



## WORLD'S LARGEST OFFSHORE DRILLING CONTRACTOR STANDARDISES ON FLIR

*Conditioned based monitoring using FLIR Systems infrared cameras has become a standard for the European and African (EAU) operation of Transocean Inc. Last year the company provided each of its rigs with their own FLIR Systems camera and now as a result of the merger between Transocean and GlobalSantaFe Corporation, this technology is being investigated for implementation on the remaining legacy GSF rigs, to ensure standardisation of equipment across the region's combined fleet of 57 rigs.*

Transocean Inc. is now the world's largest offshore drilling contractor with 146 rigs worldwide. Its mobile offshore drilling fleet, consisting of a large number of high-specification deepwater and harsh environment drilling units, is considered one of the most modern and versatile in the world. This is due to the company's emphasis on technically demanding segments of the offshore drilling business.

The merger with GlobalSantaFe enhances Transocean's high-end floater fleet and includes five newbuild ultra-deepwater units. It also strengthens the company's position in the worldwide jack-up market, especially in the Middle East, West Africa and the North Sea.

The smooth running of all EAU assets from a maintenance point of view is one of the responsibilities of Bob Speirs, an operations engineer with considerable infrared experience. As the business unit's condition monitoring specialist his job is to ensure that each rig has its own FLIR Systems infrared camera and that it is used to maximum effect.

"We are currently integrating the condition monitoring strategies of the two legacy companies," Bob Speirs explains. "It's a steady process but we're now asking our teams to extend the scope of their infrared inspections. They are taking in a lot more mechanical applications into the process and in particular power transmission systems."



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Bob has good reason to emphasise the value of infrared for mechanical inspection. Before joining Transocean he had been called to a gas processing rig to investigate a problem with a glycol pump. This system is used to remove water from the gas stream and, as typically there are just two of these on a rig, it is a fairly critical piece of equipment. The maintenance team was unable to determine the exact location of knocking from the unit against the ambient noise on the rig and therefore the decision had been made to strip down the pump unit to locate the defect.

"With my FLIR camera I was able to prevent this unnecessary procedure," Bob continued. "By looking at the thermal pattern on the second, healthy glycol pump and using that as a benchmark, I was soon able to pinpoint the problem to the suction valve. A quick examination of the suction valve soon revealed one of the guides was cracked." The faulty component was swiftly replaced saving in the region of 12 hours labour.

Naturally Bob is now integrating mechanical inspection into Transocean's condition monitoring programme and is encouraging his teams to use their FLIR Systems' camera to troubleshoot. One pass of the camera can reveal a lot of important information and this valuable advice certainly proved its worth on a semi submersible rig survey.

These rigs rely on hydraulic accumulators to stabilise their drilling equipment in the water. They compensate for the rise and fall in the ocean swells. These are essentially pressure storage reservoirs in which a non-compressible hydraulic fluid is held under pressure by a neoprene bag filled with nitrogen. On this particular rig 20 of these accumulators were used and it became evident through the display of the FLIR Systems camera that the bag on one of these units was exhibiting

distinctly different thermal characteristics to the others.

"Further inspection revealed that the bag was actually full of hydraulic fluid rather than nitrogen. In other words it had a substantial leak," Bob explained. "As a result the accumulator was not doing its dampening job. Although there were a large number of other accumulators to compensate for this failure it's certainly not a problem that would have been picked up by the naked eye."

For Transocean thermal imaging has become a vital part of its predictive maintenance procedures. It's a non-contact method that can be used without powering down and it therefore allows the company to maximise its up-time. And the reasons for it choosing FLIR Systems are largely down to cost and simplicity. For Transocean having a potential upgrade path for its cameras was also important so that its future needs can be accommodated with growing experience.

"This technology is now eminently affordable," Bob concluded. "The FLIR Systems' cameras are so very easy to use. This is important for a company such as ours that wants to implement the technology worldwide and encourage its use way beyond electrical inspection."

On the strength of recommendation from the Transocean EAU operation FLIR Systems thermal imaging is now also being adopted by its counterpart in Asia Pacific.

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P3408A Glycol Pp A



P3408A Glycol Pp A Discharge Valves



P3408B Glycol Pp B

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