Founded in 1828, Bureau Veritas is an international group specialised in the inspection, analysis, audit, and certification of products, infrastructure (buildings, industrial sites, equipment, ships, etc.) and management systems (ISO standards, etc.) in relation to regulatory or voluntary frameworks.

Bureau Veritas ranks as the world’s second largest group in conformity assessment and certification services in the fields of quality, health and safety, environment, and social responsibility ("QHSE"). It is recognised and accredited by major national and international organisations.

Bureau Veritas is present in 140 countries through a network of more than 900 offices and 330 laboratories. It has around 48,000 employees and a client base of 400,000.

In 2010, the Group reported revenue of €2.929 billion.

Bureau Veritas is listed on the Euronext Paris.

For more information:
www.bureauveritas.com
A new meaning of efficiency
Key points
Newbuildings
Expert global support
Close to clients
Operational services
Research & development
Offshore
Bulk carriers
Oil & chemical carriers
Gas carriers
Container ships
Passenger ships
Offshore support vessels & tugs
Dredgers
Warships
Marine renewable energy
Consultancy & outsourcing
Inland waterways

The 1,395-passenger Marina, 66,084 gt, the first newbuilding for Prestige Cruise Holding and its brand Oceania Cruises, delivered by Fincantieri Sestri.
Our optimism for 2010 was not misplaced. Owners renewed their fleets with a stream of new ships, newbuilding orders picked up, yards were busier and the offshore sector grew strongly. But there were dark clouds. Bulker and tanker owners suffered as the market struggled to absorb the new ships and the Deepwater Horizon incident and subsequent costs have changed for ever the way that offshore operators look at risk. Continuing pressure on environmental emissions, coupled with rising oil prices, put a new focus on operational efficiency.

Now efficiency has to take on a new meaning. To be efficient means more than optimising a ship to burn less fuel when loaded and at its design service speed. It must burn less fuel and cleaner fuel across a wide range of loading conditions and a wide range of speeds. To be efficient means more than saving fuel, it means burning the right fuel in the right place, making a pathway for the use of gas, nuclear and fuel cell solutions. To be efficient means operating the ship in the optimum way for every environmental condition, and that means having crew with the right training, the right support and the right feedback on the operating conditions to make the right judgements. And that is the role of class, at its most basic—to keep things safe. We are there.

During 2010 we redeployed resources to help yards develop new and more efficient designs. We invested heavily in Arctic and offshore research and development to ensure that the best tools and experienced people were right there with the offshore operators and developers, helping them quantify and control risks, finding the optimum solutions that meet all the definitions of efficiency. Not the fastest, not the easiest, but the best and safest way to do things. That’s what we delivered in 2010.

BERNARD ANNE
Executive Vice President and Managing Director, Bureau Veritas Marine Division

A NEW MEANING OF EFFICIENCY

“The 2,000-car-capacity City of St Petersburg was delivered in December 2010 by Kyokuyo Shipyard to Nissan Motor Car Carrier. The unique semi-sphere bow of this vessel is designed to reduce wind resistance and save fuel.”

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“...the interests of academics, industry and class to work towards new and more efficient ways to do things at sea and in offshore energy.

Gas was a strong focus. Getting it out of the ground with floating solutions, we were there. Transporting it in new and safer LNG carriers, we were there. Delivering it with LNG-RV vessels and floating FSRUs, we were there. Then, using it to propel ships, we worked on projects for fuelling large container vessels, feeder vessels and ferries. And we foresaw that it would be most helpful for passenger ships in port areas, so we developed solutions for that as well.

BV as a group continued to grow strongly, acquiring companies with complementary expertise so we can roll out new services to shipowners. And the size of the group has helped us to be present in every country, in every technology, in every ship type and at every part of the industrial process, from concept through to delivery and operation of complex ships and offshore systems. Diversity, versatility, strength, control and a relentless focus on the real meaning of efficiency. Those were our key themes for 2010, and they are why we will help more owners, operators and yards during 2011.

The 2,000-car-capacity City of St Petersburg was delivered in December 2010 by Kyokuyo Shipyard to Nissan Motor Car Carrier.

The unique semi-sphere bow of this vessel is designed to reduce wind resistance and save fuel.

It worked. Our classed fleet grew strongly to over 9,400 ships. Our newbuilding order book doubled on the new orders from the year before. And we were entrusted with key contracts in the offshore field, such as the verification of the northern Norway Golsat FPSO and field, including all subsea systems.

Class can help with that quest for new levels of efficiency. We can facilitate and act as a catalyst at every level, measuring what happens now, predicting what effect changes will have, injecting knowledge and technical expertise and sharing development with academics and industry. And verifying the outcomes, making sure they are safe. It is easy to build an underpowered, slow and fuel-efficient ship, but much more difficult to build a safe and fuel-efficient ship. And that is the role of class, at its most basic—to keep things safe. We are there.
KEY POINTS

“There aren’t any more simple problems. Today we have to facilitate innovations which produce solutions to complex and multi-faceted problems.”

PIERRE DE LIVOIS
Senior Vice President and Technical Director

Class has come a long way from its basic function of devising rules to prevent accidents and loss of life. In the current market, owners and offshore operators want to improve efficiency and save costs, yet they also want to do more difficult things, such as harvest deepwater oil, offshore gas and deep offshore wind energy.

• During 2010 BV’s classed fleet grew to a record 9,493 vessels totalling over 76.46m gt. The growth came from a large number of newbuildings and also a substantial transfer of ships in service. The ships in service being moved to BV class were of a low average age, which brought down the average age of the fleet once more.

• Newbuilding orders entrusted to BV class doubled on 2009 to 9.5m gt, with a healthy presence in every ship type, every shipbuilding country and with every significant cluster of owners.

• BV published new Rules for Offshore Floating Gas Units and saw several major FLNG projects come to fruition with BV assistance.

• BV updated its AIMS asset integrity management system and delivered the first integrated AIMS plan covering topsides and hull with risk-based inspection and maintenance, on the Paiflor FPSO.

• BV published guidance on Risk-Based Verification and Classification of Offshore Units and won a major third party verification contract from ENI Norway for the development of the Goliat field off northern Norway. The verification covers an innovative FPSO design, subsea systems and risers and electrification.

• A Green Rating system based on BV’s experience in rating energy-efficient buildings adapted for shipping to help owners and charterers rate and manage the energy efficiency of ships was proposed.

• The first MLC certificate was issued to a Greek owner, preparing the way for international leadership of key projects investigating whipping and springing in very large open ship structures.

• BV published Rules on the classification of mooring systems for offshore structures, and its consultancy arm Tecnitas won interesting contracts to design anchors and moorings for deepwater offshore units.

• BW worked on projects to bring gas fuel for ships into reality, and on a specific project to help cruise vessels use LNG in ports.

• BV’s new order book during 2010 mirrored global trends, doubling 2009 orders to over 9.5m gt, with a substantial Chinese and Brazilian component, and an increased offshore floater segment. Chinese owners dominated the BV order book, placing orders for 2.05m gt of bulkers and tankers to BV class during 2010, with Greek owners not far behind ordering 1.7m gt, with a large component of bulkers within that. French owners ordered over 1m gt of new vessels, mostly bulkers. Owners in sixty-four other countries also ordered vessels to BV class, with Singapore, Switzerland, Russia, Taiwan, Sweden, Canada and Japan completing the top ten countries by tonnage of new orders.

• Of BV’s new orders, 5.6m gt were for bulk carriers and 2.4m gt for tankers, with the rest evenly split across every type of ship from luxury cruise vessels, sophisticated Ro-pax ferry or larger dredger to new types of offshore support vessel and wind farm support craft. The mix reflected the diversity of Bureau Veritas fleet and expertise, and its ability to support projects of every ship type and in every geographical area.

• The trend for the next few years is towards more stable levels of newbuildings, more offshore energy activity, for both oil and gas and wind, and increased focus on risk management and the energy efficiency in new designs as well as in operations of ships.

BRUNO DABOUSI
Vice President Sales and Marketing Management

NEWBUILDINGS

“The trend for the next few years is towards more stable levels of newbuildings, more offshore energy activity, for both oil and gas and wind, and increased focus on risk management and the energy efficiency in new designs as well as in operations of ships.”

In terms of global market share, BV was entrusted with over 13 per cent of the 2010 neworders in tonnage and over 16 percent in number of vessels. The share was a little higher than that in China and Greece, and 100 per cent in France, Switzerland, Portugal and Croatia. Brazil is a fast-growing market for both the ownership and building of new ships and there BV took thirty per cent of the new orders placed.

The bulk of the new orders were for construction in China, with some cruise vessels in Europe and major ferry orders in Korea. But developments in inland navigation meant BV also saw strong gains in Egypt, local content rules boosted its Brazilian presence, and its newbuilding surveyors were active in every shipbuilding country in the world. They were doing what they always do, year in, year out - making sure those yards and owners get the right ship built.
2010 was a year of adjustment. Yards had to adjust to falling order books, and owners to the prospect of a major tonnage overhang in some sectors. Furthermore, class had to adjust resources to give more support to shipowners taking delivery of new tonnage, and more support to yards needing rapid approval for energy-efficient designs. For the Bureau Veritas network, that meant retraining and redeploying some newbuilding surveyors to help them deliver support to ships in service and transferring more resources of expertise to Asia, closer to the key yards.

**EXPERT GLOBAL SUPPORT**

"Many sectors of the maritime industries are facing up to rapid change. Pressure has increased on shipowners and shipyards with more and more stringent regulations. Our added value is to best assist our clients to see the challenges clearly, to set priorities, to make the best technical choices, to have smooth, safe and efficient operations. That is why we are developing enhanced services for trusted clients, a sort of “Platinum class service” to allow them to move forward with BV with full confidence."

**DIDIER CHALÉAT**
Senior Vice President Marine West Zone

The shift in business from West to East is accelerating. Not just in shipbuilding, where China is now number one, but also for shipowning. The pace of change is still increasing, so we have reinforced our organization accordingly and will carry on putting resources into China. We are now a local company, as evidenced by the contract to class two VLCCs to be built in China for China’s Nanjing Oil Tankers. But it is not just China, we are strengthening offshore expertise in Singapore and ramping up our expertise on very large containerships in Korea. We have to be strong in Asia, and we are.”

**DIDIER BOUTTIER**
Senior Vice President Marine East Zone

CLOSE TO CLIENTS

**NORTH AMERICA**

The Bureau Veritas US network grew in both competence and extent during 2010. Passengership Safety Plan approval was delegated to local teams and a new survey office was opened in California.

Owners were active with ongoing business, including the building of two capesize vessels for Canada’s Oak Maritime at SWS in China and the early 2011 delivery of two more capesize vessels from SWS to Foremost. Sargeant Marine ordered two asphalt tankers in Turkey, and deliveries included two tugs in Canada by Gpe Ocean, two capesize vessels for General Ore and the first of two luxury cruise ships for Miami-based Oceania Cruises from Fincantieri. International Shipping Partners transferred an exploration passenger vessel to BV class and BV strengthened its team of dedicated passengership surveyors.

The offshore sector saw Pride International transfer the Sea Explorer semi-submersible to BV class as the first of a number of units. There was continuous development in the offshore area to cope with the new HSE and equipment certification regulations in the Gulf of Mexico, which will culminate in the opening of a dedicated offshore rig, supply vessel and equipment LPO in Houston in early 2011.

**SOUTH AMERICA**

BV took the majority of newbuilding orders in Brazil in 2010, including four panamax tankers for Petrobras Transpetro to be built at EISA Shipyard and eight LPG carriers to be built for Petrobras at Promar / STX Pernambuco Shipyard.

Three 7,500 cu m LPG carriers were ordered by Elcano Navegação to be built to BV class at the Itajai Shipyard. Three bunker tankers for Delima Navegação will be built to BV class at Enavi/Ronave Shipyard and two supply /oil recovery vessels for Siem / Consul will be built at ETP Shipyard.

P-55 will be one of the largest production platforms in the world after installation, with approximately 115,000 t in displacement, and Bureau Veritas surveyors are following the construction in several yards and manufacturers in Brazil and abroad.

*Marine survey stations*  
*Marine technical centres*  
*Marine operations centres*  
*Marine regional training centres*
In the offshore sector BV carried out certification of basic design for BV-classed P-14 and P-17 semisubmersible platform upgrades for an operational water depth increase to 2,000 m. An ambitious three-year plan to reinforce local competence and extend offshore deepwater services was begun with a co-operation agreement with Ocean Engineering Department of Federal University of Rio de Janeiro.

**NORWAY**

A key contract was signed with EINI Norway for the Third Party Validation Authority (TPVA) of the Goliat field development project.

A new business area has opened up as BV has been delegated authority for the inspection of small fishing vessels in Norway.

Local owners and yards were active with new orders, including two Ulstein POVs for Siem to be built in Brazil, three 2,500 gt salvage tugs to be built in Romania and outfitted at STX Brattug, four oil/chemical tankers to be built in Brugsvik and a multi-purpose supply vessel for Sarter to be built in China.

During the year Bergen Tankers took delivery of two small vessels built in Poland, and Nordic Maritime Services took over a newbuilding chemical tanker.

**SWEDEN, DENMARK & ICELAND**

Four ships with BV class were ordered at Danish yards. Those were a 50 m double-ended ferry to be built at Hvide Sande Skibs-BAaedbyggeri, two 40 m double-ended ferries at Assens Shipyard and at Talty Shipyard and a 16 m survey vessel at Esbjerg Shipyard.

Meanwhile, eleven ships were ordered at foreign shipyards for Danish/Swedish owners. Those comprised five 85,000 gt suemsax oil tankers for Stora, two 5,700 gt split hopper dredgers for Rohde Nielsens A/S, one 2,900 gt dredger at Western Baltic Shipbuilding in Lithuania, a 4,500 gt general cargo ship for Eriks Thun AB, and two 11,000 gt multi chemical/ashalt tankers for Wissy Tankers.

While only three ships were delivered from yards in the region in 2010, several new vessels were delivered from foreign yards to owners in Denmark during the course of the year. These included three 64,000 gt post-panamax bulk carriers for DF Nordic in Copenhagen, one 5,700 gt chemical/oil tanker for Herning Shipping, two 3,400 gt LPG carriers for Lauritzen Kösan and a 104,000 gt LNG carrier for Maersk LNG A/S.

Two dredgers with BV class have been ordered at P-S Werften in Wldsgt. Those split hopper dredgers for owner Rohde Nielsens from Denmark have a capacity of 4,500 m3 hopper and a length of 103 m.

The cooperation with manufacturers has been intensified - together with Becker Rudder a composite rudder shaft was developed and type approval is in progress; this new development has some advantages like low weight, better integration of control devices and more independence from steel forging companies.

The consulting activity in particular for LNG was another field of growth. Shipowners as well as authorities have requested consultancy regarding LNG as fuel. The Russian leading design office have selected BV as class society for their new Medmax LNG carrier design.

**GERMANY & CENTRAL EUROPE**

The number of BV classed vessels for German owners increased by 20% in numbers and by 50% in tonnage in 2010. The majority of the new vessels are bulk carriers like the Conti Saphir built in China for Conti Group, and extend offshore deepwater services like the Conti Saphir built in China for Conti Group.

UK & IRELAND

In 2010 were delivered the 177,000 cu m LNG vessel Ben Badis to MOL, the handy bulkers Pilson and Astoria for Helikon, seven K-class 6,250 dwt cargo ships for Caribrooke; two handy bulkers; the tenth in a series of 7,000/9,500 dwt tankers from Qingdao/Zhejiang yards and two 16,500 dwt tankers from Zhijiang Jingtang.

2010 saw the start of training for the ILD Maritime Labour Convention. Training has been combined both internally and with those clients keen to achieve early implementation, including Northern Marine Management, Arklow Shipping, and Caribrooke. There was a high level of co-operation with the Maritime and Carisbrooke. There was a high level of co-operation with the Maritime and Carisbrooke. There was a high level of co-operation with the Maritime and Carisbrooke. There was a high level of co-operation with the Maritime and Carisbrooke. There was a high level of co-operation with the Maritime and Carisbrooke. There was a high level of co-operation with the Maritime and Carisbrooke. There was a high level of co-operation with the Maritime and Carisbrooke. There was a high level of co-operation with the Maritime and Carisbrooke.

BV also expanded training services for shipmanagers, strengthened its MLC 2006 competences, and experienced an increased demand in ISO 9000 and ISO 14000 certification from owners and managers.

**SPAIN & PORTUGAL**

In Spain, Navantia began designing a new OPV series for the Spanish Navy to BV class and in Portugal ENVC Vana do Castelo began designing two sophisticated asphalt tankers, a type of vessel for which BV is the world leader.

Spanish shipyards delivered twenty BV-class vessels to Jan de Nul, Acciona Trasmediterranea, Balea, Naviera Armas, Ibazarbal and Navesco. Notable were the dredgers and stone-dumping vessels built in Construcciones Navalis del Norte for Jan de Nul, Leiv Eriksson and Simon Stevin, which broke new records; the passenger ferries Volcan del Teide for Naviera Armas and Ariel Matutes and SF Alcueramas for Balea, all built at Barreras, the ro-ros built by Navantia for Acciona Trasmediterranea, the cargo ship Salamina for Columbian owner Navesco, as well as the fire-fighting tugs built in Armon and Boluata.

While BV is working in close cooperation with Vega-Reederei and LNG specialist Marine Service on the SIECAS-Faeder concept - a 1,000 teu container vessel with dual fuel engines and LNG stored in containers on deck. The approval in principle has been carried out, it is expected that this concept is an attractive solution for the upcoming new requirements in the SEDAs.

Owners in Belgium were active, with orders for nineteen new vessels, including a capsize for Bocimar and six very sophisticated dredgers for Belgian companies. Eighteen seagoing vessels, one major ferry yacht and seven inland vessels were delivered, including the first suction-capable inland waters tanker and the last of the series of eight LNG-RV vessels for Emar.

**FRANCE**

During the year, 64 vessels were ordered in French shipyards. A total of 45 ships were ordered by French shipowners. And eight vessels were ordered by French owners from French shipyards.

**GERMANY**

The 900-passenger Abel Matutes built to BV class
design by Sietas, to Van Oord.

The market for offshore wind energy and its associated service vessels is booming in Spain and BV has been chosen by Navantia and Acciona as the class society for approval of the design of a wind turbine installation vessel. BV has been chosen as classification society for the European HPWind research project about offshore floating wind turbines.

The LNG carrier Maersk Melanesia, 165,770 cu m built by Samsung Heavy Industries for Maersk LNG A/S.

The IPSEM code certification along with ISO 9001 was renewed for the Port of Cork.

The 23,200 cu m trawling suction hopper dredger Maxima can dredge to depths of 125 m. Built in the Netherlands by IHC Dredgers BV class for dredging major Offshore, it is the largest hopper dredger built in a Dutch yard.

Notable deliveries during the year included that of Maxima, the largest hopper dredger built in the Netherlands by IHC Mvrdvedo, to Van Oord.

SCORENREM is building four catamarans landing craft with mobile landing platforms.

SOFATHUR has delivered twenty six BV class vessels to Japan.

The 350 passenger SS Majestic to Acapulco.

The 750 passenger SS Majestic to Acapulco.

The 14001 contract by Euroship Services Ltd was signed with STX Bratvag.

The Daewoo Langer A/S, one 2,900 gt dredger at Western Baltia Shipbuilding in Lithuania, a 4,500 gt general cargo ship for Eriks Thun AB, and two 11,000 gt multi chemical/ashalt tankers for Wissy Tankers.
ITALY
The BV fleet in Italy now totals over 3.1 mgt, comprising roughly 300 units, which equates to 28 per cent of the Italian fleet. In addition, more than 5,000 small ships have already been certified under the Italian flag.

The entire cruise ship fleet of MSC is classed by BV Italy. Cruise vessels delivered by Fincantieri in Italy in the past twelve months and built under BV supervision include the two small luxury cruise ships L'Austral and Le Boreal, built for Compagnie du Ponant.

BV has a dedicated team in Italy for mega yachts which deals with everything from local plan approval to the provision of dedicated surveyors at yards.

HELLENIC & BLACK SEA
Twenty-two ships totalling 1.6 mgt were ordered to BV class by Greek owners, including five capsize bulkers for Cardift Marine to be built at SWS, two similar vessels for Canata Shipping, and two VLCCs for Dynacom to be built at New Century. Two Greek clients, Larus SA and Dalnav, both ordered newbuildings to BV class for the first time, with three orders for kamsarmax bulkers to be built at Daewoo Mangalia in Romania.

In the same period Greek owners took delivery of fifty-eight new vessels with BV class, totalling 2.5 mgt, and Romanian shipyards delivered nineteen BV-class vessels, including a large bulk carrier and two sophisticated ice-breaking tugs. Examples are the Citius capsize bulk carrier delivered to Enterprise Shipping by Sungdong and the Ian M, a capsize bulkier delivered to Tsaksis Shipping by Romania’s Daewoo Mangalia yard. BV has now in its Register 15.5 mgt belonging to the Greece based owners.

In addition, development of classification services for the inland navigation fleet in the region has already started and will continue to expand in 2011, mainly in Serbia, Bulgaria and Romania.

TURKEY & CASPIAN SEA
Forty-one new orders were placed at Turkish yards with BV class, including a 13,000 dwt asphalt tanker to be built at Sedef Shipyard and a 13,000 dwt asphalt tanker to be built at TKMV Shipyard, both for US-based Sargard Marine. Two 15,000 dwt general cargo ships are to be built at Ozan Shipyard for Paphos Shipping of Bulgaria.

SOUTH ASIA
In India, fourteen ships were ordered with BV class, and ten small vessels were ordered in Bangladesh. The Indian orders included a tug to be built at Tanjani Shipbuilders for Macarani Ship Management and four Kamsarmax bulkers ordered at Jiangsu Eastern for the Shipping Corporation of India. In Bangladesh the orders included an oil tanker for the Bangladesh Navy, a ro-ro ferry to be built in Denmark, and a dredger to be built at Karnaphuli Ship Builders.

Indian shipyards delivered eight ships with BV class and Indian owners took three vessels with BV class. An example was the 15,350 gt general cargo ship built in Chowgule for a Dutch owner.

JAPAN
Meanwhile, more large tankers on BV’s orderbook include two VLCC buildings for Nanjing Oil Tanker Co at the CSSC Longxing Shipyard, and two VLCC being built for Dynacom at New Century/New Times Shipyard.

In 2010, 451 ships totalling 5.9 mgt were ordered to BV class in Japan, of which 123 ships of 2.7 mgt were for Asian owners. BV is the leading class society in terms of newbuilding bulk carriers. The seven 206,000 dwt bulkers ordered by Diana and Cardift at Jiangnan Changxing Shipyard are the largest bulk carriers ever built in China.

JORDAN
Five newbuildings, including three new VLCCs for Shih Wei Navigation and two Kamsarmax for Wilmar Holdings of Singapore and MPM Shipping of Japan, were delivered in 2010.

KOREA
A total of 225 ships aggregating 5.4 mgt were ordered at Chinsu shipyards with BV class in 2010, of which 123 ships of 2.7 mgt were for Asian owners. BV is the leading class society in terms of newbuilding bulk carriers. The seven 206,000 dwt bulkers ordered by Diana and Cardift at Jiangnan Changxing Shipyard are the largest bulk carriers ever built in China.

KOREA
In 2010, 47 ships were ordered in Korean yards, totalling 1.65 mgt. This compares with just 16 ships, aggregating 524,485 gt, ordered in the previous year. Specific examples of new BV orders include the six 23,100 gt oil/chemical tankers for Seacera, three 51,500 gt chemical/voy tankers for Stena Bulk of Sweden, a 161,500 gt FPSO for Total and four 38,900 gt bulk carriers for Greek owners.

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A total of 37 ships aggregating 2.7 mgt were delivered by Korean yards in 2010. Among these were the 5,410 gt asphalt tanker, San Beato for Shih Wei Navigation, the first such specialised offshore unit built in Korea, and the LNG carrier Castillo de Santisteban, for Elcano.

TAIWAN
Taiwanese owners were active in 2010 and at the end of the year had forty-three ships totalling 21.3 mgt on order. Examples of the new orders during the year were twenty 28,000 dwt bulk carriers to be built by Kita Nihon, Japan, ordered by Shih Wei Navigation Co. As a shipyard country, one 110 ft steel hull mega yacht has been contracted in 2010 under BV class, to be built by Premier Yacht Co. Bureau Veritas Taiwan was busy with the new construction of two 40,400 dwt tankers for CPC and two 93,000 dwt bulkers for Taipower. There are six yachts under construction at Jade Yachts, Premier Yacht, and Norsemester Shipyard.

During 2010 Taiwanese yards delivered five large motor yachts, and local owners took delivery of seven newbuildings. These included the 37,000 dwt bulk carrier Efficiency Oil for Shih Wei Navigation, which is the first of a series of eight for Taiwanese owners.

The BV fleet in Italy now totals over 3.1 mgt, comprising roughly 300 units, which equates to 28 per cent of the Italian fleet. In addition, more than 5,000 small ships have already been certified under the Italian flag.

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After ten years of newbuilding activity, BV now has over 300 ships, totaling 15.5 mgt belonging to the Greek owners.

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Taiwanese owners were active in 2010 and at the end of the year had forty-three ships totalling 21.3 mgt on order. Examples of the new orders during the year were twenty 28,000 dwt bulk carriers to be built by Kita Nihon, Japan, ordered by Shih Wei Navigation Co. As a shipyard country, one 110 ft steel hull mega yacht has been contracted in 2010 under BV class, to be built by Premier Yacht Co. Bureau Veritas Taiwan was busy with the new construction of two 40,400 dwt tankers for CPC and two 93,000 dwt bulkers for Taipower. There are six yachts under construction at Jade Yachts, Premier Yacht, and Norsemester Shipyard.

During 2010 Taiwanese yards delivered five large motor yachts, and local owners took delivery of seven newbuildings. These included the 37,000 dwt bulk carrier Efficiency Oil for Shih Wei Navigation, which is the first of a series of eight for Taiwanese owners.
In 2010 the Bureau Veritas-classed fleet grew strongly and ended the year at an all-time high of 9,493 vessels totalling over 76.46m gt. The growth came from a large number of newbuildings and also a substantial transfer-in of ships in service. The ships in service being moved to BV class were of a low average age, which brought down the average age of the fleet once more. BV created special teams to ensure the smooth transition of transfer of class agreement requirements for ships transferred direct on delivery.

The growing fleet created the opportunity for Bureau Veritas to develop new services to support shipowners and offshore operators. Following the Deepwater Horizon incident, a new focus on risk management created a need for tailor-made services to verify projects and identify and control risk. In the offshore field in particular operators need closer integration of classification and verification, and systems that can be tailored to clarify and control risks in specific projects. BV responded to that, developing new guidelines on Risk-Based Classification and Verification, and extending the scope of risk management services to cover subsea systems as well as floaters and ships. An example of a specific tailored system was a scheme created for Maersk Oil North Sea to audit the Knutsen shuttle tanker fleet which serves its FPSOs, to ensure they conform with Maersk Oil’s operational/safety/security requirements. ConocoPhillips also turned to Bureau Veritas to develop a hull verification scheme, based on the optimum frequency of internal inspections for an LPG/FSO in Australia. The ability of Bureau Veritas to react quickly to these specific needs and devise and implement effective audit schemes was key to them being entrusted to BV.

While work continued on developing and widening the scope of AIM tools for offshore asset management, the impetus to deliver better tools to shipowners was not lost. Work continued on a new reporting tool for CAP, which will be made available to shipowners in early 2011. The intention is to deliver a web-based tool which will be quicker and easier to use. It will show graphical interpretation of thickness measurements on screen and identify trends across successive inspections. The new CAP software will make the CAP report for any vessel type into an effective marketing tool for the shipowner, and an effective risk management tool for the charterer. Work continued to facilitate the implementation of the Maritime Labour Convention. MLC2006 will come into force soon and BV issued the first certificates under the convention to owners in Greece. Services in demand were mainly for gap analysis as owners wait for flag States to ratify the convention and introduce specific legislation. BV has over 200 trained MLC inspectors worldwide now and is encouraging owners to take early steps to implement the convention, especially for large vessels such as passenger ships employing a lot of crew.

While the IMO Ship Recycling Convention is not yet in force, demand for Green Passports grew as owners came under increasing pressure to recycle ships responsibly. BV reacted swiftly to issues arising from asbestos being found on vessels. This is not a class issue but BV was able to provide information and specific investigation services to owners. The Green Passport will cover asbestos, which for owners who adopt this solves two problems in one.

Keeping up with changing legislation is a burden for all owners and offshore operators, so BV has developed a new annual publication - Navigating through the Statutory Requirements - which gives a snapshot of new requirements likely to come into force for every ship type in the next biennial. In 2011 a new rule-finder tool will be added to the website. The VeriSTAR website is also being upgraded to ensure it can better interface with owners’ own systems, helping them manage their fleets more effectively.

“The ability of Bureau Veritas to react quickly to specific needs and to devise and implement effective tailored audit schemes was key to them being entrusted to BV.”

CLAUDE MAILLOT
Vice President Ships in Service Management
RESEARCH AND DEVELOPMENT

“We are strong because we work with others. We see academic co-operation as much more than linking our name with a university and providing scholarships, although we do that. We work in a large number of joint industry projects with other companies and institutes, and we believe that wide sharing of knowledge promotes faster and safer development.”

PIERRE BESSE
Vice President Research Department Marine Division

Wide academic and industrial co-operation was at the heart of BV’s research and development strategy during 2010. By linking with nineteen leading universities in Brazil, China, Russia, Korea, Singapore, Malaysia, Vietnam, Australia, Taiwan and France and joining forces with shipowners, shipyards, technical institutes and equipment manufacturers in a wide range of projects, Bureau Veritas plans to speed development of new tools to help maximise ship efficiency and to get offshore energy from the range of existing, developing and renewable technologies safely and swiftly to the market.

Bureau Veritas currently works jointly with Shanghai Jiao Tong University, Tianjin University, Dalian University of Technology and Harbin Engineering University in China, ICOFFSHORE (Hanoi) in Vietnam, the University of Technology of Malaysia, the National University of Singapore, Pusan National University and Seoul National University in Korea, the University of Western Australia, National Taiwan University and National Kaohsiung Marine University, Universidade Federal do Rio de Janeiro in Brazil, the State Maritime Technology University (St Petersburg) in Russia and in France, Ecole Centrale de Nantes, Ecole Centrale de Marseille, ENSTA Panth and ENSTA Bretagne.

Working jointly with Harbin University, BV is developing a fully coupled analysis of deep water floating systems, which helps develop TLP/Spars/FLNG projects by delivering the latest in hydrodynamic modelling. With St Petersburg University, BV has developed IceSTAR, an impressive tool for modelling the response of structures to ice which will be made available to shipyards in 2011. Setting up active departments within universities and bringing academics into BV’s R&D teams is an extension of its collaborative approach.

Bureau Veritas R&D programmes were focussed on more energy-efficiency ships during 2010. There was a strong focus on safer and more efficient ships during 2010. Efficiency research included numerical modelling of hull and propulsion performance and of the energy networks on board, as well as performance monitoring at sea. Specific analyses were carried out on energy-saving devices such as pre-swirl stators and ducts, and on the benefits of air lubrication. One project examined the impact of fouling on the hull and propeller and another examined the means to develop energy from waste on board. Part of the same area was BV’s leadership of the new EU-funded Ulysses project which begins in 2011, working with Wartsila to develop designs for ultra-slow steaming.

Work continued on developing the HOMER software for shipyard use. It is an interactive tool for direct hydro-structure calculations in seakeeping. It calculates the dynamic response of ships and marine structures to the hydrodynamic loads. The prototype software is undergoing full scale validation with the instrumentation of a 13,300 teu ULCS. It will be partially incorporated into VeriSTAR Hull but may also be used as a stand-alone tool.

The VeriSTAR-HLC tool was further developed and validated to improve the life-cycle management for any marine structure.

The Ocean Basin at COPPE/UFRJ is equipped with sophisticated multi-directional wave generators and the deepest model basin in the world and we can use those to develop safe and clean technologies to promote deeper offshore energy exploitation. The projects will be mainly linked to the development of technology for the exploration and production of the recently discovered pre-salt fields in ultra-deep waters in the offshore Santos Basin in Brazil.”

PROFESSOR SEGEN FARID STEFEN
Director of Technology and Innovation of COPPE, Federal University of Rio de Janeiro

Case Study
“Our co-operation agreement with Bureau Veritas is a natural step which reflects the maturity of BV’s presence in Brazil and its willingness to join forces with the academic community to develop technology to the benefit of the industry and the country. The first development project is already under way, tackling some important aspects in the evaluation of DP (Dynamic Positioning systems) for oil shuttle tankers, in connection with off-loading operations offshore. We expect to see real useable tools and new software and technical developments to help get the next generation of floaters and deep water subsea systems on stream quickly and safely. The Ocean Basin at COPPE/UFRJ is equipped with sophisticated multi-directional wave generators and the deepest model basin in the world and we can use those to develop safe and clean technologies to promote deeper offshore energy exploitation. The projects will be mainly linked to the development of technology for the exploration and production of the recently discovered pre-salt fields in ultra-deep waters in the offshore Santos Basin in Brazil.”

Work continued to ensure BV’s leadership in sloshing studies, combining CFD with full scale tests, and the publication of guidelines on direct approach modelling accounting for hydro-elastic effects.

The VP9700/2010/2011

CASE STUDY

Bureau Veritas and Harbin Engineering University in China, ICOFFSHORE (Hanoi) in Vietnam, the University of Technology of Malaysia, the National University of Singapore, Pusan National University and Seoul National University in Korea, the University of Western Australia, National Taiwan University and National Kaohsiung Marine University, Universidade Federal do Rio de Janeiro in Brazil, the State Maritime Technology University (St Petersburg) in Russia and in France, Ecole Centrale de Nantes, Ecole Centrale de Marseille, ENSTA Panth and ENSTA Bretagne.

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Work continued to ensure BV’s leadership in sloshing studies, combining CFD with full scale tests, and the publication of guidelines on direct approach modelling accounting for hydro-elastic effects.
Three big influences made themselves felt in the offshore field during 2010. The first was the Deepwater Horizon incident, which caused everyone to re-evaluate their risk management strategies. The fallout is not yet clear but it will certainly lead to more sub-sea regulation and more demand for verification. The second was the rising price of oil, which moved upwards and carried the tide of offshore projects with it. And those two influences created the third big issue, which is a shortage of skilled engineers to develop projects safely.

Work on a number of FLNG projects proceeded. A fully updated set of Rules for Offshore Floating Gas Units was developed and published. The Rules cover structure design principles, hydrodynamics, design loads, hull girder strength, hull scantlings, local structural improvements, the cargo containment system, stability and subdivision, arrangements, access, ventilation and venting of spaces in the cargo area, equipment and safety particulars, topsides systems, transfer systems, piping systems, use of cargo as fuel, electrical installations and swivels and risers.

Major new contracts awarded to Bureau Veritas during 2010 included the classification of a new 1.8m bbl FPSO Clov, to be built at DSME for Total service off West Africa, and the Third Party Independent Verification contract for the Goliat field development project on behalf of ENI Norway. The Goliat contract covers the verification of the new Sevan type 1m bbl FPSO, the subsea production systems, the flow lines and risers and the electrification cable from land. This project located offshore northern Norway brings special challenges of sea conditions, cold temperature and winter darkness, remoteness and environmental issues.

The Petrobras 55 or P-55 will be the 13th floating platform in the world after installation, with approximately 105,000 t in displacement. P-55 will be the 7th floating platform classed by Bureau Veritas with the Brazilian oil giant Petrobras.

The 1.8m bbl FPSO Pazflor, built to BV class by DSME, Korea and delivered with a fully integrated AMS system in place.

All three influences created opportunities for Bureau Veritas, which worked hard during 2010 to strengthen its offshore teams, especially in Brazil and Houston, and to upgrade its tools such as Ariane and Hydrostar, to facilitate quicker and more comprehensive analysis of potential projects. At the same time operators were increasing their attention to maintenance of existing offshore units and infrastructure. BV reacted to that by upgrading its AMS (asset integrity management system) and developing Risk-Based Inspection systems to include topsides of units. A full set of guidance notes on risk-based verification and classification of offshore units was published.

A number of FLNG projects were coming to fruition, including the Prelude project for Shell off Australia, where BV provided technical assistance, FEED studies for Petrobras and Technip for an FLNG off Brazil, and the Russian high Arctic Shtokman project with BV supplying classification services to the project.

The Goliat contract is part of a trend bringing together the class and verification of whole projects under one third party body, and Bureau Veritas is expecting a number of similar contracts during 2011.

Another new trend, the increasing importance of local content, was illustrated by a FEED study for the Egina FPSO on behalf of Total Nigeria. In Brazil, work continued on the P-55 semi-submersible, which will be the world’s largest when delivered.

At the end of 2010, Total took delivery of the 1.8m bbl FPSO Pazflor, built under BV class in Korea and delivered with an AMS plan built around an integrated Maintenance, Inspection and Engineering system incorporating risk-based inspection for the entire unit, including topsides.
BULK CARRIERS

A volatile year for bulk carrier owners ended with ship values and rates depressed. But there were opportunities for cash-rich owners, and new ordering continued at a surprisingly high pace alongside a steady stream of new deliveries. Bureau Veritas concentrated on solving problems for owners and yards and on improving the energy efficiency and operational efficiency of the bulk fleet.

Two at Daewoo Mangalia, all by top rated European and Asian owners. During 2010 owners took delivery of 179 bulk carriers with BV class, totalling over 11m dwt. There were fifty-seven bulk carriers with BV class, totalling over 11m dwt. There were fifty-seven bulk carriers with BV class, totalling over 11m dwt. There were fifty-seven bulk carriers with BV class, totalling over 11m dwt. There were fifty-seven bulk carriers with BV class, totalling over 11m dwt. There were fifty-seven bulk carriers with BV class, totalling 177,000 dwt built by Shanghai Jiangnan Changxing Shipbuilding for Wah Kwong Ship Management.

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A new notation for single pass loading of ore carriers was developed, alongside a technical service for ship owners to verify structural strength for loading aground under the NAABSA (Not Always Afloat But Safely Aground) clause in charters.

A joint development project between BV and Korea’s HHI to investigate hydrodynamic loading on an ore carrier due to whipping and springing began. BV also worked with CSBC on hydroelastic and spectral fatigue analysis on a capesize bulk carrier design. The Bureau Veritas-led EU project Ulysses got underway, aiming to drastically improve the energy efficiency of commercial ship designs through a combination of ultra-slow speeds and complementary technology. The aim is to reduce bulk carrier GHG emissions by 30 per cent by 2020 and 80 per cent by 2050, compared to 1990 levels.

In the background, Bureau Veritas ensured that key personnel were taking an active role in the IACS working groups.

At the end of 2010 BV classed a fleet of 784 bulk carriers totalling 50m dwt, and had an order book of 448 vessels totalling 27.7m dwt. New orders during 2010 added 137 vessels and 10m dwt to the order book. The bulk of the order book now consists of handysize and handymax vessels.

Interesting new orders during 2010 included three 206,000 dwt capesizes for Ocean Freighters to be built at Jiangnan Changxing, and two sister ships for Greeno’s Diana at the same yard. Cardiff Marine ordered two similar ships from SWS. In the next size down, around 180,000 dwt, orders for bulkers to BV class were placed by Bocimar, Nisshin Shipping, Louis Dreyfus Armateurs, Oak Maritime and Wah Kwong.

Examples include seven 170,000 dwt capesizes for Enterprises built at Sungdong, four 114,500 dwt bulkers built for Norden at Shanghai Shipyard and two 75,200 dwt vessels for Conti built by Penghai Zhongbai Jingu. Groupe Bourbon subsidiary Setraf-Saget took ten 58,000 dwt handymax vessels for Yangzhou Dayang and BV was chosen to class two 57,000 dwt handymax vessels built by Nantong Jinhua.

A major new order was for fourteen 43,500 dwt and five 58,000 dwt bulkers for Setraf-Saget at Yangzhou Dayang. Western Bulk ordered six 37,000 dwt handysize at Hyundai Mipo. Kamsarmaxes were particularly popular, with eight new orders placed at Jiangsu Eastern, four at HHI and two at Daewoo Mangalia, all by top rated European and Asian owners.

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Tanker owners began 2010 confident that the worst was behind them. But by the end of the year prospects looked gloomy, with a young fleet and an order overhang depressing rates, ship values and new orders. There were bright spots in specialised sectors, and Bureau Veritas took a record number of orders for asphalt tankers, an area where it is the world leader. Brazil was another bright spot, with demand from Petrobras helping yards and operators with a foothold in the country. Behind the scenes Bureau Veritas continued to work hard in all the groups harmonising the Common Structural Rules for tankers and bulkers, ensuring that owners and yards got a fair balance in the new rules. BV also updated its emergency response service for tanker owners, adding a video conference facility. Work progressed on a new CAP tool to help owners get and use CAP reports quickly. Conscious of the pressures on tanker owners, BV was keen to develop tailor-made operational support services, and Maersk Oil North Sea Ltd UK came to BV to devise and implement an audit scheme for the Knutsen shuttle tanker fleet operating to Maersk in-house requirements.

BV’s strategy of building a diverse fleet means it has a good representation in all sizes and types of tanker. At the year-end it classed over 1,000 tankers with an average age of 9.25 years. At the top end that included sixteen VLCCs, while in handy chemical and specialised tankers under 60,000 dwt BV classes over 28 per cent of the world fleet. At the end of 2010 BV was classing 370 tankers being built around the world, around 24 per cent of the global total. These included fifteen VLCCs, thirteen suezmax vessels and 328 handy chemical and specialised tankers, almost half the world order book for this type of sophisticated vessel.

Examples of new orders in 2010 were two 316,000 dwt VLCCs to be built at Hyundai Heavy Industries (HHI) for TMT, the 163,000 dwt suezmax Tony built at New Times for Dynacom, and three 6,700 dwt tankers built for American Eagle Tankers at Okskaya Sudoverf, Russia, for Caspian Sea service. There were a lot of deliveries in the chemical and specialised sector including a 9,200 dwt asphalt carrier built in Croatia for Thome.

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LNG operators were waiting for shore infrastructure to catch up in 2010, so there were few orders for new tonnage. LPG operators fared better and confidence came back into the market. By the year-end, confidence was coming back into LNG markets again as demand relating to floating terminals and offshore installations picked up, and gas-fuelled vessels began to be seen as the future.

Yards were busy delivering a stream of completed tonnage to BV class and looking to the future for new developments. Bureau Veritas was there to support owners with the new vessels, and to work with the yards and operators on new projects. There was a lot of activity on new containment systems for LNG, and BV were busy working on the approval of containment systems for Nordic Yards, suitable for both the carriage of cargo on LNG carriers and for the storage of LNG as a fuel, on the SPB system aimed at FLNG units, the KOGAS KC1 system for cargo tanks and the DSME Type B system for fuel tanks.

BV chaired one of the working groups on the revision of the IGC Code and participated in the on-going development of the IGF Code for gas-fuelled vessels. While LNG orders were muted, ordering for LPG vessels was strong. During 2010 Bureau Veritas was entrusted with the class of eighteen new orders for LPG vessels totalling 154,300 cu m. These included eight vessels between 4,000 and 12,000 cu m to be built at the Promar Shipyard, part of the STX group, at a greenfield site in Brazil, for Petrobras subsidiary Transpetro, and three 7,500 cu m vessels for Elcano to be built at Brazil’s Itajai yard for a Petrobras charter. Outside Brazil, orders were for two 22,500 cu m and two 3,500 cu m LPG carriers for Indonesia’s Pertamina to be built at HHI and Taizhou Wuzhou and three 6,600 cu m ethylene carriers to be built at Dinghong Jiangsu for Anthony Veder.

Eleven LPG vessels were delivered to BV class, including two 22,500 cu m vessels for Maersk built at HHI and three similar vessels built for Naftomar of Greece. Chemgas took two 2,700 cu m vessels from hogau Grueningen; Geogas took one 5,000 cu m vessel from Kannö Zosen and Naftomar took three 16,500 cu m vessels from Yangzhou Dayang.

At the end of 2010 Bureau Veritas was classing fifty-five LNG carriers totalling over 7.4m cu m and had nearly twenty per cent of the world order book of LNG carriers building to its class. The BV-class LNG fleet totalled 181 vessels and there were a further 26 vessels on order, giving BV a substantial global market share. Six major LNG carriers were delivered to BV class during 2010. These included the 165,000 cu m Maersk Meridian with membrane Mark III containment system and steam turbine propulsion were built for AP Moller by Samsung. The Expedient and the Exemplar, two 150,900 cu m LNG-RV vessels with membrane Mark III containment system and DFDE propulsion built for Exmar at DSME, Korea’s HHI built the Abdelkader and the Ben Badis, two 177,000 cu m vessels with membrane Mark III and DFDE propulsion for Japanese major MOL, and the Castille de Santos, a 173,000 cu m LNG carrier built by STX. This is the first major LNG unit built by STX in Korea.

The 173,600 cu m LNG carrier Castillo De Santisteban was delivered in 2010 by STX Offshore & Shipbuilding to Empresa Naviera Elcano.

The 22,500 cu m LPG carrier Gaz Fraternity was built by HHI for Greece’s Naftomar.

The 150,900 cu m LNG-RV Exemplar built to BV class for Exmar/Excelerate by Korea’s DSME, the last of an eight-vessel series of LNG-RV ships.

CAPT MARC NUYTEMANS
EGS Exmar Shipmanagement, Antwerp

Case Study
“Exmar is a pioneer in LNG technology in the marine environment. Our LND-RVs eliminate a blockage in the value chain for LNG by cutting out the need for a shore installation and storage plant. We are using proven technology, but we are ahead because we have found new ways to do things with plant already in use ashore and with ship types already sailing. We are a dynamic and proactive company and we look for the same qualities in our service partners. Our partnership with BV gives back a long way and is based on forward planning and reliability and on BV’s proactive capability. BV has been an extremely reliable partner for us in bringing the LND-RVs to market and in helping us to harness innovative ways of doing things. We look forward to them partnering us on new LNG developments.”

CAPT MARC NUYTEMANS
EGS Exmar Shipmanagement, Antwerp

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GAS CARRIERS

LNG operators were waiting for shore infrastructure to catch up in 2010, so there were few orders for new tonnage. LPG operators fared better and confidence came back into the market. By the year-end, confidence was coming back into LNG markets again as demand relating to floating terminals and offshore installations picked up, and gas-fuelled vessels began to be seen as the future.
Container ship operators began to feel confidence returning during 2010, but there was no rush to order new vessels. Operators were busy absorbing the steady stream of newbuildings being delivered, and trying, with shipyards, to look beyond the current crisis and foresee what ship types and sizes would be required for the future. Bureau Veritas was there to help yards and owners, developing advanced hydrostructure tools for the design analysis of ultra-large container ships. BV took joint development project between BV and Korea’s HHI to investigate hydrodynamic loading on a container ship due to whipping and springing. A full-scale measurement campaign between BV, CMA CGM and DSME began on a 13,830 teu container ship.

Looking at energy efficiency and environmental protection, BV worked on the development of LNG-powered container ship designs, including a 1,000 teu Baltic feeder with low-pressure DF Diesel. BV was classing 297 container vessels totalling 875,000 teu and had thirty-nine vessels of 207,000 teu building under its class. Eighteen of the newbuildings are post-panamax vessels of over 3,000 teu, of which eleven are over 10,000 teu. Significant orders in 2010 include two 2,800 teu fully cellular container ships at Hyundai Mipo and four 27,000 dwt multi-purpose dry cargo/container ships at Taizhou Kouan, all placed by Pacific International Lines to BV class.

2010 was a big year for deliveries, with twenty-three new container carriers coming into service with BV class, totalling 158,000 teu. That included eight ULCS, four 13,830 teu vessels for CMA CGM from DSME and four 11,354 teu vessels for CMA CGM from HHI. CMA CGM also took two large vessels each from Samsung and Hanjin. Cardiff Marine took delivery of a 6,477 teu vessel from Hanjin, and Chartworld took four 3,650 teu vessels from Hanjin Philippines. German owners took five 1,000 teu vessels from Jiandong & Sainty Yangzhou, and Dongkuk Marine took a 1,080 teu vessel from Japan’s Hakata yard.

An interesting delivery involved two refrigerated cargo/container vessels built for Dutch reefer major Seatrade by Kitanihon, the Baltic Klipper and the Atlantic Klipper. With a length overall of 165 m, the ice class 1B vessels have a cargo carrying capacity of 636,600 cub ft and a service speed of 21.5 kn (banana laden). With a container capacity of 503 teu these modern ships are extremely flexible and efficient.

In tough times, owners turn to a class society which can offer support. Owners in Germany, the Netherlands and Greece moved nine modern vessels to BV class, including the 809 teu Flintercrown for Flinter, the 868 teu Vitality for Dioryx, the 997 teu Vega Aquila for Vega, the 1,043 teu Dora C for Cosmoship and the 2,544 teu Vitality for Diorca. Leadership of the European project TULCS to improve knowledge of the behaviour of the structure of ULCS and also participated in the WHIPPY joint industry project. Work continued on a
Cruise and ferry operators were cramped for finance for new projects during 2010, which led to a tough year for the major passenger ship building yards. But as the year ended there were signs that new projects were coming forward. As the global economy improves, a series of new orders for large cruise ships and major ferries is likely. Yards need support to be ready for that, which Bureau Veritas gave readily.

The first vessel to be ordered under those regulations during 2010 was a 3,200-passenger ro-pax for Tunisia’s Cotunav, to be built at DSME, Korea, to BV class for 2012 delivery. A completely new design, it will be the largest passenger ship ever built in Korea and will have capacity for 1,040 cars in addition to the passengers. It follows orders at DSME for two BV-class.

The big change will be that the new vessels will all be new designs and have to comply fully with IMO’s Safe Return to Port regulations. The first vessel to be ordered under those regulations during 2010 was a 3,200-passenger ro-pax for Tunisia’s Cotunav, to be built at DSME, Korea, to BV class for 2012 delivery. A completely new design, it will be the largest passenger ship ever built in Korea and will have capacity for 1,040 cars in addition to the passengers. It follows orders at DSME for two BV-class.

Although it was a quiet year for new orders, deliveries were still coming on stream. MSC Cruises took delivery of the 3,200-passenger MSC Magnifica from STX St Nazaire. The vessel was awarded the Six Golden Pearls for its all-embracing integrated approach to health, safety and environmental protection. Italy’s Fincantieri Ancona delivered Le Boreal, a 264-passenger luxury small cruise vessel for France’s Compagnie du Ponant. The energy-efficient vessel will be followed shortly by a sister ship. And at Fincantieri Sestri, Miami-based Oceania Cruises took over the 1,395-passenger upper/premium cruise vessel Marina. This vessel built to BV class is among the first ones approved fully on the basis of probabilistic damage stability criteria.

In Spain the Barreras yard was active, delivering a series of large ro-pax ferries for Spanish ferry companies. The 900-passenger Abel Matutes completed a series for Balearia, and the 1,450-passenger and 3,100 lane-metre Volcan del Tode, built for Naviera Armas, was the largest and most powerful vessel yet to come out of the yard.

During the year Bureau Veritas was active working with yards and IMO to secure interpretations of the Safe Return to Port regulations, and it up-dated the notation “AVM-IPS” to be in line with machinery redundancy as now required by SOLAS.

Detailed research and development with yards was carried out into the use of LNG on cruise ships, as a main fuel for ferries and short-haul cruise vessels and also as a potential alternative to low-sulphur fuel for manoeuvring and cold ironing in port for larger or longer range vessels. BV is working on several new projects for passenger vessels which could burn LNG in port or near port areas but switch to heavier fuels when on passage. There is also an ongoing research project to develop fuel gas from waste on board.

Energy efficiency for passenger ships was in the spotlight, and Bureau Veritas worked on tools such as Green Rating to help owners to quantify energy use and rate vessels ahead of the Energy Efficiency Design Index expected soon from IMO.

PASSENGER SHIPS

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The market for more sophisticated Offshore Support Vessels and tugs grew strongly in 2010. OSV builders and owners face challenges as oil majors push for ever more sophisticated ships with higher specifications in terms of required power and redundancy, yet also requiring increased fuel efficiency and the ability to handle more complex and hazardous cargoes such as new drilling compounds.

BV’s focus on tugs and OSVs led to an increased number of owners transferring fleets in service to BV class. A key development has been the drafting of rational design and operation of tugs, a joint project to create a new set of rational rules were presented by BV at ITS conference in Vancouver in May 2010. Feedback from the tug industry has been extremely positive and an ability to handle more complex and hazardous cargoes such as new drilling compounds.

At the end of 2010 BV’s classed fleet of tugs grew to 5,935 tugs in service and a newbuilding order book of 301 vessels. New orders for towing vessels reached 125 vessels, while 139 new tugs were delivered. In the OSV market, BV new classes 323 supply vessels and has another 102 on order, including forty-one orders for new vessels placed during 2010. Significant deliveries included two 90 tonne BP Robert Allan-designed offshore tugs for Smit built by Keppel Nantong, five 70 tonne BP ASD escort tugs for Smit built by Uzmar and the first of a series of four 78 tonne BP Damen-designed ASD escort tugs for Laminaco built by Songcam in Vietnam. Two 50 tonne BP Aker Arctic-designed shallow-draught ice-breaking tugs were delivered to JSC Circle Maritime Invest by STX RT Offshore Bralisa, and two 76 m / 2,000 dwt IMR vessels for Bourbon Offshore were delivered by Socarenam. Bourbon Offshore also took the 2,900 dwt PSV Bourbon Gulf Star from Zhejiang Shipbuilding as well as the Bourbon Artabaze, a 120 tonne BP / 2,100 dwt Conon Wu-designed AHTS from Bharat. Guangzhou Dredging delivered the 85 m / 2,000 dwt IMR vessel Mamola Serenity to Promar, while Damen Galati delivered the 120 tonne BP / 1,800 dwt AHTS 6615 Med Dicie to Med Offshore.

Interesting new orders included a new series of twenty 80 tonne BP / 1,800 dwt Sinopacific-designed AHTS for Bourbon Offshore, a further 120 tonne BP 2,100 dwt AHTS for Great Offshore at Braila and five 33 tonne BP / 870 dwt icebreaking tugsupply vessels to be built for Wagenborg. Smit brought the 65 tonne BP Damen ASD tug Smit Humber, two 47 tonne BP ASD tugs and the 59 tonne BP Damen ASD tug Smit Martinique into BV class, while Laminaco put two 90 tonne BP / 940 dwt AHTS into BV class and Alam Maritim chose to move two 66 tonne BP / 1,000 dwt AHTS into BV class, as did the Omni Group for its newbuilding 70 tonne BP / 1,700 dwt.

As the vessels have got larger and more powerful, BV has made big efforts in using 3D Finite Element Analysis and advanced fatigue assessment tools to ensure the structural reliability of the sophisticated new designs. Cutter suction dredgers have seen a big increase in the effective cutter power. One of the key issues with such large installed power is the control of noise and vibrations. BV’s subsidiary Tecnitas has a proven track record in the prediction of vibration levels and the mitigation of associated problems, in particular for dredgers.

The global dredging industry continued to develop ever more powerful and sophisticated vessels during 2010. Today’s vessels must be able to operate in both deeper and more exposed waters, with dynamic positioning for hopper vessels for improved manoeuvrability and operational precision. Another important development is the optimisation of the hull shape of hopper dredgers through the application of extremely wide bulbous bows, in order to improve trim control and maximise payload while at the same time minimising operating draught.

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The dredging industry is pushing its frontiers towards higher efficiency, lower environmental impact and the deployment of new and advanced technology, Bureau Veritas, as the global leader for the classification of dredgers, is stepping up the application of environmental protection tools such as the CLEANSHIP family.

In 2010 the active fleet of dredgers classed by BV reached 542 vessels, while the order book at the year end stood at eighty-three. There were thirty-three new orders in 2010, and forty-three new dredgers were delivered by BV class.

Significant deliveries included four 2,850 cu m split hopper units for Van Oord built at China’s Dalian Liaonan, two 12,000 cu m hopper dredgers for Boskalis built by IHC Merwede, the VoX Maxima, a 31,10 cu m hopper dredger for Van Oord built by IHC Merwede, the Leiv Eiriksson, a 44,000 cu m hopper dredger for Jan De Nul built by Construcciones Navales del Norte. In addition, Jan De Nul took delivery of the innovative 35,930 dwt fall pipe/rock dumping vessel Simon Steven from Construcciones Navales del Norte, three 1,800 cu m split hopper units from Tianjin Xinhe and two 23,500 kw self-propelled cutter dredgers from Croatia’s Uljanik Shipyard.

Interesting new orders included the 24,450 kW self-propelled cutter dredger Artemis, to be built for Van Oord at IHC Merwede, an 11,000 cu m hopper dredger and a 28,000 kw self-propelled cutter dredger for DEEM, both to be built at IHC Merwede. Boskalis chose Bureau Veritas to class a 24,000 dwt fall pipe/rock dumping vessel to be built at KeppeL Singmarine, and Jan de Nul has entrusted BV with the classification of two 7,500 cu m hopper dredgers and a 6,500 kw side stone dumping vessel to be built at STX, as well as two 14,000 cu m hopper dredgers to be built at Uljanik Shipyard.

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WARSHIPS

During 2010, Bureau Veritas was entrusted with the classification of three new 21,600 tonne Mistral-class force projection vessels. Two are for the Russian Navy, ordered at DCNS/STX Saint-Nazaire, and the third is for the French Navy under a joint DCNS/STX agreement. Bureau Veritas is also continuing to classify the first two vessels built of this class, the BPC Mistral and BPC Tonnerre, both having undertaken their third annual survey. The versatile vessels can carry 700 troops and 16 helicopters.

New rules for naval auxiliaries were developed for the French DGA, to provide a framework for a new generation of fleet support vessels. The rules will be published in 2011 and apply traditional tanker class rules to the oil cargo tank area, and special purpose rules in other areas. Ammunition handling requirements are adapted from BV’s naval rules.

The Indian Navy tasked Bureau Veritas to class fifteen fast interceptors, 13 m loa craft capable of 50 knots, to be built at the French Couach yard, and the Romanian police service chose Bureau Veritas to class a 66 m loa patrol vessel to be built at Damen Galati.

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In 2010 Bureau Veritas extended its commitment to marine renewable energy, establishing a special team to work on wind, tide and wave power generation offshore.

BV is a founding member of the HiPRWind consortia of nineteen European companies which are working with EU funding to stimulate market development in floating wind technology.

A key initiative was to develop and publish guidelines for the Classification and Certification of Floating Offshore Wind Turbines. The guidelines specify the environmental conditions under which floating offshore wind turbines may serve the principles of structural development and provide a knowledge platform for future development and for reliability and maintenance of new fields now under development. There are nineteen complementary partners in the HiPRWind project, strong industry participants supported by research institutes and universities. Bureau Veritas is a key industrial partner and is helping with the design to ensure that the structure is built and installed on time and safely. They are skilled and open minded, and show real commitment to making things happen.”

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Demand for consulting services in 2010 was concentrated in two areas, offshore energy and the environment. Shipowners were cutting costs but Tecnitas was able to deliver cost-effective services to owners and expand its services in new countries.

In the offshore field, a significant contract was for the full design of suction anchors for the Clov FPSO, building at DSME for Total service off West Africa. Tecnitas is also providing a finite element and design study for the mooring system appurtenances for Clov.

Asset Integrity grew in importance and the HLC 3D viewer was combined with the BV AIMS system, which now covers over 100 offshore units.

Groupe Bourbon tasked Tecnitas to carry out a critical analysis of its fleet of OSVs. The aim is to identify potential critical areas and put in place a strategy to focus surveys.

Tecnitas has long experience with analysing risers, and that was focused this year to develop a methodology which would provide independent analysis of flexible risers and the fatigue process. The Deepwater Horizon incident has focused attention on subsea components and, with longer risers in deeper waters, more verification is required to control risk. Tecnitas is now well placed to provide both and design assistance for deepwater risers.

In Greece Tecnitas carried out the feasibility study for the conversion of the tanker Cap Diamant into an FPSO and in Turkey Tecnitas began a new service providing shipyard newbuilding supervision for a Turkish shipowner building in Far East yards.

Traditional Tecnitas expertise in noise and vibration was in demand from Chinese shipyards, and close to home for the specific analysis of the best cabins on a major new inland cruise vessel. The 135 m Dutch Shipping new cruise vessel will have the best cabins on the aft quarters, with double views, but as these are closest to the machinery then flexible mountings are required to reach the tough maximum noise levels permitted.

In the renewable energy field Tecnitas carried out several risk assessment studies for offshore wind farms in the Channel and Mediterranean, looking at traffic impacts, potential pollution from a collision and local impacts.

In the gas field Tecnitas carried out permitting assistance for a proposed Caribbean FSU project.

In the environmental field, work progressed on developing better tools for owners, yards and charterers to assess the energy performance of vessels. A new energy efficiency software tool will be rolled out for owners during 2011.

Getting rid of old ships cleanly was a major task. Around seventy ships are to be taken out of service for the French navy, which created demand for Tecnitas to carry out full studies of the vessels in order to provide Green Passports and to support the tendering process for dismantling. These included major fleet units such as the Jeanne d’Arc helicopter carrier. And supplying Green Passports for new ships, including a gas carrier, continues to grow as owners realise it will be required in the future.

NIELS FUHRMANN
Project Director, Gasfin Development SA

Case Study
“Gasfin is an independent developer and operator of mid-scale LNG solutions across the LNG infrastructure chain from liquefaction to shipping, storage, regasification and local distribution. Gasfin possesses all the required resources to scope, configure, negotiate, finance, deliver and operate green-field mid-scale LNG infrastructure. Bringing gas from remote reserves or supplying gas to smaller markets is challenging because we are always breaking new ground. We are working on an FSRU project in the Caribbean and we chose to use Tecnitas to provide technical assistance for the permitting process. This includes the performance of a range of studies, HAZID/HAZOP, environmental impact assessment, safety studies and preparation of dossiers to be submitted to the administration. Bureau Vertias has the LNG experience and competence and Tecnitas has the permitting experience we need. Things are going along well and support from BV has been great.”
Although the economies of North Europe were still recovering in 2010, there was strong growth globally in inland navigation activities. Bureau Veritas saw both its classed fleet of inland vessels and its order book grow strongly. Demand grew from countries such as Egypt, Brazil and Serbia as the authorities in these countries increasingly recognise the value of class for their inland fleets. Bureau Veritas extended its national delegations in the Netherlands, where it now carries out inspections on behalf of the Dutch authorities, and entered new agreements in a wide range of countries.

A key theme of the year was the extension of deep-sea voluntary notations and software to cover inland navigation requirements. Green Passport was introduced, to provide owners with a list of hazardous materials in the vessel’s construction, and the Cleanship family of environmental notations covering all emissions was extended to inland vessels. New software included VeriSTAR-CHEM to help owners and charterers manage ADR products, and MARSINLAND to help designers and yards by providing the scantlings for transverse sections of inland vessels to meet BV’s recently revised rules for inland navigation vessels.

In total, 113 new orders were entrusted to BV during 2010, including twenty-five passenger vessels and thirty-one tankers. Looking forward, BV will develop new rules for specific inland waters requirements, including floating establishments, Harbour Equipment such as floating dock doors, and an integrated system to recognise the qualities of the new generation of environmentally friendly vessels.

Interesting deliveries in 2010 included the cement carrier 51 m loa Sandre for CFT, built in Romania’s ATG Giurgiu shipyard, the 322-passenger Bellini, and the 440-passenger Rossini accommodation barges for Caspian Sea service in Kazakhstan, built by De Hoop. The tanker double hull vessel Sempachersee, built by Teamco Shipyard BV (Netherlands) for Befrag AG.

The tanker double hull vessel Sempachersee, built by Teamco Shipyard BV (Netherlands) for Befrag AG.

The first inland navigation tanker which is also able to operate along the Belgian coast was delivered, built to BV class. The New York is 125 m loa and can carry 4,560 cu m of cargo. Passenger vessels for inland cruising have been growing in size and complexity. The Egyptian fleet has grown especially quickly, with 45 vessels undergoing classification during 2010. In Europe, two luxurious vessels of 135 m loa were being built to BV class, the Alina for Scylla Tours, built in Vahali, Serbia, and the River Antoinette, being built for Uniworld at the De Hoop yard in the Netherlands, for Rhine cruising. Another new order was for the passenger vessel Douro Spirit, for service on Portugal’s Douro river, built in Navalria, Portugal.

INLAND WATERWAYS