BP Shipping

safeships

our commitment to safety in the shipping industry

be the best | raising the bar | working with partners | safety achievements | boots on deck | sea staff workshops
Safe ships. It’s at the heart of everything we do, as our core values state so clearly: safe ships, clean seas, commercial success. For each and every one of us it is paramount that we maintain our focus on safety at all times.

It is, therefore, with great pleasure that I introduce to you a publication that sets out to explain thoroughly what BP Shipping’s safety charter is all about. ‘Safe Ships’ essentially is about you, the seafarers and shore based staff who work for BP Shipping and exemplify our safety values every working day.

In this publication we talk about our safety principles and goals, our processes and our performance. We also seek to show how the various parts of our organization ‘live and breathe’ safety, how individuals and ships put safety values into action, how we work with our partners to raise safety standards, how each one of us has an important role to play and how, as an organization we are striving to become truly world class in our safety performance and culture.

Although BP Shipping is already (arguably) a safety leader in the shipping industry today, we still have some way to go to achieve world-class performance. We also have a responsibility to keep raising the bar in terms of our pursuit of safety excellence.

As your new CEO I want to emphasize clearly that safety is unambiguously our number one priority in BP Shipping. Safety is not something that is redefined each time a new person assumes responsibility for an organization. Instead it is, and should be, a lasting and integral part of an organization, part of its very fabric and being. Ultimately it defines our licence to operate.

Moreover, in BP Shipping, safety is part of the core framework and mission statement of our organization. The fact is that our activities represent one of the BP group’s biggest HSSE and financial risks. We have also been designated the centre for marine excellence within the BP group. As such, we are not only responsible for the safe and environmentally sound transportation of hydrocarbons but also for devising safe and responsible shipping solutions in support of group strategy across all parts of the BP group. We must be relentless in our pursuit of safety excellence.

As Lord Browne, our group chief executive, stressed recently to employees in Sunbury, the BP group’s top priority is safety and operational integrity. Nothing is more important. Lord Browne also noted that in the past two years the group “has fallen short of the high expectations it sets for itself” following major HSSE incidents such as the Texas City explosion and the oil spills in Alaska. “We are finding out what has gone wrong and putting things right,” he said, “and we will learn from our mistakes and emerge a stronger company. We’re confident. We’re carrying on…” I was talking to a small group from BP Shipping recently and they responded like this, “We’re undertaking repairs on the voyage. We’re doing some repairs en route, but we’re still on the voyage.” An appropriate and important analogy I think.

I hope you all learn something useful from ‘Safe Ships’ and if you take only one thing away with you from this publication I trust it is this: BP Shipping means what it says about safety.

Safety is ultimately all about people and how they carry out their day to day accountabilities – and there is no one more important to BP Shipping’s safety performance than you.

David Baldry
Group Vice President and CEO of BP Shipping

Over the past couple of years BP Shipping has been working to create a renewed and sustainable safety culture that is capable of taking safety performance to a new level across the organization.

Our intention with this publication, the accompanying film and the discussions all of you will be having about safety in the coming weeks on your ships or in our offices around the world, is for everyone who works for BP Shipping to refocus their energies behind the shared objective of reducing accidents and incidents.

Safety applies to every operation we perform, anywhere in the world. Whether preventing catastrophic incidents through integrity management or eliminating personal injuries and equipment damage through control of work, our goal is nothing less than an accident free, injury free operation. Every single action that each of us takes, whether at work or in any part of our daily lives must include and reflect our core value of safety.

We start this journey from a firm base. Across the BP group there is a common commitment regarding safety. Safety, for all BP employees and contractors, is about people finishing their working day in the same healthy state as when they started it.

In BP safety is the responsibility of individuals working together as part of a team. There are many people to help us as individuals, such as masters, fleet safety training officers and workshop trainers. We also have the necessary procedures and practices designed to lessen the risk of a safety incident.

Ultimately, though, safety is down to each one of us at whatever level we work. Today we are building an organization in which every single person in BP Shipping is empowered and entitled to call attention to any unsafe act, to stop working until the situation is resolved and to do so without fear of any adverse consequences.

We are determined to ensure that the integrity management of our operations remains a key focus. This means, in particular, that each of us must be certain that the equipment we use or are responsible for, is fit for purpose and in safe working condition. We are also doing everything we can to ensure that all those who work for BP Shipping receive the proper safety training to perform their tasks to the best of their abilities.

Some complain about ‘safety message overload.’ However, statistics bear out that whenever people are not reminded about the importance of safety, that’s when accidents are likely to happen.

It is our hope that this publication will provide you with the background and context as to why safety is so vitally important. ‘Safe Ships’ will provide you with information on the many ongoing efforts to help improve our safety performance and further us on our journey towards a world-class safety culture.

We are always open to new ideas about safety, so should you wish to comment on anything you read in ‘Safe Ships,’ or to offer specific suggestions, please contact BP Shipping’s safety adviser, Paul Manzi. He can be reached at Paul.Manzi@bp.com or on +44 (0)1932 771678.

We hope you enjoy reading this, please share it widely with colleagues and friends inside and outside the organization.

Sylvia V. Baca
Global HSSE and ER Director

David Baldry
Group Vice President and CEO of BP Shipping
developing a world-class safety culture

On the face of it, BP Shipping is one of the safest tanker operators around, regularly achieving top quartile safety results in the industry and rarely making headlines for the wrong reasons. But as the organization’s fleet has grown rapidly to more than 80 vessels today, so the realization has spread that truly world-class safety performance is about more than lowering headline safety numbers or beating industry benchmarks.

For safety performance to really move to a new level, it has to become self sustaining and therefore sustainable. “Day in, day out, the safety message has to be made and remade so that it becomes engrained at every level everywhere, in every action, in every decision and in every way. The entire organization has to be safety empowered and constantly on the lookout for new hazards,” says Dave Williamson, director of fleet operations for BP Shipping. “We’re beginning to make the turn towards constant improvement and the sort of restless state of mind that we need, but there is still some way to go.”

In the past, most emphasis has been put on numbers and performance based on: “days away from work case” incidents, lost time injuries, near misses, oil spills and other serious incidents. These performance matrices continue to be monitored very closely and show continuous improvement.

But now the push is on to move safety performance to a small measure and operational refinery explosion in some parts of the cultural and operational factors that led to the Texas City refinery explosion in 2005 might be present in the cultural and leadership. Williamson concludes: “At the moment we’re not able to say we’re the best, we still have areas where we believe there is significant room for improvement. But ‘the best’ is a relative state and safety is a never ending journey. My sense is that we’ve made significant changes and advances in the past couple of years.”

Intrinsic to this more open approach is the importance of driving safety back into the ‘line’ – to people with asset management capability. In parallel, new emphasis is being placed on safety leadership on vessels and ashore to engender a stronger sense of inclusiveness and team bonding around safety behaviour.

“Safety is not just about trips or falls. It’s about exactly the same things you also need to achieve great operational performance and the same motivations that give us the continuous drive to have the best people, processes, equipment and leadership.” Williamson concludes: “At the moment we’re not able to say we’re the best, we still have areas where we believe there is significant room for improvement. But ‘the best’ is a relative state and safety is a never ending journey. My sense is that we’ve made significant changes and advances in the past couple of years.”

BP Shipping health, safety and security charter

BP Shipping fully supports and endorses the BP group’s HSS policy and commitment to HSS performance. We will deliver HSS performance by meeting the goals and objectives contained in the BP group HSSE Functional Standards, Code of Conduct and the BP HSSE Management System Framework, the requirements of the International Safety Management (ISM) Code, the International Ship & Port Facilities Security (ISPS) Code and the International Standard ISO 9001 ‘Quality Assurance’.

BP Shipping’s commitment to the environment and clean seas is documented in the BP Shipping Environmental Charter.

What you can expect from BP Shipping:

- Minimize risks to the health and safety of employees and contractors through evaluating the risk and establishing safeguards in relation to all hazardous activities.
- Provide a secure working environment by protecting people, assets and our operations against the risk of injury, loss or damage from criminal or hostile acts. Utilize safe and proactive operating practices to protect all aspects of the environment from harm.
- Establish clear HSS objectives, identify roles and responsibilities and establish performance measures that lead to a continuous improvement in our HSS performance.
- Ensure that business activities are in full compliance with all legal requirements and are conducted in accordance with best practices and established guidelines put out by industry bodies of which we are a member, strive where possible to meet legislation early, and exceed compliance requirements.
- Provide and maintain a safe place of work free from abuse of alcohol and the use of illicit drugs.
- Continuously improve HSS management skills of personnel ashore and onboard ships, including preparing for emergencies related to health, safety and security.
- Keep our documented HSS management system under review to ensure it is current and relevant.
- Ensure that the company HSS charter and performance is freely available to the public and other interested parties upon request.
- Influence our contractors and others to share our commitment to sound HSS performance.

What BP Shipping expects from employees and contractors:

- Work safely as a condition of employment.
- Understand and comply with our HSS charter and procedures.
- Report any accidents, incidents, or unsafe conditions.
- Actively participate in proposals or strategies designed to prevent accidents and thereby protect the environment.
- Work towards achieving continual improvement in our HSS performance.
- Have a working knowledge of emergency response procedures.
Most things in life carry a risk: crossing the road, flying by plane, even walking the dog. Most risks can be assessed and quantified and BP Shipping’s operations are no different.

**assessing risk**

With the roll-out of a raft of acronyms in 2006 and 2007 such as: GMOS (Group Marine Operating Standard), MAR (Major Accident Risk), RAMMS (Risk Assessment Model for Marine & Shipping), HI (Hazard Identification) and JHA (Job Hazard Analysis) very little undertaken at any level in BP Shipping in the future is likely to escape specialist risk and mitigation evaluation.

Conceptualizing this basic framework proved a tough challenge, says Linh Austin, BP Shipping’s global strategy manager. Eventually a risk framework pyramid was devised that ties everything together in a way that links the BP group risk standard, optimal solutions, commercial security and risk assessments associated with a specific activity such as a voyage.

The objective has been to identify the risk exposure of BP Shipping’s operations to the BP group and to prioritize mitigation efforts at various levels. Risk is defined as the probability of an incident multiplied by the consequences.

At the heart of this undertaking is RAMMS. This model creates a common definition around risk that can be shared across BP Shipping by charterers, deck officers, new build architects, operations managers and many others. Designed to ensure that whatever is created around risk aligns closely with BP group levels of ‘riskiness’, it also identifies appropriate actions to mitigate risk.

Built from scratch in 2005, RAMMS occupies a huge Excel spreadsheet more than 40,000 lines long. Almost every possible shipping permutation is listed, assessed by various criteria and given a relative ranking. “RAMMS allows us to be systematic, efficient and consistent in our assessment of shipping and marine risk to the BP group,” says Austin.

Most of the 900 or so marine movements undertaken each day during 2005 across the BP group reside within RAMMS. “Essentially RAMMS is a tool to help us prioritize our focus and resources and is consistent with MAR,” Austin notes.

For its part MAR provides the BP group context against which BP Shipping’s safety performance can be evaluated to see how it compares to BP group performance levels. An MAR review in October 2006, for example, analysed fatalities to crew and third parties and also the risks to the BP group from pollution.

The MAR process also acts as a tool to reduce risks by identifying areas that require improvement. In the 2006 MAR review areas included those where progress was already under way (such as the move to a global double hull policy for all vessels), some that required industry wide support to be advanced (higher standards for the cabotage fleet) and some that are still to be fully implemented (BP Shipping’s commitment to transport at least 50% of BP group hydrocarbon cargoes on BP owned, operated and time chartered ships).

MAR is complemented by GMOS which covers operating standards for everything that floats in the BP group, from ships to FPSOs as well as ferries, barges and tugs. The purpose of GMOS (which is to be rolled out across the BP group in 2007) in the words of Martin Shaw, manager of group marine standard implementation, is “to promote marine standards within the BP group.”

HI and JHA, in contrast on the safety risks associated with life on board a ship. “Both are part of the Control of Work (CoW) standard being introduced across the BP fleet,” explains fleet safety training officer, Tony Clark. “The objective is to reduce the risk to which our workforce is exposed and the potential for harm to others.”

The new CoW standard is defined by monitoring the performance of a specific task. Suitably trained staff undertake this assessment and the standard will be audited later by an independent review to verify conformance and to measure the status and effectiveness of the system against its goals.

Both HI and JHA are flexible processes. Lessons learned can be incorporated in each JHA and highlighted on each CoW standard audit to ensure that action items are tracked and completed. JHA is designed “to get the people who are actually carrying out the work more engaged – to encourage thinking outside the box,” says Clark. Priority areas include physical hazards, equipment, resources and environmental hazards.

Austin agrees these risk models may seem theoretical, but as he puts it: “What they’re all about is creating a common definition around risk that all of us can share in BP Shipping. We can now make the most appropriate choices for every distinct marine and shipping action, which is a big advance.”

The range of marine risk

**Total risk index**

- A VLCC, with persistent oil on the US West Coast
- 37K, carrying non-persistent oil on UK Coast
- Intermediate class vessel, carrying gasoline in the South China Sea
- Ferry boat, Baltic
- Dive boat, Sea of Japan
- A rig supply boat, off the Angolan coast

**indicative...**
BP Shipping uses four main metrics to measure safety performance: lost time injuries (DAFWCF – Days Away From Work Case Frequency), recordable injuries (RIFR – Recordable Injuries Frequency Rate), spills to water (>1 bbl) and loss of containment. Statistics are collected on a systematic basis, shared regularly with employees and cover both BP owned and operated and third-party vessels.

Statistics are not the ‘be all and end all’ of safety performance and today as much attention is paid by specialists to behaviour and attitude as to procedures and processes. But numbers still matter – not least in the way they can detect a developing trend.

Overall, BP Shipping’s safety performance has improved steadily in the past five years despite occasional setbacks, the exceptional expansion of the fleet and the big increase in the number of new officers, crew and shore based workers.

DAFWCF decreased noticeably in the 2001 to 2004 period before rising somewhat in 2005 and 2006 as the fleet expansion took off. Nevertheless, 36 recordable injuries occurred on BP operated and time chartered vessels during 2005.

In 2006, HSSE performance contracts for time charter and third-party managers set a target of 10% reduction in DAFWCF and RIFR in accordance with BP Shipping standard reporting definitions.

A range of management tools including employment contracts with safety targets, quarterly safety performance reviews, a monthly ‘dashboard’ report listing safety performance ship by ship, a performance league which rates ships quarter by quarter on eight metrics including safety, and a biannual bottom up international safety management review all reinforce one basic message – safety performance determines reputation.
safety achievements in the past year

▲ Extra officers on ships. By placing two junior officers on most ships, more time is allowed to gain sea experience and safety training before promotion.

Double hull policy tightened to include vessels of 600dwt by 2008, well ahead of international requirements.

▲ Altered composition of sea staff workshops for officers to ensure they are more inclusive and focus more on safety related issues.

▲ Updated safety procedures. Understanding and performance have been enhanced by rewriting and simplifying procedures to make safety related processes easier to carry out.

Introduction of fleet safety training officers and creation of a robust safety training programme.

▲ Improved safety relationships between ship and shore, including innovations such as telephone calls from the chief executive, VSAT discussions and regular safety features in ‘The Flag’ magazine.

six key things we will continue to do

1. Create an environment in which safety is supported and enhanced by those in the workforce.

2. Empower those on the front line to have the greatest control with respect to safety.

3. Improve hazard management across the BP Shipping workforce.

4. Simplify procedures to incorporate current practices and always incorporate best practice.

5. Seek opportunities to modernize and upgrade our safety equipment.

Talking safety to John Chapman, winner of BP Shipping’s CEO’s HSE individual contribution award for 2005, is a bit like talking medicine to a doctor. Everything he says exudes a total commitment to rational behaviour, advance planning and open discussion. With safety, he says, “there are no half measures.”

Chief engineer on the liquefied natural gas carrier the Northwest Shearwater for the past two years, Chapman has been the inspirational driving force behind many new safety initiatives on the vessel. According to the citation that accompanied his award, “he fostered a spirit of inclusiveness among the crew and helped generate a new level of safety awareness through lecturing, training and information sharing.”

Where does this dedication come from and why is he so safety focused? “You perform many different things on a ship,” he says, “safety is very much a core value that everything hasn’t done before, we analyse it carefully to see if we can identify any dangers and mitigate them if possible. If we feel the risks are unacceptable, then the job just won’t get done.”

Everyone on board BP ships is empowered to tell anyone else when they are behaving in an unsafe manner. “This needs a willing crew, safety has to be embraced by everybody,” he says. “We all have a responsibility to be safe and work safe, everybody is their own safety officer.”

John Chapman first went to sea in 1973 and has been with BPMS, sailing on BP Shipping vessels since 2001, over the years he has seen a huge change in attitudes to safety. “Back then it was more a question of ‘Is anyone looking?’ and accidents were covered up. The draconian approach, when only the captain laid down the safety approach, was ‘in vogue’. Today safety has blossomed and crews are not afraid to speak out about safety. They come to safety meetings and there’s no loss of authority at all, just an increased understanding.”

He concludes: “Many people think I’m a pain in the neck about safety but I don’t mind, I’ve always had an appetite for safety. Human error is the biggest danger on a modern ship. The thought of a fatality or even an accident on a ship I’m serving on worries me greatly. I wouldn’t ever want it to happen, but it only takes a moment of complacency, so I go the extra mile and always try to remain focused.”

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Following the fleet safety stand down in June 2005, most vessels and shore based offices sent valuable feedback to BP Shipping headquarters in Sunbury. A strong sense of commitment to HSSE was evident across the organization but, as expressed in a subsequent analysis, “the comments collected were very mixed and reflected a culture that is not thoroughly integrated.”

To help develop a more strongly shared set of safety values and behaviours the feedback was consolidated into five themes: training, procedures, culture, equipment/personal protective equipment (PPE) and supervision and experience. A template was then designed to show what the fleet had requested, what has been done and what has yet to be done.

This template is updated regularly. As of the middle of September 2006, it listed 12 key issues and their status:

- **‘A variety of training methods are needed.’**
  
  Computer Based Training (CBT) is just one source of Safety Of Life At Sea (SOLAS) training. Fire fighting, medical, Person In Charge (PIC), seamanship, high voltage and other seafaring safety related training is all being provided as part of the Medical Care training course. Safety officer training for engineers and other ‘offerings’ are being developed.

- **‘More training needs to be provided by HSSE professionals.’**
  
  Six fleet safety training officers have been deployed. Since May 2006, they have visited 19 vessels and spent over 150 days on board. Their roles are dedicated to safety and seamanship training on board and focused on junior officers and senior crew members. We continue to work to gain a better understanding of the various needs for training across cultures.

- **‘Shore side training quality and opportunity have diminished.’**
  
  We have introduced BP specific courses such as the oil & gas tanker operations courses, fire fighting and management courses for senior officers, subject specific courses (such as ice navigation) and geographic specific courses (Turkish Straits). We will be analysing our current training opportunities against our needs to ensure they match areas requiring attention.

- **‘The Quality Assurance Procedures (QAP) and permit to work system are cumbersome and difficult to use.’**
  
  The QAP has been rewritten and rolled out to the fleet. The permit to work system has been rewritten to make it simple yet still provide robust control of hazards.

- **‘Risk assessment is not fully understood throughout BP Shipping.’**
  
  The safety management system has recently been updated into the revised quality assurance system and simplified. Shore side based training is being developed.

- **‘Officers are not permitted enough time to supervise.’**
  
  Extra officers have been provided to vessels with berth capacity to reduce the burden on senior officers and allow them more time to supervise. This process will continue.

- **‘Officers are not given enough time to gain experience and are promoted too rapidly.’**
  
  Additional officers have been provided to vessels in the fleet, with berth capacity to allow more time for officers to gain experience. Performance management training is being provided to senior officers and leadership training to superintendents.

- **‘A number of AMOS M&P Planned Maintenance (PM) routines do not reflect the true work involved and some are missing from the system.’**
  
  The operations integrity team is conducting a large scale review of AMOS M&P to ensure that all necessary PM routines are included in the system and that the content is accurate.
‘Shore side safety procedures need to be more accessible and easier to comply with.’

Procedures affecting the operation of the fleet have been integrated into the revised QA. Training on this revised system has been provided to many teams.

‘There is commercial pressure to complete the job causing conflict between complying with procedures and getting things done.’

The fleet operations director has sent a letter to all masters to ensure there is a clear understanding of their accountability for the safe operation of their vessel. We have made huge efforts to remove such pressure by keeping commercially hard decisions on shore, rather than put ship staff in a difficult position.

‘Design issues brought forward are not seen as being addressed in subsequent building projects.’

A process has been established to ensure that design issues are captured and included in new build specifications. A five day ‘shakedown’ period is now part of the new delivery process.

‘Personal Protective Equipment (PPE) is not always worn when required nor does it always appropriately fit the hazard.’

Wearing PPE is a condition of employment and those not wearing appropriate PPE will be disciplined. A hazard review was carried out and a new fall protection equipment standard developed. Personal fire fighting equipment is being evaluated against BP group and international standards. PPE and fire fighting equipment upgrades are to be added to the approved safety equipment list by the end of 2006.
1876 Samuel Plimsoll succeeds in getting amendments to the British merchant shipping acts that eventually lead to the load line which is familiar to seamen all over the world today.

1904 First radio distress signal ‘CQD’ adopted. Used for first time in 1909 when RMS Republic and SS Florida collide off Nantucket.

1908 ‘SOS’ is ratified as the international distress signal at a conference in Berlin.

1912 RMS Titanic hits an iceberg and sinks with the loss of 1,503 lives. An investigation recommends better watertight bulkheads, lifeboats for all, lifeboat drills, boat crew training, wireless installation on all passenger ships and 24 hour wireless watch keeping.

1913 International Ice Patrol is set up with US funding to monitor icebergs in North Atlantic.

1914 Maritime states develop the first global safety agreement for shipping, the International Convention for the Safety Of Life At Sea (SOLAS).

1915 US Coast Guard is formed to enforce maritime law, provide mariner assistance and protect US maritime security interests.

1930 International Convention on Load Lines adopts principles to ensure adequate stability and avoid excessive stress on a ship’s hull through overloading. In 1966 the Load Lines convention leads to a series of improvements to the safety aspects of loading.

1934 Fire on RMS Morro Castle results in the introduction of fire retardant materials, automatic fire doors and ship wide fire alarms.

1948 United Nations holds the Geneva Conference which leads to the establishment of Inter-Governmental Maritime Consultative Organization (later IMO).

1959 International Maritime Organization (IMO) begins business. It adopts a new version of SOLAS, the most important treaty dealing with maritime safety. Over time it widens its remit to assume responsibility for all pollution related matters, maritime search as well as rescue and tonnage regulations.

1966 A BP tanker British Crown explodes while loading crude. New build BP tankers subsequently include design improvements and development of the inert gas system.

1967 Torrey Canyon grounds off Land’s End, UK causing major environmental damage to Cornish and French coasts. The spill leads to the Civil Liability Convention in 1969, ensuring adequate compensation is provided to persons suffering pollution damage from accidents involving oil tankers. This disaster is the turning point for the IMO as it expands its activities in the environmental and legal fields.

1969 Marpessa, Mactra and King Haakon V11 explode while tank cleaning. Subsequently inert gas from a ship’s exhaust is pumped into cargo tanks to mitigate the risk of explosions on oil tankers, and crude oil washing is introduced to clean cargo tanks.

1972 Convention on the International Regulations for Preventing Collisions at Sea (COLREGS) recognizes traffic separation schemes. The first traffic scheme at sea was set up in the Dover Straits in 1967.

1974 SOLAS tightens fire safety provisions for tankers and defines minimum standards for construction and equipment to be carried on ships.

1976 Argo Merchant grounding and spill off Massachusetts leads to demand for more stringent action and to expand the scope of MARPOL 73.
1978 International Convention for the Prevention of Pollution from Ships (MARPOL). MARPOL 73/78 becomes the main convention covering the prevention of marine pollution by ships including noxious liquids, sewage, garbage and air pollution. It also expands the requirement for segregated ballast tanks, requires the fitting of crude oil washing machines and inert gas systems. Additional measures for oil tankers are incorporated into SOLAS requiring improvement to steering gear, radar equipment, collision avoidance aids and stricter survey regimes.

1978 Amoco Cadiz. The supertanker runs aground three miles off the coast of Brittany, spilling 227,000 tonnes of oil. The disaster followed an argument over salvage rights.

1978 The International Convention on Standards of Training, Certification and Watch keeping for Seafarers (STCW) is established. It sets requirements on training, certification and watch keeping for seafarers to international levels.

1979 A convention is adopted to develop an International Search & Rescue Plan (SAR) to rescue people at sea.

1985 Oil Spill Response Limited is formed by the oil majors in the UK to focus on responding to spills, maintaining spill response equipment and providing training.

1989 Exxon Valdez runs aground on Bligh Reef in Prince William Sound, Alaska. Oil eventually pollutes 1,100 miles of non-continuous coastline making this the largest oil spill to date in US waters.

1990 Oil Pollution Act (OPA) is signed into law in the United States. It requires all ships to have a detailed containment and clean up plan and mandates the phase out of single hulled tankers starting in 1995. The Oil Spill Liability Trust Fund is set up with $1 billion underwritten by ship owners to provide funds for use following an oil spill.

1990 Marine Spill Response Corporation is formed in the US by oil companies to respond to catastrophic oil spills of any size.

1992 IMO adopts double hull requirement for all tankers ordered after July 1993, following ABT Summer spill.

1993 IMO adopts International Management Code for the Safe Operation of Ships and for Pollution Prevention in response to major accidents at sea in the 1980s. The ISM Code aims to ensure safety at sea, prevent human injury and loss of life and avoid damage to the marine environment.

1998 UK Maritime Safety Agency and Coastguard Agency are merged into the Maritime and Coastguard Agency (MCA) with a remit to promote high standards of safety at sea.

1999 Erika. The 25 year old single hulled tanker breaks up off southern Brittany, spilling 15,000 tonnes of heavy fuel oil. The European Commission blames the poor condition of the ship for the spill. The incident results in the IMO adopting faster, stricter phase out schedules for single hulled tankers from 2003.

2002 Prestige. The 26 year old single hulled tanker breaks up and sinks 150 miles off the coast of Spain while carrying 20 million gallons of heavy fuel oil, devastating large sections of the northern Spanish coastline. This spill leads to further amendments to the phase out of single hulled tankers.

2003 New IMO Guidelines concerning places of refuge for ships in distress are agreed. A supplementary oil spill damage fund is set up raising total compensation limits to $1.1 billion.

2004 The International Convention for the Control and Management of Ships’ Ballast Water and Sediments is adopted. It requires ballast exchange to prevent and ultimately eliminate the transfer of harmful aquatic organisms.

2006 Report to IMO on 35 incidents involving fires and explosions in cargo areas of chemical and product tankers 1980-2005 finds that the main factor is a failure to follow or understand cargo operating guidelines and procedures.
Between 40 and 50 ships have been built for BP Shipping in the past decade. These vessels have generated many safety ideas in terms of design that will be incorporated into our future new build programmes.

As outlined by Nick Davison, head of discipline marine structures, and Chris Bailey, technical manager, potential improvements to BP Shipping’s tankers and gas carriers can broadly be divided in two, those that make a ship more secure and those that improve its performance and its safety.

Accommodation changes are intended to make the space on ships lighter and more user friendly. “The overall space will be the same but it will be better utilized,” explains Bailey. Other improvements include design changes to make it harder for pirates to seize control of a vessel, wider use of low pressure, non hazardous water mist fire fighting equipment and a reduction in the use of hydraulic systems are planned. Another area where we have enhanced our standards is with higher standards of protection against toxic smoke release in the accommodation bulkhead linings, flooring and furnishings. Coupled with this, more fire protection bulkheads and the use of passageway doors will prevent smoke spreading.

In the second category are structural and technical improvements that will improve ship performance and allow vessels to operate more efficiently and with less risk. “A lot of lessons have been learned in recent years about structural fatigue as trade routes have become more global,” says Davison. “This means there will be higher structural standards on vessels in the future.”

BP Shipping’s main priority is to reduce the risk to the BP group and this focus is uppermost in our minds when we design our vessels. Most other owners take a more commercially focused view when building new tonnage.
Future ships will contain significant new safety features as the result of numerous discussions and compromises that are inherent in a global industry in which no player, however large, can dictate terms. “We are always trying to strike a balance,” explains Adrian Howard, BP Shipping’s technical director. “We have a responsibility to spend money efficiently while achieving BP standards. There are a lot of straightforward design improvements we can introduce as well as another area where we’re waiting for technology to be developed.”

To illustrate the point, Howard explains some of the objectives:

- Reducing the hazardous activities carried out by the crew can make a real difference to safety performance. For example, painting on board can be inherently dangerous, especially high level and tricky areas, such as the mast, so the search is on for a paint that will last the entire life of the tanker, to eliminate the need for repainting.

- Reducing the cause of incidents can be accomplished by increasing automation, developing intuitive control equipment and minimizing piping and joints – all of which would reduce the chances of human error and cut down on the number of leaks and spills.

- Reducing the severity of incidents involves reviewing all aspects of a tanker’s design and thinking two steps ahead of a possible incident. For example, by determining the consequences of a cargo vapour leak in the vicinity of electrical equipment, risk can be decreased if the amount of electrical equipment on deck is minimized.

- Reducing the consequences of a collision at sea will continue to be a risk. Therefore, cargo tanks are required to be double hulled but at present there is no equivalent requirement for bunker tanks. New BP ships will include double hulled bunker tanks since some of the large vessels in our fleet carry as much as 5,000 tonnes of fuel. Another example is the use of high grade fire retardants to protect personnel and equipment.

- A large amount of the equipment on board BP ships exceeds minimum legal requirements,” says Howard. “On the new Gem class for example, there is added fire protection including a ‘water curtain’ that allows protected access to the lifeboats and rafts in the event of an emergency. There are fire resistant bulkheads around the accommodation quarters, easy to use fire hoses on each deck and additional fire and gas detection systems.”

Currently BP Shipping is working with a lifeboat manufacturer with the aim of creating one standard lifeboat for all BP vessels. “Lifeboat exercises can be very dangerous,” says Howard. “Having one agreed design that includes certain specific safety improvements means all seafarers can be familiar with it, whichever ship they join in the BP fleet.”

Howard is also looking at new materials, one of which – the ‘sandwich plate system’ – uses composite material inserted between steel plates to dampen vibration and lessen the impact of an explosion. Here the issue is less the material and more the capability of shipyards to change their production methods, as well as the attitude of the ship classification societies. “You can’t just turn up and apply new technology to ships,” Howard explains. “Anything that changes shipyards’ procedures is likely to be resisted and the classification societies insist on a lot of testing.”

Howard concludes ”We’re always trying to think of new ways to improve ship design and we’re always learning lessons.”
The LNG carrier the Northwest Shearwater has won the ship of the year award in recognition of the wholehearted dedication to HSE of everyone on board. The selection committee were impressed by the ship’s world-class safety culture with its emphasis on mutual respect, trust and teamwork. Everyone has their part to play, whether it is in keeping the decks clean, keeping the engine turning, navigating safely from A to B or delivering the cargo successfully. Each team member was seen as being important and relevant to the safety and success of each voyage as any other.

The Northwest Shearwater is the oldest ship in the fleet by far. For those who sail on her she can be cantankerous and difficult, requiring hard work and extra effort, yet she is highly popular and people want to return again and again. Perhaps this is because of the pride and professionalism of all on board and their combined commitment, that makes the Northwest Shearwater a high performing, happy and, above all, safe ship.

**CEO’s HSE awards 2005**

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**ship of the year northwest shearwater**

**the captain’s walk**

Often it is the seemingly simplest safety ideas that have the greatest impact. Captain Malcolm Lakey discovered this for himself when he joined the LNG carrier Northwest Shearwater last year as master. “I walked on board a ship where the level of safety was already second to none. The culture was all there. My main task was really to fine tune our performance.” The question he faced was how to go about it.

Eventually Lakey hit upon a straightforward strategy that was to produce real results. He began to take a daily ‘safety’ walk around the ship. “It’s been tremendous,” he reflected later. “I get out of my office for an hour each day with a different crew member and we talk to everyone we meet, picking up on safety related issues that can easily be missed due to over familiarity.”

It’s an innovation that Lakey, a 21 year veteran of life afloat with BP Shipping, feels could be rolled out across the BP fleet. Another is the introduction of a ‘red card’ which is carried by each member of the crew, as physical evidence of the authority given by the master to empower every person on the ship’s staff to stop any action which he or she sees that is considered dangerous or potentially dangerous.

Do such ideas really make a difference? Statistics suggest so. By 2006 the Northwest Shearwater had gone more than eight years without a DAPWC and more than a year without a single first aid case.
Twenty two new ships have been built by Samsung Heavy Industries (SHI) at its huge yard on the island of Geoje off the southern Korean peninsula. Other big orders were placed with Daewoo Shipbuilding and Marine Engineering Company (DSME), Hyundai Mipo Dockyard and Hyundai Heavy Industries (HHI). At each of the yards the safety message is all pervasive and deep rooted. Nevertheless, meeting tight production rates (typically a tanker takes nine months to construct from the steel cutting to sea trials) without compromising quality and safety proved to be one of the biggest challenges facing the BP construction team responsible for liaison with their Korean counterparts.

The key, according to Brian Woodman who headed the BP Shipping site team at SHI, was close co-ordination with the SHI HSE department on a basis of mutual understanding and respect. “There were no major safety innovations,” he reflected as the Aframax tanker new build programme wound down in mid 2006, “but in a number of areas – such as protection of tank cleaning openings – sensible improvements were made that raised safety standards and allowed the job to be done more safely and effectively.”

Sharing knowledge proved central to these developments, with SHI every bit as keen to co-operate as BP.

More than half the ships built for BP between 2002 and 2006 were commissioned from shipyards in South Korea. The consequence has been ever closer co-operation with Daewoo, Hyundai and Samsung.
Sea staff workshops

Sea staff workshops are not safety specific, nor are they a new idea. In the past 12 months BP Shipping has taken them to a new level of intensity and inclusion, making safety the number one priority and stepping up efforts to spread consistent messages in a spirit of open give and take.

In early October the organization held its 12th workshop and it was “the best we’ve ever had,” says Dave Williamson, director of fleet operations. Attendees came from every part of BP Maritime Services (BPMS), discussions were very wide ranging, the mood was inclusive and enthusiastic, there were a lot of good examples and Williamson himself has many to offer. One involved holding a ship back in October because “we couldn’t safely man it” he says. A second related to a bosun who injured his back recently, was hospitalized in Houston and then linked to his family in India by video conferencing. The third was ‘personal’, when a Northwest Shearwater crew member told him politely that he was wearing the wrong protective eye glasses while the vessel was in dry dock in Singapore.

As the BP Shipping fleet has grown so has the need for a larger, more proactive safety training programme for those at sea.

In June 2006, the organization’s fleet safety training officer (FSTO) capability increased with the addition of four new FSTOs. At the same time the training given by FSTOs was upgraded and expanded to cover more topics. The new arrangement is known as the ‘Boots on Deck’ programme. The programme exists primarily to provide support for masters and focus on areas where incidents or behavioural trends suggest more training is necessary. For instance a number of accidents involving hand injuries during mooring operations in 2005, resulted in more focused training on tools and mooring procedures.

FSTOs typically spend one to three weeks on board a ship, depending on its schedule and the training requirement. One of the FSTO’s, Tony Clark, says each visit begins with a review of recent safety issues and a deck walk to observe crew safety behaviour. After that the emphasis shifts to one or more of 20 training topics including working safely at heights, mooring operations, root cause analysis and environmental care. Additionally, FSTOs assist ship safety officers while vessels are in dry dock, conduct workshops for cadets and also participate in sea staff workshops.

Crew reaction, says Clark, has been entirely positive. “There’s been no animosity at all,” he observes, following seven ship visits in 20 weeks. “We’re there to help, and everyone has been keen to get as much information out of us as possible.”

Each FSTO brings slightly different skills to the job: Clark has had 22 years at sea as well as shore based safety expertise. Majid Kadir has a background in industrial health. Robert Cornish was previously a second officer in the BP fleet, Jeff Adamczyk worked as a chief officer in the Alaska Tanker Company and Mick White is a training expert. Captain Shanthnu Sharma (not pictured above), has recently joined the team, and we believe he will be a great asset to the group.

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a proactive approach to vetting

Over the past decade the safety culture within BP Shipping "has changed radically," according to Enys Dan, director of marine assurance.

One example of this development he says, is the increasing emphasis put on "testing the commitment and competence of others." In his words: "There’s a pool of about 5,000 hydrocarbon carriers in the world but only 3,000 are acceptable to BP. All these vessels are flagged, classified and operate at sea, so we must seek a level of compliance above that which is generally accepted."

Each year BP moves about 250 million tonnes of crude oil and products, some 5% of the world’s seaborne oil movements and operates at scores of terminals around the world. Approximately 35% of this activity is handled by the BP controlled fleet with the balance carried on spot chartered vessels. About 200 vessels are on charter to BP every day.

To ensure that vessels, ports and terminals meet the company’s stringent safety standards, a team of 20 vetting superintendents is employed and given specific objectives. Their primary role, says Dan, is to provide assurance to the BP group that the risk involved in using marine vessels and moving hydrocarbons by sea has been minimized as much as possible. In parallel, they are charged with working with the rest of the industry to raise safety standards.

Prior to chartering a vessel it must be thoroughly ‘vetted’. In 2005 some 25,000 vetting enquiries were received and 3,000 ship inspections were carried out directly or indirectly. Sixteen per cent of vessels failed to achieve the status of ‘good ship’ and were deemed ineligible for charter. The assurance team also carries out 50 audits a year of shipping companies, forming an ‘entry gate’ for potential long-term charter partners.

Since 2001, BP Shipping’s vetting criteria has been tightened progressively, reflecting the accelerated schedule adopted for the phase out of single hull tankers. An effective top age limit of 25 years has been introduced above which the company will no longer charter vessels; structural policy has been tightened and simplified, inspections targeted on older vessels and new terminal vetting standards introduced.

All ports and terminals used by BP are checked and audited on a regular basis by the BP Shipping audit team. During 2005 their role was expanded into assessing risk in third-party terminals using a basic set of minimum criteria created by BP to measure terminals. This has rapidly become an industry guide.

The company also amended its terminal feedback report form to include information needed by Intertanko for its terminal vetting database, to help ensure faster remedial actions. Another challenging area involves barge traffic, given the lack of international consistency about safety standards. In 2005 BP Shipping began work on establishing a common minimum standard applicable to all.

This constant reaching out into new safety areas is not happening by chance. As Dan, a 35 year veteran of BP Shipping, puts it: “My belief is that we show more commitment to outstanding safety performance now than at any other time. When people look at BP, they see a determined and focused drive to be best in class.”

Within three hours of completing these procedures BP Shipping vetting superintendents in Sunbury receive a ‘headline’ report that provides an outline assessment.

A full report follows from the inspector within three days. It is then reviewed by a superintendent to ensure it matches BP Shipping criteria before being forwarded to the ship owner and to OCIMF (Oil Companies International Marine Forum) – an umbrella organization which operates SIRE (Ship Inspection Report Exchange) and maintains a data bank of 14,000 reports on oil, chemical and gas tankers. If no response is received from the owner within 14 days, the report is released and remains valid for 12 months.

Captain Gamal Fekry, who heads the BP Shipping vetting team, describes the inspection regime as ‘thorough’ and says it has set the industry standard. It is also flexible, there is a priority option to match BP group needs, and it is rigorous with regular audits of inspectors’ work and annual meetings in the UK to ensure consistency of approach and full understanding of BP’s requirements.

When a ship is nominated for BP use, it enters a sophisticated, tried and tested vetting system designed to weed out any vessel that is not up to the exacting safety standards and technical specifications laid down for ship owners wishing to do business with the BP group.

At the heart of this system is the work of 54 inspectors based around the world who produce detailed reports on 2,400 vessels each year. Selected for their special competencies and experience (a minimum requirement is to have been a master mariner or chief engineer), inspectors are mostly in their 40s and 50s and are organized into three categories, with category one able to inspect all types of ships.

Typically an inspector for BP Shipping will do three or four ship inspections a month within his or her core region. Each lasts ten hours on board, with preference given to inspections being carried out at sea. A checklist of tasks is involved, these include visiting the bridge, assessing the management of charts, walking the ship to check structure, fixtures and fittings, conducting on deck interviews, visiting the engineering department and checking operational procedures and cargo management. A check is made for oil leaks and there is also a one on one session with the ship’s master.

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**Fire protection**

Use of low toxic insulation on electrical cables in the accommodation. Detection system throughout the entire accommodation block and engine room.

**Collision avoidance**

Ship is fitted with integrated bridge system for all navigation information to be better assimilated by the watch keeper.

**Lifeboats**

The deluge system allows for safe mustering and boarding of lifeboats when ship is engulfed by fire.

**Voyage data**

Installation of voyage data recorders to gather information about ships performance.

**Fire fighting equipment**

Engine room fitted with fire extinguishing system.
This ship is an example of a typical BP oil tanker.

**Ballast tanks**
Double hull space to mitigate spills from groundings and collisions. Ballast water is carried in this space.

**Hull structure**
- Hull structure is continuously monitored against stress and fatigue by hull monitoring strain gauges and pressure transducers.
- Hull structure integrity is improved through use of better coating systems to minimize corrosion.
- Hull structure subject to finite element analysis to better understand hull fatigue.

**Fire fighting equipment**
Deck fire fighting provided with duplicate foam and pipelines systems.

**Collision protection**
Double hull space is extended beyond cargo spaces both around wing bunker tanks and under the cargo pump room.
being the best the culture

Three years ago a search began in the BP group for new and better safety performance indicators. This was easy to demand but harder to provide; what was wanted was something that went beyond the old and all too familiar benchmarks.

Over the following two years masses of incident data, survey material, cultural studies, safety audits and anything else remotely connected to safety performance across the BP group was collected, organized and studied. An atomic physicist, a university expert in safety culture, a psychologist and a statistician were hired to undertake a study which included the use of artificial intelligence tools and structural equation modelling.

Eventually everything was ready for a computer run, designed to match safety outcomes to selected behavioural traits and a huge surprise emerged. Safety performance, it appeared, has far more to do with how people are treated and how they feel about such matters as their work/life balance and the leadership of their team than it does with other parameters like safety observations, man hours or kilometres driven.

The results were sufficiently unexpected, says Cinzia De Santis, director of safety, culture and leadership for the BP group, to run the tools again, this time according to segment. The results were the same and so the research was shared with Shell who conducted a similar exercise and also came up with similar findings. "Issues related to treatment at work continually came out as most important in terms of safety performance however you cut it," says De Santis. "We started to believe in our data."

A decision was then taken to conduct pilot studies in the BP group. One was in Colombia and again it emerged that behavioural factors played a more important part in safety performance than, for example, the permit to work system. After this, the team decided to look at strong safety performers outside BP, such as a US nuclear powered aircraft carrier (the ‘Abraham Lincoln’), a nuclear plant and a DuPont facility. The ‘trust and respect’ evident between ranks on the ‘Abraham Lincoln’ particularly impressed De Santis as did the “strong sense of camaraderie that definitely impacted attitudes towards safety,” she says.

Out of all this research the team then created an ‘ideal place’ where safety performance is perfect, and it is this concept that has been rolled out since June 2006 across the BP group as the target to be reached. The expectation is that the nearer a business unit or function or segment gets to achieving it, the better safety performance is likely to become.

In the ‘ideal place’ the workforce is fully informed, leaders are competent where safety is concerned, everyone is mindful about safety issues, there is ample capability to respond to emergencies, the organization is receptive to outside advice, learning is continuous and the culture is blame free so that safety incidents are examined for what they teach rather than looking for a scapegoat. All actions in this ‘ideal place’ are fair and disciplinary procedures exist but are perceived to be equitable. The culture is not complacent and the regime is felt to be respectful. “All this is projected down from leaders but it is activated by the workforce,” explains De Santis.

Such has been the impact of the concept that De Santis and her colleagues have been swamped by requests to present it across BP. A coaching framework has been developed and “wherever we find a space to develop our ideal in the group, we take it. We’re like a virus, we want to spread and get into the DNA of the organization, our strategy is contagious rather than imposition from the top,” she says.

Already parts of BP as diverse as the Chirag platform in the Caspian Sea, the Trinidad & Tobago business unit and marketing Europe as well as others have signed up for assessment and coaching. Follow up visits will take place one year later to see how close ‘Utopia’ has become. “Of course it’s an ideal,” concludes De Santis. “But the sad tragedy at Texas City has given us all the impetus to change. People want to explore this route.”
As with a navigator’s ‘passage plan’, security is a ‘berth to berth operation’ or ‘end to end’ as it is starting to be called in security circles. No part of the entire process of moving a cargo from A to B can ever be ignored and the subtleties of each of the different parts need to be fully understood.

Potential security related threats take many forms: theft, piracy, terrorism, stowaways, rescues at sea and fraud for example. They can occur in port, at anchorage or on the high seas. They may involve violence, crime, disease or politically charged incidents.

It is primarily through operating practices adopted by BP Shipping that we seek to minimize the exposure of our seafarers and our company to such threats. Legislation was introduced in the form of the ‘International Ship and Port Facilities Security (ISPS) Code’ in the summer of 2004 and this too, has shaped our approach to shipboard security management together with BP group security standards.

In effect, however, there are two main approaches to shipboard security. One is designed to prevent ships being used by terrorists as offensive weapons or to transport themselves or their materials. The other is intended to ensure safe and secure deliveries by sea of the essential energy supplies that underpin modern society and are a vital part of economies around the world.

Supporting all security processes is a need to be aware of the nature and scope of threats that may be faced. We achieve this today through close liaison with many parties including the UK government, the Royal Navy, the intelligence community, BP group security, other tanker operators and industry organizations.

Through shared understanding we have been able to develop an appropriate response and build it into our operational planning. Typically this means identifying areas where our vessels will not trade, making use of special single voyage permissions, issuing routeing instructions and upgrading shipboard security and safety practices.

In the last year or two, as we have looked to the future and started to consider the next generation of ships entering the BP fleet, we have turned our attention to the design and equipment that will be used in future new build programmes.

Changes to the physical design of the vessels will improve their passive defences by impeding or preventing intruders from taking control more than at present. We also plan to install new intruder detection equipment such as stem looking radars. In addition night detection equipment is being trialled on some of our most recently delivered vessels to gain experience and improve the technical specifications of ships and their equipment in the future.

However, the most important and effective security element of all, is the seafarers who crew BP vessels and sail in difficult waters all over the world. Seafarers face multiple challenges that are increasingly likely to arise in particular parts of the world with deep rooted political and social issues.

Of special concern to us is the issue of rescuing persons at sea. We are clear in our moral and statutory obligation to rescue distressed persons at sea but when this involves other than bona-fide seafarers it inevitably also involves increased risk that requires robust, but sympathetic, management.

Another concern in some regions where our ships trade relates to cargo and commercial fraud, all ships’ masters are now alert to unusual communications such as odd requests for cargo details or ETAs or requests for company details.

Given this security scenario, it is vitally important that our seafarers are always fully informed, included in security and safety planning and properly trained. Security at sea seems sure to figure prominently in our thoughts and plans for years to come. As with safety, we can never take our eyes off security. To be safe, you must be secure, that is the bottom line.
About 80% of all accidents are due to human error, such as failure to follow cargo operation guidelines.

More than half (53%) of all BP Shipping safety incidents in 2005 were caused by management, supervision or procedure failures.

BP inspectors carried out 2,422 inspections in 2005 (initial failure rate 50%) and assessed 2,270 inspection reports from other companies.

The Ship Inspection Report (SIRE) programme run by the Oil Companies International Marine Forum (OCIMF) contains 14,000 regular oil, chemical and gas tanker inspection reports.

Shipping is the safest form of commercial transport, yet more than 2,600 lives were lost on cargo ships in the 1995 to 2004 decade.

The safety triangle: for every fatality, there are 10 reportable incidents, 30 minor incidents or injuries and 600 near misses.

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More than half (53%) of all BP Shipping safety incidents in 2005 were caused by management, supervision or procedure failures.

BP inspectors carried out 2,422 inspections in 2005 (initial failure rate 50%) and assessed 2,270 inspection reports from other companies.

The Ship Inspection Report (SIRE) programme run by the Oil Companies International Marine Forum (OCIMF) contains 14,000 regular oil, chemical and gas tanker inspection reports.

Shipping is the safest form of commercial transport, yet more than 2,600 lives were lost on cargo ships in the 1995 to 2004 decade.

The safety triangle: for every fatality, there are 10 reportable incidents, 30 minor incidents or injuries and 600 near misses.
The world according to Bruce McKenzie, BP Shipping’s crisis manager, is divided in two: most of the world, and the Americas. Anything that happens West of 30 degrees West to 180 degrees West is handled by an emergency response team located in the United States, anywhere else and it’s handled by a team in Sunbury.

From a bespoke emergency response (ER) centre in BP’s Sunbury office complex, an Incident Management Team (IMT) can take control once an incident involving a BP vessel or a BP cargo is reported. In McKenzie’s words: “The IMT has full authority to do whatever is necessary to fix the problem.” This includes financial authority and the ability to call out additional company and contract resources.

The IMT is made up of volunteers from within BP Shipping in Sunbury. There are eight teams of 10 people, each being on duty one week in every eight. The IMTs are built around specific competencies including command, operations, logistics, planning, legal, finance, ship design and structure, charts and public affairs. A business support team representative focuses on the potential impact the incident could have on BP Shipping’s business, liaising with other potentially affected BP business units and supporting the IMT.

The 80 people belonging to the IMTs are offered opportunities throughout the year to attend specialized training courses. Additionally, guest speakers are brought into the office for ‘lunch and learn’ sessions to discuss unique elements of emergency response such as oil spill, salvage and fire fighting.

To ensure they stay sharp, the teams are also routinely exercised. Each quarter a large exercise is conducted, usually lasting four to six hours. Typically these exercises are arranged to address areas identified as being a risk by the BP Shipping regional managers. Examples in 2006 included tanker ‘incidents’ off Taiwan, in the Baltic Sea and off Tanzania.

Shorter exercises take place on a monthly basis to test various aspects of the response system, this includes BP Shipping partners such as time charter companies and manning agents. “Exercises teach us a lot. There were 30 lessons learned from the Tanzania exercise, everything from information about the local phone system to the need for signs on doors in Sunbury,” explains McKenzie. “Basically they allow us to constantly assess our preparedness and give us a leg up if a real incident occurs.”

Over the past year McKenzie has introduced several changes intended to improve ER performance including revamping the ER training programme, replacing an electronic information management system and refurbishing the ER centre. “Shipping safety is always a challenge, a lot of the worst risks we face are actually in port rather than at sea,” he says. “An ER system provides reassurance, gives support and allows us to contain and resolve incidents as safely and quickly as possible.”

Known as Sea Alarm, the organization is now a key player in a European wide drive to improve the way wildlife is treated if and when there is an oil spill at sea around the coasts of the continent. “We try to give a push towards greater co-operation between wildlife groups, industry and local and national governmental bodies,” says Sea Alarm’s Hugo Nijkamp. “Our objective is to raise standards, encourage learning and information sharing and to reconcile differences.”

In 2005, Sea Alarm’s efforts received a major boost when the oil industry, through the Oil Spill Response Ltd/Global Alliance, agreed to provide funding on an annual basis. In 2006, the organization won its first grant from the European Commission to run three workshops covering all European Union littoral states with the emphasis on achieving minimum standards of oil spill preparedness.

“Everyone is damaged by incidents like the Prestige in 2002 (in Galicia, Spain),” says Nijkamp. “We need to raise standards all round, not just in terms of shipping safety but also in terms of wildlife rehabilitation, on the ground arrangements after an incident and also local and national response planning. We can all learn from each other, by co-operating, everyone can benefit.”
case study

BP Shipping safety stand down

In June 2005, BP Shipping took an unprecedented action. Captains across the fleet gathered officers and crew together and conducted an extended safety stand down.

All work other than necessary watch keeping ceased and everyone listened to an audio message from the chief executive about the importance of safety. A question and answer session followed during which issues raised in the message were discussed more fully.

On shore work also ceased in BP Shipping’s offices across the world, as employees contemplated their personal commitment to safety at work, their duty to stop unsafe operations, workforce safety training and the clarity and relevance of existing safety procedures.

The stand down followed a relative decline in BP Shipping’s safety performance during the first half of 2005. This performance was mostly due to a spate of low impact groundings and an increase in personal injuries caused by individuals or supervisors not following existing procedures. The action came about as management were determined to do something dramatic to highlight the unwelcome trend.

Subsequently the actions that followed the stand down were designed to improve safety performance and ward off complacency. They included a review of all safety processes and procedures, enhanced safety responsibilities for masters and higher safety standards for all those working with BP Shipping. Many of those who participated in the stand down sent in constructive feedback on their reflections. This has since been used to help construct a clearer approach throughout BP Shipping towards the realization of world-class safety performance.

IDEESS helios award submission

Training has long been the key to safe operations at sea. With the BP fleet going through a period of rapid growth and concerns increasing about the quality and procedures taught at training facilities attended by many of our crews, a decision was taken in 2005 to set up a specific course in seamanship safety for petty officers and ratings at a training centre in the Philippines, home for many of our crews.

The International Development and Environment Seamanship School (IDEESS) at Subic Bay was chosen to host the first five day residential course in March 2006. Five more training courses were scheduled in the Philippines during 2006 and the next stage of the project will take the programme to a new training centre in India.

Training at IDEESS is practical and hands on, with minimal time spent in lectures. The main areas covered include: moorings safety, working at heights, enclosed space procedures, lifting and rigging, workshop safety, fire fighting, lifesaving and the responsibilities of petty officers and ratings. Participants are assessed throughout the course on three criteria: knowledge, ability and leadership capabilities.

To help make the course as realistic as possible, a purpose built working mooring deck was constructed at IDEESS to BP specifications, a workshop was designed similar to company vessels’ engine room workshops and a lifting area built to simulate rigging and slinging operations. An area was designated to enable students to be trained in using paint stages, bosun’s chairs and fall prevention systems. BP specific personnel protective equipment and safety equipment were used as part of the training.

The overall aim, according to fleet safety training officer Mick White, who helped build the programme from scratch, is to create a common standard in safety seamanship across the BP fleet and to ensure that crews understand BP Shipping’s commitment to safety. Since the courses began, the details have been shared with owners of time chartered vessels and IDEESS has been given clearance to offer the course to the wider shipping industry. In parallel, the number and function of crew training officers in the BP fleet has been revamped so that today they are able to deliver the same standard of training as that given at IDEESS, so reinforcing its messages.
Talking safety to Paul Manzi, fleet safety adviser, involves a discussion about every aspect of BP Shipping’s performance, from the design of a vessel to crew recruitment, operations and leadership behaviour.

in profile paul manzi

Q: How did you get involved with safety?
A: I took a job with a marine insurance company in the US. After four months of investigating body parts, fires and disasters I concluded there had to be a better way of earning a living. I couldn’t detach myself from what I saw – it made me a terrible investigator. I saw a lot of pain and suffering during this period but it laid the ground work for me. It provided a framework for everything I’ve done since.

Q: So what did you do next?
A: I went back to school (university) and took a Master’s degree in Environmental and Safety Management. That was in 1988. Exxon Valdez happened in 1989 and I haven’t had to look for work since. When I graduated I began installing environmental and safety management systems for various companies in Texas connected with the sea or river barges.

Q: Has there been one incident that has summed up the importance of safety to you?
A: Yes. Once, when I was working in a shipyard in Oregon, a boilermaker I’d got to know was killed when he fell 45 feet on to a floor while holding a tank lid. He wasn’t wearing a safety harness yet he’d insisted that his trainee and another person there did. It’s haunted me ever since that I haven’t been able to ask him why he behaved the way he did. One simple action would have saved his life. Now, if I ever see similar situations going unchallenged in an organization, that’s when I know there is something wrong with its business performance. The two go hand in hand, that’s the crux for me.

Q: What’s the first thing you do going into a new job?
A: Well, BP Shipping is the seventh time I’ve come into a company as a safety adviser, but each situation has been different. Basically I try to understand what the company’s safety expectations are and where the organization is in relation to these expectations. I prefer to remain hidden for two or three months while I seek answers. This didn’t apply at BP Shipping because the Texas City incident occurred soon after I arrived and there was an immediate rush to evaluate our safety situation.

Q: Do you get much job satisfaction?
A: Absolutely. I like safety. I like what I do. I suppose the satisfaction comes from two aspects of the job. One is knowing that I’m contributing in some way to make seafarers’ lives better. That’s the altruistic driver. The other is that I’m convinced that if we get safety behaviours right, good business performance follows. With safety you have the opportunity to make a quick and immediate impact on a situation. When companies do change their safety culture for the better you feel it at once. It’s always a very positive development.

Q: What have you been trying to achieve at BP Shipping?
A: In a phrase, to make the organization more restless and relentless about safety. We’re allocating money efficiently and effectively, in the financial sense ‘enough’ is spent on safety. But do we devote enough of our time to safety? I feel we can all do a lot better. We spend a lot of time talking safety but not enough ‘doing safety’. We need to be more active and more persistent. Everyone in the organization needs a stronger sense of purpose about safety so that we all feel we are empowered to save the day if necessary. There’s a lot of enthusiasm about safety in the organization but to move performance to another level, a truly world-class level, we must always be aiming for something better.
What safety

What do people who work for BP Shipping think about safety? We asked 60 employees at every level around the world to answer five questions and suggest a safety slogan.

**What makes a ship safe?**

“Safety has to be ship sponsored, not something we push from shore.”

“Diligence, and good officers who give a lead to the crew.”

“A safety culture, brought about by all staff working together to achieve safety.”

“It’s about ‘duty of care’, for oneself, for one’s fellows, for the environment.”

“If everyone lives safely, you have safety in numbers.”

**How do you communicate safety messages?**

“Face to face, or by questioning and challenging physical evidence.”

“Training, educating, re-educating and providing the resources necessary.”

“Remotely, by email. On board by ASA conversations. Personally, leading by example.”

“Through example, discussion and guidance.”

“Leading by action and openly acknowledging areas for personal improvement.”

**What is your role in safety?**

“Supportive.”

“To lead from the front and set an example.”

“To make sure safety equipment arrives on board asap.”

“We are all leaders in safety.”

“Leadership and setting an example.”

“Ensure my own actions are safe. Then help others.”

**Contributors:**
- James Bobbitt fleet technical management
- Laura Kovary port superintendent
- Robert Cornish fleet safety training officer
- Bob Baldwin regional manager
- Chris Gaukroger marine superintendent
- Steve Huddart construction manager
- Dharam Kanyathi chief engineer
- Praveen Bakshi chief engineer, British Security
- Stephen Taylor new build delivery superintendent
- Russell Brooks ship operator
- Karmen Bilin buyer, fleet procurement
- Jayachandran Ramanpillai marine superintendent FTMB
- Ray Clark chief engineer, Al Khaznah
- Vis
How do you guard against complacency?

“Never give up. Always have safety on the agenda. Always show zero tolerance for any unsafe acts or conditions.”

“Regular drills. Practice makes perfect.”

“Safety is our shield against accidents, don’t let cracks develop in it.”

A safety slogan:

“Look safe, be safe.”

“Assumption is the mother of all accidents.”

“What one thing could be done to improve safety?

“Training, training and more training.”

“Improve worker education in the shipyards.”

“Slow down, safety is about time. Take your time and stay safe.”

“Make it a habit to identify, report and fix potential failure.”

“Listen to lessons learned by others.”

“Engage your brain before your hands.”

“Accidents don’t happen — they are caused!”

“Involvement drives excellence in safety.”
When Targe Towing Limited won a contract at the end of 2004 to manage a three vessel tug fleet at the BP Coryton oil refinery it was an acknowledgement of the company’s “quality of service, underpinned by its proactive initiative in fire fighting training for dedicated terminal tugs,” said managing director Tom Woolley.

Little more than nine months later around midnight on 9th October 2005, the crew of Stanford, one of the new tugs based at Coryton, had just turned in for the night when the captain received a call from a person representing Essex County Council. Southend pier was on fire, could they help?

The Stanford and her sister tugs are “state of the art” vessels built at a cost of around $8 million each. Capable of steaming 14 knots ahead and 13 knots astern, they have ‘class one’ fire fighting ratings and are trained to handle emergencies, nevertheless this would be the first time the crew had tackled a pier fire.

Any doubts were quickly dispelled as Stanford battled the fire for more than four hours using its fire monitor to target high powered jets of water at the blaze. The crew’s response reflected the value of their safety training, and although the middle of the pier was lost, the end was saved.

Shortly after this Targe Towing won the inaugural BP Shipping’s CEO’s HSE partner of the year award for 2005, deserved recognition for a BP partner that already had an outstanding safety record. In the 12 years from 1994 to 2006 that Targe Towing have been managing the BP tug fleet at Hound Point in Scotland, they have recorded no DAFV Cs and have had no unplanned down time.
working with partners

BP Shipping’s primary point of contact with third-party ship managers and time charters exceeding four months is the fleet operations assurance and relations team.

At any moment the team can be working with more than 50 external ship managers and have at least 80 vessels under its remit. The team is not responsible for the day to day management of these vessels, nor is it responsible for approving vessels for time charter. Instead, its remit is to ensure that management services provided by third-party managers are aligned with the standards and expectations of the BP group.

Key areas of this involve ensuring that the terms of the charter agreement are enforced through regular inspections, fostering relationships between sea staff and BP Shipping, and encouraging the sharing of best practice.

“Safety plays a central role in this assurance process, for example, we undertake HSSE audits on ship managers, from which they develop and own an improvement plan,” explains Andy Glass, BP Shipping’s customer and relationship manager, “this is subject to ongoing assessment during regular visits to the manager’s offices.” The team also establishes and manages HSSE performance contracts with each third-party and time charter manager. The contracts cover the overall fleet of vessels run by that manager, rather than just vessels the manager may have on time charter to BP.

In other ways too, fleet operations assurance acts as a catalyst to improve third-party safety standards. It conducts annual workshops with third-party managers, for chief executives and another for operations and HSSE professionals within the third-party company. In 2006 some 90 people from 55 companies attended a BP Shipping sponsored workshop.

The team provides advice and assistance where possible in the event of a significant incident and arranges training courses on BP Shipping safety initiatives around the world in order to share improvements industry wide.

Fleet operations assurance is now developing a ‘sharepoint site’ to make it easier to share best practice among third-party ship managers. “Our objective is to get the message to as many external people as possible about BP’s absolute commitment to safety,” says Glass. “We are continually seeking improvement.”

raising the bar

Over the past five years the safety culture at BP ShipCare, a wholly owned subsidiary of BP Shipping located on an island off the coast of Malaysia, has been transformed “so that now it is instantly recognizable to anybody familiar with BP’s worldwide standards,” says Andrew Cassels, ShipCare’s managing director from 2001 to early 2006.

Most of the workers at BP ShipCare’s base at Labuan in Sabah, are local contractors. Their job is to look after vessels of every type laid up at a secluded anchorage in Brunei Bay. Ships are brought to Labuan from all over the world and then subject to a full care and maintenance regime. This includes the turning of motors, fans and main engine shafts, dehumidifying engines and accommodation spaces and maintaining safety systems. Underwater inspections are conducted regularly and individuals are trained in emergency response procedures. Watch keepers on board and ashore provide 24 hour security.

In the past, safety at Labuan was task focused. Accident reporting had been limited to significant incidents, morale was low and relationships uneasy. Cassels’ first challenge, was to improve communication, make it personal and put the focus on safety rather than speed. The message was: “take twice as long to do a job if that is what it takes to do it safely”. Management changes were made, a new hierarchy created, safety procedures written down, bonuses introduced linked to safety performance and a safety officer appointed from the work force.

Performance improved noticeably in 2002 and continued to do so until a change of local management was followed by a serious DAFWC incident in 2005. “That was a huge lesson to us all and gave us cause to reinvigorate our safety drive,” notes Cassels. More regular safety meetings followed, as did more safety inspections and safety tool box talks, all linked directly to BP’s Golden Rules of Safety.

“Safety requires daily focus, you just can’t talk about it monthly or quarterly,” Cassels reflects. “Safety is a leadership issue, to work at the bottom level it must beled from the very top. To see potentially unsafe conditions requires a mind set that is only attained through continuous messages and actions. Safety performance can always be improved.”
In ship design we continued to work to optimize hull forms and rudder designs on new ships to improve their efficiency. High efficiency variable speed drives for compressors were installed on some tankers. We studied ways to improve ship scheduling in order to cut the time vessels spend in ballast. An energy audit of one of our tankers was conducted that included everything from engine performance and speed trials to assessments of the ship’s lighting, boilers, air compressors and operational management.

During the year we teamed up with the World Wildlife Fund (WWF) to work together in areas of mutual interest compatible with our shared desire to protect Particularly Sensitive Sea Areas (PSSAs) and Marine Protected Areas (MPAs). The first focus of our joint efforts is the Baltic Sea.

‘We will comply with all applicable legislation and regulations and strive, where practicable, to reduce our impact on the environment by meeting legislation early and exceeding compliance requirements.’

In 2005 and 2006, BP Shipping was one of six companies to participate in a North Sea pilot project to identify the benefit of emissions trading for shipping. Our ships trading in the North Sea complied with LSFO directives although compliance is not mandatory until August 2007. We are supporting proposed legislation in California designed to reduce emissions in port areas. We have taken an industry lead in introducing environmentally-friendly anti-fouling paint on our ships ahead of legislation. Our existing fleet is TBT free and the new build BP Shipping vessels constructed in South Korea and Japan in 2006 were all finished with five year, TBT free, anti-fouling paint systems. Together with the WWF, we lobbied for the ratification of the IMO Anti-Fouling Systems Convention.

‘We will actively promote environmental awareness by training and education of our employees.’

The newly formed environmental work group, composed largely of staff, met three times in 2006 and made a number of commitments that are being followed up. We introduced marine environmental awareness into HSSE training courses and held three courses in the UK and two in Australia during 2006 that were open to all BP Shipping staff and third-party managers. Along with the IMO, BBC and other partners, we produced a documentary entitled ‘Invaders from the Sea’ about the devastating effects of non-indigenous species caused by ballast water exchange.

‘We are committed to being an industry leader in environmental stewardship and will participate in discussions with relevant authorities to develop measures to minimize our industry’s impact on the environment.’

We continued to participate in and chair the non-profit organization SEAtT (Shipping Emissions Abatement and Technology) in 2006. Our new diesel electric LNG carriers were fitted to accept shore side electricity. We experimented with the use of renewable energy on our vessels. We began testing a new low solar absorption paint range on one of our tankers to find out if it reduces the production of methane and other volatile organic compounds.

We advanced the concept of ‘green passports’ (which include an inventory of hazardous materials on board) for our new build vessels by going further than the industry model and by extending the concept to include existing BP Shipping owned and operated vessels. One ship in each class will be documented each year until the entire fleet has been covered.

We employed a large marine assurance team to audit terminals and ports where BP cargo is lifted and discharged to ensure they meet our standards. Through Intertanko, we shared our inspection reports with the tanker industry.

We maintained our membership of major oil spill response co-operatives around the world and continued to sponsor the Brussels based Sea Alarm Foundation which works to protect wildlife in Europe from the effects of oil spills.

‘We will be transparent in reporting our environmental performance. We will make our commitment available to the public, openly report our performance, and use a competent and independent body to verify our reported data.’

In 2005 the air emissions from our owned and operated and time chartered fleet totalled 136,245 metric tonnes. SOx (56,338MTe), NOx (49,907MTe), particulate (3,098MTe) and non-methane hydrocarbons (31,009MTe) accounted for 91% of these emissions. The figures were included in BP group data presented in BP’s 2005 Sustainability Report and verified by Ernst & Young. Early in 2007 we will produce a standalone BP Shipping environmental report which will be verified independently.
The growing involvement of BP Shipping employees in safety initiatives was underlined by entries in the 2006 Helios Awards that recognizes best practice and new activities across the BP group.

‘Changing course towards operational excellence’ one of three commended entries submitted by BP Shipping, described the culture change that has taken place as BP Shipping has evolved from a 16 ship fleet in 2002 to one of more than 80 oil and gas carriers today. Seven ‘magic’ processes had such a profound impact across the board, including affecting attitudes to safety. ‘The culture changed from one that was slightly autocratic, polarized and risk averse to one that is collaborative and performance driven. We now have a common purpose.’

Another commended entry, ‘five day shakedown’ showcased a procedure introduced by the new build delivery team in 2005 to make certain that every BP Shipping new build or bareboat charter vessel leaves its point of delivery with all defects repaired and catalogued. The result today is that BP ships enter service with a written record of systems tested and verified and with crews that have had five days at sea to gain operational familiarity with the vessel’s systems, before it sails.

A third entry focused on ‘seamanship safety’. A 2005 review of safety instruction in India and the Philippines concluded that statutory training received by crews from these countries was ‘inconsistent in quality and procedures taught.’ As a result a decision was taken to establish a seamanship safety course at designated training centres in the two countries, a first for BP Shipping. Details of the course have since been shared with time charter owners and the training centres have been given clearance to offer the course to the wider shipping industry (see page 24).

Safety was also key to the entry by the fleet technical management team. Called a ‘moment for safety’, this idea encourages employees time for a reflective ‘safety moment’ during the course of each working day. With its stress on personal behaviour, ‘moment for safety’ has proved to be a highly effective way of improving individual safety awareness.
There are many sites on the internet that provide more information about safety at sea and other topics discussed in this publication. They include:

- www.oicm.com – the site of the Oil Companies International Marine Forum which promotes continuous improvement in standards of design and operation.
- www.bp.com – the BP group site.
- www.marise.org – a site that collects shipping facts and figures and is run by the UK based International Chamber of Shipping.
- www.intertanko.com – the site of the International Association of Independent Tanker Operators.
- www.laphworldports.org – the site of International Association of Ports & Harbours. Has a section on port safety.
- www.sigtto.org – the site of the Society of International Gas Tankers & Terminal Operators which promotes high standards in gas tankers and terminals.
- www.imarest.org – run by the Institute of Marine Engineering, Science and Technology, it contains an excellent maritime links directory to sites worldwide.
- www.safetyatsea.se – a Norwegian run site linking 20 organizations working to improve safety in the North Sea.
- www.maib.gov.uk – the site of the UK government’s Marine Accidents Investigation Branch which examines all accidents on board UK ships worldwide.
- www.stepchangeinsafety.net – an oil/gas industry site designed to improve safety performance in the industry.
- www.mcga.gov.uk – the site of the Maritime and Coastguard Agency, develops, promotes and enforces high standards of marine safety 24 hours a day.
- www.gov.im/dti/marineadmin/ – the Isle of Man is a modern flag registry with a strong emphasis on quality, high standards and efficient service.

Books, user guidelines, videos and official publications about safety and shipping are available in many languages and can be purchased through websites such as www.amazon.co.uk or direct from organizations like the IMO. They include:

- A century of tankers (Intertanko, 2002; ISBN 82 996596-0-4; $69) which describes the growth of the tanker industry.
- Feeding the powerhouse of growth (Intertanko video; $30) looks at steps taken by the tanker industry to improve safety performance.
- Code of safe working practices (SIGTTO, free) – a downloadable publication also available in hard copy from 17 St. Helen’s Place, London EC3A 6DG.
- Safety and health at sea (£31.99 from Amazon). By Arne Sagen and Pat Mitchell.
- Survival at sea (£17.50 from Amazon). By Ron Brandt. Rates as the most comprehensive survival manual for non-military seafarers.
- The sea – a bimonthly magazine published by the Mission to Seafarers that includes articles on safety at sea. Available online at www.sirc.cf.ac.uk.

http://eubrgs278/stellent/groups/ist_shipping/documents/bps_publishedcontent/psafety.hcst