

Enhancing Small Bore Tubing (SBT) Integrity

Minimising Hydrocarbon Leaks & Unplanned Shutdowns

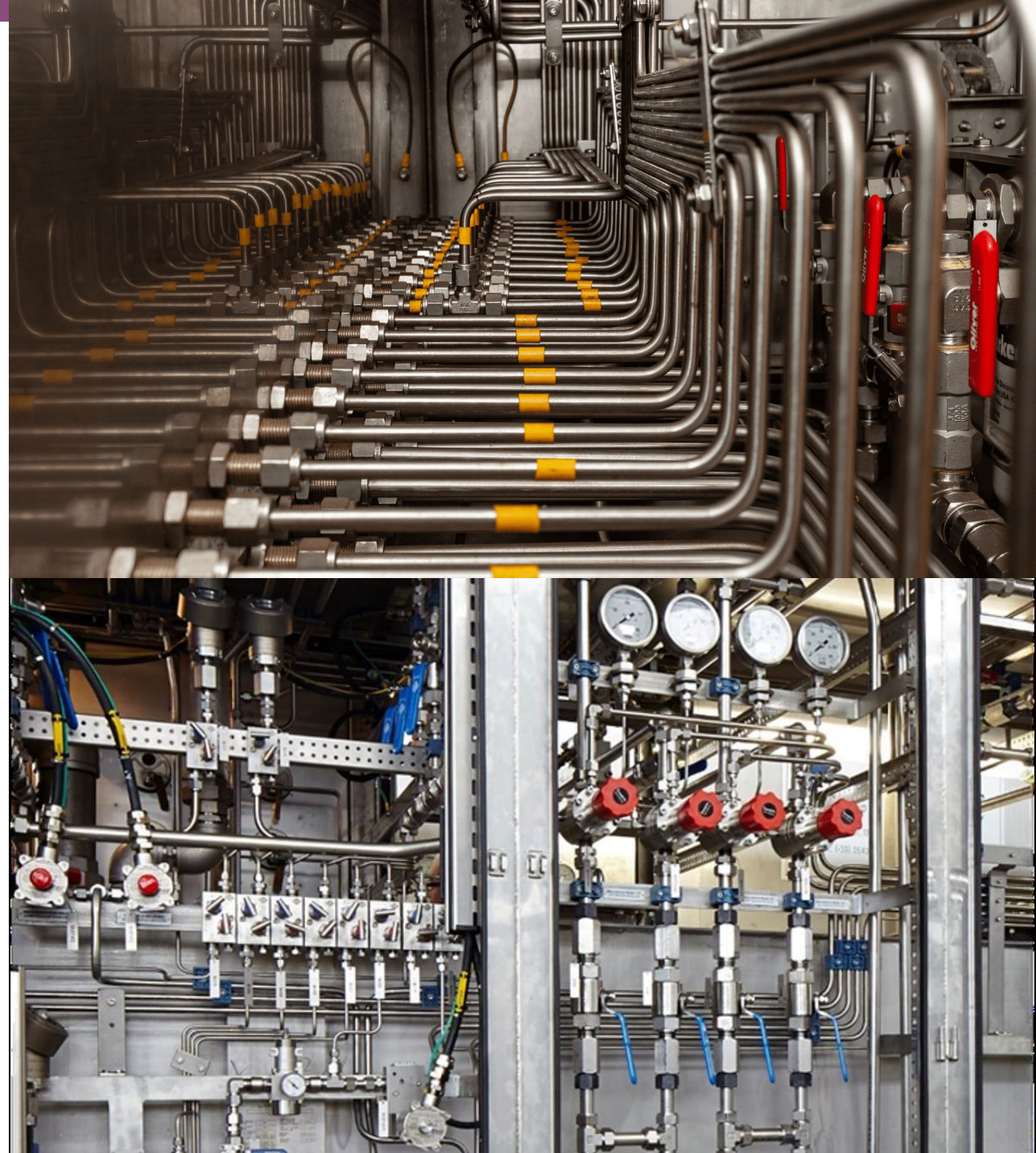
Connor Munroe | SPE Topsides UK 2025 | The Chester Hotel | 12th November

Asset Integrity Problem Context

- What is Small Bore Tubing?
- The role of SBT in offshore topsides?
- Vulnerability of tubing?

“17% of all reported hydrocarbon leaks were related to instruments (half considered major or significant releases).”

“58% of all instrument leaks were gas releases for which the significant severity threshold was breached (notionally an amount greater than 1 kg)”



Industry Case Study

North Sea Platform (2015)

What happened?

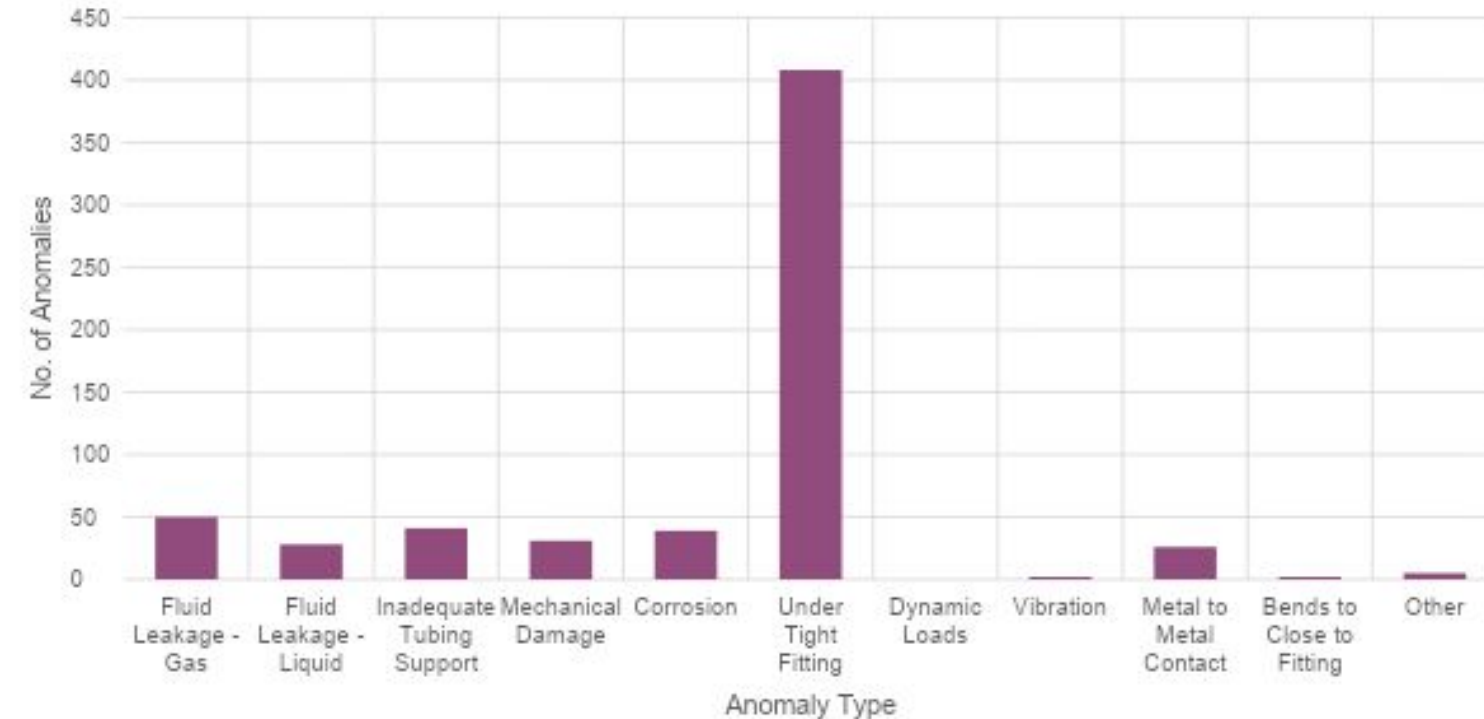
- Hydrocarbon gas release estimated
~2000kg over 84-minute period
- Originated from small bore instrumentation
tubing near gas compressor.
- HSE issued safety notice to operator for
failing to prevent leak.



SBT Anomalies Across a Platform 2020-Present

ROSEN assessment of 331 inspection reports for one platform:

- 632 individual anomalies reported during **SKN Offshore** SBT Inspection Campaigns.
- Primarily under tight fittings.
- Approximately 12% of anomalies were associated with a leak (either gas or liquid).



Example

Hydrocarbon Gas Leak

Information

- Both leaks are from Gas Lift System
- ½-inch tubing will contain hydrocarbon gas at lift pressure (100+barg).



Example Mechanical Damage

Information

- Inspector noted that he strongly suspects the tubing has been stood on.
- This tubing is connected to the 3rd stage injection compressor and could see pressures up to 240barg



Small Bore Tubing Service

What we offer



Offshore Inspection

Provider of Project Management and E&I
Maintenance, Installation and Inspection
Services to the Energy Sector.



Integrity, Assurance, Risk Assessment & Prioritisation

Provider of Integrity and Consultancy Services to the
Energy Sector.

Small Bore Tubing Service

How we support

Plan Inspection Campaign

- Inspection priority
- Prepare inspection plan and work packs

Propose Corrective Action

- Provide a clear repair plan for all anomalies, including repair priorities and dates, for entry into the client's maintenance system.
- Work order prioritisation



Offshore Inspection

- Carry out inspection
- Raise work orders
- Anomaly management

Onshore Integrity Assessment

- Review SBT inspection reports and provide engineering assessments aligned with client strategies and Energy Institute guidelines
- Prioritise anomalies using the client's 5x5 risk matrix.
- Technical support with SBT Integrity related issues.

Values and Benefits

Avoiding Failures

Compliance & Safety

Additional Services



- This **fully managed** approach to SBT management streamlines the process and ultimately reduces burden for the operator.
- Promotes proactive repairs during campaigns when permitted and optimises prioritisation of corrective work based on the EI guidelines.

The logo for ROSEN features the word "ROSEN" in a bold, white, sans-serif typeface. The letter "O" is stylized as a circle with a horizontal line passing through its center, resembling a play button or a film reel. The background is a dark blue gradient with a thin horizontal bar at the top transitioning from teal to purple.

ROSEN

empowered by technology