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Ship/Platform Collision Incident Database (2015) for offshore oil and gas installations

Prepared by **Liverpool John Moores University**
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There is a potential for major structural damage to offshore installations leading to fatalities and serious injuries in the event of collision by either a passing or an in-field seagoing vessel. Both categories of collision have occurred on the UK Continental Shelf although to date only significant, rather than catastrophic, consequences have occurred. Internationally, collisions have occurred that have caused both loss of life and environmental damage. This report describes work to update the Ship/Platform Collision Incident Database for the UK Continental Shelf (UKCS) and the collision frequency analysis which was previously described in Research Report RR053 (2001). Report RR1153 considers collision threat detection.

Data was collected from collision incident record sources to confirm or complete previous records and to expand the database up to December 2015. The database overlaps with the previous version by providing information from 1996 to 2015. The database of operating experience has been recompiled and extended to encompass all mobile and fixed installations operating on the UKCS and takes into account recent abandonments. The main database includes actual collisions, while 'near misses' are analysed in a separate section. In an attempt to expand the previous database and gain further understanding of the scale and nature of the 'near miss' events, data from a variety of sources is included: the findings are interpreted in section 4 of the report.

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Ship/Platform Collision Incident Database (2015) for offshore oil and gas installations

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EXECUTIVE SUMMARY

This study is carried out by Liverpool John Moores University (LJMU) at the request of the Energy Division of the Health and Safety Executive (HSE) to update the ship to platform collision incident database provided in their Research Report 053.

Data has been gathered and analysed from a number of collision incident sources to complete and expand the previous work up to 31st December 2015. The time period of the study overlaps the previous database in Research Report 053 and covers a 19 year period from 1996 to 2015. Similarly, data regarding the operating experience on the UKCS in this time has been gathered and analysed, taking into account any installations that have been taken out of service as well as newly installed installations.

Through the combination of operating experience with the number of incidents per year, it is possible to calculate an incident frequency and the confidence intervals that can be placed with them. The data has been further broken down to show specific data sets, such as, incidents per installation type, by vessel type, by damage severity and by geographical location. It has been found that from the analysis the general trend of ship to platform collision incidents has decreased. However, when analysing the frequency of incidents per year, the trend of incidents is periodic steadily increasing and decreasing over the 19 year period.

When concerning vessel types for collision incidents, it has not been deemed necessary to divide the incidents into "passing" and "attendant" as there have only been 2 collisions involving "passing" vessels since 1996.

However, the consequences of collisions from "passing" vessels has not gone unnoticed. Further analysis identified 56 'Near Misses' from 1996 – 2015. In this section of the study the number of incidents has been broken down to vessel type due to the increased number of incidents involving "passing" vessels. This is due to the potential for major structural damage should a passing vessel collide with an offshore installation.

Given the data gathered and analysed, the mean incident frequencies per year for all incidents and for those incidents were damage occurred are shown in the following table:

Mean incident frequencies: 1996 - 2015

Installation type	All reported incidents	Incidents resulting in minor, moderate or significant damage
All	0.0280	0.0116
Fixed	0.0139	0.0054
Floating	0.0507	0.0219
Jack-up	0.0778	0.0222

The figures quoted in the table above should be taken with some caution as it is likely that there is a level of under reporting and incomplete data entries within the information gathered. Primarily the levels of under reporting are assumed to be in the areas of geographical location and damage classification.

The database presented in Research Report 053 provided some information regarding the number of 'Near Misses' and what constitutes a 'Near miss'. This study expands upon that by re-defining

the term ‘Near Miss’ and identifying any incidents from these definitions. A total of 56 incidents were found to have occurred within the 500m zone of platforms that did not result in any contact but had the potential to result in a collision. These findings are interpreted in Section 4.

An overall discussion of the results and the implications of the findings as well as conclusions are demonstrated in Sections 5 and 6.

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ABBREVIATIONS

AME	Advanced Mechanics and Engineering Limited
BROA	British Rig Owners Association
ED	Energy Division
ERRV	Emergency Response and Rescue Vessel
ERRVA	Emergency Response and Rescue Vessel Association
FPS	Floating Production and Storage
FPSO	Floating Production, Storage and Offloading
FSU	Floating Storage Unit
GISIS	Global Integrated Shipping Information System
HSE	Health and Safety Executive
IADC	International Association of Drilling Contractors
ISP	Insulation, Scaffolding and Painting
MAIB	Marine Accident Investigation Branch
MaTR	Marine Technology Support Unit Report
NMI	National Maritime Institute Ltd.
MOU	Mobile Offshore Unit
MODU	Mobile Offshore Drilling Unit
OGUK	Oil & Gas UK
OSD	Offshore Safety Division (now ED)
OSPAR commission	Oslo/Paris convention (for the Protection of the Marine Environment of the North-East Atlantic)
RIDDOR	Reporting of Injuries, Diseases and Dangerous Occurrence Regulations
UKCS	United Kingdom Continental Shelf
WOAD	World Offshore Accident Databank
WREC	World Energy Related Casualties

1. INTRODUCTION

A database of vessel/ platform collision incidents on the United Kingdom Continental Shelf (UKCS) was originally created for the Health & Safety Executive (HSE), Offshore Safety Division (OSD) in 1985. It has subsequently been amended and extended on several occasions, in 1995 (MaTR0321), 1997 (MaTR0447) and in 2003 in the research report 053, "ship/platform collision incident database (2001).

LJMU has assisted the HSE with the compilation and updating of the previous data evaluation, contained in research report 053, to include incidents that have occurred since the last review. The compilation of the database is outlined in Section 2 of this report.

As the collision incident database has been compiled, information has been extracted to determine incident frequencies per year for different installation and vessel types. Furthermore, a second data set has been compiled in the form of the individual installations operating within the time period of the study. This includes installations that have begun operations and installations that have ceased operations during the time period of the study. The analysis of incidents is broad and comprehensive, and is outlined in Section 3.

As part of the expansion of the previous evaluation from 2003, the section of collision incidents regarded as near misses has been expanded. These incidents have been compiled as a separate record and an analysis of the incidents has been conducted. The analysis follows the same structure as Section 3. Incident frequencies have been calculated as well as the incidents being categorized by installation and vessel type. This analysis is presented in Section 4.

Section 5 provides a discussion of the assessment and implications of the results identified in Sections 3 and 4.

2. COMPILATION OF DATABASE

2.1. COLLISION INCIDENT DATABASE

For this study an incident has been defined as a reported impact or contact between a vessel and a fixed or mobile installation in terms of the RIDDOR 2013 database, which utilises reported incident information from the OIR/9b and F2508A forms.

The original 1985 collision incident database was compiled from studies performed by the National Maritime Institute Ltd. (NMI) [1, 2] and the International Association of Drilling Contractors (IADC) [3]. An update in 1991 by Advanced Mechanics and Engineering Limited (AME) [4] used incident records taken from the HSE Energy Division (ED) OIR/9A files (ED was known as the Offshore Safety division at the inception of the previous database). A further database was developed in 2003 (Ship/platform collision incident database (2001)) [5] which extended and cross-checked the Collision Incident Database produced under MaTSU reports MaTR0321 (1995) and MaTR0447 (1997) [6, 7]. The 2003 database included a total of 557 incidents of vessels contacting offshore oil and gas installations have been recorded in the period from 1 January 1975 to 31 October 2001.

The 2001 ship/platform collision incident database has been further cross-checked and extended. The complete database is demonstrated by Appendix A, where a total of 176 incidents of vessels impacting or contacting both fixed and floating offshore structures have been recorded from 1st January 1996 to 31st December 2015. There are a number of reasons why this timeframe has been used; i) it provides a significant overlap of 5 years with the previous ship/platform collision incident database, ii) it is in parallel the initiation of the RIDDOR database which came into force on 1st April 1996, and, iii) provides a simpler method of producing operating experience of installations per year. The data has been recorded from a number of sources. The prime source of information given a data point is demonstrated by the "*Source"* column in Appendix A. In many cases the data is supplemented or confirmed from additional sources. Data across the whole study has been compiled from the following sources:

- Reporting of Injuries, Diseases and Dangerous Occurrence Regulations 2013 (RIDDOR), utilising search criteria "Collisions, or potential collisions", between "vessels and offshore installations". Information source is labelled as HSE in the database [8].
- World Offshore Accident Databank (WOAD) using the search criteria (Collision, Offshore Units" and "Europe North Sea" [9].
- Marine Accident Investigation Branch (MAIB) using the search criteria "Offshore installations", "collision" and "contact" [10].
- Global Integrated Shipping Information System (GISIS) using search criteria "Collisions" and "North Sea" [11].
- World Energy Related Casualties (WREC) using search criteria "offshore installations", "collisions" and "North Sea" [12].

All data sources are labelled using their stated abbreviation in the "source2 column of Appendix A. In some cases information is not available, and this is identified by being labelled as "unspecified".

The database in Appendix A has been compiled by the following sort criteria:

1. The installation type: Fixed (steel, concrete), Floating (Semi-sub, FPSO, FSU, drillship *etc.*), jack-up and Other (wind turbine, unspecified)
2. Severity of damage to the installation, i.e. Significant, Moderate, Minor, None and Unspecified.
3. The date of the incident.
4. The type of vessel: standby, supply, other attendant, passing, and unspecified.

2.1.1. Installation damage class

In order to permit more meaningful evaluation of the database, all incidents have been placed into a damage severity category, labelled "Installation Damage", in accordance with the following criteria. In some instances, where the damage class was not originally reported or was clearly inaccurate, the category has been assigned by the author based on the extent of reported damage and the criticality of the member involved. The damage severity ratings are as follows:

Significant:	Damage affecting the integrity of an installation sufficient to require immediate repair. i.e.: if the installations integrity is compromised through damage resulting in the breaching of the structure and/or subsea damage. Similarly, a collision is deemed to be significant if the crew must be evacuated and/or the installation's process are shut-down;
Moderate:	Installation requires maintenance but not immediate repairs as the integrity of the installation is not compromised. This damage takes the form of large dents above or below the waterline without breaching the structure. Similarly, to qualify as moderate damage the crew can be mustered but not evacuated and processes may be shut down in anticipation for impact if the collision path can be predicted.
Minor:	Damage not affecting the integrity of the installation, but still required maintenance, i.e.: small dents and scuffs above the waterline.
None:	No damage occurred.
Unspecified:	Status of the installation or damage severity was not specified in incident reports.

2.2. OPERATING EXPERIENCE

For the purpose of this study a fixed installation is defined as any platform or group of platforms linked by bridges or walkways and may be of either steel or concrete construction. The operating experience is presented as the number of installations operating in the UKCS within a given year. This includes the progression of new platforms that come into service and platforms that have been decommissioned. While in the previous database operating experience of fixed installations is presented in "installation years" rather than number of operating fixed installations per year, because in the southern North Sea a supply vessel, for example, is only likely to approach those platforms installed with a crane or living quarters when carrying cargo. This is acceptable in terms of attendant vessels, but in a real world scenario it is entirely possible for any vessel to contact any fixed installation given the right circumstances. Hence, every fixed installation, where possible, operating in the North Sea per year has been identified and included in the study.

Operating experience of fixed installations has been determined from the Oil & Gas Authority, OSPAR and the individual operators where known [13, 14]. This contains the year of first operation and the decommissioning year where appropriate.

Mobile installation operating experience on the UKCS has been determined form OSPAR, the Oil & Gas Authority, MarineTraffic, Rig Zone and Infield [13, 14, 15, 16, 17]. A mobile or floating installation is referred to in this study as a semi-sub and monohulls (FPSO, FSU, drillship *etc.)*. Furthermore, the operating experience of jack-up installations has been analysed separately to the rest of the floating installations.

Furthermore, references [18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34] were utilised to obtain additional information regarding installations that are still in operation or have ceased operation.

A summary of operating experience for fixed installations, floating installations and jack-up rigs over the period of study (1996 – 2015), in the UKCS, is represented graphically in Table 1 and presented in Figure 1.

Table 1: Operating experience for fixed and mobile installations on the UKCS.

	Number of installations per year				Operating experience per year			
Year	Fixed	Floating	Jack-up	Total	Fixed	Floating	Jack-up	Total
1996	214	34	14	262	214	24	14	252
1997	218	39	14	271	432	63	28	523
1998	223	40	15	278	655	103	43	801
1999	230	44	17	291	885	147	60	1092
2000	234	45	21	300	1119	192	81	1392
2001	241	44	22	307	1360	236	103	1699
2002	243	43	22	308	1603	279	125	2007
2003	246	43	22	311	1849	322	147	2318
2004	248	43	22	313	2097	365	169	2631
2005	249	43	22	314	2346	408	191	2945
2006	250	43	22	315	2596	451	213	3260
2007	264	45	22	331	2860	496	235	3591
2008	267	48	22	337	3127	544	257	3928
2009	267	47	24	338	3394	591	281	4266
2010	260	46	26	332	3654	637	307	4598
2011	261	45	26	332	3915	682	333	4930
2012	261	47	27	335	4176	729	360	5265
2013	266	44	27	337	4442	773	387	5602
2014	267	43	30	340	4709	816	417	5942
2015	256	42	33	331	4965	858	450	6273

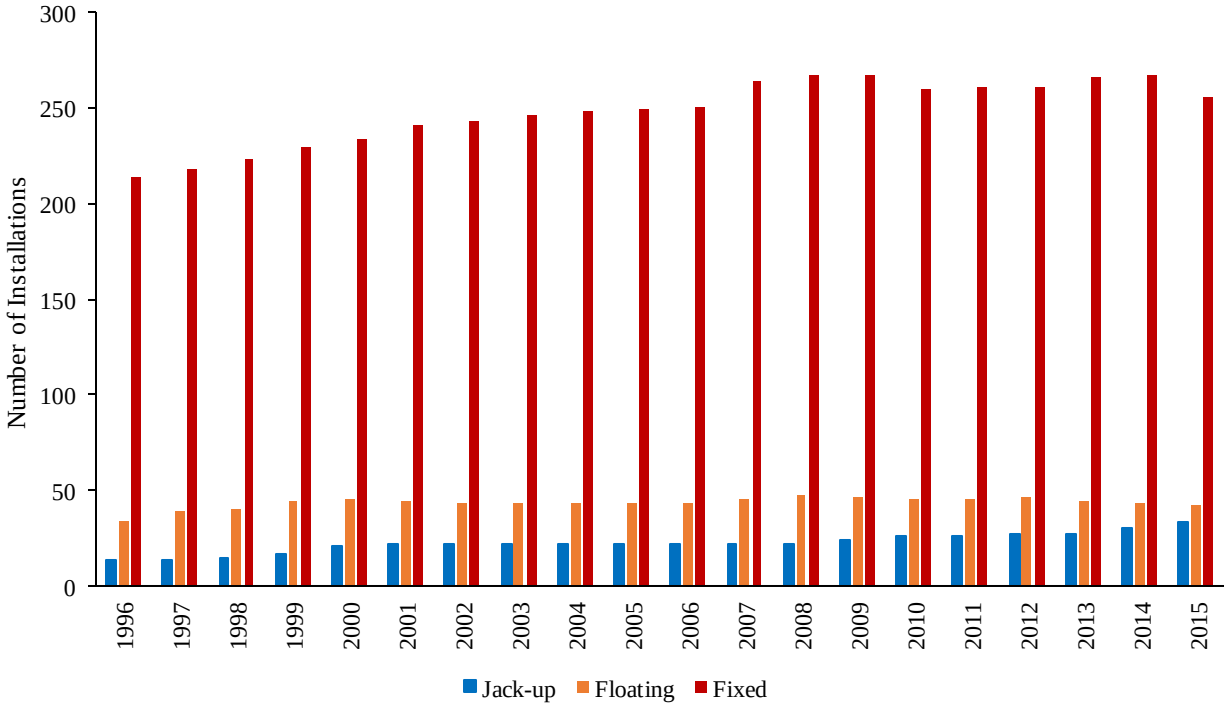

Figure 1: Number of Fixed, Floating and Jack-up installations operating per year between 1996 and 2015

3. ANALYSIS OF HISTORICAL DATA

3.1. INTRODUCTION

This section presents an analysis of collision incident statistics for the UKCS in the period of 1st January 1996 to 31st December 2015. For the purpose of the study the total number of incidents resulting in contact between vessels and platforms is 176. When determining incident frequencies, the installation operating experience is the total number of operational platforms on the UKCS in that year. This takes into account the inclusion of new platforms and the decommissioning of existing platforms. Appendix B highlights the list of all installations that have been in operation from 1996 to 2015.

The data was analysed for all reported incidents, both by year and cumulatively, as well as by damage severity, i.e. "*minor*", "*moderate*" and "*significant*". This was to identify any trends within the data that may exist. It is possible that there is some element of inconsistency regarding the reporting of minor damage and in some cases it may be reported as "*none"* or no damage. However, there is enough data and descriptions to include the damage class "*minor*" along with "*moderate*" and "*significant*". Similarly, incidents resulting in "*moderate*" and "*significant*" damage are most likely to have been reported accurately due to the damage severity.

The main areas covered in this Section are:

- Variation of incident frequency and confidence limits with time for different damage categories and types of installations;
- Variation of incident numbers with time for different types of vessels.

It has been assumed that the incident likelihood follows a binomial distribution. Based upon this assumption, 5% and 95% confidence limits have been produced for all installations both as a collective and individually. This information is demonstrated across Figures 2, 5, 8, 11, 12, 15, 16, 19, and 23. The 5% and 95% confidence intervals have been calculated for all reported incidents per year utilising an accepted methodology [35, 36, 37, 38].The Confidence Intervals are calculated through the application of Equation 1:

$$CI = \lambda \pm Z\sqrt{\lambda/N} \tag{1}$$

where, λ is the mean or frequency (No. incidents (r) / No. of installations (N)), Z represents $Z_{1-\alpha/2}$ which is the percentile of the standard normal distribution and is given as ± 1.96 for 5% (increase) and 95% (decrease) intervals. Equation 1 is known as the Wald interval and is a simple method for obtaining confidence intervals. However, it has been known for some time that the Wald interval performs poorly, unless N is quite large. In this study the value of N is comparatively large when compared to the value of r. Hence, there can be some confidence in the application of the Wald interval equation. The interval procedure is conservative due to the discreteness of the binomial distribution; conservative means that the empirical value of the confidence coefficient is larger than the nominal level $1 - \alpha$ [35, 36, 37, 38].

Furthermore, the Wald interval, in Equation 1, can also be demonstrated as follows (Equation 2):

$$CI = \lambda \pm Z\sqrt{\lambda(1-\lambda)/N} \tag{2}$$

This equation is an adaptation of the Wald interval, however, the use of this instead of Equation 1 does not alter the results of the study. Due to the comparative value difference between r and N the final results for λ are negligible, i.e. the differences are to a degree of 0.0001 or smaller. In the

event that the values of *N* are smaller, there could be a debate as to the most applicable Equation [37, 38].

Similarly, the following section of Equation 1 is also known as the margin of error:

$$Z\sqrt{\lambda/N}$$

This is demonstrated throughout the relevant tables in the study for completeness.

3.2. TREND OF INCIDENT FREQUENCY OVER TIME

The trends and variation of incident frequencies over with time for all installation types has been analysed both as a collective and individually, i.e. fixed, mobile and jack-up. All reported incidents of collisions resulting in impact or contact have been analysed, any near misses have not been included here. Similarly, incidents that have resulted in some form of damage i.e. "*minor*", "*moderate*" and "*significant*" have also been analysed separately.

3.2.1. All installations

Table 2 and Table 3 demonstrate the frequency and cumulative of all reported incidents to all installation types, by year, between 1996 and 2015.

Table 2: Frequency of all reported incidents to all installations per year

Year	No. of incidents in year (r)	No. of installations operating in year (N)	5% Confidence limit	Mean (λ)	95% Confidence limit	Margin of error
1996	9	262	0.057	0.034	0.012	0.022
1997	17	271	0.093	0.063	0.033	0.030
1998	17	278	0.090	0.061	0.032	0.029
1999	15	291	0.078	0.052	0.025	0.026
2000	18	300	0.088	0.060	0.032	0.028
2001	12	307	0.061	0.039	0.017	0.022
2002	10	308	0.053	0.032	0.012	0.020
2003	6	311	0.035	0.019	0.004	0.015
2004	4	313	0.025	0.013	0	0.013
2005	7	314	0.039	0.022	0.006	0.017
2006	8	315	0.043	0.025	0.008	0.018
2007	12	331	0.057	0.036	0.016	0.021
2008	8	337	0.040	0.024	0.007	0.016
2009	4	338	0.023	0.012	0	0.012
2010	5	332	0.028	0.015	0.002	0.013

Table 2: (continued)

Year	No. of incidents in year (r)	No. of installations operating in year (N)	5% Confidence limit	Mean (λ)	95% Confidence limit	Margin of error
2011	7	332	0.037	0.021	0.005	0.016
2012	4	335	0.024	0.012	0	0.012
2013	6	337	0.032	0.018	0.004	0.014
2014	4	340	0.023	0.012	0	0.012
2015	3	331	0.019	0.009	0	0.010

Table 3: Mean and cumulative frequency of all reported incidents to all installations per year

Year	No. of incidents in year (r)	Cumulative no. of incidents in year (r1)	No. of installations operating in year (N)	Cumulative no. of installations operating in year (N1)	Mean (λ)	Cumulative mean (λ1)
1996	9	9	262	262	0.034	0.034
1997	17	26	271	533	0.063	0.049
1998	17	43	278	811	0.061	0.053
1999	15	58	291	1102	0.052	0.053
2000	18	76	300	1402	0.060	0.054
2001	12	88	307	1709	0.039	0.051
2002	10	98	308	2017	0.032	0.049
2003	6	104	311	2328	0.019	0.045
2004	4	108	313	2641	0.013	0.041
2005	7	115	314	2955	0.022	0.039
2006	8	123	315	3270	0.025	0.038
2007	12	135	331	3601	0.036	0.037
2008	8	143	337	3938	0.024	0.036
2009	4	147	338	4276	0.012	0.034
2010	5	152	332	4608	0.015	0.033
2011	7	159	332	4940	0.021	0.032
2012	4	163	335	5275	0.012	0.031
2013	6	169	337	5612	0.018	0.030
2014	4	173	340	5952	0.012	0.029
2015	3	176	331	6283	0.009	0.028

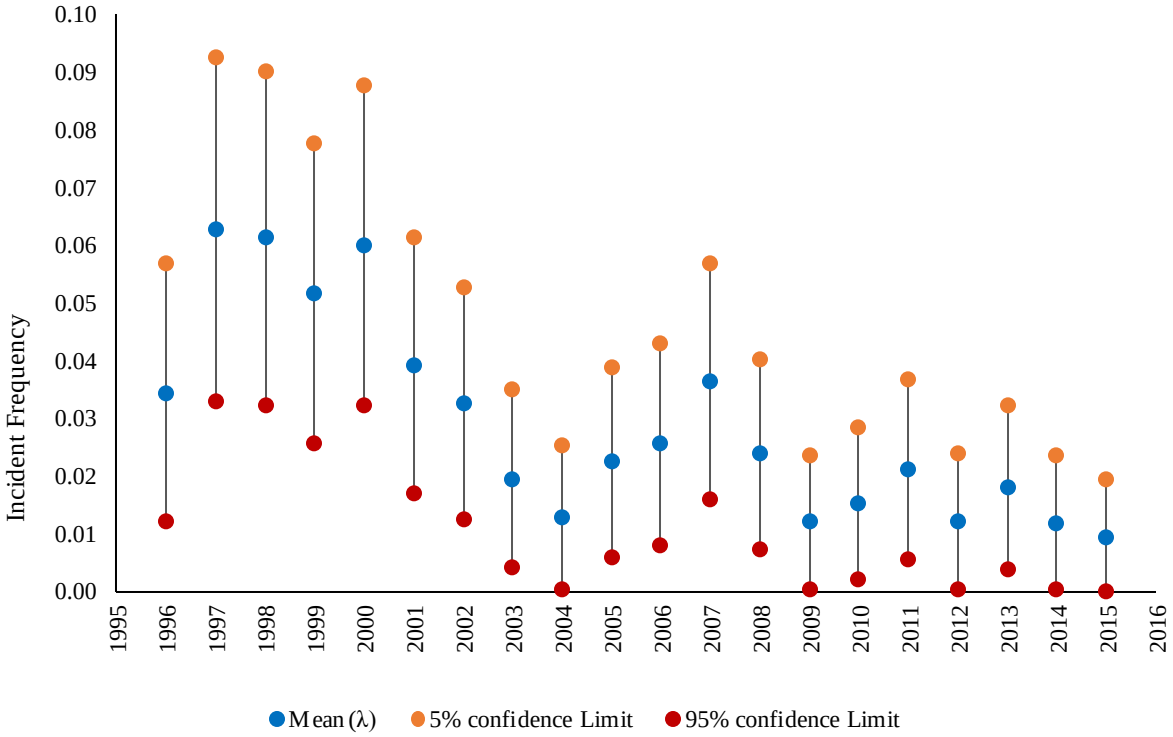

Figure 2: Frequency of all reported incidents to all installations per year

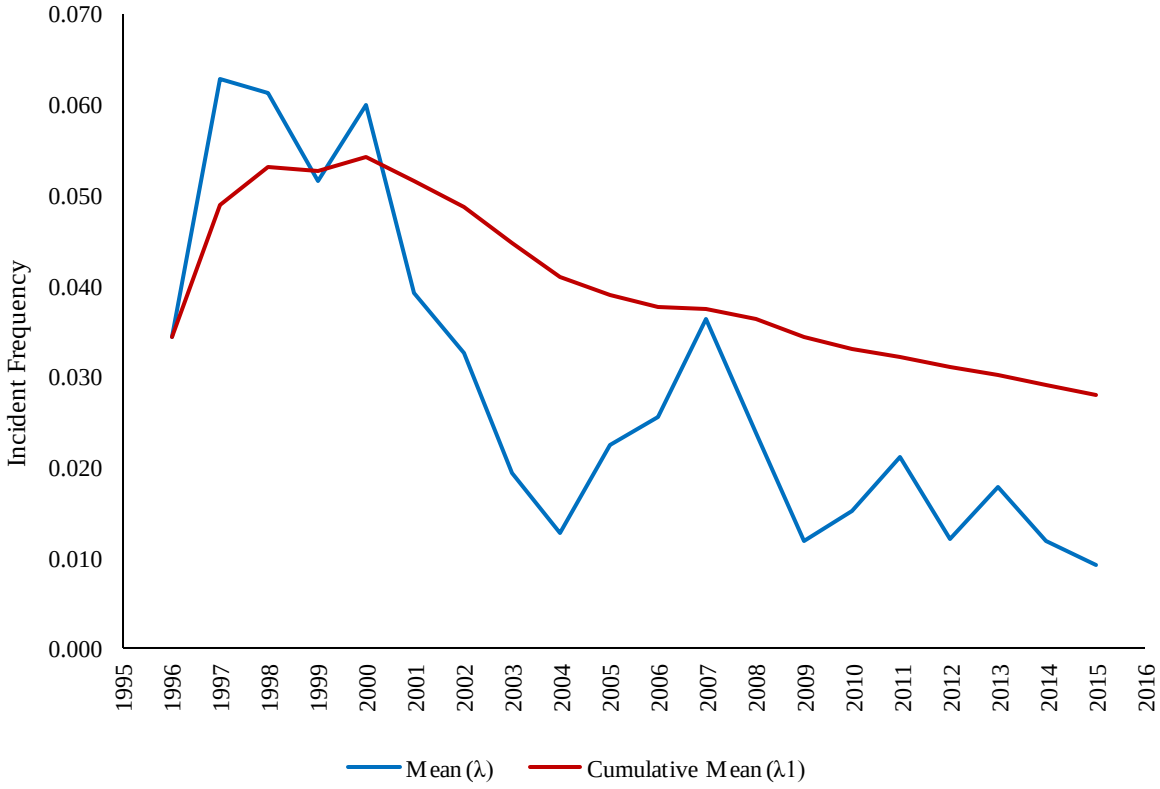

Figure 3: Mean and cumulative frequency of all reported incidents to all installations

It can be seen from Figure 2 and Figure 3 that the general trend of ship to platform collisions is in decline. However, there are two key spikes within the data, firstly, in 1997 then again in 2007. These spikes could be attributed to the general increase in operational installations per year, or they could be anomalous spike. However, the data shows that there is a gradual increase and decrease within the trend. This could lead one to believe the situations may have occurred to account for some fluctuation. One possible explanation is that safety case regulations have been released in both 1996 and 2005. It is possible that an alteration in regulation can affect the operation and reporting when ship/platform incidents occur.

Table 4 and Table 5 demonstrate the Damage class of and incidents resulting in minor, moderate or significant damage to all installations per year respectively. For the time period of 1996 – 2015, 2 incidents were reported as significant, 6 were deemed to be moderate and 65 resulted in minor damage. The remaining incidents resulted in either no damage to the installation or the damage was unspecified.

Table 4: Damage classification of all reported incidents to all installations per year

Year	Unspecified	None	Minor	Moderate	Significant	Total
1996	3	1	5	0	0	9
1997	11	1	5	0	0	17
1998	11	0	6	0	0	17
1999	3	5	7	0	0	15
2000	8	1	9	0	0	18
2001	5	2	5	0	0	12
2002	4	2	2	1	1	10
2003	2	2	2	0	0	6
2004	1	1	2	0	0	4
2005	0	4	2	1	0	7
2006	3	3	1	1	0	8
2007	1	5	4	1	1	12
2008	2	2	4	0	0	8
2009	0	1	3	0	0	4
2010	0	4	0	1	0	5
2011	0	3	3	1	0	7
2012	1	1	2	0	0	4
2013	2	2	2	0	0	6
2014	0	2	2	0	0	4
2015	2	1	0	0	0	3
	60	43	65	6	2	176
	34.1%	24.4%	36.9%	3.4%	1.1%	100.0%

Table 5: Frequency of incidents resulting in minor, moderate or significant damage for all installations per year

Year	No. of incidents in year (r)	No. of installations operating in year (N)	5% Confidence limit	Mean (λ)	95% Confidence limit	Margin of error
1996	5	262	0.036	0.019	0.002	0.017
1997	5	271	0.035	0.018	0.002	0.014
1998	6	278	0.039	0.022	0.004	0.017
1999	7	291	0.042	0.024	0.006	0.018
2000	9	300	0.050	0.030	0.010	0.020
2001	5	307	0.031	0.016	0.002	0.014
2002	4	308	0.026	0.013	0	0.013
2003	2	311	0.015	0.006	0	0.009
2004	2	313	0.015	0.006	0	0.009
2005	3	314	0.020	0.010	0	0.011
2006	2	315	0.015	0.006	0	0.009
2007	6	331	0.033	0.018	0.004	0.015
2008	4	337	0.024	0.012	0	0.012
2009	3	338	0.019	0.009	0	0.010
2010	1	332	0.009	0.003	0	0.006
2011	4	332	0.024	0.012	0	0.012
2012	2	335	0.014	0.006	0	0.008
2013	2	337	0.014	0.006	0	0.008
2014	2	340	0.014	0.006	0	0.008
2015	0	331	0	0	0	0

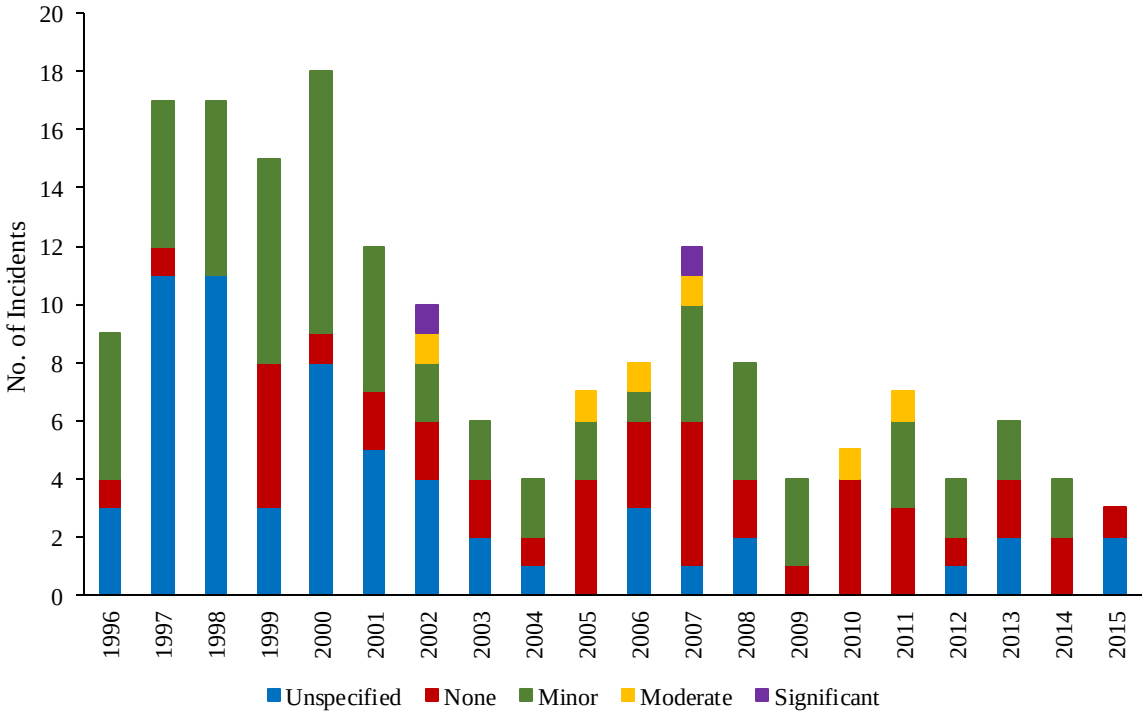

Figure 5: Damage classification of all reported incidents to all installations per year

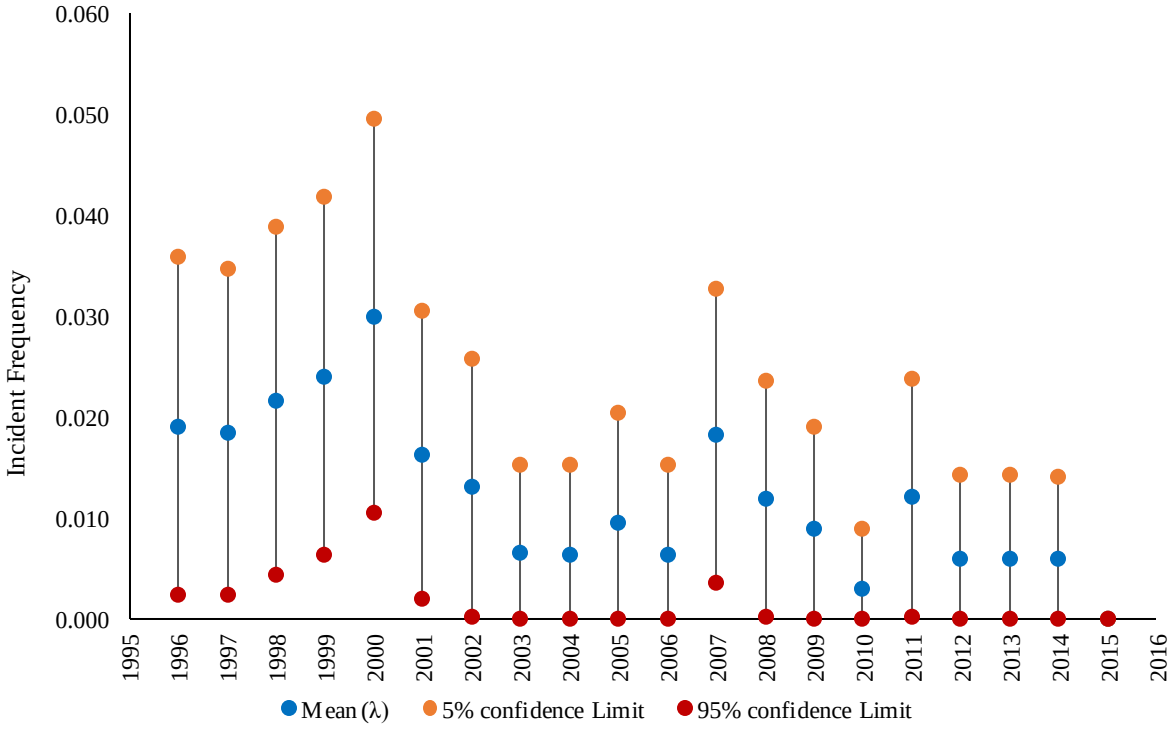

Figure 4: Frequency of incidents resulting in minor, moderate or significant damage for all installations per year

3.2.2. Types of vessels involved in collisions

A summary and graph of the types of vessels involved in collision incidents are demonstrated by Table 6 and Figure 6. These indicate that the majority of incidents are caused by attendant vessels. A breakdown of the attendant vessels shows that 23 incidents were caused by "*Stand-by*" vessels, 92 by "*Supply*" vessels, 34 were "*Other Attendant*" vessels, with the rest being "*Unspecified*". It can also be seen that 2 incidents occurred due to "*Passing*" vessels (a merchant container and a trawler). The category of "*Other Attendant*" includes the following vessel types:

- Anchor handler 6 incidents
- Diver support 5 incidents
- Inspection vessel 1 incident
- ISP (Insulation, Scaffolding and Painting) 1 incident
- Merchant Tanker 5 incidents
- Other support vessels 3 incidents
- Tug 7 incidents
- Other unspecified attendant vessels 6 incidents

Table 6: Number of reported incidents by all vessel types per year

Year	Standby	Supply	Other Attendant	Passing	Unspecified	Total
1996	1	7	0	0	1	9
1997	3	7	3	0	4	17
1998	1	10	5	0	1	17
1999	2	11	1	0	1	15
2000	1	7	3	0	7	18
2001	6	2	2	0	2	12
2002	1	3	1	1	4	10
2003	1	3	1	0	1	6
2004	1	2	1	0	0	4
2005	0	6	1	0	0	7
2006	1	3	3	0	1	8
2007	0	5	4	1	2	12
2008	2	4	2	0	0	8
2009	0	3	1	0	0	4
2010	1	4	0	0	0	5
2011	0	5	1	0	1	7
2012	1	3	0	0	0	4
2013	0	3	3	0	0	6
2014	1	1	2	0	0	4
2015	0	3	0	0	0	3
	23	92	34	2	25	176
	13.07%	52.27%	19.32%	1.14%	14.20%	100.00%

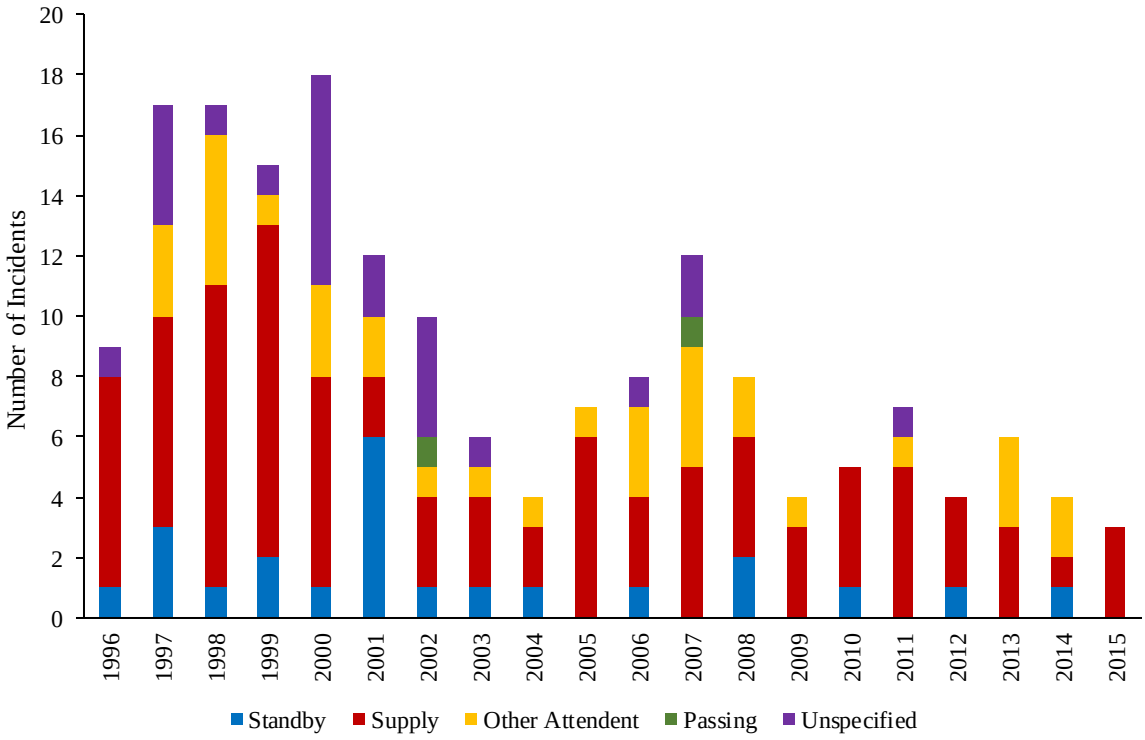

Figure 6: Number of reported incidents by all vessel types per year

Table 7 and Figure 7 demonstrate the trend of incidents given the type of vessel and the month of occurrence. Given the data presented, most incidents have occurred in the 6 month period of October to March when compared to April to September. This can be attributed to an increase in the number of incidents involving supply vessels between October and March. In this time frame weather conditions are likely to be more adverse and hence increases the risks during cargo transfer. Similarly, there is a large spike of incidents in the month of July. This can also be attributed to the weather in the sense that the weather is generally better between May to September and so increased maintenance and close support work is carried out. This can be seen by the cumulative number of incidents between May to September where the majority of incidents involving standby vessels occur, as well as other attendant vessels. This is backed up further by the fact that the number of incidents related to other attendant vessels increases as the months between May and October is usually when annual inspections and repairs take place. This can be seen also by the number of Diver support incidents, where 4 of the 5 incidents occur between May to August.

Table 7: Number of incidents given the type of vessel and the month of occurrence

Month	Standby	Supply	Other attendant	Passing	Unspecified	Total	
January	2	7	2	0	6	17	9.66%
February	1	6	1	0	2	10	5.68%
March	1	12	3	0	3	19	10.80%
April	0	7	3	0	0	10	5.68%
May	4	6	3	1	0	14	7.95%
June	0	7	2	0	3	12	6.82%
July	4	9	5	0	4	22	12.50%
August	3	3	5	1	0	12	6.82%
September	3	6	3	0	0	12	6.82%
October	4	11	2	0	2	19	10.80%
November	0	10	3	0	0	13	7.39%
December	1	8	2	0	2	13	7.39%
Unspecified	0	0	0	0	3	3	1.70%
	23	92	34	2	25	176	100.00%
	13.07%	52.27%	19.32%	1.14%	14.20%	100.00%	

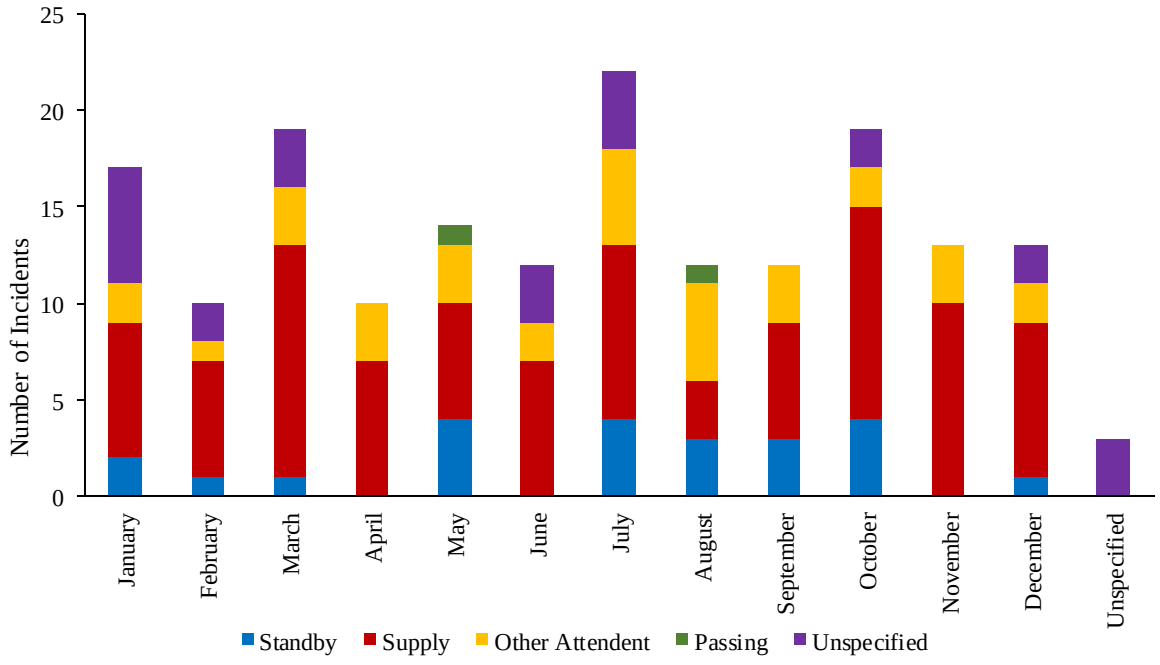

Figure 7: Number of incidents by vessel type per month

There is a consistent decreasing trend regarding all reported incidents to all installations. It can be seen that there is a spike in the number incidents in 1997 before gradually declining to a low in 2004. This peak in 1997 can be attributed to an increase in the number of reported incidents to both floating and jack-up installations. Following the low in 2004, the number of reported incident increases steadily again until 2007. This can again be attributed to an unusually high number of incidents regarding Jack-up installations. Following 2007, the frequency of incidents remains steady until the end of the study's time period in 2015.

The average trend of all reported incidents has not fluctuated too drastically but it has gradually reduced from 1996 to 2015, with the mean frequency over the whole study is 0.028 per year. Utilising the total operating experience this equates to 1 incident every 35.69 installation years or 9.27 per year for the current level of installation activity in 2015. Following this the mean frequency for incidents where minor, moderate or significant damage has been reported is 0.0116 per year. This equates to 1 incident resulting in damage every 86.06 installation years or 3.84 per year for the current level of installation activity in 2015. This statistical analysis highlights a general improvement in support vessel operating practices over the 19 year period.

To provide a more meaningful statistical analysis regarding reported offshore collision incidents, the data has been divided and analysed by each installation type. The following sections outline the trends in incident frequencies for fixed, floating and jack-up installations.

3.2.3. Fixed installations

A total of 70 reported incidents were identified involving collisions between vessels and fixed installations between 1996 and 2015. The following installation types are included in this statistical analysis:

- Fixed Steel — 60 incidents
- Fixed Concrete — 3 incidents
- Jacket — 7 incidents

Tables 8 and 9 demonstrate the mean frequency and cumulative frequency of all reported incidents to all fixed installations on the UKCS between 1996 and 2015. Figures 8 and 9 graphically represent the information demonstrated in Tables 8 and 9.

Table 8: Frequency of all reported incidents to fixed installations per year

Year	No. of incidents in year (r)	No. of installations operating in year (N)	5% Confidence limit	Mean (λ)	95% Confidence limit	Margin of error
1996	8	214	0.063	0.037	0.011	0.026
1997	7	218	0.056	0.032	0.008	0.024
1998	4	223	0.036	0.018	0	0.018
1999	6	230	0.047	0.026	0.005	0.021
2000	7	234	0.052	0.030	0.008	0.022
2001	8	241	0.056	0.033	0.010	0.023
2002	2	243	0.020	0.008	0	0.011
2003	3	246	0.026	0.012	0	0.014
2004	2	248	0.019	0.008	0	0.011
2005	3	249	0.026	0.012	0	0.014
2006	4	250	0.032	0.016	0	0.016
2007	3	264	0.024	0.011	0	0.013
2008	2	267	0.018	0.007	0	0.010
2009	1	267	0.011	0.004	0	0.007
2010	1	260	0.011	0.004	0	0.008
2011	5	261	0.036	0.019	0.002	0.017
2012	1	261	0.011	0.004	0	0.008
2013	1	266	0.011	0.004	0	0.007
2014	2	267	0.018	0.007	0	0.010
2015	0	256	0	0	0	0

Table 9: Mean and cumulative frequency of all reported incidents to fixed installations

Year	No. of incidents in year (r)	Cumulative no. of incidents in year (r1)	No. of installations operating in year (N)	Cumulative no. of installations operating in year (N1)	Mean (λ)	Cumulative mean (λ1)
1996	8	8	214	214	0.037	0.037
1997	7	15	218	432	0.032	0.035
1998	4	19	223	655	0.018	0.029
1999	6	25	230	885	0.026	0.028
2000	7	32	234	1119	0.030	0.029
2001	8	40	241	1360	0.033	0.029
2002	2	42	243	1603	0.008	0.026
2003	3	45	246	1849	0.012	0.024
2004	2	47	248	2097	0.008	0.022
2005	3	50	249	2346	0.012	0.021
2006	4	54	250	2596	0.016	0.021
2007	3	57	264	2860	0.011	0.020
2008	2	59	267	3127	0.007	0.019
2009	1	60	267	3394	0.004	0.018
2010	1	61	260	3654	0.004	0.017
2011	5	66	261	3915	0.019	0.017
2012	1	67	261	4176	0.004	0.016
2013	1	68	266	4442	0.004	0.015
2014	2	70	267	4709	0.007	0.015
2015	0	70	256	4965	0	0.014

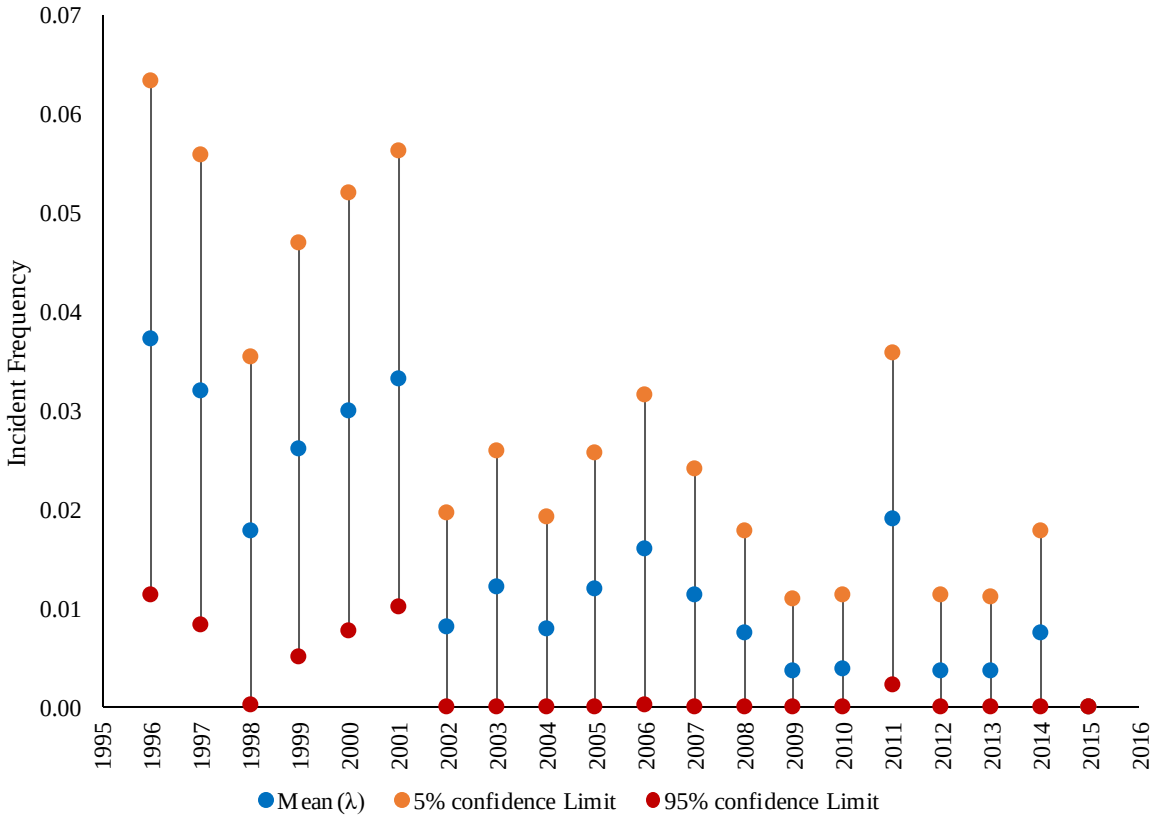

Figure 9: Frequency of all reported incidents to fixed installations per year

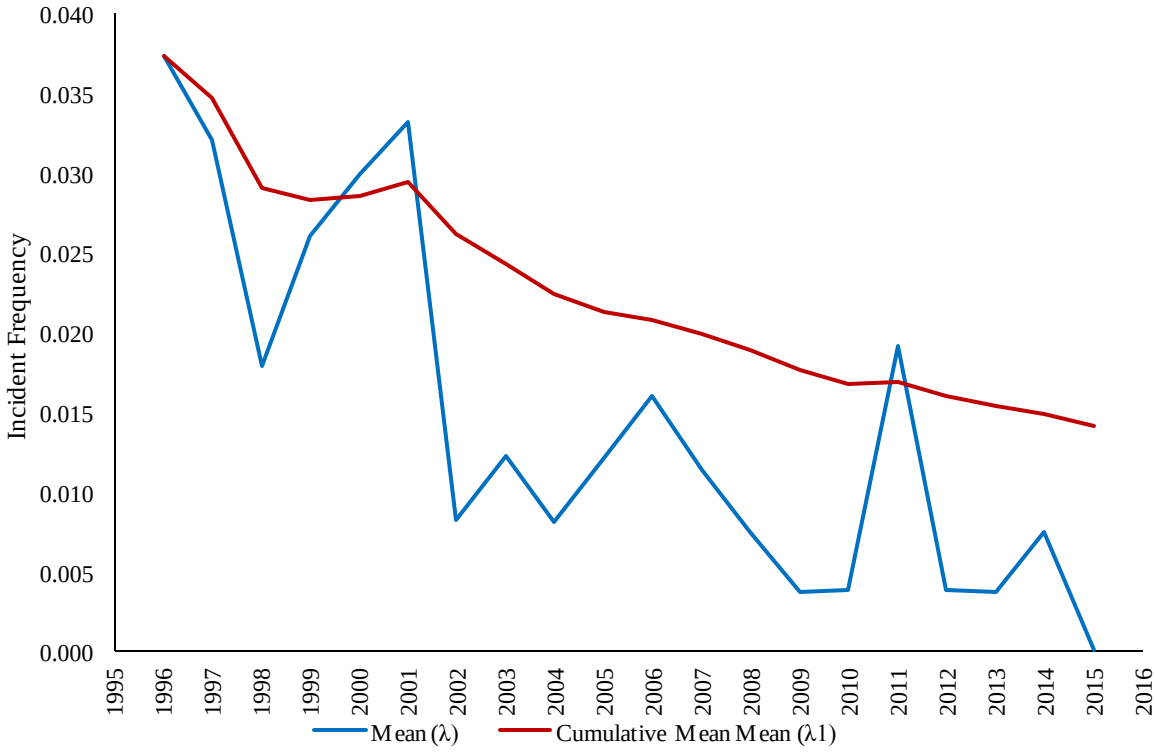

Figure 8: Mean and cumulative frequency of all reported incidents to fixed installations per year

Tables 10 and 11 summarise the number and damage classification of all incidents relating to fixed installations as well as those categorised as resulting in "*minor*", "*moderate*" or "*significant*" damage. The data presented in Tables 10 and 11 is represented graphically in Figures 10 and 11. 23 incidents were classed as minor, with 3 moderate and 2 significant incidents.

Table 10: Damage classification of all reported incidents to fixed installations per year

Year	Unspecified	None	Minor	Moderate	Significant	Total
1996	2	1	5	0	0	8
1997	4	1	2	0	0	7
1998	3	1	0	0	0	4
1999	1	2	3	0	0	6
2000	1	6	0	0	0	7
2001	4	2	2	0	0	8
2002	0	0	1	0	1	2
2003	0	1	1	0	0	2
2004	0	1	1	0	0	2
2005	0	2	1	0	0	3
2006	0	2	1	1	0	4
2007	0	0	1	1	1	3
2008	0	1	1	0	0	2
2009	0	1	0	0	0	1
2010	0	1	0	0	0	1
2011	0	2	2	1	0	5
2012	0	0	1	0	0	1
2013	1	0	0	0	0	1
2014	0	1	1	0	0	2
2015	0	0	0	0	0	0
	16	25	23	3	2	69
	23.2%	36.2%	33.3%	4.3%	2.9%	100.0%

Table 11: Frequency of incidents resulting in minor, moderate or significant damage for fixed installations per year

Year	No. of incidents in year (r)	No. of installations operating in year (N)	5% Confidence limit	Mean (λ)	95% Confidence limit	Margin of error
1996	5	214	0.044	0.023	0.003	0.020
1997	2	218	0.022	0.009	0	0.013
1998	0	223	0	0	0	0
1999	3	230	0.028	0.013	0	0.015
2000	0	234	0	0	0	0
2001	2	241	0.020	0.008	0	0.012
2002	2	243	0.020	0.008	0	0.011
2003	1	246	0.012	0.004	0	0.008
2004	1	248	0.012	0.004	0	0.008
2005	1	249	0.012	0.004	0	0.008
2006	2	250	0.019	0.008	0	0.011
2007	3	264	0.024	0.011	0	0.013
2008	1	267	0.011	0.004	0	0.007
2009	0	267	0	0	0	0
2010	0	260	0	0	0	0
2011	3	261	0.025	0.011	0	0.013
2012	1	261	0.011	0.004	0	0.008
2013	0	266	0	0	0	0
2014	1	267	0.011	0.004	0	0.007
2015	0	256	0	0	0	0

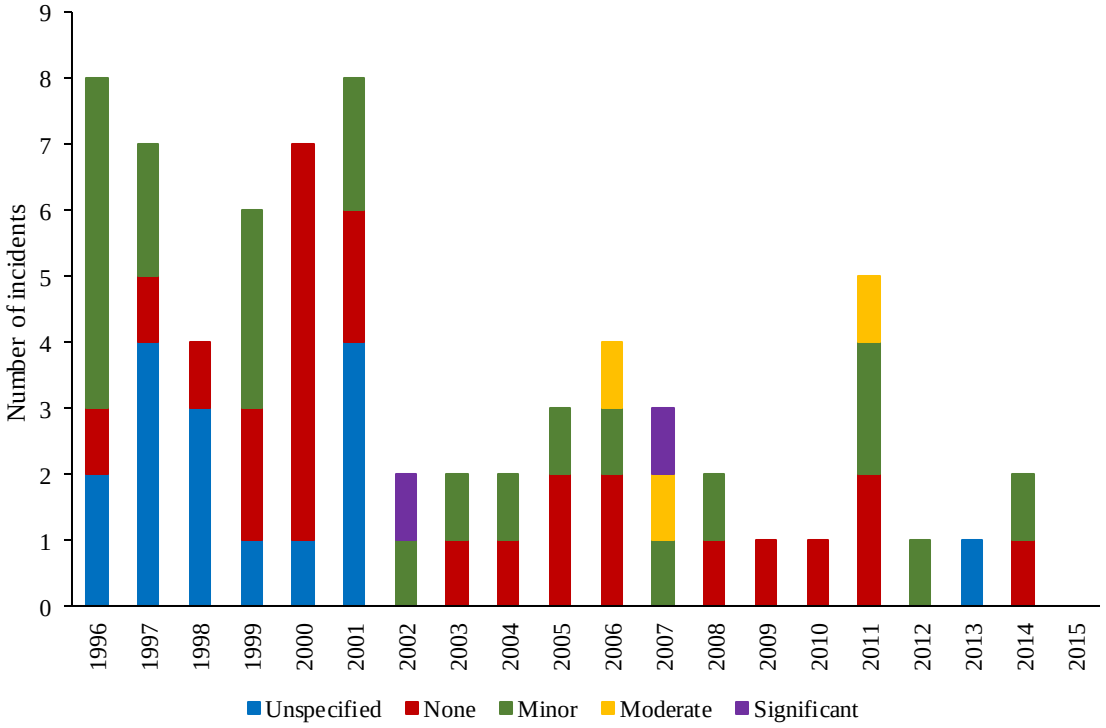

Figure 10: Damage classification of all reported incidents to fixed installations per year

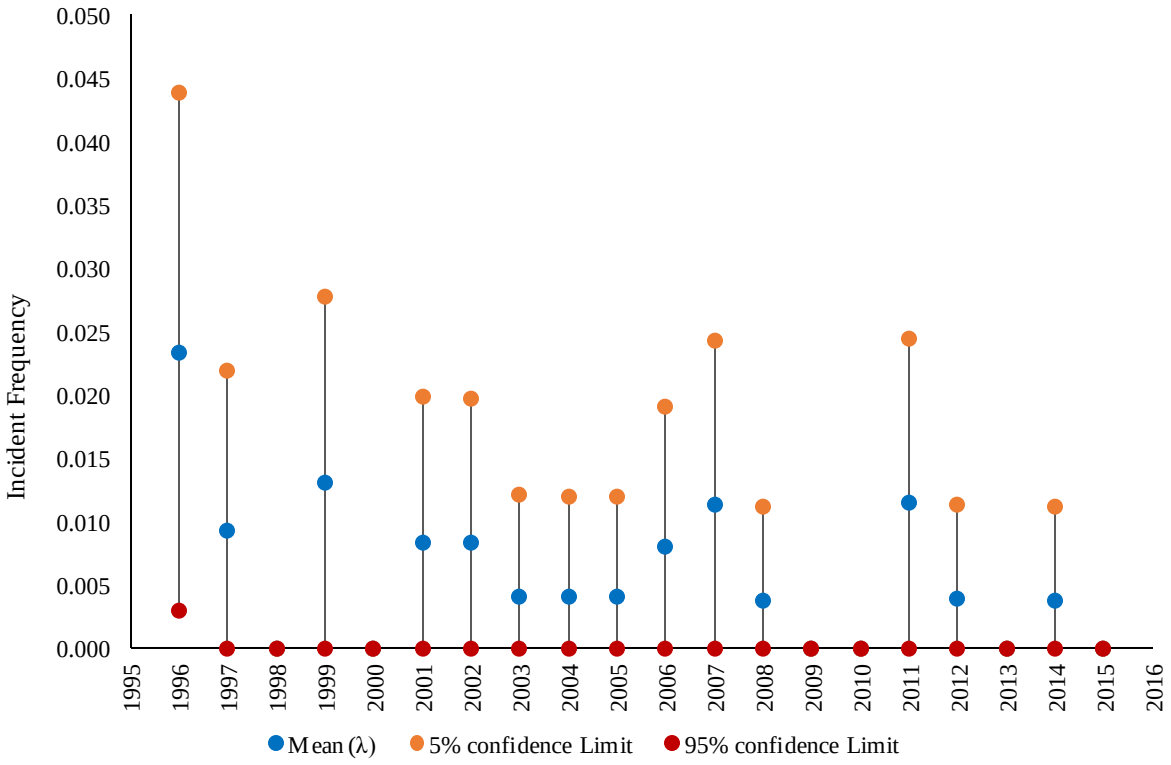

Figure 11: Frequency of incidents resulting in minor, moderate or significant damage for fixed installations per year

Within the initial years of the study (1996-2001) the frequency of incidents remained at a consistently high level until a large decrease in 2002. The incident frequency fluctuated very little with a small spike in 2006 – 2007, which is in concurrence with the spike for incidents across all installations. There is one anomalous data point in 2011 were the frequency of incidents rapidly increases and instantly decreases in 2012. Generally the mean frequency displays a consistent decrease over the 19 year period.

Over the whole 19 year time period, the frequency of an incident occurring with a fixed installation is 0.0139 per year. This equates to 1 incident every 70.9 installation years or 3.6 every year for the current level of installation activity in 2015. Similarly, the frequency of an incident that causes damage to a fixed installation is 0.0054 per year. This equates to 1 incident every 177.32 installation years or 1.44 every year given the current installation activity in 2015. It is highly probably that the data is slightly skewed to the higher frequencies in the early years of the study, as well as the random spike of incidents in 2007. Both of these incidents could have an adverse effect on the overall data and effect the present activity.

3.2.4. Floating installations

For the purpose of this study number of different installation types have been included in this category. All of the installations in this section are considered to be floating installations, in other words, the surface section of the installation is able to move with the section of the sea. A total of 44 incidents involving floating installations where identified. The following is a breakdown of the number of incidents per floating installations type:

- Semi-submersible drilling — 14 incidents
- Semi-submersible production — 1 incident
- Semi-submersible accommodation — 1 incident
- Semi-submersible unspecified operation — 14 incidents
- Floating production and storage (FPS) — 6 incidents
- Floating Storage unit (FSU) — 1 incident
- Floating production, storage and offloading (FPSO) — 5 incidents
- Single mooring buoy — 1 incident
- Buoy unspecified operation — 1 incident
- Articulated loading column — 1 incident

Tables 12 and 13 demonstrate the mean frequency and cumulative frequency of all reported incidents to all floating installations on the UKCS between 1996 and 2015. Figures 12 and 13 graphically represent the information demonstrated in Tables 12 and 13.

Table 12: Frequency of all reported incidents to floating installations per year

Year	No. of incidents in year (r)	No. of installations operating in year (N)	5% Confidence limit	Mean (λ)	95% Confidence limit	Margin of error
1996	1	34	0.087	0.029	0	0.058
1997	7	39	0.312	0.179	0.047	0.133
1998	7	40	0.305	0.175	0.045	0.130
1999	4	44	0.180	0.091	0.002	0.089
2000	3	45	0.142	0.067	0	0.075
2001	3	44	0.145	0.068	0	0.077
2002	5	43	0.218	0.116	0.014	0.102
2003	0	43	0	0	0	0
2004	0	43	0	0	0	0
2005	3	43	0.149	0.070	0	0.079
2006	1	43	0.069	0.023	0	0.046
2007	3	45	0.142	0.067	0	0.075
2008	2	48	0.099	0.042	0	0.058
2009	2	47	0.102	0.043	0	0.059
2010	3	46	0.139	0.065	0	0.074
2011	0	45	0	0	0	0
2012	0	47	0	0	0	0
2013	1	44	0.067	0.023	0	0.045
2014	0	43	0	0	0	0
2015	0	42	0	0	0	0

Table 13: Mean and cumulative frequency of all reported incidents to floating installations

Year	No. of incidents in year (r)	Cumulative no. of incidents in year (r1)	No. of installations operating in year (N)	Cumulative no. of installations operating in year (N1)	Mean (λ)	Cumulative mean (λ1)
1996	1	1	34	34	0.029	0.029
1997	7	8	39	73	0.179	0.110
1998	7	15	40	113	0.175	0.133
1999	4	19	44	157	0.091	0.121
2000	3	22	45	202	0.067	0.109
2001	3	25	44	246	0.068	0.102
2002	5	30	43	289	0.116	0.104
2003	0	30	43	332	0	0.090
2004	0	30	43	375	0	0.080
2005	3	33	43	418	0.070	0.079
2006	1	34	43	461	0.023	0.074
2007	3	37	45	506	0.067	0.073
2008	2	39	48	554	0.042	0.070
2009	2	41	47	601	0.043	0.068
2010	3	44	46	647	0.065	0.068
2011	0	44	45	692	0	0.064
2012	0	44	47	739	0	0.060
2013	1	45	44	783	0.023	0.057
2014	0	45	43	826	0	0.054
2015	0	45	42	868	0	0.052

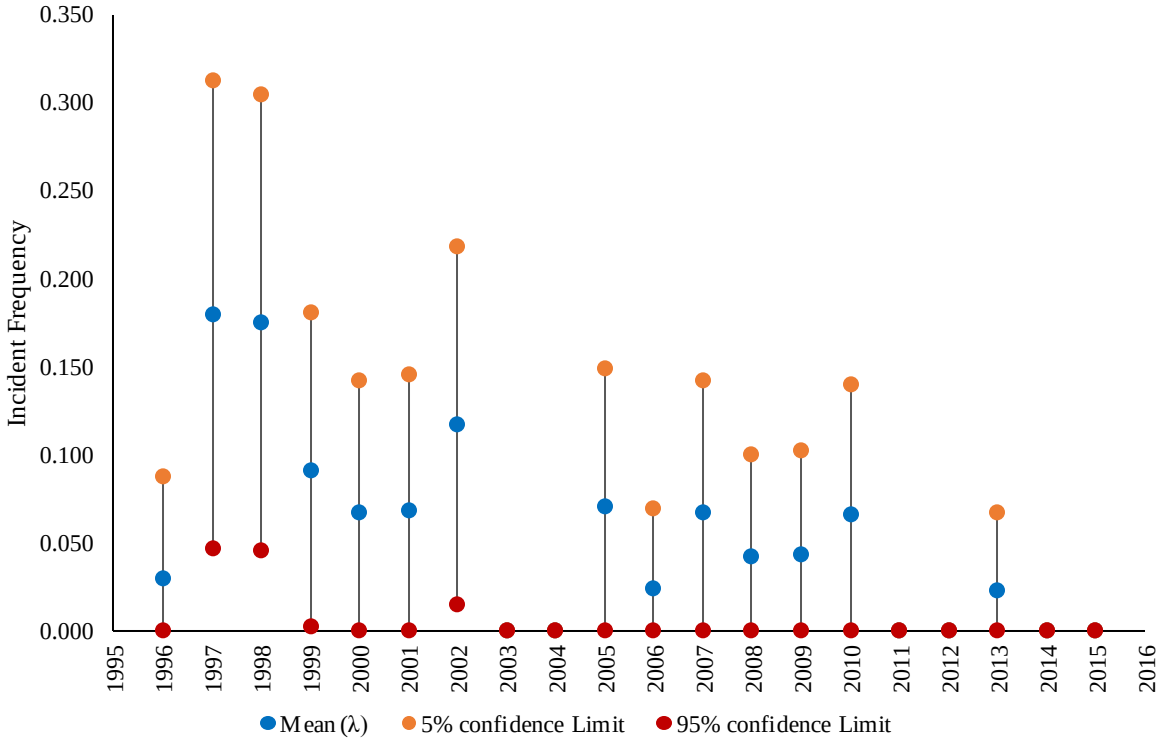

Figure 12: Frequency of all reported incidents to floating installations per year

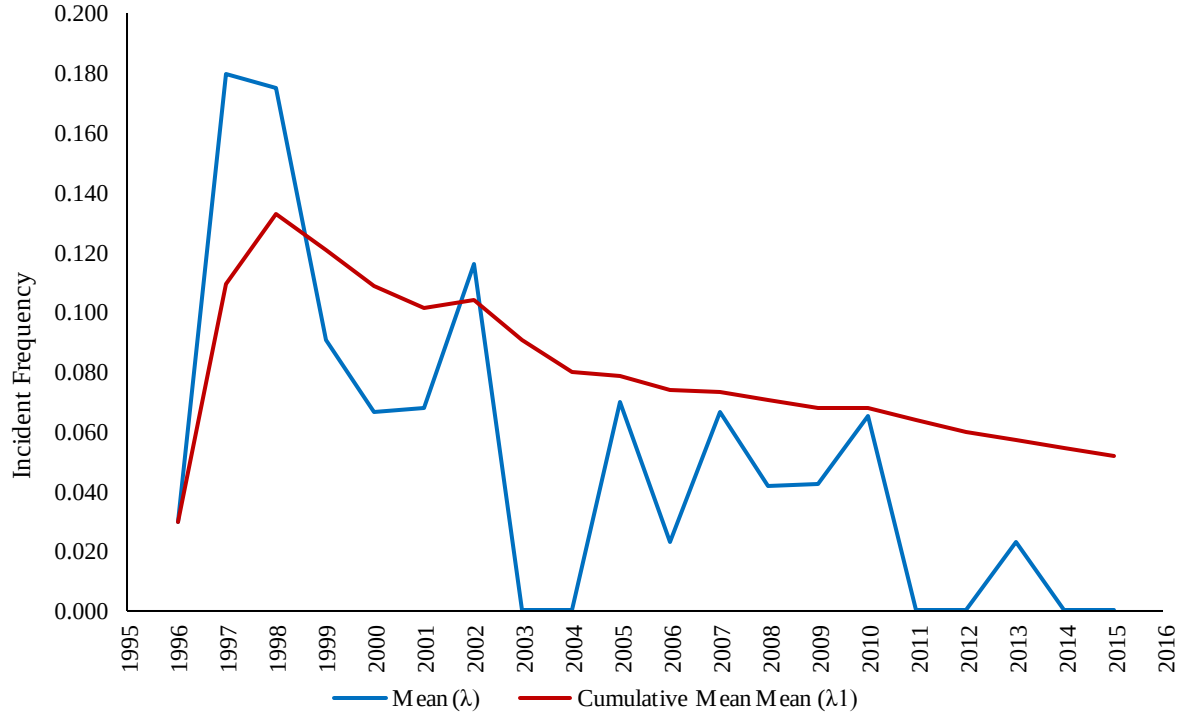

Figure 13: mean and cumulative frequency of all reported incidents to floating installations per year

Tables 14 and 15 summarise the damage classification of the reported incidents to floating installations as well as a breakdown of the number of incidents that cause minor, moderate and significant damage. In total, 16 incidents were classified as minor, 3 as moderate and none were deemed to be significant. Similarly, 26 incidents were found have suffered no damage or the damage classification was unspecified.

Table 14: Damage classification of all reported incidents to floating installations per year

Year	Unspecified	None	Minor	Moderate	Significant	Total
1996	1	0	0	0	0	1
1997	5	0	2	0	0	7
1998	4	0	3	0	0	7
1999	1	0	3	0	0	4
2000	1	0	2	0	0	3
2001	3	0	0	0	0	3
2002	2	1	1	1	0	5
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	1	1	1	0	3
2006	0	1	0	0	0	1
2007	0	2	1	0	0	3
2008	0	0	2	0	0	2
2009	0	0	2	0	0	2
2010	0	2	0	1	0	3
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
2013	0	1	0	0	0	1
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
	17	8	17	3	0	45
	37.78%	17.78%	37.78%	6.67%	0.00%	100.0%

Table 15: Frequency of incidents resulting in minor, moderate or significant damage for floating installations per year

Year	No. of incidents in year (r)	No. of installations operating in year (N)	5% Confidence limit	Mean (λ)	95% Confidence limit	Margin of error
1996	0	34	0	0	0	0
1997	2	39	0.122	0.051	0	0.071
1998	3	40	0.160	0.075	0	0.085
1999	3	44	0.145	0.068	0	0.077
2000	2	45	0.106	0.044	0	0.062
2001	0	44	0	0	0	0.000
2002	2	43	0.111	0.047	0	0.064
2003	0	43	0	0	0	0
2004	0	43	0	0	0	0
2005	2	43	0.111	0.047	0	0.064
2006	0	43	0	0	0	0
2007	1	45	0.066	0.022	0	0.044
2008	2	48	0.099	0.042	0	0.058
2009	2	47	0.102	0.043	0	0.059
2010	1	46	0.064	0.022	0	0.043
2011	0	45	0	0	0	0
2012	0	47	0	0	0	0
2013	0	44	0	0	0	0
2014	0	43	0	0	0	0
2015	0	42	0	0	0	0

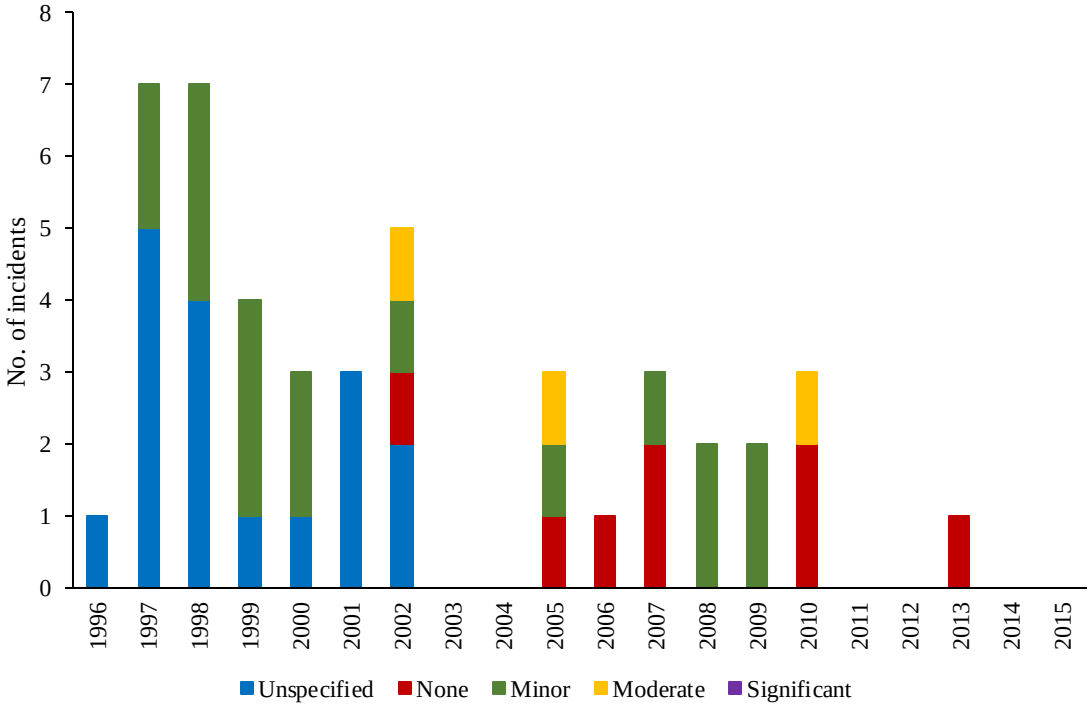

Figure 14: Damage classification of all reported incidents to fixed installations per year

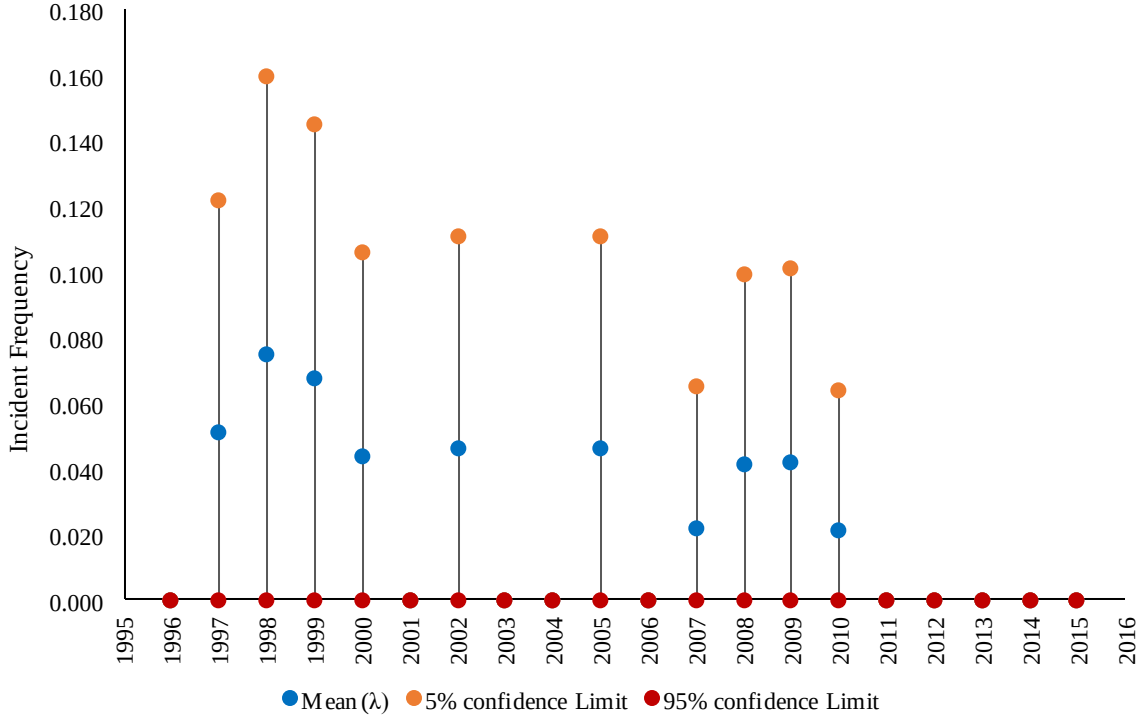

Figure 15: Frequency of incidents resulting in minor, moderate or significant damage for fixed installations per year

The trend of collision incidents regarding floating installations on average decreases over the 19 year period, however, there is an element of fluctuation. A peak in the number of incidents is reach in 1997 and 1998. This eventually decreases to zero in 2003 and 2004 and the frequency of incidents remains consistent until 2011 at which point the number of incidents decreases to zero again through to 2015, with the exception of 1 incident in 2013.

Over the entire 19 year period (1996 – 2015) the frequency of an incident occurring regarding a floating installation is 0.05 per year. This equates to approximately 1 incident every 19.72 installation years or 2.12 every year given the operating levels in 2015. The statistical analysis for incidents resulting in damage identified an average incident frequency of 0.022. This can also be said to be 1 damaging incident every 45.68 installations years or 0.919 per year at the current operating levels in 2015.

3.2.5. Jack-up installations

A total of 35 reported incidents were identified involving collisions between vessels and jack-up installations between 1996 and 2015. Tables 16 and 17 demonstrate the mean and cumulative frequency of all reported incidents to all jack-up installations on the UKCS between. Figures 16 and 17 graphically represent the information demonstrated in Tables 16 and 17.

Table 16: Frequency of all reported incidents to jack-up installations per year

Year	No. of incidents in year (r)	No. of installations operating in year (N)	5% Confidence limit	Mean (λ)	95% Confidence limit	Margin of error
1996	0	14	0	0	0	0
1997	3	14	0.457	0.214	0	0.242
1998	5	15	0.626	0.333	0.041	0.292
1999	4	17	0.466	0.235	0.005	0.231
2000	3	21	0.305	0.143	0	0.162
2001	1	22	0.135	0.045	0	0.089
2002	1	22	0.135	0.045	0	0.089
2003	2	22	0.217	0.091	0	0.126
2004	1	22	0.135	0.045	0	0.089
2005	1	22	0.135	0.045	0	0.089
2006	1	22	0.135	0.045	0	0.089
2007	5	22	0.426	0.227	0.028	0.199
2008	3	22	0.291	0.136	0	0.154
2009	1	24	0.123	0.042	0	0.082
2010	1	26	0.114	0.038	0	0.075
2011	1	26	0.114	0.038	0	0.075
2012	0	27	0	0	0	0
2013	0	27	0	0	0	0
2014	1	30	0.099	0.033	0	0.065
2015	1	33	0.090	0.030	0	0.059

Table 17: Mean and cumulative frequency of all reported incidents to jack-up installations per year

Year	No. of incidents in year (r)	Cumulative no. of incidents in year (r1)	No. of installations operating in year (N)	Cumulative no. of installations operating in year (N1)	Mean (λ)	Cumulative mean (λ1)
1996	0	0	14	14	0	0
1997	3	3	14	28	0.214	0.107
1998	5	8	15	43	0.333	0.186
1999	4	12	17	60	0.235	0.200
2000	3	15	21	81	0.143	0.185
2001	1	16	22	103	0.045	0.155
2002	1	17	22	125	0.045	0.136
2003	2	19	22	147	0.091	0.129
2004	1	20	22	169	0.045	0.118
2005	1	21	22	191	0.045	0.110
2006	1	22	22	213	0.045	0.103
2007	5	27	22	235	0.227	0.115
2008	3	30	22	257	0.136	0.117
2009	1	31	24	281	0.042	0.110
2010	1	32	26	307	0.038	0.104
2011	1	33	26	333	0.038	0.099
2012	0	33	27	360	0	0.092
2013	0	33	27	387	0	0.085
2014	1	34	30	417	0.033	0.082
2015	1	35	33	450	0.030	0.078

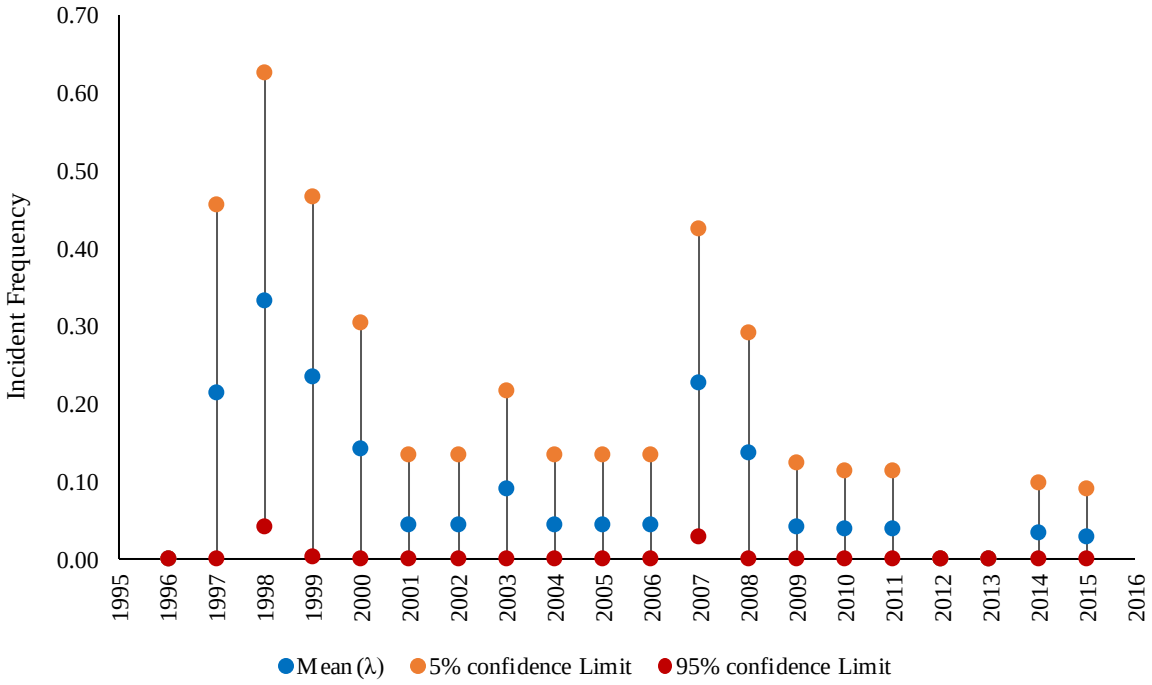

Figure 16: Frequency of all reported incidents to jack-up installations per year

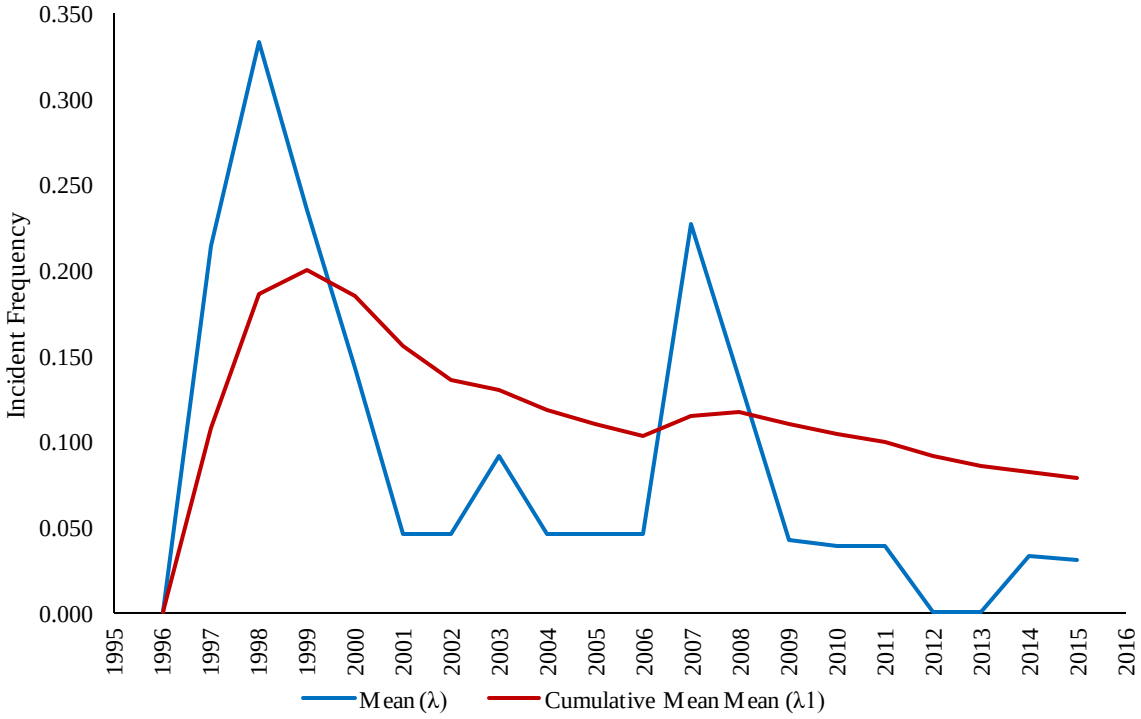

Figure 17: Mean and cumulative frequency of all reported incidents to jack-up installations per year

Tables 18 and 19 summarise the damage classification of the reported incidents to Jack-up installations as well as a breakdown of the number of incidents that cause minor, moderate and significant damage. In total, 10 incidents were classified as minor, and none were deemed to be moderate or significant. Similarly, 25 incidents were found have suffered no damage or the damage classification was unspecified. Figures 18 and 19 graphically demonstrate the data presented in Tables 18 and 19.

Table 18: Damage classification of all reported incidents to jack-up installations per year

Year	Unspecified	None	Minor	Moderate	Significant	Total
1996	0	0	0	0	0	0
1997	2	0	1	0	0	3
1998	5	0	0	0	0	5
1999	1	1	2	0	0	4
2000	2	0	1	0	0	3
2001	0	0	1	0	0	1
2002	0	1	0	0	0	1
2003	1	1	0	0	0	2
2004	1	0	0	0	0	1
2005	0	1	0	0	0	1
2006	1	0	0	0	0	1
2007	0	3	2	0	0	5
2008	1	1	1	0	0	3
2009	0	0	1	0	0	1
2010	0	1	0	0	0	1
2011	0	1	0	0	0	1
2012	0	0	0	0	0	0
2013	0	0	0	0	0	0
2014	0	0	1	0	0	1
2015	1	0	0	0	0	1
	15	10	10	0	0	35
	42.86%	28.57%	28.57%	0.00%	0.00%	100.0%

Table 19: Frequency of incidents resulting in minor, moderate or significant damage for jack-up installations per year

Year	No. of incidents in year (r)	No. of installations operating in year (N)	5% Confidence limit	Mean (λ)	95% Confidence limit	Margin of error
1996	0	14	0	0	0	0
1997	1	14	0.211	0.071	0	0.140
1998	0	15	0	0	0	0
1999	2	17	0.281	0.118	0	0.163
2000	1	21	0.141	0.048	0	0.093
2001	1	22	0.135	0.045	0	0.089
2002	0	22	0	0	0	0
2003	0	22	0	0	0	0
2004	0	22	0	0	0	0
2005	0	22	0	0	0	0
2006	0	22	0	0	0	0
2007	2	22	0.217	0.091	0	0.126
2008	1	22	0.135	0.045	0	0.089
2009	1	24	0.123	0.042	0	0.082
2010	0	26	0	0	0	0
2011	0	26	0	0	0	0
2012	0	27	0	0	0	0
2013	0	27	0	0	0	0
2014	1	30	0.099	0.033	0	0.065
2015	0	33	0	0	0	0

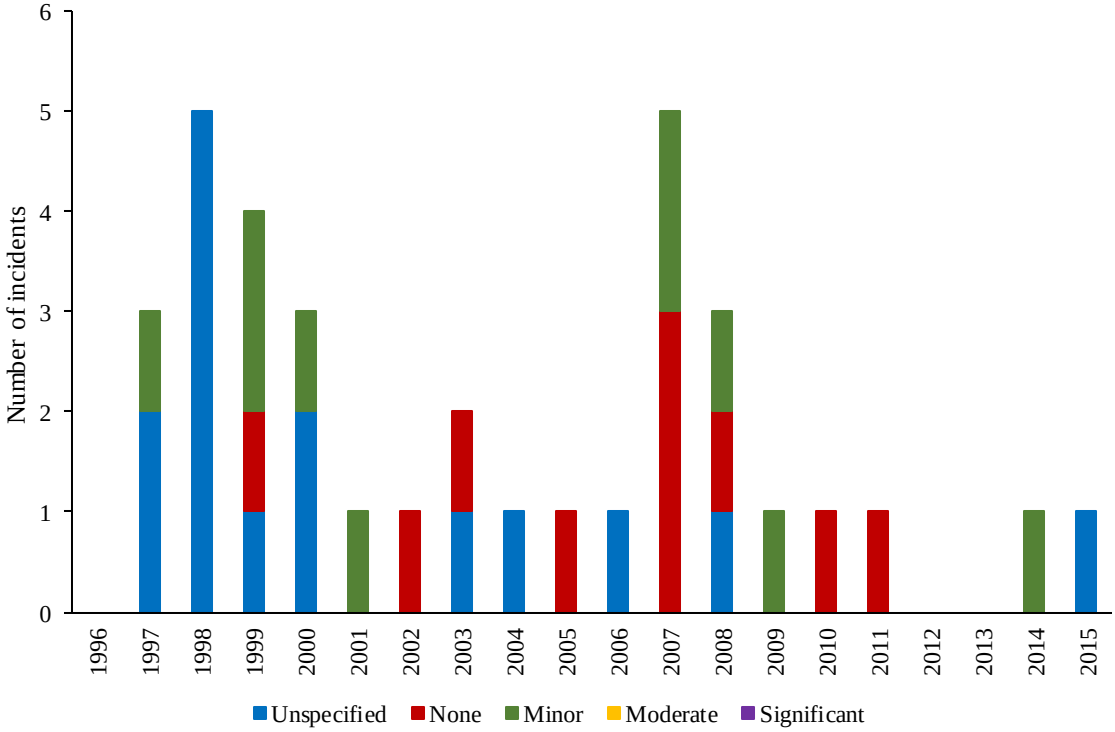

Figure 18: Damage classification of all reported incidents to jack-up installations per year

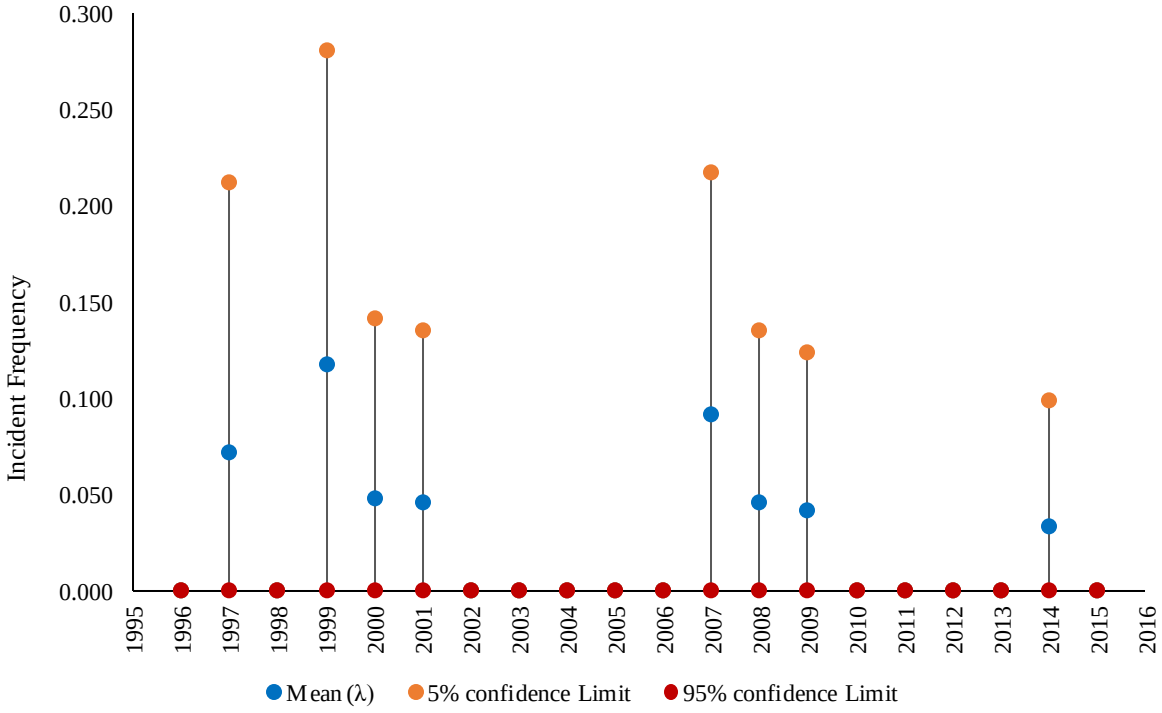

Figure 19: Frequency of minor, moderate and significant damage to jack-up installations per year

The incident frequency in the earlier part of the study for jack-up installations is relatively high given the small population of operating installations compared with the number of incidents, with a peak frequency in 1998. The trend in incident frequency decreases and remains consistent from 2001 onwards. There is on key spike in the incident frequency in 2007 where a significant number of incidents occurred. A key issue with the jack-up operating data compared to fixed and floating data is that the number of platforms that have been decommissioned or taken out of service in the 19 year period was not known accurately. Hence the number of jack-up installations operating on the UKCS steadily increases, and potentially devalues the data presented.

Over the whole study the average frequency of an incident occurring between a vessel and a jack-up installation is 0.077 per year. This equates to 1 incident every 12.85 operating years or 2.56 incidents per year given the current operating levels in 2015. Furthermore, the average frequency of an incidents causing damage is 0.022 per year. This can also be stated as 1 damage causing incident every 45 installation years or 0.73 incidents per year given the current operating levels in 2015.

3.2.6. Summary of incident frequencies

A summary of the incident frequencies for all vessel and installation types is presented in Table 20. The data in the tables has been generated using the both the number of all recorded incidents and those incidents which have resulted in minor, moderate and significant damage. The mean incident frequencies have not been conducted separately for attendant and passing vessels as there have only been 2 reported incidents of collisions with passing vessels over the 19 year period.

Table 20: Summary of mean incident frequencies of all reported incidents and incidents that have resulted in damage to the installation

Mean incident frequencies: 1996 - 2015		
Installation type	All reported incidents	Incidents resulting in minor, moderate or significant damage
All	0.0280	0.0116
Fixed	0.0139	0.0054
Floating	0.0507	0.0219
Jack-up	0.0778	0.0222

3.2.7. Geographical distribution

For this section of the statistical analysis the geographical locations of all incidents and installation types are analysed as a whole. This is due to the fact that certain installation types are used more frequently in different sections of the North Sea. For example, floating installations would not be used as much as fixed installations in the southern North Sea due to the shallower waters. Similarly, jack-up installations are not utilised as often as other installation types in the northern North Sea. If the installations were analysed individually by type and by area, the data would seem skewed as the results may suggest that the certain installations have experienced an average of more or less incidents due to the relative size of their population in a given area.

A straightforward comparison of the reported incidents by region is demonstrated by Table 21 and Figure 20. The information shows areas that have endured more incidents than others, yet the data should be viewed against the varying levels of activity between the North Sea sectors. Unless the number of incidents per region is cross referenced with the number of installations

operating in that region, then an incident frequency is difficult to obtain. Similarly, the activity within each sector could be said to be difficult to map accurately as mobile floating unit can be moved from location to location while under the same contract.

Table 21: Geographical distribution of all reported incidents

Incident by Sector		
Sector	Number	Percentage
Northern North Sea	28	15.91%
Central North Sea	33	18.75%
Southern North Sea	32	18.18%
West of Shetland	5	2.84%
Morecambe Bay	3	1.70%
Liverpool Bay	3	1.70%
Unspecified	72	40.91%
Total	176	100.00%

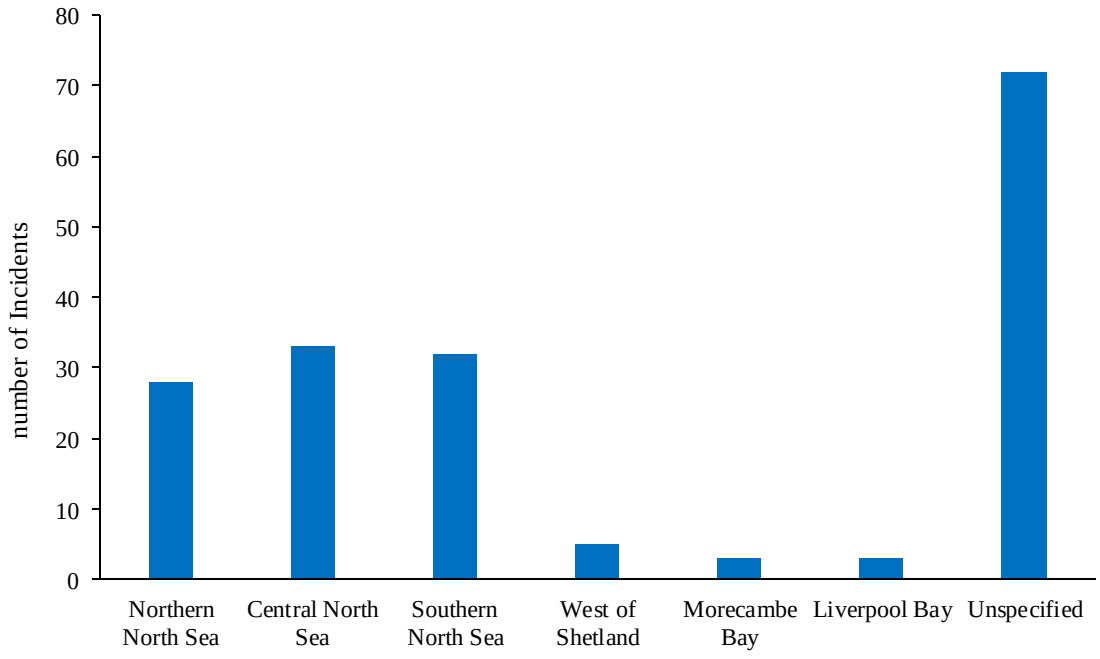

Figure 20: Geographical distribution of all reported incident on the UKCS

All incidents outlined in the statistical analysis were attendant vessels with the exception of 2 incidents which were passing vessels, a trawler and a merchant container ship. Similarly, these 2 incidents occurred in the southern North Sea. This would be expected as this is deemed to be the most congested sector in terms of offshore operations and general shipping activity.

3.2.8. Other or unspecified installations

While the majority of the data within the statistical analysis was complete, i.e. the information contained; installation type, date (with month), location, vessel type, damage classification and in many cases the installation name. However, there are a number of collision incidents that have been reported between 1996 and 2015 which have incomplete data recordings or do not involve a fixed, floating or jack-up installations. Within this section of the data the oil or gas field may be known but the specific installation may not be. It may be possible to estimate the installation type however, it is possible that within a field of predominantly fixed installations, a floating installation may also be under contract in the same field. Hence, the installation type has not been predicted even though the field may be known. Within this data set there is enough information to include it within parts of the analysis where a specific installation type does not need to be known. The data contains the following number of incidents:

- Unspecified installation type 23 incidents
- Wind turbines 3 incidents

Table 22 and Figure 21 demonstrate the number of incidents involving other or unspecified installations types per year.

Table 22: Number of incidents reported for other and unspecified installation types per year

Year	Unspecified	Wind turbine
1996	0	0
1997	0	0
1998	1	0
1999	1	0
2000	5	0
2001	0	0
2002	2	0
2003	1	0
2004	1	0
2005	0	0
2006	1	1
2007	1	0
2008	1	0
2009	0	0
2010	0	0
2011	1	0
2012	2	1
2013	4	0
2014	0	1
2015	2	0
	23	3

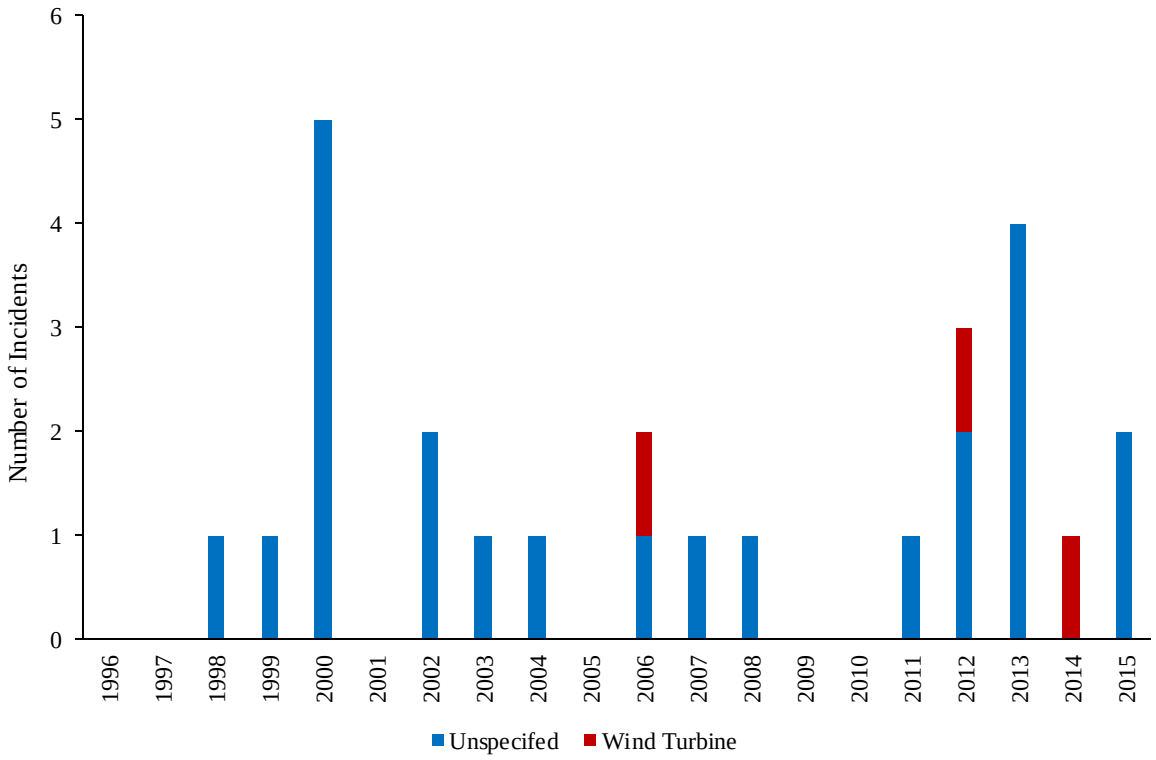

Figure 21: Number of incidents reported for other or unspecified installation types per year

4. NEAR MISSES

The previous ship/platform collision database (2001) identified a database review from 1997 which highlighted that a large body of data existed relating to 'near misses', and that these occur frequently in all areas of the UKCS. Within the report in 1997 a 'near miss' was defined as an infringement of the 500m safety zone. Similarly, it was also concluded that more comprehensive reporting of said incidents would improve the understanding of the magnitude of the problem and lead to identifiable causation factors. In this regard the causation factors were referred to as being similar to those which involved passing vessel collisions. This is due to the fact that the majority of passing vessel collisions were due to poor watch-keeping or the inability to recover from a dangerous situation.

In an attempt to better the understanding of 'near miss' situations, a number of initiatives were implemented between the database review in 1997 and the production of the ship/platform collision database in 2001. These new initiatives, utilising the HSE's ORION system, identified the following information:

- HSE 'Orion' system using search keyword "POS COLLISION OFF" (28 incidents – 14 classified as 'near miss' – 14 classified as not 'near miss')
- HSE 'Orion' system SZI section and OIR9A reports (59 incidents – not possible to determine whether 'near miss')
- ERR VA Warning Off Reports (246 incidents – not possible to determine whether or not it is a 'near miss')

Furthermore, during the latter years of the 2001 database, the HSE revisited their definition of the term 'near miss' and determined that "only incidents that lead to the activation of any part of the Duty Holder's Emergency Response Plan should be classified as a 'near miss'". This was deemed to be a better criterion for definition than, for example, one that refers to an approaching vessel's Closest Point of Approach (CPA) because of the different external factors and circumstances prevalent in different areas of the UKCS. The busier waters of the Southern North Sea will lead to many more close approaches by vessels than West of Shetlands where a potentially errant vessel may cause alarm more readily because it is a relatively rare event. Although the reporting routes outlined above led to increasing amounts of reports being received by HSE and ERRVA, many of which yield important information about an event, it is somewhat debatable whether all should be classified as a 'near miss' within the confines of the recent definition. Some of the doubt is centred on the inability to determine whether an installation's Emergency Response Plan was activated purely from the information contained within the report; this is particularly true for the ERRVA Warning Off Reports which it appears are completed and filed by the ERRV without recourse to the installation.

While this is a valid approach to determining whether a near miss has occurred it is not the preferred method in this study. A key reason for this is that a number of the OIRION incidents using the keyword "POS COLLISION OFF" involve incidents that are not classed as near misses but involve uncontrolled vessels missing a platform by small margins, within the 500m zone. Two examples of incidents not considered as near misses are as follows:

- Incident 1: Anchor handler experiences total loss of power in 500m zone and drifts towards a fixed steel installation.
  "Whilst preparing for rig move of jack up drilling rig - anchor handling vessel suffered total loss of power. Vessel started drifting and narrowly missed colliding with platform."

- Incident 2: Shuttle tanker experiences DP computer failure during cargo offloading and moves towards an FPSO.

> "Shuttle tanker was making its approach in preparation for cargo offloading. At a distance of approximately 200 metres shuttle tanker experienced failure of main propeller pitch control. This initiated a sequence of events which resulted in a 100% ahead pitch demand from the DP system. The vessel started to move ahead and manual control was selected. The vessel was steered to starboard and arrested 120 metres from the FPSO's stern at approximately 90 degrees."

These incidents were not considered as near misses as the installations emergency response plan was not initiated in both cases, yet if key decisions were not made during the incidents, they may have resulted in contact to the respective installations. Given incident 1, there was an element of luck that the vessel drifted past the installation.

Therefore, in this study the definitions quantifying a "near miss" are as follows:

Passing vessels:

- Any passing vessel on a collision course with an installation, without any apparent operating failures, that enters the 500m zone unauthorised but does not make physical contact with the installation.
- Any unauthorised passing vessel that enters or is within the 500m zone and experiences failures which compromise the ability to handle the vessel, and can be deemed to be on a collision course but does not make physical contact with the installation.

Attendant vessels:

- Any attendant vessel in the 500m zone that experiences failures which compromise the ability to handle the vessel, and can be deemed to be on a collision course but does not make physical contact with the installation.

Given the outlined definitions above, 56 incidents were determined to be classed as "near misses" in the 19 year period between 1996 and 2015. These incidents are outlined by installation type in Table 23 and Figure 22. These incidents are broken down by installation type, as follows:

- Fixed steel — 26 near misses
- Fixed concrete — 1 near miss
- Jacket — 2 near misses
- Floating production — 1 near miss
- FPSO — 5 near misses
- FSU — 3 near misses
- Semi-submersible — 4 near misses
- Semi-submersible drilling — 4 near misses
- Semi-submersible accommodation — 1 near miss
- Jack-up — 3 near misses
- Unspecified — 3 near misses

Further to this, an additional near miss incident involved two installations. A supply vessel which, suffered an engine fire and as a result lost all ability to navigate and steerage, presented a collision threat to a fixed steel installation and a semi-submersible accommodation installation. This is counted as one incident as the floating platform was carrying out operations with the fixed platform along with the supply vessel. All near miss incidents identified in this study are demonstrated in Appendix C.

Table 23: Number of near misses on the UKCS per installation type per year

Year	Fixed	Floating	Jack-up	Multiple	Unspecified	Total
1996	0	1	0	0	0	1
1997	2	4	0	0	0	6
1998	3	2	0	0	0	5
1999	6	3	1	0	0	10
2000	3	0	0	0	1	4
2001	2	4	0	0	0	6
2002	3	2	1	0	1	7
2003	0	0	0	0	0	0
2004	2	0	0	0	0	2
2005	1	0	0	0	0	1
2006	3	0	1	0	0	4
2007	4	0	0	0	0	4
2008	0	0	0	0	0	0
2009	0	1	0	0	0	1
2010	0	0	0	0	0	0
2011	1	0	0	0	0	1
2012	0	0	0	0	1	1
2013	0	0	0	0	0	0
2014	1	1	0	1	0	3
2015	0	0	0	0	0	0
	31	18	3	1	3	56
	55.36%	32.14%	5.36%	1.79%	5.36%	100.00%

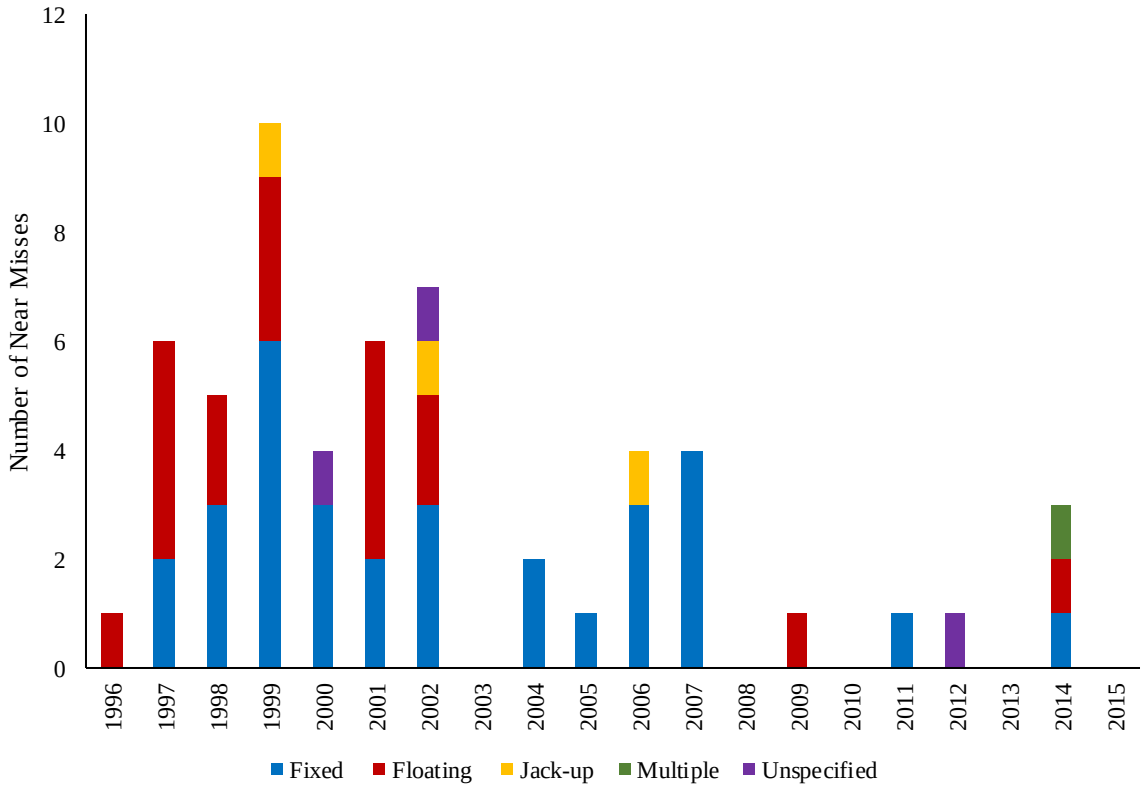

Figure 22: Number of near misses on the UKCS per installation type per year

It can be seen that the number of incidents directly correlates to the relative number of installations of a given type operating in the North Sea per year, i.e. there are more fixed installations operating on the UKCS, hence the number of near misses relating to fixed installations is much higher when compared to floating or jack-up installations.

Tables 24 and 25 demonstrate the mean and cumulative frequencies of all reported "near misses" per year on the UKCS between 1996 and 2015. Similarly, Figures 23 and 24 demonstrate such frequencies information graphically.

Table 24: Frequency of all reported near misses on the UKCS per year

Year	No. of near misses in year (r)	No. of installations operating in year (N)	5% Confidence limit	Mean (λ)	95% Confidence limit	Margin of error
1996	1	262	0.011	0.004	0	0.007
1997	6	271	0.040	0.022	0.004	0.018
1998	5	278	0.034	0.018	0.002	0.016
1999	10	291	0.056	0.034	0.013	0.021
2000	4	300	0.026	0.013	0	0.013
2001	6	307	0.035	0.020	0.004	0.016
2002	7	308	0.040	0.023	0.006	0.017
2003	0	311	0	0	0	0
2004	2	313	0.015	0.006	0	0.009
2005	1	314	0.009	0.003	0	0.006
2006	4	315	0.025	0.013	0	0.012
2007	4	331	0.024	0.012	0	0.012
2008	0	337	0	0	0	0
2009	1	338	0.009	0.003	0	0.006
2010	0	332	0	0	0	0
2011	1	332	0.009	0.003	0	0.006
2012	1	335	0.009	0.003	0	0.006
2013	0	337	0	0	0	0
2014	3	340	0.019	0.009	0	0.010
2015	0	331	0	0	0	0

Table 25: Mean and cumulative frequency of all reported near misses on the UKCS per year

Year	No. of near misses in year (r)	Cumulative no. of near misses in year (r1)	No. of installations operating in year (N)	Cumulative no. of installations operating in year (N)	Mean (λ)	Cumulative mean (λ1)
1996	1	1	262	262	0.004	0.004
1997	6	7	271	533	0.022	0.013
1998	5	12	278	811	0.018	0.015
1999	10	22	291	1102	0.034	0.020
2000	4	26	300	1402	0.013	0.019
2001	6	32	307	1709	0.020	0.019
2002	7	39	308	2017	0.023	0.019
2003	0	39	311	2328	0	0.017
2004	2	41	313	2641	0.006	0.016
2005	1	42	314	2955	0.003	0.014
2006	4	46	315	3270	0.013	0.014
2007	4	50	331	3601	0.012	0.014
2008	0	50	337	3938	0	0.013
2009	1	51	338	4276	0.003	0.012
2010	0	51	332	4608	0	0.011
2011	1	52	332	4940	0.003	0.011
2012	1	53	335	5275	0.003	0.010
2013	0	53	337	5612	0	0.009
2014	3	56	340	5952	0.009	0.009
2015	0	56	331	6283	0.000	0.009

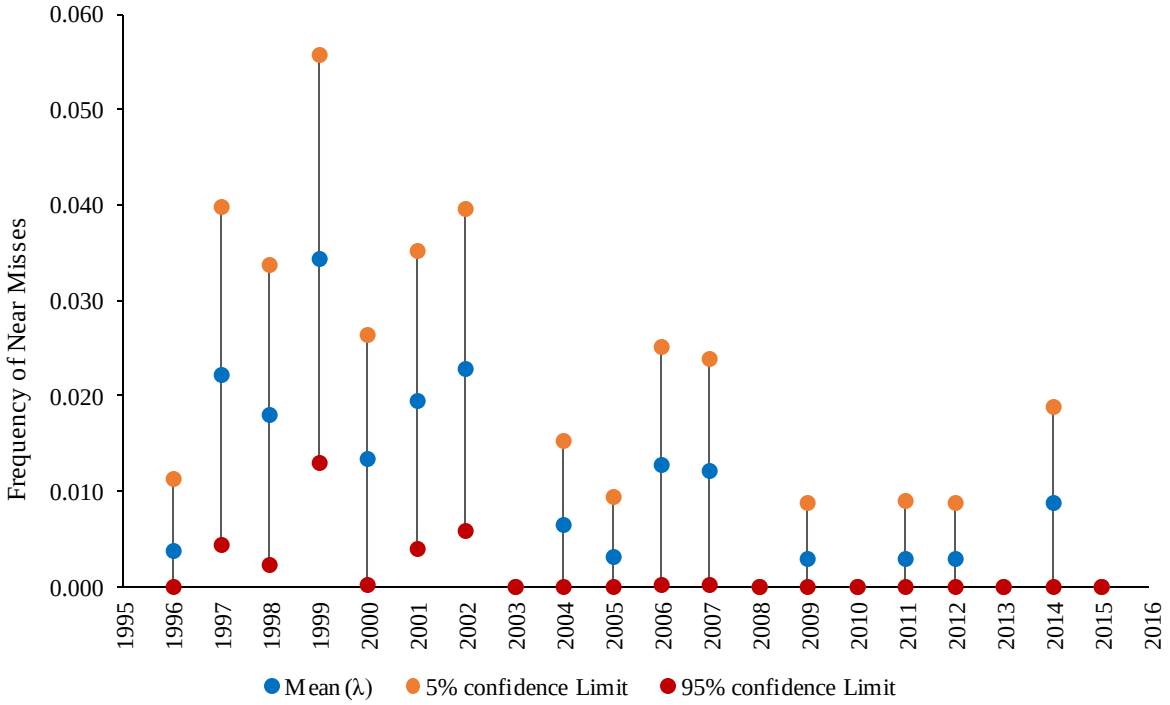

Figure 23: Frequency of all reported near misses per year

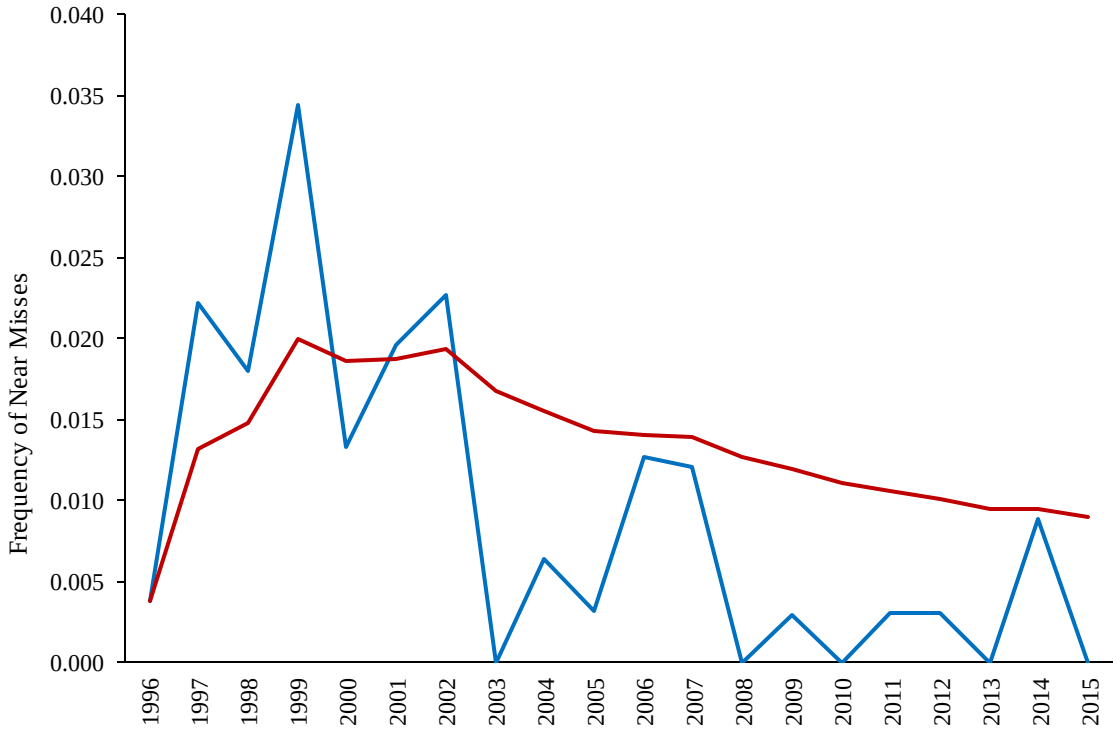

Figure 24: Mean and cumulative frequency of near misses per year

4.1. TYPES OF VESSELS INVOLVED IN NEAR MISSES

Tables 26 and 27 demonstrate the number of "near miss" incidents per vessel type per year as well as per month. This data indicates that the majority of "near misses" involve attendant vessels. A breakdown of the attendant vessels shows that 5 incidents involve "*standby*" vessels, 7 involve "*supply*" vessels and 18 involve "*other attendant*" vessels. It can been seen from Table 25 that the number "near misses" involving "*passing vessels*" accounts for more than 25% of the total number of "near misses". This is a significant number of vessels when compared to the number of "*passing vessels*" that cause collisions. Finally, "*unspecified*" vessels account for 11 "near misses". The categories of "*attendant vessels"* and "*passing* vessels" includes the following vessel types:

Attendant:

- Anchor handler 1 near miss
- Barge 2 near misses
- Diver support 2 near misses
- Research vessel 1 near miss
- Shuttle tanker 8 near misses
- Unspecified cargo 1 near miss

Passing:

- Fishing vessel 5 near misses
- Trawler 3 near misses
- Merchant cargo 1 near miss
- Merchant container 1 near miss
- Merchant tanker 1 near miss
- Unspecified passing 4 near misses

Table 26: Number of near misses per vessel per year

Year	Standby	Supply	Other attendant	Passing	Unspecified	Total
1996	0	0	1	0	0	1
1997	2	2	2	0	0	6
1998	1	0	1	2	1	5
1999	1	2	4	2	1	10
2000	0	0	3	0	1	4
2001	0	0	1	2	3	6
2002	0	0	3	2	2	7
2003	0	0	0	0	0	0
2004	0	0	0	2	0	2
2005	0	0	0	1	0	1
2006	0	1	0	2	1	4
2007	0	0	1	1	2	4
2008	0	0	0	0	0	0
2009	0	0	1	0	0	1
2010	0	0	0	0	0	0
2011	0	0	1	0	0	1
2012	0	0	0	1	0	1
2013	0	0	0	0	0	0
2014	1	2	0	0	0	3
2015	0	0	0	0	0	0
	5	7	18	15	11	56
	8.93%	12.50%	32.14%	26.79%	19.64%	100.00%

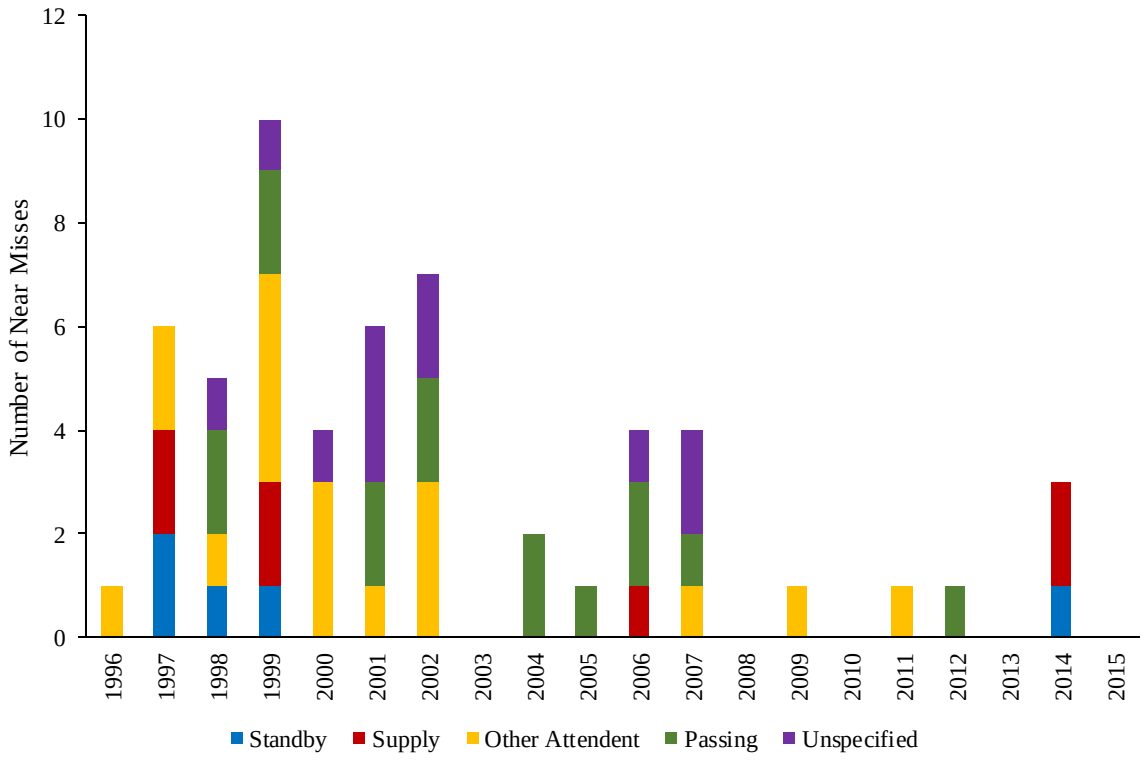

Figure 25: Number of near misses per vessel per year

Table 27: Number of near misses per vessel type per month

Month	Standby	Supply	Other attendant	Passing	Unspecified	Total	
January	1	0	1	1	1	4	7.14%
February	0	0	1	1	1	3	5.36%
March	3	0	2	0	0	5	8.93%
April	1	0	1	1	2	5	8.93%
May	0	0	1	3	0	4	7.14%
June	0	1	4	2	2	9	16.07%
July	0	0	0	0	1	1	1.79%
August	0	2	2	1	0	5	8.93%
September	0	1	2	2	1	6	10.71%
October	0	0	1	4	1	6	10.71%
November	0	1	2	0	2	5	8.93%
December	0	2	1	0	0	3	5.36%
Unspecified	0	0	0	0	0	0	0.00%
	5	7	18	15	11	56	100.00%
	8.93%	12.50%	32.14%	26.79%	19.64%	100.00%	

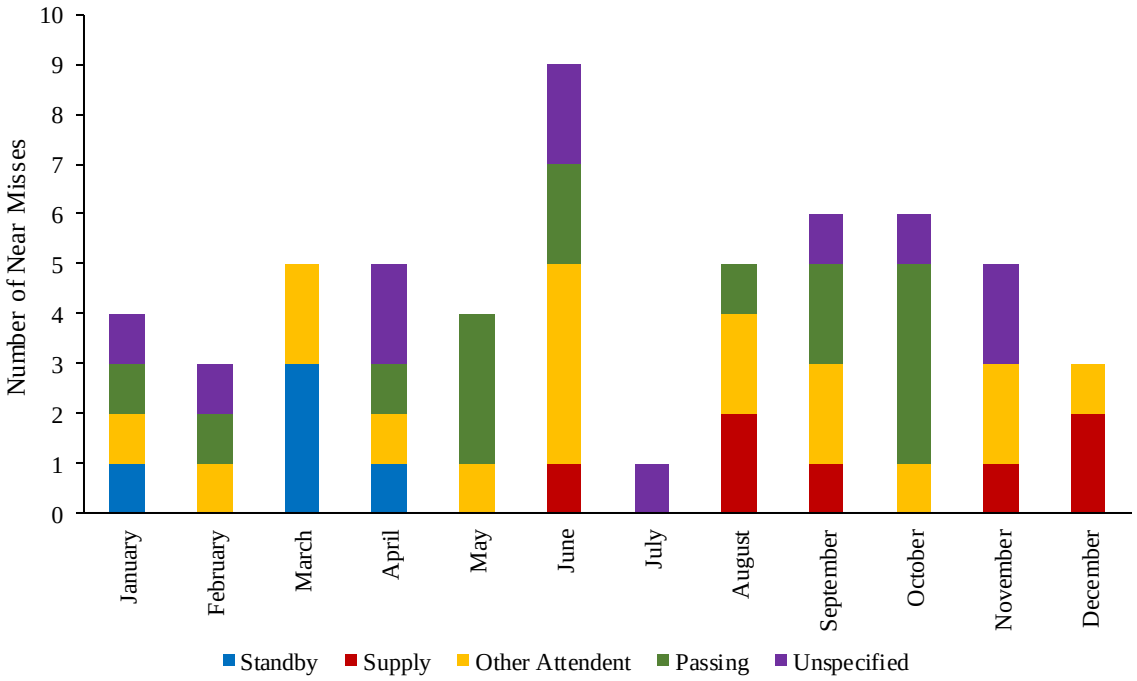

Figure 26: Number of near misses per vessel type per month

Given the data presented, slightly more incidents have occurred in the 6 month period of April to September as opposed to October to March, when most actual collisions occur. This can be attributed to two factors; firstly, the number of incidents involving attendant vessels increases in the summer months due to preferred weather conditions for maintenance and other operation; secondly, the increased number of incidents involving passing vessels. Most of the passing vessels involved in near misses in the summer months are fishing vessels and trawlers with 6 of 8 near misses involving these vessels occur between April and September. However, there are still a large number of incidents during the months October to March. Most of these incidents can be attributed to standby vessels and shuttle tankers, where 10 of the 13 incidents involving these vessels occurring in the winter months (October to March). A potential reason for this is the adverse weather conditions, and in the event of a vessel losing power or control, the weather plays a significant part in the uncontrolled direction in which the vessel will head.

4.2. NEAR MISSES BY GEOGRAPHICAL LOCATION

For this section of the statistical analysis the geographical locations of all reported near misses are analysed as a whole. This is for the same reasons stated in the analysis involving collision by geographical location; certain installation types are utilised more frequently in different sections of the UKCS. If the installations were analysed individually by type and by area, the data would seem skewed as the results may suggest that the certain installations have experienced an average of more or less incidents due to the relative size of their population in a given area.

Again a straightforward comparison of the reported “near misses” by region is demonstrated by Table 28 and Figure 27. The information shows areas that have endured more “near misses” than others, yet the data should be viewed against the varying levels of activity between the North Sea

sectors. Unless the number of incidents per region is cross referenced with the number of installations operating in that region, then an incident frequency is difficult to obtain.

Table 28: Geographical distribution of all reported near misses on the UKCS

Near misses by sector							
Location	Standby	Supply	Other attendant	Passing	Unspecified	Total	
Northern	1	2	4	1	0	8	14.29%
Central	2	3	6	4	1	16	28.57%
Southern	0	0	3	7	5	15	26.79%
Morecambe Bay	0	0	0	1	0	1	1.79%
West of Shetland	0	0	1	0	0	1	1.79%
Unspecified	2	2	4	2	5	15	26.79%
	5	7	18	15	11	56	100.00%

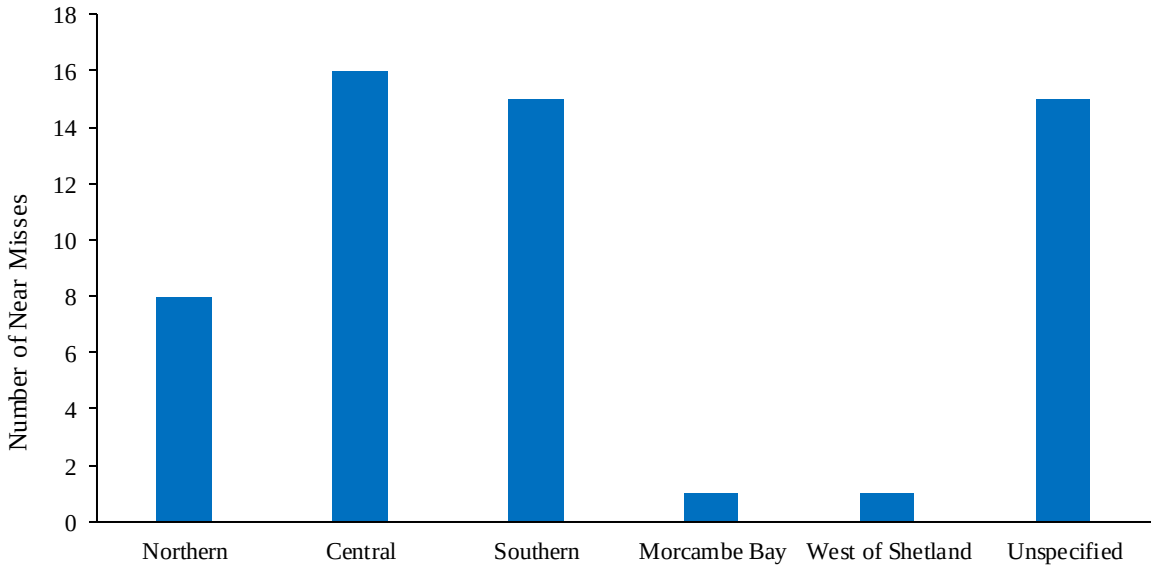

Figure 27: Geographical distribution of all reported near misses on the UKCS

All "near misses" in this analysis involve all vessel and installations types. The data would suggest that most incidents occur in the central and southern North Sea. This is a fairly accurate statement as these two sectors have the highest concentration of installations. Furthermore, the data in Table 28 demonstrates the number of incidents per region per vessel. The data implies that the majority of "near misses" involving "*passing vessels*" occur in the southern sector of the North Sea. This makes sense as the southern North Sea is heavily congested with both offshore platforms and commercial shipping. Similarly, the majority of the unspecified "near misses" occur in the southern sector. It would be reasonable to suggest that many of these unknown vessels would be "*passing vessels*".

5. DISCUSSION

5.1. INCIDENT FREQUENCIES

In the time period of 1996 to 2015, the general trend of ship/platform collision incidents, in accordance with the outlined criteria, has demonstrated a decrease in the number of incidents. Similarly, while there were few incidents involving moderate or significant damage, the number of incidents involving minor damage has also decreased. This may be attributed to the adoption and application of improved working practices. While the cumulative trend of incidents has decreased there are fluctuations within the incident frequencies. It can be seen for all installations that there are peaks in the data in 1997 and in 2007. This can possibly be attributed to the release of Safety Case regulations and amendments in 1996 and 2005. The periodic release in SC regulations can potentially be a factor in the reporting and occurrence of ship/collision incidents as ship collision is seen as being a Major Accident Hazard as it is an event which may cause major damage to the installation and therefore subject to regulatory requirements. Hence, changes in practices through regulations may affect the occurrence frequency of results in the immediate years after the regulations are released. Similarly, it is also possible that the release of new or amended regulations may result in improved working practices in terms of the level and quality of incident reporting. This can be backed up further by analysing collision incidents across the different installation types (fixed, floating and jack-up). Each of the different installation types experiences a spike in the number of incidents between 1996 -1997 and 2006 – 2008.

5.2. DATA COMPLETENESS

The compiling of this database involved rigorous and exhaustive cross checking of incidents across the 5 data sources utilised to avoid any repeated entries and to confirm that the relevant data had been used. Similarly, comprehensive checking was applied to the data entries to ensure that all relevant data was obtained in order to produce the most accurate data base possible. Furthermore, where data entries were not fully complete, *i.e.* where the name of the installation was given and the date of the incident, further sources of information were utilised to complete said entries to provide information on the vessel type, the type of installation, the month of occurrence, the geographical location *etc.* many data entries were deemed to be incomplete and the best possible effort was made to fully complete these entries. Unfortunately, not all data entries were able to be 100% completed. In most cases these entries have an unspecified installation type or date and hence identifying the correct incident when analysing various sources of information was difficult to impossible. In addition, 40% of incidents do not have a geographical location in their data entry due to two key factors. Firstly, the initial data source did not specify a geographical location or an installations type, making completing the data entry very difficult. Secondly, some of the entries without geographical locations are related to floating installations in operation across the 19 year period of the study. It can be difficult to pin point which geographical location these installations were in at the time of the incident, if further required information is not available.

Regarding the damage classification for the data entries, more often than not the damage classification was stated using the relevant descriptors in the incidents reports. However, some data entries have an unspecified damage classification but have a report attached. In this event the incidents reports were examined and if the damage report gave a substantial description of the incident and the consequences, then a damage classification could be assigned to the incident. On the other hand those incidents that have no damage classification stated and a very limited to no existent incidents reports, have been assigned the damage classification of unspecified.

5.3. VESSEL TYPES INVOLVED IN COLLISIONS

Given the ship to platform collision incidents that have been recorded from 1996 to 2015, only 2 of the 176 incidents have involved passing vessels, in 2002 and 2007. Both passing vessel

incidents involved fixed platforms (Jacket in 2002 and fixed steel in 2007), and there seems to be no explanation as to why other installation types have not been involved in collisions. This seems to be an example of passing vessels abiding by the regulations and not venturing in the direction of offshore platforms as well as possibly being slightly fortuitous.

Furthermore, the potential damage classification that can be experienced by the collision of a passing vessel can be deemed to be high, *i.e.* significant or even total loss. Fortunately, no total losses were experienced in this study. However, the passing vessel collision in 2007 resulted in the sinking of the vessel itself (with all persons on board recovered) and significant damage the platform. Significant damage was observed on the riser and clamping arrangements, with no hydrocarbon loss, forcing the shutdown of the platform. It is highly fortuitous that the vessel collided with a NUI (Normally unattended Installation) at a time when it was completely unmanned. Had the vessel collided with the NUI while personnel were operating on-board, the consequences could have been much more severe.

The risk levels associated with passing vessels increases significantly in the event that an unauthorised vessel infringes the 500m zone of a platform. It has been stated in [5] that the kinetic energy possessed by passing container vessels or tankers is sufficient to cause great structural damage, even with a glancing blow. That being said the vessel would most likely have to suffer a malfunction whereby the velocity and heading cannot be altered. Similarly, the potential for a passing vessel to collide with a platform is to a large extent out of the control of the platform operators and the surrounding attendant vessels. However, it is possible to provided warning if the necessary actions are taken.

The two incidents involving passing vessels have occurred in the southern North Sea. This is unsurprising as this area of the North Sea is the most congested in terms of commercial shipping on local coastal voyages (including passenger vessels), short distance voyages between the UK and the European Mainland, and long voyages between Northern European ports and International, Non-European ports. As well as this there are a large number of fishing vessels operating from both the UK and other European ports. Given the vast number of vessels coupled with the large number of offshore platforms operating in the Southern North Sea, the vessels must adhere to traffic lanes rather than follow their own course.

Following from passing vessels, 174 of the 176 recorded incidents have either occurred from attendant vessels or are unspecified. This is not completely surprising given the number of vessel in close proximity to offshore platforms and the time that they spend within that proximity. While this seems like a significant ratio, the fact is that the number of collision incidents has steadily decreased since the inception of Safety Case regulations. The safety case of a platform must give full details of the arrangements for managing health and safety and controlling major accident hazards on the installation, and vessel to platform collision events are considered as a major accident hazard. Hence with the continuous updating and enforcement, the general trend of collision incidents has decreased, with some periodic fluctuations.

With the entering into the statute of The Statistical Returns (Carriage of Goods and Passengers by Sea) Regulations 1997 and the advent of the Maritime Statistics Collection Agency (MARSTATS) on 1 January 2000 it was possible for the previous database (2001) to present information about a number of factors that may have an impact on ship/ platform collision incidents. More specifically, information regarding the number of voyages into and out of U.K. ports from/ to the UKCS, the identity of the vessels involved and the type of cargo carried by those vessels was extracted from MARSTATS. However, in this study this information is not provided due to the current accessibility of such data, yet the importance of said information is reiterated. Possessing knowledge regarding the specifications of the passing and attendant vessels in the lanes surrounding offshore platforms is key to the further assessment of ship/platform collisions. Yet, there are some issues regarding the level and quality of information that is required to be reported.

Under Article 2 (Definitions) of EU directive 2009/42/EC (statistical returns in respect of carriage of goods and passengers by sea), the scope includes goods shipped to offshore installations, yet it does not include vessels used for drilling or exploration. Furthermore, under Article 4 (Ports), of 2009/42/EC, each Member State shall select from the list referred to in paragraph 1 any port handling more than one million tonnes of goods or recording more than 200 000 passenger movements annually. This shows that there is a limited interest in the movements off offshore vessels. I would appear that the key interests, from this directive, are in the areas of bulk trading, hence minor ports are somewhat discounted [39].

Finally, what is clear from the 2001 database is that the average dimensions (length, breadth &draught) and tonnages (gross, deadweight & displacement) have steadily increased from 1975 to 2001. Furthermore, the 2001 database also states that the port of Great Yarmouth saw the largest number of voyages and cargo tonnage by Emergency Response and Rescue Vessels (ERRV) carrying commercial cargo between UK ports and the UKCS, with Aberdeen second and Heysham, Immingham, Liverpool and Peterhead bay all paling in comparison. It can be assumed that this trend has remained the same due to the locations of the ports and the UKCS Oil & Gas fields.

5.4. NEAR MISSES

Of the 56 ‘Near Misses’ identified for this study more than 50% occurred in the 500m zone around fixed installations, with a further 32.14% occurring around floating installations. However, what is more significant regarding ‘Near Misses’ is the types of vessels that are involved. It has already been outlined that 2 collision incidents out of 176 involved passing vessels. Yet when analysing the data from ‘Near Misses’, 15 of the 56 incidents involve passing vessels, with 30 being attendant and 11 unspecified.

When comparing with the number of passing vessel collisions, this number seems rather high. However, what it demonstrates is that 15 collisions have potentially been avoided when an unauthorised vessel enters a platforms 500m zone. This shows some immediate action has been taken to ensure contact is avoided. Similarly, the 2 collision incidents occurred in the Southern North Sea. When considering’ Near Misses’, 7 of the 15 involving passenger vessels have occurred in the Southern North Sea, adding further verification that collision with passing vessels are more likely in in this region. However, when identifying the key geographical locations for all ‘Near Misses’, the Central North Sea has the majority with 28.57%, then Southern and unspecified with 26.79%. This shows that many more collision involving attendant vessels have been recorded in other areas of the North Sea. The data also suggests that there is a level of incompleteness when recording and reporting data. For ‘Near Misses’ in this study the location is only unspecified if the name of the platform is unknown or the platform is floating and its whereabouts at the time of the incident are unknown.

6. CONCLUSION

The database contains a compilation of ship/platform collision data from several widely differing sources and so potentially represents the most complete record of collision incidents on the UKCS.

The data presented should be interpreted with caution as it is highly likely that some degree of under reporting of incidents has occurred. Primarily this is thought to be of those incidents where little or no damage resulted to the installation.

It is important to note that the confidence with which the database should be assessed is to the level that it represents the *best case* so far as the frequency of incidents is concerned. In reality it is likely that the frequency of incidents which result in less serious damage could well be higher than indicated in this report. In more recent years it is believed that a much higher degree of accuracy has been achieved, particularly for more serious incidents. However, the issue with under reporting is more associated with incidents that result in very little damage. This has a knock on effect, *i.e.*, if the installation is floating and damage from a collision is minor to none existent, then the report may not be fully complete, and subsequently, the location of the incident may not be reported. This leads to an unspecified geographical location in the analysis as it is very difficult to retrace where the incident was as the installation may have moved to a new field. This event, associated with floating installations has occurred repeatedly throughout the data gathering process. Furthermore, the operating experience of jack-up installations should also be considered as *best case* as an accurate number of installations operating per year was not accessible. This resulted in the meticulous compilation of the number of operational Jack-up installations per year from 1996 to 2015. Similarly, little data is given as to which jack-up installations have been completely removed from service or when a Jack-up has been moved off site. The information available was not accurate enough to fully determine the precise number of jack-up installation operating on the UKCS per year, hence the number of jack-up installations gradually increases. However, this increase is not excessive and it is assumed that only a small number of installations will have been removed from the UKCS. Therefore, any change in the operating experience of jack-up installations during the 19 years will be minimal and subsequently not have a great effect on the incident trends or outcomes.

The conclusions from the 2001 report state that a larger data set of 'near miss' incidents has been collated by both the HSE and, since April 2001, by ERRVA. The statement in the 2001 database reads: "Based upon the definitions of a 'Near Miss' in the 2001 database, the latter source of data should more properly be considered as 'warning off' because it contains little to independently support the new definition of a 'Near Miss', i.e., when any part of an installation's emergency response plan is activated." However, the data is still relevant as it quantifies the amount of potentially errant traffic, provides information on the range at which approaching vessels may take avoiding actions and outlines the effectiveness of radio contact or other means to warn of installation's presence. This study has expanded this further by analysing 'Near Misses' through a clear set of definitions. Based upon these definitions 56 'Near Miss' incidents were identified and analysed in the same manner as the collision incidents in Section 3. This is an expansion of the previous database as the information presented in the 2001 report produced data utilising three data sources and analysed the information from each source separately. This study analysed the 'Near Miss' information by vessel type and by geographical location, as did the 2001 report, however, this report also demonstrated the frequency and cumulative frequency of the 56 incidents as well as the type of installation involved.

This report has expanded the knowledge base regarding ship to platform collisions and 'Near Misses' based upon information from five key data sources as well as previous collision databases and offshore industry reports and publications. The definition of a 'Near Miss' has been redefined in an attempt to remove any uncertainty about what classifies as a 'Near Miss', particularly in this study.

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APPENDIX A:
SHIP/PLATFORM COLLISION INCIDENTS

No.	Year	Source	Month	Location	Name of Unit	Type of Unit	Vessel	Damage	Comments
1	1996	HSE	November	Southern	Unspecified	Fixed Steel	Supply	Unspecified	
2	1996	MAIB	November	Southern	Unspecified	Fixed Steel	Supply	None	No damage reported.
3	1996	HSE	May	Northern	Unspecified	Fixed Steel	Supply	Minor	Superficial damage to NE leg.
4	1996	HSE	June	Central	Unspecified	Fixed Steel	Supply	Minor	-
5	1996	HSE	July	Southern	Unspecified	Fixed Steel	Supply	Minor	3 bolts sprung on redundant 8" glycol riser approx. 12' above L.A.T.
6	1996	HSE	August	Central	Unspecified	Fixed Steel	Supply	Minor	
7	1996	HSE	August	-	Unspecified	Semi-Sub Drilling	Stand-by	Unspecified	Slight indentation to column. Separate contact with Nos. 5 and 6 anchor chasing pennants.
8	1996	HSE	October	Southern	Unspecified	Fixed Steel	Unspecified	Minor	Bent boat fender.
9	1996	HSE	July	Southern	Unspecified	Fixed Steel	Supply	Unspecified	Contact did not occur. Potable water hose burst as vessel pulled clear.
10	1997	HSE	January	-	Unspecified	Jack-up	Unspecified	Unspecified	
11	1997	MAIB	April	Northern	Unspecified	FPS	Supply	Unspecified	Heavy indent damage to a shell plate in way of a wing ballast tank.
12	1997	HSE	March	-	Unspecified	Jack-up	Unspecified	Unspecified	
13	1997	HSE	January	Central	Unspecified	Semi-Sub Drilling	Stand-by	Minor	
14	1997	HSE	July	Northern	Unspecified	FPS	Merchant Tanker	Unspecified	Some unspecified structural damage.
15	1997	HSE	February	Southern	Unspecified	Fixed Steel	Unspecified	Minor	
16	1997	HSE	May	Northern	Unspecified	Fixed Steel	Stand-by	Unspecified	Profile damage to the fire pump caisson.
17	1997	HSE	September	Northern	Unspecified	Fixed Steel	Supply	Minor	
18	1997	HSE	March	Northern	Unspecified	Fixed Steel	Supply	None	No apparent damage at 6.5m level.
19	1997	HSE	February	Central	Unspecified	FPS	Supply	Unspecified	
20	1997	HSE	July	Morecambe Bay	Unspecified	Fixed Steel	Diver Support	Unspecified	
21	1997	HSE	August	Central	Unspecified	FPS	Merchant Tanker	Unspecified	
22	1997	HSE	July	-	Unspecified	Semi-Sub Accommodation	Stand-by	Unspecified	Structural damage to the port and starboard aft life raft platforms and bulk hose rack on aft end of unit.
23	1997	HSE	October	Central	Unspecified	Fixed Steel	Supply	Unspecified	
24	1997	HSE	December	Southern	Unspecified	Fixed Steel	Supply	Unspecified	
25	1997	HSE	September	Central	Unspecified	Articulated Loading Column	Supply	Minor	Damage to the ladder's verticals and scraping the outer concrete surface of the installation.
26	1997	HSE	December	-	Unspecified	Jack-up	Unspecified	Minor	Scratching on 2 teeth of outboard cord in port aft leg.
27	1998	HSE	July	-	Unspecified	Semi-Sub Drilling	Anchor Handler	Minor	Some timber splintering on the boat bumper arrangement, no structural damage.
28	1998	HSE	July	-	Unspecified	Jack-up	Anchor Handler	Minor	Small dent in water well.
29	1998	HSE	February	Central	Unspecified	FPS	Stand-by	Minor	Frame 93-94, sl40 bend approximately 3 - 5cm inside water ballast tank 6 port.
30	1998	HSE	May	-	Unspecified	Jack-up	Supply	Unspecified	
31	1998	HSE	December	-	Unspecified	Jack-up	Supply	Unspecified	

32	1998	HSE	June	Northern	Unspecified	Fixed Concrete	Supply	Unspecified	
33	1998	HSE	August	Central	Unspecified	Single Buoy Mooring	Merchant Tanker	Unspecified	
34	1998	HSE	June	Southern	Unspecified	Fixed Steel	Unspecified	Unspecified	
35	1998	HSE	February	-	Unspecified	Semi-Sub Drilling	Supply	Unspecified	
36	1998	HSE	March	-	Unspecified	Jack-up	Supply	Unspecified	
37	1998	HSE	April	West of Shetland	Unspecified	FPS	Anchor Handler	Unspecified	
38	1998	HSE	April	-	Unspecified	Semi-Sub Drilling	Supply	Minor	Indention to hull 2' x 4' - no breach to tank.
39	1998	HSE	November	Southern	Unspecified	Fixed Steel	Supply	Unspecified	
40	1998	HSE	December	-	Unspecified	Semi-Sub Drilling	Supply	Unspecified	
41	1998	HSE	April	-	Unspecified	Jack-up	Supply	Unspecified	
42	1998	HSE	July	Northern	Unspecified	Fixed Concrete	Supply	Minor	Platform north side diesel bunker hose burst causing a spillage of approximately 10 gallons. No structural damage.
43	1998	HSE	September	West of Shetland	Unspecified	Unspecified	Merchant Tanker	Minor	Number 9 starboard water ballast tank and approximately 5 meters of handrails.
44	1999	HSE	March	Southern	Unspecified	Fixed Steel	Supply	Unspecified	Vessel made glancing contact.
45	1999	HSE	April	-	Unspecified	Semi-Sub Drilling	Supply	Unspecified	-
46	1999	HSE	May	-	Unspecified	Jack-up	Tug	Unspecified	Minimal damage to crane pedestal and helideck supports.
47	1999	HSE	January	Morecambe Bay	Unspecified	Unspecified	Unspecified	None	Contact did not occur. Potable water hose burst as vessel drifted clear.
48	1999	HSE	December	Northern	Unspecified	Fixed Steel	Supply	Minor	Boat bumper dented and top support pipe slightly kinked on the top side.
49	1999	HSE	December	Central	Unspecified	Fixed Steel	Supply	Minor	Potable water hose parted and damage to No. 4 lifeboat.
50	1999	HSE	March	-	Unspecified	Jack-up	Supply	None	No damage to the leg chord.
51	1999	HSE	December	-	Unspecified	Semi-Sub Drilling	Supply	Minor	Damage to five timber fenders and distorted frames and stiffeners.
52	1999	HSE	October	-	Unspecified	Jack-up	Stand-by	None	No damage to the leg chord.
53	1999	HSE	March	-	Unspecified	Semi-Sub Drilling	Supply	Minor	Indentation of the shell plating resulting in no penetration of the plating.
54	1999	HSE	June	Northern	Unspecified	Fixed Steel	Supply	Minor	Superficial paint scratches on the diagonal brace.
55	1999	HSE	October	-	Unspecified	Jack-up	Supply	Minor	White metal marks and some shaved off metal from vessel on one side of the teeth.
56	1999	HSE	January	-	Unspecified	Semi-Sub Drilling	Supply	Minor	Paintwork damage only.
57	1999	HSE	July	Southern	Unspecified	Fixed Steel	Stand-by	None	None apparent.
58	1999	HSE	September	Central	Unspecified	Fixed Steel	Supply	None	None apparent.
59	2000	HSE	January	Southern	Unspecified	Fixed Steel	Supply	Unspecified	-
60	2000	HSE	April	-	Unspecified	Semi-Sub Drilling	Supply	Unspecified	Unspecified damage reported.
61	2000	HSE	July	-	Unspecified	Jack-up	Anchor Handler	Unspecified	Unspecified damage reported in the area of preload tanks Nos. 20 and 22.
62	2000	HSE	January	Morecambe Bay	Unspecified	Unspecified	Unspecified	None	No apparent damage.
63	2000	HSE	January	Central	Unspecified	Fixed Steel	Supply	Minor	Serious damage to lifeboat.
64	2000	HSE	January	Northern	Unspecified	Fixed Steel	Diver Support	Minor	Outer skin of No. 2 lifeboat punctured and mooring pins wrenched from the side of the boat. The stiffener is also distorted on the lifeboat land area support frame.
65	2000	HSE	February	Central	Unspecified	Fixed Steel	Supply	Minor	Minor structural damage to the support frame of cable trays on the south-west corner of the Cellar Deck.

66	2000	HSE	April	-	Unspecified	Semi-Sub Drilling	Anchor Handler	Minor	Damage to stringers and vertical stiffeners and setting in of the shell plating at the 70ft draft level.
67	2000	HSE	August	Northern	Unspecified	Fixed Steel	Supply	Minor	Paint scraped off.
68	2000	HSE	September	Central	Unspecified	Semi-Sub Production	Stand-by	Minor	Slight superficial damage to the column fender and also an access ladder on No. 2 winch.
69	2000	HSE	November	Northern	Unspecified	Fixed Steel	Supply	Minor	Damage to escape platform for the life rafts, lifeguard guide wires and bunkering hoses.
70	2000	HSE	November	Central	Unspecified	Fixed Steel	Supply	Minor	Damage to fire water main. Mitigation measures in place.
71	2000	MAIB	Unspecified	-	Unspecified	Jack-up	Unspecified	Minor	
72	2000	WREC	January	-	Unspecified	Unspecified	Unspecified	Unspecified	
73	2000	WREC	January	-	Unspecified	Jack-up	Unspecified	Unspecified	
74	2000	WREC	July	-	Unspecified	Unspecified	Unspecified	Unspecified	
75	2000	WREC	July	-	Unspecified	Unspecified	Unspecified	Unspecified	
76	2000	WREC	December	-	Unspecified	Unspecified	Unspecified	Unspecified	
77	2001	HSE	February	-	Unspecified	Semi-Sub Drilling	Supply	Unspecified	
78	2001	HSE	May	-	Unspecified	Semi-Sub Drilling	Stand-by	Unspecified	
79	2001	HSE	October	Southern	Unspecified	Fixed Steel	Stand-by	None	No obvious damage.
80	2001	HSE	March	-	Unspecified	Jack-up	Stand-by	Minor	Two score marks and a small indentation in leg.
81	2001	HSE	June	Central	Unspecified	Fixed Steel	Diver Support	Minor	Paint removed.
82	2001	HSE	July	Southern	Unspecified	Fixed Steel	Stand-by	Minor	Superficial damage of the platform leg.
83	2001	HSE	May	-	John Shaw	Semi-Sub	Stand-by	Unspecified	"TOISA PLOVER" STDBY vessel was checking the John Shaw's navigation lights after completing the inspection it turned back on a course of 210 degrees the master reported that he forgot to de-clutch one of his engines when he turned on his new course (while the vessel was checking the lights both engines were clutched in). He went to the chart table to do some correspondence, the vessel subsequently struck the rig on the STBD AFT Diagonal Brace and Column. No injuries reported. Weather - Fine & Dry. Wind 18-22 kits. DIR 265 degrees. Seas 2 - 2.5m. Pitch 0.4 - 1.0 degrees (Full APM). Roll 1.4 - 3.2 degrees. Heave 0.4 - 1.0 m.
84	2001	HSE	June	Northern	Captain WPP	Jacket	Inspection Vessel	Minor	Minor contact (scuff) by another inspection vessel (DP Eagle) in the field at the time. Paint removed from one of the cross members on the jacket (steel) structure. Some damage to instruments on the vessel. Damage to the ROV launch structure on the side of the vessel. The current status is the vessel has been stood off and sent off to Peterhead Harbour to meet an Investigation Team. Our installation was inspected by our stand by vessel. Photographs and witness statement have been taken. We will complete the investigation and let the HSE know the outcome.

85	2001	HSE	July	Southern	Viking CD	Fixed steel	Stand-by	Minor	The Field Standby Vessel 'Rassay' struck the NUI Viking CD South West Leg. The installation was unmanned Rassay's reports no injuries to vessel's crew. Superficial damage of the platform leg reported. Vessel reported damage to focsle. The incident is now under further investigation by both Conoco UK Ltd & the vessel's owners BUE.
86	2001	HSE	October	Southern	Murdoch 44/22A-MD	Fixed Steel	Supply	None	Vessel collision occurred during unloading operations. The Sea state at the time was 1 metre, wind 314 degrees at 14 knots. The Marine Vessel blue lona & Murdoch MC platform were engaged in cargo handling operations. The Lona was slowly moving astern and hit the platform. No obvious damage could be seen from the platform to either the structure or vessel. The Structure will be inspected by a specialist team. The Vessel returned to Great Yarmouth Base
87	2001	WREC	January	-	Ekofisk	Fixed Steel	Unspecified	Unspecified	
88	2001	WREC	March	-	P12C	Fixed Steel	Unspecified	Unspecified	
89	2002	WOAD	December	-	STENA DEE	Semi-Sub	Stand-by	None	A vessel crashed into the semi while it was drilling some 140 miles SE of Aberdeen (UK). The operators did however not report the event to the emergency services. Neither the coastguard nor the police knew about the event before being noticed by the press the following day. The accident occurred at about 0930 hrs when standby vessel "Havila Sea" crashed into one of the four legs of the semi slightly damaging the leg above the water line. The vessel sustained very minor damage. No one was injured.
90	2002	WOAD	May	Southern	ROUGH,47/8 ,BD	Jacket	Passing Trawler	Significant	No injuries were reported when 100 non-essential personnel on the accommodation platform (in the Rough gas storage field, 80 km off the Yorkshire coast) were evacuated to a nearby oil tanker using a Sea King helicopter, after the trawler Marbella hit the southwest leg in foggy conditions. There is a 500 m exclusion zone around the installations. A team of engineers remained on board to assess the damage to the leg. The Rough site has been closed for annual maintenance since May 2... The trawler, which had a crew of 20, was badly holed but made its way to the river Humber. The platform structure was gashed above the waterline. A diving support vessel will be hired to search for any subsea damages. Investigations concluded that the integrity had not been compromised. Tentatively, operations will resume 1 June. More information is found in the WOAD archive.
91	2002	HSE	January	-	Ocean Guardian	Semi-Sub	Supply	Moderate	The supply vessel 'striking iona' was manoeuvring close to the starboard side of the rig in order to work cargo. The vessel's bow struck column C1 above the boat bumper, 18 feet below the main deck. There is a large dent in the plating and deformation of two ring beams but no penetration. The vessel master advised that he inadvertently cancelled the yaw

92	2002	HSE	April	-	Magellan	Jack-Up	Tug	None	At approximately 15:35 on the 11 April the global Santa Fe Magellan was moving on the Franklin platform with 4 anchors deployed, to tractor tugs on the beams and AHT on the bow. Contact was made between a perimeter walkway at the rear of the Magellan drill floor and a railing and light below the Franklin weather deck the condition at the time were wind 12 Knots from the south east to south east. Seas 0.5 meters tide flow was south west away from the platform. The rig was moving in from standoff location to alongside Franklin platform. A low northerly swell was inducing a fluctuating oscillation in the rig structure. Whilst the rig was alongside in position it experienced such an oscillation which grew to such an extent the contact was made between the two installations. This oscillation mast the true position of the rig and led the person in charge of positioning the rig to believe the rig was further off. The GSF tow master was person on charge of positioning rig.
93	2002	HSE	April	-	Sedco 706	Semi-Sub	Supply	Unspecified	Off-loading Supply Vessel. Events prior to the incident are as follows: Load lifted from Troms Falken deck being landed on 706 pipe deck by deck crew. At this time the Troms Falken pulled off further from the stbd side and lifted his fwd 'jib crane' and started to move an empty skip just below and aft of his bridge windows. At this time he was in a safe position to carry out this operation. As this deck operation was taking place on the Troms Falken the 706 stbd crane slewed round from the pipe deck ready to take another lift. At this time the Crane Op was instructed to stop and standby until deck operations on the Troms Falken, the vessel started to move in closer to the rig. The Troms Falken master was instructed that he should start to pull away as he was getting closer to the rig. This request was repeated 2 or 3 times but there was no response from the vessel master. The Troms Falken continued to come closer to stbd fwd 30 ft. column with still no response from him at requests to pull off. The Troms Falken's Port Bridge handrails collided with the underside of the stbd fwd 30 ft. column overhang (aft). It was only at this point that the vessel responded to repeated requests and said he was pulling away from the stbd side of the rig.

94	2002	HSE	October	Northern	Alba FSU	FSU	Supply	Minor	The operation in progress was supply boat operations supply FSU with water and diesel oil bunkers. The weather was logged at 06.00 as Wind NNW by 10 knots: sea state 2.4m maximum height 4.1m slight cloud with good visibility. Air temp 5.9 C sea temp 11.8C Barometer 1012mb. The supply boat vessel Kaubturm was being worked by the ALBA FSU and holding position using supply boat engines and thrusters. The supply boat started to drift towards FSU and after applying controls to move supply boat from FSU no response from thrusters was noticed. The controls were changed over to the supply boats fwd control and again no response noted. The supply boat then drifted into FSU causing damage to stbd side hull plating but no actual penetration of the ballast tank. The supply boat No2 thruster was regained. The bunkering hoses were disconnected and the supply boat exited the 500m zone at 9.54. At 10.00 hrs the supply boat began testing of equipment to determine actions to be taken. No 2 Thruster taken out of service until control systems / thruster can be checked at next port of call. This being Aberdeen.
95	2002	MAIB	Unspecified	Northern	Brent D	Fixed Steel	Unspecified	Minor	
96	2002	WREC	February	-	Kingsholme1 2 buoy	Buoy	Unspecified	Unspecified	
97	2002	WREC	March	-	SB STIRLING	Unspecified	Unspecified	Unspecified	
98	2002	WREC	July	-	ESK SC ABERDEEN	Unspecified	Unspecified	Unspecified	
99	2003	WOAD	November	Northern	EIDER 211/16A	Jacket	Supply	None	Supply Highland Eagle made very minor contact with leg of production platform Eider An in lat 61 21N, long 01 10E. Highland Eagle is checking to see if it has sustained any damage, while the production platform has only very minor damage to an escape ladder on the leg which was contacted. (Lloyds Casualty Week) No more information available.
100	2003	HSE	February	-	Maersk Enhancer	Jack-Up	Anchor Handler	None	While connecting the tow wire from the Maersk Trinity port off corner of the rig the anchor handling vessel collided with the rig at least twice. The rig suffered indentation of hull side and bottom plating and damaged paintwork. Watertight integrity of the rig was not compromised. The Maersk Trinity sustained a hole in the stern roller and damage to strong back.

101	2003	HSE	May	Northern	Forties Alpha	Fixed Steel	Stand-by	Minor	Investigation team: - Mike McHale - HSEC, Richard Humphage - HSEA, Colin Bryce - Safety Representative. Incident Description: - Standby vessel BUE Canna had been on close standby since 08.17hrs for abseilers working on the flare tower. At approx. 15.15hrs The CCR received a phone call from a Woodgroup employee reporting that the standby vessel had just collided with the platform. At the same time the skipper of the BUE Canna called the CCR to report that he had collided with the platform and was pulling away to inspect his damage. The skipper of the boat made contact with the CCR several minutes later, saying that he had sustained damage to the top of his mast with nav lights hanging down and damage to the minicom aerial. Immediate Actions: At approx 15.22, the BUE Canna was instructed by the OIM to move out of the platform 500 mtr zone. OIM, OTL and HSEC attended SE corner Level 1 to discuss what happened with witnesses. After examination on the 66ft level, marks on a fire main discharge pipe below the 66ft level were observed. Paint had been scrapped. No other damage was observed. The area was inspected by the Offshore Inspection Engineer who confirmed that paint had been scraped from the line and no other damage has been sustained. It seems that the vessel was passing under the platform in NE direction and the radio mast of the vessel had come into contact with the installations pipe work and the vessel had sustained minor damage. LOGCO were informed by FA CCR. At the time of the collision, the wind was at 20 knots at direction of 200 deg, sea state 1 mtr sig wave and 4 mtr max wave. Investigation: - The platform was advised that the vessel was to be relieved 24-5-03, 07.00hrs without re-entering the 500m zone. It returned to Montrose Port where a marine investigation was initiated, led by an Apache North Sea Ltd representative. For further details of the investigation, please contact Richard Abbott, Apache Logistics Manager, Tel: 01224 756400.

102	2003	HSE	October	Southern	Ravenspurn North	Fixed Concrete	Supply	Minor	At 0945 Hrs 24/10.2003 the Putford Aries MRV was undergoing routine marine operations within the 500m zone. It was to carry out back load and bunkering operations. On moving astern to come within reach of the care crane the captain had difficulty in stopping the vessel from going astern. The captain used the vessels other engine/thrusters to manoeuvre away from the platform. However the vessel glanced the caisson, which contains the incoming risers from ST 2, ST 3 and JN. These lines have been shut in till the cassion can be proved sound. The vessel was instructed to leave the500m zone of the platform. A visual inspection was carried out on the vessel and the caisson. Damage appears to be superficial i.e. seaweed deposited on the vessel and 2 orange paint scuffs on the caisson. No indentation that can be seen. A high level investigation teram (Headed by an external performance unit leader) was sent to the platform on the 25/10/2003 to carry out the investigation. This was followed up on the same day with a visit to Great Yarmouth Quay to meet with the vessel. HSE duty man has been informed.
103	2003	HSE	December	Southern	Noble Julie Robertson	Jack-Up	Supply	Unspecified	The Eider Alpha has been struck by the supply vessel the Island Eagle. The platform is at muster at the moment. Standboat arriving to inspect for any possible structural damage.
104	2003	WREC	June	-	Unspecified	Unspecified	Unspecified	Unspecified	
105	2004	HSE	March	-	C Prospect	Unspecified	Supply	Minor	Weather conditions were wind 170 x 25 - 30 knots. Sea 170 x 2.5m 8sec period. Rig Operation - routine drilling. The supply vessel Far Service was transferring bulk barite and deck cargo to the rig. Far Service was port side to the rigs port side with his bow facing aft. At 05:00 the Service struck the rig on PC2. The Far Service struck the rig again between the centre column PC2 and aft column PC3. Far Service pulled off parting bartie hose. No personnel injured on either the rig of the Far Service. Watertight integrity of both vessels intact. Minor deck plating damage to rig and minor bend to diverter line. Far Service damage broken portside bridge wing window. Minor damage to bridge wing superstructure and bent mast. No Environmental incident occurred due to parting of dry bulk hose. Incident cause: Far Service stbd main engine cut out due to coupling failure on lube oil pump causing supply vessel to slew into rig. For Further details please contact M Edwards OIM GSF Arctic III

106	2004	HSE	March	Liverpool Bay	Douglas Complex	Jack-Up	ISP	Unspecified	The ISP was in close approach to the East face of the Douglas Wellhead platform in preparation for a well intervention programme. Environmental conditions at the time were wind direction 270degs, Force 3 & 4, wave height 0.5metres, Visibility 10 miles. Dry. 2 Douglas scaffolders were dismantling an overboard scaffold that had been constricted to remove the TEMSC PROD in advance of the ISP coming alongside the East Face of DW. One scaffolder was working overside dismantling the scaffold, the second scaffolder has inboard of the platform handrail (acting as standby man and assisting with material removal). Unknown to the scaffolders the ISP had commenced its approach to locate on the East Face. As the ISP approached its final location, the standby scaffolder recognised the risk, reached overside and pulled his colleague inboard just as the ISP came in to contact with the scaffold structure. Contact was made between the temporary outboard scaffold and the ISP after crane A frame. The operation was stopped land made safe. Incident investigation launched.
107	2004	HSE	August	Southern	West Sole Alpha Platform	Fixed Steel	Stand-by	None	Operation - Cargo operations onto standby boat. Sea state - 1.5 to 2M, wind 15 - 20 knots. No substances involved. Standby Boat - Putford Provider. 13.21 Vessel enters 500m zone. 13.25 Vessel set up 50 metres off platform. 13.40 Vessel settled alongside platform, portside to commence work. 13/43 First lift landed on vessel. 13.43 - 13.55 Vessel moved ** heading and settles 10m off platform. Now lying stern on to platform for comfort and to give water. 13.58 / 13.59 APPROX Impact with protruding structure (bumper) on leg. 14.10 OIM stops job. Crane driver called down from crane by OIM.

108	2004	HSE	October	Central	Forties Charlie	Fixed Steel	Supply	Minor	The above incident occurred on 7th October 2004 at approx 1400 hours. At the time Charlie was in normal production mode. The Highland Champion was working alongside the North Face of the platform taking backload of material. The platform CRT was unaware of a collision until at 1442 the Highland Champion advised him that it was taking on water into its steering compartment and that it may have impacted the platform at around 1400. Initial investigation of the platform structure revelled that a timber fender on the diagonal brace between the 44ft level of the NW leg and the 17ft level of the north central vertical member had been badly splintered and steelwork fixing the fender to the brace severely deformed. It was observed that the Highland Champion had a gash in the stem towards the port quarter at approximate waterline level (it may have been below waterline level initially but it is understood that after the impact, the vessel had been deballasted to lift the gash above water). A written statement was obtained from the Master of the Highland Champion confirming that no failure of control or propulsion system had taken place and that all navigation systems and aids to manoeuvring were functional. On this basis further work in the field was permitted. A detailed visual inspection has been completed by means of rope access and initial assessment is that no damage has been sustained by the diagonal member itself or other than a graze to the surface. The report has been submitted for further review by structural specialist. An onsite operational risk assessment has been carried out of potentially increased risk to the integrity of this member from any further impact.
109	2005	HSE	March	-	GSF Galaxy III	Jack-Up	Supply	None	At approximately 1950hrs on 27/3/5 the Bourbon Topaz commenced pumping diesel oil on the stbd side of the rig. Because of the direction of the water the boat had its port side to the rig and at approximately 2025hrs the vessel lost its heading and moved stern first into the Galaxy IIIs stbd leg braces. Weather - Fine, Dry night, Wind Speed - 25 Kts direction 100degs seas - 2 mtrs 100 degs, swell - 3 mtrs 95 degs. Pumping was stopped, the hose recovered from the vessel without any spillage and it was sent by std by outside the 500mtrs whilst the damage to the leg was assessed.

110	2005	HSE	May	Central	Buchan A	Semi-Sub	Supply	None	The supply vessel "Grampian Explorer" had entered our 500 metre zone, after having carried out her manoeuvrability/control checks and had just come alongside. The vessel was in a steady position when she lost transverse thrust. This resulted in her contacting 'B' & 'C' column, before she was able to re-start her thrusters and pull clear of the platform. She immediately informed the platform Marine Control of the contact. Initial indications are that platform damage is limited to a walkway handrail on 'C' column and a grating platform just above sea level on 'B' column. Damage has also been sustained to the Grampian Explorer to handrails and superstructure, at and just below her bridge. The reason for the failure of her thrusters cannot be determined at this time. Further investigations will need to be carried out and the vessel is returning to Peterhead for that purpose. The weather at the time of this incident was calm; wind dir. 267 degrees, speed 16/17 knots; sea height 1.1 / 1.7 metres; wave period 4.7 secs. The platform intend to conduct an internal structural inspection of the adjacent column tanks a.s.a.p. 16/05/05 - Notifier requested part b info be amended and also part G.
111	2005	HSE	May	Central	Forties Alpha	Fixed Steel	Supply	None	Supply vessel (Toisa Intrepid) struck the underside of NW corner at the 70 degree level extended deck of platform at midnight. The vessel sustained damage to its radar/ comms dome. There was no damage to the platform. Our marine and logistics coordinator will be interviewing the vessel master when he is next in port with the contracting company management. Due to the damage sustained to the vessel communications are limited. It is not thought there was any failure of equipment and the vessel was still able to hold its position and supply platforms throughout the field. The HSE manager, Logistics manager and OIM's have been informed of the incident and they have agreed to let the vessel remain working in the Forties field whilst the investigation is ongoing. Weather at the time- Weather from log in CCR wind 18. Sea 1.9- 3.5. Bearing 156. Vis lo.

112	2005	HSE	July	Northern	Brent A	Fixed Steel	Supply	None	24/07/05 at around 13h50. Weather conditions: Seastate 2.5 m, wind direction 0 deg, strength 26 knots at 50 m level. The supply vessel Skandi Barra had been worked on the East Side (weatherside) of the platform for about 20mn when she went astern and made contact with the steel structure off the South Eastern Leg of the platform. The vessel's bridge came under the crane pedestal and her antenna made contact with the underside of the pedestal. As soon as they noticed the supply vessel coming abnormally close to the platform the crane driver and deck foreman alerted the PSS to the situation. The PSS immediately changed the platform status to GPA, setting off a platform muster. All personnel were stood down after a full muster and the vessel having been able to pull off to a zone of safety. The impact had been of slight strength, but perceptible. A full report has been requested form the vessel Master. The damage on the platform structure was investigated. No visible damage at the crane pedestal could be found. At the 21" level off the south eastern Leg of the platform, a jump off platform and stairway were found kinked, indicating a point of contact with the platform structure. No visible damage could be observed on the platform main structure. The vessel bounced off the jump off platform which absorbed the shock. Two impacts could be observed on the stern of the Skandi Barra well above the sea level, the lower one likely to be punctured. The vessel also reported a kinked antenna. The platform requested the sdby boat to take pictures of the impacts on both the supply vessel and the platform.
113	2005	HSE	August	Central	Forties Delta	Fixed Steel	Supply	Minor	At 02:45hrs on Thursday 25th August 2005 the supply vessel Northern River was sitting on the NW corner of the Forties Delta Platform, prior to carrying out backload operations. There was a moderate breeze with good visibility with a moderate sea state, with a current between 0.3 knots. The distance from the vessel to the platform reduced to 7-8 meters and, during manoeuvring operations to increase this distance, the vessel hit the NW leg fender, causing damage to the wooden fender on the leg of the installation and also damage to the vessel. The cause of this incident may be attributed to the rudder not being to midships, when the poscon was engaged.

114	2005	HSE	October	Central	Buchan A	Semi-Sub	Supply	Minor	The supply vessel Sea Links had entered our 500m zone, after having carried out the manoeuvrability/control checks. Whilst attempting to move the stern to come along side, witness accounts says "he seemed to be approaching rather quickly and at an angle close to the platform". The Sea Links contacted a platform oblique bracing (B-2) and then a she thrust forward she contacted Sea Column, before moving clear. Both impacts were above the water line. The visual internal inspection of platform structures has revealed some structural distortion. There appears to be no loss of water tight integrity/impact stability. The seal links has sustained minor paintwork scratches, a slight indentation starboard side, between mid-ships and stern and she has lost a fender. There were no injuries to any personnel on platform, or vessel, nor was anyone known to be at risk at any time. The weather at the time of this incident was, wind direction 250 degrees, speed 18/24 knots, sea height 1.7 - 2.6 m, wave period 5 seconds. Although still dark, visibility was clear. Further investigations will need to be carried out when the vessel returns to Aberdeen.
115	2005	HSE	November	West of Shetland	Schiehallion FPSO	FPSO	Tug	Moderate	During connection operations with the tug "Braveheart". The towing chain was being passed up to the stern of the Schiehllion prior to heading control duties. During this operation the stern of the tug made contact with the stern of the FPSO. The interior of the Schiehllion aft peak ballast tank was inspected and it was identified that damage had been sustained to the steelwork and the internal coating of the tank bulkhead. 29/11/05 - Notifier requested amendments to part g.
116	2006	HSE	August	Liverpool Bay	Douglas DW	Fixed Steel	Support	None	The Clwyd Supporter Vessel was involved in deck cargo handling operations alongside the Douglas Deck (South Side). The vessel drifted east, the cargo was lifted clear of the Clwyd Supporter deck. As the vessel attempted to leave station the fan tail of the funnel impacted on a steel protrusion on the DD cellar deck (protrusion was the remnants of a sea fastening). No impact to structure or jacket. Only slight markings on steel work. Minor damage to fan tail of vessel funnel. Immediately actions taken: 1) Vessel pulled away to safe location 2) Platform CCR notified and Douglas OIM notified. 3) Platform structure checked for damage - no faults found (paint from vessel funnel deposited on vessel structure). 4) Vessel returned to dock - marine investigation ongoing. Weather: Calm and clear Sea state: 0.6 M sig, wave height (period 7 seconds) Wind direction: North speed : 15 knots Sea direction: North Westerly

117	2006	HSE	September	Central	Shearwater WHP	Fixed Steel	Other	Moderate	Whilst carrying out jacking up manoeuvres, the GSF Magellan made contact with the NW leg on the Shearwater Wellhead jacket. Approximate weather conditions: Southerly 15 knot winds. Wave height < 1m. The leg that was contacted has not been inspected by Shearwater personnel but the indications from the GSF Magellan staff is that there is minor damage to the Shearwater Wellhead jacket NW leg paint work and minor damage to secondary structural steel on the starboard side of GSF Magellan stern. Immediate corrective actions are: Minimum distance between the two installations set at 2 ft., A watchman on station at all times on the GSF Magellan.
118	2006	HSE	September	Southern	Scroby Sands Wind Farm	Wind Turbine	Other	Unspecified	A programme of pro-active generator replacement is currently being undertaken at Scroby Sands Offshore Wind Farm. At approximately 2100 on 29/09/2006 the A2 Sea? Sea Energy? Vessel approached Wind Turbine T14 where the blade rotated and the tip end of the blade struck the vessel leg. Nobody was hurt during the incident and an internal report has been compiled following a formal investigation. ICC Note - "This report has missing data and has been completed to the best endeavour of the ICC". Unable to contact Notifier to ascertain B4. Saved as "Not Known" and "Reportable" as best judgement.
119	2006	HSE	October	Central	Buzzard	Fixed Steel	Supply	None	Whilst working supply vessel Northern Supporter contact was made between the vessel and the installation platform leg.

120	2006	HSE	October	Central	Enquest Producer	FPSO	Stand-by	None	We had a requirement for an essential transfer of a crew member from the standby vessel for compassionate reasons. This involved the use of a frog which is a personnel transfer capsule. This required the Viking Tiree (standby vessel) to come stern first towards the FPSO on our starboard side under the reach of our starboard crane which has a 25 metre jib line. The first approach by the vessel failed due to being unable to hold position. The second approach took place after the vessel had re-aligned itself. On the second approach we lowered the capsule to the aft deck of the standby vessel. The capsule was then to be disconnected from our crane line. During this time the vessel continued to move stern first towards the FPSO making minor contact with our hull in the location of number 6 starboard water ballast tank. The weather conditions recorded on the standby vessel at 11:27 were wind 210 degrees by 14 knots, 1.5 metres confused swell. The conditions recorded on FPSO at approximately 11:15 were maximum roll over the previous 10 minutes, 2.2 degrees port and 2.5 degrees starboard. The maximum pitch was 0.8 degrees up and 0.2 degrees down. The maximum heave was 2.5 metres. The compassionate was then strapped into the frog and the standby vessel approached again. The crane pendant was re-connected and the frog was hoisted off the vessel onto FPSO without incident.
121	2006	HSE	November	-	Ensco 92	Jack-Up	Supply	Unspecified	Supply vessel 'Havila Fame' working Port side of Installation. At 12:19 hours the vessel had a momentary loss of station keeping and made contact with cord 'B' on the installations forward leg. Vessel asked to stand off outside the 500mtr zone. Damage assessment revealed some paint marks on cord 'B' forward leg. No deformation of leg teeth or structural damage.
122	2006	HSE	December	Central	ETAP CPF	Fixed Steel	Supply	Minor	At 1500hrs on Friday 8th December the supply vessel Caledonian Victory had been called in to discharge cargo at the PDR platform. The weather conditions at the time were recorded as 270 degrees at 18 - 22 knots, wave height was 2 -2.5 metres. The vessel approached the platform from a North Westerly direction, however, at some point during the positioning stage of the operation the master of the vessel momentarily lost control and came into contact with the platform riser protection frame. An investigation has been initiated to determine the mode of failure.
123	2006	WREC	October	-	Unspecified	Unspecified	Unspecified	Unspecified	

124	2007	HSE	March	Central	FPSO Maersk Curlew	FPSO	Tug	None	The tug Magnus was manoeuvring close to the stern at the curlew having connected to tow line. One controllable pitch propeller failed in the stern position causing the tug to move towards FPSO. The captain stopped the engine for the failed propeller. Unfortunately the Chief officer also stopped an engine but the wrong one. This left the tug with no power and it collided with the FPSO. The tug suffered slight damage to the bulwark but there was no damage to the FPSO and no injury. The engine was restarted and the tug moved clear of the FPSO.
125	2007	HSE	June	Southern	Sea fox 4	Jack-Up	Supply	Minor	The supply vessel 'power express' entered the 500 metre zone of the Leman Bravo and Sea Fox4 (combined operations). Whilst positioning alongside the SF4 leg Number 2 and one of the anchors secured on the side of the SF4 the vessel came in contact with the SF4 Leg Number 2 and one of the anchors secured on the side of the SF4. Minor damage to both the SF4 and Power Express. Weather - wind 076 degrees 9 knots, wave heights 0.5 metres, visibility mist approx 800 metres.
126	2007	HSE	June	Central	Rowan Gorilla VII	Jack-Up	Unspecified	None	On 16th June 2007 The Northern Conroyd was manoeuvring in on the portside of the RG7 to take on an anchor for running and setting of same. Whilst manoeuvring back towards the rig Northern Conroyd made contact with the rig hull causing an indentation along the turn of the hull approx 8 ft long. No injuries to any personnel on board the RG7 or The Northern Conroyd. After inspection of the hull on the RG7 had been completed, frames F17 & F18 had been bent approx 4" - 6" and 8 ft long turn in the section of the hull. No cracks or welds in the steel were observed. The pre-load tank 10T was also inspected and no cracks were observed. The RG7 was jacked down to an 8 ft draught and checked for water tight integrity. The integrity of the RG7 was in good order, The Northern Conroyd had slight damage. No quadrant or block as vessel was moving
127	2007	HSE	July	-	Sedco 704	Semi-Sub	Supply	None	Supply Vessel FD Invincible was discharging Pot water and fuel on the Starboard side when supply vessel fire alarm activated, this was quickly identified as a false alarm. Fuel and pot water transfers were stopped. Master arrived on bridge to be informed by the Chief Officer that the Joystick power supply had failed. At this point the 4 tunnel thrusters had 50% Port thrust i.e. pushing the vessel towards the rig. FD Invincible aft Port fender came in contact with starboard aft 18ft column before control could be regained by the Master. Hoses were recovered and vessel exited 500 metre zone. No damage to either vessel evident

128	2007	HSE	July	Central	Rowan Gorilla VI	Jack-Up	Supply	None	M/V Siem Carrier was along the port side of the rig. They were positioned with their port side to the rig and had just finished transferring base oil to the rig. The port bow of the boat swung around into the port leg of the rig coming in contact with I Rack. The captain pulled the bow away from the leg, the base oil transfer hose was removed and the boat pulled outside the 500 meter zone to do damage assessment and make phone contacts. According to captain jan stromme the cause of the contact with the rig was caused by the loss of the boats fixed heading system (dropped out). He said that he should have gotten an alarm to let him know this, but alarm did not work. He switched over to manual to pull the boat away from the leg. The boat was then released to go into town to perform a complete investigation. Upon inspection, there is no apparent damage to the leg of the rig. The captain of the boat reported damage to the port side of the vessel under the bridge (minimal damage). ICC Note - "This report has missing data and has been completed to the best endeavour of the ICC." Unable to contact notifier to obtain B4 information. Saved as "Not Known" and "Reportable" saved as best of judgement.
129	2007	HSE	July	-	GSF Galaxy	Jack-Up	Supply	Minor	The supply vessel Maersk Fetcher was approaching GSF Galaxy 1, from the North to commence bulk hose operations. As the vessel approached the installation, the duty officer changed over from wheelhouse forward control to aft control initially set up in manual joystick mode. First attempt to switch 'auto-heading mode' on vessel failed, as the buttons had not been properly pressed down. The bow of the Maersk Fetcher drifted fast towards the rig. Vessel controls were switched back to manual and full bow thrust away from the rig was given. The bow of the Maersk Fetcher drifted under the rig and there was contact between the foremast of the vessel and he hull of the GSF Galaxy. 1. This resulted in damage to the foremast and superficial damage to the hull. The weather conditions at the time of the incident - wind - WSW 15 - 20 Kts, Sea state moderate.
130	2007	HSE	July	-	GSF Labrador	Jack-Up	Supply	None	At 1830 the supply vessel boulder had just commenced offloading wireline VSP equipment on the starboard side of the rig. Weather, light airs, fair current 160 degrees, 1.4knots rig heading 309 degrees. Due to causes unknown at this time the boulder began to bodily move to port and collided twice with the bow leg on the forward starboard chord. The vessel then whilst moving FWD got its Aft mast entangled with the towing bridle. The rig went to emergency stations and mustered all personnel. HMCG informed, no personnel injured. B5 actual response: Collision with GSF Labrador's bow leg stbd forward chord by supply vessel

131	2007	HSE	August	Southern	Viking ED NUI	Fixed Steel	Passing Merchant Container	Significant	On the 4 August 2007 at approx. 18:00, the MV JORK (IMO-No-8500082) collided with the Normally Unattended Installation Viking Echo Delta. Viking Echo Delta was unmanned at the time of the collision and suffered damage to the Echo Delta Riser and clamping arrangements. Production from the Viking Echo Delta platform was stopped immediately and there was no release of produced hydrocarbon. Following the collision MV JORK anchored approx one kilometre from Viking Echo Delta and subsequently sank at 08:00, 5 August 2007. All POB from MV JORK were recovered prior to the vessel sinking. Incident reported to HSE by telephone at 19:40, 4 August 2007, and followed up by further verbal contact at 21:15, 4 August 2007 (Mr Paul Adamson). OIR13 will be submitted once full supporting information available.
132	2007	HSE	October	southern	Leman Alpha	Fixed Steel	Other	Minor	The Seafox 4 accommodation vessel is presently interfaced to the Leman Alpha platform for shutdown activities. During cargo operations by supply vessel, the Northern Mariner alongside the Seafox 4, the vessel lost station and contacted the starboard aft (No.2) leg of the SF4 and the NW leg of the AK jacket. Initial (visual) assessment of damage to the platform suggests that it is primarily coating damage though the stub that supported the boat fender (removed) is also bent. The SF4 leg looks OK but has paint marks from the vessel. The vessel struck the AK with his stem and 'glanced' the SF4 with his port side. He has reported that he has one person with a minor eye injury, following a fall, as a result of the contact.
133	2007	HSE	November	Southern	Sea fox 4	Semi-Sub	Other	Minor	The Seafox 4 accommodation vessel is presently interfaced to the Leman Alpha platform for shutdown activities. During cargo operations by supply vessel, the Northern Mariner alongside the Seafox 4, the vessel lost station and contacted the starboard aft (No.2) leg of the SF4 and the NW leg of the AK jacket. Initial (visual) assessment of damage to the platform suggests that it is primarily coating damage though the stub that supported the boat fender (removed) is also bent. The SF4 leg looks OK but has paint marks from the vessel. The vessel struck the AK with his stem and 'glanced' the SF4 with his port side. He has reported that he has one person with a minor eye injury, following a fall, as a result of the contact. *(N.B. Comment is duplicated from previous incident as the vessel struck both the jacket and the semi-sub installations)*

134	2007	HSE	December	Northern	BP Harding Platform	Fixed Steel	Support	Moderate	Normal operation was underway. Weather was good with a 14 knot Westerly and a 2.5m sign wave and > 10k visibility. The Regional support Vessel the Caledonian Victory was moving away to the West of the Harding platform after discharging cargo. At a distance of approx 550 metres the vessel lost all power. The weather was such that the drifting vessel returned to the Harding platform and impacted the West and North legs. The platform went to muster and shutdown prior to the impact. No one was injured in either the vessel or on the platform.
135	2007	WREC	July	-	TSB BOULDER	Unspecified	Unspecified	Unspecified	
136	2008	HSE	May	Southern	Noble Julie Robertson	Jack-Up	Other	Unspecified	After sailing number 2 lifeboat as part of the yearly preventative maintenance programme and ABS Class Rules, the boat was being manoeuvred into position to hook up to the davit winch wires in order to recover it to the rig. Difficulty was encountered engaging the second hook, so the first hook was disengaged in order to make a second attempt. At this point the coxswain lost control of the helm and the boat sailed forward, striking the rig's bow leg. The lifeboat was subsequently successfully recovered to the rig and surveyed for damage, which was found to be minimal and the boat was still fit for purpose. Procedures have been amended to ensure only 'fully' experienced coxswains sail the lifeboats during recovery operations.
137	2008	HSE	September	Northern	Goldeneye Platform	Fixed Steel	Stand-by	Minor	This incident has been verbally communicated to Gus Findlay. At approximately 18:55 hours on 02nd September 2008, the Goldeneye platform standby vessel Grampian Guardian came into contact with the south west leg structure of the Goldeneye platform. All personnel on both the platform and the standby vessel were safely accounted for. Goldeneye platform production was not in place at the time due to planned shutdown. Further meetings have since taken place with several Technical authority personnel resulting in approval to proceed for a production restart. Damage believed to be superficial. Photographs available for inspection.
138	2008	HSE	September	-	Transocean Rather	Semi-Sub	Supply	Minor	At 07:15 hrs supply vessel Maersk Fetcher had completed bulk loading and in process of returning hoses to the rig when he lost power for a few seconds to his thruster controls. The swell brought his bridge superstructure into contact with the overhang of the winch deck starboard forward causing some damage to the walkway and navigation running lights enclosure. The vessel suffered damage to internet antenna and telex antenna on his mast. No equipment fell at sea. The vessel quickly recovered and moved clear of the rig for evaluation.

139	2008	HSE	October	Central	ENSCO 100	Jack-Up	Stand-by	Minor	The Putford Viking was on location off the port side of the rig. The Putford Viking had been worked by the Murdoch platform, with no apparent reason there was a loss of control of the vessel and it veered towards the ENSCO 100 bow leg. The Master of the vessel made adjustments to the controls, without the desired effect. This resulted in the vessel contacting the bow leg of the ENSCO 100. Substantial damage was incurred to the Putford Viking.
140	2008	HSE	October	-	Unknown	Unspecified	Supply	Unspecified	Description of event: Weather during incident: S?ly winds 20 knots, sea state Approx. 2,5 m significant. A minor impact with the supply vessel (Greatship Dipti) occurred during a heading change. The starboard side of the FPSO at water ballast tank no 4, contacted the supply boat on her port quarter (aft) gunwale and plate below. This caused minor damage to the supply vessel in these positions. In order to assess the FPSO damage, WBT 4 stb was emptied and checked for extent of damage: four positions identified with various indents, the largest indent being about 75 mm. This area needs to be further checked with MPI after the scaffolding is built. A report will be made during the night and forwarded to the engineering department for review and recommendations. Note: No cracks observed during visual inspection. Causes: Improper communication and checks prior to heading change. Ballast operator believed that the supply vessel was still outside the 500 m zone when he initiated the heading change. Supply vessel had been called in by the work force leader on deck. This action had not been noted by the ballast operator and a check of the location of the supply boat was not performed before the ballast operator commenced the heading change. Actions taken to prevent reoccurrence Instructed the ballast operator(s) to do a visual check on both sides prior to any heading change. Improve the communication between all parties involved in this type of operation. Investigation initiated. Awaiting report. ICC Note - "This report has missing data and has been completed to the best endeavour of the ICC." Unable to contact notifier to obtain B3, B4 and B5 information. Saved as "Not Known" and "Reportable" saved as best of judgement.

141	2008	HSE	November	Southern	Stamford Well	Fixed Steel	Support	None	The following info comes from the incident report provided by the Guard Vessel "Content". At 1245 contact with NG5 towing 270° at estimated 3.4 knots, vessel was clear of pipeline and therefore requested to continue on course until west of Stamford well. NG5 Skipper agreed but then altered course to approx 300°. Vessel was warned that he was on a heading which would cross the vulnerable pipeline and precise coordinates were issued. Instruction given to vessel turn away from pipe. At approx 1400 vessel NG5 stopped in position 53° 48.35N 002° 49.97E. When contacted he said he thought he had snagged the wellhead. Guard vessel then reported incident to standby vessel Britannia Conquest. At 2100hrs NG5 reported that he had slipped her gear because weather was poor
142	2008	HSE	November	-	Sedco 704	Semi-Sub	Supply	Minor	The UP Esmeralda, supply vessel, was alongside the rig discharging cargo. It was observed that the vessel was getting closer to the rig and he was asked on several occasions to move away from the rig. He failed to do this and made contact with the Stbd forward 18' column. The vessel made a minor dent on the column, the column was not breached. The vessel also suffered minor damage. It has been ascertained that the vessels Joystick system had failed allowing him to drift onto the rig.
143	2008	HSE	November	Southern	Noble Julie Robertson	Jack-Up	Supply	None	While performing back load operations from the rig, the supply vessel Greatship Dwanhi was located on the starboard side. Due to the positioning of the cargo that was being handled, the vessel was side on to the rig, with 40% power being used on his stern and bow thrusters. At one point this power appeared to be insufficient as the vessel drifted in towards the rig, contacting the starboard leg. The boat immediately pulled off and operations stopped to check for damage. Close inspection of the leg and vessel revealed no structural damage to either, just paint marks on the leg where the boat had contacted it.
144	2009	WOAD	February	Central	Ensco 92	Jack-up	Supply	Minor	The jack up, with 93 persons on-board, collided with supply vessel “Supply Express” 45 miles east north-east of Flamborough Head and mustering was initiated. Inspections revealed no visible damage to the rig, while vessel suffered hull damage. The vessel hit the rig’s aft leg. The vessel was on a break from supplying the rig when the incident happened. Some of the waves may have accelerated the speed of the vessel towards the rig. There were no injuries and no environmental issues from the incident. No further information available.

145	2009	WOAD	May	Northern	Thistle, 211/18A, A	Jacket	Supply	None	Tug/supply boat "Maersk Feeder" collided with the platform's cellar deck, only causing minimal damage. At the time of the incident the vessel was close in to the platform with fresh water hose attached when it sustained a main engine failure. Vessel used thrusters to manoeuvre away from the platform, but brushed the platform causing damage to guardrails and an aerial sited on the bridge roof. Within 30 mins the vessel drifted away from the platform and managed to establish power from one engine. No further information available.
146	2009	HSE	June	-	Stena Spey	Semi-Sub	Supply	Minor	The PSV Greatship Dhwani was engaged in deck cargo operations on the Port side of the installation, cargo operations where completed on the port side and the PSV was asked to make her way to the starboard side for thirty minutes time. The Barge Engineer and Roustabout where engaged in maintenance of the Aft Lifeboats and observed the PSV manoeuvring from port side to stbd side of the installation about 100 metres astern, in a line Fore and Aft between the Aft Lifeboats and the ROV unit. At approximately 2220hrs the PSV suddenly started moving rapidly ahead and distance was closing on the installation, despite the best efforts of the PSV to manoeuvre away from the installation the PSV impacted the Blister on P3 Caisson Weather & Environmental Conditions: Wind: Light airs, Sea: 0.5m max swell, Roll & Pitch: Negligible, Heave: Nil, Wx: Fine & Clear, Visibility: + 10 nm. The PSV was asked to make her way to a safe area to conduct a damage assessment to ensure safety of her own vessel and the ERRV was tasked with assisting in the damage assessment of the installation. A damage assessment team (technical and marine) conducted inspections of P3 Caisson and Port Propulsion room and reported no damage, control room reported no abnormal soundings, alarms or unexplained trim or list. The PSV informed the installation she had suffered minor damage to the flare of her bow with no structural damage evident and all equipment had been tested, no defects. The ERRV Vos Tiree FRC inspected the P3 Caisson blister and confirmed the installation looks to have suffered minor coating damage with no puncture to the hull, impact looks to have been in an area with a stiffener present. Presently PSV is fully operational and her hull integrity is intact.
147	2009	HSE	October	West of Shetland	Schiehallion FPSO	FPSO	Merchant Tanker	Minor	Shuttle Tanker "Loch Rannoch" was manoeuvring into position in preparation for an off-loading operation. Shuttle tanker bow impacted oil off-loading reel on stern of FPSO. No injuries, no oil release. Damage to hose reel and its supporting structure currently being assessed.

148	2010	HSE	March	West of Shetland	FPSO Petrojari Foinaven	FPSO	Supply	Moderate	Whilst bunkering diesel to the Foinaven FPSO @8:40 1st march, the Havila Fortress lost DP position control and drifted into the port aft quarter of the FPSO contacting her guard rail against the FPSO. Havila Fortress stopped off-loading diesel at 08:42 & the FPSO disconnected the hose at 0845. No diesel entered the sea. The standby vessel Grampian Frontier was called in to check for damages on FPSO and reported evidence of damage (small paint strip) on the port side of the FPSO. Subsequent investigation on board FPSO confirmed some structural damage to the aft void space of the FPSO, no crack in the hull.
149	2010	HSE	March	Central	Ensco 100	Jack-up	Supply	None	The vessel Toisa Coral, was approaching the rig in order to take some backload cargo and swung into the wind at a distance of approx 200 metres, when according to the vessel master, control was lost resulting in contacting the rigs starboard leg, starboard leg inspected and no damage was observed. Vessel making its way to Aberdeen to inspect damage.
150	2010	HSE	August	-	Byford Dolphin	Semi-Sub	Stand-by	None	While the Standby Vessel the VOS Explorer was alongside the port side of the rig to receive a basket that had been back loaded from the port main deck. The boat lost power of his main engine, and drifted towards the port fwd pencil column making contact with the port PCP's and glancing against the port side pencil column before drifting clear fwd of the rig. The VOS Explorer used its remaining thruster to manoeuvre clear of the rig. No damage was sustained to the rig or the boat.
151	2010	HSE	October	-	Ocean Princess	Semi-Sub	Supply	None	MODU Ocean Princess Well Completion Operations Wind 090 X 18mph Seas 090 x 2mts Heave 0.5mt Pitch 0.5 Roll 0.8 Dry and Cloudy. The supply vessel, FS Aquarius entered the 500mt zone of the Ocean Princess tbd Side to discharge one container, after completing the lift 1156hrs the supply vessel lost power to the aft thrusters resulting in the vessel colliding with the Ocean Princess Columns SC3 & SC4 resulting in damage to the columns. Inspection of the damaged space showed no water ingress. There was do injuries to personnel.

152	2010	HSE	November	-	Unspecified	Jacket	Supply	None	Whilst the supply boat the Putford Protector was positioning itself to work the quarters jacket it appeared to move too quickly and extremely close to the AC North East leg, possibly touching. The deck hand gave signal of the close proximity to the Captain and the boat tried to pull away but caught the NE leg of AC which appeared to swing the boat parallel to the jackets. The boat then appeared to have lost control and bumped itself down the jackets, AC, AP and then onto AD whereby it snagged the water hose pulling it away from the platform. This was reported quickly to the OIM who took the decision to GA and shutdown the platform. The sea conditions were < 10 knots, <1m wave height, wind 065 deg. There is superficial damage to the boat railings and scuffed jacket legs. No injuries to boat crew. A further internal investigation is to take place
153	2011	WOAD	April	Northern	Magnus,211/ 12, Production	Jacket	Supply	None	BP'S UK North Sea Magnus platform was shut down for a short period after the North Star Shipping vessel Grampian Defender collided with the facility. The UK supermajor shut the platform for about 36 hours following the incident, which happened on 22 April, it has emerged. BP said there was very minor damage to the platform, which has been repaired. Only minor damage occurred to the vessel, which acts as an emergency response and rescue unit for Magnus. The vessel returned to port and has been repaired. Managing director of North Star, said: "It would appear that a mechanical failure affected the vessel but thankfully no-one was hurt."
154	2011	HSE	February	Northern	Britannia Platform	Fixed Steel	Supply	Minor	At 15:04 cargo discharging between the supply vessel MV "Supply Express" and the Britannia platform was suspended to release the Britannia deck crew for a break. The supply vessel remained on station with the Master on watch. At 15:05 the supply vessel lost all power. At 15:07 the Master of the supply vessel informed the Britannia platform that he had lost power and could not control the movement or direction of the ship. The vessel drifted towards the platform and at 15:10 the port side of the vessel contacted the platform jacket on the North side. Shortly afterwards the bow of the vessel passed below the bridge connecting the Britannia platform to the BLP and the vessel sustained damage to his top mast array and heat shielding on the platforms connecting bridge was damaged. After passing beneath the connecting bridge the vessel then struck an underdeck platform causing minor structural damage. Upon hearing that the vessel had lost power the platform GPA was sounded and personnel went to muster stations. There were no injuries to personnel. Investigation continues onshore.

155	2011	HSE	June	Northern	Piper B Platform	Fixed Steel	Supply	None	Supply Vessel SBS Tempest commenced cargo operations at Piper Bravo and at approximately 20:40 hrs. Supply Vessel came too close to the platform and had minor impact with the platform at the South West corner. SBS Tempest immediately pulled away from platform to a safe distance of approximately 100 metres. The Vessel television dome was damaged during the impact. SBS Tempest then stood off Piper whilst initial investigations were undertaken. It was ascertained that no structural damage had occurred on Piper Bravo and that there was no engineering or mechanical problem with SBS Tempest. Weather Conditions at time of incident were as follows: - Wind Speed û 16-22knots Wind Direction - 215 degrees. Sea State 2.5 to 3 metres Tide 036 degrees at 0.3 knots (3 hours before high water) Visibility 10+ Nautical Miles Investigation ongoing
156	2011	HSE	July	Southern	Noble Julie Robertson	Jack-Up	Supply	None	While supply vessel NSO Fortune was carrying out cargo loading / unloading operations on the starboard side of the rig, it suddenly moved to port and came into contact with the starboard leg. It was immediately apparent that the vessel had ruptured a tank on its port side hull. There were no casualties on either the vessel or rig as a result of this collision. Visual inspection of the starboard leg was carried out by the standby vessel BHOS Harvester which confirmed there was no damage visible. Report of damage to NSO Fortune was reported to Humberside Coast Guard (no assistance required) and report of spill from vessel's tank was reported via PON 1 to HMCG, DECC and JNCC. Wind speed at the time of the incident was 23 knots with 2.5m swell. Current was 0.8 knots @ 116 degrees. Standby vessel obtained samples of spill (suspected diesel / water mix) and carried out agitation operations to break up slick.

157	2011	HSE	August	Central	Gannet Alpha	Fixed Steel	Other	Minor	Operation - Gangway connection of the Edda Fides to the Gannet Alpha platform to allow the movement of personnel from the accommodation vessel to Gannet Alpha during the annual platform. At the time of the un-commanded disconnection of the bridge the wind speed was 24 knots, gusting 27 knots from direction 231 degrees. The gangway is a hydraulically controlled unit, observed by camera with the gangway unit monitored 24 hours a day from a control point on the Edda fides bridge. The investigation team is being mobilised to the Edda Fides on the 21st August. Part Of states - At 05:10 on the 19th August the gangway between the Gannet Alpha platform and the 78 Any collision between a vessel which results in the damage to either the installation or vessel. Edda Fides accommodation vessel disconnected via an un-commanded operation (The gangway is DNV classed equipment), which resulted in some damage to the stairway of the gangway indicating collision with the platform structure. The incident is being investigated by the Shell marine dept. and the vessel owners.
158	2011	HSE	October	-	Unknown	Unspecified	Supply	Minor	The supply vessel Skandi Rona was called to come into the rigs Starboard side, made passage along the stern of the rig and while manoeuvring close to Sedco 711, the supply vessel, contacted the 711's starboard aft column, resulting in minor damage to the rig plating and stiffening
159	2011	GISIS	Unspecified	Northern	Magnus Field (North Sea)	Fixed Steel	Unspecified	Moderate	

160	2012	HSE	March	Liverpool Bay	North Hoyle Wind Farm	Wind Turbine	Supply	None	Crane Collision Incident North Hoyle Windfarm - Vessel Odin & T23 Incident date and time: 15th March 2012 between 21:34 & 22:00 Project: Gearbox Exchange Report - CDMC report to Client 19th March 2012 F10 No. - BB48B0BAE3 Client. - RWE Designer- Vestas Wind Systems PC. - Vestas Offshore Special Projects C. - Hochtief, operators of vessel Odin CDMC. - Graeme Lewis (Vestas Offshore HSE) Executive Summary During a crane operation to retrieve towing gear and anchor from the tug Wal on March 15th between 21:34 and 22:00 the hoist rope for the smaller of the two hoist systems on the cane fitted to the Odin came into contact with the last (approximately) 4m of the blade on wind turbine T23. Following the discovery of this event by Vestas staff, crane operations were suspended, and an immediate dynamic risk assessment carried out to determine if there was any imminent danger to vessel or crew. Despite damage no immediate danger from the damaged blade existed. The Odin was therefore retained in its position alongside WTG T23 to allow the investigation to proceed unhindered. The incident occurred during a Vessel operation and not during Vestas works on the WTG. The lifting operation was carried out due to the earlier failure of the vessel winch normally used to retrieve towing gear and anchor, and took place in hours of darkness.
161	2012	HSE	March	-	Unknown	Unspecified	Supply	Unspecified	The supply vessel "Malaviya 19" was alongside discharging brine and water bulks when it came into direct contact with the installation. The vessel was operating on the north face, with weather conditions recorded as; wind 315 degrees at 15 knots, and swell 310 degrees at 2.5m, current of 315 at 1.2 knots and an overcast sky with good visibility. During supply operations the vessel was initially able to maintain position and commenced cargo operations as planned, but was subsequently noted to be unable to maintain station and moved in toward the Platform. The vessel struck the Platform structure on the north side around and including the B9 leg. This information resulted in a GPA being initiated and the platform being brought to muster. A full production and gas import system shut down was initiated as a direct reaction to the incident. The vessel was then able to pull away from the installation and make its way outside of the 500m zone. A visual inspection of the north face was conducted and damage assessed as being minor at this time, including scrape marks on the B9 leg and possible minor damage to a pile guide on the outer aspect of this leg. No one was hurt during this incident, with all personnel retained inside the TR until the structure was assessed and deemed safe.

162	2012	HSE	September	-	OAS platform	Unspecified	Supply	Minor	During supply boat offloading activities today (Sunday 16th September) the mid ship bumper bar section on the Maersk Puncher came into contact with the underside of the OAS (walk to work landing platform) resulting in damage to both the OAS platform and supply vessel. The offload had been ongoing for approximately 3 hrs prior to the incident, but the vessel had just turned around (port side nearest the platform) 2 lifts before contact was made. Wind speed and sea height at the time of the incident were 22 knots and 2.0 - 2.5m.
163	2012	HSE	September	Southern	Clipper PT	Fixed Steel	Stand-by	Minor	Slight impact damage to leg C1 and the Putford Enterprise midships (above the waterline).
164	2013	HSE	January	-	Unknown	Unspecified	Tug	Unspecified	The Island Valiant was completing subsea survey work of the Horne well, when the vessel struck the Horne and Wren platform.
165	2013	HSE	January	-	Well Head Platform	Unspecified	Supply	Minor	At approximately 1040 hrs on 29th January 2013, the multi-role ERRV m/v Putford Aries hit the RN platform while going in to work cargo. Early indications are that the vessel had gone in to work Central Production Platform North side, suffered a loss of control (for reasons unknown at this point) drifted past CP, hit the NW corner of the Well Tower, damaging the Putford Progress (Enhanced Daughter Craft) and a handrail on the vessel's bridge. The Master then tried to recover the vessel away from the installation, but drifted under the installation's bridge and the vessel's bow then contacted the CP East leg, scuffing the concrete and suffering a puncture hole on the vessel's bow from the leg bumper. The vessel has pulled out of the 500m zone and subsequently returned to Great Yarmouth for repair. The damage to the Central Production platform and wellhead platform was of a minor nature. A full investigation is in progress
									Early indications are that the vessel had gone in to work Central Production Platform North side, suffered a loss of

166	2013	HSE	May	Central	Janice Alpha	Semi-Sub	Diver Support	None	On the 12.05.13 the following events took place: 21:40- cessation of Daughtercraft diving operations at the Janice Alpha FPU (Floating Production Unit). The Daughtercraft "Aberlour" heads back towards the mothership Adams Vision DSV. 22:36- Aberlour recovered back to the mothership Adams Vision DSV. 22:52- due to increasing weather conditions the Adams Vision moved outside the Janice Alpha 500m zone where it sat waiting for client instruction either to stand-by on location or to transit to Aberdeen. 23:15- the Duty SDPO (Senior Dynamic Positioning Officer) selected "Manual" manoeuvring mode (thus de-selecting thrusters from DP) but was unable to establish control of the system. The Adams Vision began an accelerated drift towards the Janice Alpha. 22:38- the Adams Vision Master was called to the Bridge. Upon arriving the Master requested that the SDPO step out of the console and then took control himself. The Master switched over to Manual and confirmed that the levers were operational. Despite being able to take command of vessel propulsion the Master was unable to avoid soft contact with the Janice Alpha. Communication was made with the Janice Alpha to inform them of the soft contact. The Adams Vision then departed the 500m zone. The vessel crew carried out a damages investigation. The Adams Vision made contact with the Janice Alpha by way of: Adams Vision- upper Bridge structure port side Janice Alpha- port side/ forward section of helicopter decking At 00:15 on the 13.05.13 the Adams Vision commenced transit to Aberdeen.
167	2013	HSE	June	-	Unknown	Unspecified	Supply	None	Amendment to Incident reference No: 4BFE9E6C9E (Amendment to rig name) Whilst pulling off of location after completing cargo operations the supply vessel made contact with the Port and bow installation legs. Rig proceeded to precautionary muster and after initial visual inspection by the FRC (Fast Rescue Craft) revealed no structural damage, to cords or cross braces. The crews were stood down from muster. Further structural surveys to be carried out. Duty HSE informed.
168	2013	HSE	September	-	Unknown	Fixed Steel	Supply	Unspecified	The Vos Raasay vessel was approaching the platform for back loading of containers to the 48/29 FTP - however the vessel was positioned North of the platform approaching the platform with the tide to the 48/29A, the Master tried to reposition to the FTP but experienced loss of control and was taken with the tide under the platform bridge and into the structure of the 48/29Q. The 40 POB mustered at the secondary muster and all personnel were evacuated from the platform.

169	2013	HSE	December	-	Preload Tank 7P2	Unspecified	Tug	Minor	Brief Report Minor damage sustained after sea going harbour tug contacts rig during rig move operations. Detail Rig pinned on the Nexen Golden Eagle standoff location. Hull stationary and now elevated clear of the water at a 5 ft air gap ready for preload operations. Aft tow vessel were to be disconnected and stood down. Wind speed was building to 25 knots, sea state was confused at 1.5 m, 5 to 6 sec period. At 23.75 hrs 12 Dec 13, the sea going harbour tug 'RT Spirit' was requested to come in and release her tow line from the rigs Port Aft quarter smit bracket. As the tug came astern, with Captain at helm, the aft end of tug was lifted on the swell resulting in the aft end of the tug making contact with the rig hull. The keel plate/side shell of preload tank 7P2 sustained minor damage. Temporary repair made from inside tank. Welding up cracked weld between side shell plate and keel plate at bottom edge of hull on Port Aft Corner. Repair completed in consultation with Class (ABS) and Ensco corporate engineering dept. Ensco corporate Engineering issued permanent repair plan and detailed drawing. This will require external work on the side shell of the rigs hull. To be completed in Q2 2014. (Spring/Summer due to better weather). ABS surveyor will be required on site to oversee repair.
170	2014	HSE	January	-	PW jacket	Jacket	Stand-by	None	Standby vessel, Putford Jaguar, was close in to the PW jacket while transferring loads using the PW crane. During this operation the Putford Jaguar made contact with one of the unused anchor points on one of the North side support legs. There appears to be no obvious damage to the platform leg however the thin wall steel above the striking line at the aft of the vessel has been damaged. An internal investigation has been started.
171	2014	HSE	March	Northern	Nexen Goldeneye	Jack-Up	Tug	Minor	Rig afloat with 4 anchors deployed, 3 tugs assisting. Rig was moved astern toward final location onto Golden Eagle Platform within a required 1.5 metre tolerance. Aft crane engine cab and one area to port aft of the drill floor area made contact with uppermost deck on Golden Eagle platform. Localised damage sustained to the aft crane and cable trays around rig floor windfall. investigation ongoing

172	2014	HSE	May	Southern	Leman Alpha AD1 Jacket leg B1.	Fixed Steel	Supply	Minor	The AD1 Crane had completed 1 lift of a mini container from the AD1 Main Deck down to the Putford Voyager, and while the Alpha Deck Crew prepared another mini container for backload, the Helmsman (1st Mate) on the Voyager had allowed the vessel to drift slightly on the tide away from the AD1 Jacket. When the Platform contacted the Voyager and stated that the second lift was ready, the Helmsman started to move the Voyager astern towards the AD1 Jacket and position the vessel cargo deck under the AD1 Crane Hook. Tidal flow at the time was 156 degrees at 1.5 knots (drift off), wind 11 knots at 050 degrees. During the manoeuvre, the Helmsman mis-judged the amount of propulsion to apply to the vessel to move the relatively short distance back to the Platform and the vessel came into contact with leg B1 on the AD1 Jacket as a result. Those on board felt the AD1 Jacket rock slightly when the vessel made contact. An immediate inspection was carried out on the AD1 leg and the vessel. Superficial damage (protective coating) was noted to leg B1 and to the Vessel (paint). It was also noted that the AD1 Crane Main Block had come into contact with a Davit on the vessel. POB on Platform and vessel were kept up to date throughout.
173	2014	HSE	August	-	Turbine.	Turbine	Diver Support	None	Dive vessel on a four anchor system lost one anchor. There was a diver in the water at the time. The vessel drifted into the WTG and damaged the vessel and fuel tank.
174	2015	HSE	January	-	Unspecified	Unspecified	Supply	Unspecified	At 11:00hrs the Crane Operator commenced working the Troms Capella supply vessel. The Crane Operator informed the vessel that he would stand the vessel off due to increasing weather. The vessel acknowledged and began moving away from the rig. At 11:22 hrs the Troms Capella's bow came into contact with the Starboard Forward 18 ft. intermediate column. General alarm sounded and the rig went to muster. Troms Capella pulled away. Full muster no injuries to personnel on the rig or supply vessel. Investigation ongoing.
175	2015	HSE	January	Southern	Paragon B391	Jack-up	Supply	None	Ocean surf collided with the starboard leg of the rig, causing no damage to the rig but sustaining metal work damage to her starboard side fairing.
176	2015	HSE	March	Northern	Apache North	Unspecified	Supply	Unspecified	Supply boat Sea Falcon collided with Platform's North East Corner level one. This incident occurred whilst the above vessel was manoeuvring alongside the platform prior to starting deck cargo operations. Investigations ongoing.

APPENDIX B:
LIST OF INSTALLATIONS OPERATING ON THE UKCS PER YEAR

No.	Name	Location	Operator	Production Start	Status	Year Decommissioned	Still operational	Category	Begin Year	Operational Years
1	Angus FPSO	UK 31/26a	Amerada	1992	Decommissioned	2012		Floating steel	1996	16
2	Blenheim FPSO	UK 016/21b	Talisman	1995	Decommissioned	2000		Floating steel	1996	4
3	Donan FPSO - SWOPS	UK 15/20	BP	1992	Decommissioned	1998		Floating steel	1996	2
4	Durward FPSO	UK 21/11	Amerada	1997	Decommissioned	2000		Floating steel	1996	4
5	Emerald FPF	UK 2/10	MSR	1992	Decommissioned	1996		Floating steel	1996	0
6	Emerald FSV Ailsa Craig	UK 2/10	MSR	1992	Decommissioned	1996		Floating steel	1996	0
7	Esmond CP	UK 43/13	BHP	1985	Decommissioned	1996		Fixed steel	1996	0
8	Esmond CW	UK 43/13	BHP	1985	Decommissioned	1996		Fixed steel	1996	0
9	Gordon BW	UK 43/15	BHP	1985	Decommissioned	1996		Fixed steel	1996	0
10	Teal FPSO	UK 21/25	Shell	1997	Decommissioned	2012		Floating steel	1996	16
11	Hutton; TLP	UK 211/28	Kerr McGee	1984	Decommissioned	2001		Floating steel	1996	5
12	Maureen A	UK 16/29	Phillips	1983	Decommissioned	1999		Fixed steel	1996	3
13	Frigg - MCP01	UK014/09	Total E&P	1977	Decommissioned	2004		Gravity-based concrete	1996	8
14	Fife FPSO	UK 31/26	Hess	1995	Decommissioned	2012		Floating steel	1996	16
15	Camelot CB	UK 53/1	ExxonMobil	1992	Decommissioned	2002		Fixed steel	1996	6
16	Hutton NW	UK 211/27	BP	1983	Decommissioned	2009		Fixed steel	1996	13
17	Frigg (UK) TP1	UK010/01	Total E&P	1977	Decommissioned	2004		Gravity-based concrete	1996	8
18	Frigg (UK) CDP1	UK010/01	Total E&P	1977	Decommissioned	2004		Gravity-based concrete	1996	8
19	Ardmore - Rowan Gorilla VII	UK030/24	Acorn	2003	Decommissioned	2005		Jack-up	1996	9
20	Ardmore SAL 1	UK030/24	Fairfield	2003	Decommissioned	2005		Fixed steel	1996	9
21	Ardmore SAL 2	UK030/24	Fairfield	2003	Decommissioned	2005		Fixed steel	1996	9
22	Miller	UK 16/8	BP	1992	Decommissioned	2011		Fixed steel	1996	15
23	Cavendish Platform	UK043/19	RWE DEA	2007	Operational		2015	Fixed steel	1996	8
24	Chiswick	UK049/04	Venture	2007	Operational		2015	Fixed steel	1996	8
25	Galley FPF	UK 15/23a	Talisman	1998	Decommissioned	2008		Floating steel	1996	12
26	Inde [east] JD	UK 049/24	Shell	1971	Decommissioned	2009		Fixed steel	1996	13
27	Inde [east] JP	UK 049/24	Shell	1971	Decommissioned	2009		Fixed steel	1996	13
28	Inde [east] K	UK 049/24	Shell	1971	Decommissioned	2009		Fixed steel	1996	13
29	Inde [east] L	UK 049/24	Shell	1971	Decommissioned	2009		Fixed steel	1996	13
30	Inde [east] M	UK 049/19	Shell	1971	Decommissioned	2009		Fixed steel	1996	13
31	Inde [east] N	UK 049/24	Shell	1971	Decommissioned	2009		Fixed steel	1996	13
32	Brent D	UK 211/29	Shell	1976	Operational		2015	Gravity-based concrete	1996	19
33	Goldeneye Platform	UK 14/29a	Shell	2004	Operational	2011		Fixed steel	1996	15
34	Chiswick Platform	UK049/04	Venture	2007	Operational		2015	Fixed steel	1996	8
35	Hudson FPSO Petrojarl 1	UK 210/24a	Dana	1993	Decommissioned	2015		Floating steel	1996	19
36	Ivanhoe; AH001	UK15/21a	Hess	1989	Decommissioned	2009		Floating steel	1996	13
37	Shelley FPSO - Sevan Voyageur	UK22/3a	Premier	2008	Decommissioned	2010		Floating steel	1996	14
38	Anglia A	48/19	Ithaca Energy	1991	Operational	2015		Fixed steel	1996	19
39	Audrey A	49/11	Centrica	1988	Operational	2016		Fixed steel	1996	20

40	Audrey B	48/15	Centrica	1988	Operational	2016		Fixed steel	1996	20
41	Brent A	211/29	Shell	1976	Operational		2015	Fixed steel	1996	19
42	Brent B	211/29	Shell	1976	Operational		2015	Gravity-based concrete	1996	19
43	Caister	44/23	ConocoPhillips	1993	Operational		2015	Fixed steel	1996	19
44	Conwy NPAI	110/12a	EOG	2012	Operational		2015	Fixed steel	1996	3
45	Dunlin A	211/23	Fairfield	1978	Decommissioned	2015		Gravity-based concrete	1996	19
46	Europa Steel Platform	49/22	ConocoPhillips	2000	Decommissioned	2015		Fixed steel	1996	19
47	Ganymede ZD	49/22	ConocoPhillips	1995	Operational		2015	Fixed steel	1996	19
48	Horne Platform	53/03	Tullow	2005	Operational	2015		Fixed steel	1996	19
49	Janice A	30/17	Maersk	1999	Operational		2015	Floating steel	1996	16
50	Murchison	211/19	CNR	1980	Decommissioned	2013		Fixed steel	1996	17
51	Thames AP	49/28	Perenco	1986	Decommissioned	2015		Fixed steel	1996	19
52	Thames AR	49/28	Perenco	1986	Decommissioned	2015		Fixed steel	1996	19
53	Thames AW	49/28	Perenco	1986	Decommissioned	2015		Fixed steel	1996	19
54	Tyne Platform	44/18	Perenco	1996	Operational		2015	Fixed steel	1996	19
55	Valiant north 1	49/16	ConocoPhillips	1988	Operational		2015	Fixed steel	1996	19
56	Valiant north 2	49/16	ConocoPhillips	1988	Operational		2015	Fixed steel	1996	19
57	Valiant south	49/21	ConocoPhillips	1988	Operational		2015	Fixed steel	1996	19
58	Vampire Fixed Steel Platform	49/16	ConocoPhillips	1999	Decommissioned	2016		Fixed steel	1996	20
59	Vanguard PQD	49/16	ConocoPhillips	1988	Operational		2015	Fixed steel	1996	19
60	Victor JD	49/22	ConocoPhillips	1984	Operational	2016		Fixed steel	1996	20
61	Viking AR	49/12	ConocoPhillips	1972	Operational		2015	Fixed steel	1996	19
62	Viking BA	49/17	ConocoPhillips	1973	Decommissioned	2014		Fixed steel	1996	18
63	Viking BC	49/17	ConocoPhillips	1973	Decommissioned	2014		Fixed steel	1996	18
64	Viking BD	49/17	ConocoPhillips	1973	Decommissioned	2014		Fixed steel	1996	18
65	Viking BP	49/17	ConocoPhillips	1973	Decommissioned	2014		Fixed steel	1996	18
66	Viking CD	49/17	ConocoPhillips	1975	Decommissioned	2015		Fixed steel	1996	19
67	Viking DD	49/17	ConocoPhillips	1977	Decommissioned	2014		Fixed steel	1996	18
68	Viking ED	49/16	ConocoPhillips	1977	Decommissioned	2015		Fixed steel	1996	19
69	Viking GD	49/17	ConocoPhillips	1973	Decommissioned	2011		Fixed steel	1996	15
70	Viking HD	49/17	ConocoPhillips	1973	Decommissioned	2014		Fixed steel	1996	18
71	Vulcan 1-PRD	49/21	ConocoPhillips	1988	Operational		2015	Fixed steel	1996	19
72	Vulcan 2-PTD	48/25	ConocoPhillips	1988	Operational		2015	Fixed steel	1996	19
73	Camelot CA	53/1	ERT	1989	Decommissioned	2012		Fixed steel	1996	16
74	Ivanhoe	15/21a	Hess	1989	Decommissioned	2013		Floating steel	1996	17
75	Leadon FPSO	9/14a	Maersk	2001	Decommissioned	2007		Floating steel	1996	11
76	Alba FSU	16/26	Chevron	1994	Operational		2015	Floating steel	1996	19
77	Cavendish Platform	43/19a	Ineos	2007	Operational		2015	Fixed steel	1996	8
78	Chestnut Hummingbird FPSO	22/02a	Centrica	2008	Operational		2015	Floating steel	1996	7
79	Chiswick Platform	49/04a	Centrica	2007	Operational		2015	Fixed steel	1996	8
80	Cutter QC Platform	49/09a	Shell	2006	Operational		2015	Fixed steel	1996	9

81	Garrow Platform	42/25a	Alpha Petroleum	2007	Operational		2015	Fixed steel	1996	8
82	Grove Platform	49/10a	Centrica	2007	Operational		2015	Fixed steel	1996	8
83	Kilmar Platform	43/22a	Alpha Petroleum	2006	Operational		2015	Fixed steel	1996	9
84	Mimas Platform	48/09a	ConocoPhillips	2007	Operational		2015	Fixed steel	1996	8
85	Munro Platform	44/17b	ConocoPhillips	2005	Operational		2015	Fixed steel	1996	10
86	Tethys Platform	49/11	ConocoPhillips	2007	Operational		2015	Fixed steel	1996	8
87	Caravel QR	49/20a	Shell	2008	Operational		2015	Fixed steel	1996	7
88	Donan FPSO Global Producer III	15/20a	Maersk	2007	Operational		2015	Floating steel	1996	8
89	Kelvin WHP	44/18b	ConocoPhillips	2007	Operational		2015	Fixed steel	1996	8
90	Wenlock	49/12a	Alpha Petroleum	2007	Operational		2015	Fixed steel	1996	8
91	Buzzard Sweetening Platform	20/6a	Nexen	2011	Operational		2015	Fixed steel	1996	4
92	Shamrock QS	49/20a	Shell	2008	Operational		2015	Fixed steel	1996	7
93	West Don Northern Producer	211/18a	Enquest	2009	Operational		2015	Floating steel	1996	6
94	Jacky WHP	12/21	Ithaca	2009	Decommissioned	2017		Fixed steel	1996	21
95	West Don/Don SW SAL	211/18a	Enquest	2009	Operational		2015	Fixed steel	1996	6
96	ECA Riser tower	42/29	Perenco	1999	Operational		2015	Fixed steel	1996	16
97	Wingate Platform	44/24b	Wintershall	2011	Operational		2015	Fixed steel	1996	4
98	Jasmine LQ	30/6a	ConocoPhillips	2013	Operational		2015	Fixed steel	1996	2
99	Jasmine WHP	30/6a	ConocoPhillips	2013	Operational		2015	Fixed steel	1996	2
100	Huntington FPSO	22/14b	Premier	2013	Operational		2015	Floating steel	1996	2
101	Clipper South Platform	48/19a	Ineos	2012	Operational		2015	Fixed steel	1996	3
102	Ensign NPAI Platform	48/14a	Centrica	2012	Operational		2015	Fixed steel	1996	3
103	Breagh Platform	42/13a	Ineos	2013	Operational		2015	Fixed steel	1996	2
104	York NUI	47/2a	Centrica	2013	Operational		2015	Fixed steel	1996	2
105	Katy Platform	44/19b	ConocoPhillips	2013	Operational		2015	Fixed steel	1996	2
106	Conwy NPAI	110/12a	EOG	2016	Operational		2015	Fixed steel	1996	-1
107	Babbage Platform	48/2a	Premier	2010	Operational		2015	Fixed steel	1996	5
108	Clair Ridge DP Platform	206/8a	BP	2016	Operational		2015	Fixed steel	1996	-1
109	Clair Ridge QU	206/8a	BP	2016	Operational		2015	Fixed steel	1996	-1
110	Golden Eagle PUQ Platform	20/1	Nexen	2014	Operational		2015	Fixed steel	1996	1
111	Golden Eagle W Platform	20/1	Nexen	2014	Operational		2015	Fixed steel	1996	1
112	Franklin West WHP	29/5b	Total	2001	Operational		2015	Fixed steel	1996	14
113	Elgin WHP B	22/30c	Total	2001	Operational		2015	Fixed steel	1996	14
114	Alma FPSO - Enquest Producer	30/24c	Enquest	2015	Operational		2015	Floating steel	1996	0
115	Cygnus A Wellhead Platform	44/11a	Engie	2016	Operational		2015	Fixed steel	1996	-1
116	Foinaven FPSO Petrojarl	204/24	BP	1997	Operational		2015	Floating steel	1996	18
117	Gryphon A	9/18b	Maersk	1993	Operational		2015	Floating steel	1996	19
118	Balmoral FPV	16/21	Premier Oil	1986	Operational		2015	Floating steel	1996	19
119	Guillemot,Teal FPSO Anasuria	21/25	Anasuria	1997	Operational		2015	Floating steel	1996	18
120	Amethyst east A1D	47/14	Perenco	1990	Operational		2015	Fixed steel	1996	19
121	Amethyst east A2D	47/14	Perenco	1990	Operational		2015	Fixed steel	1996	19

122	Amethyst east B1D	47/15	Perenco	1990	Operational		2015	Fixed steel	1996	19
123	Amethyst west C1D	47/14	Perenco	1990	Operational		2015	Fixed steel	1996	19
124	Barque PB	48/14	Shell	1995	Operational		2015	Fixed steel	1996	19
125	Barque PL	48/14	Shell	1995	Operational		2015	Fixed steel	1996	19
126	Barque PB	48/13a	Shell	1990	Operational		2015	Fixed steel	1996	19
127	Beatrice AD	11/30	Talisman	1981	Decommissioned	2015		Fixed steel	1996	19
128	Beatrice AP	11/30	Talisman	1981	Decommissioned	2015		Fixed steel	1996	19
129	Beatrice B	11/30	Talisman	1981	Decommissioned	2015		Fixed steel	1996	19
130	Beatrice C	11/30	Talisman	1981	Decommissioned	2015		Fixed steel	1996	19
131	Bessemer	49/23	Perenco	1995	Operational		2015	Fixed steel	1996	19
132	Boulton Wellhead Platform	44/21a	ConocoPhillips	1997	Operational		2015	Fixed steel	1996	18
133	Cleeton CC	42/29	Perenco	1988	Operational		2015	Fixed steel	1996	19
134	Cleeton CPQ	42/29	Perenco	1988	Operational		2015	Fixed steel	1996	19
135	CleetonWellhead tower	42/29	Perenco	1988	Operational		2015	Fixed steel	1996	19
136	Clipper PC	48/19	Shell	1990	Operational		2015	Fixed steel	1996	19
137	Clipper PT	48/19	Shell	1990	Operational		2015	Fixed steel	1996	19
138	Clipper PW	48/19	Shell	1990	Operational		2015	Fixed steel	1996	19
139	Davy AMOSS	53/5a	Perenco	1995	Operational		2015	Fixed steel	1996	19
140	Douglas DA	110/13b	ENI	1996	Operational		2015	Jack-up	1996	19
141	Douglas DP	110/13b	ENI	1996	Operational		2015	Fixed steel	1996	19
142	Douglas DW	110/13b	ENI	1996	Operational		2015	Fixed steel	1996	19
143	Excalibur A	48/17a	Perenco	1994	Operational		2015	Fixed steel	1996	19
144	Galahad	48/12	Perenco	1995	Operational		2015	Fixed steel	1996	19
145	Galleon PN	48/20	Shell	1994	Operational		2015	Fixed steel	1996	19
146	Guinevere	48/17	Perenco	1993	Operational		2015	Fixed steel	1996	19
147	Hamilton A	110/13	ENI	1997	Operational		2015	Fixed steel	1996	18
148	Hamilton north	110/13	ENI	1995	Operational		2015	Fixed steel	1996	19
149	Hewett; 48/29 A	48/29	ENI	1969	Operational		2015	Fixed steel	1996	19
150	Hewett; 48/29 B	48/29	ENI	1969	Operational		2015	Fixed steel	1996	19
151	Hewett; 48/29 C	48/29	ENI	1969	Operational		2015	Fixed steel	1996	19
152	Hewett; 48/29 FTP	48/29	ENI	1969	Operational		2015	Fixed steel	1996	19
153	Hewett; 48/29 Q	48/29	ENI	1969	Operational		2015	Fixed steel	1996	19
154	Hewett; 52/5A	52/5	ENI	1969	Operational		2015	Fixed steel	1996	19
155	Hyde	48/6	Perenco	1993	Operational		2015	Fixed steel	1996	19
156	Inde [west] AC	49/23	Perenco	1971	Operational		2015	Fixed steel	1996	19
157	Inde [west] AD	49/18	Perenco	1971	Operational		2015	Fixed steel	1996	19
158	Inde [west] AP	49/18	Perenco	1971	Operational		2015	Fixed steel	1996	19
159	Inde [west] AQ	49/23	Perenco	1971	Operational		2015	Fixed steel	1996	19
160	Inde [west] AT	49/23	Perenco	1971	Operational		2015	Fixed steel	1996	19
161	Inde [west] BD	49/18	Perenco	1971	Operational		2015	Fixed steel	1996	19
162	Inde [west] BP	49/18	Perenco	1971	Operational		2015	Fixed steel	1996	19

163	Inde [west] CD	49/23	Perenco	1971	Operational		2015	Fixed steel	1996	19
164	Inde [west] CP	49/23	Perenco	1971	Operational		2015	Fixed steel	1996	19
165	Lancelot	48/17	Perenco	1993	Operational		2015	Fixed steel	1996	19
166	Leman AC	49/27	Perenco	1968	Operational		2015	Fixed steel	1996	19
167	Leman AD	49/27	Perenco	1968	Operational		2015	Fixed steel	1996	19
168	Leman AD1	49/26	Shell	1968	Operational		2015	Fixed steel	1996	19
169	Leman AD2	49/26	Shell	1968	Operational		2015	Fixed steel	1996	19
170	Leman AK	49/26	Shell	1968	Operational		2015	Fixed steel	1996	19
171	Leman AP	49/27	Perenco	1968	Operational		2015	Fixed steel	1996	19
172	Leman AQ	49/27	Perenco	1968	Operational		2015	Fixed steel	1996	19
173	Leman AX	49/27	Perenco	1968	Operational		2015	Fixed steel	1996	19
174	Leman BD	49/26	Shell	1968	Operational		2015	Fixed steel	1996	19
175	Leman BH	49/26	Shell	1968	Decommissioned	2016		Fixed steel	1996	20
176	Leman BP	49/26	Shell	1968	Operational		2015	Fixed steel	1996	19
177	Leman BT	49/26	Shell	1968	Operational		2015	Fixed steel	1996	19
178	Leman CD	49/26	Shell	1968	Operational		2015	Fixed steel	1996	19
179	Buchan A	21/1	Repsol-Sinopec	1981	Operational		2015	Semi-Sub	1996	19
180	Leman CP	49/26	Shell	1968	Operational		2015	Fixed steel	1996	19
181	Leman D	49/26	Shell	1968	Operational		2015	Fixed steel	1996	19
182	Leman DD	49/27	Perenco	1968	Operational		2015	Fixed steel	1996	19
183	Leman DP	49/27	Perenco	1968	Operational		2015	Fixed steel	1996	19
184	Leman E	49/26	Shell	1968	Operational		2015	Fixed steel	1996	19
185	Leman ED	49/27	Perenco	1968	Operational		2015	Fixed steel	1996	19
186	Leman EP	49/27	Perenco	1968	Operational		2015	Fixed steel	1996	19
187	Leman F	49/26	Shell	1968	Operational		2015	Fixed steel	1996	19
188	Leman FD	49/27	Perenco	1968	Operational		2015	Fixed steel	1996	19
189	Leman FP	53/1a	Perenco	1968	Operational		2015	Fixed steel	1996	19
190	Leman G	49/26	Shell	1968	Operational		2015	Fixed steel	1996	19
191	Leman H	53/2	Perenco	1968	Operational		2015	Fixed steel	1996	19
192	Leman J	49/28	Perenco	1968	Operational		2015	Fixed steel	1996	19
193	Lennox	110/15a	Eni	1996	Operational		2015	Fixed steel	1996	19
194	Markham ST1	49/05	Centrica	1992	Operational		2015	Fixed steel	1996	19
195	Morecambe DP6	110/2	HRL	1985	Operational		2015	Fixed steel	1996	19
196	Morecambe DP8	110/2	HRL	1985	Operational		2015	Fixed steel	1996	19
197	Morecambe North	10/2	HRL	1994	Operational		2015	Fixed steel	1996	19
198	Murdoch Compression Platform	44/22	ConocoPhillips	1993	Operational		2015	Fixed steel	1996	19
199	Murdoch	44/22	ConocoPhillips	1993	Operational		2015	Fixed steel	1996	19
200	Pickerill A	48/11	Perenco	1992	Operational		2015	Fixed steel	1996	19
201	Pickerill B	48/11	Perenco	1992	Operational		2015	Fixed steel	1996	19
202	Ravenspurn ST2	43/26a	Perenco	1990	Operational		2015	Fixed steel	1996	19
203	Ravenspurn ST3	42/30	Perenco	1990	Operational		2015	Fixed steel	1996	19

204	Ravenspurn A	42/30	Perenco	1990	Operational	2015	Fixed steel	1996	19
205	Ravenspurn B	42/30	Perenco	1990	Operational	2015	Fixed steel	1996	19
206	Ravenspurn C	42/30	Perenco	1990	Operational	2015	Fixed steel	1996	19
207	Ravenspurn WT1	43/26a	Perenco	1990	Operational	2015	Fixed steel	1996	19
208	Rough AD	47/8b	Centrica	1985	Operational	2015	Fixed steel	1996	19
209	Rough AP	47/8b	Centrica	1985	Operational	2015	Fixed steel	1996	19
210	Rough BP	47/3d	Centrica	1985	Operational	2015	Fixed steel	1996	19
211	Rough CD	47/3d	Centrica	1985	Operational	2015	Fixed steel	1996	19
212	Schooner Platform	44/26a	Faroe Petroleum (U.K.) Limited	1996	Operational	2015	Fixed steel	1996	19
213	Sean south PD	49/25	Shell	1986	Operational	2015	Fixed steel	1996	19
214	Sean south PP	49/25	Oranje Nassau	1986	Operational	2015	Fixed steel	1996	19
215	Sean north RD	49/25	Oranje Nassau	1986	Operational	2015	Fixed steel	1996	19
216	LOGGS GGS AP	49/16	ConocoPhillips	1988	Operational	2015	Fixed steel	1996	19
217	LOGGS GGS CP	49/16	ConocoPhillips	1988	Operational	2015	Fixed steel	1996	19
218	LOGGS GGS PP	49/16	ConocoPhillips	1988	Operational	2015	Fixed steel	1996	19
219	West Sole WA	48/6	Perenco	1967	Operational	2015	Fixed steel	1996	19
220	West Sole WAP	48/6	Perenco	1967	Operational	2015	Fixed steel	1996	19
221	West Sole WAS	48/6	Perenco	1967	Operational	2015	Fixed steel	1996	19
222	West Sole WB	48/6	Perenco	1967	Operational	2015	Fixed steel	1996	19
223	West Sole WC	48/6	Perenco	1967	Operational	2015	Fixed steel	1996	19
224	Windemere	49/9	Ineos	1997	Operational	2015	Fixed steel	1996	18
225	Alba northern	16/26	Chevron	1994	Operational	2015	Fixed steel	1996	19
226	Alwyn north NAA	3/9	Total E&P	1987	Operational	2015	Fixed steel	1996	19
227	Alwyn north NAB	3/9	Total E&P	1987	Operational	2015	Fixed steel	1996	19
228	Andrew	16/28	BP	1996	Operational	2015	Fixed steel	1996	19
229	Arbroath	22/17	Repsol-Sinopec	1990	Operational	2015	Fixed steel	1996	19
230	Armada Platform	22/5	BG	1997	Operational	2015	Fixed steel	1996	18
231	Auk A	30/16	Repsol-Sinopec	1975	Operational	2015	Fixed steel	1996	19
232	Beryl B	9/13	Apache Beryl	1976	Operational	2015	Fixed steel	1996	19
233	Beryl Riser tower	9/13	Apache Beryl	1976	Operational	2015	Fixed steel	1996	19
234	Brae A	16/7	Marathon	1983	Operational	2015	Fixed steel	1996	19
235	Brae B	16/7a	Marathon	1988	Operational	2015	Fixed steel	1996	19
236	Brae east	16/03a	Marathon	1993	Operational	2015	Fixed steel	1996	19
237	Britannia Platform	16/26	ConocoPhillips	1998	Operational	2015	Jack-up	1996	17
238	Bruce D	9/9	BP	1993	Operational	2015	Fixed steel	1996	19
239	Bruce PUQ	9/8a	BP	1993	Operational	2015	Fixed steel	1996	19
240	Captain WPPA	13/22a	Chevron	1997	Operational	2015	Fixed steel	1996	18
241	Claymore A	14/19	Repsol-Sinopec	1977	Operational	2015	Fixed steel	1996	19
242	Claymore Quarters Platform	14/19	Repsol-Sinopec	1977	Operational	2015	Fixed steel	1996	19
243	Clyde	30/17b	Repsol-Sinopec	1987	Operational	2015	Fixed steel	1996	19
244	Captain FPSO	13/22	Chevron Texeco	1997	Operational	2015	Floating steel	1996	18

245	Cormorant north	211/21a	TAQA	1982	Operational	2015	Fixed steel	1996	19
246	Douglas FPF	110/13	Eni	1996	Operational	2015	Floating steel	1996	19
247	Dunbar	3/14a	Total E&P	1994	Operational	2015	Fixed steel	1996	19
248	Eider	211/16a	Taqa Bratani	1988	Operational	2015	Fixed steel	1996	19
249	Erskine	23/26a	Chevron	1997	Operational	2015	Fixed steel	1996	18
250	Everest north	22/9	BG	1993	Operational	2015	Fixed steel	1996	19
251	Everest north riser	22/10	BG	1993	Operational	2015	Fixed steel	1996	19
252	Forties FA	21/10	Apache	1975	Operational	2015	Fixed steel	1996	19
253	Forties FB	21/10	Apache	1975	Operational	2015	Fixed steel	1996	19
254	Forties FC	21/10	Apache	1975	Operational	2015	Fixed steel	1996	19
255	Forties FD	21/10	Apache	1975	Operational	2015	Fixed steel	1996	19
256	Forties FE	22/6	Apache	1975	Operational	2015	Fixed steel	1996	19
257	Forties Unity riser	21/9	BP	1975	Operational	2015	Fixed steel	1996	19
258	Fulmar A	30/16	Repsol-Sinopec	1982	Operational	2015	Fixed steel	1996	19
259	Fulmar AD	30/16	Repsol-Sinopec	1982	Operational	2015	Fixed steel	1996	19
260	Gannet A	21/25	Shell	1993	Operational	2015	Fixed steel	1996	19
261	Harding Platform	9/23	Taqa Bratani	1996	Operational	2015	Jack-up	1996	19
262	Heather A	2/5	Enquest Heather	1978	Operational	2015	Fixed steel	1996	19
263	Judy	30/7	ConocoPhillips	1995	Operational	2015	Fixed steel	1996	19
264	Kittiwake A	21/18a	Enquest	1990	Operational	2015	Fixed steel	1996	19
265	Lomond	23/21	BG	1993	Operational	2015	Fixed steel	1996	19
266	Magnus	211/12	BP	1983	Operational	2015	Fixed steel	1996	19
267	Marnock ETAP PDR Platform	22/24a	BP	1998	Operational	2015	Fixed steel	1996	17
268	Marnock ETAP QU Platform	22/24a	BP	1998	Operational	2015	Fixed steel	1996	17
269	Montrose A	22/17	Repsol-Sinopec	1976	Operational	2015	Fixed steel	1996	19
270	Morecambe AP1	110/3	HRL	1985	Operational	2015	Fixed steel	1996	19
271	Morecambe CPP1	110/3	HRL	1985	Operational	2015	Fixed steel	1996	19
272	Morecambe DP1	110/3	HRL	1985	Operational	2015	Fixed steel	1996	19
273	Morecambe DP3	110/8	HRL	1985	Operational	2015	Fixed steel	1996	19
274	Morecambe DP4	110/3	HRL	1985	Operational	2015	Fixed steel	1996	19
275	Nelson	22/11	Enterprise	1994	Operational	2015	Fixed steel	1996	19
276	Ninian north	3/3	CNR	1978	Operational	2015	Fixed steel	1996	19
277	Ninian south	3/08	CNR	1978	Operational	2015	Fixed steel	1996	19
278	Piper B	15/17	Repsol-Sinopec	1976	Operational	2015	Fixed steel	1996	19
279	Rough BD	47/3d	Centrica	1985	Operational	2015	Fixed steel	1996	19
280	Saltire A	15/17	Repsol-Sinopec	1993	Operational	2015	Fixed steel	1996	19
281	Scott JD	15/22	Nexen	1993	Operational	2015	Fixed steel	1996	19
282	Scott JU	15/22	Nexen	1993	Operational	2015	Fixed steel	1996	19
283	Tartan A	15/16	Repsol-Sinopec	1981	Operational	2015	Fixed steel	1996	19
284	Tern	210/25	TAQA	1989	Operational	2015	Fixed steel	1996	19
285	Thistle A	211/18a	Enquest Heather	1978	Operational	2015	Fixed steel	1996	19

286	Tiffany	16/17	CNR	1993	Operational		2015	Fixed steel	1996	19
287	Beryl A	9/13	Apache Beryl	1976	Operational		2015	Gravity-based concrete	1996	19
288	Brent C	211/29	Shell	1976	Operational		2015	Gravity-based concrete	1996	19
289	Cormorant A (South)	211/26a	TAQA	1979	Operational		2015	Gravity-based concrete	1996	19
290	Ninian Central	3/03	CNR	1978	Operational		2015	Gravity-based concrete	1996	19
291	Ravenspurn CPP	43/26a	Perenco	1990	Operational		2015	Gravity-based concrete	1996	19
292	Curlew FPSO	29/7	Shell	1997	Operational		2015	Floating steel	1996	18
293	Ketch A Platform	44/28b	Faroe Petroleum (U.K.) Limited	1999	Operational		2015	Fixed steel	1996	16
294	Malory Platform	48/12	Perenco	1998	Operational		2015	Fixed steel	1996	17
295	Neptune Platform	47/4b	Perenco	1999	Operational		2015	Fixed steel	1996	16
296	Ross FPSO Bleo Holm	13/28	Repsol-Sinopec	1999	Operational		2015	Floating steel	1996	16
297	Trent Platform	43/24	Perenco	1996	Operational		2015	Fixed steel	1996	19
298	LOGGS GGS RP	49/16	ConocoPhillips	1988	Operational		2015	Fixed steel	1996	19
299	Inde D Platform (PERENCO)	49/23	Perenco	1989	Operational		2015	Fixed steel	1996	19
300	Mungo NUI Platform	22/20	BP	1998	Operational		2015	Fixed steel	1996	17
301	Pierce FPSO Haewene Brim	23/27	Enterprise	1999	Operational		2015	Floating steel	1996	16
302	Shearwater A Wellhead Platform	22/30b	Shell	2000	Operational		2015	Fixed steel	1996	15
303	Shearwater C PUQ Platform	22/30b	Shell	2000	Operational		2015	Fixed steel	1996	15
304	Waveney Platform	48/17	Perenco	1998	Operational		2015	Fixed steel	1996	17
305	Banff FPSO	29/2	CNR	1996	Operational		2015	Floating steel	1996	19
306	Bruce Phase II Platform	9/9	BP	1993	Operational		2015	Fixed steel	1996	19
307	Captain bridge linked platform	13/22a	Chevron	1997	Operational		2015	Fixed steel	1996	18
308	Corvette Platform	49/24	Shell	1999	Operational		2015	Fixed steel	1996	16
309	Elgin PUQ	22/30c	Total	2001	Operational		2015	Jack-up	1996	14
310	Elgin WHP	22/30c	Total	2001	Operational		2015	Fixed steel	1996	14
311	Franklin WHP	29/5	Total	2001	Operational		2015	Fixed steel	1996	14
312	Galleon PG	48/14	Shell	1994	Operational		2015	Fixed steel	1996	19
313	Guillemot West FPSO	21/30	Dana	2000	Operational		2015	Floating steel	1996	15
314	Skiff PS Platform	48/20a	Shell	2000	Operational		2015	Fixed steel	1996	15
315	Brigantine BG	49/19	Shell	2001	Operational		2015	Fixed steel	1996	14
316	Brigantine BR	49/19	Shell	2001	Operational		2015	Fixed steel	1996	14
317	Viscount Platform	49/16	ConocoPhillips	2002	Decommissioned	2015		Fixed steel	1996	19
318	Banff FSU Apollo Spirit	22/27	CNR	1999	Operational		2015	Floating steel	1996	16
319	Clair Phase 1 Platform	206/8	BP	2005	Operational		2015	Fixed steel	1996	10
320	Hoton Platform	48/7b	BP	2001	Operational		2015	Fixed steel	1996	14
321	Jade Platform	30/2c	ConocoPhillips	2002	Operational		2015	Fixed steel	1996	13
322	Millom West Platform	113/26	ConocoPhillips	1999	Operational		2015	Fixed steel	1996	16
323	Minerva Platform	47/3	Amoco	2003	Operational		2015	Fixed steel	1996	12
324	Buzzard Production Platform	20-Jun	Nexen	2007	Operational		2015	Fixed steel	1996	8
325	Buzzard Utilities Platform	20-Jun	Nexen	2007	Operational		2015	Fixed steel	1996	8
326	Buzzard Wellhead Platform	20-Jun	Nexen	2007	Operational		2015	Fixed steel	1996	8

327	Calder Platform	110/07	ConocoPhillips	2004	Operational		2015	Fixed steel	1996	11
328	Carrack QA Platform	49/14	Shell	2003	Operational		2015	Fixed steel	1996	12
329	Clipper PR Platform	48/19	Shell	1990	Operational		2015	Fixed steel	1996	19
330	Saturn	48/10	ConocoPhillips	2005	Operational		2015	Fixed steel	1996	10
331	Viking KD Platform	49/12	ConocoPhillips	1999	Operational		2015	Fixed steel	1996	16
332	Viking LD Platform	49/17	ConocoPhillips	1999	Operational		2015	Fixed steel	1996	16
333	Cygnus A PU Platform	44/11a	Engie	2016	Operational		2015	Fixed steel	1996	-1
334	Cygnus QU Platform	44/11a	Engie	2016	Operational		2015	Fixed steel	1996	-1
335	Cygnus B Wellhead Platform	44/12a	Engie	2016	Operational		2015	Fixed steel	1996	-1
336	Mariner PDQ Platform	9/11a	Statoil	2018	Operational		2015	Fixed steel	1996	-3
337	WIDP Sevan 400 FPSO	210/24a	Dana	2017	Operational		2015	Floating steel	1996	-2
338	Stella FPF-1	30/6a	Ithaca	2016	Operational		2015	Floating steel	1996	-1
339	Leman AC Compression Platform	49/26	Shell	1968	Operational		2015	Fixed steel	1996	19
340	Clipper PH Platform	48/19	Shell	2013	Operational		2015	Fixed steel	1996	2
341	BW Catcher FPSO	28/9a	BW Offshore	2017	Operational		2015	Floating steel	1996	-2
342	Culzean Wellhead Platfom	22/25a	Maersk	2019	Operational		2015	Floating steel	1996	-4
343	Culzean Utilities Living Quarters	22/25a	Maersk	2019	Operational		2015	Floating steel	1996	-4
344	Culzean Processing Platform	22/25a	Maersk	2019	Operational		2015	Floating steel	1996	-4
345	Mariner FSU	9/11a	Statoil	2018	Operational		2015	Floating steel	1996	-3
346	Ailsa FSO	22/25a	Maersk	2019	Operational		2015	Floating steel	1996	-4
347	Kraken FPSO	9/2b	EnQuest Heather	2017	Operational		2015	Floating steel	1996	-2
348	Noble Lloyd Noble	9/11a	Statoil (U.K.) Limited	2017	Operational		2015	Jack-up	1996	-2
349	Solan Platform	205/26a	Premier	2016	Operational		2015	Fixed steel	1996	-1
350	Ettrick FPSO Aoka Mizu	20/03a	Nexen	2007	Decommissioned	2016		Floating steel	1996	20
351	Kittiwake SAL	21/18a	Enquest	2006	Decommissioned	2009		Fixed steel	1996	13
352	Athena FPSO	14/18b	Ithaca Energy	2012	Decommissioned	2016		Floating steel	1996	20
353	MacCulloch FPSO	15/24b	ConocoPhillips	1997	Decommissioned	2015		Floating steel	1996	19
354	Welland South	53/4a	Perenco	1990	Decommissioned	2010		Fixed steel	1996	14
355	Schiehallion FPSO	204/20	BP	1998	Decommissioned	2012		Floating steel	1996	16
356	Galaxy 3		Sanat Fe	1999	Operational		2015	Jack-up	1996	16
357	Maersk Resilient		ABS	2008	Operational		2015	Jack-up	1996	7
358	GSF Labrador	48/25c	Transocean	1983	Operational		2015	Jack-up	1996	19
359	ENSCO 100		Ensco	1986	Operational		2015	Jack-up	1996	19
360	ENSCO 101		Ensco	2000	Operational		2015	Jack-up	1996	15
361	ENSCO 120		Ensco	2013	Operational		2015	Jack-up	1996	2
362	ENSCO 121		Ensco	2013	Operational		2015	Jack-up	1996	2
363	ENSCO 122		Ensco	2014	Operational		2015	Jack-up	1996	1
364	ENSCO 70		Ensco	1981	Non-Operational	2014		Jack-up	1996	18
365	ENSCO 71		Ensco	1982	Operational		2015	Jack-up	1996	19
366	ENSCO 72		Ensco	1981	Operational		2015	Jack-up	1996	19
367	ENSCO 92		Ensco	1982	Operational		2015	Jack-up	1996	19

368	ENSCO 80	Ensco	1978	Operational		2015	Jack-up	1996	19
369	Stena Spey	Stena	1983	Operational		2015	Floating steel	1996	19
370	Noble Hans Deul	Noble	2008	Operational		2015	Jack-up	1996	7
371	Noble Regina Allen	Noble	2013	Operational		2015	Jack-up	1996	2
372	Noble Sam Turner	Noble	2014	Operational		2015	Jack-up	1996	1
373	Noble Julie Robertson	Centrica	1982	Operational		2015	Jack-up	1996	19
374	Paragon B391	Paragon Offshore	1982	Operational		2015	Jack-up	1996	19
375	Paragon HZ1	Paragon Offshore	1981	Operational		2015	Jack-up	1996	19
376	Paragon MSS1	Paragon Offshore	1981	Operational		2015	Floating steel	1996	19
377	Baug	Borr Drilling	1991	Operational - Stacked		2015	Jack-up	1996	19
378	Brage	Borr Drilling	1998	Operational Stacked		2015	Jack-up	1996	17
379	Eir	Borr Drilling	1999	Operational - Stacked		2015	Jack-up	1996	16
380	Fonn	Borr Drilling	1986	Operational - Stacked		2015	Jack-up	1996	19
381	Maersk Gallant	Nexen	1993	Operational		2015	Jack-up	1996	19
382	Maersk Highlander	Maersk Oil & Gas	2016	Operational		2015	Jack-up	1996	-1
383	Maersk Reacher	BP	2009	Operational - Ready		2015	Jack-up	1996	6
384	Maersk Resolve	Wintershall	2009	Operational		2015	Jack-up	1996	6
385	Noble Llyod Noble	Statoil	2016	Operational		2015	Jack-up	1996	-1
386	Prospector 5	Total	2014	Operational		2015	Jack-up	1996	1
387	Rowan Gorilla V	Total	1998	Operational - Ready		2015	Jack-up	1996	17
388	Rowan Gorilla VI	ConocoPhilips	2000	Operational - Ready		2015	Jack-up	1996	15
389	Rowan Norway	ConocoPhilips	2011	Operational		2015	Jack-up	1996	4
390	John Shaw	Transocean	1982	Decommissioned		2015		1996	19
391	Ocean Guardian		1985	Operational - Stacked		2015		1996	19
392	Sedco 706	Transocean	1976	Operational		2015		1996	19
393	Sea Fox 4		1976	Operational		2015		1996	19
394	Transocean Rather	Transocean	1987	Operational		2015		1996	19
395	Ocean Princess	Diamond Offshore Drilling	1975	Non-Operational	2013	2015		1996	17
396	Deepsea Aberdeen	Odfjell Drilling	2014	Operational		2015	Floating steel	1996	1
397	Ocean Patriot	Shell	1983	Operational		2015	Floating steel	1996	19
398	Ocean Valiant	Maersk Oil & Gas	1988	Operational		2015	Floating steel	1996	19
399	Paul B. Loyd, Jr.	BP	1987	Operational		2015	Floating steel	1996	19
400	Sedco 711		1982	Operational - Cold Stacked	2016	2015	Floating steel	1996	19
401	Sedco 712	Faifield energy	1983	Operational		2015	Floating steel	1996	19
402	Sedco 714		1983	Operational Cold Stacked	2016	2015	Floating steel	1996	19
403	Sertao	Petrobas	2012	Operational		2015	Floating steel	1996	3
404	Transocean leader	EnQuest	1987	Operational		2015	Floating steel	1996	19
405	Transocean Spitsbergen	Statoil	2009	Operational		2015	Floating steel	1996	6

406	West Pheonix	Nexen	2008	Operational		2015	Floating steel	1996	7
407	WilHunter		1983	Operational - Cold Stacked	2016	2015	Floating steel	1996	19
408	WilPhoenix	Apache/Taqa	1982	Operational		2015	Floating steel	1996	19

APPENDIX C:
NEAR MISS INCIDENTS

No.	Year	Source	Month	Location	Name of Unit	Type of Unit	Vessel	Cause	Comments
1	1996	HSE	June	-		Semi-Submersible Drilling	Cargo	Total Power Loss	Cargo vessel lost power and was drifting towards the rig. Drilling operations suspended and down manning took place. Local vessels gave assistance to get a towline attached and pull the vessel clear of the rig.
2	1997	HSE	March	-		Semi-Submersible Drilling	Standby	Engine Failure	Vessel reported engine failure while positioned up wind of drilling rig. Relative bearing observation indicated vessel would drift past close but not collide with rig. Monitoring continued. Stand by vessel proceeded with attempts to place tow line onto vessel. Tow was secured and CPA was increased to in excess of 100 yards. Tug arrived on scene and secured tow line on vessel. Tow line had parting shortly after being secured. Vessel later recovered power.
3	1997	HSE	June	Southern		Fixed Steel	Anchor Handler	Total Power Loss	Whilst preparing for rig move of jack up drilling rig - anchor handling vessel suffered total loss of power. Vessel started drifting and narrowly missed colliding with platform.
4	1997	HSE	August	-		Semi-Submersible Accommodation	Supply	Manoeuvring Misjudgement	Supply vessel was in a position at the stern of the rig with a potable water hose connected transferring potable water and off-loading containerised deck cargo. Vessel was positioned on a northerly heading and in attempting to reposition encountered manoeuvring difficulties and made contact with rig's No. 5 anchor wire on port aft side. Rig was de-ballasted to transit draught for wire inspection. Some strand damage was evident on No. 5 anchor wire.
5	1997	HSE	October	Central		FPSO	Shuttle Tanker	D.P. Control Failure	Shuttle tanker secured to FPSO and GPS signals were poor and both DARPS and DGPS were deselected from DP console. Shuttle maintained position using Artemis only but this failed for a short period and DP system reverted to 'model control'. Due to software problem this caused shuttle tanker to manoeuvre astern causing mooring hawser to be tensioned. The off-position alarm sounded and control of shuttle established by using DGPS absolute system. This caused shuttle to manoeuvre ahead and stabilise in normal offloading position.
6	1997	HSE	November	Northern		Fixed Steel	Supply	Manoeuvring Misjudgement	During crane operations with the supply vessel a 1 tonne container was knocked over on the vessel deck due to sudden vessel movement. During operations to regain control the vessel then moved close to the riser access tower. Wind speed - 27 knots. Direction - 144 degrees. Wave height - 3 metres. Visibility - fine and clear.
7	1997	WOAD	March	-	OCEAN NOMAD	Semi-Submersible	Standby	Engine Failure	THE ENGINE OF STANDBY VESSEL 'GRAMPIAN PRINCE' CUT OUT AND STARTED DRIFTING TOWARDS THE RIG. ONSHORE HELICOPTERS WERE SCRAMBLED, BUT NOT REQUIRED. THE RIG WAS ATTACHED TO A TUG AT THE TIME. NO FURTHER INFORMATION AVAILABLE. SOURCE: PRESS&JOURNAL 970307.
8	1998	HSE	March	Central		Fixed Steel	Standby	Engine Failure	Engine failure of one engine on stand by vessel. Weather conditions 7-8 metres seas 45 knot winds. Vessel unable to carry out stand by duties and had to hold station.

9	1998	HSE	April	Southern	Fixed Steel	Trawler	Unauthorised 500m zone	Beam trawler entered 500 metres safety zone while fishing.
10	1998	HSE	June	-	Semi-Submersible Drilling	-	-	Vessel 6 nautical miles away. Coastguard alerted. Helicopter available for precautionary downmanning. Supply vessel in field prepared to take undertow.
11	1998	HSE	September	Northern	Fixed Steel	Trawler	Engine Failure	Standby vessel contacted installation control room and informed them that a trawler had no engine power and was drifting toward installation and current position was 2 miles from north east side of installation. Wind 145 degrees, 25/ 30 knots, 2/ 3 metre seas, visibility poor in mist, down to 200 metres in places, cloud cover 8 oktas. Another fishing vessel was on location but unable to offer any assistance. Installation OIM was called out and platform emergency procedures for collision activated. Stand by vessel launched it's FRC and the crew transferred a handline from accompanying vessel to the drifting vessel so that a 3" wire tow line could be connected between the vessels. Accompanying vessel took up slack on wire tow rope and vessel was towed past on installation's north face at 750 metres,
12	1998	HSE	December	Northern	FSU	Shuttle Tanker	Thruster Control Failure	Incident occurred during normal crude oil export transfer operations between the FSU and shuttle tanker. Shuttle tanker suffered loss of propeller pitch control, the propeller failing to zero pitch with the resultant loss of thrust. Shuttle tanker later re-established pitch control and initiated a pump shutdown by breaking the telemetry link.
13	1999	HSE	January	Northern	Fixed Steel	Standby	Total Power Loss	Installation's standby vessel was observed from the platform not displaying any navigational lights. The platform was advised that the standby vessel had lost all power and was drifting towards the platform. The OIM initiated emergency procedures onboard the platform and notified HM Coastguard. A nearby installation's standby vessel transferred to the scene and attended the drifting vessel. Vessel drifted north of the installation and later reported that all power and main engines had been restored. Drifting vessel reported that the loss of power was due to a generator tripping causing all load to be transferred to another generator which then shutdown due to overload causing total loss of electrical and consequential loss of main engines.
14	1999	HSE	April	Central	Fixed Steel	Diver Support	D.P. Control Failure	Whilst moving the vessel from the southern side to the eastern side of the platform there was a failure of the ship's starboard 'taut wire boom' causing the vessel to swing starboard. At the time the vessel was engaged in ROV work at platform.
15	1999	HSE	May	Southern	Fixed Steel	Passing Merchant Tanker	Post/ Operation Neglected	Oil tanker was on a collision course with installation. All radio calls went unheeded and 10 persons evacuated from the installation. When the tanker changed course distance from installation was half a mile.

16	1999	HSE	June	Central	Fixed Steel	Supply	Post/ Operation Neglected	Standby vessel reported that a supply vessel was heading towards the platform on a possible collision course and they had been unable to contact the vessel. Platform GPA and muster initiated and emergency response plan implemented. Contact was established approx 20 minutes before the closest point of approach and the vessel altered course.
17	1999	HSE	August	Central	Floating Production	Supply	Engine Control Failure	Supply vessel was working cargo at an installation when an alarm sounded on the bridge. Control of the vessel's port main engine (PME) was lost and vessel's Master took manual control of the vessel and communicated with the Chief Engineer. A further alarm on the joystick desk indicating a thruster failure and the Master made the decision to pull clear of the installation. The platform deck crew was warned by the vessel to stand clear of the potable water hose that subsequently parted. The vessel cleared the installation to outside the 500 metres zone to effect repairs.
18	1999	HSE	August	Southern	Fixed Steel	Diver Support	Post/ Operation Neglected	ROV support vessel was using platform as way mark on auto pilot. Auto pilot not switched off until vessel 10 to 60 metres from installation.
19	1999	HSE	September	Southern	Fixed Steel	-	Post/ Operation Neglected	Having failed to make contact with an approaching vessel, the standby vessel launched their fast rescue boat. The FRC came alongside the approaching vessel.
20	1999	HSE	September	West of Shetlands	FPSO	Shuttle Tanker	Power Failure	After an oil export the shuttle tanker and FPSO assumed fixed headings close to their weather vaning headings and began disconnection operation. During disconnection the ESD2 automatic disconnect facility was inhibited while crew reconnected messenger lines and paid these out. During recovery of oil export hose FPSO experienced reduction in electrical power availability; thrusters automatically tripped and power to oil export hose reel reduced increasing time taken to recover hose. Whilst hawser and messengers were being recovered, FPSO heading changed rapidly: 55 degrees in about 2 minutes. Shuttle tanker Master took manual control of tanker and manoeuvred it, using minimum power, to safe position ending disconnect operation with ship stopped 10 - 30 metres away from FPSO at 90 degrees difference in heading. Wind SE, force 3-4. Slight /mod sea state. Sea/swell Ht sig 2.6 metres, max 4.6 metres, period 8 secs. Swell predom westerly.
21	1999	HSE	October	Morecambe Bay	Jack-Up	Fishing vessel	Unauthorised 500m zone	Fishing boat infringed the installation's safety zone when it came as close as 40 metres from the SW corner of the installation. Installation was evacuated but the vessel could not be raised on the radio by the standby vessel.
22	1999	HSE	November	Northern	FPSO	Shuttle Tanker	D.P. Computer Failure	Shuttle tanker was making its approach in preparation for cargo offloading. At a distance of approximately 200 metres shuttle tanker experienced failure of main propellor pitch control. This initiated a sequence of events which resulted in a 100% ahead pitch demand from the DP system. The vessel started to move ahead and manual control was selected. The vessel was steered to starboard and arrested 120 metres from the FPSO's stern at approximately 90 degrees.

23	2000	HSE	January	Southern		Fixed Steel	Barge	Post/ Operation Neglected	A large object was sighted on a potential collision course with platform. Investigation found object to be an RAF target pontoon 19m x 4m x 2.5m (20 tonnes). Pontoon taken in tow by standby vessel until salvage vessel took control.
24	2000	HSE	January	Southern		Fixed Steel	-	-	Drilling rig was moving from the NW bell location to the standoff location. When it became free at the NW bell location, it unexpectedly moved towards the wellhead. The footprint of the jack-up port leg overlapped the footprint of the protection frame on the wellhead. Well and pipeline were shut in and depressurised.
25	2000	HSE	June	Central		Fixed Steel	Research	Steering Failure	Research vessel suffered a loss of steering whilst inside the platform 500 metres zone. The vessel pulled away under reverse power and using remote steering. Closest approach to the platform was 150 metres.
26	2000	HSE	September	-		-	Barge	Mooring Failure	An 800 feet dumb barge being towed by two tugs came into contact with the dive station and detached it from its moorings while a diver was operating inside cell 1 attached to the dive station by an umbilical line. The diver was not injured but was immediately removed from the water and diving operations suspended.
27	2001	HSE	July	Southern		Fixed Steel	-	Weather Conditions	Flotel was at the standoff position and was also retrieving two of the last four anchors. An unexpected squall came through the area from a direction of 200 degrees causing the flotel to pivot in a direction towards the installation. With the backup resources at hand, e.g. the vessel's propulsion and the four anchor handling vessels, the flotel was brought back under full control in a timely manner. The air gap between the flotel and the installation was reduced. During this situation the installation's OIM was informed and they decided to go into alert and shutdown their platform.
28	2001	HSE	October	-		Semi-Submersible Drilling	Fishing Vessel	Unauthorised 500m zone	Standby vessel reported unidentified vessel approaching the rig, speed 6-8 knots, CPA 0.2 nautical miles. Weather was thick fog with south easterly x 30 knot wind. Rig was moored to 8 anchors and drilling 12 1/4" hole with water based mud. Unidentified vessel had passed within 0.5 nautical miles of nearby installation and her standby vessel had been unable to raise vessel on VHF or see it for identification. Standby vessel tried unsuccessfully to contact on VHF. Drilling operations were suspended and anchor winches all clutched out in preparation to move off location. Aberdeen Coastguard informed that approaching vessel was 1.8 nautical miles from the rig CPA 0.12 nautical miles. OIM instructed standby vessel to fire flares across approaching vessel's bow to warn vessel. Abandon rig alarm sounded. Muster at aft boats. Men positioned port fwd. column with flares. Radio contact established and all hands stood down.

29	2001	HSE	May	Central	Alba FSU	FSU	Shuttle Tanker	DP Failure	The operation in progress was a crude oil transfer from the Alba Floating storage Unit to the shuttle tanker Aberdeen. A tandem system was used with 80 metre hawser and 16 inch hose. After successful pre-discharge DP trials with the FSU systems the vessel made a routine approach and on completion of hook-up operation, the crude transfer was commenced at 1849 hrs on 26th May. From vessel's log 27th May; "0132 hrs DARPS 1&2 failed. 0133 hrs off-loading position alarm, stop cargo-DP in manual. 0138 hrs position stable-re-select DP loading mode. 0150 hrs resume loading. 1335 hrs completed loading". With DARPS restored, the operation was resumed by mutual agreement. The DP system operated without fault for the remainder of the operation; the disconnection and unmooring was uneventful. When failure of both DARPS occurred there was erroneous gyro information presented on the vessels systems-no failures/faults of associated systems were observed on the FSU. Although manual control was selected correctly, in good time and with no system failures evident, potential for collision was deemed to exist. The charterer of the Aberdeen, Navon is to arrange, with the agreement of the owners and Chevron UK Ltd, verification trials at the Alba FSU under the direction of DP systems manufacturer Kongsberg Seatex. Projected trials date is 1st June. The results of the Seatex verification trials and the Aberdeen's incident report will be used to form conclusions on how to prevent a similar incident. Vessels lying steady on a heading of 226 deg T. Weather: wind Sx 12k, waves sig. 0.5m max, 0.8 period 4.6 sec, Temp. air 11degC, sea 11.5degC, mbar 1015. The incident occured on the Shuttle tanker "Aberdeen" with mooring hawser secured and export hose connected.
30	2001	HSE	June	-	Polyconcord	Semi-Submersible	-	Mooring Failure	The Polyconcord Flotel had a reportable incident during anchor retrrievel and un-mooring from the Elgin PUQ location - SEE ATTACHMENT
31	2001	HSE	September	Central	Piper B	Fixed Steel	Passing Vessel	Unauthorised 500m zone	Infringement of 500m exclusion zone by unauthorised vessel. MV Emsland en route from varberg in Sweden to Belfast entered the piper platform 500m exclusion zone without permission. The vessel was detected by the standby vessel havila sea but was unable to prevent the vessel from entering the 500m zone with the closest point of approach being the south west corner of the platform. Refer to attachments.
32	2001	HSE	October	-	Ocean Princess	Semi-Submersible	-	Post/ Operation Neglected	At 08:32 hours the rig standby vessel, Grampian Guardian reported unidentified v/l approaching the rig, speed 6-8 knots, cpa 0.2m. Weather was thick fog with south easterly x 30knots wind. Ocean princess was moored to 8 anchors drilling 121/4" hole with water based mud. Unidentified v/l had passed within 0.5nm of Buchan Platform and her standby vessel.

33	2002	HSE	February	Central	Alba FSU	FSU	Shuttle Tanker	Weather Conditions	Shuttle tanker tandem off-loading operations to "Gerrita" had commenced at 09:28hrs 20th .Alba FSU and Gerrita were lying with on approximately WNW heading in normal configuration. The Gerrita was attached to the FSU by a mooring hawser and crude oil export hose, with a separation distance of approx 80 mtrs. This position was being maintained by the Gerrita using Dynamic Positioning (DP). At approx 1000 / 20th the wind force strengthened very rapidly with the direction veering from NE approx 17kts to approx E 45 - 50 kits. This rapid change in wind conditions put the wind astern and caused the Gerrita to move away from the normal configuration towards the FSU's starboard quarter, with an increasing difference in headings between the 2 vessels. At 1012 the FSU General Alarm was sounded and crude export was shut down as a precaution. All personnel were mustered at their emergency stations at 1018. The Alba ERRV Havila Searcher was summoned onto close standby with the Gerrita. The Gerrita DP system was unable to regain the normal configuration in line astern of the FSU due to the severity of the weather conditions. The Gerrita Master attempted to regain position by taking manual control, but was also unable to achieve this. The FSU instructed Gerrita to carry out an Emergency Shutdown Class - 2 (full disconnection of hose and hawser) and to move clear astern. The Gerrita was in a position abreast of the FSU Control room, approx 25 - 30mtrs off, almost at right angles to the FSU when the class - 2 disconnection took place at 1016hrs. Gerrita then moved clear of the FSU by 1024 when the mooring messenger was released, at which time the vessel was approx 100mtrs off the starboard bow at right angles to the FSU. He then proceeded to a safe location 3 miles down wind of the field to await an improvement prior to resuming off-loading operations. Location of where incident happened - shuttle tanker tandem offloading - close approach on starboard side.

34	2002	HSE	March	-	Captain FPSO	FPSO	Shuttle Tanker	Engine Failure	During loading of oil from ChevronTexaco FPSO to the Navon Cargo Tanker Gerrita the tanker suffered a main engine failure. The following describes the sequence of events. March 13th at 13:06 the main engine stopped due to a burst pipe supplying lube oil to engine. At 13:08 loading was stopped and at 13:11 the ESD II was engaged. The vessels heading at ESD II WAS 358 degrees, the distance to the FPSO was 78.5 metres. The current was from the north at 1.9Kts and the wind direction was 270 degrees at 8-10Kts. The vessel was moving slowly astern when the ESD II was engaged and all thrusters were operational, with the vessel able to control the heading. The standby vessel was called in to ' Near Standby ' but the emergency tow-line was not connected as the vessel was able to make a control withdrawal and was in no danger of getting closer to any other installation in the area. At 14:55 the engine on the Gerrita was restarted and tested and found to be back in working order after repairs had been made.
35	2002	HSE	April	Central	Tartan Alpha Platform	-	-	-	22.35 Our standby vessel picked up a radar target, on potential collision course with the platform. The vessel did not respond to calls on the radio, standby vessel contacted platform estimated impact time 40 minutes. Platform told to muster, in preparation for potential abandonment. Vessel changed direction and standby vessel confirmed no further risk to platform. Personnel stood down. The wind was 10 knots west, seas one metre and visibility ten miles.
36	2002	HSE	April	-	Ensco 92	Jack-Up	-	Power Failure	The "tor chimera" radio E92 of lost power and location. STD - by vessel "Blue Iona" notified and transits to location - Ship is 1.1 NM from big: Emergency alarm is activated and crew reports to minster cull and Ensco Eros is activated. Ship is reported stable with anchor dropped and holding E92 commenced POB evacuation 65/47 upheld members via helicopter support to nearby condo/Ensco installations, other vessel support at location. Highland oeampion, platform trader. Situation continued stable and E92 with stand by support vessels alert through dambreams Wednesday 1/05/02. Weather winds offshore @ 218 deg with 21/2 - 3 m seas. The combinco installation status is safe with both wells shut in and topsides vented. The 12 man essential crew will remain on standby with emergency evac. available on the nearby e72.

37	2002	HSE	May	Central	14/19 Claymore	Fixed Steel	Fishing vessel	Unauthorised 500m zone	Weather clear, vis-10nm+. Time: 12.30hrs (BST). During a period of helicopter operations on the CAP a member of the helideck crew noticed a fishing vessel approx. 1200m on the platform East side & that it was heading towards the installation. The incoming chopper landed on the deck and the helicrew went about their duties. While awaiting the arrival of the offgoing pax the helicrew noticed that the F/V was still heading towards the installation. The HLO advised the MARCO that this vessel was approx. 500-600m distance from the platform and that it was heading towards us. The MARCO advised the standby vessel - Scott Protector - who was on close standby duty covering the heli-ops and also some overside work, stationed on the lee side of the platform - this was CPP platform SW. The SBV left station at full speed and proceeded around to the CPP East side to warn off the approaching fishing vessel. With the F/V well into the 500m zone the SBV was heading across her bows and with horns blaring. The F/V eventually went about, the distance from the installation at this time was estimated to be approx. 120-150m. the F/V was not answering on ch.16, the SBV eventually made brief contact on ch.73.
38	2002	HSE	June	Central	Nelson Platform	Fixed Steel	Diver Support	DP Failure	Whilst in close proximity (10 metres) to the Nelson Platform the dive vessel CSO Alliance suffered a fail of its DP navigation system which resulted in the senior DPO de - selecting the system and manually taking control to stabilise the vessel.
39	2002	HSE	August	Central	Kittiwake	Fixed Steel	Fishing Vessel	Unauthorised 500m zone	At approximately 23:10 hrs on 11-Aug-02 the platform standby vessel (Bue Shetland Service) reported an infringement of the platform 500m zone by a fishing vessel. The Shetland Service was able to contact the fishing vessel (subsequently identified by its markings as PD340 Ocean Venture) and the fishing vessel altered course to take it away from the platform. An OIR/13 shall be submitted with further details of this incident.
40	2004	HSE	May	Central	Heather Alpha	Fixed Steel	Trawler	Unauthorised 500m zone	Two pair trawlers " Harvester PD98 and Harvester PDMS, fishing close to installation @ 19.25 PD98. Entered safety zone. Coastguard confirmed agents "Peterhead fisherman". HSE duty officer called 22.02 OIR 15 will be sent in.
41	2004	HSE	June	Southern	Ravenspurn North	Fixed Concrete	Fishing Vessel	Unauthorised 500m zone	A fishing vessel was seen on radar to be on a collision course with the Ravenspurn North Installation. Standby Vessel, Putford Aries, was unable to make radio contact with the fishing vessel to warn it off. Platform Emergency Response procedures initiated. The vessel changed course from an easterly course to a north easterly course passing the platform within the 500 meters exclusion zone.

42	2005	HSE	October	Southern	Sean PP 49/25 A	Fixed Steel	Passing Merchant Container	Unauthorised 500m zone	500 Metres Infringement of Romeo Platform 07/10/05 at 2125 hrs. I observed the cargo vessel LUKAS call sign V2PG2 mmsi no 304674000 4 miles NW of ROMEO platform on a course of 160 degrees true. It appeared by his course vector that they were going to infringe the 500 metre zone of the platform so I attempted to make contact with the LUKAS on ch 16, 13 & 6 to inform them of this & ask them to alter there course to starboard to clear the platform & W cardinal buoy adjacent to the platform. By 2135 I could not get any response from the LUKAS as I informed the SEAN PAPA control room of the situation. The SEAN PAPA turned on the fog horns on the ROMEO to try and attract the LUKAS attention & we tried everything we could to attract the LUKAS attention including shining my searchlight into the LUKAS bridge. On doing that I could not see anyone in the bridge of the LUKAS & I stayed alongside the LUKAS calling them all the time until they were past & clear of the SEAN PAPA which was 2200hrs whereupon I informed GT. YARMOUTH coastguard of the situation & the PUTFORD ACHATES took over trying to contact the LUKAS & followed them in the hop of attracting their attention. The LUKAS went inside of the ROMEO's 500 metre zone @ 2149 hrs & was 300 metres off the platform @ its closes point of approach. Weather conditions on scene. Wind 180 degrees @ 8 knots. Sea state calm. Visibility 3 to 4 miles.
43	2006	HSE	February	-	GSF Labrador	Jack-Up	-	Thruster Failure	MV Aquarius was alongside the rig backloading Barite through a hose. The vessel lost power to its thrusters. This caused limited station keeping ability, decision by Captain was to pull away from the Rig immediately and in doing so parted the hose. No contact was made with the Rig. Minimum loss of barite occurred (PON1 submitted)

44	2006	HSE	February	Southern	Clipper PM 48/19A	Fixed Steel	Passing Vessel	Post/ Operation Neglected	At approximately 05.20 hours on 18th Feb 2006, the stand by vessel Putford Enterprise detected the vessel Ocean Lord heading directly fore the Clipper Platform, on a course of 306 degrees and a speed of 14.8 knots. The Putford enterprise called the Ocean Lord approximately 10 time on channel 16 to alert the vessel, with no response. A DSC was sent on channel 70 twice, again wit no response. With 20 mins to impact, the Master of the Putford Enterprise called the Clipper Room Operator to alert the platform to the hazard. The Putford was put on an intercept heading and continued to try and raise the Ocean Lord on Channel 16 and DSC. A search light was shown in the direction of the vessel and with 10 minutes to impact, the Ocean Lord altered course away from the Clipper. The Ocean Lord was asked to maintain a proper lookout and radio watch visa channel 16. All the preceding was reported to MCA, to allow the coast guard to follow up the incident with the vessels concerned. A HAZREP was raised by the MCA.
45	2006	HSE	September	Northern	Magnus 211/12	Fixed Steel	Supply	Positional Failure	Supply vessel 'Normand Aurora' whilst being worked for bulk loading/unloading activities, went from C-joy (Poscom) joystick into DP-joystick mode in order to get a better accuracy of positioning the vessel. A procedure often used when disconnecting hoses. After a short time they experienced that the platform created a so called 'shadow' for the differential signal for the DGPS whereby the vessel lost the differential signal for a short time. This resulted that the DP rejecting the DGPS signal and gave a 'position drop out alarm' with the result that the vessel lost position whereby the thrusters started to react spontaneously. Vessel moved closer towards the platform. Manual intervention was immediately taken by switching back into 'C-joy joystick mode' and manoeuvred the vessel away to a safer distance from the platform in order to disconnect the hoses.
46	2006	HSE	October	Southern	Clipper PM 48/19A	Fixed Steel	Passing Vessel	Post/ Operation Neglected	Vessel BBC Japan reported by standby boat and automatic identification system to be on a direct collision course with platform. Standby boat Putford Enterprise could no initially achieve communication with BBC Japan. Clipper OIM received 15 minutes notification. Platform crew called to Prepare to Abandon Platform and process shutdown and venting commenced. Vessels BBC Japan changed course 10 minutes prior to predicted collision.

47	2007	HSE	January	Southern	Murdoch	Fixed Steel	Passing Cargo Vessel	Engine Failure	On the 11th January 2007 at 15.20 the cargo vessel (Vindo) lost engine power. The vessel was approximately 9 nautical miles east of the Murdoch complex. The Murdoch platform alerted the coast guard and the main ConocoPhillips office in Aberdeen, activating the emergency response team. The weather was storm force 10 and there was no option of resuce of platform personnel from the water, therefore Murdoch complex was shut down, vented and non-essential personnel were evacuated, by helicopter, to nearby Ensco 101 drilling platform. As the Vindo drifted closer towards Murdoch without any success in restoring engine power, the remaining personnel were evacuated to the Viking Platform. The vessel briefly regained engine power allowing it to be steered around Murdoch before the engines failed again. The vessel continued to drift through the field missing the nearby Caister (Normally unmanned installation) by approximately 500m. In an attempt to secure her position, Vindo dropped anchor in the vicinity of the Murdoch/Boulton and Murdoch main transportation pipelines. Post event survey of these pipelines showed that no damage occured during Vindo anchor operations. The Murdoch platform was re-manned fully and production commenced by mid-afternoon, Friday 12th January 2007. (9 nautical miles from Murdoch Platform)
48	2007	HSE	August	Northern	Dunbar Platform	Fixed Steel	Diver Support	Post/ Operation Neglected	Reporting occurrence on Vessel Bar Protector during construction diving operations alongside the east face of Total Dunbar Platform. Vessel crane came briefly in contact with an overhang structure of the platform. The contact caused one light fitting from the platform to be damaged and subsequently fall on the deck of the vessel. No injuries have been sustained by personnel on Platform and Vessel. No damage has been sustained by vessel. Operations were immediately suspended and divers recovered. Platform Management informed and PTW suspended. Investigation on occurrence ongoing, vessel is at time of writing heading to Lerwick for scheduled crew change. 24/08/07 - notifier called to complete b4.
49	2007	WOAD	November	Southern	Murdoch	Jacket	-	-	
50	2007	WOAD	November	Southern	CAISTER, 44/23A	Jacket	-	-	

51	2009	HSE	March	-	Triton FPSO	FPSO	Shuttle Tanker	Power Failure	The offloading tanker Nancy Knutsen was scheduled to do a cargo offload from the Triton FPSO on 05/03/09 0618 Hrs Nancy Knutsen completed the mooring and offloading hose connection astern of the Triton FPSO 0630 Hrs Commenced offloading cargo from Triton to Nancy Knutsen 0638 Hrs Nancy Knutsen reported a loss of power on vessel and requested the standby vessel Grampian Prince to make ready for connecting the tow line. At the same time the Nancy Knutsen sent an ESD 1 signal to the Triton which stopped the cargo offloading. The Nancy Knutsen lost power to one main engine and to its thrusters. It still had power on one main engine The offloading tanker Nancy Knutsen was scheduled to do a cargo offload from the Triton FPSO on 05/03/09 0618 Hrs Nancy Knutsen completed the mooring and offloading hose connection astern of the Triton FPSO 0630 Hrs Commenced offloading cargo from Triton to Nancy Knutsen 0638 Hrs Nancy Knutsen reported a loss of power on vessel and requested the standby vessel Grampian Prince to make ready for connecting the tow line. At the same time the Nancy Knutsen sent and ESD 1 signal to the Triton which stopped the cargo offloading. The Nancy Knutsen lost power to one main engine and to its thrusters. It still had power on one main engine Over the next few minutes the Nancy Knutsen drifted in to approximately 35 metre astern of the Triton. Its normal offloading position is about 68 metres astern of the Triton 0642 Hrs Nancy Knutsen reported it had control of propulsion and was manoeuvring slowly astern to take up position on Taut Hawser (tight mooring line) astern of the Triton 0645 Hrs Nancy Knutsen in position on taut hawser astern of the Triton with all essential equipment for safe manoeuvring of the vessel up and running. (Main engine and thrusters) The Nancy Knutsen was now maintaining its position with minimum weight on hawser. Nancy Knutsen informed Triton that it was now holding it position in a safe manner and was carrying out further checks on its systems prior to letting go from Triton. 0818 Hrs Nancy Knutsen confirm it had carried out checks on all it system and was ready to disconnect from the Triton.0819 Hrs Disconnected offloading hose 0827 Hrs Commenced unmooring 0840 Hrs Completed unmooring 0845 Hrs Nancy Knutsen clear of 500 metre zone. The Nancy Knutsen is continuing its investigation into the cause of the loss of power and we await its report. For information No damage was done to either of the vessels.

52	2011	HSE	November	Northern	Lyell Manifold B	Fixed Steel	Diver Support	-	Note; Please disregard Type of work and Type of Dangerous Occurrence above, options do not relate to diving operations. Type of Dangerous Occuurrence: Schedule 2 Part 1, Diving Operations, 10 (e) any uncontrolled ascent which puts a diver at risk. Diver 1 and Diver 2 were engaged in diving operations outside the forward diving bell located at Lyell Manifold B when there was a requirement to reposition the DSV by 10m. It was agreed by the Dive Supervisor and Bridge that the Stbd taut wire would be recovered and the Port taut wire deployed to facilitate the vessel move. The divers remained at the manifold and were instructed to check their umbilicals were clear prior to recovery of the taut wire; they reported back all was OK. On commencement of recovery of the Stbd taut wire, Diver 1 was lifted from B manifold and called an all stop. This was carried out immediately. It was subsequently assessed that the taut wire clump weight had risen to 15m above the seabed and the manifold was 8m above the seabed. The diving bell was positioned 5m above the manifold. It estimated that the upward excursion of the diver was 2 to 3m. Following the all stop, the taut wire was lowered to 2m and Diver 1 confirmed he had returned to bottom. Diver 1 confirmed he was OK and was instructed to follow his umbilical to the taut wire and unfoul it. This was sucessfully completed. Divers then returned to the bell and the system where Diver 1 again confirmed he was OK. Initial investigation indicated that although Diver 1 had full visibility of his umbilical he did not see the taut wire. ISS will issue a Safety Flash emphasising the requirement to fully check umbilicals prior to any vessel move or deployment/recovery of taut wires, and to ensure the guidance in IMCA D010 is adhered to.

53	2012	HSE	June	-	Ensco 102	-	Passing Vessel	Post/ Operation Neglected	13:00 STANDBY VESSEL 'VOS PROVIDER' IDENTIFIES VESSEL ON COLLISION COURSE WITH ENSCO 102 INSTALLATION AND ATTEMPTS TO MAKE CONTACT WITH VESSEL VIA VHF CHANNEL 16. 13:16 STANDBY VESSEL 'VOS PROVIDER' ALERTS E102 RADIO ROOM ON VHF CHANNEL 10 OF A VESSEL, LATER IDENTIFIED AS THE M/V "PATRIA" PRESENTLY ON A COLLISION COURSE WITH THE RIG HAVING A CPA (CLOSEST POINT OF APPROACH) OF 0.5NM AND ARE UNABLE TO ESTABLISH CONTACT WITH VESSEL'S BRIDGE WATCHKEEPER. GENERAL ALARM IMMEDIATELY ACTIVATED FROM INSIDE THE RADIO ROOM AND THE OIM ARRIVES SHORTLY AFTERWARDS TO MAKE AN ANNOUNCEMENT FOR ALL PERSONNEL TO GO TO THEIR RESPECTIVE MUSTER STATIONS AND AWAIT FURTHER INSTRUCTIONS AS AN EMERGENCY SITUATION HAD DEVELOPED INVOLVING A VESSEL ON A COLLISION COURSE WITH THE RIG. 13:18 THE RIG FLOOR INFORMS THE RADIO ROOM THAT THE WELL HAS BEEN SHUT IN & IS SECURE. 13:20 "VOS PROVIDER" INFORMS E102 RADIO ROOM THAT THE VESSEL IS CURRENTLY ON A BEARING OF 245 DEGS AT 4.8NM FROM THE RIG. 13:22 LEVELS 1 TO 4 REPORTED TO BE ALL CLEAR OF PERSONNEL. 13:25 E102 RADIO ASK "VOS PROVIDER" TO SUPPLY ANY AVAILABLE DETAILS OF THE VESSEL AND WAS INFORMED OF THE FOLLOWING: SIZE 83M IN LENGTH, 13M IN BEAM, RADIO CALLSIGN P3YL6, IMO No. 009123312, MMSI No. 209734000 AND BOUND FOR THE PORT OF MONTROSE. 13:26 FULL HEAD COUNT, 107 PERSONS ACHIEVED. 13:26 ENSCO & CONOCO ONSHORE RESPONSE TEAMS GIVEN SITREP AND INFORMED OF FULL HEAD COUNT ONBOARD. 13:26 THE MASTER OF THE "VOS PROVIDER" ADVISES E102 RADIO THAT HE IS CONTINUING TO USE ALL CHANNELS OF COMMUNICATION TO ALERT THE VESSEL BY WAY OF CHANNEL 16 VHF, 2182 Khz RADIOTELEPHONY AND GMDSS DSC CHANNEL 70 VHF. 13:27 THE MASTER OF THE "VOS PROVIDER" ADVISES E102 RADIO THAT THE M/V "PATRIA" HAS NOW ALTERED COURSE TO 270 DEGS AND WILL PASS THE RIG APPROX 2NM TO THE NORTH. 13:34 THE MASTER OF THE "VOS PROVIDER" ADVISES E102 RADIO THAT HE WILL CONTINUE TRYING TO ESTABLISH CONTACT WITH THE M/V "PATRIA" AND WILL "SHADOW" THE VESSEL TILL IT PASSES INSTALLATION SAFETY. 13:35 ASKED THE MASTER OF THE "VOS PROVIDER" FOR THE CURRENT SPEED, COURSE & DISTANCE OF THE M/V "PATRIA" AND WAS INFORMED: 12.1 KTS, 258 DEGS & 1NM CPA OFF E102. 13:38 THE MASTER OF THE "VOS PROVIDER" ESTABLISHES CONTACT WITH THE BRIDGE WATCHKEEPER ON THE M/V "PATRIA" ON CHANNEL 16 VHF AND TRANSFERS TO CHANNEL 10. 13:40 E102 RADIO ASKS THE MASTER OF "VOS PROVIDER" IF HE CAN OBTAIN THE M/V "PATRIA" FLAG STATE IF POSSIBLE. IT WAS NOTED BY E102 RADIO THAT THE BRIDGE WATCHKEEPER ONBOARD THE M/V "PATRIA" ACTED AWKWARDLY & RELUCTANTLY WHEN ASKED THIS BY THE MASTER OF THE "VOS PROVIDER". EVENTUALLY THE VESSEL FLAG STATE WAS GIVEN AS CYPRUS. 13:44 OIM INSTRUCTS PERSONNEL TO STAND DOWN FROM MUSTER STATIONS. 13:52 THE MASTER OF THE "VOS PROVIDER" ADVISES E102 RADIO THAT THE M/V "PATRIA" IS NOW PASSED CLEAR TO THE NORTH AND WILL CONTINUE TO MONITOR THE VESSEL FURTHER.

54	2014	HSE	April	Central	Kittiwake Platform.	Fixed Steel	Standby	Steering Failure	Whilst preparing to carry out close standby cover the vessel lost steerage and passed within 3 metres of the platform SW Corner leg. The vessel was travelling at a speed of 2-3 knots at the time of the incident. No impact to the platform or vessel occurred and the vessel proceeded to exit the 500 metre zone having regained steerage and power. The incident took place within a 3-4 minute time period. No personnel were underdeck at the time of the incident. All overside and close standby activities suspended pending further investigation. POB 68. Wind Speed 12 knots. Wind Direction 225 degrees.
55	2014	HSE	December	Central	1) Lomond Platform and 2) Borgholm Dolphin	1) Fixed Steel, 2) Semi-sub	Supply	Engine Failure	Edda Frende is a 4,000 te Gross weight Supply Vessel which suffered an engine fire and as a result lost all ability to navigate and steerage. The vesssel was 12 miles SW of the Lomond installation at the time, with a sea state presenting a collision threat to the Lomond Platform and Borgholm Dolphin Flotel. Vessel drift was circa 1.2 knots giving a time to closest point of approach of 10 hours. With this confirmed and a field POB in excess of 300 people the Lomond OIM initiated a precautionary downman of both facilities. 160 people departed the flotel before the drifting vessel was secured by anchor handlers and confirmed as no longer posing a threat to either facility.
56	2014	HSE	December	-	The Ocean Guardian	Semi-Submersible	Supply	Engine Failure	The Ocean Guardian received a call from the MCA informing us that the Grampian Venture had lost main engine power and was drifting in an Easterly direction at 2kts. The Grampian Discovery was our SBV at the time the MCA contacted us and informed us that the Grampian Venture was drifting 13.1nm west of the Ocean Guardian. The Control room made contact with the Grampian Venture 11nm from our location brg 270°, at that time the Grampian Venture informed us that his CPA to us was 5nm and that he would pass a minimum of 4nm south of our position. We continued to monitor the range and bearing on the rigs radar which gradually increased as he got closer to the rig, the effect of the tide turning and running from the North pushed him South 4nm as was first communicated to us by the Grampian Venture.

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Ship/Platform Collision Incident Database (2015) for offshore oil and gas installations

There is a potential for major structural damage to offshore installations leading to fatalities and serious injuries in the event of collision by either a passing or an in-field seagoing vessel. Both categories of collision have occurred on the UK Continental Shelf although to date only significant, rather than catastrophic, consequences have occurred. Internationally, collisions have occurred that have caused both loss of life and environmental damage. This report describes work to update the Ship/Platform Collision Incident Database for the UK Continental Shelf (UKCS) and the collision frequency analysis which was previously described in Research Report RR053 (2001). Report RR1153 considers collision threat detection.

Data was collected from collision incident record sources to confirm or complete previous records and to expand the database up to December 2015. The database overlaps with the previous version by providing information from 1996 to 2015. The database of operating experience has been recompiled and extended to encompass all mobile and fixed installations operating on the UKCS and takes into account recent abandonments. The main database includes actual collisions, while 'near misses' are analysed in a separate section. In an attempt to expand the previous database and gain further understanding of the scale and nature of the 'near miss' events, data from a variety of sources is included: the findings are interpreted in section 4 of the report.

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RR1154

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