FUEL MANAGEMENT
a strategic asset

READ THE EDITION #3
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Client confidence is fundamental to the leadership of BOURBON in any market context. It is a precious asset that takes several years to earn but can be lost in a few minutes. We have built our reputation on the offshore maritime services market thanks to the work of these past years, but nothing can be taken for granted, we must deliver our services day after day and know how to remain attractive. I would thus like to take advantage of this editorial to invite you to read the PartnerShip articles from this perspective.

Winning the confidence of the client means respecting one’s commitments and keeping the promise of operational excellence on a daily basis.

Winning the confidence of the client means respecting one’s commitments and keeping the promise of operational excellence on a daily basis. Everyone knows that this is a challenge. We are transparent with our clients and we are committed to communicating about both our weaknesses and our plans for corrective action. It is an effort of rigor, but discipline in the application of our procedures pays off: our clients know how to evaluate our overall performance and remain loyal to us.

This commitment to transparency and performance is reflected in our policy to optimize fuel consumption. BOURBON has become a reference in this field. Our know-how extends from the vessel design phase to the analysis of the consumption performance per type of operation to determine energy savings measures which can eventually reduce our clients’ fuel bill by up to 30%.

This same transparent approach has led to the creation of myBOURBON, a web platform that provides our clients with direct access to indicators for HSE, maintenance, crewing, fuel, billing, etc. By eliminating paper documents, we simplify our communication and deliver all contractual and operational data in real time. This innovative, scalable and responsive application demonstrates that BOURBON has been able to anticipate digital revolution.

We are ready for tomorrow, we are connecting our vessels, we are analyzing our data, and our crews are competent and deliver operational excellence. Let’s live up to the confidence that our clients place in us.

Rodolphe Bouchet
Chief Commercial Officer - BOURBON
When BOURBON’s customers charter our vessels, they pay for the fuel the vessels burn in addition to the day rate. We are committed to keeping fuel consumption as low as we can to help them reducing their costs, a strategy appreciated by our customers.

Our customers are struggling to minimize their expenses in a tough economic environment. By optimizing the consumption of our vessels, we generate significant savings.

Most of our vessels are diesel-electric, which is the most fuel-efficient mode of propulsion. The hull design and the power management set up also aim at reducing fuel consumption. But more than this, BOURBON has shaped its operational policy around the need to maximise fuel efficiency. For instance, Captains and crews have been given clear instructions to adjust speed, power, and number of engines online at all times to keep fuel consumption as low as possible.

-30%

Maximum fuel savings a year

“BOURBON's vessels fuel consumption is definitely less than that of its competitors,” says Tom Campbell, Logistics Manager of Cairn Energy, an independent oil company currently in the exploration and appraisal phase of a program off the Senegal coast. “When we put out to tender, we ask for the vessel's fuel consumption rate at various stages - at standby, in transit, in dynamic positioning - and calculate the true overall daily cost. For our last two campaigns, BOURBON has been much cheaper than its competitors, allowing us to save several thousand dollars a day.”
Once the contract is under way, Cairn Energy monitors the fuel consumption on a daily basis to check that it is in line with expectations, using the vessel’s daily report and myBOURBON digital platform that provides real-time data and metrics. “Fuel economy has taken on greater importance to us over the past four or five years,” relates Campbell. “After receiving significant fuel bills following a program in Greenland, we decided that this was an area in which we had to proactively manage, and we changed our vessel tendering model to include fuel consumption.”

Apart from its operations in Senegal, Cairn Energy has operated assets in Morocco and Ireland. “When we are looking for vessels for future projects in other regions, BOURBON’s approach to fuel efficiency will mean they are well placed in any future tendering process,” remarks Campbell. “The fact that they appreciate the value of managing fuel consumption gives them a real competitive advantage. They’re experts in their field and they give me advice in a very proactive manner, which I really appreciate.”

**Two questions for Tom Campbell**

**Concretely, how does BOURBON help you save money with fuel?**

We have a really strong relationship not only with the vessel’s master and crew, but also with the Port Captain appointed by BOURBON. Our rig is only six hours from port, and so we arrange to send the boat out when we know that the rig will be ready to receive the cargo in six hours. There’s no need for vessels to travel at full speed, everything is carefully planned and programmed. It’s clearly a win-win situation for both of us: we save considerable amounts in fuel bills, but there are benefits for BOURBON as well. By not working the engines as hard, they are able to save on maintenance.

**Has BOURBON helped reduce fuel consumption for you in other ways?**

Yes, in two ways. On the one hand, they suggested adjusting the safety standby procedure. By stationing the boat outside the 500-metre zone but within 1 nautical mile of the rig they can operate with a single generator, which in itself has saved us $4,500 per day. And at an early stage in the contract, they told us that as we were not using all the deck space of the vessel, it would be advantageous to us to switch to a smaller boat which would use less fuel. This was an extremely helpful suggestion that we took advantage of!

"Experts in their field, BOURBON teams give me advice in a very proactive manner, which I really appreciate."
In an industry undergoing transition linked to the emergence of a 'new normal', the digital revolution gives BOURBON a decisive edge. The group has therefore launched a number of initiatives focusing on data expertise. Xavier Daull, Digital Innovation Manager, and Anne-Laure Comte, Head of Maintenance Processes, discuss a Proof of Concept which was recently introduced in Angola on two sensor-equipped ships, and they draw some initial conclusions.

"Our goal is to gather all the data generated by the sensors onboard the ships, and to use that data onshore to develop decision-support tools," explains Xavier Daull. "We study all the possible fields of application and the best returns on investment for BOURBON. The launch of a Proof of Concept (POC) project involving these two ships will help us to validate the feasibility of this digital solution with a view to implementing a much wider rollout within our fleet".

REMOTE ACCESS FOR FUTURE ACTION

Condition based maintenance will be one of the great beneficiaries of exploiting data. This type of maintenance consists of taking action before a breakdown on the basis of criteria previously measured on operating equipment. It is going to become much wider in its scope, application and efficiency thanks to the use of data. Onboard sensors will enable remote access to the entire system on board ships for all operations requiring the involvement of an external expert. The outcome is that specialists will be able to study breakdowns and identify solutions remotely, thereby avoiding the costs involved in sending specialists to the ship. BOURBON also hopes to use this data gathering solution to improve the configuration of its vessels. The main focus is to optimise the number of engines running at any time in order to reduce fuel consumption. Other uses of data gathered in this way include the digitalisation of multiple paper-based processes to simplify and accelerate administrative tasks, and improving working conditions for the crew to boost operational excellence.
"The data fed back from onboard sensors will allow us to identify the parameters that influence fuel consumption relative to the operational profile of each vessel."

XAVIER DAULL
DIGITAL INNOVATION MANAGER

A POSITIVE FIRST ASSESSMENT

BOURBON vessels built in series offer an excellent opportunity to roll out this digital solution more widely. "On ships like the Bourbon Liberty series, the installation of smart sensors will be more straightforward than it would for a varied fleet, because we can capitalise on existing architectural designs," says Anne-Laure Comte. "Even though we have already amassed a great body of maintenance experience on this type of vessel, the data provided by these sensors will allow us to conduct a more detailed validation of our previous analyses, and move towards new fields of study.

For our Surfers, which are complex high-speed vessels, our priority is to increase fleet reliability. We are seeking primarily to detect parameter variances and bad practices at the earliest-possible opportunity. " Nearly a year after launching this digital initiative, the first feedback is promising. The feedback provides essential learning with regards to a more ambitious rollout. The maintenance team are thus going to work in collaboration with the classification organisations on the plans for condition based maintenance and predicting which actual maintenance projects are to be replaced. The fleets will also be assisted by Operational Support Centers which will direct the work of remote or on-site technicians.

Finally, all the data from the embedded systems will be analysed to provide artificial intelligence to enable us to learn more quickly about situations encountered and significantly improve the efficiency and security of our operations.

"Our ultimate goal is not to have a 100% smart ship fleet, but rather to focus on the most modern vessels for which smart ship technology offers real added value."

ANNE-LAURE COMTE
HEAD OF MAINTENANCE PROCESSES

THE PROOF OF CONCEPT MADE IN ANGOLA, IN FIGURES

- 13 billion data recorded on a vessel since the beginning of the POC in February 2017
- More than 5,000 various data recorded on the MPSV
- Around 1,000 to 2,000 various data recorded on the PSV
BOURBON has provided Subsea 7 with AHTS vessels and Crew boats for a large-scale gas project in Taurus and Libra, two major gas fields off the coast of Alexandria, in Egypt. This project is the phase one of the West Nile Delta project.

The first phase, a nine well tie-back to the existing Burullus facilities, has started in July 2016. The design, procurement, fabrication, installation and pre-commissioning contract for subsea and topside facilities is held by Subsea 7, that has had a close and successful working relationships with BOURBON since 2011.

COMPETITIVE BIDDING

"A competitive bidding process for the West Nile Delta was launched early in 2016," says Karim Mebarek, Vice President Marine Services. Decisive factors that helped BOURBON win the contract were the size of its fleet, its ability to provide the whole array of vessels required, the geographic locations of the vessels, and the specific characteristics of its fleet - notably the fact that the vessels are diesel-electric, which enables cost-savings on fuel. "And obviously, there was also the quality of the service that has been built up through our relationship over the years with Subsea 7," he adds.

Bourbon Offshore Triangle - the group’s Egyptian affiliate - was required to provide six anchor-handling tug supply (AHTS) vessels to support Subsea 7’s barges. It chose to mainly use Bourbon Liberty 200-series vessels, which offer powerful engines and winches and a bollard pull of up to 85 tons.

"When an operation requires such resources, our international presence and our network of ship managers are real assets."

SHADY THARWAT
CONTRACTS MANAGER
Subsea 7 also asked the group to provide vessels for crew transportation between the hook-up vessel and shore. In view of the high number of people to be transported and the speed of journey times that would be needed, Bourbon Offshore Triangle decided to use three Surfers. The group operates around 200 of these vessels in West Africa, but this was the first time in many years it has used them in the Mediterranean. Three Surfers were mobilized from West Africa on top of the Subsea 7 barges towed by our anchor handlers. In all, at the end of the project we had transported more than 17,000 passengers without injuries and incidents.

“Surfers are very high-maintenance jet-propelled vessels,” points out Karim Mebarek. “We needed onshore maintenance facility. Subsea 7 were generous enough to allow us to use their yard in Abu Qir for these operations. This played a big part in the reliability of the service we were able to offer.”

With an outstanding zero-incident safety record and performances in terms of vessel availability, Bourbon Offshore Triangle has provided an excellent service to Subsea 7, a customer with whom it hopes to continue a fruitful – and mutually beneficial relationship in phase two of West Nile Delta and additional projects that Subsea 7 has received award for in Egypt.

A SPURT OF ACTIVITY IN EGYPT

Egypt is recovering from several years of economic turmoil. The current Egyptian government has put in place an ambitious energy policy that should enable it to drastically reduce its reliance on gas imports. In particular, rich resources beneath the Mediterranean, off the Nile Delta, will allow the country to achieve a high level of self-sufficiency. Several exploration and drilling projects are being fast-tracked. Solidly established in Egypt with numerous assets available locally and access to an international network, Bourbon Offshore Triangle is fully experienced to better respond to customers’ needs.
IN PICTURES

Subsea Services: combining technical expertise and safety in deep water

A diesel-electric powered DP3 MPSV, the Bourbon Evolution 800 has 1,200 m² of deck space, 2 AHC cranes (150 t and 40 t), and can be equipped with 2 UHD ROVs.

BOURBON teams have installed around 500 Jumpers worldwide at depths of up to 2,000 m.

Wellhead installation is a key operation in the life of an oilfield. BOURBON has successfully installed around 350 of them.

The BOURBON ROV fleet features cutting-edge equipment and can operate at depths of up to 4,000 m.

The BOURBON fleet of electro-hydraulic cranes with active heave compensation is operated by a dedicated team of experts.

Class 3 dynamic positioning enables the Bourbon Evolution to fulfil diving support missions in complete safety.
The most severe crisis in the oil and gas sector has resulted in a drastic drop in investments. As the industry is responding by cutting costs, safety must not be sacrificed under any circumstances. An explanation with Albertus Zwiers, Maritime Manager Global Upstream at Shell Shipping & Maritime, and Chris Dixon, VP Operational Safety Management and HSE Director at BOURBON.

**How to remain cost effective while maintaining a strong focus on safety?**

**Albertus Zwiers:** The current period of reduced Oil & Gas exploration and new project activities offshore will inevitably lead to offshore support vessel industry consolidation that will create sufficient economy of scale to weather the storm. If this wasn’t the case before, then now is the time to become fully focused on safety management. In our experience, good safety management is good business.

**Chris Dixon:** The crisis has presented many challenges for all stakeholders to remain cost effective while at the same time maintaining a strong focus on safety. It is in this context that the values of proactive leadership driving meaningful safety programs play such an important part in keeping people and assets safe.

**Albertus Zwiers:** Indeed Chris. We, at Shell Shipping & Maritime, maintain a strong focus on maritime safety via our Partners in Safety program, in which our key strategic maritime partners participate and cooperate. The program requires our Partners in Safety to demonstrate strong senior leader commitment to safety and prevention of incidents on board. Learning is promoted by using Reflective Learning and Learning Engagement tools, available on a common website.

**Chris Dixon:** As you know, we have adopted the key components of Shell’s Partners in Safety program to best ensure sharing, learning and application of good practices. Today, we maintain a strong yet practical focus on safety through use of our ‘Safety Post’ – a monthly reflective learning campaign - and also through LFI (Learning from Incidents) communications. These tools support and complement Safety Takes Me Home campaign enabling a standard approach to managing safety across all of our activities.
Decrease in the serious incident frequency on Shell chartered vessels for the last 4 years

The digital revolution is underway in the industry: what is the impact on operational safety?

Albertus Zwiers: Even though we live in a world where digital technology is readily available and routinely used on board, operational safety is very much dependent on human interaction and intervention. Successful team work depends mainly on effective communication and looking out for each other to stay safe.

Chris Dixon: I fully agree that safe operations are – and have always been – very dependent on successful human interactions, even if technology in general is making great progress onboard vessels and how they are managed. In my view, digitalization is a tremendous step forward that can considerably assist the daily management of vessels both onboard and ashore. However, we must take great care that the expectation is not that it can replace seamanship, common sense decisions and other all-important human interactions.

Albertus Zwiers: I would also like to point out that almost all core elements of safety management and all the elements of our Partners in Safety program are based on engagement and discussion. Risk assessment and mitigation are managed by human beings and require close cooperation, discussion and engagement between shore and vessel staff.

What are the safety challenges of tomorrow?

Albertus Zwiers: Without a doubt maintaining competence and seamanship by attracting competent individuals with the right attitude towards safety, which can only be done by offering meaningful and rewarding careers at sea. The sea presents an unforgiving environment and does not suffer fools gladly, so adequately trained and prudent mariners will be needed to preserve safety of life at sea.

Chris Dixon: I believe the safety challenges of tomorrow are very similar to those of today – and in fact, those of yesterday. I have long believed that to be best prepared to meet safety challenges, we only require three components: management commitment, effective systems and competent people with a desire to implement and maintain them. When any one of these critical factors is missing, there will always be a heightened risk of injury or other accidents. Strengthening and encouraging the three components should be everybody’s objective and with determination, the challenges can be successfully met.
Fuel efficiency: a key lever of cost reduction

Borne by our clients, the cost generated by fuel consumption can be a substantial part of global chartering costs. In this context, optimizing fuel consumption is a key aspect of cost cutting.

**FUEL CONSUMPTION**

20% of the total cost of a charter on average

**BOURBON IMPLEMENTED AN EFFICIENT FUEL MANAGEMENT POLICY, IN PARTNERSHIP WITH ITS CLIENTS, BASED ON 4 MAINS PILLARS:**

1. Vessel Design & Propulsion
2. Fuel Monitoring

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