



# INTEGRATED TECHNOLOGIES MWD/LWD Forum

Keeping Your Finger On The Pulse



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# Welcome

# Speaker Information

- Andrew Biem
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- U.S. Navy Veteran, IADD, SPE, AADE

# MWD: Yesterday, Today and Tomorrow

- MWD Technology needs are constantly evolving
- MWD Technology is quickly becoming commoditized
- MWD Technology  $\neq$  Unicorn



# MWD: Yesterday, Today and Tomorrow

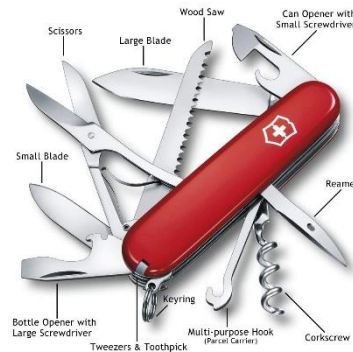
## ■ 2015

- Dual Telemetry
- Continuous Inc/Azi
- Drilling Dynamics
- Dev Time: 3-6 Months
- Field Testing: 5000 Hours
- Reliability: 1200ish MTBF?
- Full Crews/Reduced Crews w/ROC
- Unmanned w/ROC



## ■ 2025

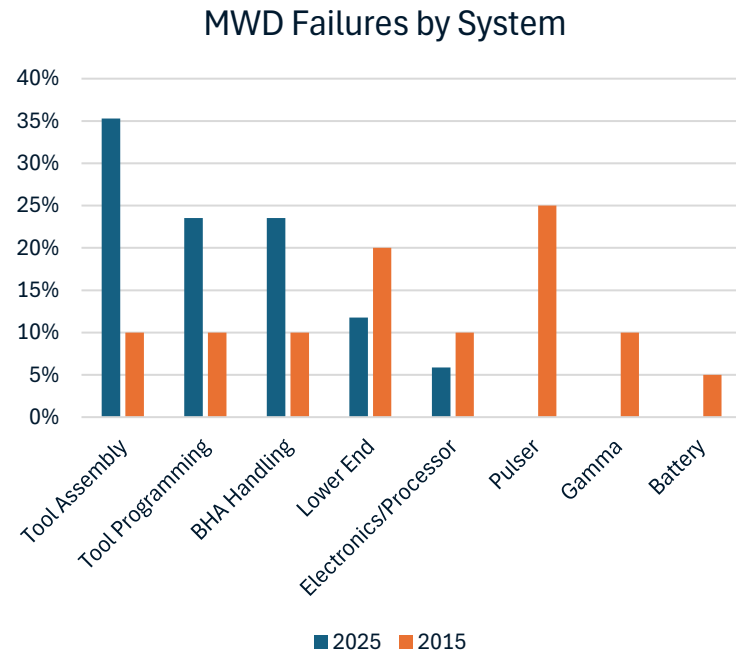
- RSS Real-Time Comms
  - What platform? All of them!
- Resistivity
- PWD
- Azi Gamma
- Forced Re-Sync
- Telemetry Switching
- Dev Time: 1-3 Weeks
- Field Testing: 1-2 Runs
- Reliability = Yes
- “Just rent me your kit”



# MWD: Yesterday, Today and Tomorrow

## ■ Reliability: Yesterday Vs. Today

- Human error replaces hard failure
- Engineering efforts have been mostly effective
- Further separation of product from service is risky



# MWD: Yesterday, Today and Tomorrow

- Tomorrow (Later Today)
  - Continue focus reliability centered maintenance & engineered sustaining
  - Reduce the human error
  - More 3rd-Party integrations
  - Intuitive surface systems
  - 200°C...is that all??? Not hardly!
  - Commercial creativity



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# Thank You