas in my company to share what I am doing and learn from what they know.

True

False

I actively share information with and solicit information from other operators via informal means like networking and formal means like operator groups and industry events

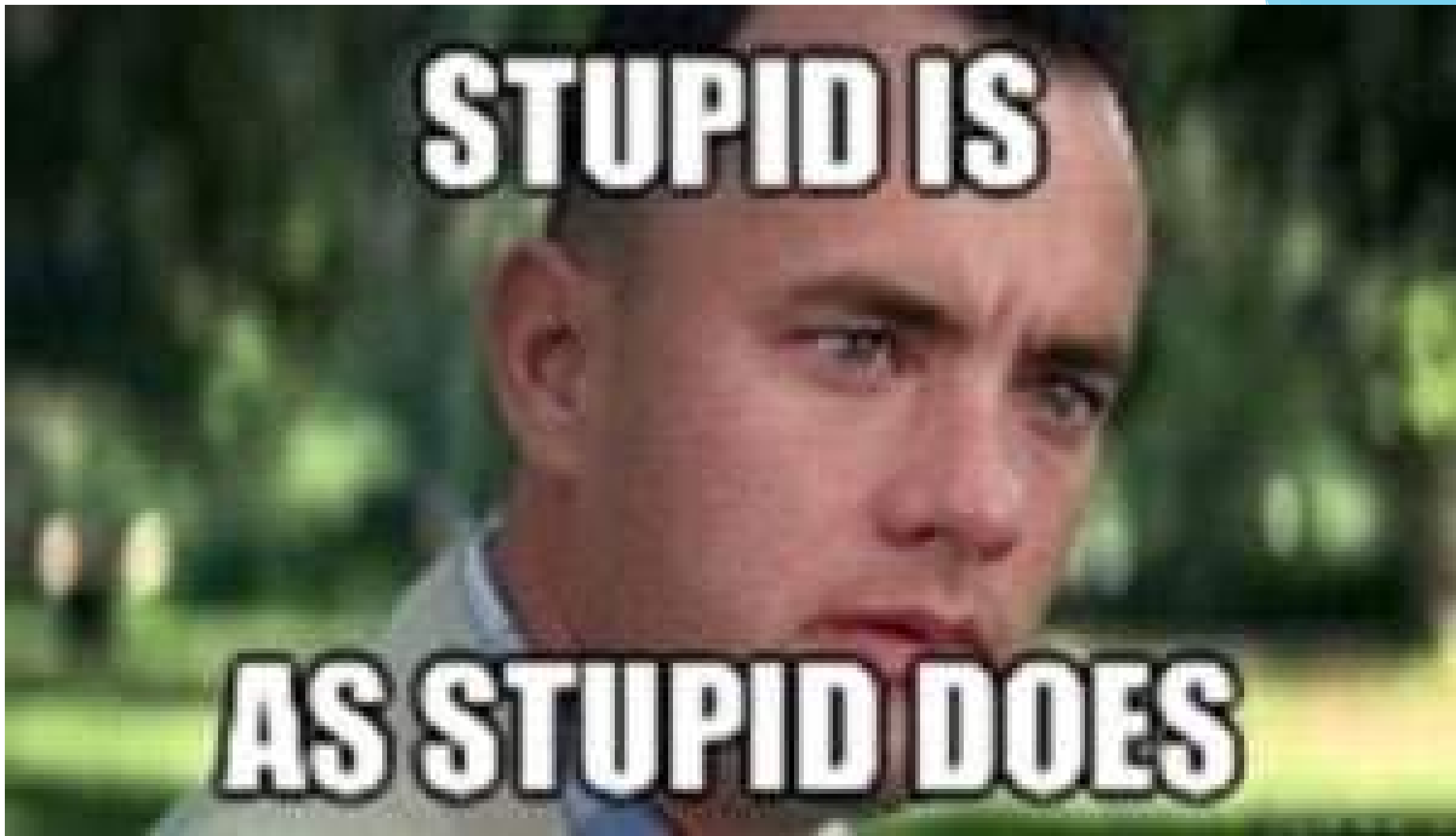
True

False



**Life is hard; it's harder
if you're stupid.**

– John Wayne





Whatever Happened to Multi-Discipline Teams???



*Systems
Engineer*

Maintenance

Operations

*Facilities
Engineer*

*Production
Engineer*

*Reservoir
Engineer*

Poor communication across disciplines

“Natural Work Team” (NWT) in GL Installation/Operations

- ▶ Operations/Maintenance
- ▶ Compressor Vendor
- ▶ Gas Lift Vendor
- ▶ Reservoir Engineer
- ▶ Drilling Engineer
- ▶ Gas Lift/Production Engineer
- ▶ Facility Engineer
- ▶ Project Manager
- ▶ Systems/Automation
- ▶ Gas Gatherer

Reduce Failures/Workovers
- Use integrated solution team, ID root cause, use best practice team, inspect failures, team needs rod/pump/ chemical/ work-over/ company man.

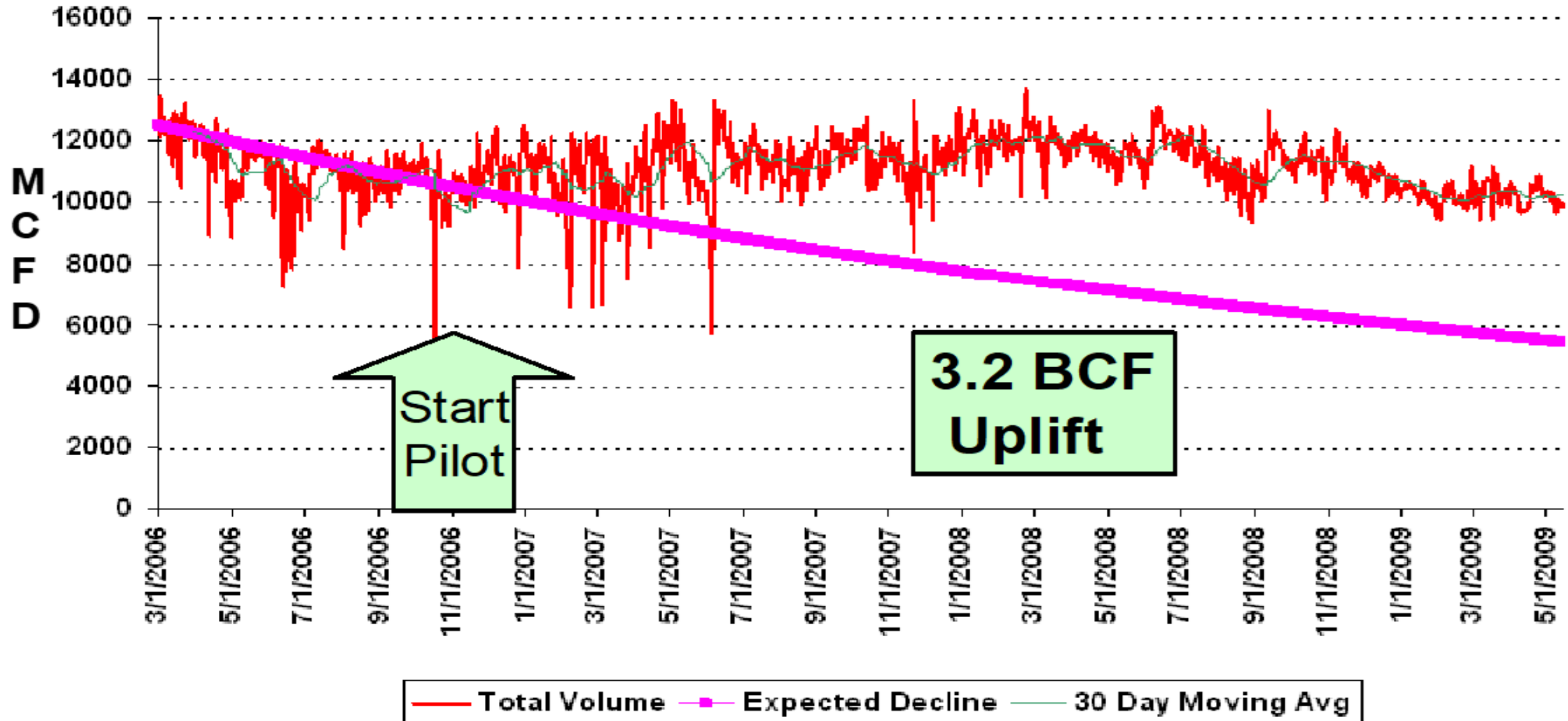


Optimizing Mature Gas Wells in South Texas - A Team Approach, SPE 124911

Artificial Lift
R&D Council



Figure 8: Overall Production Results



To Share or Not to Share



- ▶ New Plunger Lift Optimization System
- ▶ New Artificial Lift Approach
- ▶ It's hard to keep anything “secret” in the oil patch!

Sharing and Collaboration Changed My Career



- ▶ ALRDC
- ▶ Progress

My most memorable experience was hearing the gasp of all 130 people in the audience at the Artificial Lift Forum in November 2003 during my “True Loads are False” presentation. The gasp from everyone in the room occurred when I stated Sam Gibbs, SPE588 July 1963, had solved the wave equation without the gravity term causing the pump card loads to be shifted below the zero load line by the missing buoyancy force.

Sharing and Collaboration Changed My Career



- ▶ Having/Attending/Participating in ALRDC Workshop is very **worthwhile**.
- ▶ Continuing education of Engineers, Operators, and Others is **essential** is sharing Detailed Knowledge.
- ▶ Supplier exhibits are extremely **valuable**. All gain from the knowledge and exchange of ideas.
- ▶ Opportunities to **network** with others from the Industry adds great value.

Keynote Presentations Enhance Understanding of Our Industry



Year 2000

- The U.S. is running out of natural gas
- U.S. oil production peaked in 1970, has fallen ever since, and will continue to do so
- Global resource scarcity

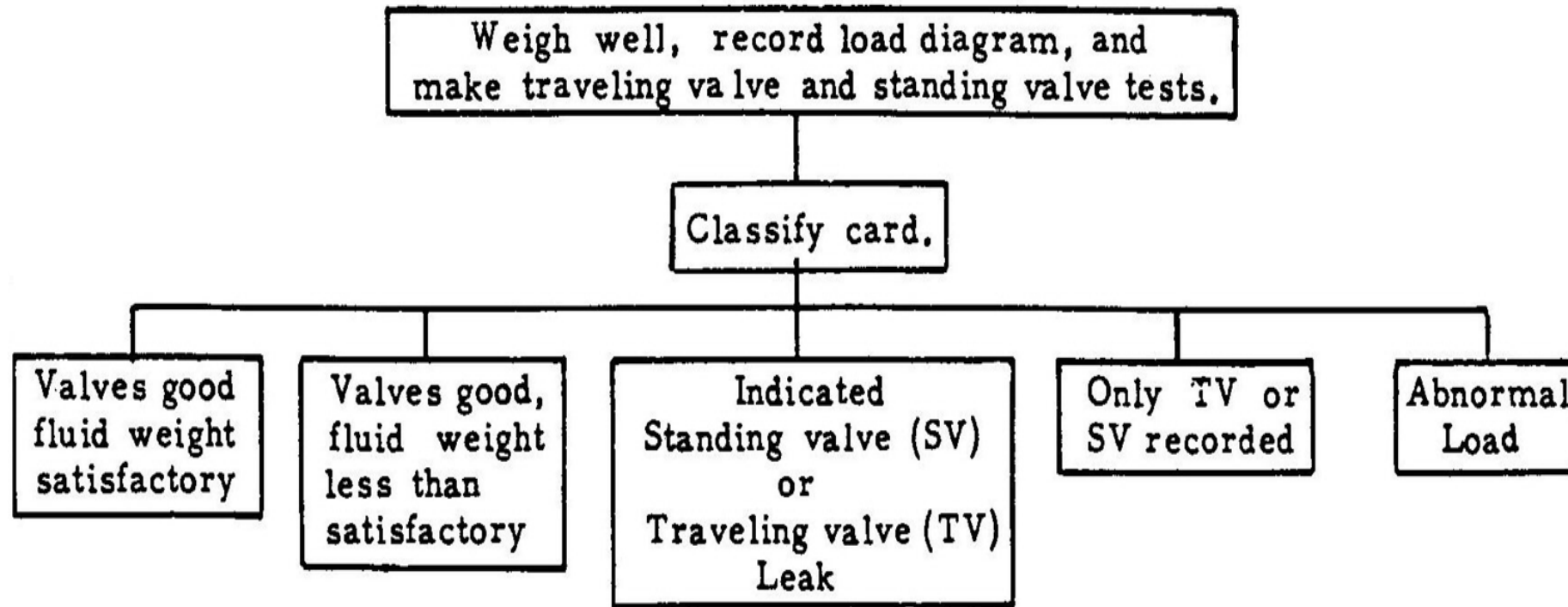
Year 2013

- The U.S. has over a 100 year supply of natural gas
- U.S. oil production is growing rapidly, with no end to growth in sight
- Global resource abundance

The Unconventional Reservoir Revolution has Transformed the U.S. O&G Industry



Dynamometer Testing for Trouble Shooting the Pumping Well Problem



From "Dynamometer Testing for Analyzing the Pumping Well Problem",

By C. J. MERRYMAN & D. K. LAWRENCE, SWPSC 1958

Better Together - How Sharing and Collaboration Have Benefitted Us

October 1999



SPE 56661

Sucker-Rod-Pumping
L.R. Heinze, SPE, Texas Tech

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Abstract

Sucker rod pumping is the dominant method of oil production in the Permian Basin. The research results of the Permian Basin Research Consortium (ALEOC), a consortium of 11 oil companies, have analyzed data provided by more than 25,000 sucker rod pumps scattered in the Permian Basin. The results presented here are typical of the data.

SWPSC 2007

A REVIEW OF THE NON-DIMENSIONAL PUMPING PARAMETERS AND THEIR USE IN SUCKER ROD STRING DESIGN

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ABSTRACT

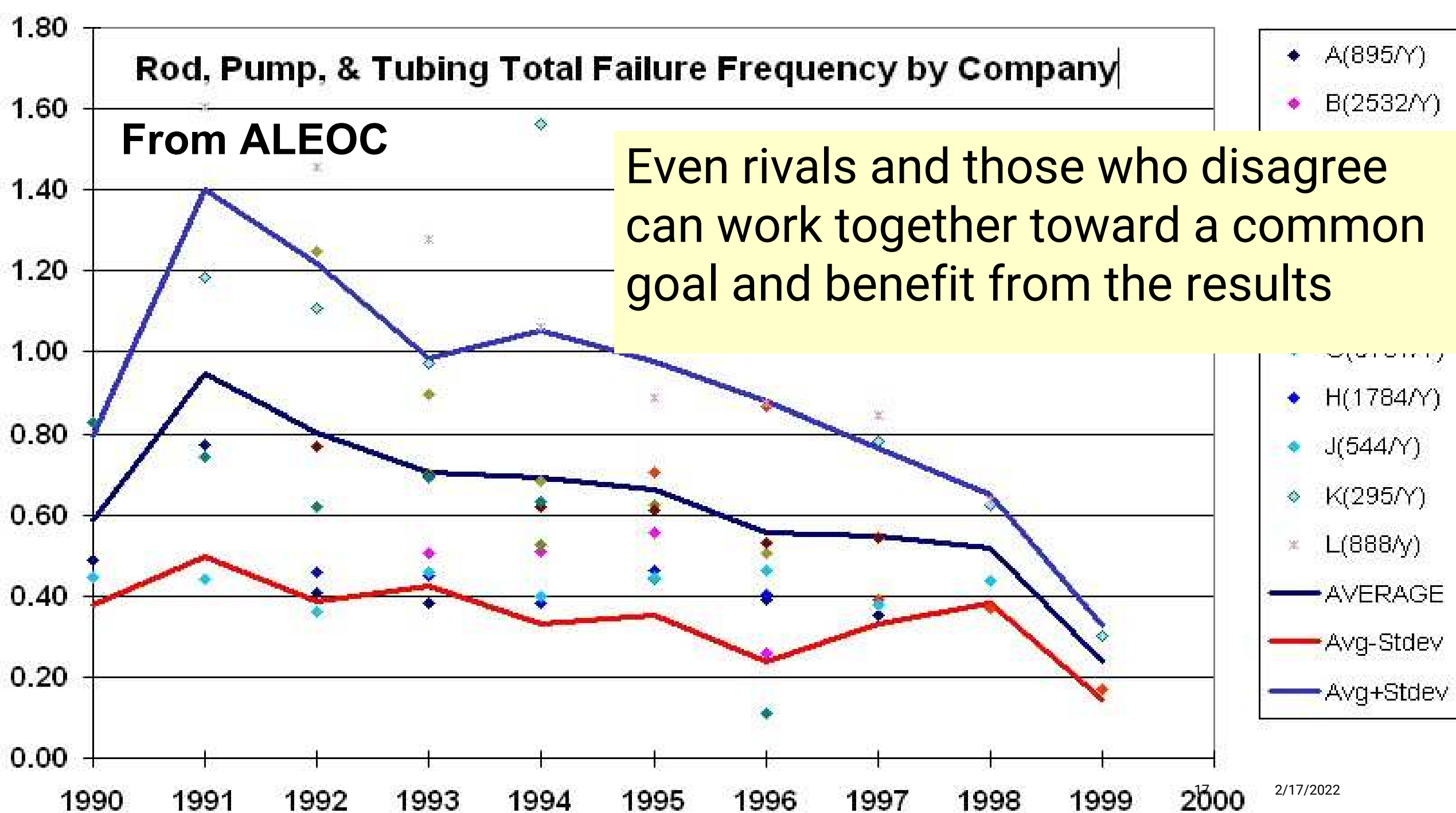
During recent sucker rod pumping problem solving schools presented at the SouthWestern Petroleum Short Course, it has become apparent that few engineers and operators know about the non-dimensional pumping parameters developed by Sucker Rod Pumping Research Inc. and provided to the industry in API RP 11L for rod string designs.

This paper will discuss the background and physical meaning of the two main parameters F_o/Skr and No/No' , show the nomograph of their inter-relationship, and provide recommended limits which are typically not provided in modern rod string computer programs. These limits may assist in reducing sucker rod system failures. The relationship of these design parameters to the dynamic motion of the sucker rod pumping system and the formation of undertravel or overtravel dynamometer cards will be provided. Additionally, a comparison of sucker rod string design recommendations, resulting sucker rod system failure frequencies per year and a discussion of operating practices will be provided.

Rod, Pump, & Tubing Total Failure Frequency by Company

From ALEOC

Even rivals and those who disagree can work together toward a common goal and benefit from the results



What Did the Permian Basin Producers Gain ALEOC Collaboration and Sharing



1. Making an effort to analyze the well's operation and taking action to fix problems discovered is the **MOST important requirement**
2. Everyone in the study group recognized their performance could be improved and they took action to reduce failures
3. Their different actions with-in their individual companies resulted in a reduction of failures for all companies in the study group
4. **Expect a 0.4 Failure Frequency in Your Field**

What is the main barrier that prevents me from sharing and collaborating more?

Benefitting From Collaboration and Sharing



- Over the years, the mood of our industry may have changed, but our goals are the same.
- ALRDC is Focused on what we do best.
- Keep learning and applying new knowledge.
- Keep coming to Workshops –a great source of Collaboration and Sharing and Learning.



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