HEALTH & SAFETY REPORT 2015

Oil & Gas UK
the voice of the offshore industry

HEALTH & SAFETY REPORT 2015

OIL & GAS UK

Oil & Gas UK
the voice of the offshore industry

Contents

1. Foreword

Welcome to the 2015 Oil & Gas UK *Health & Safety Report*. As in previous years, the publication captures key developments across the health and safety arena and provides an accompanying commentary.

Tragically, it was a year in which two colleagues lost their lives in separate incidents at the TAQA Harding and BP Unity installations. Both incidents remind us once again of the hazardous nature of our industry and the need for continuous vigilance.

Overall, safety performance continued to improve against several criteria, including our non-fatal accident injury rate when compared with other UK industry sectors. There was also further improvement in the number of hydrocarbon releases. However, more effort is required to address the growing backlog in safety-critical maintenance.

The transposition into UK law of the EU Offshore Safety Directive required significant resource involving constructive engagement with industry stakeholders, the Health and Safety Executive (HSE) and the Department of Energy & Climate Change on its implementation.

Another major issue was ensuring continued effective search and rescue helicopter (SARH) cover for offshore workers in the central North Sea following privatisation of the UK national SARH service, which also coincided with the removal of BP's Jigsaw helicopter from the Miller platform to allow for decommissioning. Despite current cost challenges, the oil and gas industry stepped in to fund a £60 million contract with Bond Offshore Helicopters over five years to deliver the service.

Helicopter safety remains a priority. The outcome of the Air Accident Investigation Branch inquiry into the Super Puma L2 crash, resulting in the tragic loss of four lives in 2013, is awaited. We also continue to work closely with the UK Civil Aviation Authority in responding to the actions and recommendations made in the CAP1145 report, which aims to further improve helicopter safety.

The HSE Key Programme 4 (KP4) examined the industry's management of ageing and life extension (ALE) and found that the sector has responded well to the challenges arising from these issues and has strategies and practices in place to ensure the safe, long-term operation of offshore installations. We will continue to work with HSE on its KP4 report recommendations and ensure a continuing industry focus on ALE and on asset integrity management.

All of these matters and many more are expanded upon within this report and I hope you find the publication interesting and informative. Any queries on content or feedback should be directed to Robert Paterson, Oil & Gas UK's health, safety and employment issues director, on rpaterson@oilandgasuk.co.uk.

Finally, can I take this opportunity to stress that these are indeed difficult economic times, but there must never be room for compromise when it comes to safe operations.

Robert Paterson
Health, Safety and Employment Issues Director, Oil & Gas UK

2. Health Performance

Each year, doctors who carry out medical assessments of offshore oil and gas employees globally, as per Oil & Gas UK guidelines, are asked to submit a statistical return, indicating the total number of medicals they have performed and the number of cases in which individuals have failed to pass their assessments. The figures for the past few years are shown below. These illustrate a clear and continuing upward trend in the total number of medicals performed worldwide, which has exceeded 100,000 in each of the past two years and has almost trebled in less than a decade. Meanwhile, the failure rate has been fairly constant, between one and 1.4 per cent overall.

Figure 1: Examining Doctor Statistics

	2010	2014	2015
Number of Examining Doctors	796	968	1,047
Number of Countries with Oil & Gas UK-accredited Examining Doctors	37	50	55

Year	Total Number of Medicals Conducted	Percentage of Medicals Failed (Total Number)
2008	39,780	1.3 (503)
2009	48,941	0.2 (108)
2010	56,850	1.4 (784)
2011	59,900	1.1 (665)
2012	93,219	1.4 (1,284)
2013	113,006	1.2 (1,333)
2014	118,597	1.1 (1,285)

The most common causes for individuals failing these assessments are listed below and they have been very consistent over a number of years. Cardiac disease remains the most common cause, accounting for 13 per cent of all failed medicals in 2014.

Figure 2: Top Six Causes for Failing Medical Assessments

2010	2013	2014
Cardiac	Cardiac	Cardiac
Diabetes	Hypertension	Hypertension
Weight	Diabetes	Weight
Psychiatric	Weight	Diabetes
Hypertension	Dental	Drug Abuse
Drug Abuse	Drug Abuse	Dental

Precise figures are not yet available for the past year, but based on historic figures, cardiovascular disease (heart attacks and, increasingly, strokes) is likely to remain the leading cause for medical emergencies on offshore installations.

3. Health and Hygiene: Significant Issues and Activities

While the UK offshore oil and gas industry has traditionally been excellent at examining its safety record and the underlying causes of incidents, health and safety reports have less frequently examined health issues in the same way. In 2014, there was an increased focus on health-related matters and we are grateful to our medical advisor, Dr Graham Furnace, for his assistance in this over the year.

3.1 Occupational Health and Hygiene Network

In June 2014, Oil & Gas UK established a new network to bring together occupational health and hygiene professionals across the industry with the objective of sharing lessons, learnings and good practice. The opportunity to network in this way has been met with enthusiasm and has generated significant discussion at the quarterly meetings. An initial output is a proposal to develop an industry standard on offshore medic competency assurance (see Section 3.2 below).

3.2 Offshore Medic Competency

Offshore medic competency is an area of concern for the Oil & Gas UK Occupational Health and Hygiene Network. To ensure consistent quality in the delivery of healthcare offshore, the network has proposed the development of an industry standard for offshore medic competency assurance. Following discussions, OPITO – the Offshore Petroleum Industry Training Organisation – has agreed to help create this standard for UK Continental Shelf (UKCS) medics, covering recruitment, ongoing professional education and core clinical responsibilities. This work will continue during 2015.

3.3 Ebola

Cases of Ebola, a severe viral illness, were confirmed in several countries in West Africa, in particular Guinea, Liberia and Sierra Leone in 2014, with imported and secondary infections appearing in Europe and North America. An increasing number of queries about Ebola led Oil & Gas UK to produce a guidance note providing relevant information to member companies whose workforce travels to and from industry sites in West Africa.

Although the overall risk to the UK and the probability of a case occurring on the UKCS was low, Oil & Gas UK worked closely with Health Protection Scotland and Public Health England to reinforce their public health messages and further reduce the risk of a case offshore. As well as publishing guidance for employers and employees on the Oil & Gas UK website[1], a poster was produced for display at heliports as a reminder to personnel that they should not travel offshore if they had returned from an affected area within the previous 21 days.

[1] Oil & Gas UK's guidance on Ebola can be found at www.oilandgasuk.co.uk/Ebola

3.4 E-Cigarettes

Safety measures stipulate that smoking is only permitted within designated safe locations on offshore installations. The increasing use of e-cigarettes has prompted employers across the industry to request advice from Oil & Gas UK on their use offshore. The common argument for e-cigarettes is that they are an aid to smokers who wish to stop smoking. This is not supported by the only scientifically-led investigation[2] to date of this concept, which shows that e-cigarettes are not more effective than existing nicotine replacement therapies (gums, patches, etc) in helping individuals to stop smoking. Existing nicotine replacement therapies are medically-regulated, but e-cigarettes are not, although it is expected that those containing more than 20 miligrammes/litre of nicotine will be regulated from 2016.

Oil & Gas UK has now produced advisory notes on managing the use of both tobacco nicotine and e-cigarettes on offshore installations, which have been circulated to its forums and networks. The advice recommends that the industry is consistent with well-established public health measures to reduce tobacco smoking and that unless, and until, they become medically regulated, e-cigarettes should not be permitted offshore.

[2] A paper on 'Electronic Cigarettes for Smoking Cessation' was published in *Lancet* journal in 2013.

4. Safety Performance

This section outlines key aspects of the UK offshore oil and gas industry's safety performance using a number of metrics and a range of reference sources. Please note that the data sets cover different periods and, where appropriate and feasible, the individual charts below stipulate the relevant reporting period.

4.1 Oil & Gas UK Benchmarking

Each year, Oil & Gas UK carries out a benchmarking exercise for participating installation duty holders, as listed in Figure 3 below, to gain an overview of the UK industry's safety performance. This is conducted on an anonymous basis with companies allocated a letter as illustrated in Figure 5 opposite. Each participating company receives their individual company results, which are issued to their representative on Oil & Gas UK's Health & Safety Forum.

Figure 3: Companies Participating in the Benchmarking Exercise

Participating Companies	
Apache North Sea Ltd	GDF Suez E&P UK Ltd
BG Group Plc	Maersk FPSO UK Ltd
Bluewater Services UK Limited	Maersk Oil North Sea UK Ltd
BP Exploration Operating Company Ltd	Marathon Oil UK Ltd
Britannia Operator Ltd	Nexen
BW Offshore UK	Perenco UK Limited
Centrica Energy Upstream	Petrofac Facilities Management Ltd
Centrica Storage Ltd	Premier Oil UK Limited
Chevron North Sea Ltd	RWE Dea UK Ltd
CNR International UK Ltd	Shell UK Limited
ConocoPhillips UK Ltd	Talisman-Sinopec Energy UK Ltd
Dana Petroleum Plc	TAQA Bratani Limited
ENI Liverpool Bay Operating Company	Teekay Petrojarl
EnQuest Plc	Total E&P UK Limited
E.ON E&P UK Limited	Wood Group PSN Ltd
Fairfield Energy Ltd	
N.B. It is important to note that companies are listed above in alphabetical order and this does <u>not</u> correspond to letters allocated to companies in the performance charts in Figure 5.	

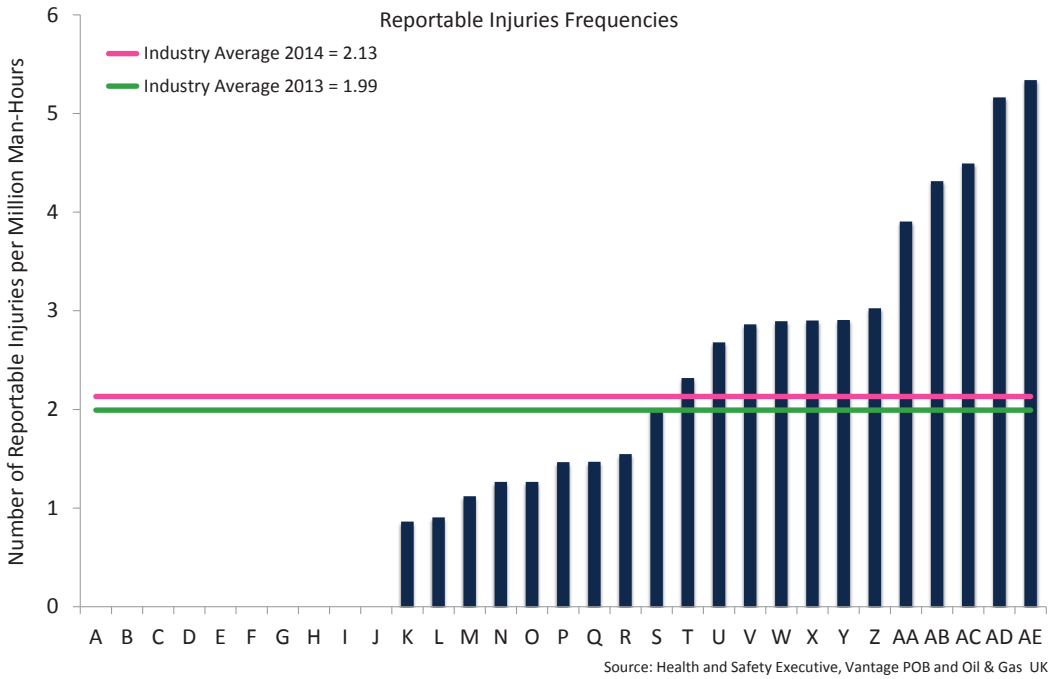
The benchmarking uses incident data from the Health and Safety Executive (HSE) and man-hour data from the Vantage Personnel on Board (POB) tracking system, covering a calendar-year period. The injury rates are then calculated per million man-hours based on a 12-hour workday as illustrated in Figure 4 below.

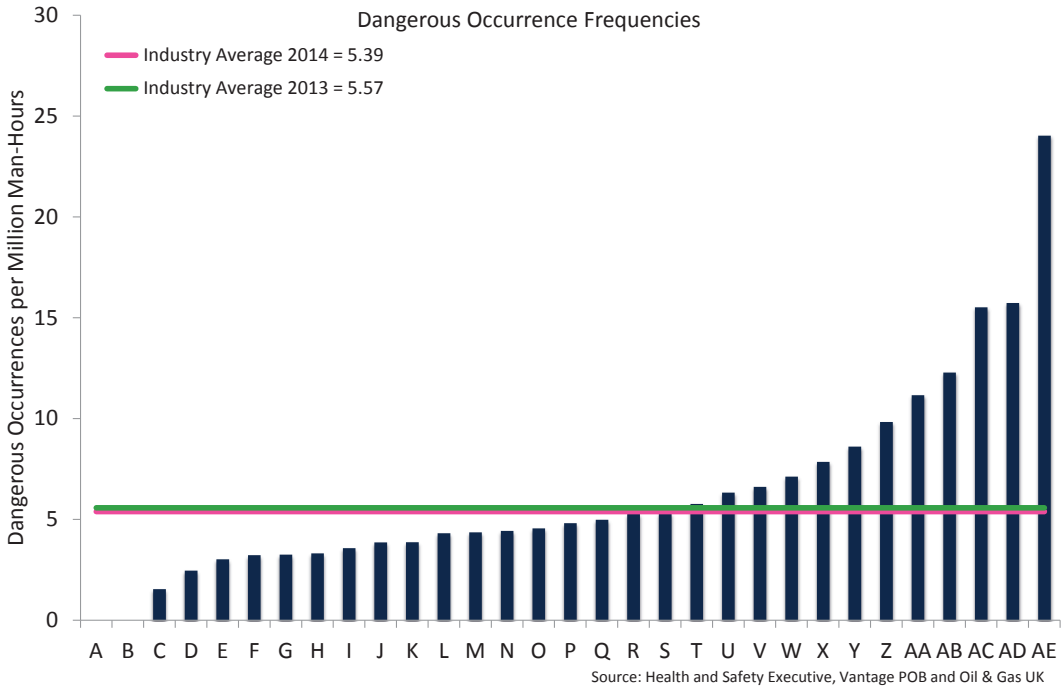
Figure 4: Oil & Gas UK's Safety Performance Benchmarking Calculations

$$\frac{\text{Number of Incidents}}{\text{Daily POB Figure}} \times 1{,}000{,}000$$

The benchmarking process covers: reportable injuries frequencies (fatal, specified and over-seven-day injuries) and reportable dangerous occurrence frequencies, according to the *Reporting of Injuries Diseases and Dangerous Occurrence Regulations (RIDDOR) 2013*. See Figure 5 below.

Figure 5: Installation Duty Holders' Safety Performance Benchmarking Results





Regrettably, in 2014, the industry had two offshore fatalities: one on the TAQA Bratani Ltd Harding platform on 27 February and the other on the BP Unity platform on 4 September.

The incident on the Harding platform occurred just after 2.15 am when a TAQA employee fell overboard during maintenance activity on the platform. A team from TAQA, along with investigators from Police Scotland and HSE, were deployed to investigate the incident. The investigation into the causes and contributory factors of the tragedy has resulted in a reiteration of the company's drive to continually improve its safety performance through compliance with safety procedures, and verification of such through active supervision and audit.

The incident on BP's Unity platform occurred when a Cape employee fell through a created opening during maintenance activity on the platform. Subsequent investigations by BP, Police Scotland and HSE showed that the incident occurred as a result of a safety barrier around the created opening being breached. This incident resulted in an immediate reiteration by BP of the critical importance of safety barriers and operating discipline, a focus that has continued into 2015 and featured within the company's segment-wide safety stand down.

Figure 6 below shows actual numbers of incidents and man-hours over a four-year period. This provides a breakdown of injury severity that is not apparent in Figure 5. Statutory reporting criteria for injuries has changed, resulting in some incidents that would previously have been reported as major/specified now being reported under the over-seven-day category. Also, on 6 April 2012, the classification of over-three-day injuries was replaced with that of over-seven-day injuries.

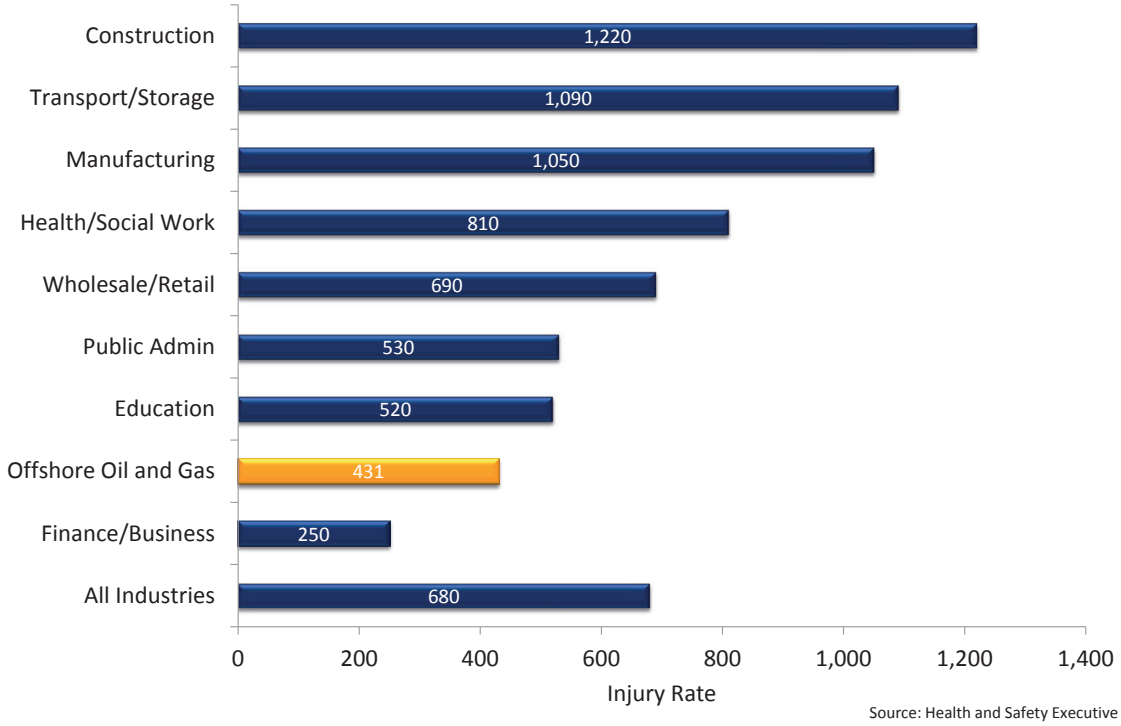
Figure 6: Numbers of Reportable Incidents

	Number of Reporting Companies	Fatalities	Major/ Specified Injuries	Over Seven Day Injuries	Dangerous Occurrences	Man-Hours
2011	28	2	25	72	347	45,081,195
2012	26	0	27	70	260	51,339,945
2013	28	0	32	81	316	56,695,543
2014	31	2	16	103	306	56,793,896

4.2 Health and Safety Executive Statistics (Personal Injuries)

The UK offshore oil and gas industry is a major hazard industry. However, in comparison with other UK industry sectors, the offshore oil and gas industry has a lower personal injury rate and performs better. Figures 7, 8 and 9 are based on data provided by HSE, which are drawn from RIDDOR reports. The data are therefore considered to be reliable and verifiable.

Figure 7: The Three-Year Average (2011 to 2014) Non-Fatal Injury Rate by UK Industry Sector per 100,000 Workers



Source: Health and Safety Executive

Focusing specifically on the offshore oil and gas sector, the figures below reveal that the non-fatal and combined fatal and specified injury rate improved last year (RIDDOR 2013 now requires industry to report specified injuries rather than the previous list of major injuries). Disappointingly, the over-seven-day injury rate has increased from 2013. Changes in statutory reporting requirements in 2013 may have contributed to these results, however, it is too early to be definitive.

Figure 8: The Three-Year Rolling Average of Non-Fatal Injury Rate per 100,000 Workers for the UK Offshore Oil and Gas Sector

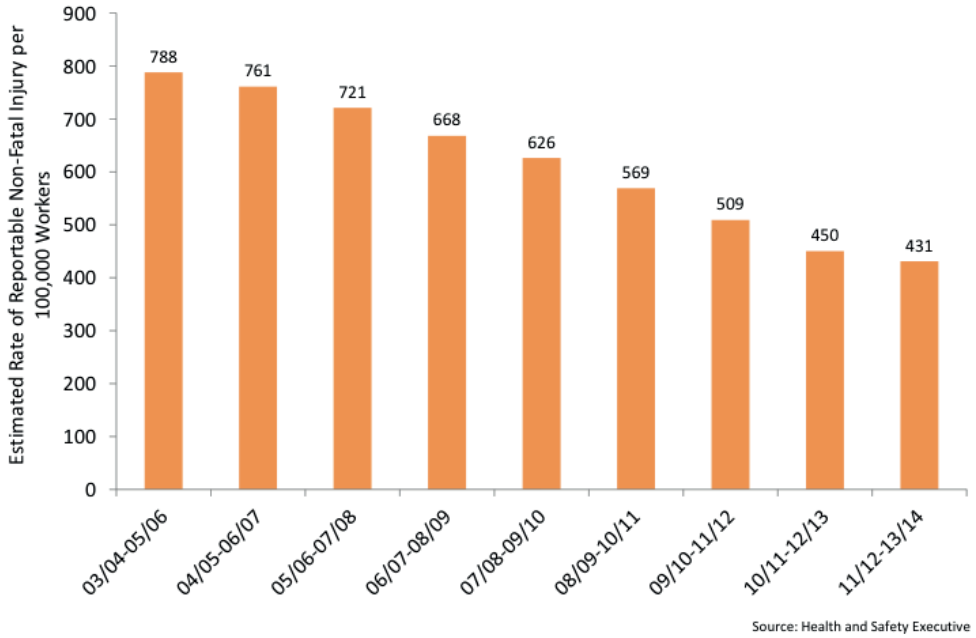
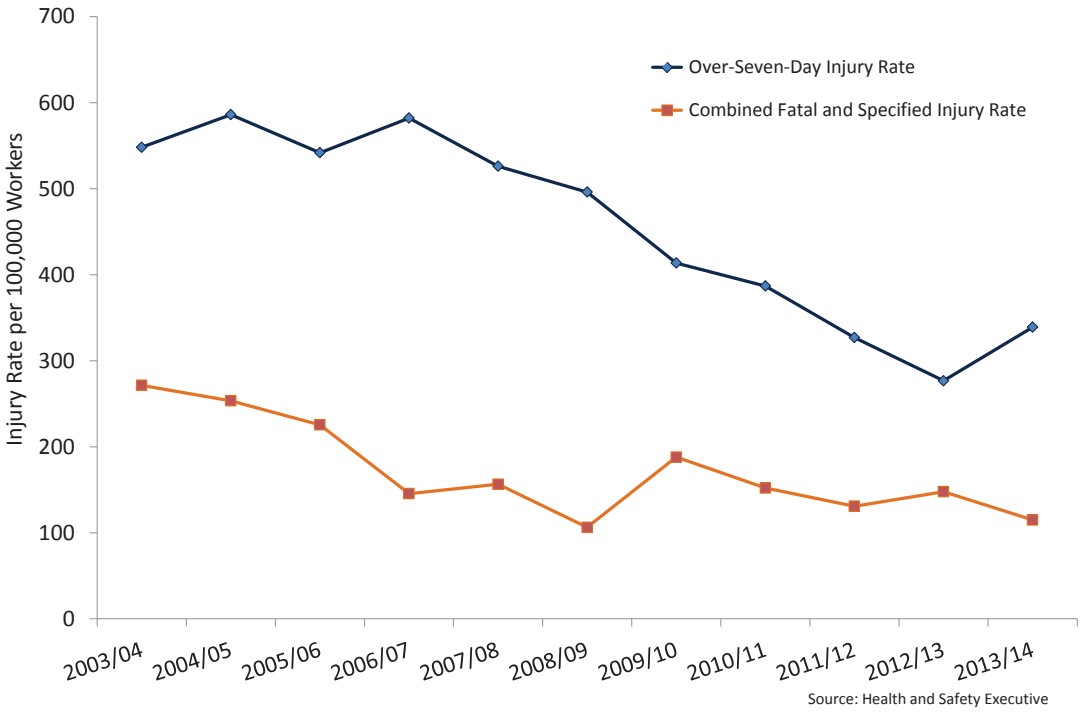


Figure 9: Over-Seven-Day Injury and Combined Fatal and Specified Injury Rates per 100,000 Workers for the UK Offshore Oil and Gas Sector



4.3 Asset Integrity Key Performance Indicators

The HSE Offshore Division ran the Key Programme 3 (KP3) inspection programme on asset integrity management from 2004 through to 2007. Asset integrity was defined as "the ability of an asset to perform its required function effectively and efficiently while protecting health, safety and the environment". Asset integrity management was defined as "the means for ensuring that people, systems, processes and resources that deliver integrity are in place, in use and will perform on demand over the whole life cycle of the asset".

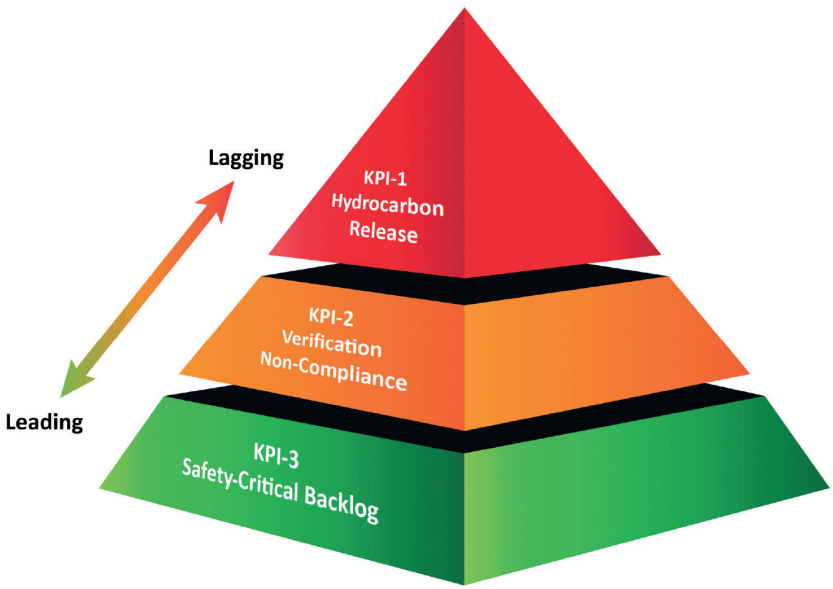
One of the many responses from the UK offshore oil and gas industry to KP3 was to develop additional asset integrity-related key performance indicators (KPIs), as illustrated in Figure 10 below, that would consistently demonstrate industry progress in this area over time and complement hydrocarbon release (HCR) statistics. The criteria for the KPIs were that:

- They present meaningful information that allow performance trends over time to be evaluated.
- They comprise data that are readily available to all or most operators with little or no further effort to collect and report.
- They are consistently defined across operators.

The industry set up a voluntary asset integrity KPI scheme, with data collected since 2008. Oil & Gas UK administers the scheme and collates data from a number of operators and duty holders. The three current cross-industry asset integrity-related KPIs are:

- KPI-1: Hydrocarbon Releases
- KPI-2: Verification Non-Compliance
- KPI-3: Safety-Critical Maintenance Backlog

Figure 10: Asset Integrity Key Performance Indicators



This section provides an update of the data collected by HSE (KPI-1) and Oil & Gas UK (KPI-2 and 3) in 2014. Please note that the HSE reporting period is April to March. The Oil & Gas UK reporting period is January to December.

4.3.1 KPI-1 Hydrocarbon Releases

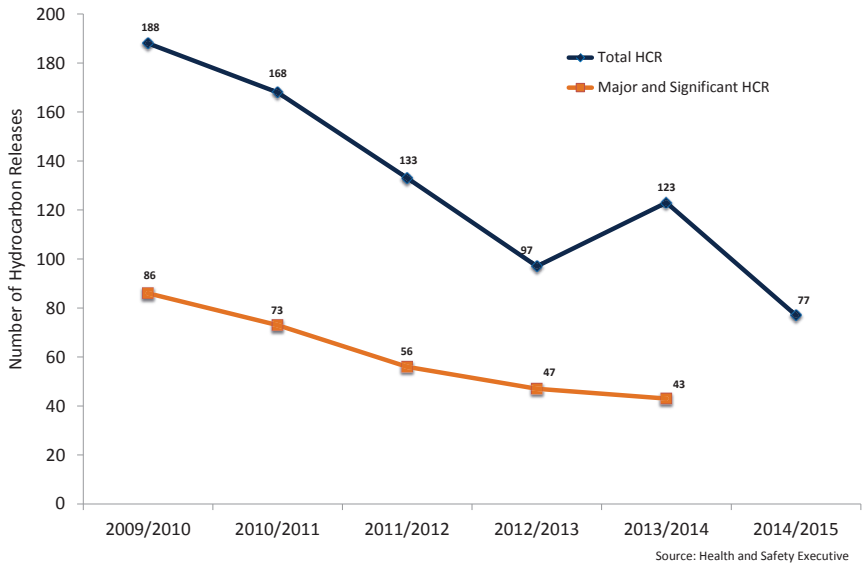
HCR are, in simple terms, oil and gas leaks and are a key hazard management issue for the UK offshore oil and gas industry. Robust measures are in place to prevent, detect, control or mitigate such releases. It is essential that where HCR do occur, they are responded to effectively; reported appropriately and consistently; investigated to identify causal factors; and that remedial and improvement measures are implemented to prevent reoccurrence. Incidents that are reportable under RIDDOR are classified as major, significant or minor HCR based on their potential to cause a major accident if ignited. Duty holders of offshore installations supply any additional data contained on the HCR database (HCRD) system voluntarily to HSE.

In 2010, Step Change in Safety agreed with all its member companies to strengthen efforts to reduce the total number of HCR. They set an objective to achieve a 50 per cent reduction in the number of reportable HCR by the end of March 2013, measured against the 2010 total HCR figure of 188. The industry fell just short of the 50 per cent reduction target, achieving a 48 per cent reduction over the three-year period. In addition to the overall improvement, a 45 per cent reduction in major and significant HCR in the three-year period was also very encouraging.

It should be noted that, from 1 April 2014, only petroleum HCR are recorded. The industry's voluntary HCR reporting (OIR12) no longer requires recording of non-petroleum HCR (referred to as non-process HCR, such as, diesel, methanol, hydraulic fluid, etc), although this information is still captured under the RIDDOR reportable dangerous occurrences. Figure 11 represents provisional data received from HSE for the period April 2014 to March 2015[3]. Note this is correct based on the data available at the time of publishing this report. Figure 12 opposite illustrates the split between process and non-process HCR.

Current analysis shows that the total number of process HCR was 77 in 2014/15 compared with 102 from 2013/14, which is a further 24.5 per cent decrease. We are unable to present the combined total of major and significant process HCR for 2014 due to a delay in receiving the data from HSE.

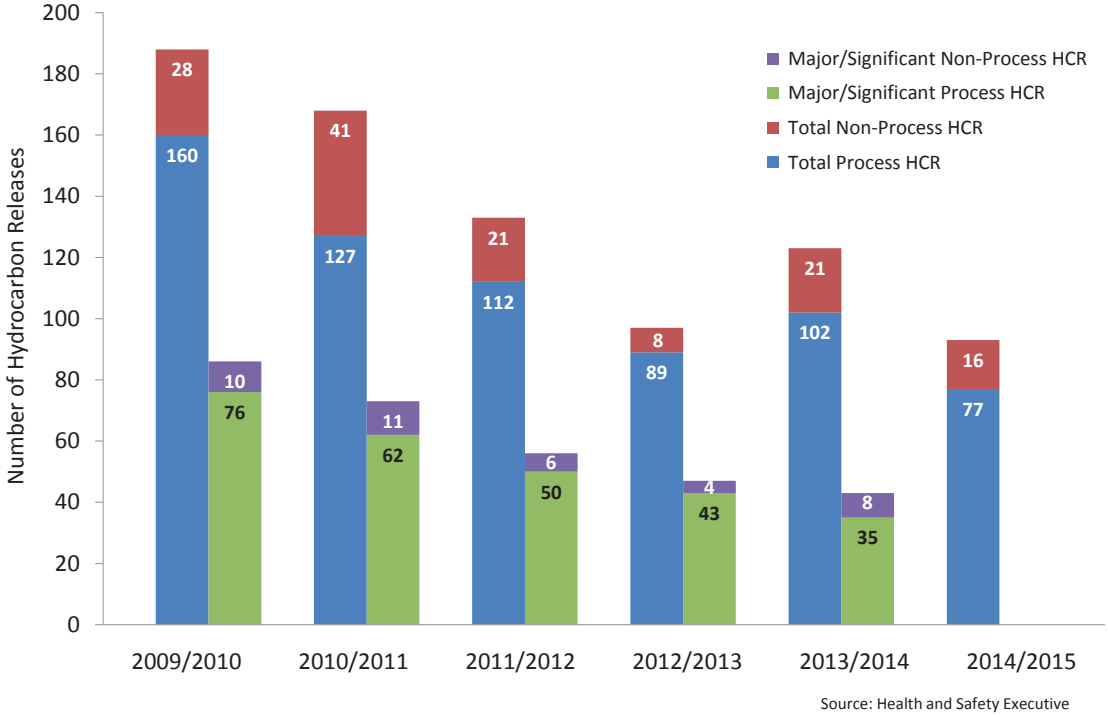
Figure 11: Number of Hydrocarbon Releases Occurring Offshore



Note: the 2014 data only include process HCR.

[3] From 1 April 2014 to 31 March 2015, HSE hydrocarbon release reporting figures are provisional and subject to change until finalised for publication.

Figure 12: Number of Hydrocarbon Releases Occurring Offshore Broken Down into Process and Non-Process



Source: Health and Safety Executive

In early 2014, an Oil & Gas UK work group published new *Supplementary Guidance on RIDDOR Reporting of Hydrocarbon Releases*[4] with a view to ensuring greater consistency in the reporting of minor oil and gas leaks. More information on future updates of this publication can be found in Section 11.7.4 of this report.

The Step Change in Safety Asset Integrity Steering Group has launched a HCR Improvement and Implementation Work Group to support continued HCR reduction efforts and improve asset integrity performance across the UKCS. The main objectives of the work group are:

- To develop a methodology for assessing duty holder HCR reduction plans, providing objective feedback on the plans and promoting cross-company best practice through mentoring
- To create a set of performance indicators for HCR and major accident hazard prevention that can promote best practice across the industry

The work group will work with the regulators, operators and contractors to continue to promote adoption of HCR reduction plans and best industry practices. This includes adoption of consistent leading and lagging metrics that sustain the industry's HCR reduction targets in line with HSE strategy.

[4] The *Supplementary Guidance on RIDDOR Reporting of Hydrocarbon Releases* is available to download at www.oilandgasuk.co.uk/publications

4.3.2 KPI-2 Verification Non-Compliance

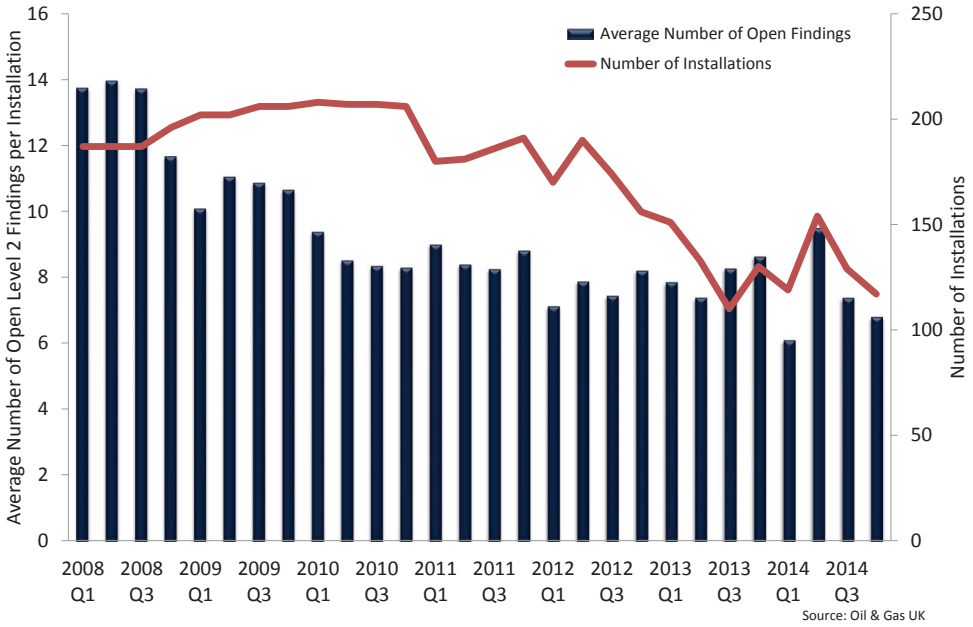
The safety-critical parts of offshore installations are subject to a verification process to ensure they are suitable for their intended purpose and remain in good condition and repair. Safety-critical parts of an installation include, for example, fire and gas detection, emergency shutdown and temporary refuge. Verification is undertaken by an independent competent person (ICP) and the findings are ranked as levels 1, 2 or 3 using common definitions, as outlined in Figure 13 below, and reported to Oil & Gas UK on a quarterly basis. KPI-2 monitors and measures non-compliances under levels 2 and 3, as they are the more significant findings.

Figure 13: Current Definitions – Verification Findings[5]

Level	
1	Performance standard satisfied, but an ICP may suggest an improvement to the system or may request additional information to demonstrate compliance with a performance standard.
2	Single performance standard failure with no significant threat to the installation.
3	Fundamental weakness of the safety-critical element (SCE) assurance system that: • involves multiple failures of a performance standard(s) or • presents a significant threat to the integrity of the installation

Figure 14 illustrates the number of open Level 2 findings (unresolved findings) per installation since the scheme started in 2008 to the end of 2014. The overall trend is one of improvement, notwithstanding a brief increase in the second half of 2013 and quarter 2 2014. Even allowing for that short rise, the specialists who provide the data and manage assurance and verification within duty holder companies believe risks continue to be adequately controlled.

Figure 14: Average Number of Open Level 2 Findings per Installation and the Number of Installations Reported at the End of a Quarter

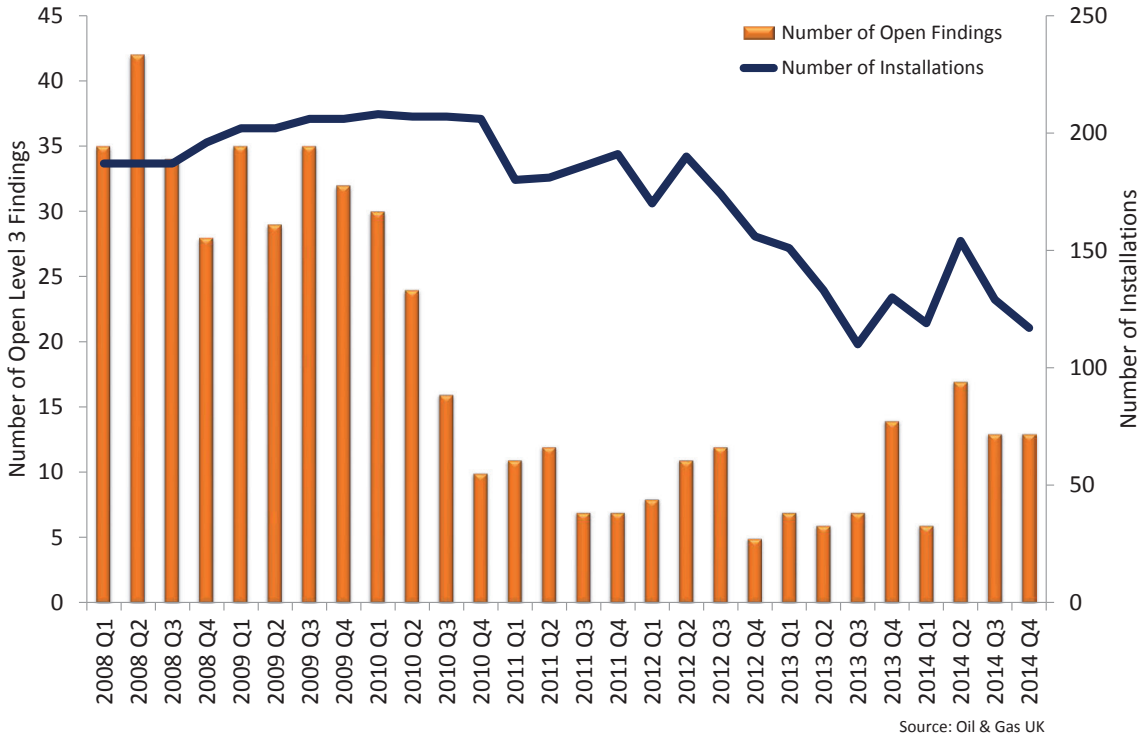


[5] Level 1 performance is tracked by duty holders but is not part of the industry KPI scheme.

Level 3 findings shown in Figure 15 relate to more serious matters of concern. As might be expected, such findings are relatively rare and the number of Level 3 findings per installation is so small that the total number across all participating installations is monitored and reported.

Since the introduction of the scheme in 2008, the industry has consistently reduced the number of Level 3 findings. Despite the relative increase in absolute numbers recorded in quarter 4 2013 and the second half of 2014, industry has maintained relatively low levels overall. Remedial and improvement actions to close out findings are of course managed at duty holder rather than industry level.

Figure 15: Total Number of Open Level 3 Findings and the Number of Installations Reported at the End of a Quarter



Source: Oil & Gas UK

4.3.3 KPI-3 Safety-Critical Maintenance Backlog

The KPI-3 produces a record of safety-critical maintenance backlog, defined as the total number of planned, corrective and deferred safety-critical maintenance man-hours that are beyond their planned completion date. It should be noted that deferred maintenance backlog man-hours are defined as planned or corrective maintenance that have exceeded their planned completion date and have gone through a formal and robust deferral process involving relevant technical or engineering authorities.

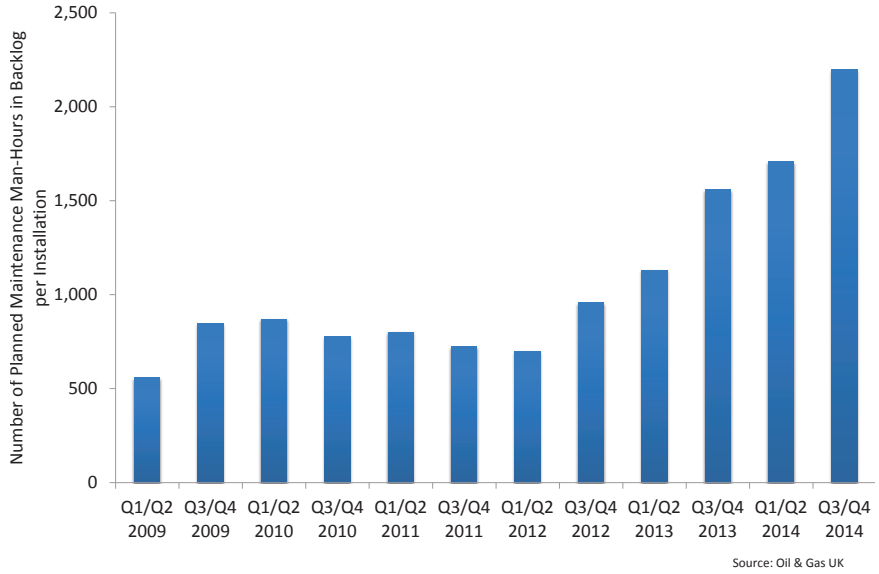
Figure 16 opposite shows an increasing trend in safety-critical maintenance backlog since reporting began in January 2009 to the end of quarter 4 2014. The Oil & Gas UK Asset Integrity KPI Work Group meeting in December 2014 raised concerns about the deteriorating performance trends and noted the level of participation in the KPI scheme had diminished over the last few years. Work is currently being undertaken to validate the accuracy of the data and to encourage all operators to participate in the voluntary reporting scheme to give the best reflection of how, as an industry, safety-critical maintenance is being managed.

Participating companies have shown that robust management systems are in place, involving relevant technical authorities, when decisions about deferral of safety-critical maintenance are being made.

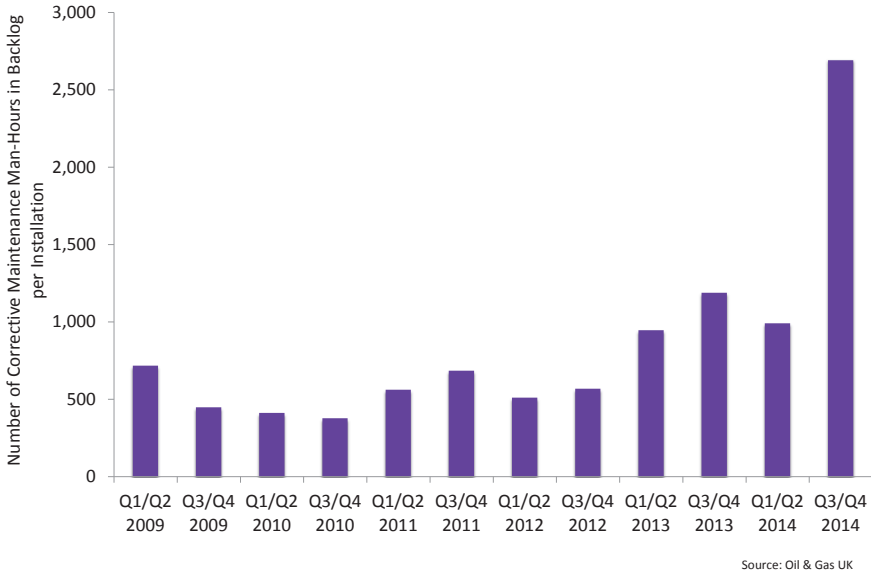
In November 2014, the Oil & Gas UK Board was advised by HSE of its concerns that safety-critical maintenance backlog was ‘disappearing’ into deferred safety-critical maintenance. The industry was further challenged to develop a set of asset integrity related KPIs that added value to major hazard management within the industry and monitored risk control improvement. Subsequent meetings with HSE have helped to clarify the purpose and objectives of the industry’s voluntary asset integrity KPI scheme to them.

A written request has since been sent to all Oil & Gas UK Operator Council representatives seeking their continued support for the scheme by providing accurate submissions based on the set industry criteria on an ongoing quarterly basis. The work group and the board agree that the KPIs serve as a useful industry metric and should be continued. Execution of safety-critical maintenance backlog is managed at duty holder installation level, rather than industry level, and will continue to be a key focus area for the industry and regulator to monitor performance.

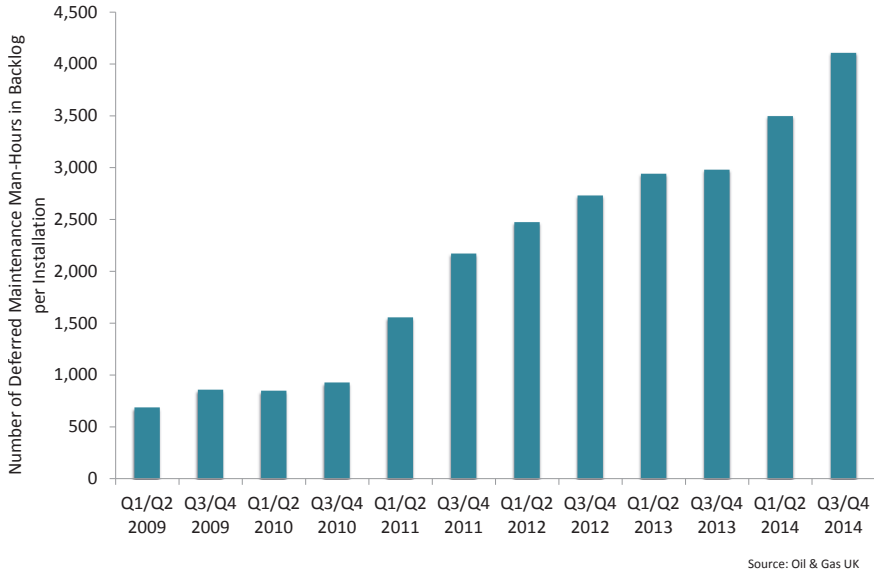
Figure 16: Average Number of Planned, Corrective and Deferred Safety-Critical Maintenance Man-Hours per Installation



Source: Oil & Gas UK



Source: Oil & Gas UK



Source: Oil & Gas UK

5. Safety: Significant Issues and Activities

This section summarises some of the more significant safety issues and activities affecting the industry and, in turn, Oil & Gas UK during 2014. It does not set out to represent the entire scope of issues and activities, only those of key significance or of wider interest to member companies and other stakeholders.

5.1 European Union Offshore Safety Directive

Following the Deepwater Horizon incident in the Gulf of Mexico in April 2010, the European Commission (EC) expressed its initial views on the safety of offshore oil and gas operations in its communication, *Facing the Challenge of the Safety of Offshore Oil and Gas Activities*[6], published in October 2010. The EC concluded that the existing divergent and fragmented regulatory framework that applied to the safety of offshore oil and gas operations in Europe, along with current industry practices, did not provide adequate assurance that risks from offshore accidents were minimised throughout the Union.

The European Union (EU) Directive on safety (and environment) of offshore oil and gas operations was adopted in July 2013 with implementation required by Member States by July 2015. Over the past two years, the focus has been on how the Directive would be transposed into UK legislation. In this vein, the Department of Energy & Climate Change (DECC), HSE and industry, through Oil & Gas UK, have been working collaboratively and have engaged extensively to transpose the Directive's requirements, with the objective to maintain existing procedures as far as possible and retain the high standards of the UK's current offshore regulatory regime.

Many of the Directive's requirements are already implemented through the existing Offshore Installations (Safety Case Regulations) 2005 (SCR 2005). Many of these existing provisions are being maintained in the Offshore Installations (Offshore Safety Directive) (Safety Case etc.) Regulations 2015 (SCR 2015), together with any necessary amendments or new provisions imposed by the Directive. There have also been consequential changes to the Offshore Installations (Prevention of Fire and Explosion, and Emergency Response) Regulations 1995 (PFEER); the Offshore Installations and Pipeline Works (Management and Administration) Regulations 1995 (MAR); as well as new provisions relating to licensing, environmental legislation and financial responsibilities.

Oil & Gas UK's directorates in both safety and environment worked closely with DECC and HSE regulators and the industry during a period of informal consultation at the beginning of 2014. On 23 July 2014, the formal consultation period began and lasted for eight weeks. Following extensive engagement with members, Oil & Gas UK made a formal response on behalf of the industry. Oil & Gas UK also helped facilitate industry support of the Regulatory Impact Assessment required under government rules. Over the course of the consultation period, a number of challenges were highlighted by industry. These included:

- The legal basis for environmental-critical elements and building the capacity for their verification scheme.
- Clarifying what a Corporate Major Accident Prevention Policy is. What is 'corporate' and how much detail is required to be submitted by each duty holder?
- International reporting – when do you report and what is to be reported?
- Well examination requirements – where to place responsibility for establishing a well examination scheme and the means and scope for undertaking well examination.
- Transitional arrangements – when do 'existing' production installations need to comply?

[6] *Facing the Challenge of the Safety of Offshore Oil and Gas Activities* can be downloaded at http://bit.ly/oct10EC

There were also other areas that caused the industry great concern and these were as follows:

Operatorship – early legal advice from UK Government lawyers suggested that, under the terms of the EU Offshore Safety Directive, there could only be one operator for a production installation and that the Directive did not allow for duty holders to produce safety cases, as is currently permitted under SCR 2005. This was strongly contested by industry as it would have had detrimental effects on the UKCS and the ability to maximise economic recovery of the UK's hydrocarbon resources, while providing no additional benefits to safety or environmental matters.

Oil & Gas UK sought separate legal advice and, through collaboration, industry was able to successfully argue for a multiple operator model and the need for a production installation operator (duty holder). However, this development resulted in some changes regarding the responsibility for managing discharges to the marine environment.

Competent Authority – the Regulatory Impact Assessment laid out five options regarding the set-up of the new Competent Authority (CA), a body that will provide oversight of major accident, safety and environmental risk management and is responsible for implementing the Directive.

The options ranged from maintaining the UK's current regulatory model to establishing an independent, stand-alone, offshore safety and environmental regulator. In the consultation document issued to industry in July 2014, DECC and HSE identified a preference for DECC's Offshore Oil & Gas Environment and Decommissioning Team and HSE Energy Division to work in partnership to provide the CA under a Memorandum of Understanding (MoU). The reasoning was that this would avoid changes to the machinery of government and provide a single, consistent, regulatory interface for industry.

This remains the government's preferred option, despite strong industry support for either HSE to become the CA or for a stand-alone authority to be established. The DECC/HSE partnership will be referred to as the Offshore Safety Directive Regulator (OSDR)[7].

Reporting of incidents – annex IX of the Directive, which covers common reporting requirements across oil and gas operations in Europe, was subsequently published as an EU Implementing Regulation on 13 October 2014. The UK, largely, already reports a number of the incidents as dangerous occurrences under RIDDOR, however, there are some new reporting requirements, such as the failure of a safety and environmental critical element.

The reporting format is governed by the Implementing Regulation and a subcommittee, the EU Offshore Authorities Group (EUOAG), has been set up to produce supporting guidance. The EUOAG is made up of regulators from the various Member States, as well as representatives from the International Association of Oil & Gas Producers (IOGP) and the International Association of Drilling Contractors (IADC). Oil & Gas UK has provided input to these meetings through HSE, IOGP and IADC. To minimise the reporting burden, HSE is working to align the new requirements with existing measures, so that there is a single route for reporting UK offshore incidents.

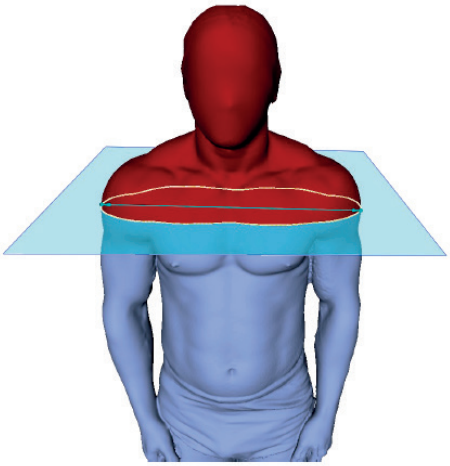
[7] For more information, visit www.hse.gov.uk/osdr/index.htm

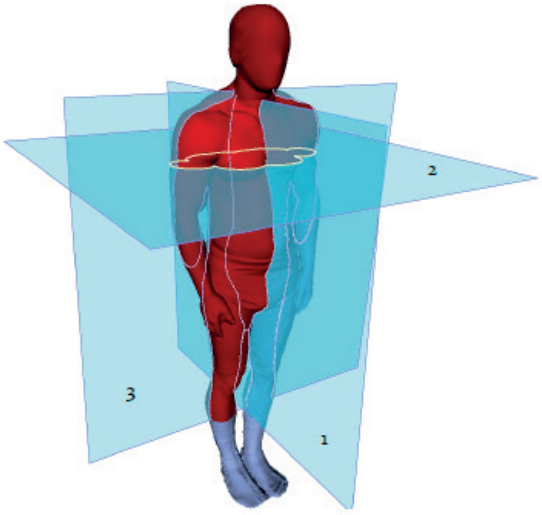
Figure 17: Key Milestones for Implementing the EU Offshore Safety Directive

5.2 Offshore Workforce Size and Shape

Confined space working and general space limitations are commonplace within the offshore industry and it is the size and shape of the workers that determine their fit within this environment. The last survey of offshore workers' body sizes was completed almost 30 years ago. Since then, the average weight of the offshore employee has increased by around 19 per cent. In addition, the weight of the heaviest individuals is proportionately even greater.

In light of this, Oil & Gas UK, together with researchers from Robert Gordon University, embarked on a study in late 2012 to measure the shape and size of the male offshore workforce, with backing and funding from a number of companies and HSE. The aim was to measure around 600 male offshore workers, using novel 3D scanning technology to generate a data set representative of those who work and travel offshore every year.





This study was thrown into particularly sharp focus in February 2014 by the Civil Aviation Authority's (CAA) CAP1145 review of offshore public transport helicopter operations. Among other recommendations, CAP1145 stipulated that, from 1 April 2015, CAA would prohibit passengers from travelling offshore whose body size, including the required safety and survival equipment, was incompatible with the push-out window emergency exit size.

Information from the size and shape project has therefore been used to inform the response to CAA requirements and the efforts to ensure compliance. Oil & Gas UK has worked closely with Step Change in Safety's Helicopter Safety Steering Group on this matter. In October 2014, Step Change in Safety announced that all helicopter passengers would be measured by the width of their shoulders, and those who measure greater than 22" (55.9 centimetres) will be classed as extra broad (XBR). Extra broad passengers are now required to sit in a helicopter seat nearest to the most compatible window.

Interest has already been expressed in using the size and shape data for commercial purposes, such as the design of offshore safety equipment. Any commercial income will provide financial support for future research project work. This study has shown the huge benefits arising from industry and academia working together in collaborative research.

5.3 Industry-Funded Central North Sea Search and Rescue Helicopter Service

The Oil & Gas UK Board commissioned a study in June 2013 to assess the adequacy of search and rescue helicopter (SARH) cover in the sea areas around Aberdeen and the central North Sea (CNS). This was in anticipation of new national SARH arrangements from the Department for Transport (DfT) and Maritime and Coastguard Agency, to be in place from 1 April 2015. The revised arrangements include the provision of a new base at Inverness Airport and closure of Royal Air Force bases at Lossiemouth and Boulmer, which coincides with removal of the Jigsaw SARH from the Miller offshore platform that is due for decommissioning.

Despite Oil & Gas UK's efforts to convince DfT to change its SARH basing strategy to accommodate the needs of the oil and gas industry, particularly for low frequency and high consequence incidents such as ditchings, DfT was not convinced of the need to change its approach. The Oil & Gas UK study concluded that there would be a resulting gap in the CNS SARH coverage, affecting the ability to meet the industry's goal of rescuing and recovering up to 21 persons within two hours.

Oil & Gas UK, in conjunction with 19 affected operators, worked together to find a commercial solution so that effective emergency response arrangements could continue in the sea areas around Aberdeen and in the CNS. As a result, participating companies have awarded Bond Offshore Helicopters a £60 million contract over five years to deliver SARH coverage. It will operate out of Aberdeen and provide rescue, recovery and medevac cover for offshore workers.

5.4 Key Programme 4 and Ageing and Life Extension Activities

The Oil & Gas UK Ageing and Life Extension Steering Group (ALESG) was established in 2012 to provide a cohesive and collaborative approach to promoting and addressing ALE-related issues on the UKCS in support of wider integrity management and security of energy supply.

The HSE concluded its three-year KP4 inspection programme in December 2013, which focused on the industry's management of ALE. It issued its final report at a joint industry/HSE event in May 2014[8]. The industry's focus and management of ALE has, in turn, continued with the development of industry guidance namely[9]:

- *Guidance on the Management of Ageing and Life Extension of Offshore Structures*
- *Guidance on the Management of Ageing and Life Extension for UKCS Floating Production Installations*
- *Guidance on Ageing and Life Extension Aspects of Electrical, Control & Instrumentation Equipment*

Oil & Gas UK also hosted a joint conference in Norwich in November 2014 with the East of England Energy Group to increase awareness of the KP4 Report and its key messages, targeting specifically southern North Sea operators and their supply chain.

Further work is planned in 2015 in conjunction with the Pipeline User Group (PLUG) to develop guidance on the management of ALE for pipeline and riser systems and with the Energy Institute (EI) to develop further guidance on ALE-related issues.

[8] More information can be found at www.hse.gov.uk/offshore/ageing.htm

[9] The three ALE guidance documents are available to download at www.oilandgasuk.co.uk/publications

5.5 Safety of Offshore Helicopter Operations

As mentioned in Section 5.2, CAA published a review of offshore helicopter operations safety, CAP1145, on 20 February 2014. CAP1145 proposed a series of actions and recommendations, several of which were directed at industry and have since been implemented with oversight from the Offshore Helicopter Safety Action Group (OHSAG). The group is chaired by CAA and includes the offshore industry, helicopter operators and workforce and pilot representatives.

The CAA stipulated that, from 1 September 2014, all helicopter passengers must be equipped with Category A emergency breathing systems (Cat A EBS)[10] or else they must be seated next to a push-out window exit. Moreover, from 1 January 2015, the EBS became compulsory regardless of where in the helicopter the passenger is seated. Step Change in Safety and Survitec led the work to develop the new EBS in record time. The resulting lifejacket and EBS system was certified by CAA in August 2014 and rolled out soon after to meet the September deadline and well ahead of the January deadline. This provides both improved survival equipment to the workforce and removes the need for seating restrictions.

Over 75,000 workers have now been dry trained to use the EBS and work continues to incorporate the Category A EBS training into the Helicopter Underwater Escape Training (HUET), which must be completed by all offshore workers as part of their basic safety training.

Another requirement of CAP1145 was that, from 1 June 2014, helicopter operations were to be restricted to conditions where the significant wave height is less than six metres. Furthermore, from 1 September 2014, no operations could take place if the significant wave height is greater than the helicopter-certified ditching performance. This was clarified from the original CAP1145 action that used the term “sea state”, which was ambiguous. Initial feedback has indicated that a higher than predicted number of flights were impacted during December, January and February and so work is under way to establish whether this was due to an irregular winter pattern.

The changes regarding passenger and window size are summarised in Section 5.2 of this report.

[10] Cat A EBS is a compressed air emergency breathing system with no rebreathable element. It also has the capability to be used in air and under water, can be operated with either hand, and requires no more than one action to activate. The mouthpiece can be deployed within 10 seconds and a nose clip is provided to prevent water from entering the nose. Cold water performance allows sufficient breathing air for up to 60 seconds in cold (12°C) water.

5.6 Helideck Issues on Normally Unattended Installations

The CAA CAP1145 report also included recommendations about the fitting of automatic fire-fighting equipment to normally unattended installations. Prompted by discussions with Oil & Gas UK, CAA commissioned Cranfield University in mid-2014 to examine whether the recommendation was valid and proportional and to provide proposals on the way forward. The Cranfield Report was shared with industry at an OHSAG meeting in April 2015, together with a CAA paper proposing a constructive way forward. Industry will work with CAA to resolve this matter during 2015.

5.7 Pipeline and Riser Loss of Containment

Work to update the pipeline and riser loss of containment (PARLOC) data continued throughout 2014 and culminated in the publication of a new report that updates the previous document published in 2003. Further information is given in Section 11.6.

6. Offshore Helicopter Transport Safety Record

6.1 Background

Since 1976, commercial air transport helicopter flight statistics and reportable accident data for UKCS offshore operations have been collected by CAA under its mandatory occurrence reporting (MOR) scheme. During this 39-year period, up to year-end 2014, more than 65 million passengers have been transported to and from UKCS offshore installations, with over 7.7 million flights made (sectors flown) and consuming over 3.6 million flying hours. During the same period, 13 fatal accidents have claimed the lives of 117 offshore workers and flight crew and there have been 60 non-fatal accidents[11].

To provide a report that is representative of today's offshore flight operations using a fleet of modern helicopters, data for the last 20 years (from 1995 to 2014) have been used for comparative purposes. With this in mind, and as a measure of current UKCS activity, in 2014, just over 141,400 sectors were flown, consuming 78,900 flight hours and transporting over 1.53 million passengers offshore. This was a notable rise in activity over 2013 when 131,600 sectors were flown. Since 1995, four fatal accidents have claimed the lives of 38 offshore workers and flight crew and there have been 18 non-fatal accidents.

From 1995 to 2014, a large number of safety improvements have been introduced to UKCS helicopter operations. These improvements have resulted from a number of industry-led initiatives and CAA research projects and are summarised in Section 6.5[12].

6.2 Current Helicopter Types

At the end of 2014, the UKCS helicopter fleet numbered 101 aircraft and comprised a mix of airframe types. Current helicopter types used for UKCS offshore oil and gas support are shown in the table below.

Figure 18: Current Helicopter Types used for UK Continental Shelf Offshore Oil and Gas Support

Type	Weight class	Introduced	In fleet
AgustaWestland AW139	Medium	2005	17
Eurocopter AS365 N3 (Dauphin)	Medium	1979	3
Eurocopter EC155	Medium	2007	6
Sikorsky S76	Medium	1980	7
AgustaWestland AW189	Heavy	2014	2
Eurocopter AS332 L (Super Puma)	Heavy	1982	3
Eurocopter AS332 L2 (Super Puma)	Heavy	Pre 2005	13
Eurocopter EC225 (Super Puma 2)	Heavy	2005	23
Sikorsky S92	Heavy	2005	29

Since 2001, only heavy and medium twin-engine helicopters have been used on the UKCS. This is because two-pilot, light, helicopter operations generally don't have sufficient range or payload to meet contemporary offshore commercial expectations.

[11] A complete listing of the 73 reportable accidents involving helicopters serving the UK offshore oil and gas sector from 1976 to 2014 is provided in an appendix on the Oil & Gas UK website at www.oilandgasuk.co.uk/healthandsafetyreport

[12] For a full and detailed list of industry-led safety initiatives and CAA research projects, see the appendix provided on the Oil & Gas UK website at www.oilandgasuk.co.uk/healthandsafetyreport

It is also important to make the distinction between heavy and medium twin-engine helicopter operations. As a rule, heavy twins (such as AW189, AS332, EC225 and S92) operate mainly out of Aberdeen or Scatsta and generally fly sectors with long flight times. Medium twins (such as AS365, EC155, S76 and AW139) fly mainly out of the regional heliports (that is Blackpool, Humberside, North Denes and Norwich) and these aircraft record a high number of sectors with relatively short flight times.

6.3 Offshore Helicopter Reportable Accidents on the UK Continental Shelf

All significant flight safety occurrences are reported to the CAA using the MOR scheme. There are a number of reports submitted every month, providing constant oversight of safety-related occurrences. It is the MORs classed as reportable accidents that are highlighted in this report.

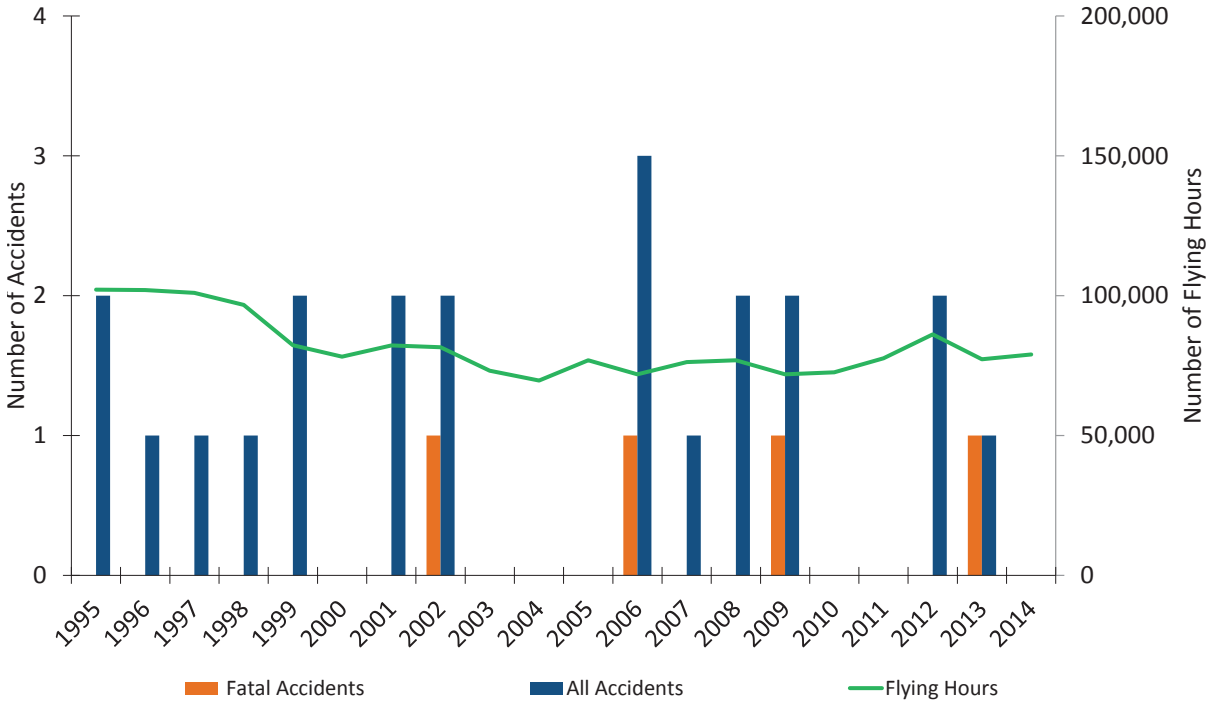
From 1995 to 2014, four fatal accidents have claimed the lives of 38 offshore workers and flight crew. Two accidents were caused by catastrophic component failure and the other two attributed to human factors.

Eighteen reportable non-fatal accidents have also occurred since 1995. These include major component failures, pilot error, lightning strikes, major airframe damage, and main and tail rotor damage. In most cases, only the helicopter was damaged but, infrequently, these accidents have resulted in injury to personnel.

6.4 Accident Analysis

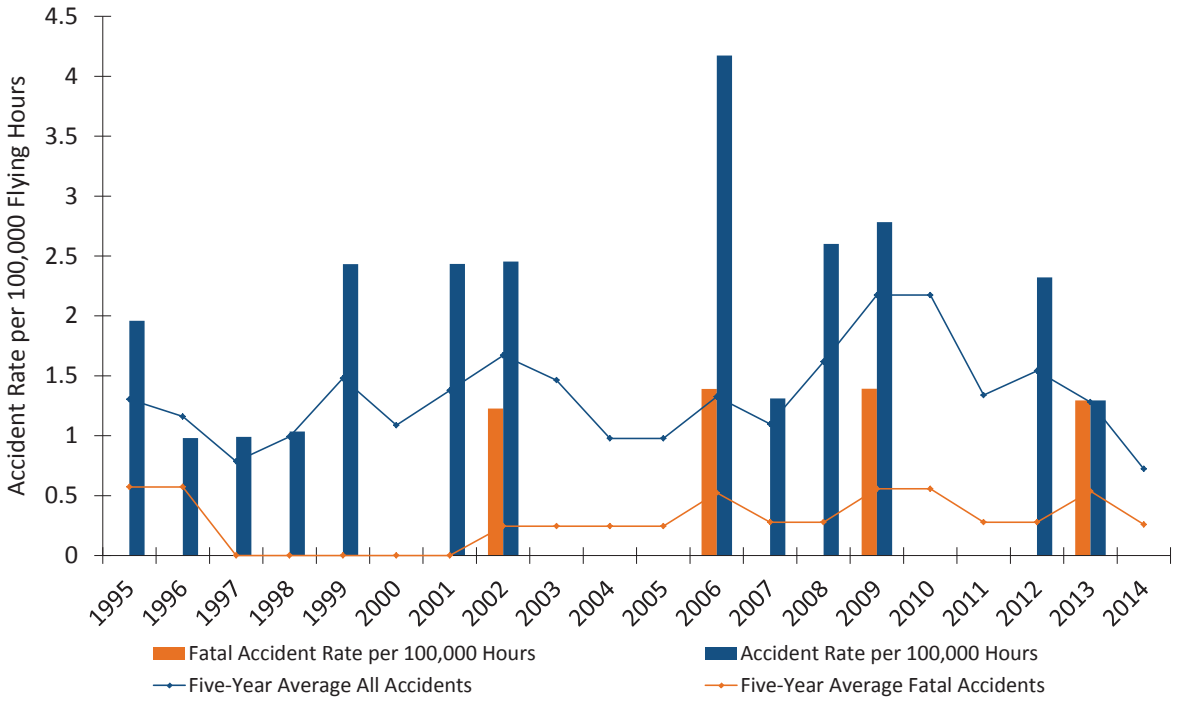
The following graphs illustrate the distribution of UKCS fatal and all reportable accidents from 1995 to 2014, as well as offshore helicopter fatal and all accident rates per 100,000 flying hours.

Figure 19: UK Continental Shelf Fatal and All Accidents Distribution



Source: Oil & Gas UK

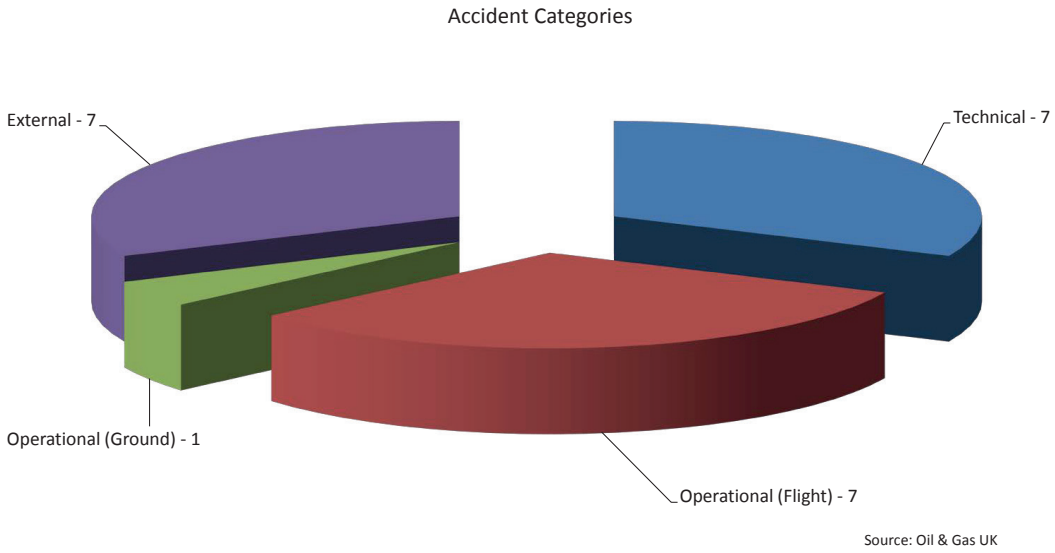
Figure 20: UK Continental Shelf Fatal and All Accident Rates per 100,000 Flying Hours



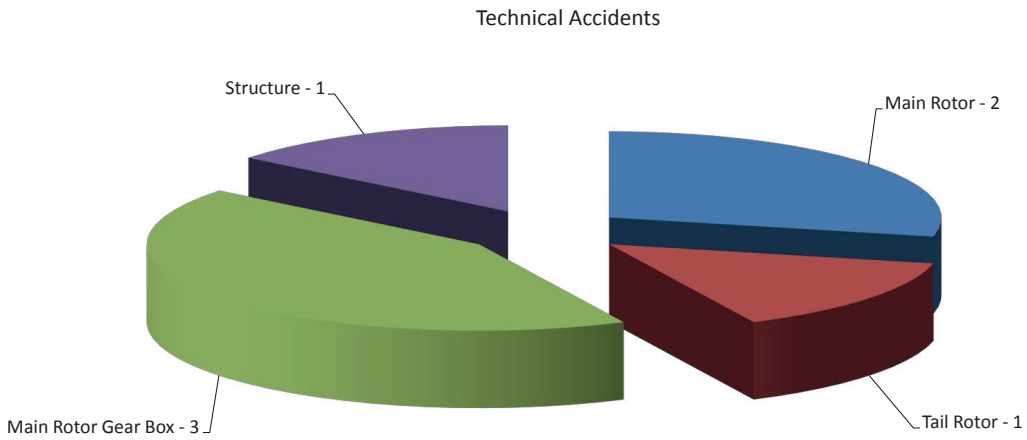
Source: Oil & Gas UK

A breakdown of reportable accidents from 1995 to 2014 is provided in the following charts[13].

Figure 21: Breakdown of Reportable Accident Causes, 1995 to 2014

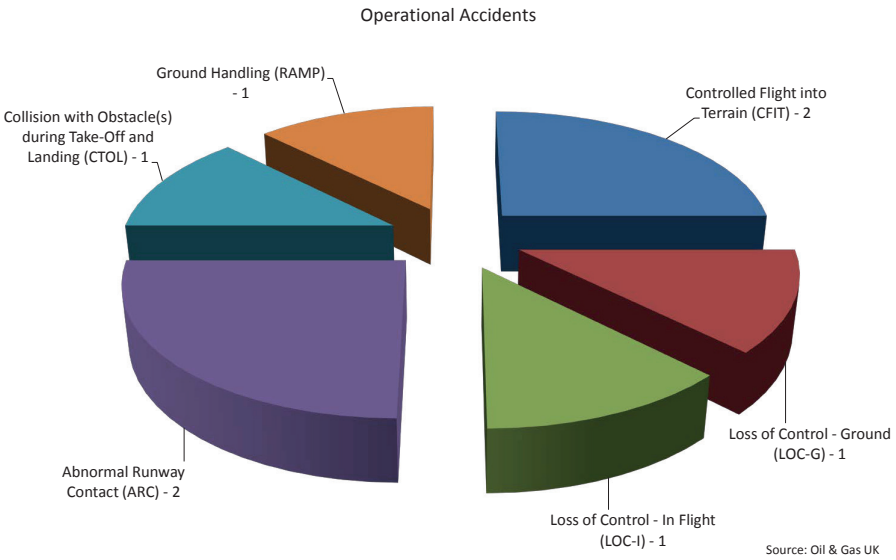


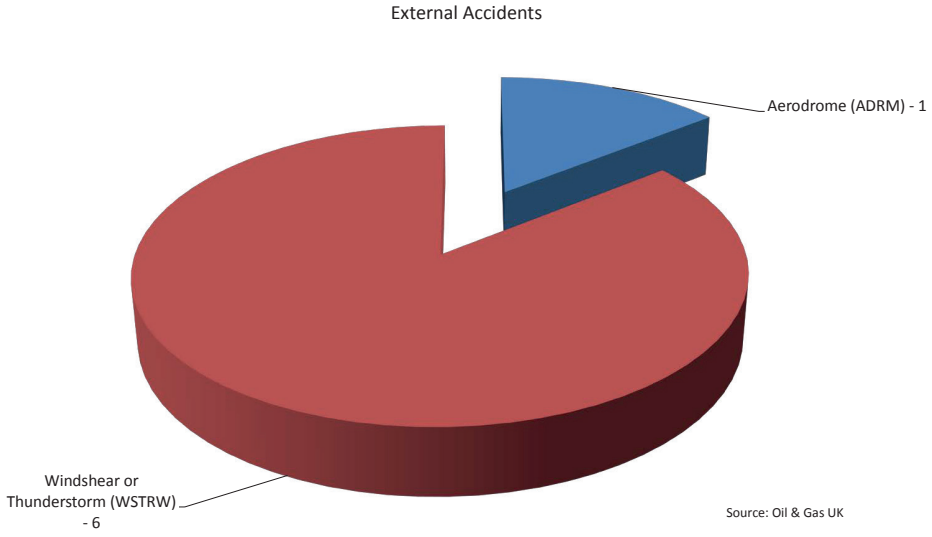
Source: Oil & Gas UK



Source: Oil & Gas UK

[13] In order for accident events to be identified using a recognised international code, categorisation and causation follows the International Civil Aviation Organisation/Commercial Aviation Safety Team Common Taxonomy Team Taxonomy.





From 1995 to 2014, operational causes have accounted for 36 per cent of the accidents, 32 per cent have been due to technical failures and 32 per cent have been caused by external factors. Although the non-fatal reportable accident rate on the UKCS since 1995 represents a significant improvement over earlier years, non-fatal accidents continue to occur.

Seventy-five per cent of operational accidents occurred during flight, all of which are attributed to pilot error. The remaining 25 per cent occurred on the ground. Eighty-six per cent of the technical failures have been attributed to dynamic component failures (main rotor gear box, main rotor blade and tail rotor). A structural issue accounts for the remaining 14 per cent.

For the 32 per cent of accidents due to external factors, the majority (86 per cent) were the result of weather-related events, including five lightning strikes and an encounter with a water spout. The final accident accounts for the remaining 14 per cent and was a very heavy helideck landing caused by adverse helideck environmental effects (hot turbine exhaust plume).

A comparison of UKCS offshore helicopter accident rates with worldwide fatal and all reportable accident rates, supplied by IOGP, can be made for the period 1995 to 2014 (see table below). This indicates that, averaged over this time, UKCS offshore helicopter operations are lower risk than they are globally.

Nevertheless, it is important to understand that helicopter operations in many of the global regions lack regulatory management and equipment sophistication when compared with the UK. Also, on the UKCS, helicopter operations are exclusively two-engine, two-pilot operations whereas, for example, in the US Gulf Coast region and elsewhere, there are a large number of small, single-engine and single-pilot operations. It is these types of operation that have the largest percentage of fatal and non-fatal accidents.

Figure 22: Comparison of Fatal and Non-Fatal Reportable Accident Rates, 1995 to 2014

Region	Fatal Accident Rates (per 100,000 flying hours)	All Accident Rates (per 100,000 flying hours)
Worldwide (Estimate)	0.49	1.35
UKCS	0.27	1.34

6.5 Safety Improvements and Initiatives

Since the early 1980s, many safety initiatives and improvements to UKCS helicopter operations have been funded and fully supported by industry and the regulators (CAA and HSE). Some of the major achievements in recent years are listed below, but they have not been given any order of priority or importance[14].

TCAS 2 Collision Avoidance System

A programme is under way on the UKCS to introduce an airborne collision avoidance system on all offshore helicopters. This system has the potential to eliminate conflictions between similarly equipped offshore helicopters and to reduce 'air miss' opportunities with other aircraft.

Extension of VHF Communications Coverage and Introduction of Multilateration Flight Surveillance for the North Sea

In 2004, the UKOOA (now Oil & Gas UK) Aviation Safety Technical Group (ASTG) initiated a joint project with National Air Traffic Service to assess the efficiency and coverage of offshore helicopter VHF aeronautical communications and fight surveillance provided on the UKCS. The outcome of this review led to significant work and investment being made to upgrade and modernise offshore VHF aeronautical communications and the development and installation of a new multilateration flight surveillance system that has significantly enhanced air traffic control on the UKCS.

The new systems became operational in 2010 and the wide-area multilateration was welcomed by air traffic controllers as a surveillance tool that is the equivalent of radar.

The East Shetland Basin has to date used the Gullfaks radar for flight surveillance. However, this has now reached its projected end of life and will not be replaced once it is removed from service as the Norwegian Air Traffic Control now use an alternative system – ADS-B. A project is now under way to extend the multilateration system into this offshore region.

Meteorological Project

In 2009, in response to a new CAA CAP437 requirement, an Oil & Gas UK-led project commenced to provide a UKCS, automatic, meteorological recording and reporting network to improve the accuracy of weather information used by offshore helicopter flight crews. This project entailed installing specialist meteorological equipment and software on designated hub installations and has to date provided training for more than 1,000 offshore personnel. The Helimet system became fully operational in 2012 and expansion and system upgrades continue. As the system matures, it is increasingly being regarded by flight crews as an excellent flight planning tool providing real time met data.

Helideck Lighting

Green perimeter lighting was adopted as an international standard on offshore helidecks following a CAA research project that included field trials of new helideck lighting systems designed specifically to enhance visual cues for landing at night. Green perimeter lighting has been in use on the UKCS for the last four years in conjunction with revised floodlighting.

The project also identified the significant benefits of lighting the aiming circle and 'H' marking. Following successful trials during winter 2012/13, these new lighting systems are now being installed on UKCS offshore helidecks. Step Change in Safety is monitoring implementation progress.

[14] For a full and detailed list of industry-led safety initiatives and CAA research projects, see appendix provided on the Oil & Gas UK website at www.oilandgasuk.co.uk/healthandsafetyreport

Forecasting/Predicting Triggered Lightning Strikes

Responding to requests from industry, CAA collaborated with the Met Office to investigate and demonstrate the feasibility of forecasting/predicting triggered lightning strikes on helicopters. Oil & Gas UK, CAA Norway, CHC Helicopter and seven individual oil and gas companies have funded the project, for which initial work was completed in June 2011. The system has since been evaluated and improved via in-service trials conducted during the winter 2011/12 and 2012/13 lightning seasons. Although further refinements have been identified, the system is considered mature and helicopter operators have requested that it is left running on the Met Office OHWeb weather information system.

Advanced Anomaly Detection for the Health and Usage Monitoring System

A programme began in 2009 to implement advanced anomaly detection (AAD) to the health and usage monitoring system (HUMS) data on the UKCS offshore helicopter fleet. The outcome of a successful CAA research project, AAD improves on existing HUMS data analysis using data mining techniques and enhances HUMS' sensitivity to defects without increasing or even reducing the false alert rate.

When fully implemented, HUMS detection rates may increase from about 65 to 85 per cent. HUMS AAD Controlled Service Introduction for the most used helicopter types on the UKCS commenced in 2013.

Enhanced Passenger Cabin Safety and Survival

In response to CAP1145 actions and recommendations, industry collectively embarked on a priority programme to introduce Category A EBS for all passengers travelling on offshore helicopters across the UKCS. This programme, from concept to equipment introduction, was successfully completed in a matter of months, including dry training for offshore workers.

Similarly, seating arrangements were made adjacent to available escape windows and seat allocation was introduced for each aircraft type to ensure that passengers are able to escape from a ditched helicopter in a short time period regardless of size and shape. More information is provided in Section 5.2.

6.6 Summary

The UKCS is a major industrial sector and cannot operate without helicopters – they are intrinsic to offshore operations and there are no realistic alternatives. These non-scheduled public transport operations on the UKCS take place in a hostile environment. Although the safety record is good for this type of operation, tragically there have been a number of incidents in recent years.

Despite having a fleet of some of the most up-to-date and technologically advanced helicopters, the most recent fatal accidents occurred in July 2002 (Sikorsky S76 in Leman Field), December 2006 (Eurocopter AS365 Dauphin at Morecambe Bay), April 2009 (Eurocopter AS332L2 Super Puma off Peterhead) and 2013 (Eurocopter AS332L2 Super Puma on approach to Sumburgh). These tragic accidents, as well as the non-fatal incidents, serve as a constant reminder of the need for continuous improvement to minimise the risks.

The UK oil and gas industry will continue to work in concert with helicopter operators, helicopter and safety equipment manufacturers, and regulators to further reduce risks. Risk reduction will only be achieved by collectively and vigorously pursuing current and future offshore helicopter safety initiatives and research projects and ensuring, where practicable, that implementation of actions and recommendations arising from various inquiries and reviews in 2013/14 (such as CAP1145) is expedited.

7. Regulatory Consultations

Oil & Gas UK continues to serve as a focal point for industry response to regulatory consultations managed by HSE. The following consultations were completed in 2014.

7.1 European Union Offshore Safety Directive

As outlined in Section 5.1 of this report, DECC, HSE and industry, through Oil & Gas UK, have engaged extensively over the last two years to transpose the EU Offshore Safety Directive requirements into UK law by July 2015. As part of this process, a formal consultative document was published on both HSE and DECC websites on 28 July 2014 and was open for comments for eight weeks. Oil & Gas UK's Health & Safety and Environment Directorates consolidated industry views from members in response to the regulators. In addition, the majority of operator and duty holder companies made their own submissions, bringing the total number of responses to HSE/DECC to 65. The consultation concerned a number of key areas, including establishment of the CA, as mentioned in Section 5.1.

One of the questions concerned the proposed approach to setting up the new CA. Five options were considered in the Regulatory Impact Assessment:

1. Do nothing
2. A DECC/HSE partnership CA to deliver the Directive requirements (that is major accidents only)
3. A DECC/HSE partnership CA covering all offshore safety and environmental regulation
4. HSE becomes the offshore safety and environmental CA
5. An independent 'stand-alone' offshore safety and environmental CA

The consultation document identified option 2 as DECC and HSE's preferred option.

The Oil & Gas UK consultation with members showed a strong preference for the creation of a single integrated safety and environment regulator. Following the consultation, the UK Government announced that it was to proceed with its preferred option of a DECC/HSE partnership to deliver regulatory oversight for major accident hazards only.

7.2 Approved Codes of Practice

The Lőfsted report on health and safety legislation published in November 2011 recommended that HSE reviews all approved codes of practices (ACoPs). The review was delayed for offshore specific ACoPs to account for changes arising from the EU Offshore Safety Directive and was completed as part of the Directive's transposition process. The HSE sought industry views on proposed revisions to two established ACoPs, namely:

- Prevention of Fire and Explosion, and Emergency Response (PFEER)
- Health Care and First Aid on Offshore Installations and Pipeline Works

In line with the government's drive to reduce the legislative burden on industry, while maintaining suitable standards of health and safety, the proposed revisions were geared towards clarifying and simplifying the ACoPs. As part of the response to the EU Offshore Safety Directive consultation (see above), Oil & Gas UK submitted industry responses that broadly supported the proposed revisions and offered only minor suggestions for improvement to the above ACoPs.

7.3 Health and Safety Executive's Offshore Intervention Strategy

During 2014, HSE's Energy Division (ED) consolidated its major hazard inspection programme to ensure that its resources are deployed to best effect. With support from Oil & Gas UK members, HSE developed a criteria for ranking installations as A, B or C in a hierarchy based on inherent hazards; duty holder performance across a range of factors; and other intelligence, such as previous incidents, the number of RIDDOR reports including HCR and the effectiveness of major hazard barriers.

This, in turn, drives inspection frequency and ensures regulatory activity is proportionate to installation major accident risk, taking into account the duty holder's performance in controlling these risks. This means that ED will inspect higher hazard installations and operators with poorer performance more frequently and in greater depth than installation duty holders where risks are perceived to be better managed.

For 2014/15, about 50 category A installations were to be inspected twice, about 90 category B installations were to be inspected once and circa 170 category C installations were not to be inspected. Inspectors assess how well risks are controlled, the adequacy of emergency measures and make an objective judgement of the duty holder's compliance with offshore legislation. ED has also developed a number of inspection guides in consultation with industry[15]; these guides set out criteria against which operator's performance is judged.

[15] The HSE's inspection guides are available at www.hse.gov.uk/offshore/inspection.htm

8. Oil & Gas UK's Work in Representative Bodies

Oil & Gas UK's Health, Safety and Employment Issues Directorate manages a broad range of issues and co-ordinates the development of co-operative solutions on behalf of industry. This is achieved through a number of forums, networks and work groups. The directorate also actively participates in various other industry groups.

8.1 Oil & Gas UK Forums

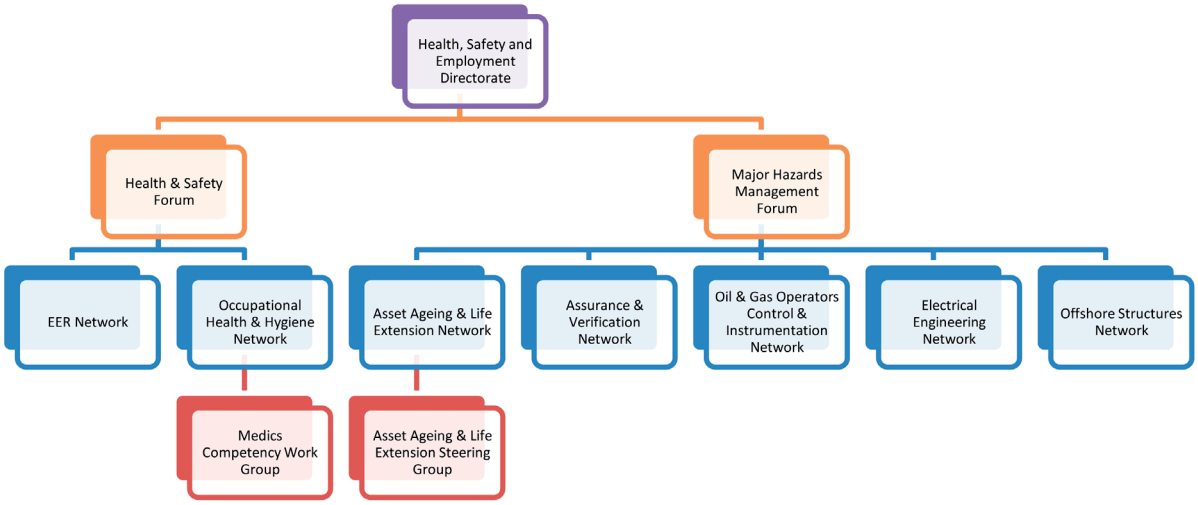
Health & Safety Forum	The Health & Safety Forum is a centre for communication between Oil & Gas UK and member companies on a wide range of health and safety issues affecting the UK offshore oil and gas industry. It provides the industry with a platform to engage with the regulators and other stakeholders and proposes and supports research, studies and analysis to ensure appropriate health and safety improvement strategies and actions are developed. Meetings are chaired by Oil & Gas UK and are held quarterly.
Major Hazards Management Forum	The Major Hazards Management Forum provides opportunities for technical safety specialist members to share knowledge, opinion and operational experience in relation to major hazard management.
Aviation Safety Technical Group (ASTG)	The ASTG provides and maintains technical oversight of aviation matters and promotes an industry position on a wide range of issues. The group is open to subject specialists only.

Figure 23: Forums and Associated Groups Organogram

8.2 Oil & Gas UK's Networks

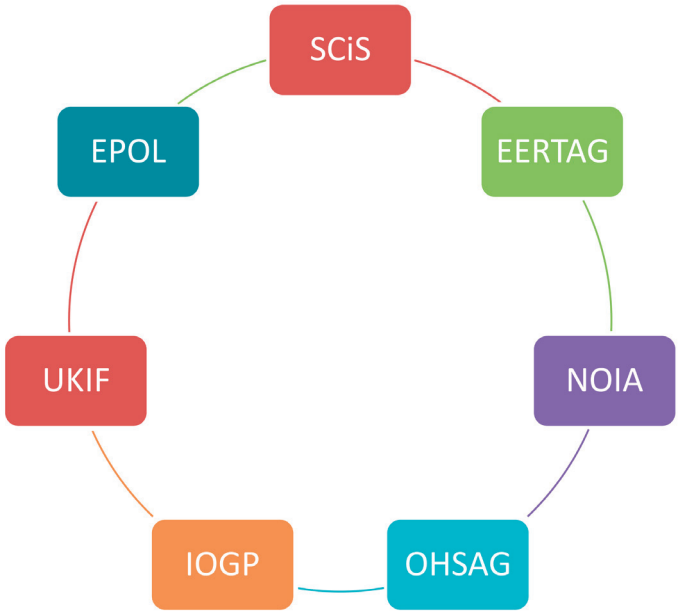
Networks	
Evacuation, Escape and Rescue (EER) Network	This network functions online only and provides a conduit for communication with duty holders and those with emergency response responsibilities.
Occupational Health and Hygiene	New for 2014, this group was set up to promote and raise the profile of health (including nutrition); to share key issues and operational solutions; to facilitate networking; to ensure that relevant and current health issues are represented within the Health & Safety Forum; and to link with the Employment & Skills Forum. This network meets on a quarterly basis.
Ageing & Life Extension	The ALE Steering Group meets quarterly and provides a conduit for communication with duty holders, regulators and other interested stakeholders on ALE and KP4 related matters.
Assurance & Verification	This network comprises assurance and verification practitioners from duty holder members and provides a mechanism for identifying and discussing industry-wide issues. This network meets quarterly to share lessons learnt and good practices.
Electrical Engineering	This network is chaired by a member representative and comprises electrical engineers from duty holder members. It is largely self-managed and provides a mechanism for identifying and discussing industry-wide issues. This network meets regularly and, in 2014, it published a technical note on *Guidance on Corrosion Assessment of Ex Equipment.* An Oil & Gas UK extranet site has been established for its members.
Oil & Gas Operators Control and Instrumentation Network (OGOCIN)	This network is chaired by a member representative and comprises control and instrument engineers and technical authorities. It was formerly set up under the UKOOA Instrument Committee and was brought under Oil & Gas UK control in December 2014. It is self-managed and provides a mechanism for identifying and discussing industry-wide control and instrumentation issues. The network meets on a quarterly basis. An Oil & Gas UK extranet site has been established for members.
Offshore Structures	This network consists of structural engineers from member companies. It primarily functions as an online community, but has met occasionally to discuss specific issues and to explore industry-wide solutions to particular challenges. An Oil & Gas UK extranet site has been established for members.

Figure 24: Network Organogram



8.3 Oil & Gas UK's Work with External Groups

Figure 25: Examples of External Bodies on which Oil & Gas UK is Represented[16]



[16] The acronyms in the graphic are spelt out in the glossary in Section 12 of this report.

Step Change in Safety (SCiS)	SCiS was founded in 1997 by the oil and gas industry trade associations. It is a member-led organisation that aims to make the UK the safest place to work in the global oil and gas industry through co-operation and collaboration between organisations and the sharing and adoption of best practices. During 2014, a sub-group from the leadership team guided the legal separation of SCiS from Oil & Gas UK, making it an independent tripartite organisation that represents the workforce, regulators and employers. Those in the sub-group set up the new organisation, drafted articles of association and created new membership engagement and communication plans.
Evacuation, Escape and Rescue Technical Advisory Group (EERTAG)	EERTAG is a tripartite body of industry, regulator and trade union representatives, with Oil & Gas UK providing part of the industry representation and the HSE providing secretariat support. The group meets twice a year to focus attention on emergency response and rescue matters affecting the industry.
North Sea Offshore Industry Associations (NOIA)	NOIA consists of representatives from the national offshore oil and gas industry trade associations from Norway, the Netherlands and Denmark, with Oil & Gas UK providing the UK input. The group has focused successfully on mutual recognition and acceptance of emergency response training standards across national boundaries.
International Association of Oil & Gas Producers (IOGP)	IOGP's Safety Committee strives to make the global exploration and production industry as safe as practicable. Some of the top areas of work over the last 12 months include: • EUOAG guidance to ensure a common data reporting format across EU member states for major hazard indicators and to aid understanding of the requirements of the EU Offshore Safety Directive. • Standardisation of barrier definitions to help with clarification/standardisation of terms in relation to incidents, barriers and performance. • Strategic planning cycle for IOGP events and publications.

UK Industry Forum (UKIF)	This UK Industry Forum is chaired by Oil & Gas UK and consists of representatives from the Offshore Contractors Association, IADC, the Caterers Offshore Trade Association, OPITO, HSE, trade unions and OPITO-approved training providers. The prime purpose of the group is to provide guidance and support to OPITO on the development of industry training and competency standards. It provides a screening process for requests to change standards and exercises scrutiny and review of work undertaken to maintain OPITO standards.
Offshore Helicopter Safety Action Group (OHSAG)	An action from CAA's CAP1145 review was to set up a CAA-led safety governance body for offshore operations, with representation from key organisations from across the industry. The primary purpose of OHSAG is to: • Facilitate delivery of the CAA offshore helicopter safety review actions • Monitor the progress of recommendations made to others • Facilitate dialogue between helicopter operators, employee representatives, manufacturers and regulators • Co-ordinate and lead the communications of the review to stakeholders and media • Assess the ongoing effectiveness of implemented safety initiatives to ensure tangible and measurable safety benefits are delivered
Emergency Preparedness Offshore Liaison Group (EPOL)	EPOL is an industry-led forum with membership drawn from Police Scotland, the Maritime & Coastguard Agency, Oil & Gas UK, and operator and contractor organisations. The group exists to improve offshore emergency response arrangements on the northern UKCS and west of Shetland. Sub-groups are formed to develop solutions to specific emergency response-related challenges facing the industry.

9. Publications

A key function of Oil & Gas UK is to lead or support the development of industry guidelines and to promote sharing of good practice and information. Guidelines are typically developed by appropriate volunteers drawn from member companies and supported by Oil & Gas UK staff. This section summarises recently published health and safety related documents.

9.1 Pipeline and Riser Loss of Containment

Oil & Gas UK and EI have collected and analysed UKCS pipeline and riser loss of containment data during the 12-year period 2001 to 2012 to update the PARLOC report. The new edition was released on 25 March 2015 and is the preferred source of risk assessment data for generic loss of containment frequencies.

The report provides improved data for use in quantitative risk assessments and safety cases. The data are presented in an aggregated format and calculated failure rates are in line with those of the 2001 report[17].

9.2 Risk-Related Decision Making Guidance

The *Risk Related Decision Making Guidance*[18] was published in July 2014. It is designed to facilitate risk-related decision making by providing a common understanding of the bases upon which such decisions are made. It provides a structured framework for business, technical and societal factors to be considered and to establish a transparent and justifiable basis for decision making. The guidance is aimed at those who make decisions as opposed to risk specialists.

The guidance replaces the *Industry Guidelines on A Framework for Risk Related Decision Support – Issue 1, May 1999* and builds on the experience gained since 1999, reflecting both changes in the regulatory environment and the increasing maturity of risk-related decision making. It also includes relevant information from the withdrawn *Guidelines for Quantitative Risk Assessment Uncertainty, March 2000*.

[17] The PARLOC report is available to download at www.oilandgasuk.co.uk/PARLOC
[18] The *Risk Related Decision Making Guidance* is available to download at www.oilandgasuk.co.uk/publications

10. Oil & Gas UK Health and Safety Events

A range of events are organised throughout the year to encourage sharing of information and learning of important issues. Health and safety events from the last 12 months include:

September 2014

Tuesday 2

Security Seminar

55 attendees
29 companies

Appealing to the security, health and safety, and human resources communities, this event covered social engineering influences, personnel and people security, cyber security and audits, and the influence on infrastructure.

October 2014

Tuesday 7

Occupational Health Seminar

74 attendees
48 companies

This seminar focused on personal health and nutrition, as well as wider offshore occupational health issues, and was run in conjunction with HSE.

November 2014

Thursday 20

KP4 Briefing

52 attendees
32 companies

The HSE's KP4 Report was the focus of this seminar in order to increase awareness of the report and its messages on ALE. Hosted in Norwich, in association with the East of England Energy Group, the event targeted southern North Sea operators and the supply chain.

More information can be found at www.oilandgasuk.co.uk/events

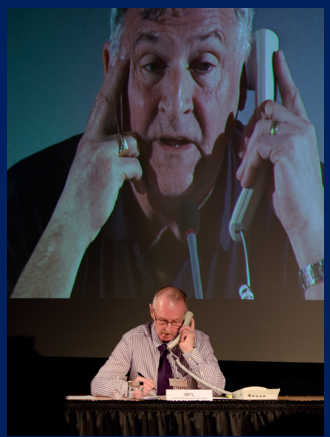
March 2015

Thursday 19

EPOL Seminar

124 attendees
59 companies

Managing the response to emergencies or crises can be daunting, particularly when this is in addition to 'the day job'. Organised by EPOL, this event was primarily aimed at those involved in, or wishing to develop their capability in, emergency response procedures and training.



April 2015

Wednesday 29

UK Oil and Gas Industry Safety Awards

320 attendees
61 companies

The annual UK Oil and Gas Industry Safety Awards ceremony celebrates the people, teams and companies making a real difference to offshore health and safety.
The winners of the 2015 Awards are:

- Safety Leadership – Vic Retalic, Premier Oil Plc
- Safety Representative of the Year – Karen McCombie, Sodexo
- Innovation in Safety – BG Group and Amec Foster Wheeler
- Workforce Engagement – Bruce Offshore Platform Team, BP
- Occupational Health and Hygiene – Lesley Officer, Rowan Drilling UK Ltd
- Sharing and Learning – Neil Clark, IHF Ltd

May 2015

Tuesday 19

EU Offshore Safety Directive Seminar

81 attendees
44 companies

This half-day seminar focused on the changes and impact for industry of operating under the new safety regime from July 2015, with regulatory oversight from the newly established Offshore Safety Directive Regulator.

Speakers from HSE and DECC shared their views and expectations and case studies from industry gave an insight into practical arrangements for the new safety case submission requirements.

May 2015

Wednesday 20

Examining Doctors' Conference

80 attendees
62 companies

The topics for 2015 included:

- SAR arrangements in the UK
- Passenger size – response to CAP1145
- Anaphylaxis
- ADHD
- View from abroad – Ebola in Nigeria
- Alternative methods of medical assessment
- Revisions to Oil & Gas UK medical guidance

June 2015

Tuesday 2

Aviation Seminar

90 attendees
40 companies

The CAA's CAP1145 actions and recommendations have significantly broadened the number of work streams and also provided extra impetus for getting the job done. Speakers from across the oil and gas and aviation industries reflected on the progress that has been made to improve offshore helicopter operations over the last year since the publication of the CAA's report.

All Year

5 dates

Doctors' Training Workshop

94 attendees
30 nationalities

This preparatory training course ensures that examining doctors have sufficient knowledge of the UK offshore oil and gas industry to undertake Oil & Gas UK medical examinations. The workshops attract attendees from oil and gas regions all around the world where Oil & Gas UK's medical standards are adopted.

More information can be found at www.oilandgasuk.co.uk/events

11. Focus Areas for 2015

11.1 European Union Offshore Safety Directive

Oil & Gas UK and industry will continue to engage with HSE/DECC on the implementation of the EU Offshore Safety Directive. Regulations were signed off by ministers and laid before Parliament in March 2015, coming into force in July 2015.

Focus has now turned to writing the supporting interpretative guidance and to the work of the OSDR operational implementation team. The team has developed process framework diagrams and assessment templates to provide information about the roles and responsibilities within OSDR and the procedures to be used by the regulator's inspectors.

The EUOAG continues to develop supporting guidance for the reporting requirements as stipulated in the Implementing Regulation. As mentioned, to minimise the reporting burden, HSE is working to align the new reporting requirements with existing RIDDOR measures so that there is a single route for reporting offshore incidents. Oil & Gas UK will continue to facilitate industry engagement with the CA to support adoption of the new Regulations and supporting guidance, as well as to respond to any industry-wide issues arising from their implementation.

Among other matters, the EU Directive Articles 6(8) and 19(4) place an obligation on Member States to establish a mechanism for effective tripartite consultation between the CA, industry and workforce representatives. At the present time, the Offshore Industry Advisory Committee (OIAC) exists to advise HSE. However, due to the requirements of the Directive, environmental matters will need to be included in future consultation arrangements. A proposal is currently being developed to establish a new committee to replace OIAC. This committee will support the work of OSDR. Work is ongoing to define the terms of reference for the new tripartite consultative committee with a view to establishment in early 2016.

11.2 Offshore Workforce Size and Shape

The focus in early 2015 has been to analyse the passenger size data collected (see Section 5.2 for background on the project). The data – soon to be available under licence – should prove invaluable to those designing offshore safety equipment, survival clothing, and space and accommodation requirements offshore. It also highlights the difference in dimensions between offshore workers and their onshore male counterparts.

The research group will produce a booklet to illustrate the percentile chart data for each of the 26 measurements taken and will develop a learning tool for use by others who want to conduct additional scanning studies. Academics are planning to publish papers that further describe the physical characteristics of the workforce.

11.3 Offshore Medic Competency

Oil & Gas UK will take forward the development of an industry competency standard for offshore medics in conjunction with OPITO. The aim is to ensure that medic recruitment, training and competency can be proactively managed and formally assessed in order to deliver safe and effective offshore healthcare.

11.4 Industry-Funded Central North Sea Search and Rescue Helicopter Service

The development of this SARH resource continued through the early part of 2015 and has now been handed over to the participating companies. For more background and other information, see Section 5.3 of this report.

11.5 Ageing and Life Extension

Further work is planned via PLUG to develop guidelines on ALE management for pipeline and riser systems. EI is also working to develop ALE-specific KPIs and the Oil & Gas UK Wells Forum is updating its integrity guidelines, including management of wells-related ALE matters.

11.6 Pipeline and Riser Loss of Containment

The publication of the recent PARLOC report brought the pipeline and riser loss of containment data up to date, however, work must continue to keep the data updated regularly. A UK offshore industry-standard pipelines database is being developed, which will contain all the required attributes for PARLOC. The database will be maintained by the Oil & Gas UK PARLOC Steering Group and a process will be established to collect loss of containment data on an annual basis.

11.7 Guidelines

11.7.1 Aviation Operations Management Standards and Guidance

The *Management of Aviation Operations Guidelines* will be updated this year with Issue 7 to be published. The document will be restructured as the *Aviation Operations Management Standards and Guidance* and separated into a number of new chapters to improve ease of use.

11.7.2 Fire and Explosion Guidance

The Oil & Gas UK *Fire and Explosion Guidance* will now be reviewed to ensure it continues to remain current and useful for industry. The guidance provides a source of good practice on designing against fire and explosions on offshore installations and focuses on setting a philosophy for design and assessment in a realistic and simplified manner. The document will be restructured, will link to relevant publications that are now available and the technical content will be updated to reflect current practices.

11.7.3 Cumulative Risk Guidance

Understanding cumulative risk and the interactions and interdependencies of systems and how they might impact the risk profile, is an essential part of risk management offshore. There are a number of approaches to this, and new guidance, to be released later this year, will detail these and advise on some key principles to follow when considering cumulative risk.

11.7.4 Supplementary Guidance on Hydrocarbon Release Reporting

The revised *Supplementary Guidance on Hydrocarbon Release Reporting* was published on 1 April 2014. A year after publication, feedback from industry was sought and the guidance will be updated in 2015 to reflect the comments on ease of use. The guidance will also be updated to reflect the regulatory changes following implementation of the EU Offshore Safety Directive. The plan is to complete the publication before 2015 year end.

11.8 Aviation Joint Auditing

Oil & Gas UK, in conjunction with IOGP Aviation Safety Committee and HeliOffshore, is addressing the recommendations raised in CAP1145 on UKCS helicopter auditing and contract requirements. The scope of this joint effort is to obtain consistent flight safety auditing requirements and is not related to commercial arrangements. A site has been created within the Oil & Gas UK extranet in order to allow co-operative audit scheduling, access to a standard IOGP pre-audit questionnaire, an audit template and a feedback form.

11.9 Offshore Helicopter Operations Training and Competency

Discussions over the past year with relevant stakeholders have highlighted a need to improve the standards of training and competence assessment for helideck crews and other offshore helicopter support staff. A project has now commenced to ensure that we consistently have well trained and competent staff offshore engaged in providing, for example, routine helideck operations, refuelling, met observation, aeronautical radio operations, heli-admin and hazardous goods handling. The initial objective is to have well defined and unambiguous standards and guidelines that clearly set out industry requirements. This will then inform further development and updating of initial training and periodic refresher training requirements/execution as required.

11.10 Consultation on Regulatory Oversight of Helidecks

In May 2015, CAA published a consultation on proposals for how it could take on the safety certification and approval of offshore helidecks, a role currently carried out by the Helideck Certification Agency. This follows on from Action 13 in CAP1145, which states that CAA intends to assume responsibility for the certification of UK helidecks and will consult with industry to achieve this. Oil & Gas UK will discuss the proposals with its members and continue to engage with CAA on this matter.

11.11 Accident and Failure Frequency Data

Oil & Gas UK and industry representatives have engaged with HSE and the Health & Safety Laboratory to review existing accident and failure of equipment frequency data and establish whether there is a need to update and improve this. The intention is to ensure all data feeding into quantitative risk assessment and other assessments remain fit for purpose and to facilitate better decision making with regards to major hazard risk management. Population data of equipment types will also be reviewed. Depending on the results of the review, a road map will be developed and an appropriate way forward implemented to improve the quality of the data.

12. Glossary

ACoP	Approved Codes of Practice
ALE	Ageing and Life Extension
CA	Competent Authority (known as OSDR from July 2015)
CAA	Civil Aviation Authority
CNS	Central North Sea
DECC	Department of Energy & Climate Change
DfT	Department for Transport
EBS	Emergency Breathing System
EC	European Commission
ED	Energy Division
EER	Evacuation, Escape and Rescue
EERTAG	Evacuation, Escape and Rescue Technical Advisory Group
EI	Energy Institute
EPOL	Emergency Preparedness Offshore Liaison Group
EU	European Union
EUOAG	EU Offshore Authorities Group
HCR	Hydrocarbon Release(s)
HSE	Health and Safety Executive
HUET	Helicopter Underwater Escape Training
IADC	International Association of Drilling Contractors
ICP	Independent Competent Person
IOGP	International Association of Oil & Gas Producers
KP	Key Programme
KPI	Key Performance Indicator
MAR	Offshore Installations and Pipeline Works (Management and Administration) Regulations 1995
MER	Maximising Economic Recovery
MoU	Memorandum of Understanding
NOIA	North Sea Offshore Industry Associations
OHSAG	Offshore Helicopter Safety Action Group

OPITO	The Offshore Petroleum Industry Training Organisation
OSDR	Offshore Safety Directive Regulator
PARLOC	Pipeline and Riser Loss of Containment
PFEER	Prevention of Fire and Explosion, Emergency Response
PLUG	Pipeline Users Group
POB	Personnel on Board
RIDDOR	Reporting of Injuries, Diseases and Dangerous Occurrences Regulations
SARH	Search and Rescue Helicopter
SCE	Safety-Critical Element
SCiS	Step Change in Safety
SCR	Safety Case Regulations
UKCS	UK Continental Shelf
UKIF	UK Industry Forum
XBR	Extra Broad

Notes

Oil & Gas UK (Aberdeen)
3rd Floor
The Exchange 2
62 Market Street
Aberdeen
AB11 5PJ

Tel: 01224 577 250

Oil & Gas UK (London)
6th Floor East
Portland House
Bressenden Place
London
SW1E 5BH

Tel: 020 7802 2400

info@oilandgasuk.co.uk

www.oilandgasuk.co.uk

ISBN 1 903 004 49 7