

# TUFFSHOT

Top Universal Formation Finder Solids-Tolerant High Output Tool

*“Newsco has developed and refined a top-mounted, highly efficient, solids-tolerant MWD tool.*

*The TUFFSHOT brings MWD monitoring into a new era of low MTBF and unparalleled performance.”*

## TUFFSHOT

*Our solution to inefficient, unreliable conventional survey systems*

### *Our Challenge*

Conventional survey systems are often inefficient and unreliable, and are unable to withstand the rigors of high LCM and harsh drilling conditions.

### *Our Solution*

We integrated an APS-based, field-proven, wave propagation tool, operating at multiple frequencies and spacings, with our robust MWD system. The top-mounted configuration places the WPR Sub in close proximity to the drill bit where it can accurately measure down-hole formation densities and record as well as telemeter real-time data.

Top mounting also minimizes connection wire lengths and eliminates failure-prone wet connects.

**High flow rates with high-percentage LCM:** The TUFFSHOT's powerful top-mount configuration is not prone to clogging and does not require pipe screens. Typically, the mud pump will fail before our tool will clog. *“If you can pump it, we can pulse it.”*



### TUFFSHOT Specifications

|                         |  |
|-------------------------|--|
| Survey time @1.5 sec DR | 2 1/2 minutes  |
| Battery life            | ≈ 200 hours  |
| Collar size             | 58 mm (2 1/4") minimum                                       |
| Inclination             | 0° - 180°, 0.1° accuracy                                     |
| Azimuth                 | 0° - 360°, 1° accuracy                                       |
| Dip angle               | 0° - 90°, 0.1° accuracy                                      |
| Data storage            | 3264 surveys   |
| Flow rates              | 0.5 m <sup>3</sup> - 4.0 m <sup>3</sup> (132 gpm - 1000 gpm) |
| Data rate               | 1.5 seconds  |
| Gamma and tool faces    | Fully capable  |
| Remote operation        | Fully compatible with WITS                                   |
| LCM                     | 12.5 mm (.5") solids in slurry                               |
| Operating temperature   | 302 °F (150 °C)  |

**NEWSCO**  
The Leader in Innovative Drilling Solutions

Our goal in developing this tool was to help our clients save money by reducing lost time incurred by down-hole failures of conventional survey tools. These goals were fivefold: On-site operation by the company's driller; fast, real-time surveys; high flow rates with high percentage LCM; durable and reliable operation; and remote monitoring and control.

**Durable and reliable operation:**

This is a rugged and reliable system that can withstand some of the harshest environments on the planet, such as those found in Russia, the Peruvian jungle, British Columbia, Saskatchewan, upper and lower USA, and off shore.

**Remote monitoring and control:**

When linked with the Remote Terminal, Newsco personnel can operate the TUFFSHOT from our location in Calgary, Alberta, Canada, as if he were standing on the drilling platform. And we can do this from any location in the world that has Wide Area Network access.

**Applications**

- Tight boundary drilling
- Critical well-bore placement (e.g. pad drilling)
- Geo-steering
- Proactive equipment when concerned with deviation
- Correction runs
- Shale and CBM
- Re-entries
- Directional drilling
- Build and holds
- Top hole
- Long laterals
- Resistivity
- High solids



WPR Sub

Remote Terminal Display



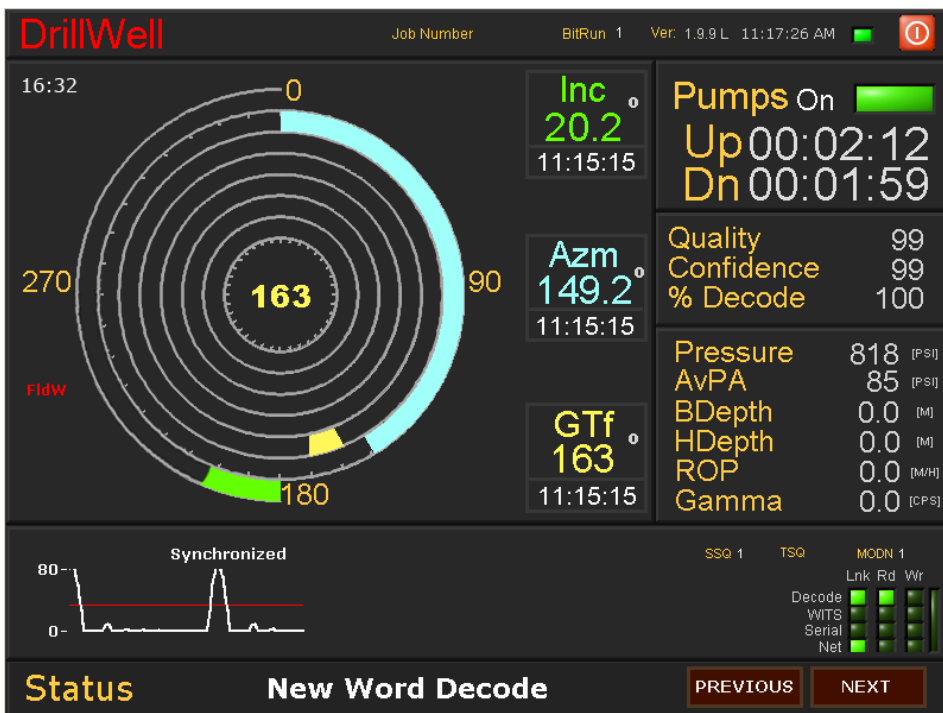
4.35 mm

0.17"

12.5 mm

0.5"

LCM



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