

Case study: East Africa

East Africa

No job too complex, too challenging

At Bridgeporth, we are driven to develop and execute non-seismic solutions that help oil companies and seismic contractors solve their toughest imaging and operational challenges. When an oil exploration firm needed gravity and magnetics data to help roadmap their seismic acquisition in a dangerous, post-conflict region in East Africa, they turned to Bridgeporth. Bridgeporth rose to the challenge by deploying a security and logistics program to mitigate risk and ensure the safety of its crew, while keeping the project moving efficiently and cost-effectively. The used two planes for acquisition as a precautionary measure against any potentially unexpected issues. As a result, Bridgeporth was able to acquire data in a previously unexplored, frontier region in East Africa while providing a comprehensive interpretation and understanding of the geological features for future seismic acquisition.

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“At the end of the day, every project presents a unique set of challenges. And it’s our job to adapt to those challenges, to problem-solve issues, and to get the best results for our clients every time, regardless of the conditions,” said Dr. Nick Harrop, Bridgeport’s Technical Director.

Nowhere was that mentality more evident than in the troubled area of East Africa Bridgeport surveyed earlier this year. Seismic acquisition had been virtually non-existent up to that point, due to volatile security and difficult logistics issues.

From an exploration standpoint, the basinal areas were undefined and regional data was lacking sufficient resolution to provide Bridgeport with clues as to what it would encounter. Before Bridgeport entered the scene previous efforts had resulted in misinterpretation and significant errors on the predicted locations and depths of the formations.

With only one available seismic line in 45,000 sqkm, Bridgeport had its job cut for them. What complicated matters further was the fact they were in a remote, desert environment with no operating airstrip to work from and a risky security situation.

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If you ask Jim Whitehouse, Logistics Director, what it means to run logistics for a project like this, he’ll tell you while logistics might sound like a simple enough business getting things from point A to B, it’s a complex dance of using the Bridgeport network and resources to meet the needs of the project in a timely, cost-effective, and secure way. When you factor in the challenges of operating in remote, frontier areas of Africa where the costs of fuel and repairs makes even the simplest endeavors a serious undertaking, it’s clearly more difficult than it seems.

“You have to remember—there was literally nothing out there. We had to actually level our own airstrip, build our own hangar, and construct an entire camp for the duration of the survey. It meant providing the timely and secure inflow of medical, construction, airstrip, and all other project-related materials and then actually constructing everything we’d need from the ground up,” explained Alan Elsey, head of field operations.

The project ended up requiring the construction of fuel tanks, maintenance sheds, and satellite dishes for communication. The enormity of the task was even more apparent when one considers that it’s easier to ship a ton of material from Chicago, USA to Mombasa, Kenya than it is to ship it from Mombasa to next door Kampala, Uganda.

In addition to the logistical challenges, travelling and operating safely in the region was difficult due to unstable geopolitics, high levels of crime, terrorist threats and restive locals. For Bridgeport, this meant having a robust, risk-based security program in place was essential. As the Foreign Office issued daily warnings, the Bridgeport crew operated with round-the-clock armed security, travelling only in secure convoys and liaising with local forces to ensure the protection of the equipment and planes.

“We’re fortunate that our in-house Security and Logistics team enjoys a close relationship with the country’s Special Protective Units (SPU) forces. It meant we could use established local forces rather than bringing in potentially unwelcome outsiders—an important advantage is a highly tribal, divisive area,” adds Bridgeport CEO Mark Davies.

As anyone who has worked in developing countries can attest, establishing excellent relationships with the local communities is especially important in the oil and gas industry. It’s often non-seismic companies like Bridgeport that make the first impression in a frontier area.

Creating a level of goodwill in a region is not only part of Bridgeport’s short-term corporate social responsibility plan wherever it operates, but goes a long way in paving a smooth entry for the seismic and oil companies who will follow. What that strategy translated to in practice was a number of meetings from the start of the project with local chiefs to incorporate them into the stakeholder engagement process. It meant bringing dozens of footballs, coloring books, and school supplies for the local children, employing and housing locals for support staff, and being respectful of the population and its traditions.



At the end of the day, Bridgeporth must anticipate issues and prepare for them before the first crew member steps off a plane. There is an extraordinary amount of pre-planning that goes into surveys to ensure on-site job safety and to allow for a quick response when issues inevitably arise. When a piece of equipment malfunctioned, the chain of reactions that ensued was swift and highly international. The call went out from Milton Keynes, UK to the engineering company in Australia to the head engineer in Russia, who was provided with a visa and arrived in East Africa within twenty-four hours. "If you wait until something becomes an issue to address it, it's already too late. You have to anticipate problems beforehand and have a solution ready to deploy the moment something comes up," adds Whitehouse.

It explains why it was important to fly two planes for the survey. In such a harsh, unforgiving environment, if a plane had an issue it could potentially mean anywhere from a few days to a few weeks to get back online. Two planes meant delays were never an issue, because a backup option always existed.

"Our men are firefighters, troubleshooters, problem-solvers. It's our job to make everything go as smoothly as possible, even in areas where everything from the environment to the regulatory policies to the logistical difficulties are conspiring against you to make things tough," states Davies. "At the end of the day, we're veterans of these challenges, and we work faster and resolve issues better than anyone else."

Initial results

"The one available seismic line agreed very well with the data we pulled. That agreement gave us confidence that the correlation would hold. That was great news for our clients, as our main objective was to help with the planning of the seismic acquisition process," says Interpretation Manager Jon Watson. The high correlation between what Bridgeporth gathered and the single line of existing seismic data led them to believe that they could accurately plan further acquisition based on Bridgeporth's gravity.

Watson went on to explain that, "Not only did our gravity data confirm a high correlation with the one line, but it also revealed that the original seismic line was poorly located. It just skimmed the edge of the basin. Now equipped with our data, the seismic team can get much better data acquisition with this roadmap."

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