THE SELECTION AND TRAINING OF OFFSHORE INSTALLATION MANAGERS FOR CRISIS MANAGEMENT

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HSE BOOKS

Health and Safety Executive - Offshore Technology Report
This report is published by the Health and Safety Executive as part of a series of work which has been supported by funds formerly provided by the Department of Energy and lately by the Executive. Neither the Executive, the Department nor the contractors concerned assume any liability for the reports nor do they necessarily reflect the views or policy of the Executive or the Department. Results, including detailed evaluation and, where relevant, recommendations stemming from their research projects are published in the OTH series of reports. Background information and data arising from these research projects are published in the OTI series of reports.
ACKNOWLEDGEMENTS

The authors would like to thank all those individuals in the offshore industry both in the UK and Norway, without whose co-operation and assistance this project would not have been completed. Gratitude is also extended to all the staff at The Montrose Fire and Emergency Training Centre for their assistance and for granting us access to their training course delegates: and to other training providers for information and the opportunity to observe their training courses. We also wish to thank all the individuals from the armed forces and other organisations who select and train individuals for command positions, for their helpful co-operation.

Finally, our special gratitude goes out to the OIMs who have been unfailingly helpful and supportive throughout this project.
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GLOSSARY

DTI  Department of Trade & Industry
EPI  Eysenck Personality Inventory
IADC International Association of Drilling Contractors
MCI  Management Charter Initiative
NASA National Aeronautics and Space Administration (USA)
NMD  Norwegian Maritime Directorate
NPD  Norwegian Petroleum Directorate
OCTO Offshore Command Training Organisation
OFTC Offshore Fire Training Centre (now The Montrose Fire and Emergency Training Centre)
OIM  Offshore Installation Manager
OLF  Norwegian Oil Industry Association
OPITO Offshore
SUMMARY

This HMSO report OTH 92 374 presents the findings from project (P2719) which investigated the selection and training of Offshore Installation Managers (OIMs) with particular reference to their ability to take command during an emergency. There were five main elements in the project.

(i) A survey of 38 operating, drilling and service companies employing OIMs for the UKCS, examined their current procedures for selecting, training and assessing OIMs. (A detailed report of this survey, interim report OTO 92 004 is available from the authors.)

(ii) A survey of nine operating and drilling companies based in Stavanger, employing OIMs for the Norwegian Continental Shelf, examined their current procedures for selecting, training and assessing OIMs.

(iii) In-depth interviews were carried out with 16 OIMs who had managed an offshore emergency to determine what had helped them to cope with the incident and what they had learned from the experience.

(iv) Information was collected from organisations outside the oil industry whose staff may be required to take command in an emergency, in order to discover the procedures used to select, train and assess these on-scene commanders.

(v) A psychometric test validation examined the relationship between OIMs' personality and their ability to manage a simulated emergency. It should be noted that this was a relatively small scale validation exercise and the findings should be regarded as preliminary trends which would require replication on a larger scale before more definitive conclusions could be drawn.

On the basis of these studies, a set of 27 recommendations are made which relate to selection, training and assessment of OIMs, with particular reference to their ability to take command in an offshore emergency. These are subdivided into five sections: selection criteria, selection methods, emergency command training, the use of simulated emergencies and formal competence assessment procedures.
1. INTRODUCTION

1.1 INTRODUCTION

This is the Final Report (OTH 92 374) for project P2719 funded by the HSE Offshore Safety Division on the selection and training of offshore installation managers for crisis management. The results of the initial stages of work from this project have already been published as two interim reports (OTO 92 004 & OTO 92 011) (Flin & Slaven, 1992).

At current levels of oil industry activity in the North Sea there is a workforce of 33,200 (DTI, 1992) on approximately 200 installations which are managed by 400-500 OIMs. There are also a significant number of men who are registered as OIMs, who can deputise for the OIM if required. Thus the total number of individuals registered as OIMs with HSE probably numbers well over 1000 persons. (As there is no published register of OIMs it is impossible to verify these estimates). OIMs work on installations which range from small gas platforms, to mobile and jack-up drilling rigs, to large production platforms which may have 300 or more persons onboard. The job requires not only day-to-day management responsibilities for a wide range of functions but also the ability to take the role of the on-scene commander should an emergency arise.

Given the potential hydrocarbon and maritime hazards on an offshore installation and their isolated location in the North Sea, the level of command ability which may be demanded of these managers is clearly out with the range of typical managerial responsibilities. The OIM's position has similarities with that of a ship's captain or an onshore petrochemical plant manager, however, the job is also unique in some respects and therefore may require special qualities, training and experience. This is currently an important issue for the oil industry as the new safety case regime, which emerged after the Piper Alpha disaster (see below), makes it necessary for oil companies to demonstrate that their offshore managers are competent to take command in an emergency.

1.2 PROJECT OBJECTIVES

This project was designed to examine the practical implications of Lord Cullen's recommendations (98, 99) from the Report of the Public Inquiry into the Piper Alpha disaster, (Cullen, 1990).

98. "The operator's criteria for the selection of OIMs, and in particular their command ability, should form part of its SMS [Safety Management System]."

99. "There should be a system of emergency exercises which provides OIMs with practice in decision-making in emergency situations, including decisions on evacuation. All OIMs and their deputies should participate regularly in such exercises."
The project objectives were:

1. To identify the particular personality characteristics and skills required by Offshore Installation Managers to enable them to perform effectively as the senior manager on an installation, with particular reference to their ability to undertake the command role in an emergency.

2. To identify the methods being used to select and train OIMs for crisis management and to evaluate the effectiveness of simulated emergency exercises (onshore and offshore) for the assessment and training of OIMs.

3. To determine whether psychometric tests would be of benefit in selecting and training candidates for the post of OIM, with particular reference to their command and crisis management responsibilities.

1.3 RESEARCH METHOD

1.3.1 Sample

It was proposed to achieve the stated objectives by collecting data from three sources:

- UK Oil Industry Managers - from the current population of OIMs on the UKCS and onshore managers in companies employing OIMs.

- Commanding Officers - other agencies experienced in the selection and training of individuals who may be required to act as on-scene commanders in an emergency, eg. the fire service, the armed forces, the police.

- Norway - Norwegian oil industry managers and research psychologists who have studied the offshore oil and gas industry.

1.3.2 Procedure

The work was carried out in five stages as shown below:

1. (i) In order to gather information on current practices for the selection, training and assessment of OIMs, interviews were arranged with onshore managers in operating, drilling and service companies employing OIMs for installations on the UKCS. (The results of this stage of the project have already been reported and circulated to participating companies, see Flin & Slaven, 1992). Chapter 2 gives a brief summary of the method and Appendix D contains detailed findings.

(ii) A series of interviews were conducted with OIMs who had managed an offshore emergency, in order to learn of their experiences, their views on the adequacy of their training and lessons learnt. Chapter 3.

2. Organisations employing staff who may be required to act as on-scene commander in the event of an emergency were contacted or visited with the purpose of finding out their methods of selection, training and assessment. Chapter 5.
3. Visits were made to companies based in Stavanger who employ OIMs for the Norwegian sector of the North Sea, in order to gather information on their selection, training and assessment procedures. Chapter 4.

4. Information was collected from UK companies employing OIMs on the type of simulations and exercises they were currently using onshore and offshore for emergency response training and OIM competence assessments. Chapter 2. Requests were made to observe a number of these exercises/simulations and although we were only able to observe a few, they are discussed in Appendix A.

5. A validation study was designed to test whether the type of personality test used for management selection can predict differences in ratings of OIMs' performance in managing simulated emergencies. Chapter 6 & Appendix B.

1.4 THE LEGAL RESPONSIBILITIES OF THE OIM

The Offshore Installation Manager (OIM) is the most senior manager of an oil or gas installation operating on the North Sea UKCS. This individual must be officially registered as an OIM with the Offshore Safety Division of the Health and Safety Executive and he is responsible for the health, welfare and safety of the personnel on board the installation, whether a drilling rig, production platform or a support installation (e.g. a flotel). The establishment of the OIM position resulted in part from the Inquiry into the Sea Gem disaster in 1965 in which a drilling rig collapsed, capsized and sank in the southern sector of the North Sea with a loss of 13 lives from a 32 man crew. The Inquiry (Adams, 1967) recommended that "... there ought to be a 'master' or unquestioned authority on these rigs" (10.2.iii) and that "... there ought to be the equivalent of a shipmaster's daily round when the 'master' could question those responsible for different aspects of the day-to-day management of the whole." (10.2.vi)

These recommendations were enshrined in the Mineral Workings (Offshore Installations) Act 1971 which requires a registered OIM to be in charge of each installation. This states (Section 5.2) that the OIM has responsibilities for the safety, health and welfare and the maintenance of order and discipline and for the discharge of that responsibility shall exercise authority over all persons on or about the installation. Section 5(5) states that in an emergency situation, the installation manager may take or require to be taken any such measures as are necessary or expedient to meet or avoid the emergency. At present there are no statutory criteria of suitability for an OIM in terms of character, skills, qualifications or experience. The only guidelines are in Section 4(1) of the Mineral Workings (Offshore Installations) Act 1971 which allows the operator of the installation to appoint any person to be the OIM provided that to the best of the knowledge and belief of the operator, that person has the skills and competence suitable for the appointment. This appointment should be notified to HSE on form OIR/5. If at any time the owner is not satisfied that an appointed installation manager has the requisite skills and competence, he is obliged to notify this to the HSE using form OIR/6 (Section 4(4)). (See Appendix C for a copy of the OIM registration form, OIR/5 and see The Offshore Installation Managers' Manual (OPITO, 1991) for a more detailed description of the relevant legislation.)
1.5 MANAGING AN OFFSHORE EMERGENCY

1.5.1 Piper Alpha

On the 6th July 1988 Occidental's Piper Alpha platform situated in the North Sea 100 miles north-east of Aberdeen, suffered a series of explosions which resulted in the death of 167 men.

"The explosion on Piper Alpha that led to the disaster was not devastating. We shall never know, but it probably killed only a small number of men. As the resulting fire spread, most of the Piper Alpha workforce made their way to the accommodation where they expected someone would be in charge and would lead them to safety. Apparently, they were disappointed. It seems the whole system of command had broken down." (Selton, 1992).

Lord Cullen chaired the ensuing Public Inquiry and he produced a very detailed two volume report (Cullen, 1990) which examined the causal factors and made 106 recommendations which the operator of each installation on the UKCS must address in a safety case submitted to the Offshore Safety Division of the Health and Safety Executive. One important factor discussed in his report was the performance of the OIM on Piper Alpha and of the OIMs on adjacent platforms, Texaco's Tartan and Occidental's Claymore, which were linked to Piper by hydrocarbon pipelines.

"The OIM had been gone 'a matter of seconds when he came running back' in what appeared ... to be a state of panic." (Para 8.9)

"The OIM did not give any other instruction or guidance. One survivor said that at one stage people were shouting at the OIM and asking what was going on and what procedure to follow. He did not know whether the OIM was in shock or not but he did not seem able to come up with any answer" (Para 8.18)

" ... it is unfortunately clear that the OIM took no initiative in an attempt to save life ... in my view the death toll of those who died in the accommodation was substantially greater than it would have been if such an initiative had been taken ... " (Para 8.35)

"The OIM on Claymore had full authority to shut down oil production and was under no constraint from management in this respect. ... I consider that he should have shut down earlier than he did ... From the evidence I conclude he was reluctant to take responsibility for shutting down oil production." (Para 7.49).

"The strong impression with which I was left after hearing the evidence as to the response of Tartan and Claymore was that the type of emergency with which the senior personnel of each platform was confronted was something for which they had not been prepared. (Para 7.52).

"The failure of the OIMs to cope with the problems they faced on the night of the disaster clearly demonstrates that conventional selection and training of OIMs is no guarantee of ability to cope if the man himself is not able in the end to take critical decisions and lead those under his command in a time of extreme stress. While psychological tests may not appeal to some companies
the processes used and proven successful by the armed forces or the Merchant Navy, who have to rely on their officers to lead under stress, should be seriously considered by operating companies. The post of OIM calls for decisions which may make the difference between the life and death of personnel on board. The remoteness of installations, the requirement for installations to be self-contained in the means of dealing with a rapidly developing incident, the need to obtain, verify and consider data communicated to him from various sources for immediate decision on which the lives of those on board depend demands a level of command ability which is not a feature of normal management posts.” (Para 20.59).

Two specific recommendations relating to OIMs' emergency command responsibilities were made:

98. “The operator's criteria for the selection of OIMs, and in particular their command ability, should form part of its SMS [Safety Management System].”

99. “There should be a system of emergency exercises which provides OIMs with practice in decision-making in emergency situations, including decisions on evacuation. All OIMs and their deputies should participate regularly in such exercises.”

1.5.2 Ocean Odyssey

Two months after the Piper Alpha disaster, on 22nd September 1988, there was a blowout and an evacuation of the Odeco rig Ocean Odyssey which was drilling in the North Sea 150 miles east of Aberdeen. The crew abandoned the installation apart from the radio operator who did not escape and was killed in the fire. The report from the resulting Fatal Accident Inquiry (Ireland, 1991) again highlighted the important role of the OIM during an offshore emergency.

"The death of Timothy Williams might reasonably have been prevented (i) if the Offshore Installation Manager (OIM) had not ordered him from the lifeboat to the radio room; (ii) if the OIM, having ordered Timothy Williams back to the radio room, had countermanded that order when the rig was evacuated, and taken steps to see that the countermanding order was communicated to him; ... " (12.5).

1.6 OFFSHORE INSTALLATIONS (SAFETY CASE) REGULATIONS

In November 1992, the HSE published a guide to the Offshore Installations (Safety Case) Regulations (HSE, 1992a). This sets out and explains the regulations which implement Lord Cullen's recommendations.

The regulations relating specifically to OIMs are accompanied by the following guidance notes:

"Organisation

17. Sufficient detail, including one or more charts and supporting narrative, should be included to demonstrate ...

(b) clear, unbroken lines of command and accountability for health and safety performance, from top management down to the lowest
operational level. This should be an integral part of the management structure for controlling the business activities. Line managers and supervisors should be made aware of their responsibilities relating to health and safety, and should formally accept them. The SMS should include in particular a clear statement of the responsibilities placed on the OIM." (p54)

"Health and Safety Arrangements"

51. **Competence and Training** The HSW Act and MHSW Regulations taken together require all employers to ensure that employees are competent to carry out their tasks without risk to their safety or health. 'Competence' means that employees must have the necessary skills, experience, knowledge and personal qualities. Employers must specify essential requirements; and ensure, through selection criteria for personnel, and by the provision of necessary information, instruction, training and supervision, that the demands of a task do not exceed the individual's ability to carry it out without risks to safety or health.

54. The SMS should outline the arrangements made to ensure that competence or training requirements for specific tasks or positions, which have been laid down in other Regulations or in guidance issued by HSE or another regulatory body, will be met. In addition for key positions where competence or training requirements have not been formally specified, the SMS should include particulars of standards proposed by the duty-holder; and outline arrangements for meeting them. Such posts are likely to include:

(a) the installation manager (for whom competence criteria should include the assessed ability to command in any emergency):“ (p61)

55. **Emergency Response** The SMS should describe the organisation and arrangements to ensure adequate protection of personnel in the event of an emergency.

58. The organisation and arrangements should include adequate provision for:

(a) establishing and maintaining a command structure by competent persons throughout an emergency, including arrangements to ensure replacements for people who become disabled;

(i) Among other matters, emergency exercises should provide the OIM and the command team with practice in decision-making in emergencies, including decisions or evacuation. All OIMs and deputies should participate regularly in such exercises." (p63)

1.7 **SELECTION AND TRAINING OF OIMS**

Historically, many OIMs have had a marine background from the Merchant Navy or Royal Navy, for example some companies appointed OIMs from their tanker fleet captains. These men would have received training to cope with emergencies in remote situations as part of their career development but this first cohort of OIMs have now been promoted onshore or are approaching retirement and in many production companies, graduate engineers without this type of crisis management experience will be the new generation of
OIMs. On drilling trips, the majority of OIMs have a marine background and are qualified Master Mariners with significant seagoing experience.

There is no standard selection or training procedure for OIMs, although many companies have their own selection criteria and portfolio of relevant courses, and there are specific courses available to familiarise OIMs with the legal responsibilities of the OIM's position. There is no published research into the selection and training of OIMs employed for the UKCS and very little has been written on the day to day demands and responsibilities of this unusual and important management position, with the exception of a recent survey of 134 OIMs carried out by Flin & Slaven (1993).

The Piper Alpha Inquiry heard evidence from three witnesses on the abilities required in an OIM. "Mr Ellice, a training manager with BP Exploration said that they looked for exposure to the North Sea environment, experience in a related technical discipline and ability to command. Information on ability to command would normally be provided through the in-company staff appraisal systems. It was extremely difficult to judge a person’s ability to command in a precise way; they could be provided with the 'techniques and mechanisms'. He said that leaders were found rather than trained. Mr Ellice was definite that BP would not and do not use psychological tests such as were practised in the Royal Navy and Merchant Navy. During experience and training leading up to the selection there would be an opportunity to assess individuals in a variety of situations and circumstances. Dr Denton representing the Institution of Mechanical Engineers, listed 4 criteria that the OIM and at least one deputy should have, command ability, specifically tested in simulated circumstances; technical literacy to at least Higher National Diploma or equivalent standard; experience of at least 3 years offshore; and understanding of the sea/air environment by training and experience. Mr Baxendale ... a practising OIM with 14 years experience ... stated that in the vast majority of cases the OIMs in his company (Shell) had all previously commanded groups of men.” (Para 20.58)

In 1991, the United Kingdom Offshore Operators Association produced a set of guidelines for offshore emergency response training (UKOOA, 1991). It states that Offshore Installation Managers and their Deputies should:

- Have a good working knowledge of the installation operations.
- Be well versed in the installation's emergency systems and procedures.
- Be aware, on a day to day basis, of particular operations and special circumstances approved under the permit to work system which may affect the ability of the installation to respond to emergencies.
- Be trained and be able to assess and to control developing emergency situations with the objective of safeguarding personnel and the installation.
- Be able to act as co-ordinator between the installation and the onshore and offshore responses to the emergency.
- Be able to act as on scene commander where a serious incident occurs on a nearby installation.
It also recommends that OIMs should receive training in emergency response, appropriate to the size of installation and numbers of persons onboard, by, for example:

- Attending the training for offshore personnel with specialist firefighting duties.
- Attending a suitable fire control course.
- Attending a suitable search and rescue awareness course.
- Developing and conducting emergency response exercises on the installation.
- Taking part in emergency exercises which provide them with practice in decision-making in emergency situations, including decisions on evacuations.

1.8 STANDARDS OF COMPETENCE FOR OIMS

In the UK there have been recent initiatives to develop standards of competence for managers (see Silver, 1991). The offshore oil industry (through the Offshore Petroleum Industry Training Organisation (OPITO)), in common with other occupational sectors in the UK, has established workgroups to develop standards of competence for offshore occupations. An OIM workgroup was set up in 1990 which consisted of practising OIMs or former OIMs from both operating and drilling companies as well as representatives from HSE and OPITO. (Professor Flin attended the meetings as an observer.) By April 1992 this group had produced a draft standard of competence for OIMs which had six core units: Controlling Emergencies, Managing Safety, Managing Operations, Managing Finance, Managing People and Managing Information (the last four based on generic Management Charter Initiative units, see Silver, 1991). However, due to the heterogeneous nature of offshore installations and consequently the very wide range of OIMs' managerial responsibilities, it was decided by the workgroup that only two units, Controlling Emergencies and Managing Safety, should be developed to a final version and these were released to companies employing OIMs in November 1992. These two units do not form part of a vocational qualification for OIMs and are OPITO copyright (OPITO, 1992) (See Appendix C for a copy.)
2. SURVEY OF UK COMPANIES

2.1 INTRODUCTION

This chapter presents a brief outline of Stage 1(i) of the project which was a survey conducted between December 1991 and January 1992, designed to examine the selection and training procedures for Offshore Installation Managers within UK offshore oil and gas companies. A full report of the survey (OTO 92 004) (Flin & Slaven, 1992) has already been circulated to participating companies, the details of which are included in Appendix D.

2.2 OBJECTIVES

The specific objectives of Stage 1(i) were as follows:

1. To identify the methods currently used by the offshore oil and gas industry to select and train Offshore Installation Managers (OIMs).

2. To identify the personality characteristics, skills and experience deemed necessary for the position of OIM by employing companies.

2.3 METHOD

In order to gather information on current practices for the selection, training and assessment of OIMs, a series of 20-25 interviews were to be carried out with onshore managers having relevant responsibility. A semi-structured interview schedule was designed to include summary information on companies, work histories of OIMs currently employed, selection procedures, candidate criteria, induction and training, and future changes to existing selection and training procedures. This was pilot tested with the co-operation of six companies, who were involved in an earlier survey of Offshore Installation Managers during July 1991 (Flin & Slaven, 1993). As a result of their comments, the interview schedule was extended and modified.

The final interview schedule contained 33 questions, most of which were open-ended. It was sub-divided into four sections covering background information on the company, their selection procedures, induction and training, and how they assessed the candidates. A final question asked what initiatives, if any, companies intended to implement in the near future as a response to Lord Cullen’s report and the OPITO industry work group on management competencies for OIMs. Particular attention was devoted to selection, training and assessment relating to crisis management. (A copy of the questionnaire is provided at the end of Appendix D.)

In November 1991 a list of current UKCS installations was provided by the HSE, and all companies therein who employed OIMs were contacted by letter enclosing a copy of the interview schedule. This letter explained the purpose of the study, and asked for their co-operation in allowing us to interview “one of their managers who has experience in the selection and training of OIMs”. They were also assured that neither the individuals interviewed, nor their
companies would be identified in the research findings. This letter was followed up within a week by a phone call.

2.4 SAMPLE OF COMPANIES

Of the 44 companies contacted, 38 agreed to take part in the study. Given this positive response, it was decided to conduct as many interviews as possible rather than the previously specified 20-25. It was felt that this was an ideal opportunity to collect information from as comprehensive a sample of the oil industry as practically possible. The sample included 18 operating, 16 drilling and 4 service companies.

A total of 30 interviews were conducted, and 8 companies completed the interview schedules and returned them by post. Each interview lasted between 35-90 minutes and was conducted by one of the research team at the company's premises. Between one and three company representatives from management were present at each interview. Their job titles included Production Managers, Operations Managers, Human Resources and Training Managers.

The companies interviewed operated a total of 198 installations, the majority of which were located in the Northern Sector of the North Sea, with between 51-100 staff on board. However, both not normally manned and small installations in the Southern, mainly gas producing sectors of the North Sea were also included. Most companies employed between 1 and 10 OIMs, and between 1 and 15 Deputy OIMs. A total of 424 OIMs and 533 Deputy OIMs were employed by the companies interviewed.

2.5 SURVEY FINDINGS

2.5.1 Selection and training procedures

The majority of the companies surveyed select their OIMs from internal candidates who have both offshore and managerial experience. Consequently, selection methods tend to be based on internal appraisal reports and recommendations rather than more formal techniques such as assessment centres or psychometric tests. Five companies are currently using psychometric tests and others are considering their use in the near future.

In drilling companies 92% of OIMs were Master Mariners, 8% had a degree and 13% had an HNC/HND/ONC. By contrast, in operating companies 3% of OIMs were Master Mariners, 29% had a degree and 29% had an HNC/HND/ONC (usually engineering or science based). The typical career development route for operating company OIMs is through lower level managerial positions (eg supervisor) held on offshore installations, whereas drilling company OIMs are almost exclusively Master Mariners, with previous marine experience before transferring to oil industry positions (eg Stability Section Leaders or Barge Masters). Some drilling OIMs are American or Canadian nationals and they may have specific OIM endorsements on their Masters licence from the US Coast Guard who set the licence qualifications (see Szczurek, 1988).

The OIM's responsibilities vary with the type, size and function of the installation, and this was reflected in the wide range of selection criteria and training methods described by respondents. Fourteen out of 38 companies...
used formal selection criteria, seven of whom provided us with copies. It is clear from the summary of job descriptions provided by companies that the OIM post involves a very broad spectrum of managerial and legislative responsibilities. Most companies had written OIM job descriptions (n=34), though four of those companies did not use them in their selection procedure.

There is no standard training prescribed for OIMs, (with the exception of the UKOOA (1991) guidelines for emergency response training), but most companies send their OIMs on one of the courses which covers general offshore legislation and the OIM's legal responsibilities. Few companies provided us with copies of their training profiles, though some had developed structured training programmes for their own OIMs. While a number of companies do use standard management training courses, these could probably be enhanced by tailoring them to the particular demands of offshore management.

Crisis management ability tended to be assessed on the basis of superiors' and colleagues' informal feedback of the individual's performance during exercises, or their previous experience of emergency situations. Notably though, 14 of the 38 companies did not assess whether candidates had this ability during the selection procedure. However, increasing use is now being made of simulated emergency training and leadership/command ability courses, and more attention is being directed toward formal assessment. A number of companies are also sending their OIMs on the Search and Rescue course, provided by Aberdeen Coastguard, which is particularly useful for those who have less experience of the marine environment. Many companies reported that they were reviewing their selection, training and assessment procedures with particular reference to crisis management. A number of the larger companies were also beginning to develop formal standards of competence for OIMs as a basis for their selection and training procedures.

2.5.2 Required personality characteristics, skills and experience

In terms of personal qualities, most companies were looking for individuals with leadership ability, good communication, decision making and team building skills, and a stable disposition. As stated earlier, managers' definitions of such terms may differ but given the scope of the study, it was not possible to establish each individual's interpretation. Most companies relied on their appraisal files, personal knowledge and observations by superiors for evidence of these qualities. Three operating and two drilling companies were using psychometric tests, predominantly personality tests as part of the selection process.

Those companies using formal selection criteria tended to look for a combination of offshore experience, managerial experience and technical expertise. In our opinion all three categories are appropriate but specific criteria need to be formulated for the managerial demands of a particular installation. Formal degree qualifications are now preferred prerequisites by most operating companies, and the majority of drilling and service companies regarded a Master's Certificate (mainly Foreign going) as essential.

2.6 CONCLUSION

It was clear from the interviews that many companies were currently examining and refining their OIM selection, training and assessment procedures. This was particularly in response to Lord Cullen's recommendations following the Public Inquiry into the Piper Alpha disaster (Cullen, 1990), which dealt specifically with
the ability of OIMs to take command in an offshore emergency. Safety case submissions will be required to state how an OIM's competence to undertake this responsibility has been assessed. The need to train and assess OIMs' ability to take command was an issue that was being addressed by a number of companies. In terms of general managerial responsibilities, several companies were producing standards of competence for OIMs and would be using these in the future for development, selection and assessment of OIMs. We believe that these standards of general management competence are just as important as crisis management skills. Crisis management and command ability are only one component of an OIM's job. It is our view that his day to day skills as a manager have a major impact on the safety of his installation.

In conclusion, the majority of companies currently employing OIMs on the UKCS were carefully reviewing their procedures for selecting, training and assessing their offshore managers. We were not in a position to undertake formal evaluation of these initiatives but we were optimistic that such developments would improve the rigour of the OIM selection, the effectiveness of OIM training and ultimately the performance of OIMs in an emergency. Some of the larger operating and drilling companies were devoting significant resources to this task and it is hoped that their efforts will be used to establish examples of good practice which can be disseminated throughout the offshore industry. As so much of this development work was ongoing at the time of the survey, it is suggested that this exercise is repeated in two years time to monitor the development and implementation of changes resulting from the Safety Case requirements.
3. OIMS' EXPERIENCE OF EMERGENCY SITUATIONS

3.1 INTRODUCTION

The aim of Stage 1(ii) was to talk to approximately 20 OIMs who had experienced serious emergency situations offshore to determine from their own training and experience, what had helped them to cope with the incident and what they had learned from the experience. This study was intended to complement Stage 1(i) of this project, described in the previous chapter. The survey identified the current work experience and qualifications companies deemed important prerequisites for the post of OIM, their procedures for selecting OIMs, and what specific training they provided to OIMs for handling emergencies offshore. It was hoped that these additional interviews would provide an insight into the reactions and behaviour of OIMs and their teams in an emergency situation. It has been found that companies are generally very poor at recording and using this kind of expertise. Dr Kaempf, a psychologist working with USA government has remarked on this phenomenon: "Unfortunately, what happens in most organizations is that people are lost ..... they retire and in most cases they leave the organization without the organization tapping into their brain and bringing that information back into the organization." (Kaempf, 1992).

3.2 OBJECTIVES

The project objectives of Stage 1(ii) were as follows:

1. To identify the types of work experience which best prepare an OIM to handle an emergency situation.

2. To identify the types of training which OIMs consider appropriate for preparing them to deal with an emergency situation.

3.3 METHOD

A semi-structured interview schedule was developed, which was based on the methodology of Flanagan's Critical Incident Technique (Flanagan, 1954) and the research on on-scene commanders' decision making carried out by Klein Associates (Klein, 1989). The interview covered the OIM's previous work experience, background information on the incident; the events leading up to and during the incident: how the OIM felt about his command ability, technical ability and decision making when dealing with the incident; which training, work experience, exercises and installation specific knowledge were useful to cope with the incident; and the strengths and weakness of their on- and offshore emergency response/control teams. The schedule was piloted by conducting a two hour interview with an OIM who had responded to a serious offshore incident, as a result of which the schedule was modified to the final format (see Appendix E).
The final interview schedule consisted of 26 open-ended questions. To preserve the anonymity of individuals and their companies, no identifying details are included in the report. In April 1992, the HSE were asked to provide the research team with details of incidents reported to them which were of a serious enough nature to be considered a potential crisis. The following types of incidents were requested which had occurred during the previous two years: a major gas release, well control, explosion of fire, accommodation fire, helicopter or pipeline incident, and any incident involving fatality, serious injury, or partial or total evacuation of personnel occurring within the previous two years. Any incidents which were still under investigation were obviously not included for legal reasons. Thereafter HSE provided confidential details of 37 OIR9A forms (notice of casualty or other accident involving loss of life or danger to life on or near to an offshore installation), plus excerpts from another 22 OIR9A forms from their database. From these lists a total of 26 incidents which fell within our specified criteria for severity were selected. A total of 23 incidents were then selected as suitable to be included in the project.

A senior operations manager from the companies on whose installations the incidents had occurred were contacted by letter enclosing a letter (from Tony Barrell, Chief Executive, North Sea Safety, HSE), requesting access, a briefing letter for the OIM, and the interview schedule. The letter explained the purpose of the project, and this stage in particular, and asked for their cooperation in allowing us to interview the OIM concerned. The letter was followed up by at least one telephone call.

The 23 incidents identified occurred within four operating and ten drilling companies. It was not possible to interview four OIMs as they were no longer employed by the companies concerned (one was retired and two were working abroad). It was not possible to interview three other OIMs in the specified time scale. A total of 16 interviews were conducted with OIMs who had experienced the following incidents: severe weather damage (3), loss of mooring chains (2), fires (4), blowouts (2), collisions (1), major gas leaks (2) and total power failures (2). The OIMs concerned did not unanimously consider their own incident as a major emergency. In a few cases there was little to be done except minimise the potential damage, or take remedial action after the event. Most OIMs were involved in serious incidents, where their knowledge, experience and skill were tested to the full. Few incidents involved serious injury or loss of life, but that does not undermine the serious potential risk presented to personnel and the integrity of the installation.

3.4 TYPE OF INSTALLATION

The emergency incidents occurred on various types of installations: seven fixed and mobile production installations, and nine mobile and jack-up drilling installations. The sample included all sizes of installations, both large and small. Ten installations had between 50-100 personnel, four had 150-200 personnel and two had 200-300 personnel on board.

3.5 WORK HISTORY OF OIMS SAMPLED

Most of those interviewed had a broad, well rounded work experience in that they had both hydrocarbon (either drilling or production) and marine experience. Eleven of those interviewed had held a Master's or other marine officer position. Five of these mariners had complemented this will drilling experience by coming up through the ranks from Roustabout to Assistant Driller, or in other drilling-related jobs. Three former mariners transferred into oil and gas production positions offshore. Only five individuals had an exclusively drilling or
production background, by either coming up through the ranks offshore, or combining onshore chemical plant experience with offshore supervisory jobs.

They had been OIMs, though not necessarily on the installation concerned, from a brief eight days up to fifteen years, though most had only been in post for up to a year. Five OIMs had been on board for up to six months, five for up to a year, and the remainder from one and half to six years, with the exception of one OIM who had been on board for fifteen years.

For ten OIMs this was the only installation they had managed as an OIM, the six others having held previous OIM positions on other installations. Ten individuals had been an OIM on that particular installation for up to one year, the remainder anything from one and half to six years. Most individuals had held supervisory or other key positions on that particular installation, before being promoted to OIM.

3.6 UTILITY OF PREVIOUS EXPERIENCE AND TRAINING

3.6.1 General experience

When asked how far they felt their training and experience had helped them to deal with the incident in question, eight OIMs reported their Merchant Navy training had been invaluable. It had taught them respect for the power of the sea, the ability to stay calm and deal with situations, and taught them to be self reliant to deal with an emergency. It had also provided them with specific training in ballast control, fire fighting and other emergency training. One individual said he had been able to form a mental picture of the situation, and his marine training had helped him to assess the situation and make the appropriate decisions.

Of the others, one mentioned the OFTC fire courses, particularly the fire team leaders course, and three said they had received no adequate crisis management training. As one OIM put it "Who would pay for you to stop drilling to run an exercise in that kind of thing?" One person qualified their response by pointing out that their past experience, supervisory and leadership skills, and sound technical background had enabled them to handle the emergency. One individual said that it had helped to know the emergency procedures and equipment.

OIMs mentioned three types of work experience which had been particularly useful to draw upon when handling the emergency: marine, knowledge of the installation, and coming up through the ranks. Those with a marine background had dealt with similar emergency situations as mariners so knew how to react, had experience of decision-making in crisis situations, knew how to control fear and nervousness and to recognise symptoms of fear in others. One individual made the point that he had received no drilling training at all, his expertise had been gained on the job and through the day to day application of procedures.

A recurring theme throughout individual's descriptions of their responses during the emergency was the vital part a thorough knowledge of the geography of the installation and processes made to a successful handling of the incident. One individual commented that he knew the details of all phases of the platform construction, drilling and floating facilities which provided an invaluable contribution. Another individual reported that it was not the first emergency he had dealt with, and his many years on the same field with the same platform systems had been a very important preparation for handling emergencies.
The third type of valuable work experience was coming up through the ranks and the experience over the years in supervisory positions. One individual mentioned the contribution of direct experience of evacuation from a semi-submersible, though he had not received a great deal of training except on what the onshore Emergency Response Team would do in an emergency. Even though some did not have any formal drilling or production training to complement their marine experience, some thought that coming up through the ranks was quite sufficient. One individual did comment though that it would have been useful to talk to someone about the safety systems on the rig - why they were there, circumstances anticipated for use etc.

### 3.6.2 Specific training

Individuals were also asked if any specific training had been of benefit in dealing with the emergency. Five individuals referred again to their marine training such as stability / ballast control, fire fighting and one person mentioned the Royal Navy damage control course. Four others also mentioned fire training (including the four day Managing Major Emergencies course) conducted by OFTC at Montrose (Allen, 1992). Two OIMs said their training in drilling and well control had been particularly beneficial. A surprisingly high number of OIMs (n=7) reported that no previous training had helped them to handle the situation, either because they had not received any specific training to handle emergencies, or because the training they had received did not apply to the situation they were faced with, while one OIM said that previous training had not been applicable to the incident. It appears that training directed toward handling emergency situations would be of considerable benefit to OIMs, even when they are quite experienced. Indeed this need was expressed by some OIMs, and others were waiting to attend such courses.

### 3.6.3 Recommended training for deputy OIMs

Next, OIMs were asked what kind of training they would recommend for relief or deputy OIMs. As one might expect from the perceived shortcomings of their own experience, either OIMs recommended crisis management training involving simulated emergencies. Four of them specifically mentioned the course offered by OFTC and one suggested that run by OCTO. Such specialised training was recommended because it was thought to provide an expert base for decision-making rather than relying on one's own past experience, and because it teaches the OIM to use personnel to best advantage and to think of the consequences of their actions. One OIM recommended that such training really needs to bring everything together - legislation, command, stress, psychology, simulations, and scenarios. There was also a suggestion to add realistic simulated emergency training offshore and for refresher crisis training every three years. Another related suggestion was for table-top exercises onshore and exercises offshore, though he recognised that table-top exercises are not particularly realistic.

The next type of recommended training (n=8) was for deputies to broaden their work experience by coming up through the ranks and standing in for the OIM. One individual recommended a career structure similar to that within the Merchant Navy. Deputies should also have an integral part to play in the emergency team, and be allowed to act in place of the OIM as frequently as practically possible during drills.

Also recommended was an appreciation of drilling and well control, even just a basic three week drilling course, including well control. Though one OIM was of the opinion that it is “Easier to give a drilling person a marine education into the
elements, ballast control and response of the rig, though a marine officer is better qualified to handle a ballast emergency."

Other specific recommended training courses were the Search and Rescue (SAR) provided by the Coastguard (n=4) which was considered excellent, basic fire fighting and fire team leaders course (n=3), and the safety representatives and safety committees courses. Two OIMs pointed out that there are no 'quick fixes' in terms of training for such a responsible position, and that 'No single style of leadership is best, just work to your strengths and away from your weaknesses.'

3.6.4 Value of OFTC emergency management training

The final question on training asked if any of the OIMs had attended the OFTC Fire Control / Management of Major Emergencies course, and if they had in what way was the course of value. Only four OIMs had actually been on the course, two were due to attend it in the near future and the remaining ten OIMs had not attended it. The responses of those who had attended were very positive. They considered this type of training as necessary and invaluable. The role players are placed in difficult situations which escalate to severe scenarios. This can increase one's confidence from having fulfilled the role adequately. One OIM said "The most important part of an OIM's job is to handle emergencies - and simulators such as OFTC are useful as they can wheedle out who cannot cope in an emergency." Two extremely experienced OIMs suggested the course would be more useful for less experienced OIMs or potential OIMs, or for OIMs with limited emergency experience.

3.7 UTILITY OF OFFSHORE EXERCISES

The offshore industry has had a clear commitment to regular offshore drills for some years, and is now moving towards more extensive use of larger exercises both on and offshore as a means of training personnel to handle emergency situations. OIMs were asked in what way, if any, previous onshore or offshore exercises had helped them to handle the emergency situation. The majority of the OIMs (n=10) found that the weekly drills such as mustering and fire team drills 'paid massive dividends' as everyone knew the procedures, knew their duties and did them quickly (particularly mustering), and in one case co-operated extremely well with fire prevention restrictions. The drills and installation specific scenarios help to develop cohesive and efficient teams, encouraging them to think for themselves. It provides fire teams with the opportunity to learn from their mistakes in a 'safe' situation, and provided drilling crews with practice in securing the well. Drills are not always popular with the crew, as one OIM said 'Nobody likes them for fear of exposing their own weaknesses, but they help to autopilot personnel'. Two OIMs also mentioned the value of their marine training when making decisions during the incident.

Two OIMs reported that previous drills and exercises had been of little value in the particular situation they had been faced with, as they were unique incidents. Another OIM also reported that they had not really made any contribution, only onshore training with a well control simulator. He found though, that experiencing considerable amounts of table-top training and handling stressful situations had been very useful. One OIM reiterated the importance of exercises and drills for the emergency control team and for team cohesion, but said 'The emergency you prepare for is never the one that happens'.

3.8 CONTRIBUTION FROM KNOWLEDGE OF THE INSTALLATION
OIMs were unanimous about the vital importance of knowing the installation - its geography, pipelines, connections to other installations, technical hazards, responses during heavy weather etc. For mobile installations, OIMs were in agreement that it is essential to know how the vessel will handle in heavy weather, what pattern and severity of damage to expect in certain situations, what spaces/compartment would be affected without having to look at drawings, and how far to move off without breaking the anchor chains. On the drilling side it is absolutely vital to know the Blow Out Preventor system (BOP), hydraulics and pipe systems. With this knowledge the OIM is able to appreciate the value of information given by key players immediately, and appreciate the ramifications of certain system failures, eg. failure of water systems or lighting to helideck meaning that it would not be possible to land helicopters, or lack of ventilation to drilling area necessitating the cessation of drilling activities.

The importance of similar information was reported for fixed installations. OIMs who had been involved in commissioning and hook-up had a far greater knowledge of the installation’s systems, pipelines and operation of their shutdown valves, emergency systems (and their operating limitations), and appreciation of the ramifications of systems failures than OIMs without this experience. As one OIM put it “A thorough knowledge of the installation is vital. How can you expect to be able to commit ER [emergency response] teams in dangerous situations without a knowledge of the geography and technical hazards within an area?” OIMs on mobile installations and fixed installations who had been involved in its construction had the ability to form a mental picture of the location of the incident and related areas, which were physically impossible to perceive once the installation was operational. With this mental picture they were able to assess the implications of damage or failure and how it could be repaired.

Getting to know the installation geography, day-to-day operations and emergency systems should be the first thing the OIM does when arriving on the installation, as our interviews revealed, an emergency incident can happen at any time - even during the first week on board. This does not mean committing the whole operations and emergency systems manual to memory, as even experienced OIMs need to refer to checklists. As one OIM bluntly put it "not to refer to manuals and checklists is not macho, just stupid". The consequences of not knowing the operational limitations or emergency systems can be disastrous. Two of the OIMs interviewed mentioned that, with hindsight, if they had known the installation plant and systems better the incidents might not have happened, or escalated to the level they did. The two incidents did not involve a major threat to life, and it always easier to assess a situation with hindsight, but the importance of giving OIMs a suitably lengthy period in which to familiarise themselves with the installation cannot be overstated. As one OIM emphasised “Two days handover is not enough.”
3.9 FAITH IN OWN ABILITIES

3.9.1 Ability as on-scene commander

The importance of prior work experience and training has been emphasised, and is perhaps self evident for successful handling of an emergency by the OIM. What is not always considered is the contribution of the individual's self confidence during an emergency situation, to the final outcome. OIMs were asked how they felt about their own ability as the on-scene commander to deal with the incident before it occurred, when the incident was in progress, and in the immediate aftermath.

OIMs were evenly split between those who were quite confident they could handle an emergency, and those for whom there was some doubt about how they would actually behave in a real emergency. Confidence seemed to have been increased for those who had thought about possible eventualities during drills and exercises and worked out their options, received emergency response training, managed large numbers of personnel before or had considerable offshore experience, and who were confident with their emergency procedures. Giving the appearance of confidence was perceived as important, because 'If you display lack of confidence it is the last thing people need.'

Those who were not totally confident said they would like to think they would have coped, but "there will always be some doubt in your mind as to how you will cope in a real situation." For one OIM, the existing emergency procedures did not cover the situation he was faced with, and decisions had to be made on the spot. Many OIMs reported that they felt more comfortable with emergency procedures already worked out - whether formally or in their own minds, rather than having to think out possible courses of action and their implications during the event. One OIM made the rather candid remark that he was too confident beforehand, and it is always difficult to assess one's self control until actually faced with an emergency.

When the incident actually happened, almost all of the OIMs felt confident, and just got on with the job in hand. There was little time for self-reflection, although a number of OIMs were aware that they were the focus of their staff's attention, watching to see his reactions, rather than listening to what was said. Not all of the OIMs preferred to make their own tannoy announcements. Some thought that personnel would be more reassured that the situation was under control if they heard his voice, while others preferred to leave the announcements to their own professional control room operators, aware that the voice can show signs of stress, wavering, dry throat, etc. which they did not want the risk of being transmitted to staff. Other OIMs also made the point that they were not only confident in their own abilities, but also in the abilities of other key members of staff. Only one OIM did not feel confident, because he was not in a position to influence the situation, it was out of his control. As a result he felt frustrated and helpless, as the most he could do was keep personnel informed. This was a highly unusual situation where the outcome did not depend on any action taken by the OIM or those on board, and is not representative of the majority of offshore incidents in this sample.
After the incident was over, most of the OIMs felt that they had handled it as well as they could, and had “earned by pay that day”. For some it was a vindication of their decision-making abilities, and many thought it had improved the camaraderie between staff, and enhanced the team spirit. Many of the OIMs praised the responses of their staff who rose to the occasion and responded well. Those OIMs who were unsure how they would respond in an actual emergency were generally pleased with their own and others responses, feeling much more confident in their own ability to handle a crisis.

Only three OIMs felt they could have handled the situation better, one because of an inadequate knowledge of the safety systems, while the other two OIMs felt the could have kept staff better informed. The importance of good communications was a recurring topic for a successful situation outcome. Keeping staff on board regularly up-dated of the situation, some recommended every 15 minutes, was considered essential for alleviating fears, preventing panic and generally reassuring for the majority of personnel who were standing at muster points. Different strategies were adopted for communicating with onshore management, but controlling the flow of information from the installation, rather than from onshore, and keeping it to essential details was considered the best approach.

3.9.2 Technical ability

It was anticipated that the OIM's technical ability, given the variety of backgrounds OIMs are chosen from, might make a considerable impact on an OIM's handling of an emergency situation. Most OIMs considered their technical expertise more than adequate for the situation they faced. Marine OIMs cited their maritime background as ideal for handling their own incident not only for maintaining stability and location, but also for the experience of fire fighting. A drilling OIM said he relied on his deputy OIM's marine background to handle the situation, but did not consider this a disadvantage. He knew the implications for the rest of the rig and considered his role was more to keep people informed.

Other OIMs reported being technically competent, but not expert, as their job was mainly to have an overview of the situation, not get bogged down in minutiae, as the job requires a wide range of skills rather than specialist knowledge. Their role involved mainly leadership ability, to appreciate the importance of the technical information proffered by others, and make the appropriate decisions. One OIM said he had been shocked by the level of noise made from the escaping gas, which presented a major barrier to communication - people could not hear themselves think. Perhaps an illustrative case of being unable to fully appreciate the textbook description, until one has actually experienced the situation.

3.9.3 How they coped with emotions

Related to the earlier question on the OIMs' ability to act as on-scene commander, OIMs were asked specifically what their personal reactions to the incident were, and how they had coped with them. Many of the OIMs reported feeling calm, though not unconcerned, and just got on with the job. Due to the rapid pace of events and the amount of concentration required to make the appropriate decisions, some OIMs became aware of their emotional reactions only once the immediate danger had been removed. Some OIMs said that during their maritime training they had developed the ability to stay calm in the face of adversity. Those who felt nervous or frightened deliberately suppressed their fears and maintained a calm outward appearance to reassure staff and
boost morale. One OIM reported filtering out unimportant information and
giving staff tasks to keep them occupied and their minds off the seriousness of
the situation. Another OIM noticed using humour and light hearted banter for
the same effect. Some OIMs realised that their staff felt the same concern
about their own families as they did, and made special arrangements to let all
on board inform their next of kin about the situation before they heard about it
through the media.

3.9.4 Effectiveness of decision making

One of the key abilities necessary to handle an emergency situation is the ability
to make decisions when under pressure. OIMs were asked, on reflection, which
aspects of their decision making had been the most and least effective. Three
OIMs made an interesting comment that in the early stages of the situation, their
decisions had been based on financial considerations, eg. cost of down time,
but that the emphasis then switched to the safety of the personnel on board,
whatever the cost. In two cases the remedial action taken had been costly (in
financial terms), but the OIMs considered the danger to the installation and
personnel on board outweighed that cost, and it was better to err on the side of
cautions. Another OIM even went against advice from onshore management.
His decision on the appropriate action to take was considered "too drastic for
them but seemed safest thing to do and all on board relaxed when that decision
was made." When one realises that, in an emergency, OIMs may need to
ignore the advice from more senior management onshore (at the risk of losing
more than just their reputation), the importance of self confidence and faith in
one's knowledge and technical expertise cannot be overstated.

Some OIMs mentioned the temptation to go to the scene of the incident and get
involved in handling it there and then rather than delegating it to others. In one
case it was felt that an on scene appearance was justified as the second in
command was not very experienced. Other OIMs thought that letting the
response team get on with it and taking care of other tasks was the most
appropriate action. Their job was to gather information from others, assess the
facts and make decisions accordingly. One OIM reiterated the important point
that he was not there to command, but to "listen to others and not be an
autocratic decision maker."

A number of OIMs commented on the rapid pace of decision-making required
during the incident "Probably made 100 decisions in short space of time", and
the short-lived, but potentially serious nature of the emergency. In such a short
time frame it would be understandable if keeping staff informed was not a high
priority. However the decision to keep staff informed, even to the extent of
holding "meetings to allay fears before the helicopter left" was regarded as one
of the most effective decisions.

The least effective decisions arose from a number of errors or omissions.
Three OIMs realised that they had been forced into making inappropriate
decisions due to their inadequate knowledge of the installation plant and
back-up systems. This relates back to the earlier point that OIMs need to be
given a reasonable amount of time in which to familiarise themselves with a
new installation, particularly if it is their first post as an OIM, or an installation
they have never worked on before. Three other OIMs reported that they had
also been forced to take inappropriate actions due to a lack of foresight and
preventive planning. This can be remedied by more experience in the post, and
comprehensive operations and emergency procedures manuals which should
prevent the need for on the spot detailed consideration of all possible
consequences.
Two OIMs said they had allowed themselves to be swayed by the opinions of others (onshore), and would rely on their own judgement in the future. Other points made by individual OIMs were: not appreciating the position of those waiting at muster points for information, being too selective in gathering information, not alerting the Coastguard early on (but have now attended the SAR course), and not removing the company representative from the control room. This last point illustrates the negative consequences of a poor working relationship with such a key staff member. Due to his senior rank, the OIM did not forcefully instruct him to leave the control room, where he was a hindrance rather than a help, giving totally inappropriate suggestions. In another case the OIM commented that the good working relationship between himself, the toolpusher and the company rep’ enabled them to make decisions as a team to control the emergency.

3.10 SUPPORT FROM COLLEAGUES

3.10.1 Particularly helpful staff during the emergency

One factor which this study had identified is that the OIM is not a 'one man band'. He is an integral part of the management structure, and the leader of the offshore management team. In order to function effectively he has to rely on the actions and information from his offshore team, and the expertise of onshore management who are usually, though not always, responsible for producing operations and emergency procedures manual.

The key individuals who made a significant contribution to the successful handling of the incident tended to be those at the scene such as fire and rescue teams, and technical specialists (eg maintenance engineers, chief engineers and electricians). Additionally, the importance of the radio operator cannot be over-stated, not only for maintaining communications, but also for controlling the flow of information between the installation and onshore management, shipping, aviation and other installations. Other important individuals were members of the supervisory teams for making suggestions and directing the efforts of others. This very often freed the OIM to deal with the task in hand, rather than being side tracked to deal with enquiries.

Medics were also praised for handling casualties and for fulfilling administration duties, particularly the evacuation of personnel which needs to be efficiently done in order to account for all personnel, who may be moved to a number of other installations. Drilling installation OIMs mentioned the importance of having a good working relationship with the client company representative. This can be critical to the successful handling of an emergency, as some of their responses to the following questions will illustrate.

3.10.2 Strengths and weaknesses of offshore team

All of the OIMs made very positive remarks about the behaviour of their offshore emergency control teams, or on installations without a dedicated emergency control team, supervisors and control room personnel. Staff such as radio operators, fire teams and medics knew what they were supposed to do, and did it. Key staff were enthusiastic, showed initiative, communicated well with each other and the OIM, and generated a strong team spirit. The OIMs knew who they could rely on to get on with the job. The point was again made of the importance of knowing the strengths and weaknesses of the offshore team, and gaining the cooperation of certain staff members. As one OIM said he "Had a good relationship with toolpusher and the company rep - under
different circumstances I might have needed to be more forceful with the co.
rep."

Three main types of weaknesses by the offshore teams were mentioned. One
factor was the tendency of staff to group around the scene of the incident
(usually a fire) out of curiosity and an all too willing desire to help. Personnel did
not want to be left out of the action, even though they did not possess the
required technical expertise to be of any real assistance, creating extra hazards
for those trying to handle the incident.

The second factor was poor communications due to inefficient equipment, or a
lack of communication by the OIM or supervisory staff. In one case, better
communication might have averted the incident. The third factor was a lack of
adequate preparation in terms of physical resources. Organization and staff
training could have improved the offshore team’s performance. This illustrates
that the day to day management skills of an OIM can have a profound influence
on the handling of an emergency, not only in terms of prevention, but also in
being prepared to handle events when things go wrong (staff training,
maintenance, operational procedures, emergency systems and emergency
procedures). Only one OIM reported that some staff had panicked.

3.10.3 Strengths and weaknesses of the onshore emergency control
team

The positive responses OIMs made about the response of their onshore
emergency response or management teams centred around flow of
communications between onshore and the installation, trust in the OIM’s
decisions and knowledge of field and/or installation. Four OIMs said onshore
management had no part to play, only being informed after the event.

While some onshore managers showed an initial reluctance to accept the OIM’s
opinion as to the seriousness of the situation, or briefly questioned the OIMs
actions, it was extremely helpful to the OIMs to know that they had the full
support and backing from their company and in some cases the client company
as well. In one case, onshore management only expressed their doubts “after
the event, then only in the manner of “wondered why you evacuated” until they
appreciated all the circumstances.” The OIMs also found it a great help to have
control of regulating the flow of information from the installation to the beach,
thereby keeping requests for information to a minimum. Where requested,
onshore teams were generally extremely helpful in preventing the media from
interfering, organising helicopters for evacuations and dealing with relatives.
Two OIMs mentioned specifically how useful it had been to have managers
onshore who possessed an excellent knowledge of the installation, the field, and
the pertinent rules and regulations concerning the incident and actions to be
taken in the aftermath.

The poor responses from onshore management tended to be the opposite of
the positive remarks made above. Failing to realise the severity of the situation,
questioning the OIM’s decisions, needlessly re-arranging evacuation
arrangements, asking for information rather than giving it, and not knowing
enough about the installation all contributed to them being a hindrance rather
than a help. At best the OIMs just “ignored silly suggestions”, but at worst “This
uninformed interference could easily have resulted in the total loss of the
platform.”

3.11 LESSONS LEARNT FROM THE EXPERIENCE
3.11.1 Knowledge gained for handling another emergency

It was hoped that one useful outcome of these interviews would be a distillation of the knowledge and expertise obtained by OIMs who had actually experienced a serious offshore incident. This would provide useful pointers for ways to improve the training of future OIMs, and also provide other OIMs with ideas on how they could improve their own day to day management skills and practices.

One of the main themes to come out of the OIMs’ responses was to ensure they were better prepared in the future by improving their knowledge of the installation’s safety systems, equipment, safety procedures, thinking through emergency planning, and in some cases re-writing the existing emergency procedures manual. Also through training staff, eg. training catering staff to assist the medic, sending fire teams for more fire training, and encouraging staff to use the emergency equipment during drills. The second main theme, as one might expect, was an appreciation of the importance of using the communications systems to best advantage. This might involve improving the existing communications systems, delegating more to the radio operators, and last but not least, keeping all staff on board regularly informed of the situation.

One interesting point made by at least two OIMs was resisting the temptation to go to the scene of the incident and get involved in handling it themselves. TO be in control of the ‘big picture’ from inside the installation, not at the scene was a better strategy. It was considered quite acceptable to ask for advice, ideas or help from the rest of the team. It is the OIM’s job to collect enough of the right sort of information. If the OIM receives too much information he can be diverted from the task in hand. He needs “to stand back, and not get involved in minutiae, and direct the overall operation.”

For some OIMs, their response to the incident had vindicated their decision making ability and reinforced their leadership style. It is vitally important to be decisive in what might be a rapidly escalating situation. As one OIM said “minutely wrong decisions are better than no decisions.” For some OIMs it also emphasised that onshore management do not necessarily make the best decisions, and “All procedures have a caveat - at OIM’s discretion. [It is] important to consider each incident as individual and take it as it comes.” Other comments related to the importance of controlling their own fear, panic or other emotion so as not to let other staff see how they felt. Also that handling the incident reinforced that such incidents are controllable and it is possible to take a logical approach to handling such an event.

3.11.2 Improvements in emergency preparedness

It was decided beforehand to ask all the OIMs what changes they had made so they would be better prepared in the future; though some OIMs had already volunteered how they had taken specific initiatives to prevent a similar situation happening again. The majority of their actions focused on procedural revisions, though personal development and staff training were also included. A particularly useful idea was keeping a log of events during the incident, or delegating the task to one of the control room team. This can provide an invaluable, accurate account of the incident for onshore management and the authorities, especially in the event of a formal inquiry.

A staff de-briefing once the incident was over usually involved the OIM, his supervisory team and the safety team in identifying how the incident had been handled and whether it could have been done better. Some OIMs asked their entire offshore staff for contributions. These meetings and, in some cases,
formal investigations identified remedial action. Procedural changes included writing prompts and checklists for the OIM’s use during an emergency, even to the point of re-writing the emergency procedures manual in a user-friendly format. Improvements to methods of keeping POB lists and reviewing mustering procedures were other common initiatives.

Reviews of specific operational procedures were another key focus for improvement, such as plant shut down and start up, back-up power facilities, maintenance of safety and emergency equipment. These reviews often resulted in new operating procedures, updating plant or installing new equipment such as emergency lighting. (It is difficult to appreciate without prior experience how the complete loss of external and internal lighting on an installation can seriously restrict the ability to move from A to B.)

Personal development included requests for training in emergency situations (eg SAR), developing self confidence, and a commitment to delegate more tasks to others and away from the OIM. Staff development mainly took the form of increased training provision, particularly for relief work or for assistance to other qualified staff. Particular mention was made of encouraging all staff to find their way around the entire installation, and familiarise themselves with it’s geography.

3.11.3 Advice for an inexperienced OIM

As one of the final questions, these experienced OIMs were asked what advice they would given to an inexperienced OIM to prepare him to face an offshore emergency. Their responses fell into a number of categories outlined below. Their quotations do not need any additional comment.

Day to day operations

"Know your platform, people especially at supervisory level - strengths and weaknesses."

"Read operations manual carefully and understand why certain systems are there. Review preventive maintenance to ensure it is getting done. Monitor safety systems."

"Know equipment and installation. Know personnel strengths and weaknesses."

"Essential to learn plant and people. Find out how to prevent incidents."

"Make sure you know the geography of the installation, main electrical hazards and how to deal with them. Spend a period of time as supernumerary assisting at exercises before going solo."

"Know plant and effects of actions and levels of shutdown. Develop control team ruthlessly to what you want them to be. Always keep personnel informed."

Emergency planning

"Be conversant with his emergency procedures manual but only to the point that he is confident that all eventualities are covered. If he has any doubts about its completeness then raise them immediately. Always use the manual during drills and actual occurrences. Not to refer to manuals in an emergency is not macho just stupid."

"Decision-making. Know rig - what it is capable of. Think through what emergencies might happen in future and plan what would do if they were to happen."
"Learn as much as possible about installation and systems: lines, pipes, pumps, emergency systems; and about staff - who would help you in an emergency?"

"Know installation's emergency procedures. Be familiar with the rig - only your decision to abandon."

**Staff training**

"Training in PTW procedures for supervisors and contractors."

"Run a major exercise involving all members of your team at least every month. Think outside of the environment of your platform, what can damage you? help you? Review your offshore team - have you got the right people in place to handle a crisis?"

"Small frequent exercises and thorough discussions afterwards. Know staff strengths and weaknesses and give them hands on experience."

**Personal development**

"Make your own judgements - go with your gut feelings in those situations. Forget about everything apart from your vessel at the time (eg. other peripherals). As OIM [you] are best qualified to assess - if based on other's assessment he is making decision."

"Don't get flustered, not to lose your calm. Realise implications and consequences. Think ahead and don't be afraid to make fast decisions."

"Stay calm outwardly to staff and reactions/decisions to incident. Step back to get overview before jumping in. Remember others [are] doing your job now - if [they] have come up through the ranks"

"Forget commercial pressures and stand alone. Always consider from a safety point of view."

"Have to keep calm or you lose it straight away. Must have performed contingency plans in own mind, ie. thought out possible scenarios and responses before incidents occur."

### 3.12 CONCLUSION

Talking to OIMs who had experience of handling real emergency situations offshore has provided valuable insights into the demands of crisis management for men in their post. Though not all of them had received specific crisis management training, they all appeared to deal competently with the emergency they were faced with. It is important to remember that the OIM's main responsibilities are for the health, safety and welfare of personnel on the installation. Crisis management is only a small, though vital, part of their job. As one of them commented, "OIMs are more business team leaders who adapt to an emergency situation." But another OIM's interpretation was that the "OIM is paid for what he could do, not what he does day-to-day." As the OIM is the most visible figure in charge of an installation, he is also ultimately responsible for everything that happens on it. With this view it is easy to forget the important points raised in Section 3.10 that he is only one link in the management chain, and only one (though obviously the most senior) member of the offshore management team.

To cope with this heavy burden of responsibility there should be a structured, progressive career structure, and appropriate training in crisis handling. A Merchant Navy career has been shown to be extremely useful in terms of progressive responsibility, training, experience of emergency situations and the
ability to be self reliant in the event of an emergency situation. It is not being suggested that all OIMs should necessarily have come up through the Merchant Navy ranks, but that this type of structured promotion coupled with specialist training and an appreciation of marine hazards is an example for the industry to follow. A combination of both drilling or production knowledge with marine experience was suggested by those interviewed as the best combination of skills and expertise for the OIM post. OIMs also need to be given a sufficient amount of time to familiarise themselves with the installation they are to manage. The importance of knowing the installation geography, pipelines and valves, etc. safety procedures and safety equipment, process, plant and operational implications of equipment failure was made throughout this chapter. The potential for ambiguity in terms of who is the most senior person on board may also require clarification. The decision needs to be made as to whether a mobile installation is to have a marine or a drilling OIM. Responsibility should not be split between the barge master/OIM and the toolpusher or senior driller.

Training in crisis management would be extremely useful for both trainee, deputy and inexperienced OIMs, but emergency simulations should be part of this as it is not always possible to train for such eventualities during offshore drills. To simulate some incidents would involve the cessation of drilling activities which is not always practically possible for operating and financial reasons. One important factor which was identified throughout the interviews was that offshore communications to others on the installation is vital in emergency. It can also be one of the systems to fail in an emergency due to equipment or power failure, or noise from a blowout. This aspect should be incorporated into simulation exercises to give OIMs experience of the difficulties and an appreciation of their importance. Two other points about communication which could be incorporated into training were made. Communication between the installation and shore based management needs careful control, so that OIMs are not dealing with unnecessary queries, yet they also need to keep the shore informed. It is also extremely important to keep personnel on board informed during an emergency, as five minutes to those handling the emergency at the scene, or in the control room is like an hour to those waiting at muster stations.

This exercise was carried out as a pilot study using a very small sample of OIMs, but the quality and detail of the information obtained has illustrated the value of conducting this kind of post-incident interview with OIMs.
4. SELECTION AND TRAINING OF NORWEGIAN OIMS

4.1 INTRODUCTION

Stage 3 was intended to complement Stage 1(i) by surveying a sample of Norwegian oil and gas companies operating on the Norwegian sector of the North Sea, on their current practices for selecting and training OIMs. This chapter contains a summary of the survey findings. More detailed information can be found in Appendix F. The term OIM will be used throughout to indicate the most senior manager on an installation, although in Norwegian companies this individual may be called Platform Manager of Field Manager.

4.2 THE NORWEGIAN OIM

The Norwegian offshore oil industry began production in 1971 from the Ekofisk field, followed by the Frigg field in 1977 and the Statfjord field in 1979. By 1991 more than twenty fields were on stream, with a total offshore workforce of 19,093 (Graven, 1992). There were at the time of the survey (July 1992) 41 manned fixed, and 20 mobile installations operating in Norwegian waters. There are approximately 120 OIMs working on production platforms, and possibly 60 on mobile installations, making an estimated total of 180 Norwegian OIMs.

The Norwegian Petroleum Directorate (NPD) is the regulatory authority responsible for supervising safety within their offshore oil industry, pursuant to Royal Decree, 28 June, 1985 (NPD, 1985). This decree authorises the NPD to:

(i) issue regulations for oil and gas activity,
(ii) conduct overall safety evaluations,
(iii) make decisions concerning consents, administrative decisions, dispensations and approvals.

Within this Royal Decree, it is the principal responsibility of the NPD to ensure the licensee's system of internal control functions effectively, which is mainly accomplished through system audits. In this regard, the NPD may carry out measurements, tests or inspections to verify the effectiveness of the licensee's internal control system. According to Act 22 of this Royal Decree "The licensee shall ensure that all persons engaged in the activities possess the necessary qualifications to perform in a prudent manner the work they have been assigned. Training shall be given to the extent necessary."

The system of internal control mechanisms is similar to recent UK legislation concerning safety cases (HSE, 1992a). The NPD is therefore responsible for issuing extensions for production licences to operating companies, and for regulating safety in Norwegian waters. This is similar to the role of the UK Department of Energy prior to the HSE taking over responsibility for safety regulation offshore. The NPD's main responsibility is for fixed installations, but there are situations where it issues regulations for mobile installations (usually the jurisdiction of the Norwegian Maritime Directorate (NMD), eg. issuing regulations of qualification requirements for drilling personnel and for the operation of mobile units (NPD, 1983).

So, as in the UK, there are no specific legislative requirements on the qualifications necessary to be an OIM on a fixed platform, but OIMs on drilling units and other mobile installations are required to hold a certificate of competency. The qualifications for 'Platform Manager' on mobile installations...
are (i) Norwegian citizenship, (ii) approved training course for Platform Managers, (iii) specified theoretical and practical training, usually a Master Mariner certificate (NMD, 1992). Unlike the UK situation where OIMs need to be registered with the HSE, OIMs do not need to be formally registered with the NPD. There are industry recommended guidelines for training issued by the OLF (1991), an organization similar to UKOOA. Most companies have also developed their own training requirements for OIMs, usually including installation specified training. (See Appendix G for a list of OLF recommended Norwegian training centres).

4.3 OBJECTIVES

The project objectives of Stage 3 were as follows:

1. To identify, for comparison with the UK oil industry, the methods currently used by a sample of companies from the Norwegian offshore oil and gas industry to select and train OIMs.

2. To identify the personality characteristics, skills and experience deemed necessary for the position of OIM by Norwegian employers.

4.4 METHOD

A semi-structured interview schedule which had been designed for Stage 1(i) was amended very slightly for use with Norwegian companies with the help of psychologists from Rogaland Research Institute in Stavanger. (A copy of the interview schedule can be found in Appendix D, with the two amended questions indicated.) The interview schedule contained 33 questions, many of which were open-ended. Neither the individuals interviewed, nor their companies were to be identified in the research findings. In March 1992, the Rogaland Research Institute team facilitated contact with nine of the major Norwegian operating and drilling companies. The companies were contacted by letter explaining the purpose of the study, and asking for their co-operation in allowing us to interview "one of their managers who has experience in the selection and training of OIMs". Enclosed with the letter was a copy of the interview schedule. The letter was followed up within ten days by a telephone call to arrange an interview.

4.5 SAMPLE OF COMPANIES

All nine companies contacted (six operating and three drilling) agreed to take part in the study. Each interview lasted between 45-90 minutes, conducted by one of the RGU research team at the company's premises in Norway, or an alternative convenient location. Between one and three company representatives from management were present at each interview. They included OIMs, Human Resources and Personnel staff, and Operations Managers. The sample ranged in size from drilling companies currently operating one or two rigs in Norwegian waters, to one production company operating more than 20 platforms. The surveyed companies operated 39 installations in total. In terms of installation size the majority of installations had between 51 and 100 staff on board, very similar to installations operating in UK waters (Flin & Slaven, 1992). In Norway offshore workers tend to work a different hitch schedule than UK offshore workers, usually two weeks on three weeks off, then two weeks on and four weeks off. Hence there are usually three OIMs to each platform. A total of 109 OIMs and 111 Deputy OIMs were employed by the companies interviewed.
4.6 SURVEY FINDINGS

4.6.1 Selection and training procedures

The majority of Norwegian operating company OIMs are drawn from operations and engineering backgrounds, generally working their way up through lower offshore management positions. This is in contrast to drilling company OIMs who come almost exclusively from a Marine background. As in the UK, Norwegian companies preferred to promote personnel from within the company to the post of OIM. None of the nine companies interviewed selected from outside the company, if it could be avoided. Three companies only looked externally for candidates if there were no suitable personnel within the company. In the UK, only two companies selected exclusively from external candidates, nine from both internal and external candidates, and 27 from only internal candidates.

Norwegian companies relied on appraisal files, personal recommendations (often including one by the person’s OIM or line supervisor), and interviews to select internal candidates, though the similar sources of information as those used by UK companies. All nine companies used job descriptions (compared to 34 out of 38 in the UK), though only seven out of nine used them in the selection procedure (compared to 30 out of 34 in the UK). None of the Norwegian companies specifically mentioned the use of simulations in their selection procedure, though ‘state-of-readiness’ training incorporating emergency simulations are often incorporated into personal development plans (details are provided below). Some job descriptions were explicit about the stressful and responsible nature of the job:

"In an emergency situation the job holder may have to make decisions, which if incorrect, could result in a major loss of production and bring a risk of accident."

"The position requires full concentration on work without periods of sleep, in total 24 hours state-of-readiness. Daily rhythms and work routines must be adapted to the work. The level of stress is affected by disturbances in operation and other factors (weather, sea, accidents, etc)."

The general procedure reported for identifying internal candidates was to examine staff appraisal files. Onshore management (usually comprising Personnel, Rig or Operations Manager and Executive management) decide on who to promote, usually after interviewing the candidate. A similar procedure is followed by UK operating companies, though they do not always interview the candidate. Within both UK and Norwegian companies it was line management responsibility to select for positions immediately subordinate to them, because, as they knew the job requirements, they were considered the most suitable people to select new personnel.

Two of the nine Norwegian companies sampled (22%) used personality tests compared to 13% of UK companies. None of the drilling companies reported using psychometric tests, though one company were considering their use in the future as another of their divisions uses them at present. Four operating companies did not use tests, though two were considering introducing them in the future. Of the two operating companies who were using tests, one company uses DAPA, (Data Assisted Personality Analysis), a Scandinavian personality test for management positions, providing scores along 30 personality dimensions. The other company uses the GARUDA test of personality for all offshore workers. This measures three factors: Cognitive style, Social style and Ego-drive from 80 questions covering 16 traits. Tests appear to be used as
infrequently in the UK. Five UK companies (three operating and two drilling) are using a variety of psychometric tests, mainly personality profiling though also tests of intellectual ability. As one might expect, UK companies are not using Scandinavian, but British and American tests (see Appendix D for test details).

All nine countries surveyed provided some form of crisis management training for their platform managers. (In the UK sample, 55% of companies were providing this for OIMs.) Most of the operating companies provided a state-of-readiness in-house training course including simulation and tactics for handling offshore emergencies, while drilling companies tended to provide the Platform Manager's course, (There is no UK equivalent of the Norwegian Platform Managers training course). There did not appear to be any formal assessment incorporated into the crisis management training, as in UK companies, except in the case of a company's own OIM's course (during which individuals usually have a written test). Three operating companies reported that there would be some form of informal feedback session on emergency response after the course on the OIM's performance. As in the UK, all Norwegian companies are required to hold drills at least once every 14 days such as fire, lifeboats, musters, etc. Almost all companies (n=8) also conducted a major emergency exercise at least once a year, usually involving the emergency services. Some operating companies have well developed onshore and offshore emergency scenario training which they carry out on a regular basis.

Most Norwegian companies said that a new OIM would spend some time with an incumbent OIM, lasting anything from one trip up to one year. The drilling companies tended to have much shorter induction periods (one trip or one week) than the operating companies. Both operating and drilling companies in the UK tended to provide relatively short induction time, ranging from a few days to a few weeks.

Norwegian companies provide on-going installation, and field specific training for OIMs once in post. Seven Norwegian companies reported providing safety, state-of-readiness (emergency), and management training. UK companies' ongoing training provision reflected legislative requirements, with up-dates on industry guidelines and survival training. This emphasis is now changing, with a trend towards increased provision of emergency response training for UK OIMs.
4.6.2 Required personality characteristics, skills and experience

As in the UK, there are no formal criteria for the OIM's post specified by the NPD, though OIMs do not need to be registered with the authorities, as they are required to be in the UK. As regards personal qualities, operating and drilling companies were looking for similar individual qualities. The emphasis was on good interpersonal skills, such as communication, coordination and being a member of a team. Leadership qualities were also important, with general managerial and supervisory skills. These were very similar to those specified by UK companies with the following differences. UK companies mentioned the requirement of a stable personality, and emphasised the ability to build up work teams, rather than membership of work teams. Companies who assessed if candidates had the required traits, established it from personal knowledge of the individual and their previous performance within the company. In the case of two operating companies personality tests were also used.

Similarly, those companies who assessed command ability relied mostly on observations by line managers during drills, exercises and the individual's day-to-day decision-making. The three drilling companies, while not having a formal assessment of crisis command ability reported examining this during the interview situation, and considering how the individual would respond to an emergency, given their personal knowledge of the individual.

As in UK companies, Norwegian drilling companies preferred OIMs to have a Master's certificate, and formal educational qualifications were preferred by operating companies. Most operating companies required several years offshore experience in a supervisory position. Drilling companies, as one would expect, wanted several years marine experience, either as a Stability Section Leader (SSL) or in a drilling position. Similar levels of experience were required by UK companies, though drilling companies did not generally specify preferred job titles. Four Norwegian companies reported that safety training, management, and leadership courses were essential prerequisites for the post. Drilling awareness, crisis handling, production and legislation training were also mentioned. This is in contrast to UK companies, who reported that survival training and the OIM regulations courses were essential, reflecting UK legislation and industry guidelines.

4.7 CONCLUSION

Norwegian companies appear to follow similar procedures for selecting OIMs, preferring to recruit from within the company, and relying on company records and personal knowledge of the individual for selection information. Where differences appear to arise between the two countries is in training provision. Although the NPD do not set explicit guidelines for OIM training, in practice, existing regulations ensure that OIMs undergo simulated emergency decision-making exercises. This was pointed out by Mr Magne Ognedal, the Director of the Safety and Working Environment Division within the NPD. At a recent conference (October, 1991) he reported on the Norwegian view of Lord Cullen's report.

"Further, Lord Cullen is also concerned about the command ability of the Offshore Installation Manager (OIM) in emergency situations. This is recommended to be evaluated in the selection of [the] OIM. In addition, the OIM should regularly get practice in decision-making in emergency situations.

This matter is not especially mentioned in the [Norwegian] regulations concerning emergency preparedness, but the intentions are taken care of by
However, there are no regulations or provision for formal competence assessment of an OIM's ability to take command in an emergency, as is now the case in the UK. Operating companies have well established State-of-Readiness and Safety Tactics training, including aspects of leadership tactics and strategies, training in decision-making under stress and the treatment of personnel in crisis situations. These types of training appear to be carefully constructed, involving professional expertise from psychologists/psychiatrists and an acknowledgement of the importance of stress management in emergencies. As regards induction training for OIMs, there appears to be greater provision for new OIMs to familiarise themselves with the installation prior to them fully taking on the OIM role.

In Norway generally there has always been a strong focus on being part of a team, or community, and working within that team to complement the skills and expertise of others. On Norwegian installations the OIM is part of the offshore management team, and team building appears to be emphasised (see Mykletun, 1993). Tied in with this belief in team work there is a strong emphasis on communication skills, particularly during decision-making, evident from the specified required personal qualities. It is also made explicit in some of the OIM's job descriptions (see Appendix F). This has implications for decision making and the chain of command in emergency situations. Personnel are expected to think and take actions by themselves should the OIM, for whatever reason, be absent from the scene of the emergency.

While some companies were aware of recent developments in the UK on management competencies, few were making any amendments, and there was no indication of a move towards formal competence assessment of OIMs' emergency command ability. Rather, they expressed the opinion that the UK is moving towards existing Norwegian safety legislation and industry guidelines in goal setting and safety cases.
5. COMMANDING OFFICERS

5.1 INTRODUCTION

In the Report of the Piper Alpha disaster, Lord Cullen (1990) examined the selection and training of OIMs in relation to their ability to take command in an offshore emergency. He suggested that "While psychological tests may not appeal to some companies, the processes used and proven successful by the armed forces or the Merchant Navy, who have to rely on their officers to lead under stress, should be seriously considered by operating companies." (Para 20.59).

5.2 OBJECTIVE

The objective of Stage 2 of the project was to learn how organisations outwith the oil industry, select, train and assess staff who would be responsible for acting as the on-scene commander in a crisis.

5.3 METHOD AND SAMPLE

The organisations of most interest were those whose senior staff might be required to take charge of a major emergency which could involve large numbers of personnel (civilian or military) in a remote location. A total of 26 organisations were contacted including several research establishments. Information was collected (i) by searching the relevant literature, (ii) contacting organisations by letter and (iii) by telephoning or visiting organisations and conducting interviews or, in some cases, observing selection, training and assessment practices. The following organisations were contacted, those marked * were visited and are described in detail in Appendix H.

- Aberdeen College, (Marine and Offshore Technology Unit) * H6
- Air Accidents Investigation Branch (Principal Inspector)
- Army (Major involved in officer selection, Gordon Highlanders)
- Australian Department of Defence (Director of Psychology)
- British Airways (General Manager, Pilot Training Centre; EPIC, Heathrow) * H9
- British Nuclear Fuels Ltd (Plant Manager)
- Fire Service (The Fire Service College, Moreton-in-Marsh) * H8
- Glasgow Nautical College
- Klein Associates (Psychologists advising US Navy on tactical decision making)
- Marine Accident Investigation Branch (Chief Inspector) H7
- Merchant Navy (Principal Nautical Surveyor & Examiner, Dept Transport) * H5
- Ministry of Defence (Senior Psychologist, Naval) H1
- NASA (Space Human Factors Life Sciences Division, Washington DC)
  (Crew Factors Group, NASA Ames, Moffett Field Air Base, California)
- Nautical Institute, London
- Police (Staff College, Bramshill; Psychologist, Metropolitan Force)
- Royal Air Force (Officers and Aircrew Selection Centre, Biggin Hill) * H10
- Royal Navy (Leadership School, HMS Royal Arthur * H2;
  Submarine Command Course, Faslane * H3;
  Flag Officer Sea Training, Portland * H4)
- Southampton Institute (Centre for Maritime Operations)
- Swedish Defence Research Establishment (Department of Human Studies)
- Swedish Fire Research Board
- United States Navy (Senior Naval Psychologist)
- University of Oslo (Division of Disaster Psychiatry)
- University of Surrey (Centre for Crisis Management)
(In addition, three distinguished wartime commanders were interviewed - Lord George Mackie (RAF Bomber Command WW2), Brigadier Alastair Pearson (Paratroop Regiment WW2) and Admiral Sir John Woodward (RN, Task Force Commander, Falklands War)).

The purpose of this stage of the project was to discover the selection methods, training and assessment procedures used to appoint senior officers to command positions (ie. where they would be required to act as leaders under conditions of high stress). Particular attention was paid to the use of psychometric testing and simulations for selection and training for leadership under stressful conditions. Where interviews were conducted, a semi-structured format was used which covered the following areas: selection criteria (person specification) for a senior command position, selection procedures, use of psychometric tests, training for emergency command (content, use of simulators, feedback mechanisms) and competence assessment. These factors will be discussed separately in the following sections. Numbers in brackets H1-H10 refer to the relevant reports which can be found in Appendix H. The main findings which are relevant to the selection and training of OIMs are summarised at the end of each section.

5.4 SELECTION CRITERIA

The selection criteria that were used to appoint individuals to senior command positions were similar across organisations. In general terms these were based on technical/professional qualifications and abilities, managerial experience and demonstrated ability to command and control actual or simulated emergencies. For example, the Merchant Navy have a well developed system of training and qualification. Selection criteria for an appointment as a ship's captain are based on certificates of competence as well as relevant sea going experience. (See Appendix H5 for details.) Individual shipping lines have their own selection criteria for officer cadets or qualified officers. For some companies, officers now need to have the ability to manage a multinational crew.

The armed forces are particularly concerned with leadership ability and General Montgomery's dictum on leadership is still stressed today at the Army Regular Commissions Board. "The two vital attributes of a leader are: a) Decision in action; b) Calmness in crisis. Given these two attributes he will succeed; without them he will fail. Our great problem in peace is to select as leaders men whose brains will remain clear when intensely frightened; the yardstick of 'fear' is absent." (quoted in Sale 1992). These organisations look for evidence of leadership potential in their initial officer selection. Downes (1991) lists the personal qualities believed to characterise a leader as follows: "In its incorporation into naval leadership training, the functions approach has been married to the more traditional qualities approach to leadership, which proposes that leaders have certain inherent qualities which qualify them to lead. In the naval leadership training package, these are identified as: intelligence, common sense, integrity, judgement, initiative, tenacity, determination, enthusiasm, loyalty, cheerfulness, sense of humour, energy, fortitude, moral courage, physical courage, the will to dominate and decisiveness. Accepting the natural and inspirational leaders are rare, the view is that the Admiralty Interview Board seeks to select those candidates who possess qualities in sufficient measure to allow them to develop into effective leaders."

While such attributes are probably highly desirable in a military leader, the organisations we contacted, including the Royal Navy, tended to specify the
competencies or skills that they would look for in a commanding officer rather than a prescribed set of personality characteristics. A typical set of competencies required in a commanding officer would include the following:

- Leadership ability
- Communication skills, especially briefing and listening
- Delegating
- Team working
- Decision making, under time pressure, especially under stress
- Evaluating the situation
- Planning and implementing a course of action
- Remaining calm and managing stress in self and others
- Preplanning to prepare for possible emergencies.

These key characteristics or skills are very similar to those listed by oil companies in the UK and Norway (chapters 2 and 4) when asked to describe the characteristics they desired in OIMs in terms of their emergency command responsibilities. Clearly these somewhat generic terms require to be broken down into their component skills, knowledge and behaviours in order that they can be used to form the basis of a person specification and a standard of competence for a particular position. In the armed forces, this is done for initial officer selection where, for example, detailed checklists of behaviours are used to record observations during assessment centre exercises. However, for more senior command appointments such as nuclear submarine command in the Royal Navy, the selection criteria are not tightly specified in a formal manner rather they are determined by the senior officers making the selection decision (see H3). “The fundamental problem [in assessing suitability for command] is that it is not possible to have an absolute, objective marking system to cover something as wide ranging and as fluid as submarine command. One of the major advantages possessed by a Royal Naval submarine captain in comparison with others is his application of individual skill and flair, rather than strict adherence to doctrine or standard operating procedures.” (Charlton, 1992)

NASA have funded extensive programmes of research into the selection of space crew and commanders for space missions. These commanders will have to be able to deal with emergencies in very remote environments in order to ensure the survival of their crew and space station. This research into leadership and command ability has produced some interesting results although it has apparently not generated a definitive set of personality characteristics for the ideal space commander. “While Kubis describes the effective space crew commander as technically competent, goal oriented and interpersonally sensitive, we have no direct data about the effectiveness of leadership styles in space environments. The Space Station Operations Task Force has recommended that only NASA career astronauts be eligible for the position of space station commander. While the selection criteria for the pool include physiological and psychological screenings to ‘select out’ pathology, the selection criteria do not intentionally ‘select in’ leaders. According to Cooper, except for the criterion of previous experience in space and the probable experience as a pilot of a previous shuttle mission, it is unclear, even to the astronauts, what methods are used to select mission commands.” (Penwell, 1990)

Current research is now attempting to define personality characteristics to ‘select in’ astronauts for space missions (Helmreich et al, 1990) and there have been studies of optimum leadership characteristics for commanders using analogue space environments (eg. remote Antarctic bases, underwater simulations). These studies suggest there may be certain behavioural attributes
that characterise the leaders of effective and high performing groups in confined, isolated environments. These leaders tend to be task and achievement oriented, to have a flexible, though primarily democratic leadership style, they work to maintain group harmony and can tolerate intimacy and status levelling without losing authority or the respect of the group. Effective leaders are described as having self-confidence, emotional control, self-reliance, and the strength of personality to maintain their authority during both sustained intimacy and moments of crisis (Penwell, 1990). These findings are relevant because the job of a space station commander shares a number of similarities with that of the OIM as the former has to manage a large team of station crew as well as scientists in an extremely remote and isolated location. In fact, NASA researchers may be particularly interested in what makes an effective OIM. At a conference in 1990 a NASA research psychologist said, "As missions grow in size, offshore oil rigs, nuclear submarines and other naval vessels may be drawn upon as analogs for moon-base, Mars-base, or a large geo-stationary space station". (Penwell, 1990)

The organisations contacted devote significant resources to monitoring and refining their selection criteria and procedures by conducting long-term research to ensure that they are selecting "the right stuff" for these senior command positions. Very little, if any, of this type of research has been carried out by the offshore oil industry. In summary, the characteristics which are regarded as essential in a senior commanding officer are not dissimilar from those listed by oil industry managers who select OIMs. Traditionally many OIMs were in fact selected on the basis of previous command experience from the forces or the Merchant Navy. In the case of drilling companies, most of whom require OIMs to be qualified master mariners, this may still be true. Selection criteria should include the assessed competence to take command in an emergency as recommended by Lord Cullen. The skills which are required relate to leadership, communication, team working, high level decision making under pressure and stress management. Where potential OIMs have not had previous command training and experience to develop leadership skills and decision making under stress then the relevant training should be provided. For an OIM position, documented selection criteria should be available, which would detail qualifications, experience, knowledge and skills necessary for the position.

5.5 SELECTION PROCEDURES

In UK Merchant Navy companies, deck officers are usually appointed as captains from within the organisation, rather than from an external pool of candidates, although agency requirement of officers has become increasingly common. Selection decisions are based on certificates of competence, previous performance records and staff appraisal reports.

In the armed forces, the police and the fire service, individuals are also appointed to senior command positions from within the organisation rather than selected from external candidates. This is similar to the procedure used to select OIMs in most companies, as described in Chapters 2 and 4. However, the leadership potential of commanding officers will already have been one of the criteria used as the basis of their selection at their initial recruitment to the organisation and suitable candidates will normally be identified from their performance at an assessment centre. In an assessment centre, a package of selection techniques is used including psychometric tests and interviews, as well as subjective observations of candidates’ performance on a series of well defined practical team exercises judged on the basis of a defined checklist of key behaviours (H1;H10). (See Feltham (1989) for a more detailed explanation
of assessment centres.) The large number of candidates enable these organisations to validate their initial selection methods against subsequent performance in training. (See Hardinge (1989), Jones et al (1992) and Sale (1992) for a review of military selection procedures).

The appointment of senior officers to command positions is generally based on selection from a pool of internal candidates. Selection decisions are reached on the basis of interviews, performance records and regular career appraisals, as well as personal recommendations from superiors. Assessment centres may be used for these mid-career appointments to senior command positions, as is the case in the police force. The selectors are usually senior officers with relevant command experience. Typically, the ability to take command in an emergency is judged by reports of performance in real incidents and/or observations of performance during training or formal competence assessment. In some cases, the selection procedure is extremely rigorous involving not only staff reports but also observations of performance in high fidelity simulators and on specially designed training and assessment courses, eg. submarine commanders, space commanders. The submarine command course is of 21 weeks duration with a failure rate of the order of 20-25% of candidates (Charlton, 1992). (H3).

In general terms, the method of selecting OIMs is similar to that employed by other organisations to select commanding officers. In both cases these are usually mid-career internal appointments. The selection decisions are made by senior officers or managers with relevant experience. The basis for the decision is the candidate's previous performance in the organisation. Documentary evidence of performance standards comes from staff reports, annual appraisals and personal recommendations by superior officers. Candidates are often interviewed but are not usually asked to undertake simulated job performance tests as part of the selection process, except in the case of submarine commanders and space commanders.

The Merchant Navy has a well developed system of training and qualification, linked to a structured career progression from cadet deck officer to captain. In the military and the services, officers have already been selected on the basis of their leadership potential and future commanders will often have been identified early in their career and then exposed to a carefully structured training and career plan to test their suitability for a senior command position. Some production and drilling companies have formal career plan systems and potential OIMs are identified in this way (Flin & Slaven, 1992). When this structured approach is adopted it ensures that potential OIMs are given appropriate training and work experience to general sufficient performance feedback to assess their suitability for an offshore management position.
5.6 PSYCHOMETRIC TESTS

For the purposes of selection, psychometric tests can broadly be divided into two types: tests of personality where candidates are required to answer 100-200 questions about themselves, and tests of intellectual ability or aptitude which require candidates to solve a series of problems (e.g. verbal, numerical, technical reasoning tasks) in a limited time period. (See Toplis et al. (199) for a readable description of psychometric testing.) The UK armed services do not use personality tests to select or assess personnel. A psychologist from the RAF, summarises the military position on the use of personality tests as follows: "Most personality tests were produced for clinical use or as research tools rather than as purpose built tools for military selection. They present problems of faking and of adverse candidate reactions but foreign experience suggests that these are not insurmountable. Other nations use personality tests, often in place of group exercises. The Dutch Army for instance, replaced group exercises in 1961 with measures of personality derived from personality tests, biodata and interviews. The UK services do not use personality tests but rely on interview assessments, references, weighted application blanks, and, in the case of officer selection, group exercises. From time to time the Services try out new tests but so far personality tests have not been able to add anything useful to the predictive power of the selection process." (Hardinge, 1989). A Royal Navy psychologist adds, "The impact of leadership research has been perhaps to move psychologists away from attempting to assess personality traits as an indication of officer potential. One response has been to put more emphasis on assessing intellect, partly on the basis that the intelligent person can learn to be a leader." (Jones, 1991)

During the course of the research we spoke to several senior naval officers who expressed an interest in the use of personality measures for the selection and development of commanding officers, one of whom had already carried out a research study of personality involving senior commanders and pilots from the Falklands campaign. The personality assessment MANSPEC has recently been used in a research study of army commanding officers (Sale, 1992). Personality tests are used for officer selection by Australia, Belgium, France, Holland, India, Israel and New Zealand (Hardinge, 1989).

Non-military organisations use personality tests for selecting officers who may take senior command positions, for example, British Airways use the Jackson Personality Inventory for pilots and Maersk Shipping use a personality test for management selection, including ships' officers. Some organisations, such as the Police, use them for team building and the development of self awareness in senior commanding officers. For example, the Fire Service use the Myers Briggs personality test and the Belbin Team Roles questionnaire for this purpose. Personality tests are very widely used by the larger British companies for managerial selection and development (Shackleton & Newell, 1991).

The UK Services use psychometric tests of intelligence which are designed to measure aptitude rather than achievement. These are in the form of general test batteries which permit both selection and allocation. For officers, the tests are typically: non-verbal/spatial reasoning, maths, verbal reasoning, speed and accuracy, general and/or service knowledge. (See H1, H10 for further details.) Many UK companies also use intellectual tests of this type for managerial selection.
Organisations such as NASA have devoted significant resources into the selection of commanders for space crew and air crew, as discussed above. They use rigorous selection procedures particularly for space missions but have not apparently managed to devise a definitive psychometric test of command ability. However, one NASA research study of pilots (commanders) using the Cockpit Management Attitude questionnaire found significant differences on the questionnaire scores between effective and ineffective pilots. The CMA scores showed that the effective pilots recognised i) their personal limitations and diminished decision making in emergencies and encouraged other crew members to question decisions and actions; ii) the need to be sensitive to personal problems of other crew members that might affect operations and feel obligated to discuss personal limitations, iii) that his or her management style should vary depending upon the circumstances and the characteristics of the crew members (Helmreich et al. 1990).

In summary, psychological tests are only used by the UK armed forces for intelligence testing at initial officer selection. They do not use personality tests. The use of personality tests in other organisations appears to be on the increase and organisations such as NASA are showing renewed interest in identifying personality traits to 'select in' commanders for space missions. Many organisations use personality tests to develop self awareness in senior officers with a view to improving their performance as commanders, but without precisely defining a single leadership style. There does not appear to be any one definitive test of command ability or crisis management skill. In Stage 5 of this project a validation exercise was conducted to assess whether a standard managerial personality test can predict the level of OIMs' performance in simulated offshore emergencies. (See Chapter 6).

5.7 TRAINING FOR EMERGENCY COMMAND

5.7.1 Training Content

The content for OIMs' crisis management training should obviously reflect the competencies that are required for effective crisis management. From the competencies listed above in 5.4, the topic areas should include: leadership, teamworking, communication skills, decision making under time pressure and stress, evaluating the situation, planning, implementing and monitoring an emergency response strategy, and stress management.

It is suggested that any input on decision making or leadership relates to these skills under emergency conditions rather than their normal managerial applications. There is valuable research material available, such as the work of American psychologists, Klein Associates (Kaempf, 1992; Kaempf & Militello, 1992) who have been carrying out work for the US Navy into tactical decision making under stress, and there are Norwegian studies of leaders under stress (Weisaeth, 1987). The Swedish Fire Research Board has also commissioned a recent report into the development and training of rescue tactics for fire commanders (Fredholm, 1991).

In the Merchant Navy, emergency response training for officers is undertaken by the nautical colleges as well as in drills and exercises at sea. Both shore-based simulators and simulated emergencies at sea can be used in the training process (Le Marquand, 1991; Elsensohn, 1991). The Nautical Institute now offer a Command Diploma for chief officers. The purpose of this award is to provide a scheme to improve the awareness and application of command expertise at sea. Part of this scheme involves the study of a specialist text "The Nautical Institute on Command" (1986) which includes chapters on stress and
For the majority of the organisations contacted, managing emergencies was either their raison d’être or was a fundamental aspect of their work. The armed forces obviously invest enormous resources into training for conflict and resulting emergencies at all levels of the organisation. For public service organisations, this is also an integral component of their operations. A common theme that emerged when asked about training was the emphasis on developing not only leadership skills but also team working abilities. (This was also emphasised by Norwegian oil companies when asked about their emergency response training, see chapter 4.) NASA and the US Navy have conducted extensive research into command team training and tactical decision making by teams in emergencies (Driskell & Salas, 1991; Franz et al, 1990; Orasanu & Salas, 1993). An important principle is that leaders should be as familiar as possible with the strengths and weaknesses of the teams they would have to rely on in an emergency. (This point was endorsed by OIMs who had managed serious incidents on their installations, see chapter 3.) Decision making can be improved by appropriate use of other members of the command team. Deficiencies in team performance frequently relate to communication problems and these can be minimised by training teams together in emergency response procedures. NASA and the American commercial airlines have developed excellent programmes for cockpit/crew resource management (CRM), (Helmreich, 1987) and a similar method has been adopted by British Airways in an extensive new training programme which will involve all their pilots and crews (H9). For personal development of command skills there are probably benefits in training prospective OIMs independently of their teams, as this will enable them to reveal their strengths and weaknesses in a supportive environment, in order to receive the necessary coaching to improve performance. For platform emergency response training, OIMs and their teams should be trained and exercised together, so that the team learn to respond as an effective and cohesive group.

An important part of incident command training was the use of case study analysis of previous incidents. This is used by the Police on their Management of Disaster and Civil Emergencies course as well as the Fire Service and British Airways. The Marine Accident Investigation Branch (see H7) publish regular summaries of shipping accidents, (MAIB, 1991), which do not name individuals or companies but which provide valuable training material. For the offshore oil industry, similar case summaries could be provided by the Offshore Safety Division of HSE or from internal company reports. The sharing of this type of information enables a better appreciation of the range of potential incidents which can occur and if the case reports are sufficiently detailed, then important lessons relating to organisational and management issues can be conveyed. (See chapter 3 for a first attempt to collect this type of information for use by OIMs.)

5.7.2 Simulations

Training for command in emergencies needs to be based on realistic simulations with scenarios incorporating features of previous incidents and potential management problems. The scenarios therefore should be carefully written and developed by individuals with an intimate knowledge of possible major hazard events for the installation in question. Trainers managing simulated emergency scenarios need to have experience in running such exercises and in judging the standards of performance observed in key players, particularly the OIM. Ideally, trainers should have relevant knowledge of the
offshore environment as well as emergency command experience, and they also need to know how to introduce and monitor the level of stress during the exercise. The methods used by the Royal Navy to exercise and assess their warship commanders and their crews (H4) provide an excellent example of how to set up and manage complex emergency simulations. See Atterbury (1992) for a detailed description of the Royal Navy methods.

While high fidelity training simulators such as those available at the Royal Navy submarine base Faslane, British Airways and in the nuclear industry are clearly invaluable for high level technical training, emergency scenarios for training commanders can also be based in lower fidelity simulators, created in situ or by using table-top exercises. Each of these options has its own strengths and weaknesses in terms of logistics, costs and realism. (See Appendix A). The police have recently developed interactive computer-based simulation suites for training senior officers in football crowd control at the Scottish Police College and the Metropolitan Police Force. Technology trainer adviser Jonathan Crego explained the advantages of the new simulation suite. “We have some sophisticated gaming and simulation in the Met. They were limited because it was clear it was an exercise. They lost the realism, the stress of being bombarded with an evolving incident that you can see, hear and touch. Where necessary, you must reproduce the stress under which people have to make decisions. This suite is an enabling tool through which you can provide that stress.” (Hilton, 1992). He also emphasised the importance and the difficulty of selecting trainers with the right skills and experience to manage simulation exercises.

The Merchant Navy also makes use of high-fidelity simulators for training and assessment, such as the ballast control simulator in Aberdeen (H6) or the LICOS (Liquid Cargo Operations Simulator) at the Maritime Operations Centre in Southampton (Barnett, 1991). The latest ship’s bridge simulator which is under construction at the Marine Institute in St John's, Newfoundland is extremely sophisticated and has been designed for training, assessment and research.

5.7.3 Feedback

It was generally felt that the feedback stage of the training process was particularly valuable for increasing self awareness and leadership skill in commanding officers. In Royal Navy exercises on warships, this is done as a ‘hot brief’ one hour after the exercise is completed and the feedback is publicised to the entire crew and not just to senior officers. Feedback should be designed to identify strengths as well as training needs within the emergency command structure. It is important that the commanding officer is now always informed as to the nature of the exercise scenario so that his performance can be evaluated and he can receive feedback, as well as the rest of the crew.

This feedback element of training should be directed to improving the OIM’s appreciation of his own strengths and weaknesses when working under pressure. A NASA research psychologist explains: “The data on pilot attitudes clearly suggest areas where training can be beneficial ... These include decision making, interpersonal communication, leadership, and leader responsibilities, and personal characteristics and reactions. For example, with regard to personal reactions, a high percentage of pilots report that their decision making capabilities are unimpaired by high stress or fatigue - something that is patently untrue. Changing attitudes about personal limitations may well result in much more adaptive behavioural strategies and co-ordinated behaviour in critical
situations where maximum effectiveness is a life or death issue.” (Helmreich, 1987).

To summarise, the military and public service organisations spend a great deal of time training for command and control in crises. The content and method of their emergency response training programmes do have relevance for this aspect of OIM training. A number of training organisations offering emergency management training for OIMs base their training courses on naval (eg. OCTO, (Larken, 1992)), army (eg. Action Based Leadership) or fire service (eg. OFTC, (Allen, 1992)) expertise. The development of suitable training programmes requires knowledge of the offshore oil industry and an understanding of the skills required to take command in emergencies. Training for emergency response should focus on teams as well as leaders, with some input on the problems of teamworking under stress, such as the CRM type training used by NASA and the airlines. Case study material should be developed and shared across companies for the preparation of realistic emergency scenarios and for OIM crisis management training.

5.8 COMPETENCE ASSESSMENT

An integral part of operational efficiency in many organisations involved the use of regular competence assessment of key individuals or teams, either in response to a regulatory authority (eg. Civil Aviation Authority) or as part of a standard training and monitoring programme. In some organisations such as the Merchant Navy, the individual must undergo a series of tests and assessments in order to achieve the required qualification, a certificate of competency to command a ship, which must be updated every five years (Department of Transport, 1988).

The fundamental problem in competence assessment for emergency control is that real emergencies cannot be used and therefore simulations must be employed. The assessment scenarios need to be carefully written and managed and should be as realistic as possible. While taking command in a crisis requires decision making under stressful conditions, the assessment itself will often create a useful level of anxiety which will produce relevant psychological and physiological symptoms albeit at a lower level than a life threatening emergency. Assessors should know how to introduce an element of stress into scenarios and to judge stress reactions where appropriate. Stress management is an important part of military training and competence assessment. “Officers in staff and command positions must now learn to deal with significant communication and information overloads, and this requires the capacity to sift the wheat from the chaff, the relevant from the irrelevant - often under conditions of considerable physical and mental stress.” (Downes, 1991). See Charlton (1992) for an excellent description of the manipulation of stress and its effects in the training and assessment of submarine commanders.

Those organisations employing simulator-based competence assessments (eg. Royal Navy, British Airways, NASA) appreciate that performance in a simulator will not predict with 100% accuracy, performance in a real life incident, but there is a strong belief that this type of competence assessment does enable the organisation to identify those individuals who do not cope well in an emergency command situation. Moreover simulator training provides the trainee with an insight into their own stress reaction and the effects that he or she is likely to experience in a real incident.

It is obviously vitally important that the competence assessments are carried out by experienced and highly trained individuals, to ensure the quality of the
evaluation and also to maintain the credibility of the process for those being assessed. During or after the assessment, the assessee should have an opportunity to explain or justify his or her actions. The assessment criteria, assessment method, and the selection and training of assessors should be formally documented. Video cameras can be used to record performance for later assessment or for feedback review. In summary, where it is essential to ensure that an individual is competent to take command in an emergency, most organisations use competence assessments based on observed performance in a simulated emergency. This can be done using high-fidelity simulators or on the installation. More than one scenario is typically used and they should be as realistic as possible. The assessors should have expertise in offshore management, crisis management and in judging performance under simulated conditions. Competence assessment can be carried out on individuals with or without a support team.

5.9 CONCLUSION

While the operational demands for these commanding officers are different to those of an OIM and while armed forces, civilians, and passengers do not equate to an offshore industrial workforce, there are useful lessons which can be learnt from studying the methods and principles employed. The psychological demands placed on the on-scene commander, whether he is a ship's captain, a police superintendent, a senior pilot or an OIM are very similar, in terms of the need to evaluate the situation, take decisions under stress and to implement and monitor an action plan through the emergency response team. Consequently the methods of selection, training and assessment used by organisations outside the oil industry do provide examples of good practice relevant to the selection, training and assessment of OIMs. Detailed reports on ten organisations are provided in Appendix H.
6. OIMS' PERSONALITY AND CRISIS MANAGEMENT

6.1 INTRODUCTION

This chapter reports the results from Stage 5 of the project which was designed to examine the practical merits of using psychological tests for the selection and training of OIMs in response to Lord Cullen's comment in Paragraph 20.59 of the Public Inquiry Report into the Piper Alpha disaster (Cullen, 1990).

While psychological tests may not appeal to some companies the processes used and proven successful by the armed forces or the Merchant Navy, who have to rely on their officers to lead under stress, should be seriously considered by operating companies." (20.59)

6.2 OBJECTIVES

The objective of Stage 5 was to determine whether psychological tests could be of benefit in selecting and training candidates for the post of OIM, with particular reference to their command and crisis management abilities. The aim was to conduct a preliminary study to establish whether a psychological assessment of an OIM's personality characteristics has any utility in predicting his emergency command ability. The specific objectives were as follows:

1. To identify the characteristics which are thought to predict an OIM's emergency management capability.

2. To select a suitable psychological test for OIMs which assesses these characteristics.

3. To identify a method of measuring OIMs' ability to manage a simulated offshore emergency.

4. To correlate OIMs' psychological test scores with the performance measure, in order to identify whether any of the psychometric test scores predict performance levels.

6.3 CHARACTERISTICS OF EFFECTIVE LEADERS IN EMERGENCIES

The first stage of this study identified the characteristics required for an offshore manager who might be required to take command in an emergency by asking employers of OIMs what personal qualities they sought in a potential OIM. (See Chapters 2 and 4, as well as our first interim report, Flin & Slaven, 1992). The characteristics most frequently mentioned are listed on the next page.
Leadership ability
Stable personality
Communication skills, especially briefing and listening
Delegating
Team working
Decision making, under time pressures, especially under stress
Evaluating the situation
Planning a course of action
Remaining calm and managing stress in self and others
Preplanning to prepare for possible emergencies

As the companies surveyed tend to appoint from internal candidates for OIM positions, their selection methods were generally based on appraisal reports and personal recommendations. There was little use of more formal selection techniques such as psychological tests or assessment centres to identify the most suitable candidate for the post against a predetermined list of personality, intellectual or behavioural criteria. There was also little evidence at the time the data were collected, that companies were specifically assessing an ON's suitability to deal with an offshore emergency, though many companies acknowledged it was an important issue and were considering how to revise their existing procedures with regard to the selection, training and competence assessment of OIMs.

An earlier survey of OIMs (Flin & Sloven, 1993) asked them “What characteristics and/or skills does an OIM need to cope with an emergency?” From a total of 134 UKCS OIMs who took part in this survey, the most common responses were:

Ability to stay Calm
Leadership
Knowledge of the Installation
Knowledge of Emergency Procedures
Decisive under Pressure
Ability to Assess Overall Situation
Ability to Communicate
Self Confidence.

As discussed in Chapter 5, a number of military, commercial and public service organisations whose staff may be required to take command in an emergency were also surveyed, and the characteristics deemed important by these organisations essentially duplicate those listed above.

A brief description of three recurring terms is given at this point, as these are not definitive or explanatory, (cf. Silver, 1991). The meanings attached to each term represent our interpretation based on discussions with managers and commanding officers.

**Leadership ability** - Inspires trust, commands respect, acts with authority and impartiality, is diplomatic, minimises potential conflict across a multidisciplinary team, is a good communicator, shows integrity, directs and controls the efforts of others, takes charge confidently and competently in an emergency.

**Stable personality** - Demonstrates emotional stability, maturity, steadiness, reliability, balanced attitudes, is level-headed, neither aggressive, introverted nor easily excitable.
Decision-making - Balanced, analytical and sound judgement, logical reasoning ability, liable to recognise and solve problems, prepared to formulate and implement decisions when under pressure, knows when to use authoritative or consultative decision-making style.

These results indicated that the most suitable test for the purposes of this study would probably be one measuring personality. We had limited access to OIMs as will be described below and it was therefore not possible to use a comprehensive battery containing a number of different measurement tools and scales. The next objective was therefore to review possible personality questionnaires in order to identify which instrument would be most likely to measure the characteristics listed above.

6.4 IDENTIFYING A SUITABLE PSYCHOMETRIC TEST

6.4.1 General use of psychometric tests for occupational selection

A psychological (or psychometric) test:

"refers to a procedure for the evaluation of psychological functions. Psychological tests involve those being tested in solving problems, performing skilled tasks or making judgements. Psychological test procedures are characterised by standard methods of administration and scoring. The results of psychological tests are usually quantified by means of normative or other scaling procedures but they may also be interpreted qualitatively by reference to psychological theory. Included in the term psychological test are tests of varieties of: intelligence; ability, aptitude; language development and function; personality, temperament and disposition; interests, habits, values and preferences."

(British Psychological Society Bulletin, May 1983, 192.)

Psychometric tests used for job selection are basically of two types: personality questionnaires which ask between 100 to 200 questions about how individuals see themselves, and tests of intellectual ability or aptitude where candidates have to solve a number of problems (e.g. verbal, numerical, technical or critical reasoning) in a limited time period (Kline, 1993; Toplis et al, 1991). The use of psychometric tests in the selection of personnel is not a recent phenomenon, and there is an extensive literature on the use of tests for selection in both civilian and military occupations (Furnham, 1992). Of particular interest were those studies which had examined the value of tests for the selection of command positions or high risk occupations. For example, Bartram and Dale (1982) administered the Eysenck Personality Inventory (EPI) to 222 RAF pilot candidates as they began flying training. The EPI measures scores on two dimensions, neuroticism/stability and extroversion/introversion. Their aim was to establish whether the EPI scores would improve predictions of success at flying training. The results supported their hypothesis, and they also found that successful military pilots have distinct personality features: lower neuroticism and higher extroversion scores than the general population. Biersner & La Rocco (1983) administered sensation-seeking, socialisation, locus of control and trait anxiety questionnaires to a sample of 30 US Navy divers. Their results suggested that divers possessed a unique personality profile in relation to their preference for risk taking.

Information gathered during an earlier stage of the project (see Chapter 5) revealed that the UK armed forces administer psychometric tests of intelligence at initial officer selection but that they do not generally use personality
questionnaires (although these may be employed for certain high risk positions). Personality assessments are regularly used by military organisations in other European countries (Jones, 1991) and a personality questionnaire called the Myers-Briggs Type Indicator is routinely administered in the US Army up to very senior ranks. Sale (1992) has recently criticised the absence of objective personality assessment in the selection of senior army officers and he carried out a small study of 49 commanders (at brigade level) using a computerised battery of personality questionnaires (MANSPEC). He concluded that this type of assessment should be incorporated into the selection process for the Higher Command and Staff Course.

Public service organisations whose officers are required to act as on-scene commanders in an emergency, such as the police and the fire service, do use personality tests as part of the development and training of senior officers. Psychometric tests are now being used more extensively within the civilian working population particularly for managerial selection (Robertson & Makin, 1986; Robertson & lies, 1988). A survey commissioned by Saville and Holdsworth (a psychometric test publisher) from Marplan in 1988 (Mabey, 1989) of the personnel attitudes and practice of 300 UK organisations found that 66% of companies use standard aptitude, ability and general intelligence tests, and 47% use personality questionnaires or inventories for recruitment or personal development purposes. As might be expected, they found that large organisations use tests disproportionately more than smaller organisations. Saville and Holdsworth also reported that attendance at their training courses in ability tests had increased by over 300% between 1985 and 1988. In a more recent survey by Shackleton and Newell (1991), using a sample of 108 companies from the Times 1000, it was found that 64% of companies reported using personality tests for at least some posts, 36% of whom use them for managerial selection. This notable increase in test usage prompted the British Psychological Society (BPS) in conjunction with the Institute of Personnel Management, to draw up standards of competence for psychometric testing. In January 1991 the BPS established a Register of Competence in Occupational Testing which lists those individuals who were already qualified or who have obtained the new Certificate of Competence in Occupational Testing (Bartram, 1991).

6.4.2 Selecting a personality test for OIMs

From the survey of 38 companies employing OIMs conducted for Stage 1(i) of this project (Chapter 2), it was established that few oil companies use psychometric tests for the selection and recruitment of offshore staff. Only three operating and two drilling companies from a total sample of 38 companies were using psychometric testing at that time. All five companies used personality tests to select staff. A number of different tests were used including the 16PF (giving scores on 16 dimensions of personality), the Predictive Index (an American test measuring four dimensions of personality), the Perception and Preference Inventory (measuring six dimensions of personality), and the Occupational Personality Questionnaire, Concept Model, (measuring 30 dimensions of personality related to managerial activities). Two companies also used some form of aptitude test, including tests of verbal and numerical reasoning, mechanical aptitude, and general intelligence. Since the study was completed, we have been informed of a further three operating companies who have used personality profiling in OIM selection and development. From a survey of nine Norwegian oil companies (Chapter 4), it was found that two companies were using Scandinavian personality tests (GARUDA and DAPA) to select offshore staff, including OIMs.

As only limited access to OIMs would be available, it was only possible to use a single psychometric test. For the reasons stated above, it was decided that this
would be a personality questionnaire. Had additional time been available we would also have included a number of additional tests such as a measure of anxiety, Type A behaviour and cognitive ability (e.g. visuo-spatial reasoning, decision making). There are many different personality questionnaires available, and following a review of those suitable for occupational selection it was decided to use the Occupational Personality Questionnaire version Concept 5.2 which measures 30 personality dimensions as the research instrument. The OPQ is published by Saville and Holdsworth Ltd, one of the major UK psychometric test companies. This particular questionnaire was chosen for the following reasons.

1. It is a British rather than an American instrument and the OIM population under study are predominantly British. The OPQ was launched in 1984 following four years of research with 53 companies such as British Petroleum, Burmah Oil, Abbey National, Plessey, Scottish and Newcastle Brewers. During the design phase 4000 subjects were profiled and development work has continued thus providing British normative data for comparison. The OPQ is one of the most popular personality questionnaires for graduate and managerial selection in the UK (Toplis et al. 1991). The OPQ Concept 5 model has also been used in studies of management competence (Dulewicz, 1992) and commercial pilot selection (Stead, 1991).

2. It is called the Occupational Personality Questionnaire because it is neither a clinical test nor is it based on a clinical model of personality disorders. It has been specially designed to look at key facets of personality which are relevant to success in managerial and professional jobs. Thus it focuses on aspects of personality which are related to everyday working life and therefore it has good face validity for use in occupational research or selection.

3. The OPQ measures 30 dimensions of personality, several of which relate to the characteristics thought to influence emergency command ability in OIMs. For example, scales such as Controlling reflect an individual's preference for taking command and managing, Worrying and Relaxed reflect general anxiety levels, and Decisive assesses preferred speed of decision making.

4. The questionnaire was designed on a sound theoretical and empirical basis and reported reliability and validity are acceptable (Saville & Wilson, 1991).

5. The Concept 5.2 version of the OPQ was chosen as it balanced brevity and reasonably short administration times with a sufficiently detailed personality profile.

6. A number of operating and drilling companies were already using the OPQ for OIM selection and/or development and any norm data obtained would be of additional value to these companies.

7. We had used the OPQ for research with an offshore population and had not encountered any problems in the administration of the test (see Forty, 1992).

Completion of the OPQ Concept 5.2 takes 30-40 minutes and respondents are asked to rate themselves on 248 statements, using a 5 point Likert-type scale, ranging from strongly agree to strongly disagree. The resulting data produce a personality profile covering 30 dimensions and a social desirability scale. The dimensions are subdivided into three main fields Relationships with People, Thinking Style and Feelings and Emotions which are listed in Appendix B1. This
questionnaire has been standardised on 3,000 adults throughout the UK, and includes managerial and professional norm data.

Another advantage of using this particular questionnaire was that using the OPQ Expert System, a profile of team type based on Belbin's work on team roles, and a profile of leadership style based on Bass' research into leadership behaviours, can be calculated from the raw scores. The team types scores are based on Belbin's (1981) classification of eight key team roles exhibiting the following characteristics:

1. Shaper - outgoing and dynamic with a strong need for achievement.
2. Plant - individualistic, unorthodox, good at generating ideas.
3. Resource-investigator - curious with an ability for exploring external resources.
5. Team worker - socially oriented, offers support and help to individual members.
6. Completer - orderly, conscientious and able to overcome problems and difficulties.
7. Co-ordinator - steers and co-ordinates the activities of the group.
8. Implementor - calm, self-confident and able to convert decisions into practical lines of action.

Belbin's classification was the result of his research into the nature, structure and behaviour of management teams, and the contrasting but complimentary behaviour of the team members. His definition of team role comprised "the ways in which members with characteristic personalities and abilities contribute to a team." From personality and intelligence tests of managers attending courses at Henley Management College, and his observations of their performance in management teams, he identified the eight distinct team roles, and argued that team success depended on the pattern of members' team types. It should be noted here, that Belbin acknowledged that it would be extremely rare for all individuals to be easily classified into one distinct team role. Rather, some individuals may score moderately on more than one role, and some may not be easily classified into any of the eight team roles. The empirical validation for Belbin's model is very limited (see Furnham et al., 1993, for a critique), but as it is widely used in industry, these derived team roles were computed for additional interest.

The OPQ-derived scores on leadership styles are based on Bass' analysis of leadership (Saville & Holdsworth, 1992) which suggests five broad leadership styles. Four of these are based on the fundamental "Task vs. People" interaction, while a fifth reflects leadership "negotiated" on a "tit for tat - you do this for me - I do this for you" basis (Bass, 1981). The leadership scores derived from the OPQ are Directive, Delegative, Participative, Consultative and Negotiative. As with the Belbin scores these were also included for preliminary consideration and should not be regarded as a principal component of this study.

6.5 METHOD

6.5.1 Subjects

In order to investigate whether personality profiling with the OPQ has any utility in predicting emergency command ability, it was necessary to compare OIMs' scores on the OPQ with ratings of their ability to manage a simulated offshore emergency. Access was granted to a training organisation, the Offshore Fire
Training Centre (OFTC) in Montrose, who provide emergency management training through simulation for OIMs. Their four day “Management of Major Emergencies” course had been identified as the most popular course for training OIMs in emergency command (Flin & Slaven 1992). It is based around six simulation exercises, where individuals role-play key members of the offshore emergency control team, including the OIM, during simulated emergency situations on a hypothetical production platform.

All companies sending their employees on the course were asked for permission to approach their employees. Individual OPQ feedback would only be given to the OIMs on a confidential basis by the researchers. No feedback would be given to OIMs on their performance ratings. Neither the HSE nor the companies involved would be provided with any individual data on OIMs’ OPQ personality profiles or performance ratings. The OPQ Concept 5.2 questionnaire was to be administered after day two of the course to those course delegates who were willing to participate in the study. Questionnaire administration and analysis would be carried out by two psychologists qualified in psychometric testing and registered to use the OPQ.

In addition, four companies who were sending their OIMs on company-specific training, and company-specific competence assessments at OFTC were also asked to participate. All the companies agreed, but one stipulated different conditions for participation. They preferred their own assessor to rate the performance of their OIMs, and for the OPQ to be administered at some time after the assessment was completed. Their course assessors also attended a seminar on rating performance (see below for details). This arrangement weakened the experimental design by altering the standardisation of raters’ assessments and the time of OPQ administration but as our priority was to collect the maximum amount of data, this procedural difference was accepted.

Companies were requested to inform their OIMs before the training course or competence assessments of the project objectives, their company’s support, and reiterate that OIMs’ participation was voluntary and confidential.

This stage of the project was carried out between January and December 1992 and during that time OPQ questionnaires were completed by a total of 154 men, (only one man declined our invitation to participate.) Performance ratings were obtained for 93 of these men.

6.5.2 Emergency command ability: Performance ratings

A rating scale based on the OIM Work Group’s Unit of Competence “Controlling Emergencies” (OPITO, 1992) was devised by the research team. This consisted of 16 scales subdivided into four fields: Assessing the Situation; Decision Making; Communication and Stress Management plus a rating for Overall Performance. Each scale was rated from 1 “poor performance” through to 6 “outstanding performance”. (A copy is shown in Appendix B2). This scale was used by OFTC course trainers to rate delegates' performance in handling the simulated emergency situations. Only delegates who role-played the OIM’s position during the exercises were rated. On the advice of the OFTC trainers, the two delegates who played the OIM in the first two scenarios were not rated, as their performance would have been considerably affected by their unfamiliarity with the equipment and layout of the mythical installation. This meant that from each course with up to 12 delegates, ratings were only obtained on the performance of six delegates. At least two trainers were involved in rating each individual who role played the OIM. This method was
chosen as it was explained by course trainers during the planning stage that it would be difficult for one trainer to observe every action of the OIM in question. The trainer who monitored the simulation using video equipment usually provided the most input into the performance rating.

All the course trainers involved in rating delegates’ performance were given a seminar by one of the researchers on the common biases in human perception which could influence their ratings. The seminar explained stereotyping, halo effects, implicit personality theory, selective perception and first impressions, and methods of reducing their potential impact on the perception and judgement of an individual's performance. Trainers were asked to judge the OIMs' performance against the standards of performance they had observed in previous training courses. The rating was therefore based on whether the trainers thought a given OIM's performance was better or worse than that of previous OIMs they had observed handling emergency simulation exercises, (i.e. a relative rather than an absolute judgement). Performance ratings were obtained for a total of 93 men who were observed in the OIM role during a simulated offshore emergency.

6.5.3 Administration

At the beginning of each course, OIMs were briefed as to the project objectives. At the end of day two of the course, or the end of the assessment, delegates were briefed in more detail about the personality questionnaire using standardised briefing notes (Appendix B3) and given the opportunity to decline to participate or to ask questions about any aspect of the project. All delegates who agreed to participate were then given standard instructions on completion of the OPQ Concept 5.2 questionnaire, and completed it at their own pace. They were also asked to complete a short form requesting demographic details such as age, time worked offshore, type of installation etc. (see Appendix B3). These details were treated as confidential and only requested for the purpose of statistical analysis.

The OPQ questionnaire typically took 30-40 minutes to complete. The research team offered to send details of each individual's personality profile to their home, and more than 90% of delegates requested this feedback. The opportunity to be given more detailed feedback on their profile either over the telephone or face-to-face was also provided, although few OIMs requested this.

6.6 RESULTS

6.6.1 Demographic date

Data were obtained from individuals in two types of situations: while they were attending the OFTC four day "Managing Major Emergencies" course, (or a company specific version of this course) or while undergoing in-company competence assessments for the OIM post (as incumbents or deputies) at OFTC premises. The majority (n=139, 90%) were attending a four day OFTC course, with only 10% (n=15) attending in-company assessments. Due to the small size of the in-company assessment sub-sample, it was considered inappropriate to examine whether this sub-group significantly differed on any of the measures compared with those who had attended the four day course. With such a small sub-sample size, it would be difficult to conclude if any observed differences were ‘true’ or due to the uniqueness of the sub-sample. This category was therefore not separated in any subsequent analyses.
In total, OPQ, personality profiles were obtained from 154 men; 60 (39%) were OIMs, 52 (34%) were deputy OIMs, and 42 (27%) were in other supervisory/managerial positions. Few companies actually have an official deputy OIM position. Those who classified themselves as such were either supervisors or superintendents who acted as relief OIMs, (holidays, sick leave, short term contracts etc.), or individuals who acted as OIMs on a regular basis, but alternated this with a number of months in the onshore office. Individuals in the "other" job group were either being groomed for a future OIM position (and hence being trained for the post), or acted as relief OIMs. Performance ratings were obtained for 93 individuals of whom 41 (44%) were OIMs, 33 (36%) were deputy OIMs and 19 (20%) were in other positions. For the purpose of this discussion all the participants will normally be referred to as OIMs.

Respondents were asked how long they had been in the post of OIM. Of the 56 (out of 60) OIMs who answered, many had been in post for only one or two years (m=4.14 years, s.d.=4.4, see Table 1).

Table 1 Time in post as OIM

<table>
<thead>
<tr>
<th>Years</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>7</th>
<th>8</th>
<th>11</th>
<th>13</th>
<th>15</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>20</td>
<td>10</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

The 154 participants were all male and the majority were in their forties (m=42.5 years, s.d.=5.2, range 30 to 59 years (see Appendix B5 for details).

The majority of participants had worked in the offshore industry for over twelve years (m=12.5 years, s.d.=4.9, range 1 to 26 years). (See Appendix B5 for details). Not surprisingly, there was a positive correlation between age and time worked offshore (r=0.37, p<0.01). Most of the sample worked on production platforms (80%), while only 15% were from drilling rigs, and 5% were from service installations.

Participants were asked if they had ever been in the Merchant Navy, Royal Navy or other armed forces. Most of the sample had no experience of these (59%), but more individuals had formerly been in the Merchant Navy (26%), than the armed forces (Royal Navy 6%, Other forces 9%).

6.6.2 OPQ Personality Profiles

As mentioned above, the OPQ Concept 5.2 produces scores on 30 personality dimensions and a social desirability scale. It should be emphasised that the labels given to each dimension on the OPQ have a specific meaning defined by the test designer and that interpretation and application of this test requires specific training.

A list of the means and standard deviations on each dimension for 154 OIMs is provided overleaf in Table 2. The range of possible raw scores is from 4 to 36 and the frequency distributions on each scale (see Table 3) indicated that in general the OIMs are a very heterogeneous group of managers in terms of personality.

While the raw scores are used in all subsequent statistical calculations, they can be converted into a standardised score on a scale of ten (sten score) to indicate how this population of managers compares with a larger norm group of British managers (n=728). The numbers 1 to 10 are based on a normalised distribution, hence a sten of 1-3 indicates that 11% of the managerial norm
group score at this level, scores of 4-7 are consistent with 78% of the norm
group and sten scores of 8-10 reflect 11% of the norm group. The mean scores
on each dimension for the 154 OIMs, shown in the first column of Table 2 were
converted to the appropriate sten score which are shown in the third column.
These sten scores indicate that the OIMs’ average scores are similar to those of
a group of onshore managers. These comparisons were examined statistically
using scale means and standard deviations for the managerial/professional
norm group (n=728) provided by SHL. Though sample means for the
dimensions *Persuasive, Controlling, Forward planning* and *Competitive*
appeared to be larger than the norm population, the differences did not reach
the .05 level of significance.
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Description</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>Sten</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persuasive</td>
<td>enjoys changing opinion of others, convincing with arguments</td>
<td>24.9</td>
<td>4.2</td>
<td>7</td>
</tr>
<tr>
<td>Controlling</td>
<td>takes charge, directs, manages, organises,</td>
<td>28.1</td>
<td>3.5</td>
<td>7</td>
</tr>
<tr>
<td>Independent</td>
<td>has strong views, speaks up, argues,</td>
<td>25.3</td>
<td>3.4</td>
<td>6</td>
</tr>
<tr>
<td>Outgoing</td>
<td>fun loving, humorous, sociable, talkative,</td>
<td>20.6</td>
<td>6.1</td>
<td>6</td>
</tr>
<tr>
<td>Affiliative</td>
<td>enjoys being in groups, likes companionship</td>
<td>23.5</td>
<td>5.3</td>
<td>5</td>
</tr>
<tr>
<td>Socially confident</td>
<td>puts people at ease, good with words</td>
<td>23.4</td>
<td>6.1</td>
<td>6</td>
</tr>
<tr>
<td>Modest</td>
<td>reserved about achievements, avoids trappings of status</td>
<td>21.5</td>
<td>6.0</td>
<td>5</td>
</tr>
<tr>
<td>Democratic</td>
<td>encourages others to contribute, consults, listens and refers others</td>
<td>23.5</td>
<td>4.5</td>
<td>6</td>
</tr>
<tr>
<td>Caring</td>
<td>considerate to others, sympathetic, tolerant down to earth, likes repairing things</td>
<td>26.7</td>
<td>3.8</td>
<td>5</td>
</tr>
<tr>
<td>Practical</td>
<td></td>
<td>27.1</td>
<td>5.2</td>
<td>6</td>
</tr>
<tr>
<td>Data rational</td>
<td>good with data, operates on facts,</td>
<td>20.7</td>
<td>5.9</td>
<td>6</td>
</tr>
<tr>
<td>Artistic</td>
<td>appreciates culture, shows artistic flair,</td>
<td>19.6</td>
<td>5.6</td>
<td>5</td>
</tr>
<tr>
<td>Behavioural</td>
<td>analyses thoughts and behaviour</td>
<td>25.5</td>
<td>3.8</td>
<td>5</td>
</tr>
<tr>
<td>Traditional</td>
<td>prefers orthodox, conventional methods</td>
<td>19.4</td>
<td>4.8</td>
<td>5</td>
</tr>
<tr>
<td>Change oriented</td>
<td>seeks variety, prefers novelty to routine</td>
<td>25.2</td>
<td>3.9</td>
<td>6</td>
</tr>
<tr>
<td>Conceptual</td>
<td>intellectually curious, enjoys the complex and abstract</td>
<td>20.5</td>
<td>5.0</td>
<td>6</td>
</tr>
<tr>
<td>Innovative</td>
<td>generates ideas, shows ingenuity</td>
<td>24.4</td>
<td>5.6</td>
<td>6</td>
</tr>
<tr>
<td>Forward planning</td>
<td>prepares well in advance, enjoys target setting, plans projects</td>
<td>24.9</td>
<td>3.6</td>
<td>7</td>
</tr>
<tr>
<td>Detail conscious</td>
<td>methodical, precise accurate</td>
<td>23.6</td>
<td>4.9</td>
<td>6</td>
</tr>
<tr>
<td>Conscientious</td>
<td>sticks to deadlines, completes jobs, perseveres with routine</td>
<td>24.8</td>
<td>4.5</td>
<td>5</td>
</tr>
<tr>
<td>Relaxed</td>
<td>calm, relaxed, cool under pressure</td>
<td>23.5</td>
<td>5.0</td>
<td>6</td>
</tr>
<tr>
<td>Worrying</td>
<td>worry when things go wrong</td>
<td>21.9</td>
<td>4.6</td>
<td>5</td>
</tr>
<tr>
<td>Tough minded</td>
<td>difficult to hurt or upset, unaffected by unfair remarks</td>
<td>18.9</td>
<td>5.3</td>
<td>6</td>
</tr>
<tr>
<td>Emotional control</td>
<td>restrained in showing emotions, keeps feelings back, avoids outbursts</td>
<td>20.8</td>
<td>5.7</td>
<td>6</td>
</tr>
<tr>
<td>Optimistic</td>
<td>cheerful, happy, keeps spirits up despite setbacks</td>
<td>27.0</td>
<td>4.2</td>
<td>6</td>
</tr>
<tr>
<td>Critical</td>
<td>good at probing the facts, sees the disadvantages, challenges assumptions has energy, moves quickly, enjoys physical exercise</td>
<td>24.8</td>
<td>3.6</td>
<td>6</td>
</tr>
<tr>
<td>Active</td>
<td></td>
<td>23.6</td>
<td>5.4</td>
<td>6</td>
</tr>
<tr>
<td>Competitive</td>
<td>plays to win, poor loser</td>
<td>18.3</td>
<td>5.5</td>
<td>7</td>
</tr>
<tr>
<td>Achieving</td>
<td>ambitious, results oriented career centred</td>
<td>20.0</td>
<td>4.8</td>
<td>6</td>
</tr>
<tr>
<td>Decisive</td>
<td>quick at conclusions, may be hasty</td>
<td>21.3</td>
<td>6.3</td>
<td>6</td>
</tr>
<tr>
<td>Social desirability</td>
<td>tended to respond in a socially desirable way</td>
<td>17.4</td>
<td>4.0</td>
<td>5</td>
</tr>
</tbody>
</table>
Table 3
Frequencies of OPQ sten scores (n=154)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>sten 1</th>
<th>sten 2</th>
<th>sten 3</th>
<th>sten 4</th>
<th>sten 5</th>
<th>sten 6</th>
<th>sten 7</th>
<th>sten 8</th>
<th>sten 9</th>
<th>sten 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persuasive</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>10</td>
<td>18</td>
<td>33</td>
<td>36</td>
<td>38</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Controlling</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>8</td>
<td>33</td>
<td>66</td>
<td>27</td>
<td>12</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Independent</td>
<td>1</td>
<td>3</td>
<td>9</td>
<td>20</td>
<td>26</td>
<td>41</td>
<td>37</td>
<td>12</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Outgoing</td>
<td>1</td>
<td>8</td>
<td>23</td>
<td>16</td>
<td>22</td>
<td>31</td>
<td>37</td>
<td>11</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Affiliative</td>
<td>21</td>
<td>4</td>
<td>12</td>
<td>32</td>
<td>22</td>
<td>31</td>
<td>27</td>
<td>2</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Socially confident</td>
<td>4</td>
<td>7</td>
<td>11</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>40</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Modest</td>
<td>3</td>
<td>1</td>
<td>17</td>
<td>30</td>
<td>10</td>
<td>9</td>
<td>32</td>
<td>33</td>
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<tr>
<td>Democratic</td>
<td>3</td>
<td>5</td>
<td>19</td>
<td>17</td>
<td>17</td>
<td>23</td>
<td>27</td>
<td>21</td>
<td>15</td>
<td>7</td>
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<tr>
<td>Caring</td>
<td>5</td>
<td>9</td>
<td>14</td>
<td>13</td>
<td>23</td>
<td>40</td>
<td>21</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Practical</td>
<td>4</td>
<td>8</td>
<td>4</td>
<td>9</td>
<td>42</td>
<td>51</td>
<td>26</td>
<td>6</td>
<td>4</td>
<td></td>
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<td>Data rational</td>
<td>3</td>
<td>8</td>
<td>19</td>
<td>35</td>
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<td>13</td>
<td>28</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Artistic</td>
<td>5</td>
<td>8</td>
<td>25</td>
<td>28</td>
<td>32</td>
<td>33</td>
<td>3</td>
<td>1</td>
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<td></td>
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<tr>
<td>Behavioural</td>
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<td>6</td>
<td>7</td>
<td>19</td>
<td>32</td>
<td>35</td>
<td>37</td>
<td>12</td>
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<td>2</td>
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<td>Traditional</td>
<td>7</td>
<td>8</td>
<td>33</td>
<td>18</td>
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<td>Change</td>
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<td>45</td>
<td>23</td>
<td>10</td>
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<td>Change oriented</td>
<td>2</td>
<td>9</td>
<td>15</td>
<td>34</td>
<td>15</td>
<td>21</td>
<td>33</td>
<td>10</td>
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<td>2</td>
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<tr>
<td>Conceptual</td>
<td>3</td>
<td>9</td>
<td>10</td>
<td>6</td>
<td>20</td>
<td>26</td>
<td>51</td>
<td>18</td>
<td>7</td>
<td>4</td>
</tr>
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<td>Innovative</td>
<td>1</td>
<td>2</td>
<td>6</td>
<td>18</td>
<td>21</td>
<td>34</td>
<td>36</td>
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<td>Detail conscious</td>
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<td>16</td>
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<td>40</td>
<td>22</td>
<td>10</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Conscientious</td>
<td>5</td>
<td>5</td>
<td>22</td>
<td>12</td>
<td>33</td>
<td>32</td>
<td>34</td>
<td>6</td>
<td>4</td>
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</tr>
<tr>
<td>Relaxed</td>
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<td>4</td>
<td>5</td>
<td>19</td>
<td>17</td>
<td>29</td>
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<tr>
<td>Worrying</td>
<td>6</td>
<td>8</td>
<td>25</td>
<td>24</td>
<td>17</td>
<td>39</td>
<td>15</td>
<td>15</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Tough minded</td>
<td>3</td>
<td>6</td>
<td>26</td>
<td>31</td>
<td>16</td>
<td>32</td>
<td>21</td>
<td>16</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Emotional control</td>
<td>3</td>
<td>11</td>
<td>21</td>
<td>15</td>
<td>20</td>
<td>15</td>
<td>48</td>
<td>14</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Optimistic</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>8</td>
<td>16</td>
<td>36</td>
<td>46</td>
<td>20</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Critical</td>
<td>1</td>
<td>8</td>
<td>10</td>
<td>18</td>
<td>24</td>
<td>37</td>
<td>10</td>
<td>28</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Active</td>
<td>5</td>
<td>7</td>
<td>23</td>
<td>18</td>
<td>24</td>
<td>31</td>
<td>27</td>
<td>15</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Competitive</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>15</td>
<td>31</td>
<td>27</td>
<td>23</td>
<td>15</td>
<td>10</td>
<td>26</td>
</tr>
<tr>
<td>Achieving</td>
<td>4</td>
<td>10</td>
<td>10</td>
<td>19</td>
<td>41</td>
<td>28</td>
<td>17</td>
<td>11</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Decisive</td>
<td>5</td>
<td>6</td>
<td>24</td>
<td>11</td>
<td>31</td>
<td>35</td>
<td>13</td>
<td>23</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Social desirability</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>29</td>
<td>29</td>
<td>29</td>
<td>18</td>
<td>8</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

6.6.3 Belbin's Team Roles

Belbin's eight team roles were calculated by the test company from OPQ raw score measures using an algorithm on their expert system. For each of the 154 OIMs, a score ranging from 0 (no preference) to 10 (strong preference) on each of the eight roles was given. Table 4 provides a brief description of each team role and summary statistics of scores (see also page 50 for descriptions of each team role.)
When the relative role preferences for each OIM were examined, it was found that the most typical preferred team role for the entire group of 154 OIMs was the Co-ordinator team role (n=48), followed by Shaper (n=28). The least popular role was Monitor evaluator. (See Table 5 for a more detailed breakdown.) Relevant norm data are not available and it is therefore not possible to compare the OIMs’ scores with an onshore group. As reported in the introduction to this chapter, it is rare for all individuals to be clearly categorised into one team role. In this sample, it was not possible to identify any one team role for 21 individuals, and a further 21 individuals scored equally highly on two different team roles.

Given the nature of the OIM’s job, it is perhaps, not surprising that many of them appear to prefer the Co-ordinator role which sets the team goals and defines roles, and directs the group’s activities. It should, however, be noted that these scores are derived from the OPQ raw data using an algorithm developed by SHL and they are not based on scores from the original Belbin questionnaire. It was not possible to obtain any information on the degree of correspondence between SHL team type scores and Belbin test scores and given the limitations of the Belbin model (Furnham et al, 1993), these data should therefore be regarded as indicative rather than definitive.
Table 5
Frequencies Of Belbin team role raw scores

<table>
<thead>
<tr>
<th>Dimension</th>
<th>rs 1</th>
<th>rs 2</th>
<th>rs 3</th>
<th>rs 4</th>
<th>rs 5</th>
<th>rs 6</th>
<th>rs 7</th>
<th>rs 8</th>
<th>rs 9</th>
<th>rs 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-ordinator</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>26</td>
<td>18</td>
<td>31</td>
<td>25</td>
<td>20</td>
<td>16</td>
</tr>
<tr>
<td>Plant</td>
<td>1</td>
<td>3</td>
<td>12</td>
<td>18</td>
<td>26</td>
<td>41</td>
<td>30</td>
<td>15</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Monitor evaluator</td>
<td>9</td>
<td>8</td>
<td>29</td>
<td>50</td>
<td>35</td>
<td>17</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource investigator</td>
<td>6</td>
<td>8</td>
<td>13</td>
<td>11</td>
<td>18</td>
<td>28</td>
<td>31</td>
<td>18</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>Completer</td>
<td>6</td>
<td>9</td>
<td>16</td>
<td>26</td>
<td>43</td>
<td>35</td>
<td>11</td>
<td>5</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Teamworker</td>
<td>6</td>
<td>3</td>
<td>9</td>
<td>21</td>
<td>18</td>
<td>32</td>
<td>24</td>
<td>19</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Shaper</td>
<td>4</td>
<td>3</td>
<td>9</td>
<td>21</td>
<td>18</td>
<td>32</td>
<td>24</td>
<td>19</td>
<td>14</td>
<td>10</td>
</tr>
</tbody>
</table>

6.6.4 Leadership Style

Five leadership style scores and level of flexibility in leadership were also calculated for each of the 154 OIMs on the basis of OPQ raw scores, by the SHL expert system. Scores on each style variable ranged from 2 to 10, the higher score indicating greater preference for that particular style. Table 6 below provides details of participants' summary scores, plus a brief description of each style.

Table 6
Leadership style scores

<table>
<thead>
<tr>
<th>Leadership style</th>
<th>Description</th>
<th>Mean</th>
<th>St. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directive</td>
<td>controlling, independent and forward planning</td>
<td>6</td>
<td>1.7</td>
</tr>
<tr>
<td>Delegative</td>
<td>non-directive, leaves others to get on with it</td>
<td>5</td>
<td>1.6</td>
</tr>
<tr>
<td>Participative</td>
<td>affiliative, persuasive, outgoing and democratic</td>
<td>6</td>
<td>2.0</td>
</tr>
<tr>
<td>Consultative</td>
<td>controlling, democratic and affiliative</td>
<td>5</td>
<td>2.0</td>
</tr>
<tr>
<td>Negotiative</td>
<td>persuasive, behavioural, delegates to others</td>
<td>6</td>
<td>1.8</td>
</tr>
<tr>
<td>Adaptability</td>
<td>extent to which can adapt style to situation</td>
<td>6</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Examination of the style scores showed that the most common preferred leadership style for this sample was Directive (n=57), followed by Delegative (n=32). However, as with Belbin's team roles, managerial norm data were not available. It was not possible to assign 28 individuals with any single leadership style, and a further 28 individuals scored highly on two different leadership styles. Again this measure is derived from the OPQ scores rather than the completion of a specific leadership questionnaire and these scores should also be regarded as a very preliminary analysis of leadership styles.

6.6.5 Relationship between demographic variables and OPQ scores

Age

The following results are all based on the full sample of 154 OIMs. When correlated with the 30 OPQ personality dimensions, age was found to be negatively associated with Data Rational, Worrying, Affiliative, Change Oriented, Democratic, Competitive, Forward Planning and Achieving. Age was positively associated with only one OPQ dimension: Traditional. The size and direction of correlations are shown in Table 7. (* p< .05, ** p< .01).
Table 7
Correlations between age and OPQ dimensions

<table>
<thead>
<tr>
<th>OPQ dimension</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data rational</td>
<td>-.18</td>
<td>.029 *</td>
</tr>
<tr>
<td>Worrying</td>
<td>-.17</td>
<td>.040 *</td>
</tr>
<tr>
<td>Affiliative</td>
<td>-.18</td>
<td>.029 *</td>
</tr>
<tr>
<td>Change oriented</td>
<td>-.22</td>
<td>.009 **</td>
</tr>
<tr>
<td>Democratic</td>
<td>-.20</td>
<td>.015 **</td>
</tr>
<tr>
<td>Competitive</td>
<td>-.20</td>
<td>.014 **</td>
</tr>
<tr>
<td>Forward planning</td>
<td>-.26</td>
<td>.001 **</td>
</tr>
<tr>
<td>Achieving</td>
<td>-.31</td>
<td>.000 **</td>
</tr>
<tr>
<td>Traditional</td>
<td>.17</td>
<td>.036 *</td>
</tr>
</tbody>
</table>

As the magnitude of correlations are fairly low, only those at the higher level of significance (p<.01) are considered. The data suggest that older OIMs prefer orthodox and conventional methods and do not readily welcome change. There is some indication that older OIMs are less competitive, ambitious and career centred. Older OIMs were also less likely to engage in forward planning for the future and less likely to encourage others to contribute and participate in decision making.

**Job group**

Analyses of variance did not reveal any significant differences in OPQ personality scores relating to the three job groups: OIM, deputy OIM and "other".

**Length of time as an OIM**

The length of time the 56 actual OIMs had been in post did not correlate significantly with any OPQ, personality dimensions.

**Time in the offshore industry**

Correlational analyses revealed that time spent in the offshore industry was negatively associated with the Artistic (r=-0.20, p<0.05) and Change Oriented (r=-0.21, p<0.01) personality dimensions on the OPQ. This indicates that the longer OIMs had worked in the offshore oil and gas industry, the less accepting they were of change and the less likely they were to try out new ways of working. (As mentioned above time worked offshore was positively correlated with age). Those who had worked longer in the offshore industry expressed less interest in the arts.

**Type of installation**

Analyses of variance were carried out to determine if the type of installation OIMs worked on was significantly related to scores on OPQ, personality dimensions. No significant effects were found. Thus it appears that the production, drilling and service installation OIMs do not significantly differ in their personality profiles. However, given the small sub-sample sizes (15% on drilling rigs and 5% on service installations) this would have to be regarded as a tentative conclusion.

**Experience of the Merchant / Royal Navy or armed forces**
There were no significant differences on the OPQ personality dimensions for participants who had experience of the Merchant Navy (n=40) or armed forces (n=23) and those who had none (n=91).

6.6.6 Emergency command performance ratings

As described above, 93 OIMs were rated on their performance in the simulated offshore emergency situation in which they role-played the OIM. A specially designed rating form was used which was based on the OPITO Unit of Competence 'Controlling Emergencies' (see Appendix B2). The rating form contained descriptions of 16 behaviours (dimensions) each of which was judged on a 6-point scale which ranged from 1-'poor', 2-'adequate', 3-'fair', 4-'good', 5-'very good' to 6-'outstanding performance'. The rating scale was deliberately designed to have an odd rather than an even number of levels, to try to reduce central tendency ratings. The mean, standard deviation and range scores are shown in Table 8 below. A table of the frequency distribution of the performance ratings is shown in Appendix B4.

<table>
<thead>
<tr>
<th>Table 8</th>
<th>Performance rating scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating</td>
<td>Mean</td>
</tr>
<tr>
<td>1. Takes command of the situation</td>
<td>4.2</td>
</tr>
<tr>
<td>2. Makes an accurate assessment of the situation given the information available</td>
<td>4.0</td>
</tr>
<tr>
<td>3. Obtains information from relevant sources</td>
<td>3.8</td>
</tr>
<tr>
<td>4. Listens carefully to incoming information</td>
<td>3.8</td>
</tr>
<tr>
<td>5. Verifies information or seeks clarification where appropriate</td>
<td>3.7</td>
</tr>
<tr>
<td>6. Makes appropriate decisions and implement them</td>
<td>4.1</td>
</tr>
<tr>
<td>7. Develops a plan of action to deal with the situation</td>
<td>3.8</td>
</tr>
<tr>
<td>8. Monitors and implements this plan</td>
<td>3.8</td>
</tr>
<tr>
<td>9. Demonstrates flexibility. Can adapt plan of action as situation and goals change</td>
<td>3.6</td>
</tr>
<tr>
<td>10. Allocates resources as required</td>
<td>3.7</td>
</tr>
<tr>
<td>11. Communicates instructions clearly and concisely</td>
<td>4.0</td>
</tr>
<tr>
<td>12. Seeks feedback to ensure comprehension</td>
<td>3.6</td>
</tr>
<tr>
<td>13. Ensures that all staff are regularly updated on situation</td>
<td>3.5</td>
</tr>
<tr>
<td>14. Maintains a calm and confident manner</td>
<td>4.3</td>
</tr>
<tr>
<td>15. Recognises the signs of stress and deals with them appropriately</td>
<td>3.4</td>
</tr>
<tr>
<td>16. Monitors workload and delegates tasks if necessary</td>
<td>3.6</td>
</tr>
<tr>
<td>17. Overall performance</td>
<td>3.9</td>
</tr>
</tbody>
</table>

*On one scale Recognises the signs of stress and deals with them appropriately ratings were only obtained for 76 OIMs. The OFTC trainers reported that not all scenarios were particularly stressful for the role playing ON or his team, so ratings on this dimension were not always applicable.

While the range scores show that the scale was employed to almost full width, the mean scores and narrow range of standard deviations indicate that in the majority of cases the OIMs were given ratings around the mid-point of the scale 3-4, i.e. 'fair' to 'good'. However, this population contained a large proportion of experienced OIMs and we would not have anticipated many ratings at the
lowest end of the scale. The highest mean score (4.3) is for the dimension
*Takes command of the situation* and the lowest mean score (3.4) is for
*Recognises the signs of stress and deals with them appropriately*. The proximity
of these means indicates that rated performance levels were similar across
dimensions. Overall the OIMs' performance was rated as 'good'.

6.6.7 Relationships between demographic data and performance
ratings

There were 93 subjects in this group.

**Age**
Age did not significantly correlate with any of the performance ratings.

**Job group**
Of the 93 individuals for whom we had obtained performance ratings, 41 (44%) were OIMs, 33 (36%) were deputy OIMs and 19 (20%) were from other posts. Analyses of variance indicated that there was a main effect of job group on a number of the rating scales. Post hoc Tukey tests showed that in all cases, the actual OIMs had significantly higher scores than one or both of the other job groups. They scored higher means than both deputy OIMs and others for *Taking command of the situation* (p<.01) and *Overall performance* (p<.01). They obtained higher scores than deputy OIMs for *Assessing the situation* (p<.05), *Making decisions and implementing them* (p<.05), *Implementing and monitoring an action plan* (p<.05) and *Maintaining a calm manner* (p<.05). OIMs also obtained higher mean scores than 'others' for *Communicating instructions clearly and concisely* (p<.01). Finally, both OIMs and deputies obtained higher mean scores than 'others' for *Ensuring that all staff are regularly updated on the situation* (p<.01).

**Time in industry**
Time spent in the offshore industry did not significantly correlate with any of the performance ratings.

**Length of time as an OIM**
The length of time the actual OIMs (n=56) had been in post did not correlate with any performance ratings.

**Type of Installation**
Analyses of variance showed that type of installation did not have a significant effect on the performance ratings. Thus production, drilling and service installation OIMs did not significantly differ in their performance on the simulated emergency situation. However, consideration must again be given to the small sub-sample sizes (13% for drilling and 5% for service installations), which make it impossible to draw any definitive conclusions.

**Experience of the Merchant/Royal Navy or armed forces**
Of the 93 OIMs whose performance was rated, 50 had no experience of the armed forces or Merchant Navy, 26 had been in the Merchant Navy, 7 had been in the Royal Navy and 9 had experience of other forces. Because of the small numbers in these groups, the data were collapsed into Experience (n=42) versus No experience (n=50). No significant differences were found on performance ratings for the individuals in these two groups.

6.6.8 Do personality scores predict performance?
To establish if there were any significant relationships between scores on the 30 OPQ personality dimensions and ratings of performance (17 scales) in a simulated emergency situation, these variables were correlated for the sub-sample of 93 participants, for whom we had obtained both OPQ scores and performance ratings. It should be pointed out here that this involved computing a large number of correlations (510), and that the probability of some of these reaching significance purely by chance cannot be discounted. No correction factors were applied in the analysis. The somewhat restricted range of the ratings is likely to have contributed to the lack of higher correlations. Table 9 shows all the significant correlations.

Table 9  
Correlations of performance ratings with personality dimensions  

<table>
<thead>
<tr>
<th>PER</th>
<th>R2</th>
<th>R4</th>
<th>T4</th>
<th>T5</th>
<th>T7</th>
<th>F10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Takes command</td>
<td>.27**</td>
<td>.21*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Assess situation</td>
<td></td>
<td></td>
<td>-.25*</td>
<td></td>
<td>-.31**</td>
<td></td>
</tr>
<tr>
<td>3. Obtains info'</td>
<td></td>
<td></td>
<td>-.23*</td>
<td>.24*</td>
<td>-.22*</td>
<td></td>
</tr>
<tr>
<td>4. Listens</td>
<td></td>
<td></td>
<td></td>
<td>.24*</td>
<td>.21*</td>
<td></td>
</tr>
<tr>
<td>5. Verifies info'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.26**</td>
</tr>
<tr>
<td>7. Action plan</td>
<td>.27**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Calm</td>
<td>.26**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p<.05, ** p<.01

The significant correlations shown are of a fairly low magnitude but these are consistent with the levels of correlation reported in concurrent validation studies with personality tests such as the OPQ (e.g. Dulewicz, 1992; Stead, 1991).

Scores on the Controlling personality dimension were positively correlated with ratings of Taking Command (p<.01) and Developing an action plan (p<.01). That is, those who like to take charge and supervise others were given higher ratings for taking command and formulating a plan of action.

Scores on the Outgoing personality dimension were also positively correlated with Calm manner (p<.01), Taking Command (p<.05) and Verifies information (p<.05). Thus individuals who considered themselves to be sociable and humorous also scored highly on maintaining a calm and confident manner, taking command of the simulated emergency incident and verifying the information they had obtained, where appropriate.

Scores on the Behavioural personality dimension were significantly negatively associated with Assessing the situation (p<.05), Obtaining information (p<.05) and Listening to and verifying information (p<.05). Therefore individuals who considered themselves to be interested in understanding the behaviour of others scored lower on making an accurate assessment of the situation, obtaining information from relevant sources and listening to and verifying information where appropriate.

Scores on the Traditional personality dimension were positively correlated with Listening to information (p<.05); that is those who preferred orthodox and well proven work methods received higher ratings for listening carefully to incoming information.
Scores on the Conceptual personality dimension were negatively correlated with Assessing the situation (p<.05) and Listening to information (p<.05); therefore individuals who considered themselves to be intellectually curious and enjoyed solving complex abstract problems were rated lower on making an accurate assessment of the situation and listening carefully to incoming information.

Scores on the Decisive OPQ dimension were positively correlated with Developing an action plan (p<.05) that is those who preferred to make decisions quickly were rated higher on developing a plan of action to deal with the simulated emergency situation.

The practice of only testing those personality dimensions hypothesised to predict the relevant performance criteria in order to reduce the likelihood of accepting spurious correlations (Dulewicz 1992) was not adopted here, due to the preliminary and exploratory nature of this investigation. However, we had suggested above (at 6.4.2) that certain dimensions had been identified as potential predictors, namely Controlling and Decisive. In fact both of these were found to produce at least one significant correlation with the performance measure. The Controlling dimension has been found to predict superior's ratings of "leadership" ability in other studies of British managers from banking (n=440) and electrical engineering (n=270) (Seville et al., 1991). It had also been hypothesised above that two of the OPQ emotions dimensions Worrying and Relaxed might be predictive, but neither of these were found to be correlated to the performance ratings.

**Team roles**

Correlations were also computed for scores on Belbin's team roles with performance ratings. Table 10 shows that only three team roles (Plant, Monitor evaluator, and Team worker) correlated with performance ratings.

<table>
<thead>
<tr>
<th>Table 10</th>
<th>Correlations of performance ratings with Belbin's team types</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Plant</td>
</tr>
<tr>
<td>Assess situation</td>
<td>-0.24*</td>
</tr>
<tr>
<td>Listens to information</td>
<td>-0.24*</td>
</tr>
<tr>
<td>Obtains info’</td>
<td></td>
</tr>
<tr>
<td>Develops action plan</td>
<td>-0.26*</td>
</tr>
<tr>
<td>Monitors &amp; implements</td>
<td>-0.22*</td>
</tr>
<tr>
<td>Seeks feedback</td>
<td></td>
</tr>
<tr>
<td>Updates staff</td>
<td>-0.21*</td>
</tr>
<tr>
<td>Recognises stress</td>
<td>-0.24*</td>
</tr>
<tr>
<td>Monitors workload</td>
<td>-0.24*</td>
</tr>
<tr>
<td>Overall performance</td>
<td></td>
</tr>
</tbody>
</table>

*p<.05, **p<.01
Again, the correlations are not particularly high, but the large number of negative correlations between the Monitor evaluator team role (tends to take a back seat role, offers measured dispassionate critical analysis) and eight performance ratings (plus Overall performance), would lead to the conclusion that it is not an appropriate role for OIMs to adopt when handling emergency situations. The Belbin test is not recommended for selection purposes and this finding is likely to be of most value to those who are using the Belbin test or OPQ derived team type scores for training and development purposes.

**Leadership styles**

Correlations were also computed between the OPQ derived leadership styles and performance ratings. The only significant correlations were Adaptability in leadership style which correlated negatively with Assesses the situation \( r=-0.26, p<.05 \) and with Listens to information \( r=-0.27, p<.01 \). Again these scores were obtained from the OPQ, Expert System and as this is not a standard leadership test, this finding is of limited value.

**6.7 CONCLUSION**

This study was designed to examine the possible value of psychological tests for the selection and training of OIMs for crisis management. Having identified the personal qualities which were considered by employers of OIMs to predict emergency command ability, a personality test was selected as a suitable objective measure of these characteristics. The chosen measure was the Occupational Personality Questionnaire (version Concept 5.2) which assesses 30 dimensions of personality. This questionnaire is already being used by some companies for the selection and development of OIMs and it is currently the most popular instrument in the UK for managerial selection. The questionnaire was administered to 154 OIMs attending the Offshore Fire Training Centre for emergency management training or competence assessment. For 93 of these men ratings were obtained of their performance when managing a simulated offshore emergency.

This is the first study to have examined the personality characteristics of offshore managers and to relate these traits to their emergency command ability. In fact there has been no previous published research into the relationship of personality and command ability in British managers. It should be emphasised that this was a relatively small scale investigation and the findings should be regarded as preliminary.

The population of offshore managers tested with the OPQ Concept 5.2 were found to be very similar to the norm group of British managers. Their scores on five OPQ dimensions: Persuasive, Controlling, Forward planning, Competitive and Affiliative appeared to be slightly different from the onshore managerial norm group, but did not reach a statistically significant level.

The older OIMs wore found to show some slightly different characteristics from the younger OIMs. For example, they were more Traditional, less Change Oriented and less Democratic than the younger OIMs but this may also be true of the onshore managerial population and is a factor that would need to be explored further. No significant differences in personality were found in relation to job group, (OIM, deputy OIM or other), or to previous armed forces or merchant navy experience.

Ratings of performance were obtained for the 93 OIMs who managed a simulated offshore emergency. These were mainly experienced managers and the ratings tended to be clustered around the mid-point of the rating scale. As
mentioned above this was an experienced sample of offshore managers which was likely to have restricted the range of observed performance compared to that which would have been recorded in a less experienced group. The rating scale was specially designed for the study and due to the logistical constraints outlined above it was not possible to collect reliability or validity data for this scale, and hence no correction factor could be applied to the correlational analyses.

It was found that OIMs generally performed better during the simulated emergency than deputies or ‘others’, which is probably due to their greater experience in managing both routine installation activities as well as regular offshore emergency drills and exercises.

The principal objective of this study was to carry out a concurrent validation of the chosen psychological test. That is, to examine the relationship between the personality questionnaire scores and a criterion measure, in this case the criterion was the OM's ability to manage a simulated offshore emergency as assessed by an experienced trainer's evaluation of his performance. Six OPQ dimensions: namely higher scores on Controlling and Outgoing, and lower scores on Conceptual, and Behavioural were found to predict higher ratings on two or three of the performance rating criteria. (None of the correlations on Behavioural exceeded 5% significance and the possibility that these are spurious would require further investigation). The personality dimensions Traditional and Decisive were each correlated with one of the rating criteria, but only Decisive was at the higher level of significance.

These results are based on a relatively small sample size (93) for a concurrent validation exercise and while this number is acceptable, the results must be regarded as preliminary. The significant correlations obtained are modest, but they do suggest that the OPQ Concept 5.2 may be able to make a limited contribution to the selection and development of OIMs in relation to their emergency command responsibilities. Thus if the OPQ Concept 5.2 is being used as part of a selection or development process for prospective OIMs, then scores on certain OPQ dimensions may be worth taking into account at the interview stage or during formal competence assessment of command ability. For example, OIM candidates who score low on Controlling (low scorers dislike taking the lead in a group; high scorers like to make decisions and to take charge and organise) or Outgoing (low scorers tend to be shy and more inhibited; high scorers are typical “extroverts”) or high on Conceptual (high scorers like to take a theoretical approach and enjoy hypothetical and abstract problems; low scorers prefer implementation to theorising) should be interviewed in a manner which would allow further exploration of these aspects of their personality and management style. The Decisive dimension only predicted performance scores on ability to develop an action plan, but as this is such a central facet of emergency command, it is suggested that candidates who score low on this dimension (prefer to take decisions slowly) again should have this aspect of their decision making style considered at interview.

It should be emphasised that psychologists do not recommend that personality questionnaires are used in isolation, rather they should be used as part of the selection process, in conjunction with interviews and other selection techniques (Dulewicz, 1992; Feltharn & Rolls, 1991). Thus while we believe that the OPQ can contribute to the selection and development of managers, we would not advocate that the OPQ (or any other personality questionnaire) is relied on as a sole predictor of command ability.
This questionnaire and several other personality profiling tools are already being used by a number of companies as part of their OIM selection and development process. There are no published data on the validation of personality assessment for the prediction of OIMs' managerial ability and this study has not attempted to assess the validity of the OPQ for predicting general managerial performance on offshore installations. This would be a valuable exercise but it would require access to appraisal records or other performance data for offshore managers.

This study was only based on a single personality questionnaire (OPQ) and these results do not indicate whether any other type of psychometric test such as a measure of intelligence or leadership style would have any utility for the prediction of OIMs' emergency command ability.

In conclusion, while this personality questionnaire, the OPQ Concept 5.2, did generate some interesting and potentially indicative correlations in relation to emergency command ability, these results should be regarded as preliminary. This was a small scale study for a concurrent validation exercise and the data would require to be replicated with a larger sample and a criterion measure which had undergone further development, before more definitive conclusions could be drawn. As mentioned above, it would not be recommended that psychometric measures of personality are used as screening devices for OIM selection. However, these instruments can contribute to the predictive accuracy of the overall selection process if they are used in conjunction with other selection methods. If a larger data base can be developed in co-operation with the offshore oil industry, then more definitive results on the value of psychometric testing in relation to OIMs' emergency command ability and to their general managerial performance might be obtained.

It is most unlikely that there is one perfect personality profile for an OIM. However, we have no doubt that certain key managerial skills are required for the safe and efficient operation of offshore installations and for competent command of an offshore emergency. Some individuals are able to demonstrate these skills more easily than others and their superiority is a result of their training and their experience as well as their personality. What is important is that OIMs are properly trained for this position and that they are aware of how their personality and management style influence their ability to undertake the role of the on-scene commander in the event of an emergency.
7. CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

The overall aim of the project was to examine how the selection and training of OIMs might be improved, with particular reference to their ability to manage an offshore emergency. This final chapter outlines the conclusions drawn on the basis of the findings described in the previous chapters. These are presented under the following headings: selection criteria, selection methods, training procedures, simulated emergency exercises, competence assessment. Recommendations are listed at the end of each section.

7.2 SELECTION CRITERIA

7.2.1 Conclusions

Information on the desired personality characteristics and skills for an OIM in terms of his emergency command responsibilities was obtained by interviewing onshore managers in companies that employ OIMs in Britain (see Flin & Slaven, 1992 and Chapter 2), and in Norway (see Chapter 4). The personal attributes that managers mentioned were generally expressed in terms of command skills rather than as personality characteristics. The majority of responses included the following skills and characteristics:

- Leadership ability
- Stable personality
- Communication skills, especially briefing and listening
- Delegating
- Team working
- Decision making, under time pressures, especially under stress
- Evaluating the situation
- Planning a course of action
- Remaining calm and managing stress in self and others
- Preplanning to prepare for possible emergencies

This list is very similar to that obtained from a survey of OIMs themselves (Flin & Slaven, 1993) although these OIMs and the OIMs who participated in the crisis interviews also emphasised the importance of a good knowledge of the installation and of emergency procedures (see Chapter 3). The skills listed above were also considered essential in commanding officers by other organisations. If the attributes of a successful commander are expressed in terms of personality characteristics (as opposed to skills) (see Chapter 5) then there may be certain features of personality which are related to emergency command ability. These appear to include:

- willingness to take the leadership role
- emotional stability
- stress resistance
- decisiveness
- self-confidence
While there appeared to be general agreement as to the skills and characteristics required, the terms given are general labels and do not indicate a very precise set of behaviours or attributes. The same terms may not mean the same thing in different organisations or even to different respondents. For the key characteristics of leadership, stable personality and decisiveness, a more detailed definition was provided in Chapter 6. This problem of defining managerial competencies is well documented (Greatrex & Phillips, 1989; Hirsh & Bevan, 1991). A recent study of managerial skills in British companies found that, “The commonest single expressions were communication, leadership, judgement, initiative, organising and motivation. ... By far the highest level of confusion surrounds the expression 'leadership', which is unfortunate as it was the second commonest term of all, found in over half the documents analysed. Some view it as synonymous with the whole set of behaviours needed in managing people, and therefore view it as a competence. Some see it as a skill with the implication that leaders are not born but can be taught. Many see it as more of a personal attribute but this may be in terms of personality type, intellectual approach to dealing with problems or situations, or even as a motivational or attitudinal attribute. ... Assessment and training require a more precise skill language which describes how a good manager needs to perform in a specific role and environment.” (Dale & lies, 1992)

In the case of defining the skills required by an OIM to manage an offshore emergency, this has been accomplished by the OPITO ON Working Party on Standards of Competence who have prepared a detailed set of performance criteria in their Unit of Competence "Controlling Emergencies" (OPITO, 1992, see Appendix 3). This Unit of Competence would appear to be a very valuable document both for defining required skills and for identifying training and assessment requirements. The four elements in this unit are:

- Evaluate situation and anticipate needs
- Maintain communications
- Delegate authority to act
- Deal with stress in self and others

Each element is further subdivided into a set of performance criteria. A number of companies are now using this as a basis for their OIM command ability competence assessment. The views of onshore managers responsible for employing OIMs (Chapters 2 & 4), the experiences of OIMs who have handled crises (Chapter 3) and the information collected from other organisations whose senior staff have to take command in emergencies (Chapter 5) would endorse the content of this Unit of Competence as the required skills for controlling an emergency.

The psychometric test study (Chapter 6) provided some indication that three dimensions of personality as assessed by the Occupational Personality Questionnaire appeared to be related to ability to take command of a simulated offshore emergency. The predictions were that those who showed higher scores on the Controlling dimension (like to take charge and to organise), higher scores of the Decisive dimension (are prepared to weigh up situations quickly and to take decisions faster) and lower scores on the Conceptual dimension (prefer implementation to theorising) were given significantly higher performance ratings on one or more aspects of their performance when managing the simulated emergency. As emphasised earlier these findings should be regarded as preliminary trends and would require replication on a larger sample before more definitive conclusions could be drawn.
In terms of selection criteria for OIMs, all companies required technical, managerial and offshore experience. The level of experience and qualification required varied across companies and was also dependent on the type of installation to be managed. Our study (Chapters 2 & 4) showed that most OIMs (94%) on drilling and service units are required by their companies to be qualified master mariners and they will already be in possession of certificates of competence to take command of a vessel and to deal with emergencies. Only 37% of the companies surveyed had documented formal selection criteria. We would suggest that formal selection criteria should be used for appointments at this level.

Some operating companies were undertaking detailed job analysis techniques in order to improve their selection criteria and training requirements for OIMs. We were impressed by the work being undertaken in a number of operating companies which were developing full competence assurance systems to cover all areas of an OIM's responsibility for a given installation.

### 7.2.2 Recommendations: Selection Criteria

1. Formal selection criteria should be prepared for the OIM position on each installation. These should typically specify the required qualifications, training and experience in terms of the technical and managerial aspects of the job and the amount of time to have been spent offshore in general, and in a supervisory / Deputy OIM position in particular.

2. In terms of emergency command responsibilities, a satisfactory assessment of competence to take command in an offshore emergency is required in the selection criteria and this must be stipulated.

3. The selection criteria must stipulate the level of knowledge which is required of the installation's emergency systems and procedures.

4. The selection criteria must stipulate the level of knowledge which is required of the installation to be managed. In terms of process, control and protection systems, as well as major hazards and the ramifications of system failures.

5. A job description should be prepared for the OIM position on each installation and updated as necessary.

### 7.3 SELECTION METHODS

#### 7.3.1 Conclusions

The vast majority of OIMs are selected from within their organisation rather than as external candidates. Their selection is therefore generally based on staff reports and annual appraisals rather than more formal selection techniques such as those used in assessment centres. This is very much in line with the selection methods employed by other organisations for senior commanding officers, although in some cases, for example the armed forces and the police, an assessment of leadership potential will have been an important element of the initial selection decision when the individual joined the organisation. In both the armed forces and in the Merchant Navy, there are well established career routes to senior command positions and individuals with command potential can be identified, trained and assessed for these appointments fairly early in their careers. There are obvious advantages of employing known individuals where a
record is held of previous performance, especially with respect to emergency command performance in drills, exercises, training, and the handling of actual incidents. Where external candidates are being considered, obviously available records may need to be supplemented with other measures of competence assessment.

While many companies had well documented systems of selection and appraisal, other companies appeared to be less formal in their methods. There would appear to be benefits for both managers and OIM candidates, for selection criteria and procedures as well as job descriptions to be formally documented and updated as required.

A few companies both in Scotland and in Norway, were using psychometric tests, typically of personality as part of their OIM selection and development process. A study was carried out to assess the value of a psychometric test of personality (OPQ Concept 5.2) for the prediction of OIMs’ emergency command ability (Chapter 6). The results are based on a relatively small sample size (93) for this type of concurrent validation exercise and while this number is acceptable, the results must be regarded as preliminary. Several significant correlations were obtained and although these were relatively modest it was suggested that the OPQ Concept 5.2 may be able to make a limited contribution to the selection and development of OIMs in relation to their emergency command responsibilities. However, we would not recommend that this or any other psychometric test is used in isolation as a screening device for OIM selection. If these tests are used, they should be administered and interpreted by qualified individuals, as part of the selection process, in conjunction with interviews and other selection techniques.

7.3.2 Recommendations: Selection Methods

6. The method by which OIMs are selected (either as external or internal candidates) should be recorded in a formal company document.

7. Career planning systems allow companies to identify, train and assess potential OIMs when the individual is holding more junior offshore and onshore positions. These should be considered as part of the OIM selection procedure.

8. Psychometric tests should not be used in isolation as a selection device for OIMs, however, they may provide a useful contribution to the selection and development of OIMs, if used in conjunction with other methods.

7.4 TRAINING PROCEDURES

7.4.1 Conclusions

A recent survey of OIMs (Flin & Slaven, 1993) indicated that 25% of them had received little, if any, specific training in emergency command for an offshore installation incident beyond that provided on regular drills and exercises. This issue was obviously being addressed by the time the company survey (Flin & Slaven, 1992) was carried out and it appears that most companies are now providing some training of this kind for individual OIMs or for OIMs with their teams (see Chapter 2). There is a range of training courses available, the Managing Emergencies course run by OFTC at Montrose being used most frequently. While some OIMs have been exposed to this type of training earlier in their careers, particularly those with a marine or forces background, there
would appear to be a need to develop the necessary skills in those OIMs who do not have emergency command experience. This can be provided through the OFTC course or similar courses. Training programmes for OIMs should therefore include individual emergency command training (for those who require it) and training with his offshore emergency response team. For personal development of command skills there are probably benefits in training prospective OIMs independently of their teams, as this will enable them to reveal their strengths and weaknesses in a supportive environment, in order to receive the necessary coaching to improve performance. For platform emergency response training, OIMs and their teams should be trained and exercised together, so that the team learn to respond as an effective and cohesive group. There are obvious advantages therefore in offshore emergency command teams consisting of an established core of staff from a given installation.

The training content should include material on emergency planning, emergency management, decision making and dealing with stress in self and others. The HSE Offshore Emergencies Handbook provides a basic guide to procedures for dealing with any emergency occurring offshore affecting offshore installations and pipelines (HSE, 1992b). One aspect of OIM training which is important for effective emergency command relates to knowledge of the installation. This element of competence should not be underestimated as it featured repeatedly in interviews with OIMs who had managed offshore crises. This clearly has implications for induction procedures, especially for OIMs who have not previously worked on the installation to which they have been appointed.

It appears that there is valuable information to be gained by conducting confidential in-depth interviews with OIMs who have managed offshore incidents. This material could be shared across the industry and used for training purposes and for scenario development. We would therefore recommend that more use is made of detailed incident analyses based on OIMs' personal experiences of managing offshore emergencies and that this is provided not just within companies, but on an industry wide basis through UKOOA and IADC. It is suggested that an industry working party is established for this purpose. There may also be an argument for developing a special offshore management training module for OIMs and deputies which would draw extensively on the knowledge and advice of experienced OIMs.

Simulated emergency exercises are widely used by other organisations who have to train staff for on-scene command positions. (These are discussed in the next section.) Training programmes need to be developed and managed by individuals who have knowledge of the offshore oil industry as well as emergency command experience. An important feature of emergency command training is personal feedback and coaching based on performance in simulated emergency exercises.

The UKOOA (1991) guidelines on offshore emergency training are supported by the findings of this project and should be regarded as a minimum level of emergency response training for OIMs and their Deputies.
7.4.2 Recommendations: Training

9. A structured training programme should be prepared for prospective OIMs and for OIMs in position.

10. New OIMs should spend an induction period offshore with an incumbent OIM if they have not previously worked on the installation to which they have been appointed.

11. All OIMs should have received training to enable them to undertake the command role in an emergency before they are appointed.

12. Emergency command training should include experience of playing the role of the OIM during realistically simulated emergencies either onshore or offshore, with personal feedback provided.

13. The training content should include advice on planning for emergencies, emergency management, decision making and dealing with stress.

14. Training providers should have knowledge of the offshore oil industry and emergency command experience.

15. The experience of OIMs who have successfully managed offshore emergencies should be recorded and incorporated into OIM training on an industry wide basis.

16. Emergency command training should include regular exercises for the OIM with his offshore emergency response team.

17. The UKOOA (1991) guidelines for OIMs' offshore emergency training should be regarded as a minimum standard of training for OIMs.

7.5 SIMULATED EMERGENCY EXERCISES

7.5.1 Conclusions

The use of realistic and well managed, simulated emergency exercises are clearly the most important element of training and competence assessment for OIMs. These are widely used by organisations outside the offshore oil industry where they are regarded to be the best method of training and assessing emergency command skills (See Chapter 5 and Appendix H). Simulated emergencies can be staged offshore or onshore, however, it seems that many companies are finding for both OIM training and competence assessment, that onshore simulations have certain advantages in terms of control and costs (see Appendix A). For team training, scenarios for simulations should be platform specific, based on identified accident scenarios and designed to fully test the command structure. Regular offshore drills and exercises also have a part to play in the training and appraisal of OIMs' performance. However, it is sometimes the case that the OIM will run all the drills and exercises and while he may be able to assess the performance and training needs of his team, there may be limited opportunity in this situation for assessment and feedback on the OIM's performance.
7.5.2 Recommendations: Simulated Emergency Exercises

18. Simulated emergency exercises are essential to the training and competence assessment of OIMs and other key personnel.

19. OIMs in post should participate in at least one offshore drill or simulated emergency exercise per annum in which they are not briefed as to the scenario and they are given feedback on their performance by an independent or more senior observer, e.g. line manager, safety manager.

7.6 COMPETENCE ASSESSMENT

7.6.1 Conclusions

The need to assess the ability of OIMs "to command in any emergency" as part of an installation's safety case submission has already been addressed by several production and drilling companies. Competence assessment procedures using simulated offshore emergency control room facilities at OFTC have been established by at least two of the major operating companies. There are other methods of assessing competence such as running the assessments offshore or by using other facilities. It is debatable whether it is better to assess the OIM with or without his team. OIMs normally manage incidents with the help of their teams, however, it could be argued that the presence of a strong team in an assessment could mask weaknesses in the OIM. There is insufficient evidence at present to conclude which method provides the more accurate predictor of competence.

The essential competence requirements have been defined by the OIM Standard of Competence on Controlling Emergencies and this document also states that the OIM's performance should be assessed in a minimum of three scenarios involving a prescribed range of incidents. This standard appears to have been widely adopted as a general guideline by those companies who have developed competence assessment methods for judging their OIMs' capability to manage an offshore emergency.

Formal competence assessment procedures for emergency command are used by a number of organisations outside the oil industry, most notably the Royal Navy and the commercial airlines (See Chapter 5 and Appendix H for details). The recommendations outlined below are based on the recent experiences of the oil industry (Chapter 2) as well as information from these other organisations who have a longer history of formal competence assessment.

7.6.2 Recommendations: Competence Assessment

20. The competence of an OIM to take command in an offshore emergency should be assessed prior to his appointment. This should be judged on the basis of his ability to manage three simulated emergencies of different types as outlined in the OPITO (1992) unit of competence for OIMs entitled "Controlling Emergencies".

21. The simulated emergencies should be as realistic as possible and should be designed to induce a level of stress in the assessee in order that performance under pressure can be judged.
22. The assessment procedure should include an opportunity for the assessee to explain or to justify the reasons for his actions.

23. It is preferable that two assessors are involved. If only one assessor is used then this person should not be the individual's immediate line manage.

24. Assessors should have offshore management experience and should have received training in formal competence assessment procedures.

25. The method of assessment, including details of the selection and training of persons conducting the assessments should be documented.

26. Any OIM who fails the competence assessment should not be appointed to (or allowed to continue in) an OIM position until a successful assessment is achieved.

27. OIMs should be briefed as to the criteria against which their performance is judged and be aware of the implications of being deemed 'not yet competent'.

7.7 GENERAL CONCLUSION

The offshore oil industry has clearly accepted the recommendations made by Lord Cullen on the need to ensure that their offshore managers are competent to handle emergencies. The development of a standard of competence on Controlling Emergencies for OIMs has provided a valuable focus for those tasked with reviewing selection methods, improving training and establishing formal competence assessment programmes. There is still a need in some organisations to formalise and document procedures of selection and appraisal particularly with respect to emergency command responsibilities. Offshore training organisations and consultants appear to be working with the industry to refine and develop both selection methods and the quality of training provision.

One of the difficulties of defining selection criteria and conducting training needs analysis for the OIM population as a whole is that they manage a wide range of installations with very different operational demands. It would seem entirely appropriate that the assessment of their competence to manage an emergency is based on the type of emergency they are likely to have to manage, that is in relation to the safety case of a particular installation.
REFERENCES


APPENDIX A  STAGE 4 EMERGENCY SIMULATION EXERCISES

A.1 INTRODUCTION

The Cullen Report specifically recommended “a system of emergency exercises that provides OIMs with practice in decision making in emergency situations.” (Rec. 99) (Cullen, 1990). Stage 4 examined how frequently emergency exercises are conducted offshore, and what crisis management training is provided. Observations were made of a small sample of OIMs’ performance during such simulated emergencies.

A.2 OBJECTIVES

The specific project objectives were as follows:

1. Determine the frequency and type of emergency simulations on- and offshore which involve OIMs, including methods of performance assessment and feedback.

2. Conduct systematic observations of OIM’s performance during simulated emergencies on different onshore and offshore locations, and to debrief the OIMs after the exercises were completed.

A.3 FINDINGS

A.3.1 Emergency exercise provision

During the surveys of onshore management in the UK (Chapter 2) and Norway (Chapter 4), companies were asked what simulations and exercises were currently provided, if any, and the methods of assessment used to assess the OIM’s performance. In the UK, most of the drilling and service companies, and some of the operating companies only had weekly drills as per government and industry guidelines. These tended to be conducted by the OIM for the benefit of subordinates and did not involve any assessment of the OIM’s performance. In one company such drills were critiqued, debriefed and documented in considerable detail, though this appears to be the exception rather than the rule.

Some drilling companies were audited by client companies, which involved running major exercises offshore, with feedback on performance to all personnel, including the OIM. Their frequency is not regular but dictated by the client. Some drilling and most of the operating companies run major offshore exercises simulating major offshore emergencies. These are usually organised and orchestrated by external consultants and tend to involve onshore response teams, and sometimes the emergency services as well. Few companies indicated how regularly these were run. Sample frequencies included one company with a major exercise once every three years and three companies with major exercises once a year. Most of these exercises incorporated feedback on performance to the staff involved, though there was not always a systematic performance assessment of the OIM.
Just 21 of the 38 UK companies surveyed provided some kind of crisis management training. This was either done by an external training organisation using simulated emergency situations onshore (N=12), in-house onshore table top scenarios, or offshore simulations usually organised by external consultants. While these training exercises involved debriefs on individual’s performances, and sometimes documented critiques, there was little, if any, formal assessment of the OIM’s performance.

In Norway, all the nine companies surveyed conduct drills every two weeks (as in the UK), such as fire, life boats, musters etc. Almost all the companies (N=8) also conduct major emergency exercises at least once a year, usually involving the emergency services. As with UK companies, there is little systematic assessment of the OIM’s performance, though one company did assess each of their OIMs. All the companies surveyed also provided some form of crisis management training, most of the operating companies provided State-of-readiness training that involves decision making under pressure, reactions to stress and tactics. Drilling companies tended to provide the Platform Manager’s course, conducted according to government guidelines, which involve an assessment of the OIM.

A.3.2 Observations of onshore simulation training

This section contains a brief summary of the facilities and course format for two different types of simulation exercises which were observed. Simulations of emergency exercises can take one of the following formats:

1. Simulations can be conducted offshore, usually orchestrated by external consultants presenting the control team members with an unseen emergency scenario. (See Mitchell, 1992 for an example.)

2. Onshore simulations can be conducted within purpose built premises, with high fidelity equipment to mirror an offshore control room or radio room, other key offshore locations, and communications equipment, (e.g. OFTC).

3. Onshore table-top scenarios are another form of exercise, often conducted in a number of rooms to represent different offshore locations, with telephones and portable radios to represent offshore communications systems.

Within the time scale of the project it was not possible to spend time offshore observing a large scale exercise, although routine muster drills were observed during offshore visits.

This section describes each type of onshore simulation exercise.

Onshore simulator: The purpose built simulator at OFTC contained three rooms; a control room with white boards, telephone, radios, PA, platform alarms and fire and gas status information, a radio room with radios and telephones, and a fire team or response team leader's room. The control room is under video surveillance. The trainers can produce a platform alarm, power failure, communications breakdown, fire and gas information, sound effects and can control all equipment in the simulated control room. The offshore control team can be gathered together to role play their own, or others’ offshore positions.

The simulator can be based on a mythical fixed platform or a real installation, and the POB list, offshore contact personnel and scenario can be organised to
reflect the installation participants usually work on. The exercise aims to enhance the following skills: model making (being able to mirror in one's mind what is happening at the scene of the incident), pre-planning skills, information gathering, planning, problem solving, decision-making, delegation, and communication skills. The scenarios usually last for up to one hour, run in 'actual time elapsed' in scenario development. That is, although participants are asked to imagine a start time (e.g. 6 a.m.) time elapsed thereafter is at actual pace. After each exercise, a structured feedback session is conducted, with each of the main response groups providing constructive comment on other groups' behaviour.

Onshore table-top: The table-top scenario was located in two hotel rooms, with a written emergency scenario for participants to follow based on a real platform. Two offshore locations, the control room and scene of the incident were imitated by placing staff in two separate rooms. Portable radios and telephones imitated offshore communications systems. Participants were faced with various unseen written scenarios ranging from a general work situation fire to a major offshore oil and gas emergency. Offshore scenarios were written to match the type of installation the participants worked on, but were not run in real time. The offshore control team role played their own and each others posts during these scenarios. The exercise aimed to provide participants with knowledge of their company's emergency procedures, onshore support and the role of the emergency services, and decision making in stressful situations. There was no assessment of participants performance by the course trainers but feedback was provided, mainly from other control team members.

A.4 CONCLUSION

Each type of scenario presentation has its own merits and weaknesses. The simulator is generic and is not purpose built to the specifications of a single installation; although it can be adapted for particular installations by using their station bills, telephone numbers and their emergency response procedures. It can also provide a convincing degree of realism in simulating the offshore environment which a table top presented scenario cannot do. A simulator also does not suffer from the distractions often present in hotel rooms or in the company offices, and can therefore usually elicit more realistic responses from participants and generate a more stressful atmosphere. For a detailed comparison of onshore vs. offshore simulations see Mitchell (1992) who describes his experiences as a consultant conducting both types of exercise.

An advantage of both types of onshore simulation is the opportunity to simulate major offshore emergencies (e.g. blowouts and explosions), and the degree of control the trainers have compared with an offshore location. What both types of onshore exercise lack is practice in using the equipment of the participants' installation, and any advancement of their knowledge of the installation and the responses of crew members apart from the emergency control team. It appears that there are probably merits in using both onshore and offshore exercises to train OIMs in emergency command.
## APRENDIX B PERSONALITY PROFILING OF OIMs

### B.1 PERSONALITY DIMENSIONS MEASURED BY THE OPQ

**CONCEPT 5.2**

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</table>
B.2 RGU RATING SCALE FOR OIM EMERGENCY COMMAND ASSESSMENT

(Instructions to Raters: IN CONFIDENCE)

For each of the scales overleaf, please indicate the appropriate level (from 1 to 6) in terms of observed performance for each OIM. (Observations may be made during the exercise or from the video tape). Also note the date, name of OIM and your own name (or initials).

6 Outstanding performance
5 Very good performance
4 Good performance
3 Fair performance
2 Adequate performance
1 Poor performance

Be sure, to use the full range of scores from 1 to 6 in assessing an OIM. When thinking of a score for an individual, think of the best performance you have seen an OIM give, and use that as your criteria for a score of 6. Similarly, think of the worst performance from an OIM you have seen on an emergency command course, and use that as your basis for a score of 1.

Each trainer should complete the rating ONLY for the OIM course delegate who role plays the OIM in the "hot seat" during simulations. At the end of the exercise, each trainer should complete the rating scales overleaf without discussion with other trainers. Once each trainer has completed this, the two, or more, trainers for that particular course should compare their ratings for the individual OIM and agree on a joint rating for each of the scales overleaf. Thus for each OIM in the "hot seat" there should be two or more ratings by individual trainers, and a joint rating by the trainers on that particular course. This should be completed as soon as possible after the exercise in which the OIM delegate has role played the OIM in the simulation.

It is important to remember that the ratings are CONFIDENTIAL. The OIMs should not see their ratings, the companies will not be informed about the ratings for their OIMs, nor will HSE have access to the ratings. Once RGU have collected in all the data, individuals’ names will be removed, and replaced with numerical codes prior to analysis. It is important that OIMs are not informed about their individual ratings.
I  ASSESSING THE SITUATION
  i) Takes command of the incident
  ii) Makes an accurate assessment of the situation given the information available
  iii) Obtains information from relevant sources
  iv) Listens carefully to incoming information
  v) Verifies information or seeks clarification where appropriate

II  DECISION MAKING
  i) Makes appropriate decisions and implements them
  ii) Develops a plan of action to deal with the situation
  iii) Monitors and implements this plan
  iv) Demonstrates flexibility. Can adapt plan of action as situation and goals change
  v) Allocates resources as required

III  COMMUNICATION
  i) Communicates instructions clearly and concisely
  ii) Seeks feedback to ensure comprehension
  iii) Ensures that all staff (outwith ECC) are regularly updated on situation

IV  STRESS MANAGEMENT
  i) Maintains a calm and confident manner
  ii) Recognises the signs of stress and deals with them appropriately
  iii) Monitors his workload and that of other members of ECC and delegates tasks if necessary

OVERALL PERFORMANCE
Good morning / afternoon.

My name is ..............................................................

I am a psychologist from The Robert Gordon University Business Research Unit.

My colleagues and I are currently conducting a research project for the Offshore Safety Division of the Health and Safety Executive, part of which is to establish whether psychometric tests have any utility in predicting OIMs’ emergency command ability.

To investigate this we need to compare OIMs’ scores on a given test with ratings of their ability to manage a simulated emergency.

The test we have chosen is the Occupational Personality Questionnaire. This is a British personality test, developed for use with managers and professionals. It is a selection test, not a clinical test and is now widely used by British companies for management selection. It has been designed to measure dimensions of personality relating to managerial activities.

It takes 30-40 minutes to complete, and provides scores across 30 dimensions of personality.

The performance rating will be carried out by OFTC staff after the exercises are completed. The rating scale is based on the OIM Unit of Competence "Controlling Emergencies". No individual rating scores will be divulged to companies, to OIMs themselves, or to the HSE. The ratings remain completely confidential.

All the information gathered is confidential, no individual names will be entered in the database, nor identified to your company or to the HSE.

If an individual wants, he can receive feedback on his personality test scores. I will provide my card for you to get in touch with us. I would suggest that you give your home address for the results to be posted. You can also discuss your results with us over the telephone, or arrange a face-to-face meeting.

Your companies have been approached for permission to ask you to participate, and I can give you the contact names to confirm this if would like to speak to them. There is no obligation to participate, it is completely voluntary, but we would greatly appreciate your co-operation.

This stage of the project will run until December 1992.
Q1. COURSE TYPE: OFTC 4 DAY MANAGING MAJOR EMERGENCIES
   IN-COMPANY ASSESSMENT
Q2. AGE
Q3. CURRENT POSITION: OIM
   DEPUTY OIM
   OTHER: please specify
Q4. LENGTH OF TIME AS AN OIM:
Q5. TOTAL YEARS WORKED IN OFFSHORE OIL & GAS INDUSTRY
Q6. TYPE OF INSTALLATION MANAGED: PRODUCTION PLATFORM
   DRILLING
   SERVICE/SUPPORT
Q7. IF YOU HAVE BEEN IN EITHER THE MERCHANT NAVY OR THE ARMED FORCES PLEASE INDICATE:
   MERCHANT NAVY
   ROYAL NAVY
   OTHER FORCES
   NONE
In the questionnaire you are asked to rate yourself on a number of statements.

The questions are concerned with how you typically behave at work, so if in any doubt try to answer from a work point of view.

People who try to guess what they think is the "right" answer are often mistaken as there are no "right" or "wrong" answers, so just try to rate yourself as accurately as possible rather than say what you think we want.

The questionnaire is not timed, but try to complete it as quickly as you can.

Is English a second language for anyone?

Please ask for assistance if there are any words in the questionnaire you do not know, or are unsure of their meaning.

I will now read the instructions for the questionnaire. Please turn to the first page of your question booklet.
B.5 HISTOGRAMS OF OIM PSYCHOMETRIC TEST DATA

Figure B.1
Age distribution of Stage 5 respondents

Figure B.2
Length of time Stage 5 respondents had spent working in offshore industry
Table B. 1  
Frequencies of simulated emergency performance ratings for OIMs

<table>
<thead>
<tr>
<th>Rating</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Takes command</td>
<td>6</td>
<td>15</td>
<td>33</td>
<td>32</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Assesses the situation</td>
<td>3</td>
<td>27</td>
<td>39</td>
<td>16</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Obtains information</td>
<td>3</td>
<td>32</td>
<td>39</td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Listens to information</td>
<td>3</td>
<td>33</td>
<td>39</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verifies information</td>
<td>7</td>
<td>31</td>
<td>39</td>
<td>13</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Decides and implements</td>
<td>4</td>
<td>19</td>
<td>41</td>
<td>25</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Makes an action plan</td>
<td>8</td>
<td>31</td>
<td>30</td>
<td>22</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Monitors and implements</td>
<td>5</td>
<td>35</td>
<td>31</td>
<td>21</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Has a flexible plan</td>
<td>8</td>
<td>37</td>
<td>33</td>
<td>12</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Allocates resources</td>
<td>7</td>
<td>30</td>
<td>42</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communicates</td>
<td>4</td>
<td>27</td>
<td>31</td>
<td>29</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Seeks feedback</td>
<td>9</td>
<td>35</td>
<td>37</td>
<td>10</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Updates staff</td>
<td>5</td>
<td>12</td>
<td>26</td>
<td>30</td>
<td>19</td>
<td>1</td>
</tr>
<tr>
<td>Calm manner</td>
<td>2</td>
<td>20</td>
<td>34</td>
<td>24</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Recognises stress</td>
<td>3</td>
<td>8</td>
<td>26</td>
<td>28</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Monitors and delegates workload</td>
<td>8</td>
<td>31</td>
<td>42</td>
<td>11</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Overall performance</td>
<td>6</td>
<td>16</td>
<td>51</td>
<td>19</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Note:

Each rating scale was scored as follows:

1. Poor performance
2. Adequate performance
3. Fair performance
4. Good performance
5. Very good performance
6. Outstanding performance
APPENDIX C

C.1 OIR/5 OIM Appointment Form

Mineral Workings (Offshore Installations) Act 1971
The Offshore Installations (Managers) Regulations 1972

Notice of Appointment of an Installation Manager
Under Section 4(1) of the Act

To: The Health and Safety Executive, Offshore Safety Division, Ferguson House, 15 Marylebone Road, London NW1 5JD

NOTE: For convenience of notification and recording, this form should be completed in respect of one appointee only. If it is desired to notify particulars of other appointments in respect of the same offshore installation, separate forms should be used for each appointment, but information need not be duplicated.

Notice is hereby given that

(1) .............................................................................. was on (2) ................................ .............................................

appointed

* to be manager

* to be a person to act where necessary in place of the manager

(3) Insert registered name or other designation of the installation or if no name or other designation has yet been registered under the Act other particular sufficient to identify the installation.

pursuant to the requirements of section 4(1) of the Mineral Workings (Offshore Installations) Act 1971.

† The appointee succeeds (4) ........................................................................................................

whose appointment [ceases] [ceased] on (2) ..............................................................

The appointee is aged ............... and the qualifications, skills and experience which are considered to make him a suitable person for the appointment are as follows:— (5)

................................................................................................................................ ....................................................

................................................................................................................................ ....................................................

................................................................................................................................ ....................................................

† The appointee is one of two or more persons appointed to act as manager and the general nature of the rotation arrangements and the manner in which it is determined who is in charge when more than one is appointed are as follows:— (5)

................................................................................................................................ ....................................................

................................................................................................................................ ....................................................

................................................................................................................................ ....................................................

† The appointee is one of two or more persons appointed to act in place of the manager(s) and the arrangement whereby it is determined whether this appointee or another acts in place of the manager(s) is as follows:— (5)

................................................................................................................................ ....................................................

................................................................................................................................ ....................................................

................................................................................................................................ ....................................................

Date .......................................................... Signed ..............................................................

(8) Give name of installation owner.

on behalf of (6) .......................................................... status of signatory (7) .........................

(7) e.g. Director or Secretary of a body Corporate.

OIR/5

* delete as appropriate  † delete if inappropriate
C.2 OIM Standard of Competence for "Controlling Emergencies"  
(OPITO, 1992)

GROUP TITLE : MANAGING OFFSHORE INSTALLATIONS

UNIT : CONTROLLING EMERGENCIES  
(Core Unit)

This Unit of competence is concerned principally with emergencies involving large numbers of people and which by the very nature of the emergency is a threat to life, the installation or the environment.

This Unit forms the Core for all types of installations. The Core Unit can be assessed alone only for an installation fixed to the sea bed and is limited to accommodation services. Where applicable, the following endorsements (specific to the type of installation) must be assessed in conjunction with this Core Unit. These are:

Endorsement: Production Operations  
Endorsement: Drilling Operations (Fixed)  
Endorsement: Drilling Operations (Floating)  
Endorsement: Mobile/Boating Installations

EVIDENCE : A minimum of 3 emergency scenarios should take place. Each should be based around a major incident chosen from:

- Well Control Incident
- Explosion and fire
- Accommodation fire
- Helicopter incident
- Pipeline incident
- Collision or wave damage causing structural collapse
- Loss of stability (Mobile installations)

The events on which the candidate is judged must include the following at least once in any suits of emergency scenarios:

- Abandonment of installation / rig
- Injured personnel
- Missing personnel or man overboard
- Loss of communication
- Loss of evacuation and muster points
- Stressed Personnel (individual ineffectiveness or mass panic)
- Extreme weather conditions
- Loss of essential facilities
- Loss of key personnel
- Rapidly developing situation leading to information overload
- Loss of mooring (where appropriate)

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### PERFORMANCE CRITERIA:

1. Information from all appropriate sources is obtained, evaluated and confirmed as quickly as possible.
2. Valid interpretations of all evidence are made and valid decisions taken throughout the emergency.
3. Appropriate actions are ordered in the light of this evidence. (Ibis may include doing nothing).
4. Potential outcomes of the emergency are reviewed against consequences and probabilities.
5. Resources to respond to the most appropriate outcomes are put in place as quickly as possible.
6. Emergency response teams are coordinated and directed in an effective manner.

### ELEMENT:

#### 1. Evaluate Situation and Anticipate Needs

**RANGE:**
- Communications with: Offshore team; HM Coastguard; standby vessel; fire team leaders; nearby installations / shipping / helicopters.
- Reports provided by: Tannoy to installation: 2-way radio to fire team leaders.
- Alternative communications means: 2-way radio; runners.

### PERFORMANCE CRITERIA:

- a. All essential people and organisations are immediately informed of the emergency.
- b. Reports of the situation as it develops are provided to installation staff at suitable intervals.
- c. Apparatus communications are maintained during the emergency.
- d. An accurate record of all events and of key communications is maintained.
- e. Where possible alternative means are put in place when necessary to maintain communications.

### ELEMENT:

#### 2. Maintain Communications

**RANGE:**
- Communications with: Offshore team; HM Coastguard; standby vessel; fire team leaders; nearby installations / shipping / helicopters.
- Reports provided by: Tannoy to installation: 2-way radio to fire team leaders.
- Alternative communications means: 2-way radio; runners.
**ELEMENT:** 3. Delegate Authority to Act  

**PERFORMANCE CRITERIA:**  
a. Valid decisions are taken on which activities should be delegated in the light of the circumstances of the moment.  
b. Delegated activities are assigned to those most suited to deal with them in accordance with established procedure.  
c. Functions are clear and fully comprehended by those to whom they are delegated. (This must include the necessity to report back).  

---

**ELEMENT:** 4. Deal with Stress in Self and Others  

**PERFORMANCE CRITERIA:**  
a. Symptoms of developing excessive stress in self and colleagues are recognised quickly.  
b. Appropriate action is taken to ensure the continuance of the activities.  
c. Action is taken to reduce the stress in oneself and whenever possible in colleagues.  

**ASSESSMENT GUIDANCE:**  
• Behavioural indicators:- Irritability; restlessness; inability to concentrate or to retain information; increased speech rate or volume; inappropriate attention to trivial or low priority tasks; expression of worry or anxiety.  
• Physiological indicators:- Increase in breathing rate; sweating; facial colour; muscle tension (posture, hands and facial expression).  
• Actions for continuance of activities:- Removing distressed personnel from critical tasks (especially those involving communication links) and reallocating these tasks; ensuring stressed personnel are accompanied and if possible occupied with non-essential tasks; delegating own tasks if workload becomes excessive.  
• Actions to reduce stress in self:- Reducing physiological effects in self by controlling breathing and muscle tension; controlling speech, posture, facial expression in order to demonstrate calm and authority.  
• Actions to reduce stress in others:- Communicating in a clear and calm manner and providing as much information and reassurance as possible.  
• Colleagues:- Emergency control team members; other persons in direct contact; all other persons onboard the installation.
ESSENTIAL KNOWLEDGE

Core Unit:

1. Emergency procedures.
2. Sources of information on the properties of on site materials.
3. Sources of help in an emergency (coastguard, sector club, vessels, helicopter, emergency response vessels) and their facilities, methods of communication and response times.
4. Layout of installation including location and functions of the major pieces of equipment.
5. Potential dangers resulting from activities in each area of the installation.
7. All relevant sources of energy to prime movers.
8. Drain, flare and vent systems.
9. Location and operation of emergency systems (fire and gas detection, firefighting, communications and lift saving appliances, escape systems and lifeboats).
10. Purpose of significant control systems.
11. Cause and effects of significant alarms and trips.
13. Consequences of emissions to the environment.
14. Effects of the environmental conditions on emergency response.
16. Potential effects of the emergency on diving operations.
17. Safety management system in operation and installation Safety Case.
18. Marine search and rescue procedures.

ASSESSMENT METHODOLOGY

It is anticipated that a trainee manager of an offshore installation would never be required to take responsibility for any emergency. Consequently, assessment of competence in this Unit should be based on simulated situations. This should be demonstrated a sufficient number of times (at least 3 simulations) and over a broad spectrum of potential events (as outlined in the Evidence statement) to ensure that the person is likely to remain effective during a real emergency should it occur. A sufficient number of scenarios should be created to ensure the maximum variation in choice for each assessment and the series of simulations should in total contain at least all of the events listed in the Evidence statement. Assessment in every case should be based on observation of performance.

Much of the Essential Knowledge will be revealed in the work which is carried out. Where the Assessor feels that more evidence is necessary, informal questioning is the best way of eliciting this.
UNIT : CONTROLLING EMERGENCIES

ENDORSEMENT : PRODUCTION OPERATIONS

This endorsement cannot be awarded in isolation. Competence is assessed in conjunction with the standards contained in the Core Unit.

ESSENTIAL KNOWLEDGE

Core Unit:

1. Emergency procedures.
2. Sources of information on the properties of on site materials.
3. Sources of help in an emergency (coastguard, sector club, vessels, helicopter, emergency response vessels) and their facilities, methods of communication and response times.
4. Layout of installation including location and functions of the major pieces of equipment.
5. Potential dangers resulting from activities in each area of the installation.
7. All relevant sources of energy to prime movers.
8. Drain, flue and vent systems.
9. Location and operation of emergency system (fire and gas detection, firefighting, communications and life saving appliances, escape systems and lifeboats).
10. Purpose of significant control systems.
11. Cause and effects of significant alarm and trips.
13. Consequences of emissions to the environment.
14. Effects of the environmental conditions on emergency response.
16. Potential effects of the emergency on diving operations.
17. Safety management system in operation and installation Safety Case.
18. Marine search and rescue procedures.

Endorsement Specific:

19. Process shutdown logic and its effects (operational intent and response to activation).
20. Methods of isolation and depressurisation.
21. Consequences of process upsets.
22. Purpose of the major components of wellhead and well completions.
23. The effects which Wireline, Coiled Tubing and other maintenance activities and workover operations may have on well integrity.
UNIT : CONTROLLING EMERGENCIES

ENDORSEMENT : MOBILE / FLOATING INSTALLATIONS

This endorsement cannot be awarded in isolation. Competence is assessed in conjunction with the standards contained in the Core Unit.

ESSENTIAL KNOWLEDGE

Core unit

1. Emergency procedures.
2. Sources of information on the properties of on site materials.
3. Sources of help in an emergency (coastguard, sector club, vessels, helicopter, emergency response vessels) and their facilities. methods of communication and response times.
4. Layout of installation including location and functions of the major pieces of equipment.
5. Potential dangers resulting from activities in each area of the installation.
7. All relevant sources of energy to prime movers.
8. Drain, flare and vent systems.
9. Location and operation of emergency systems (fire and gas detection, firefighting, communications and life saving appliances, escape systems and lifeboats).
10. Purpose of significant control systems.
11. Cause and effects of significant alarms and trips.
13. Consequences of emissions to the environment.
14. Effects of the environmental conditions on emergency response.
16. Potential effects of the emergency on diving operations.
17. Safety management system in operation and installation Safety Case.
18. Marine search and rescue procedures.

Endorsement Specific:

20. Basic principles and effects of sinkage/punch through (where appropriate to installation type).
21. Basic principles and effects of loss of mooring (fixed or dynamic positioning).
22. Basic principles and effects of loss of ballast control.
23. Marine damage control.
24. Installation design constraints affecting local loading limitations.
UNIT : CONTROLLING EMERGENCIES

ENDORSEMENT : DRILLING OPERATIONS (FIXED)

This endorsement cannot be awarded in isolation. Competence is assessed in conjunction with the standards contained in the Core Unit.

ESSENTIAL KNOWLEDGE

Core Unit:

1. Emergency procedures.
2. Sources of information on the properties of on site materials.
3. Sources of help in an emergency (coastguard, sector club, vessels, helicopter, emergency response vessels) and their facilities, methods of communication and response times.
4. Layout of installation including location and functions of the major pieces of equipment.
5. Potential dangers resulting from activities in each area of the installation.
7. All relevant sources of energy to prime movers.
8. Drain, flare and vent systems.
9. Location and operation of emergency systems (fire and gas detection, firefighting, communications and life saving appliances, escape systems and lifeboats).
10. Purpose of significant control systems.
11. Cause and effects of significant alarms and trips.
13. Consequences of emissions to the environment.
14. Effects of the environmental conditions on emergency response.
16. Potential effects of the emergency on diving operations.
17. Safety management system in operation and installation Safety Case.
18. Marine search and rescue procedures.

Endorsement Specific:

19. Purpose of the drill string equipment, hoisting equipment, circulating system, rotary equipment, diverter, BOP, riser and gas separator devices.
20. Causes and effects of mud loss and influx from the formation into the well bore and the implications.
22. Principles of hydrostatic well control and its application in drilling, running casing, workover operations and well testing.
23. Purpose of rig emergency shutdown systems.
24. The effects which Wireline, Coiled Tubing and maintenance activities and workover operations may have on well integrity.
25. Basic principles of leg loading and soil bearings and effects on leg bearings in case of shallow blowout or severe storm (where appropriate to installation type).
26. Ongoing drilling programme.
UNIT : CONTROLLING EMERGENCIES

ENDORSEMENT : DRILLING OPERATIONS (FLOATING)

This endorsement cannot be awarded in isolation. Competence is assessed in conjunction with the standards contained in the Core Unit:

ESSENTIAL KNOWLEDGE

Core Unit:
1. Emergency procedures.
2. Sources of information on the properties of on site materials.
3. Sources of help in an emergency (coastguard, sector club, vessels. helicopter, emergency response vessels) and their facilities. methods of communication and response times.
4. Layout of installation including location and functions of the major pieces of equipment.
5. Potential dangers resulting from activities in each area of the installation.
7. All relevant sources of energy to prime movers.
8. Drain, flare and vent systems.
9. Location and operation of emergency systems (fire and gas detection, firefighting, communications and life saving appliances, escape systems and lifeboats).
10. Purpose of significant control systems.
11. Cause and effects of significant alarms and trips.
13. Consequences of emissions to the environment.
14. Effects of the environmental conditions on emergency response.
16. Potential effects of the emergency on diving operations.
17. Safety management system in operation and installation Safety Case.
18. Marine, search and rescue procedures.

Endorsement Specific:
19. Purpose of the drill string equipment, hoisting equipment, circulating system equipment. diverter, BOP, riser and gas separator devices.
20. Causes and effects of mud loss and influx from the formation into the well bore and the implications.
22. Principles of hydrostatic well control and its application in drilling, running casing, workover operations and well testing.
23. Purpose of rig emergency shutdown systems.
24. The effects which Wireline. Coiled Tubing and maintenance activities and workover operations may have on well integrity.
25. Basic principles of leg loading and soil bearings and effects on leg bearings in case of shallow blowout or severe storm (where appropriate to installation type).
26. Ongoing drilling programme.
27. Basic principles and effects of loss of stability.
28. Basic principles and effects of sinkage/punch through (where appropriate to installation type).
29. Basic principles and effects of loss of mooring (fixed or dynamic positioning).
30. Basic principles and effects of loss of ballast control.
31. Marine damage control.
32. Installation design constraints affecting local loading limitations.

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APPENDIX D SELECTION AND TRAINING OF UK OIMs

D.1 INTRODUCTION

The aim of the first stage 1(i) of the project was to describe the current practices used by companies with offshore installations on the UKCS, to select, train and assess their Offshore Installation Managers (OIMs). (See Chapter 2 for a summary. This was previously issued as Interim Report OTO 92004)

A series of interviews was conducted during December 1991 and January 1992, with 38 oil and gas exploration and production companies operating in the UK section of the North Sea (18 operating, 16 drilling and 4 service companies). The interviews were designed to collect information about the current selection and training procedures used to recruit Offshore Installation Managers, who are responsible for the day-to-day running and safety of offshore oil and gas installations, and for the health and safety of all personnel on board such installations.

Each interview lasted between 35-90 minutes and was conducted by one of the research team at the company’s premises. Between one and three company representatives from management were present at each interview. The job titles of the interviewees are shown below in Table 1.
Table 1
Interviewee’s position in the organisation

<table>
<thead>
<tr>
<th>Title</th>
<th>Operating</th>
<th>Drilling</th>
<th>Service</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel Manager</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Operations Manager</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Production Manager</td>
<td>4</td>
<td>1</td>
<td></td>
<td>5</td>
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<tr>
<td>Training Manager</td>
<td>4</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Marine Ops Manager</td>
<td></td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>General Manager</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Safety Manager</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Production Superintendent</td>
<td>2</td>
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<td></td>
<td>2</td>
</tr>
<tr>
<td>Field Manager</td>
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<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Safety Co-ordinator</td>
<td></td>
<td></td>
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<td>1</td>
</tr>
<tr>
<td>Rig Manager</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>District Manager</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Marine Superintendent</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Managing Director</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Administrator</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Base Manager</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Field Superintendent</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Asset Manager</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Platform Manager</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

NOTE: At some interviews, more than one person was present. Different job titles may represent very similar positions.

D.2 COMPANY PROFILES

D.2.1 Type and function of installation

In order to establish a detailed picture of the types of installations managed by the OIMs employed by the 38 companies in the sample, each company was asked to give details of the types of manned installations they were currently operating.
Table 2
Number and type of installations owned by participants

<table>
<thead>
<tr>
<th>Type of installation</th>
<th>No. of companies</th>
<th>No. of installations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Drilling (n = 91)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semi-sub rig</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Jack-up rig</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Both Semi-sub and jack-up rigs</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Drill ship semi-sub &amp; drill ship</td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td><strong>Production (n = 75)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil &amp; gas platform</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Gas platform</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Oil production vessel</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Service (n=32)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flotel</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Semi-sub support</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Semi-sub production</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Multi-function support vessel</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Emergency support vessel</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Jack-up accommodation</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

From Table 2 it is clear that the sample included companies who owned varying numbers and types of installations, and also included the full range of types of installations currently operating on the UKCS. The companies interviewed operated a total of 198 installations.

D.2.2 Size of installations: Personnel on Board (POB)

Companies were asked, ‘What are the typical POB complements of each installation, and where are they usually situated? Eg. NUKCS, SUKCS?’ (Northern or Southern UK Continental Shelf). Their responses are presented in Table 3.
Details were provided for 124 installations on the UKCS. In terms of size and location of installations belonging to companies interviewed, the majority of installations were located in the Northern Sector of the North Sea, with between 51-100 staff on board. However, both not normally manned and small installations in the Southern, mainly gas producing sectors of the North Sea were also included. Some companies mentioned production platforms in the Irish Sea and one service company mentioned an installation in Norwegian waters. Several of the drilling companies did not specify Northern or Southern sector locations as their rigs operated in either sector depending on client demand.

### D.3 OIM PROFILES

#### D.3.1 Numbers of OIMs

The next section of questions asked about the previous job history, qualifications etc. of the OIMs currently employed offshore by the companies interviewed. Individuals were asked, 'How many OIMs are in post, and how many men are also registered with the Department of Energy to deputise as an OIM for each installation?’ Their responses in Table 4 show that most companies employed between 1 and 10 OIMs, and Table 5 shows that most employed between 1 and 15 Deputy OIMs. A total of 424 OIMs and 533 Deputy OIMs were employed by the companies interviewed.
Table 4
Number of OIMs employed by each company

<table>
<thead>
<tr>
<th>OIMs</th>
<th>Operating</th>
<th>Drilling</th>
<th>Service</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td></td>
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<td>3</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>3</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>3</td>
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<td></td>
<td>7</td>
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<tr>
<td>7</td>
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</tr>
<tr>
<td>8</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>14</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>16</td>
<td>1</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>22</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>35</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>59</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>75+</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Table 5
Numbers of Deputy OIMs employed by each company

<table>
<thead>
<tr>
<th>Dep' OIMs</th>
<th>Operators</th>
<th>Drilling</th>
<th>Service</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>3</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td></td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>1</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>4</td>
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<td>4</td>
</tr>
<tr>
<td>16</td>
<td>1</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>22</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>25</td>
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<td></td>
<td>1</td>
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<tr>
<td>28</td>
<td>1</td>
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<td></td>
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<tr>
<td>29</td>
<td>1</td>
<td></td>
<td></td>
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<td>36</td>
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<td></td>
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<tr>
<td>38</td>
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<td></td>
<td>1</td>
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<tr>
<td>48</td>
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<td></td>
<td>1</td>
</tr>
<tr>
<td>76+</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

D.3.2 Range of Deputy OIM positions

In order to examine the range of personnel registered to deputise as OIMs, interviewees were asked 'What positions do the nominated deputy OIMs hold?' The results are presented in Table 6 below.
Table 6
Job titles of Deputy OIMs

<table>
<thead>
<tr>
<th>Title</th>
<th>Operating</th>
<th>Drilling</th>
<th>Service</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Install./Ops. Superintendent</td>
<td>92</td>
<td>92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production Engineer</td>
<td>55</td>
<td>55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shift Prod./Ass. Prod. Eng. or Snr. Prod. tech.</td>
<td>29</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barge Op./Snr. Maint. Eng.</td>
<td>17</td>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance Superintendent</td>
<td>14</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Master</td>
<td></td>
<td></td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Stability Section Leader</td>
<td></td>
<td></td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Production Supt'/Manager</td>
<td>7</td>
<td>1</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Rig Superintendent</td>
<td></td>
<td></td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Toolpusher</td>
<td></td>
<td></td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Chief Officer</td>
<td></td>
<td></td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Barge Engineer</td>
<td>4</td>
<td></td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Barge Master</td>
<td>3</td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Chief Engineer</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Snr. Technician</td>
<td>2</td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Production Supervisor</td>
<td>2</td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Maintenance Supervisor</td>
<td>2</td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Barge Superintendent</td>
<td>1</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Onshore Plant Mgr</td>
<td>1</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Field Supervisor</td>
<td>1</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Facilities Engineer</td>
<td>1</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Production Foreman</td>
<td>1</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Night Master</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Snr Drilling Foreman</td>
<td>1</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Drilling Foreman</td>
<td>1</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mate</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Nautical Chief Engineers</td>
<td>1</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

The results reveal a wide range of jobs are considered appropriate as Deputy OIM posts. Some of the titles given probably represent very similar jobs, however, without more detailed knowledge of each position, it was decided not to concentrate these into fewer generic categories. For operating companies, most posts are departmental supervisory/superintendent positions, whereas in drilling companies, most posts are concerned with marine operations. This is as one might expect, considering most drilling installations are mobile marine vessels, and their integrity is directly related to their stability in the water. Other key posts were related to drilling, which is another potential route to the position of OIM. Service companies also possess mobile installations and run them similarly to marine vessels. This is apparent by the nature of Deputy OIM posts which relate directly to the Merchant Marine command structure, with chief officers the most prevalent position.

D.3.3 OIMs' qualifications

Companies were asked to provide details of the formal qualifications possessed by each of their OIMs currently in post. A basic checklist was provided which listed degree; HND/HNC; Master Mariner: Commander RN or other RN; DTI Engineering and "Other" (which they were asked to specify). The responses are shown below in Table 7. Three operating companies and one drilling company failed to provide us with this information.

Table 7
Current OIMs' qualifications
<table>
<thead>
<tr>
<th>Qualification</th>
<th>Operating</th>
<th>Drilling</th>
<th>Service</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree</td>
<td>43</td>
<td>9</td>
<td></td>
<td>52</td>
</tr>
<tr>
<td>HND/HNC/ONC</td>
<td>42</td>
<td>16</td>
<td>24</td>
<td>82</td>
</tr>
<tr>
<td>City &amp; Guilds</td>
<td>15</td>
<td></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>DTI Engineering</td>
<td>8</td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Master Mariner</td>
<td>4</td>
<td>110</td>
<td>47</td>
<td>161</td>
</tr>
<tr>
<td>Royal Navy</td>
<td>7</td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td></td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>None</td>
<td>19</td>
<td>9</td>
<td></td>
<td>28</td>
</tr>
<tr>
<td>Total OIMs*</td>
<td>147</td>
<td>119</td>
<td>47</td>
<td>313</td>
</tr>
</tbody>
</table>

NOTE Some OIMs have more than one qualification.
* Denotes total number of OIMs employed by the companies responding to this question.

From Table 7 it can be seen that within drilling companies, 92% of OIMs were qualified Master Mariners, 8% had a degree and 13% had an HND/HNC/ONC. Within operating companies 3% were Master Mariners, 29% had a degree, and 29% had an HND/HNC/ONC. For OIMs overall 51% were Master Mariners, 26% had an HND/HNC/ONC, 17% were qualified to degree level, 9% had no qualifications, 5% had obtained a City & Guilds qualification, 5% had other qualifications, 3% had a DTI Engineering certificate and 2% were ex-Royal Navy.

In terms of typical combinations of qualifications, the majority of operating company OIMs possessed formal qualifications usually an engineering degree or an HND. In contrast, almost all (94%) drilling and service company OIMs were qualified Master Mariners, (which currently includes an HND, though not all companies specified this).

D.3.4 OIMs' previous jobs

In order to examine prior experience, interviewees were asked of their OIMs, 'What were their previous two jobs?': The responses are presented below in Tables 8 and 9.
Table 8
OIMs' previous Job tide

<table>
<thead>
<tr>
<th>Prior job to OIM</th>
<th>Operating</th>
<th>Drilling</th>
<th>Service</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPE/OME*</td>
<td>35</td>
<td></td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>Shift Prod. Engineer</td>
<td>29</td>
<td></td>
<td></td>
<td>29</td>
</tr>
<tr>
<td>Maintenance Engineer</td>
<td>28</td>
<td></td>
<td></td>
<td>28</td>
</tr>
<tr>
<td>Masters</td>
<td></td>
<td></td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Drilling Superintendent</td>
<td>1</td>
<td>12</td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>Barge Engineer</td>
<td></td>
<td>9</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Onshore Operations</td>
<td>8</td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Operations Supervisor</td>
<td>8</td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Engineer/Petroleum Eng.</td>
<td>7</td>
<td>1</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Unspec' snr offshore posts</td>
<td>8</td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Production Foreman</td>
<td></td>
<td></td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Snr Drilling Foreman</td>
<td></td>
<td></td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Toolpusher</td>
<td></td>
<td></td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Matter</td>
<td>4</td>
<td>1</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Field Foreman</td>
<td>4</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Prof. Soldier</td>
<td>4</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Barge Master</td>
<td>4</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Master Mariner</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Onshore Ops Eng. Sup'r</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Maintenance Sup'r</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Snr instrument Tech.</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Production Maint. Technician</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Prod. Superintendent</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Platform Manager</td>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Control Room Operator</td>
<td></td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Night Master</td>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Project Superintendent</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>OIM</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Snr. Chemist onshore</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Instrument Maint' Sup'r</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Ex-Nuclear subs</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Offshore Training Off.</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Prof. airman</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Area Ops Manager</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Onshore Maint. Mgr</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Onshore Ops Eng.' Mgr</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Rig Superintendent</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Subsea engineer</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Snr. Barge Engineer</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Chief officer</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mate</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

*OPE: Offshore Production Engineer. OME: Offshore Maintenance Engineer.

Not many operating companies provided information on the second prior job of their OIMs, but those who did reported job categories similar to those in Table 8, generally departmental supervisors and superintendents. Service company OIMs came almost exclusively from a marine background (Master, Chief Officer), with drilling OIMs previously working in either drilling (e.g. Driller, Drilling Foreman) or marine jobs (e.g. Asst. Barge Master or Watchstander).
Table 10
OIMs' second prior job

<table>
<thead>
<tr>
<th>2nd prior job</th>
<th>Operating</th>
<th>Drilling</th>
<th>Service</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chief Officer</td>
<td>1</td>
<td>8</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Master</td>
<td>1</td>
<td>8</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Drilling Foreman</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>4</td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Control Room Operator</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Production Supervisor</td>
<td>3</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Maintenance Supervisor</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asst. Barge Master</td>
<td></td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Watchstander</td>
<td></td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Drilling Superintendent</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Wireline Supervisor</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Prod Superintendent</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Ballast Supervisor</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Ballast/stability Supervisor</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Dynamic Position' Ops</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Toolpusher</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Offshore Instr't Supt'</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Snr. Barge Engineer</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Snr. Watchstander</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Jacking Foreman</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Asst. Barge Engineer</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Jacking Technician</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2nd Mate</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Inspection of Tables 8, 9 & 10 above indicates that the operating company OIMs came from a wide variety of backgrounds, principally engineering: Offshore Production Engineer/Offshore Maintenance Engineer, Shift Production Engineer and Maintenance Engineer. By contrast drilling company OIMs came from a marine or drilling background, and service company OIMs came almost exclusively from a marine background. This strongly reflects the results from an earlier survey we conducted with OIMs themselves (Flin & Slaven, 1993).

The typical career development route for OIMs is through lower level managerial positions (e.g. supervisor) held on offshore installations. The majority of positions held by individuals prior to being appointed as an OIM would appear to have direct relevance in both technical and managerial terms, as well as providing experience of the offshore environment.

D.4 SELECTION PROCEDURES

D.4.1 Sources of candidates

The next section of the interview schedule asked about the selection procedure for choosing OIMs, namely sources of candidates, selection methods, the use of psychometric testing, and which staff participated in the selection process. Interviewees were asked, 'What proportions of candidates are selected from: internal, external and both types of candidates?'. Their responses are provided in Table 11 below.
Most companies (n=27) recruit only from within the company, preferring to ‘grow their own’ personnel rather than recruit from outside. Nine companies choose from both internal and external candidates, in some cases because they are too small a company to always have staff within their ranks to fill vacancies. Only two companies chose exclusively from external candidates, one because they were new to the North Sea, and the other because they did not have any UK personnel suitable for the post.

There is a distinct preference in the industry to recruit internally for management positions, such as OIM, because the individual will be well known to their subordinates and superiors, and therefore it is less likely that an unsuitable person will be given a demanding and responsible position. Also, the individual will be familiar with company procedures, and probably also with the installations, and therefore the time required for induction into the post will be minimised. The induction and training of OIMs will be explored in greater detail in Section 7.

D.4.2 Summary of selection methods

D.4.2.1 Information considered in selection decisions

To provide a brief outline of the precise selection procedure involved in selecting OIMs, interviewees were asked, ‘What sources of information are used during the selection Procedure, and what contribution does each make to the overall assessment (ie. % weighting)?’. Responses are presented separately for the selection of (i) internal candidates, and (ii) external candidates.

(i) Internal candidates

Table 12 (overleaf) contains a summary of the sources of information companies used to select candidates.

<table>
<thead>
<tr>
<th></th>
<th>Operating</th>
<th>Drilling</th>
<th>Service</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appraisal files</td>
<td>17</td>
<td>15</td>
<td>4</td>
<td>36</td>
</tr>
<tr>
<td>Personal recommendation</td>
<td>13</td>
<td>11</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>Interviews</td>
<td>10</td>
<td>14</td>
<td>3</td>
<td>27</td>
</tr>
<tr>
<td>CVs</td>
<td>9</td>
<td>9</td>
<td>4</td>
<td>22</td>
</tr>
<tr>
<td>References</td>
<td>5</td>
<td>8</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>Simulations</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychometric Tests</td>
<td>2</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Assessment Centres</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Personal knowledge</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Experience</td>
<td>0</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

For all three types of companies the most popular sources of information for internal candidates were company appraisal files, personal recommendations.
(usually from their immediate supervisor), interviews with candidates and information from their CVs. Only six companies used simulations (i.e. performance during simulated emergency exercises held offshore or onshore) to obtain information about a candidate's ability to do the job of OIM. While a number of companies were developing formal competence assessment systems, none of these were operational at the time of interviewing.

Not everyone was able to estimate the weighting attached to each source of information, but those who did gave CVs around 20% weighting, personal recommendations between 10% - 60%, appraisal files between 20% - 90%, and the simulation exercise a 10% weighting.

**Sample weightings given by eight operators were as follows:-**

1. 100% in-company appraisal files;
2. 50% personal recommendation, 50% appraisal files;
3. 66% personal recommendation, 33% the rest;
4. 50% staff appraisal, 35% interviews, 10% simulation exercises, 5% CVs (Field 1) and 50% interviews, 50% staff appraisal (Field 2);
5. 70% interviews, 20% personal recommendation, 10% staff appraisal;
6. 75% appraisal files; 25% interviews, references, CVs,
7. 30% interviews, 20% appraisal files, 15% references, 15% CVs; 15% simulation exercises, 5% personal recommendations.
8. Staff appraisal 80%, interviews 10%, personnel recommendation 10%.

**Sample weightings given by four drilling companies were:-**

1. 70% personal recommendations and staff appraisal files, and 20-30% interviews and references.
2. Three superintendents would recommend suitable candidates from looking at existing OIMs in post plus any individuals onshore with engineering or previous offshore experience, also based on personal information. More weight on operations experience than education.
3. 80% staff appraisals and 20% interview.
4. 40% CV, 40% appraisal, 10% interviews and 10% personal recommendation

**(ii) External candidates**

Table 13 contains a summary of the sources of information companies used to select external candidates.

<table>
<thead>
<tr>
<th>Source of Information</th>
<th>Operating</th>
<th>Drilling</th>
<th>Service</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviews</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>References</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>CVs</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Personal recommendation</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Psychometric testing</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

As with internal candidates, not everyone was able to estimate the weighting attached to each source of information, but those who did generally gave

---

1 NOTE: Unless stated otherwise, the numbered order of companies' responses are not related from one section to the next, to preserve the anonymity of individual companies.
interviews between 50% - 95%, references between 10% - 30%, CVs between 5% - 30%, and personal recommendations between 5% - 10% weighting.

**Sample weightings given by one operating company wore as follows:-**
1. 40% weighting for external interviews, 45% for CVs and 10% for references but this was only for one field. For the second field external selection was not current policy.

**Sample weightings given by two drilling companies wore as follows:-**
1. 50% interviews & CVs, 50% references and personal recommendations.
2. 50% interview, 50 % references and 2 interviews.

### D.4.2.2 Selection process

The final question concerning companies' selection procedures asked for more information to provide an overall picture of their selection process. It asked, ‘Could you just briefly outline your selection process, and who makes the final selection decision?’ The answers for all respondents are listed below. (I = internal candidates, and E = external candidates; L = operating company employing more than 5 OIMs or other company employing more than 10 OIMs; S = operating company employing 5 or less OIMs, and other company employing 9 or less OIMs.) Details are shown separately for each type of company.

#### Operating companies

1. The Production Superintendent makes the final decision. Current OIMs who are working with the candidates are asked for their opinion of the individual and a recommendation. Other OIMs who have worked with the candidate are polled for their opinions also. Generally, unless all the panel agree, the candidate is not selected. (I, L)

2. The panel examines the staff appraisal files and lists potential candidates. These are then ranked, and the directors decide who is most suitable for the post. (I, L)

3. The three Superintendents recommend suitable candidates from examining current appraisals and recommendations from OIMs currently in post, plus consider any individuals onshore with engineering or previous offshore experience. More weight is given to operational experience rather than formal education. (I, L)

4. After short listing candidates, reviewing their appraisal record and backround and taking into consideration personal recommendations, the candidates are interviewed by the panel and a recommendation is made. The panel interview is not particularly structured and the final selection is made by the Asset Manager. (I, L)

5. Candidates generally have many years experience in senior supervisory positions within the company. In 10-20% of cases, they have been assistant OIMs. The highest ranked of second line supervisors are the usual potential candidates, referred on the basis of their annual appraisal files. (I, L)

6. Names of potential candidates are proposed. Information about the person is found and matched to job specification. (I, L)

7. If no-one is suitable within the company, through looking at staff appraisal files, will then approach a consultant or agency, who will provide a written report on the candidates. The most suitable will be interviewed. (I&E, L)

8. The candidates’ production, supervisory/managerial and job knowledge is assessed. Those who are considered for the OIM position are
instructed in the competencies required, and they would then cover the position on a temporary assignment for holiday release. Should a permanent position arise, an assessment evaluation by the line supervisors is carried out. The close contact and experience of the fine supervisors in working with the candidate strongly influences the decision. (I, S)

9. The three managers decide who is available to fill the posts, from reviewing the work history of potentially suitable individuals within the company. The production manager has the most say in who is successful. (I, S)

10. The appraisal system leads to career development, and potential staff go on a placement list. Managers then look at candidates and decide who might be suitable. The company looks world-wide for any potential candidates. Senior management discuss and agree on the best candidate. Personal experience is considered more important than technical ability. (I, S)

11. The Manager assesses personnel for replacement posts before the vacancy arises, and generally chooses an individual who has been a relief OIM in the past. The individual is invited to the office to talk to the manager, and if suitable is offered the post. (I, S)

12. The offshore management team discuss a shortlist of potential candidates with production and pipeline superintendent, interview candidates, and shortlist again. Personal development is the major consideration. (I, S)

13. Personal abilities of individuals are assessed as they fulfil duties as Senior Technicians. Exposure to OIM duties on a temporary basis (up to six months) permits further appraisal. Discussion at annual performance reviews is then used to help with final decision. (I, S)

14. Operations Manager and Administration Manager discuss the position and state the requirements and qualifications. Review staff appraisals to find suitable candidates and shortlist them, interview then select. (I, S)

15. Review CVs and referrals from own staff and check personnel files. First step is to interview candidates, then check their references. Interview panel makes final selection. (I, S)

16. Look at candidates’ previous experience (with their CV) and their background, then invite them for an interview to assess their ability. (I & E, S)

17. Internal search for possible candidates is conducted via performance appraisal files. For external candidates the post is advertised, receive CVs and applications, then conduct three-tier interviews. Candidates must provide references, with one from their previous supervisor. (I & E, S)

18. There will be two external interviews, with an invitation being based on candidates’ past experience/work history. The interviews are structured with technical questions e.g. asking about safety cases, strategy questions e.g. examining how they find solutions to problems, questions
on their past experience such as how they have handled situations in the past, and industrial relations questions. (E, S)

**Drilling companies**

1. The Rig Manager and Operations Manager list the available candidates, based on the candidates' past record with the company, CVs etc. Usually candidates have been with the company for 17-18 years. (I, L)

2. The company operates System Manpower Planning within their appraisal system. This provides names of individuals who are listed as potential for the OIM post. They are then shortlisted, and their immediate superior provides a recommendation. Candidates need to possess specific technical knowledge for a given rig/well. (I, L)

3. This company chooses from a range of pre-identified candidates which Personnel have chosen as suitable. The Operations Manager discusses the candidates with the Drilling Superintendent. Recommendations are made and discussed with the individual's manager. The applicant is then interviewed and offered the post. (I, L)

4. Management examine appraisal files, shortlist candidates and then interview. OIMs average 15 years prior service with the company so they are quite well known to management. (I, L)

5. Firstly, examine existing personnel (referrals from first line supervisors) to see if anyone is suitable. For external candidates, review their CVs and references from others. Interview, check references and interview again one or two most suitable candidates. The final decision rests with the Drilling Superintendent. (I & E, L)

6. Consider Barge Masters for the post initially, who are then interviewed by the Marine Superintendent with particular reference to how they would fit into the whole offshore management team. The Rig Superintendent will then interview the most suitable candidates and refer to the rest of the management team his recommendation on who should get the post. (E, L).

7. Management consider which existing personnel might be suitable. The opinions of existing OIMs and one of the candidate's supervisors is sought. Also consult out placement offices of other oil companies. The Production Manager decides who is the most suitable candidate, and then refers his decision to the Chief Executive for confirmation. (I, S)

8. Selection of candidates is based on their promotion capabilities. The company has a database for this, and suitable personnel are contacted for availability. The client operator provides the job description and selection criteria. After the interview, the recommended candidate's details are passed to the client who usually confirms the choice. (I, S)

9. Selection of candidates is based on their promotion capabilities. Information about their performance is obtained from previous company posts held. Marine Manager selects the prospective candidate, which is then checked by the Rig Manager. Personnel department staff have a formal role only, they keep individual assessment forms and annual appraisals. (I, S)
10. Selection is based on promotion, i.e. personnel are brought up through the ranks. Those who impress management are selected after discussion with the Rig Manager. The candidate is then notified to HQ who usually agree. Usually have a next-in-line identified for promotion. (I, S)

11. When a vacancy arises, the Rig Manager and Operations Manager discuss suitable company people, and offer them the position. (I, S)

12. Selection of candidates is conducted by the management committee from an examination of current personnel for their suitability. Usually it is a consensus decision, but the Safety/Marine Manager makes the ultimate decision. (I, S)

13. Detailed procedure is outlined in the company administration manual. A minimum of three references are obtained and thoroughly checked. All relevant qualifications are checked, and candidates are medically screened. All candidates take part in testing procedures and a structured interview. Senior Personnel Officer discusses requirements with the Operations Manager and provides feedback on possible internal candidates. Senior Personnel Officer selects leading personnel with Operations and Rig Managers. If no internal personnel are suitable the post is advertised. (I & E, S)

14. The Senior Personnel Officer ensures that all statutory minimum requirements are met and that candidates have worked in a similar position before. Candidates theoretical and practical qualifications are assessed. References from previous company colleagues are collected. All candidates do the company psychometric test battery. (I & E, S)

15. The position is advertised if necessary. CVs and application forms are checked by the personnel officer, who then arranges interviews. The first interview for candidates is with personnel and references are checked. One or two suitable candidates are then interviewed by the Rig Manager. A recommendation is then made to the Operations Manager who approves/authorises it. (I & E, S)

16. A Personnel Consultant collects responses to the advert and makes recommendations on who is suitable to the Area Manager. The Personnel Manager and Area Manager then interview the shortlisted candidates. The Rig Manager may also be involved at this stage. They make an assessment of the candidates with a recommendation' which is forwarded to Head Office. The prospective OIM will then be interviewed again by Head Office: Personnel Director, Managing Director and Operations Director. The Managing Director makes the final decision. (I & E, S)

**Service companies**

1. Examine existing staff CVs to see who would be suitable for the post. Selection is on the basis of the senior managers' opinions, and the opinions of the other OIMs. (I, L)

2. Marine Operations Manager selects on the basis of information in CVs, appraisals, personnel recommendations etc. and advice from experienced OIMs. The final selection decision is with senior management. (I, S)
3. Information on potential candidates is gathered from staff annual appraisals. Those who possess potential are then selected. Both Rig Managers assess personnel and decide who to interview. The successful candidate has a probationary period of 6 months during which he is assessed as to his capability by the, relevant Rig Manager and the other OIM. (I & E, L)

4. Personnel manager makes the final selection decision. (I)

D.4.3 Use of psychometric testing

Psychometric testing in this context, refers to the use of standardised psychological instruments used for occupational selection purposes. For managerial selection, these tests are typically designed to measure intellectual ability or personality (see 31 for further details and addresses of test companies). In this survey, companies were asked whether they used psychometric testing as part of their method for selecting OIMs. If the company did not include tests, interviewees were specifically asked if testing was included for any other offshore posts and whether they were intending to use testing at some point in the future. Psychometric tests were being used by three operating companies, and two drilling companies.

1. One operating company used the Predictive Index for all staff appointments including OIMs. This is an American personality test which measures four dimensions of personality.

2. A second operator has been using an American personality test called the 16 Personality Factors questionnaire (16PF) for the last two years in offshore selection. The 16PF is widely used by British companies for selection purposes. It gives a score on 16 dimensions of personality. (Available from ASE/National Foundation for Educational Research.)

3. A third operator had recently started to use a British personality test called the Occupational Personality Questionnaire (OPQ), which can measure up to 30 dimensions of personality (depending on the version of the test). This is now widely used in the UK and is currently the most popular personality test for managerial/graduate selection. (Available from Saville & Holdsworth Ltd. (SHL))

4. One drilling company was using (i) SHL tests of verbal reasoning, numerical reasoning, mechanical aptitude, and (ii) the Perception and Preference Inventory (PAPI) which measures six dimensions of personality, for all incomers into the organisation. (Tests available from (i) Saville and Holdsworth Ltd, (ii) PA Consulting.)

5. One drilling company was using the Predictive index personality test (mentioned above), and an American intelligence test called the Wonderlic Personnel Test (E.F. Wonderlic, Illinois).

Those companies who do not use tests include 15 operating, 14 drilling and four service companies: and another three drilling companies were considering the use of psychometric tests in the future. Three operating companies were, however, considering their use in the future, as outlined below:

1. Considering using tests for all external candidates in the future.

2. Considering their use for offshore posts next year.
3. Not actively recruiting anymore, as the field was in a wind down phase; but would be interested in exploring the use of psychometric tests in the future if they had a new field.

D.4.4 Profiles of selection panel members

Interviewees were asked, 'Who participates in the selection process, (job titles), and were any of them ever an OIM?'. A summary of their responses is provided in Table 14. Numbers quoted refer to the frequency with which a particular position was mentioned.

<table>
<thead>
<tr>
<th>Job title</th>
<th>Operating</th>
<th>Drilling</th>
<th>Services</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operations Manager</td>
<td>10***</td>
<td>8***</td>
<td>2**</td>
<td>20****</td>
</tr>
<tr>
<td>Personnel/HR/ER Mgr.</td>
<td>8*</td>
<td>7</td>
<td>3*</td>
<td>18**</td>
</tr>
<tr>
<td>Rig Manager</td>
<td>1*</td>
<td>8*****</td>
<td>1</td>
<td>10*****</td>
</tr>
<tr>
<td>Production Manager</td>
<td>6**</td>
<td>1</td>
<td></td>
<td>7***</td>
</tr>
<tr>
<td>General Manager</td>
<td>2*</td>
<td>4**</td>
<td></td>
<td>6***</td>
</tr>
<tr>
<td>Production Sup't</td>
<td>5*</td>
<td></td>
<td>5*</td>
<td></td>
</tr>
<tr>
<td>Current OIMs</td>
<td>3***</td>
<td>1*</td>
<td>1*</td>
<td>5*****</td>
</tr>
<tr>
<td>Asset Manager</td>
<td>4*</td>
<td></td>
<td></td>
<td>4*</td>
</tr>
<tr>
<td>Field Superintendent</td>
<td>4**</td>
<td></td>
<td></td>
<td>4**</td>
</tr>
<tr>
<td>District Manager</td>
<td>1</td>
<td>2</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>HQ / Vice President</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Marine Superintendent</td>
<td>3*</td>
<td>3*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Safety Pers’</td>
<td>2</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Area Drilling Manager</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Drilling Superintendent</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onshore Plant Manager</td>
<td>1*</td>
<td></td>
<td>1*</td>
<td></td>
</tr>
<tr>
<td>Deputy Ops. Manager</td>
<td>1*</td>
<td></td>
<td>1*</td>
<td></td>
</tr>
<tr>
<td>Director of Operations</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Managing Director</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Admin. Manager</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Ops Superintendent</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Marine Manager</td>
<td>1*</td>
<td></td>
<td>1*</td>
<td></td>
</tr>
<tr>
<td>Manager Compliance</td>
<td>1*</td>
<td></td>
<td>1*</td>
<td></td>
</tr>
<tr>
<td>Manager Manpower</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Snr. Recruiter</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Technical Sup’t</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Note: In many cases more than one person was involved in the selection process. Each denotes a person who had been an OIM. ER m Employee Relations Manager.

A variety of management personnel were involved in the selection process from all three types of company. Those most frequently used to select new

OIMs were Operations and Human Resources Managers. While some of these individuals were former OIMs, the majority of those involved in selection, from all types of companies, had not previously been OIMs themselves. (67% in operating, 70% in drilling and 50% in service companies had not been OIMs.)

The next section provided interviewees with the opportunity to explain why these personnel had been chosen to select OIMs. Interviewees were asked. 'Who decides which people participate, and why have these people been chosen?'

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Most companies said that those staff who participated in selecting individuals for the OIM post, were involved for historical reasons, or because it was company policy, (three operating, six drilling and two service companies). Other companies (drilling) said this was how it was outlined in their Quality Management System, their Quality Assurance manual, or because their client had specified these people. Five operating companies, one drilling company and one service company said these selectors were involved because they had the required knowledge and experience to know what type of person to select. Two operators liked to involve line management or the supervisors of potential candidates. One drilling company used the area drilling manager, another two involved line managers, especially the operations manager and the drilling superintendent. In one drilling company the Vice President made the final decision based on a review of company appraisal files.

A sample of procedures are reported in more detail below. For seven operators the policies were as follows:-

1. The Field Manager decides which selectors are chosen, based on their experience, interview technique, departmental responsibility, competence and knowledge of the job requirements. The Operations and Production Managers are also involved as the line managers of the OIM. The Personnel Manager and the Field Manager are also involved.

2. A selection panel of senior managers (Asset Managers) is a recent innovation. The Asset Managers are responsible for their own selection of the OIMs, and give formal recommendations. Candidates from the whole organisation are offered as potential interview candidates, they are then short listed and interviewed.

3. The Field Manager/Assistant Field Manager in conjunction with the General Manager would want to meet the candidates on the shortlist. They would approve the decision on the basis of expertise and knowledge.

4. The Director of Operations decides who participates. The selection panel is chosen to assess technical, managerial and career aspects, and personal attributes.

5. The Operations Manager has the final say, in consultation with senior offshore management. Beach Platform Management would discuss expatriates (former UK citizens who moved abroad to live). Selectors are chosen because of their knowledge of requirements and function, and have experience of the ON function.

6. The Operations Manager who is the line supervisor of OIM, has the best knowledge of the job requirements and is therefore able to match a suitable person with the job requirements. The Administration Manager is chosen for his knowledge on salary and benefits, and to assess character suitability.

7. The General Manager takes selection decisions because of his managerial and offshore experience in exploration and production.

Some examples for drilling companies are given below:

1. Senior personnel are responsible for recruiting OIMs, and the Manager of ‘Compliance’ consultant based on his past experience as an OIM.
2. Senior management decide on the company's recruitment procedure, as detailed in the company Quality Assurance manual.

3. As it is a small company, the relevant line managers are involved.

4. For one service company this is a normal management procedure, involving senior line managers, union opinion, recommendations, time with the company, etc.

The other companies followed very similar procedures.

D.4.5 Validity of selection methods

A final question on selection asked, 'Is the validity of your selection method for OIM posts assessed, and if so how?' No companies conducted any formal validation test of their selection methods, but given the very small numbers of candidates involved and the relatively infrequent appointments of OIMs in the smaller companies, this was hardly surprising. However, most companies do monitor and assess the performance of newly appointed OIMs and this is discussed in Section 7.2.1 below.

D.5 CANDIDATE CRITERIA

D.5.1 Selection criteria

A number of questions examined in more detail which qualifications and characteristics companies expected suitable candidates to possess for consideration as a potential OIM. Firstly interviewees were asked, 'Do you use formal selection criteria, and if so may we have a copy?'. Table 15 reveals that while fourteen companies said they did use formal selection criteria, only seven provided the research team with a copy.

<table>
<thead>
<tr>
<th>Use of formal selection criteria</th>
<th>Operating</th>
<th>Drilling</th>
<th>Services</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use formal criteria</td>
<td>YES</td>
<td>7(3)</td>
<td>5(1)</td>
<td>2(1)</td>
</tr>
<tr>
<td>NO</td>
<td>11</td>
<td>11</td>
<td>2</td>
<td>24</td>
</tr>
</tbody>
</table>

NOTE: figures in brackets denote the numbers of companies who provided a copy of their selection criteria.

The content of the formal criteria supplied covered areas such as required offshore work experience, usually including either standing in for an OIM, or being an OIM on a different installation, and desired level of educational attainment (e.g. Engineering degree). More detailed specifications included level of management experience, personal qualities (e.g. maturity, stability of personality, inspire confidence), specific training for the OIM position, technical competence e.g. in production, drilling or stability, and related management competencies. Two companies provided very detailed specifications, incorporating methods of assessing required competency levels, or a range of key units of competence e.g. controlling emergencies; and potential sources of information (e.g. drills, exercises, work record, independent assessments) to establish whether candidates possess the desired qualities.

Five of the seven companies who did not supply a copy of their formal selection criteria reported that they were still in the process of drafting them. Only two
companies reported that their formal selection criteria were not actually written down, and therefore they could not supply them. This is likely to be an area which will develop as the use of defined management competencies increase nationally, and as companies prepare safety cases which are required to state that the ON is competent to manage an offshore emergency (see section D.8.2). An OPITO Work Group has developed a set of Units of Competence for OIMs, see section D.8.1 for details.

D.5.2 Formal qualifications

The next section of the interview focused on which characteristics companies expected suitable candidates to possess, for consideration for the ON position. The first question asked, 'Formal qualifications: what is essential, and what would be useful for the post?' Table 16 presents a summary of their responses.

For both drilling and service companies, a Master's Certificate (which typically includes an HND qualification) was considered an essential prerequisite for an OIM. This was not the case with operating companies who preferred an HND or degree (usually in engineering), and previous work experience offshore. Surprisingly, five companies reported that they did not consider any formal qualifications as essential to carry out the OIM job.
Table 16
Essential and useful format qualifications

<table>
<thead>
<tr>
<th>ESSENTIAL</th>
<th>Operating</th>
<th>Drilling</th>
<th>Service</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masters Certificate</td>
<td>10</td>
<td>4</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Degree</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Offshore experience</td>
<td>2</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>5 years offshore</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Chartered/Chief Eng.</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Proven competence</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BSc in Nautical Science</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Marine experience</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2 years offshore</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>3 years offshore</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Military qualification</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Mech. Engineering or equiv.</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Tech. qualification/experience</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>20 yrs. oil/gas offshore exper’ +</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>10 yrs. oil production</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>USEFUL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree</td>
</tr>
<tr>
<td>Engineering qualification</td>
</tr>
<tr>
<td>Marine-related</td>
</tr>
<tr>
<td>Rig experience</td>
</tr>
<tr>
<td>HNC</td>
</tr>
<tr>
<td>MN or RN officer</td>
</tr>
<tr>
<td>Previous OIM roles</td>
</tr>
<tr>
<td>SAR co-ordination</td>
</tr>
<tr>
<td>Safety-related</td>
</tr>
<tr>
<td>Outward bound</td>
</tr>
<tr>
<td>Management courses</td>
</tr>
<tr>
<td>Fire fighting</td>
</tr>
<tr>
<td>Crisis management</td>
</tr>
</tbody>
</table>

NOTE: SAR - Search and Rescue.

Qualifications considered useful for the OIM post included degrees and engineering qualifications for operating companies, with engineering and marine qualifications for some drilling companies. One service company specified a marine-related background as being useful for the post.

In Table 15 we have reported the answers provided to us by the respondents. It is clear, however, that many of the "qualifications" mentioned are not actually formal qualifications (e.g. certificates) and are instead desired levels of experience.

D.5.3 Management experience

The second question in this section asked, 'Managerial experience: what is required for the post, and what would be useful?' Table 17 contains interviewees’ responses on what management experience they required from candidates for an OIM position.
High on the list of required managerial experience for drilling companies was marine experience, which is to be expected considering drilling installations are mobile marine vessels. For operating companies such specialised offshore experience was not a specified requirement, rather general experience offshore in a supervisory capacity was stipulated.
Table 18
Useful managerial experience

<table>
<thead>
<tr>
<th>USEFUL</th>
<th>Operating</th>
<th>Drilling</th>
<th>Service</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management course</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Drilling knowledge</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Managing a multi-disc' staff</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Command of a vessel</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Presentation skills</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Public Relations</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Technical ability</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>5 years experience offshore</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Crisis manag' experience</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>DMS or MBA</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Mobile installation experience</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

NOTE: DMS = Diploma in Management Studies; MBA Master of Business Administration.

Table 18 contains a summary of what companies considered to be useful managerial experience. The most common preferences were for candidates to have attended some type of managerial course (n=5), to possess some knowledge of drilling (n=2), managed a multi-disciplinary team (n=2), or been in command of a vessel (n = 2).

D.5.4 Technical experience

The fourth question in this section asked, 'Technical work experience: what is essential, and what useful for the post?'. Responses presented in Table 19 (below) indicate that knowledge of company and marine operations was considered essential by three operating and three drilling companies, with five operating companies specifying a minimum of five years experience in production and operations. Other specific areas of technical work experience considered essential included; production/plant experience (n=4), ballast/stability (n=4), and offshore production and maintenance (n=4).
Table 19
Essential technical work experience

<table>
<thead>
<tr>
<th>ESSENTIAL</th>
<th>Operating</th>
<th>Drilling</th>
<th>Service</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of company ops./marine ops.</td>
<td>3</td>
<td>3</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>5 yrs. prod./Ops experience</td>
<td>5</td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Prod./plant experience</td>
<td>4</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Ballast/stability</td>
<td>2</td>
<td>2</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Offshore prod &amp; maint. exp. (min. 10 yrs.)</td>
<td>4</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>General offshore exp’</td>
<td>2</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>10 years oil experience</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Supervisory oil &amp; gas experience</td>
<td>2</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Safety</td>
<td>2</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>2 years as Toolpusher</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Engineering knowledge</td>
<td>2</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Knowledge of drilling</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Dynamic positioning</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Diving</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Well control</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Understanding of statutory requirements</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Ships master</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Support roles onshore</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>3 yrs. exp. semi-sub</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>12 mths experience of vessels in poor weather</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>15 yrs. experience in hydrocarbon transport</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

Additional technical work experience companies considered useful for the post of OIM are summarised in Table 20. This reveals that six operating companies thought it would be useful, though not essential, for candidates to have a broad understanding of offshore operations by appreciating drilling. Other main topic areas included experience of maintenance operations (n=2), and previous offshore experience (n=2).
Table 20
Useful technical work experience

<table>
<thead>
<tr>
<th>USEFUL</th>
<th>Operating</th>
<th>Drilling</th>
<th>Service</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drilling/well services</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>experience/appreciation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance Operations</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previous offshore exp'</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helicopter Landing</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>First aid</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Computing</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Semi-sub experience</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Diving</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Formal managerial training</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Reservoir engineering</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Chemistry/metallurgy</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Well Services</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Logistics</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>IHRDC</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Oil &amp; gas processing</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Exp’ of anchor handling</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Barge Eng. on semi-sub</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Management courses</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Ionisation regulations</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

NOTE: IHRDC - Well Services course.

D.5.5 Personal qualities

As one of the overall project objectives was to identify particular personality characteristics required by OIMs to perform effectively, this section included the question, ‘What personal qualities are you looking for in the candidate, and how do you assess whether the candidate possesses these?’
Looking at the results in Table 21, the most often reported personal qualities were leadership/command ability (n=19), communication skills (n=14), sound judgement/decisive (n=11), a stable personality (n=10), supervisory/management skills (n=10) and team-building ability (n=10). These qualities are a reflection of those qualities specified as important by OIMS themselves\(^9\). Leadership abilities (40%), technical knowledge (35%), the ability to stay calm (33%), and communication skills (31%) were the four most common characteristics reported by OIMS as most suitable for post holders.

Companies reported looking for evidence of these desired personal qualities from a variety of sources. The most common information sources were their own appraisal files (n=11), observation of these candidates’ abilities at work by supervisors, and their own personal knowledge of the individual. Those companies who selected from external candidates obviously did not have access to these sources of information, and sought evidence of candidates possessing these desired qualities through the selection interview and references. Only five companies were using psychometric tests for assessing the personality attributes of candidates.

D.5.6 Crisis management ability
The next question in this section, and of particular importance to this project was, 'Is a candidate’s ability to command in a crisis assessed in the selection procedure, and if so, how?' Table 22 shows that a sizeable number of companies surveyed (n=23) reported that they did assess OIM candidates for their crisis command ability in some way, (not necessarily by formal assessment), though fourteen companies (about 35% of the sample) did not assess their candidates in this area.

### Table 22
Assessment of ability to manage a crisis

<table>
<thead>
<tr>
<th>ASSESSED</th>
<th>Operating</th>
<th>Drilling</th>
<th>Services</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>12</td>
<td>8</td>
<td>3</td>
<td>23</td>
</tr>
<tr>
<td>NO</td>
<td>5</td>
<td>8</td>
<td>1</td>
<td>14</td>
</tr>
</tbody>
</table>

Companies chose a wide range of command ability evidence (Table 23).

### Table 23
Evidence of ability to manage a crisis

<table>
<thead>
<tr>
<th>EVIDENCE</th>
<th>Operating</th>
<th>Drilling</th>
<th>Services</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual track record with company</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Previous crisis handling experience</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Appraisal system</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Interview questioning</td>
<td>2</td>
<td>2</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>EOR exercises</td>
<td>3</td>
<td>1</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Nautical experience</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>OCTO/OFTC course now/future</td>
<td>2</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Stability training</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Offshore drills</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Incident mgt. training</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>


Most companies were looking for a proven track record of ability to deal with incidents within the company (n=11), and reviewed how candidates had dealt with actual crisis incidents during their career (n=7). Some companies (n=4) reviewed candidates’ performances during various offshore exercises, while three companies provided specific crisis management training.

A more detailed analysis of current, and prospective, initiatives by all the companies interviewed is provided below.

**Operating companies**

1. Not assessed formally, though they are about to use the OFTC training course (see section 7.4 for details).

2. Performance is not formally assessed though there is a verbal report by the external consultant.

3. Performance is not assessed in the selection procedure, though performance in the job is examined and written in staff appraisal reports, and performance during offshore exercises is noted. They are
planning to develop job specific competencies and a related programme of assessment in the future.

4. At interview the candidates are asked how they have coped with a real incident in the past.

5. The persons previous work history with the company and appraisal records are examined.

6. An opinion is formed at interview, and previous performance, appraisal files and experience with the company are taken into consideration.

7. Examine how they have behaved in drills and exercises, and how they handle themselves on a day to day basis.

8. The Offshore Command Training Organisation course, or something similar is now being built into the selection model.

9. The overwhelming majority of personnel are internal and have previously been assessed.

10. When attending courses and on drills internal personnel are assessed by the safety department.

11. During drills and exercises personnel are assessed by the safety department, and external consultants who run simulations provide detailed feedback on performance.

12. No assessment to date.

13. Performance in real crisis situations is considered, and if this has not happened a judgement is made by previous supervisors.


15. Have only just started crisis management courses, and have not assessed this in the past.

16. Prior experience and reactions of personnel when under pressure in previous posts are noted, though there is no formal assessment.

17. No formal assessment, though after observing and assessing individuals during their career with the company, it is expected he will be suitable for the post by his past actions.

18. Assessed by his response in the interview to questions about his past experience.
Drilling companies

1. Consider experience gained from obtaining a Master's certificate is evidence of command ability, and day to day performance at work.

2. Consider experience gained from obtaining a Master's certificate is evidence of command ability, and scores on the Predictive Index (see Section 4.3 for details).

3. Take into consideration previous performance with the company.

4. Examine appraisal files and how candidates have handled incidents in the past.

5. Not assessing this at the present time.

6. Have not assessed this in the past, but are now developing a five day onshore course to train and assess technical and managerial skills, and also developing a course to assess OIMs' reactions to crisis scenarios.

7. No assessment.

8. No practical assessment but consider individual's performance in offshore exercises.

9. No assessment but take into account previous work experience with the company.

10. No assessment, though are considering making changes in this area in the future.

11. Conduct questioning in interviews, "table top' scenarios and only have candidates who have been an OIM in the past.

12. Conduct detailed questioning on previous experience of incidents, and "what if" scenario questioning.

13. No assessment.

14. Must have demonstrated crisis command ability on the job coming up through the ranks.

15. Consider previous work experience with the company.

16. Consider experience gained from obtaining a Master's certificate is evidence of command ability.

Service Companies

1. No formal assessment, though consider prior experience of minor crises, and examine staff appraisal files.

2. No formal assessment, as all candidates will have been Captains at sea and have dealt with incidents in their past career.
3. Provides a stability training course including a refresher (BETS - Ballast & Emergency Tactic Simulator Training) which incorporates an assessment factor.

4. Not formally assessed, but will examine their knowledge, leadership qualities and previous experience.

Details of training courses currently used and under consideration by employers of OIMs are outlined in Appendix G.

**D.5.7 Formal training**

The final question in this section on selection criteria asked interviewees about prerequisite training, *Formal training: what is essential and what is useful for the post? May we have a copy of your training profile, if there is one?*

**Table 24**

<table>
<thead>
<tr>
<th>Essential formal training</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ESSENTIAL</strong></td>
</tr>
<tr>
<td>OIM legislation</td>
</tr>
<tr>
<td>Safety awareness</td>
</tr>
<tr>
<td>Survival</td>
</tr>
<tr>
<td>Helicopter landing</td>
</tr>
<tr>
<td>Safety Rep's course</td>
</tr>
<tr>
<td>Stability</td>
</tr>
<tr>
<td>Well control</td>
</tr>
<tr>
<td>In-house management</td>
</tr>
<tr>
<td>First aid</td>
</tr>
<tr>
<td>Permit To Work</td>
</tr>
<tr>
<td>Emergency response</td>
</tr>
<tr>
<td>Fire fighting</td>
</tr>
<tr>
<td>Prod'drilling appreciation</td>
</tr>
<tr>
<td>Company induction</td>
</tr>
<tr>
<td>Drilling 3</td>
</tr>
<tr>
<td>2 day coxswain</td>
</tr>
<tr>
<td>In-house exercises</td>
</tr>
<tr>
<td>In-house leadership</td>
</tr>
<tr>
<td>Hazard identification</td>
</tr>
<tr>
<td>Loss prevention</td>
</tr>
<tr>
<td>Company policies</td>
</tr>
<tr>
<td>Mandatory off cart. USA</td>
</tr>
<tr>
<td>In-house risk analysis</td>
</tr>
<tr>
<td>Blow out prevention</td>
</tr>
<tr>
<td>IADC home study course</td>
</tr>
<tr>
<td>H2S Gas</td>
</tr>
<tr>
<td>Wire-line inspection</td>
</tr>
<tr>
<td>BETS</td>
</tr>
<tr>
<td>Read, Write, Speak English</td>
</tr>
<tr>
<td>Dynamic positioning</td>
</tr>
<tr>
<td>Command Ability Training</td>
</tr>
<tr>
<td>Diving</td>
</tr>
<tr>
<td>SAR On-Scene Command</td>
</tr>
<tr>
<td>Chemical Handling</td>
</tr>
<tr>
<td>LSA Scale (Formal)</td>
</tr>
<tr>
<td>None</td>
</tr>
</tbody>
</table>

**Table 24** contains a summary of the formal training considered to be essential for an OIM post. It reflects the existing industry guidelines followed by companies concerning training for offshore posts in general (Survival n=17),
and training for the OIM post in particular (OIM legislation n=30). Other key topics were safety awareness (n=17), Helicopter Landing course (n=16), and safety representatives courses (n=13). These topics were of approximately equal value to all three types of companies surveyed.

Table 25
Useful formal training

<table>
<thead>
<tr>
<th>USEFUL</th>
<th>Operating</th>
<th>Drilling</th>
<th>Service</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survival</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drugs</td>
<td>2</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Fire control</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Labour &amp; Admin. Mgt.</td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Computer Handling/Data</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processing Skills</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work Environment Training</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Command courses</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diving</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire team leader course</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dangerous Cargo Handling</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radioactive Protection</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Aid</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radar Navigation Cert.</td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Appreciation of other disciplines</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time management</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conflict management</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team Leader training</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Military background</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress management</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offshore exercises</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety Rep's</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NB: A number of companies provided much more comprehensive overviews of their formal training than can be accommodated in this table.

A few companies expanded their answers by providing details of other format training they considered useful, and their responses are presented in Table 25. It shows the concern companies have for broadening the OIM’s knowledge and experience to cover all types of eventualities he may be expected to cope with offshore, and improving general managerial abilities.

D.6 JOB DESCRIPTION

D.6.1 Job description use

A number of questions asked for information on job descriptions for OIMs: ‘Do you have an OIM job description, and may we have a copy?’ and, ‘Is it used in the selection procedure?’ The responses which are summarised in Table 26 show that the majority of companies (n=34) use job descriptions, and most of these companies (n=25) provided researchers with a copy.
It is interesting to note, however, that not all companies used the OIM job description during the selection procedure. Of the 34 companies who used OIM job descriptions, four did not refer to them during the selection procedure. Of the four operating and drilling companies who did not have a job description, one drilling company said it was drafting one which was yet to be approved, and two drilling companies said the topic was under review.

The next question in this section asked, 'When was the last time the job description was up-dated, and how often is this done?' Table 27 summarises when companies last updated their job description.

For most companies (n=25) the job description had been updated within the previous year, though the overall time scale ranged from between one month and five years. The following responses were given to the 'how often updated' part of the question:-

Five operators and eight drilling companies updated as required,
Three operators, two service companies and one drilling company updated annually,
Three operators updated every two years, Two operators updated every three years, One drilling company updated every five years. One service company replied that the job description is updated if and when necessary but normally once every year as part of company quality system standards. One operator was just now developing a job description for the International Safety Rating Scale (ISRS).

D.6.2 Job description content

The content of the OIM job descriptions supplied by companies were analysed and are presented below in summary. The functions of the OIMs on mobile and jack-up installations is similar, though different from that of fixed platforms. A
summary of points of divergence is outlined for each type of installation after the main summary.

**Definition**
The role of the OIM is to ensure the safe and efficient management of the installation to the satisfaction of the owners (and the Client) and to act as the company representative; and to ensure compliance with all statutory regulations.

**Duties and Responsibilities**
Responsible for health, safety and welfare of all personnel on board, and protection of the environment.

Supervision of all installation activities in support of construction and diving projects, production and topside maintenance.

To convincingly manage the installation's discipline and subcontractors, resulting in the general up-keeping and maintenance of the installation and its equipment, and maintain order and discipline.

To evaluate all situations, whether normal or of an emergency nature, and to take proper actions to avoid or minimise potential damages or losses.

Responsible through delegation to all other crew members or other related sub-contractors for all ancillary services for the safe and efficient operation of the installation.

Responsible for the overseeing of safe helicopter operations.

Ensuring that everybody who belongs to his section has the necessary knowledge and experience to be able to perform tasks placed upon them in a professional and safe manner.

Maintaining a good line of communication between all disciplines to minimise the risk of injury or delay through bad planning or equipment breakdown/failure.

Monitor the continuing suitability of company standards and advise the onshore management of necessary amendments.

Organises and chairs a daily co-ordination meeting with relevant personnel.

**Documentation Responsibilities**
Responsible for the log book, emergency procedures, written instructions and the Permit to Work system.

Responsible for preparation and/or submission of logbooks, daily records, maintenance records and permits as laid down by various authorities having jurisdiction on the different continental shelves and in accordance with the operations manual.

Responsible for compliance with all safety regulations pertaining to the safe operations of the installation and with the company logistics as outlined in the operations manual.

Ensuring that all accidents, unsafe practices or conditions reported, are investigated promptly and thoroughly and that a full report is made to the
company, in addition to any existing reporting procedure for HSE, DTp or insurance agencies.

The validity of the installation's certification and inspections.

**Training**
Ensuring that health and safety at work and accident prevention are continuously brought to the attention of all personnel, particularly by means of instruction, training and supervision.

Ensuring that all persons on board are instructed and trained in using all types of lifesaving, fire-fighting and other safety equipment available on the installation and ensure this equipment is properly maintained and available for immediate use.

Ensuring that safety training drills take place at regular intervals in accordance with statutory and company requirements.

The training of crew on correct procedures and safe working practices.

**Authority**
The OIM has direct or indirect supervisory authority over all departments and all personnel on board including manning levels.

He should co-operate with the Department Heads, (the Client's Representative) and other parties working and living on board in matters affecting these individuals.

**Service and drilling OIMs special duties**
OIMs report to; Operations Manager, Technical Manager, Marine Personnel Management, Operations Superintendent, Rig Superintendent, Rig Manager.

Marine operations, safety of crew and installation in accordance with the regulations of the registration authorities, Local Maritime Regulations, Operator and company policies.

Implementation of; surveying, dynamic positioning, anchoring and auxiliary vessel activities, communications, warehousing, medical facilities, catering, hotel activities, and up-keep activities.

Responsible for sea-worthiness and stability of installation. In event of an emergency endangering the seaworthiness or stability of the installation or risk of death or serious injury, the OIM has the authority to take whatever measures are necessary to meet the emergency.

Understands the formal organisation of the drilling operations. This is to include knowledge of the operator/contractor relationship, the organisational structure of the contracting company and operational responsibilities of senior drilling personnel.

Responsible for the decision as to when drilling should cease due to sea state. This decision must be after consultation with the Senior Toolpusher.

Responsible for fully understanding individual roles in the well control procedures and directing subordinates accordingly.

**Operating OIMs special duties**
OIMs report to: Production Superintendent, Operations Manager, Asst. District Manager, Platform Superintendent.

Ensure the platform operates to meet the prescribed production schedule at minimum cost.

Initiate improvements in overall platform performance in terms of capacity and manpower efficiency.

Give leadership and direction, ensuring that production, maintenance, construction, drilling and services activities are effectively managed and coordinated.

Participate in the planning of major overhauls and shut downs and direct activities of various departments to minimise downtime and maintain platform integrity.

Responsible for diving operations.

Direct operations in respect of the nearby processing installations of third party fluids and associated facilities.

The development and maintenance of a high level of emergency response capability with responsibility under law, in the event of any incident on or around the platform endangering personnel or assets.

Lead the safety committee.

Provide competent personnel for dealing with all aspects of safety.

Supervise directly departmental supervisors and foremen, and evaluate all platform supervisory and safety personnel.

Delegate authority and responsibility for making decisions down to the lowest possible level, and motivate all subordinates.

Counsel subordinates in connection with work related or personal problems.

Act as a focus for communication between onshore management and offshore staff to ensure that policies are properly explained and that staff opinion and ideas are fed back to management.

Establish, foster and maintain effective communications with support departments and onshore management to exchange information to solve problems and make decisions so that targets can be met.

Participate in the preparation and justification of budget forecasts for manpower and ancillary services.

Maintain reporting responsibilities for pipelines with senior personnel from other installations.
D.7 INDUCTION, APPRAISAL & TRAINING

D.7.1 Induction

The next section asked a number of questions about how newly appointed OIMs were inducted into their new job, how they were monitored and appraised once in post, and training provision. The first of these questions asked, ‘What is your induction procedure for new OIMs?’ Twenty four companies (13 operating, 9 drilling and 2 service) reported having an induction procedure; while fourteen companies (5 operating, 7 drilling and 2 service) said they did not.

The reported induction procedures varied in formality from working with the back-to-back OIM for a hitch, to formal induction training courses of between a few days to a few weeks duration. Specific procedures for those companies who provided information are detailed below, according to type of company.

Operating companies

Those companies with induction procedures reported various periods with a back-to-back OIM, from one to four trips offshore, or deputising as an OIM for some months. Also involved was a period onshore at the office to become familiar with company policy and shore management. Details from individual companies are outlined below.

One company said their induction procedure was currently under review for the International Safety Rating System (ISRS).

Another had already set up an induction element within their ISRS procedures.

Two companies said they depended on individual experience; anything up to six months offshore supervision before their first unsupervised trip offshore as an OIM, or up to six months from appointment attending mandatory courses, regulations, etc.

One company has full induction training as per all offshore personnel, additional instruction in company procedures, parallel training with existing OIMs and Incident Management Training both onshore & offshore.

One company’s induction began onshore with an introduction to key contacts onshore & essential training via competencies, before going offshore.

One company has a three phase induction procedure: Phase I - standard for all staff; Phase II - job specific by supervisor; Phase III - monthly meetings with senior management.

One operator has between one to three months orientation to office and offshore procedures, depending on experience with the company.

Of the three companies who did not have an induction procedure, one said it was currently under review, and the other two reported that the individual would have already been a deputy and therefore did not require any induction. One company reported that the person must have stood in for the OIM before, and has an OIM as handover for a few days.
Drilling companies
The companies who operated an induction procedure reported various methods, including introducing the OIM to senior management, introducing him to the company's operating procedures and OA system by spending two days or a week in the office, and the first trip with his back-to-back, and having the Rig manager staying for the first trip.

One company had the OIM spending time with the Production Manager and Operations Superintendent, then with back-to-back supervision for 1 month.

One company sent the OIM on various internal management and regulatory courses before commencing his duties as assistant OIM.

Those companies who reported no induction procedure said that usually his back-to-back would stay for a few days up to the end of the first trip. One of these companies had a two week handover.

Service companies
These companies reported similar procedures to drilling companies in that the OIM spent some time in the office working with the Rig Manager, and spent at least one trip with his back-to-back OIM.

D.7.2 Appraisal systems

D.7.2.1 Monitoring new OIMs

In response to the question 'Is the validity of your selection method for OIM posts assessed, and if so, how?' a number of companies provided details of how they monitor the performance of newly appointed OIMs. They usually have a probationary period of 3-6 months offshore, during which they monitor the new OIM's performance. One company had recently brought in external consultants to examine OIM competencies required, and had produced a profile after discussion with offshore personnel which is now used to assess OIMs. Examples of how other operating companies monitored the performance of new OIMs is given below:

1. One operator replied "not as such". Their OIMs are currently subject to normal staff assessment methods and will be "performance measured" in the future.
2. Has quarterly tasks and targets and annual appraisals.
3. Takes the Management Charter Initiative (MCI) competencies and OIM specific competencies, and personal qualities, etc. to monitor their OIMs. They interviewed ex-OIMs from three platforms who were considered to be effective, and asked them to identify categories of criteria needed to be an OIM. This has been completed recently to form a job specification (November 1991).
4. Continuous assessment is used.
5. On one field, one operator has an ongoing assessment of personnel in the post which reveals the OIMs performance directly to the Field and Operations Manager. On their other field there is no assessment of OIMs.
6. One operator says it knows the capabilities of those under assessment.
7. One company says it has in-house assessment by line management.
8. Two operators said six weeks monitoring is done when the OIM initially starts the post, plus quarterly appraisals thereafter (performance monitored closely in weekly musters).

Examples of how drilling companies monitored the performance of new OIMs is given below:

1. One drilling company had a six month evaluation for their OIM posts.
2. One company now employs a Safety/Environmental Manager and is working on the development of a TQM system.
3. One company runs courses on management with a consultant, takes appraisals, ranks drillers etc.
4. One company reported that their on-going annual appraisals, internal and external audits and emergency response drills act as their validation.
5. One drilling company had no monitoring of new OIMs except annual appraisals.

D.7.2.2 Regular appraisal of OIMs

The second question in this section asked, 'What is the method of OIM appraisal once appointed, and how often is it carried out?' Responses are detailed below according to type of company.

Operating companies

Nine companies had an annual appraisal system, one in conjunction with their Management By Objectives (MBO) system, one also with a continuous informal procedure, one with three monthly discussions and regular debriefs, one with a three month probation period with no assessment during this period, and one had an initial four week assessment prior to the annual assessment. One company had yearly staff appraisal based upon MBO and key performance targets. This was reviewed on a quarterly basis with weekly Senior Management meetings and daily contact with the Operations Manager. One company reported an initial three monthly appraisal, and two other companies had an annual appraisal with quarterly reviews of objectives.

Another company had three months probation leading either to demotion or continuance as an OIM, with annual assessments thereafter. There was also a quarterly appraisal for onshore personnel and 6 monthly for offshore personnel.

One operator's performance appraisal has been annually but from 1991, objective measurements will be taken on a quarterly basis and this is to continue.

One operator had a Department Management Performance system with Departmental heads and supervisors involved. They had three meetings to clarify goal setting, targets, key job responsibilities, and to "stretch" goals.

Two companies had a quarterly appraisal system, with annual reports by their immediate boss.

Areas covered tended to include: the application of job knowledge, efficiency, team-work, problem solving, communication skills, management/leadership, planning/organising and safety.
Drilling companies
Six companies reported annual appraisals, usually three to four pages in length on knowledge of contract, daily costs, planning, effective operations, communication, safety, quality of reporting, staff development and turnover.

Another three companies said the first appraisal was after three months, then became annual covering job knowledge, quality of work, safety awareness, initiative, adaptability, relations with colleagues, attitude and communication skills.

One company reported doing a regular rig audit, quarterly reports and an ongoing appraisal system. Another company had appraisals every six months.

One company is in the process of developing continuous monitoring by the production manager.

One has formal appraisals yet to be finalised with on-going contact with the beach for budgets, drilling, day-to-day operations.

One company has a system of continuous feedback.

Only one company did not have a formal appraisal system, preferring face to face interviews with the Rig Manager.

Service companies
Three of the four companies had an annual appraisal system, two of which also conducted an initial six month appraisal by the Operations Manager on quality of work, attitude and future training needs.

D.7.3 General training

The final question 'What types of on-going training are available for OIMs?' was asked to establish what on-going support and development was provided to new OIMs once in post. Table 28 shows that the most common training provision was, predictably, keeping up to date with industry guidelines such as OIMs regulations course and survival training, (n=20). It is possible that some companies, particularly those replying by post, made a narrow interpretation of this question and considered that it was not necessary to mention this particular training provision. This was an open question and no checklist of options was provided. Other topics specified included management training (n=9), and for operating companies a variety of technical and managerial courses (n=8).
Table 28
Training available to OIMs once in post

<table>
<thead>
<tr>
<th></th>
<th>Operating</th>
<th>Drilling</th>
<th>Service</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>All industry guideline up-dates</td>
<td>8</td>
<td>10</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Management</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Variety of management/technical</td>
<td>8</td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>As identified by appraisal</td>
<td>3</td>
<td>3</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>OIM legislation</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Safety related</td>
<td>2</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>DP Operations</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>OFTC Fire Command Course</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Internal/external courses</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Stability</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Well control</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Leadership</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Offshore workshops</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Team briefing</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Time-effectiveness</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Decision making</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Anything asked for</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>UKOOA guidelines</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

One service company said they intended to offer management courses in the future, and one drilling company were aware of crisis management training but were not keen to introduce it. One drilling company is developing ongoing training and stress management in the form of a three day OIM update course and one operator includes a course on drug abuse. Another drilling company is developing a five day course in Reactions to Crisis Scenarios. A number of operators and drilling companies have provided comprehensive lists of their ongoing training for OIMs which there is insufficient space to include. One example of such a list is: well control, drilling technology, marine maintenance, safety, management courses, combined survival, competency, m first aid, helicopter fire, fire team leader, helicopter re-fuelling, and transport of dangerous goods.

D.7.4 Crisis management training

Company representatives were asked, "Is any crisis management training provided, and what form does this take?" (e.g. onshore/offshore, with or without a team). Table 29 below shows that a total of 21 companies currently provide this training, nine are planning to provide this in the future, and eight companies do not provide this training at all.
Operating companies
The types of training used by Operating companies are as follows:

1. Use the Montrose Offshore Fire Training Centre (OFTC) Fire Control Training course (now called Managing Major Emergencies). This course involves the use of an offshore incident control room simulator in which delegates respond to an offshore emergency simulation on a hypothetical platform (Linda B). Delegates role play key offshore posts such as OIM, offshore superintendent, radio operator, control room operator, and emergency team leaders, all participating from separate rooms. It is a four day course with lectures and simulations covering what should be done in an emergency, and then finding out how delegates actually do it. Personnel are monitored by OFTC staff during the simulations (though not assessed), and there is a debrief with personnel after each exercise. This course appears to be quite stressful and realistic for the delegates playing the role of OIM during the simulations.

2. Use OFTC course mentioned above. Also use the Offshore Command Training Organisation (OCTO) course run by Rear Admiral Larken which is a seven day course combining classroom seminars of command theory with the practical applications of command in a seafaring situation off the Scottish coast. In addition, also uses offshore training L conducted by TFCW, which is linked in with their Emergency Operation Response team onshore.

3. Use OFTC course mentioned above and the Offshore Command Training Organisation (OCTO) course run by Rear Admiral Larken mentioned above.

4. Use the OFTC course mentioned above and has twice yearly drills involving the coast guard and other emergency services. External consultants observe and report on staff performance during these drills. There is an annual audit by the Managing Director of offshore drills.

5. Use the OFTC course mentioned above and have formal emergency exercises offshore.

6. Use the OFTC course mentioned above.

7. Use the OFTC course mentioned above.

8. Use the OFTC course mentioned above, and will soon introduce the OCTO course for existing OIMs. Also have search and rescue training, and oil spill control course.

9. Use onshore incident management courses, which are in-house simulations involving team members from both on- and offshore management in various scenarios including evacuation and rescue.
introduce the OCTO course (see above) in the future, which they were in the process of assessing when interviewed.

10. Use in-house emergency training which simulate major incidents, mainly for shore-based personnel. Are examining training courses offered by OCTO, OFTC and LINK for the future as they want assessment incorporated into the training provided.

11. Have offshore and onshore emergency exercises utilising all staff in the Offshore Emergency Control Room.

12. Simulate full emergency exercises involving both on- and offshore staff. An external consultant takes an active part in controlling the scenario and reports on performance of all personnel involved.

13. Conducts emergency drills offshore, with periodic emergency drills conducted in conjunction with land based personnel.

14. Offers media response training to their onshore staff only.

15. Just introduced the topic of crisis management, as the emergency exercises offshore are routine varying from small (internal) to large incidents involving offshore and onshore support and external organisations (less frequent).

16. Is presently assessing whether to offer the OCTO offshore command ability training course.

17. Full emergency exercises and weekly drills are conducted by the OIM offshore, and there are some in-house on- and offshore combined emergency exercises, though they intend to develop emergency response training in the future.

18. This training is to be developed, and will take the form of regular formal training exercises offshore.

**Drilling companies**

The types of training used by drilling companies is similar to that used by operators, though fewer offer specially designed command courses out with the company.

1. Conducts audits offshore, which are conducted with little warning. and they say these are 'very difficult'.

2. Have weekly offshore drills, and some unspecified onshore training.

3. Crisis management training is an integral part of stability and well control training, and includes simulation exercises. Emergency drills are conducted offshore each week.

4. Have simulated exercises with operators and join in exercises run by oil companies.

5. Have simulated exercises with operators and join in exercises run by oil companies, is also looking at developing their own in the future, e.g. with LINK.
6. Have an exercise under development with Aberdeen Drilling School, which will involve the onshore team.

7. Proposes to take up LOGIK as consultants to develop an exercise, but no details are available yet.

8. Are looking into the availability of crisis management training and psychometric testing.

**Service companies**

1. Has seminars onshore with outside experts: coast guard, media training and safety consciousness, for onshore staff only at present, but this may change.

2. Has safety training for onshore staff, with safety drills and a thorough knowledge of company emergency procedures for offshore personnel.

3. The other company provides BETS; Ballast Emergency Tactics Simulator for offshore semi-sub staff involved in stability duties in offshore positions.

4. Currently developing a crisis control programme in-house, with "aid memoirs" etc. for the OIMs to follow, and which tasks should be done etc.

**D.7.5 Assessment of OIM performance in crisis management training**

Companies were then asked "What assessment of the OIM, and feedback is incorporated into this training?". Their responses are detailed below, with the same numerical code as their answer to Section D7.4 for ease of cross-referencing between their two responses.

**Operating companies**

1. OFTC staff de-brief personnel and have group discussions, and the onshore superintendent talks individually to each member of staff about their performance.

2. OFTC and OCTO staff de-brief personnel and have group discussions, and the emergency on-site controller speaks to the OIM and Deputy OIM on performance.

3. OFTC and OCTO staff de-brief personnel and have group discussions.

4. OFTC and OPITO trainers debrief individuals after each exercise and have group discussions. External consultants who organise exercises win house report similar methods of monitoring performance at the time and de-briefing after exercises to examine repercussions of actions, etc. The Production Superintendent and General Manager are also involved in assessment.

5. OFTC and OPITO trainers debrief individuals after each exercise and have group discussions. There is also feedback from the safety representatives, and for onshore situations, management are involved in assessment of performance during the exercise.

6. OCTO trainers de-brief personnel and have group discussions.
7. External consultants provide feedback to participants and to the company.

8. OFTC instructors provide feedback, and de-brief to participants and group discussions to generate action lists for participants.

9. Exercises are critiqued at de-brief sessions and their findings circulated to appropriate personnel. All personnel directly involved in the exercise attend the de-brief and are able to contribute.

10. No assessment.

11. The emergency control room members are de-briefed and the Operations Manager determines if there is a training requirement from this feedback.

12. The consultant prepares a report and conducts feedback sessions with all personnel involved.

13. During offshore drills all personnel critique overall performance of all involved. In drills with office personnel a consultant provides a critique.

14. There is an assessment conducted at the time on repercussions of actions etc.

15. There is a wash-up assessment by independent (but internal) invigilators of major exercises.

16. Not applicable.

17. Not applicable.

18. Not applicable.

Drilling companies
1. Formal assessment is by the management audit team. The Rig Manager also provides feedback on performance to varying degrees of detail.

2. Feedback is provided through an internal reporting system.

3. In-house courses must be passed to at least a set minimum standard.

4. The operator assesses performance.

5. Have talked to external consultants LINK Associates about setting up training and exercises, and report that the first two days would be preparation for assessment, with the next three days involving the actual assessment.

6. There is an open assessment on current management skills assessed by test and exercise, daily assessment during the five day course, and a final assessment to determine what additional types of training the OIMs need.

7. Not applicable.

8. Not applicable.
Service companies
1. An assessment by rest of the team, which is then reported back to the beach. Also the general manager and client supervise audits.

2. Concentrates on any weaknesses shown during training, and follow up with a de-briefing on safety awareness.

3. Has de-briefs on the exercises and performance in the BETS.

4. Not applicable.

D.7.6 Simulations and exercises

Companies were then asked “Could you provide some details about your existing simulations (off- and onshore) and exercises offshore”. (These are in addition to the usual weekly drills).

Operating companies
1. Safety drills, and emergency drills co-ordinated within company guidelines. Also external consultants run scenarios and provide feedback to the teams on the installations.

2. Had a recent major exercise with the emergency services.

3. Has a programme of drills/exercises, and use external consultants: OFTC, RGIT, and TM Services who provide a full debrief. They have examined the OIM's performance in the past, and intend to consider this more in the future.

4. Weekly drills made up by platform personnel. Combination of on- and offshore drills devised by a consultant. Degree of onshore involvement varies with other onshore agencies.

5. Runs exercises as per UKOOA guidelines plus considerably more drills and exercises are held weekly on all installations and selected (in general) from all their installations. The selection is based on planned workload in order to target emergency responses applicable to major workscopes. All exercises are critiqued at a debrief attended by all personnel directly involved in the exercise. The results of such debriefs are documented and referenced for action where applicable.

6. Has exercises generated by onshore safety department, as well as OFTC simulations to the limits of operating facility. There is also one big exercise per year for the emergency response teams on- and offshore. The OIM makes decisions on the use of resources. Weekly exercises also provide a lot of lessons to be learned.

7. Has an annual onshore/offshore emergency exercise with main staff. In the gas area they have developed their own scenario, whereby one platform acts as support and one acts as the crisis platform. Usually the exercise runs for a number of hours. There is no formal assessment, though do use an external consultant for a general assessment of the organization.

8. Each platform is involved in a major scenario once every three years, plus the UKOOA weekly drills.
9. Has simulated emergencies involving fire/explosion, injuries, loss of personnel, held at least quarterly. Minor localised exercises are more frequent. A large annual exercise is conducted by internal staff, similar to an audit. Additionally, there are approximately four major exercises per annum involving a wide range of internal staff and external agencies.

10. Have five major exercises per year which escalate to crisis scenarios. One of these exercises will involve the emergency services. They also use consultants to set up a scenario and debrief.

11. Offshore OIMs generally respond to various exercise scenarios generated from both the base office and the offshore team.

12. Weekly drills, e.g. fire, man overboard. Also onshore team involved in scenarios with the OIM in "real-time", usually lasting about three hours.

13. Complies with UKOOA and company guidelines for weekly drills, e.g. lifeboat station, fire fighting; alternative evacuation every two weeks; familiarisation with breathing apparatus and emergency equipment, casualty handling and first aid every month.

14. Has simulated crises involving fires, explosions, etc. every two weeks involving emergency teams, just for offshore staff. Here the ON is the assessor; he follows guidelines and the safety department sets up exercises.

15. Have weekly drills though the OIM is not assessing himself. This aspect may be changed in the future.

16. Have weekly drills co-ordinated by the OIM, e.g. man trapped down leg, gas escape, man overboard.

Two companies did not provide any details.

Drilling companies
1. Have audit teams from their clients who visit. They also have the usual weekly drills plus a monthly focused emergency e.g. ballast control failure, large scale well control. These test the subordinates' abilities, not the ON's.

2. Have client audit teams, on- and offshore co-ordinated exercises. Weekly drills, as per DOT guidelines, e.g. abandon barge, pressure kick, helicopter crash, fire and gas escape.

3. The safety representative monitors the paper flow of the OIMs performance in drills and then this is passed to head office. Their safety plan is integrated with Emergency Responses and followed up monthly by head office. Also run weekly drills which are controlled by the OIM. These are being expanded in the future.

4. Does in house paper exercises to check communication flow with the beach, monitoring the OIM. They also undertake scenarios involving major incidents offshore e.g. evacuation. Have on- and offshore exercises, plus exercises for the client, assessed by them with detailed feedback provided.
5. Has no technical simulations but will carry these out when their installation becomes operative. Onshore they have external consultants to run beach emergency scenarios.

6. Have weekly emergency drills: e.g. fire-fighting, well control, evacuation by helicopter/boat etc., stability, abandon barge, collision, fire, blow out. Operator shutdown exercises, and Coastguard emergency response exercises.

7. Weekly DOT drills: life boat, fire etc. Plus an in-house safety programme with five different drills a month for each department.

8. Have weekly emergency drills: e.g. fire-fighting, well control, evacuation by helicopter/boat etc., stability, abandon barge, collision, fire, blow out; and on some rigs, high pressure, high temperature well control simulations are done.


10. Have weekly drills only at the present moment, but plan to expand these either on- or offshore.

11. Do not have any major simulations or exercises at present, but plan to stage them in the future.

12. Weekly emergency drills: e.g. fire-fighting, well control, evacuation by helicopter/boat etc., stability.

13. Weekly drills such as man over board, abandon barge, collision, fire and blow-out.

14. Usual weekly drills; man over board, blow out etc.

15. Weekly emergency drills.

16. Did not provide any specific details.

Service companies
1. Onshore management attend Emergency Response courses, but not offshore personnel yet.

2. Weekly drills as detailed in their company manual, and HSE scenarios.

3. Weekly drills as detailed in their company manual, and HSE scenarios.

4. One service company did not respond to the question.

D.7.7 Emergency procedures

Companies were then asked "What procedure does the OIM follow to deal with a crisis? (e.g. from where does the OIM control the emergency, who is with him, who is in contact with the beach?)" Table 30 contains a summary of their responses.

<table>
<thead>
<tr>
<th>Location/Contact</th>
<th>Operating</th>
<th>Drilling</th>
<th>Service</th>
<th>TOTAL</th>
</tr>
</thead>
</table>

Table 30
Summary of emergency procedures
The results in the table reveal that on most installations OIMs use the control room as their base to take control of emergency situations. The other main choice of venue was the radio room, though for many companies OIMs were given a degree of discretion, reporting that it depended on the nature of the emergency.

When asked who was with the OIM and who was in contact with the beach, companies responded that it was usually the radio operator (not surprising as for some OIMs they controlled the emergency from the radio room), but for a large number it again depended on the nature of the incident.

D.8 FUTURE CHANGES

D.8.1 Standards of Competence for OIMs

The final two questions focused on recent developments in the industry, and what initiatives, if any, companies had planned in response. The first of these concerned the Standards of Competence for OIMs which have been drafted by an OPITO Work Group\(^\text{12}\). Companies were asked, ‘Are you aware of the developing national standards of competence for the position of OIM and what, if any, changes to your selection system are you proposing as a result?’

A total of 33 companies were aware of the standards of competence (18 operating, 13 drilling and 2 service), while five companies were not (3 drilling and 2 service). The responses planned by those companies aware of the developments are outlined below according to type of company.

Operating companies

Three companies were actively involved in developing the competencies, one of whom is using their representative on the Standards of Competency Work Group to advise on developments. Two operators are designing full competence assessment programmes, one of which will include a Certificate of award for authorised competencies. One operator is concentrating on leadership and ability in crisis situations and how to evaluate these. Another operator is incorporating the OCTO course and developing other emergency courses. One operator is to make their selection procedure more formalised for offshore personnel, and a Management Development Programme is currently...
under construction. One company intends to have more professional engineers offshore as future OIMs rather than personnel who have come up through the ranks. Another operator has drawn up extensive job specifications on competencies required and evidence for such competencies. They are currently examining existing training and assessment for command with a possible introduction for their initiatives later in 1992.

Three operators said their response would depend on the results of the OIM Standards of Competence Work Group, though another company was starting research in this area. Just two operators said they were not considering making any changes.

**Drilling companies**

Two drilling companies were actively developing training courses for their OIMs, one of which was developing stress/crisis management training and assessment, and looking at a more structured career progression for OIMs. Two companies were examining the possibility of introducing personality tests and structured interviews for their selection procedures. Four companies reported that their response would depend on the outcomes of the OIM Standards of Competence Work Group, while one company was not proposing any changes at present, though this is under review.

**Service companies**

One service company said that they operate on too many assumptions at present, and will probably move to a more formal procedure in the near future. One company is not considering making any changes at present, as they consider their existing procedures are flexible enough. One service company did not answer the question.

**D.8.2 Safety cases**

The final question concerned companies' responses to Lord Cullen's recommendations following his 1990 Public Inquiry into the 1988 Piper Alpha disaster. Two specific recommendations pertaining to OIMs were made:

1. The operator's criteria for selection of OIMs, and in particular their command ability, should form part of its Safety Management System.

2. There should be a system of emergency exercises which provides OIMs with practice in decision making in emergency situations, including decisions on evacuation. All OIMs and their Deputies should participate regularly in such exercises. (p399)

It will be necessary for companies who employ OIMs to state how they have responded to these recommendations as part of their Safety Case for each offshore installation.

Interviewees were asked 'Will you now be amending your current selection procedures as a result of Lord Cullen's recommendations, and if so in what way?'

Companies were split almost equally between those who were intending to make changes and those who were not. Seventeen companies were planning to make a variety of changes to their selection procedures (11 operating and 6 drilling companies) and sixteen companies did not have any plans to change
their procedures (5 operating, 8 drilling and 3 service companies). Two operating and two drilling companies did not know if any changes were going to be planned, and one service company did not answer the question. A more detailed analysis of their responses is provided below, according to type of company.

**Operating companies**

Specific changes planned by individual companies include;

1. Setting up a hierarchy of levels of competency on platform and tightening up on physical fitness for offshore posts.

2. Modifying existing competencies and training needs but long-term objectives need to be more formally qualified.

3. Amending current selection procedures in line with standards of competence.

4. Tightening up broadly with Supervisors and offshore staff, though not specifically OIMs.

5. Examine selection criteria and develop a better safety awareness.

6. Improve the OIM's technical standards and do more simulations.

7. Actively investigating Command Ability Courses, Stress Management Course & Human Factors in depth. This is an ongoing commitment towards enhancement of Field Safety. Have in their most recent selection process used the "Occupational Personality Questionnaire" devised by SHL.

8. Looking at competencies to command in a crisis and for assessment (independent) of those competencies, plus possibly psychometric assessment of personal qualities, e.g. reactions to stress.

9. Development of assessment centres for OIMs using material from Repertory Grids, Action Profiling and the Work Profiling System, (these are all job analysis techniques).

10. One company has a record of OIMs competence over the last five or six years, and more intensely over the last three or four years. These cover areas that were being addressed anyway, including knowledge and competence analysis of performance.

11. Two companies are "reviewing a number of areas" in the light of Lord Cullen's report.

**Drilling companies**

Two drilling companies intended to formalise their existing selection procedures, while another was considering developing new procedures and standards. Another company intended to include command and control, and stress management courses for their personnel, while one other company was working on developing a safety course. One company was formulating more procedures for inclusion in their SMS, which was "really just putting into words what we are doing already". The influence was ongoing for the training of OIMs, but not for their selection.
Service companies

One service company felt that their selection procedures already exceeded Cullen's requirements, and another company said the only change that might be made would be if they changed the whole concept of the OIM: now the main line of command is from the Toolpusher to the Rig Superintendent, though this may change to the OIM, then Rig Superintendent. The other service company said their system is "fine", but they could improve the training and perhaps institute better practices offshore i.e. make them installation specific.
D.9 SURVEY OF OIM SELECTION AND TRAINING PROCEDURES
INTERVIEW SCHEDULE

INTRODUCTION

The Offshore Safety Division Of the HSE has commissioned this research project on the selection and training of OIMs, with particular reference to their crisis management responsibilities. This interview is part of Stage 1 of the project, and we will be interviewing representatives from a range of companies who employ OIMs. The research findings will be submitted to the HSE, and hopefully published thereafter. Interim reports will be available to participating companies. No individual or company will be identified, only summary data from the range of organizations interviewed will be used.

The Business Research Unit are extremely grateful for your co-operation, and hope this interview will not unduly inconvenience you.

Topics covered will include:

- Background information on company
- Selection procedures
- Induction and training
- Assessment of candidates

GENERAL INFORMATION

Q1. What is your position in the organization?

Q2. Is your organization: an operator or contractor (drilling, flotel, diving, other)?

Q3. How many offshore installations does your organization operate which require an OIM, and what function/design are they?

- Drilling -
  - Drillship
  - Semi-sub
  - Jack-up

- Production/drilling
  - Gas
  - Gas & Oil
  - Oil

- Production platform
  - Gas & Oil
  - Oil

- Flotel

- Barge

- Semi-sub support

- Floating storage

- Jack-up accommodation
Q4. **What** are the typical POB complements of each installation, and where are they usually situated? E.g. NUKCS, SUKCS?

Q5. How many OIMs are in post, and how many men are also registered with the Department of Energy to deputise as an OIM for each installation?

Q6. What positions do the nominated deputy OIMs hold?

Q7. What qualifications do your current OIMs (i.e. those in the post) hold? SEE CHECKLIST

Q8. What were their two previous jobs? (i.e. job titles)

**SELECTION PROCEDURES**

Q9. Who participates in the selection process, Gob titles), and were any of them ever an OIM?

Q10. Who decides which people participate, and why have these people hem chosen?

Q11. What proportions of candidates are selected from:

- Internal sources
- External sources
- Both
- Other (specify)

Q12. What sources of information are used during the selection procedure, and what contribution does each make to the overall assessment (i.e. % weighting)? TICK AS APPROPRIATE

**INTERNAL**

- Interviews
- References
- CVs
- Personal recommendations
- In-company staff appraisal files
Assessment centres
Psychometric tests, (which ones)
Simulation exercises
Others (specify)

EXTERNAL

Interviews
References
CVs
Personal recommendations
In-company staff appraisal files
Assessment centres
Psychometric tests (which ones)
Simulation exercises
Others (specify)

NOTE: IF NO PSYCHOMETRIC TESTS ARE USED ASK IF THEY ARE INCLUDED IN SELECTION FOR OTHER OFFSHORE POSTS, AND RECORD WHICH TESTS

Q13. Could you just briefly outline your selection process, and who makes the final selection decision?

Q14. Do you use formal selection criteria, and if so may we have a copy?

Use selection criteria YES/NO Obtained a copy YES/NO

Q15. Do you have an OIM job description, and may we have a copy?

Job description YES/NO Obtained a copy YES/NO

Q16. Is it used in the selection procedure?

YES/NO

Q17. When was the last time the job description was up-dated, and how often is this done?

Q18. Is the validity of your selection method for OIM posts assessed, and if so how?
ASSESSING CANDIDATES SUITABILITY FOR THE POST OF OIM

Q19. Formal qualifications: what is essential, and what would be useful for the post?

   Essential

   Useful

Q20. Managerial experience: what is required for the post, and what would be useful?

   Essential

   Useful

Q21. Formal training: what is essential, and what useful for the post? May we have a copy of your training profile, if there is one?

   Essential

   Useful

Q22. Technical work experience: what is essential, and what useful for the post?

   Essential

   Useful

Q23. What personal qualities are you looking for in the candidate, and how do you assess whether the candidate possesses these?

Q24. Is a candidate's ability to command in a crisis assessed in the selection procedure, and if so, how? IF NOT DIRECTLY ASSESSED ASK WHAT EVIDENCE IS REQUIRED OF THIS ABILITY
INDUCTION AND TRAINING

Q25. What is your induction procedure for new OIMs?

Q26. What is the method of OIM appraisal once appointed, and how often is it carried out?

Q27. What types of on-going training are available for OIMs?

Q28. Is any crisis management training provided, and what form does this take? (e.g. onshore/offshore, with or without a team). Ask for a contact person or sufficient detail so that this can be followed up in a later stage of the project.

Q29. What assessment of the OIM, and feedback is incorporated into this training?

Q30. Could you provide some details about your existing simulations (off- and onshore), and exercises offshore.

Q31. What procedures does the OIM follow to deal with a crisis? (e.g. from where does the OIM control the emergency, who is with him, who is in contact with the beach?)

Q32. Are you aware of the developing national standards of competence for the position of OIM and what, if any, changes to your selection system are you proposing as a result?

Q33. Will you now be amending your current selection procedures as a result of Lord Cullen's recommendations, and if so, in what way?
Q7. CHECKLIST - TO BE COMPLETED FOR EACH OIM, (if possible)

1. Degree
   HNC / HND
   Master Mariner
   Commander RN or other RN
   DTI Engineering
   Other (specify)

2. Degree
   HNC / HND
   Master Mariner
   Commander RN or other RN
   DTI Engineering
   Other (specify)

3. Degree
   HNC / HND
   Master Mariner
   Commander RN or other RN
   DTI Engineering
   Other (specify)

4. Degree
   HNC / HND
   Master Mariner
   Commander RN or other RN
   DTI Engineering
   Other (specify)
APPENDIX E

RGU BUSINESS RESEARCH UNIT

OIM CRISIS INCIDENT INTERVIEW SCHEDULE

GENERAL INFORMATION

Q1. Briefly outline your previous work experience in the offshore oil industry, and any other relevant jobs (e.g. merchant marine/armed forces).

Q2. When did the offshore emergency you were involved in as an OIM occur?

Q3. What was the type of incident you were involved in?

Q4. On what type of installation did the incident occur?

Q5. For how long had you been an OIM when it happened?

Q6. For how long had you been an OIM on that installation when the incident occurred?

Q7. What was the POB of the installation at the time of the incident?

ABOUT THE INCIDENT

Q8. Could you tell me stage by stage, the series of events which led up to the incident, and how you reacted at each stage?

Q9. Who was involved on the installation in helping you to cope with the incident?
YOUR ACTIONS AND REACTIONS DURING THE INCIDENT

Q10. How did you feel about your own ability as the on-scene commander to deal with the incident  

a) before it occurred?  

b) when it occurred?  

c) after it occurred?  

Q11. How did you feel about your own technical ability when dealing with the incident?  

Q12. On reflection, which aspects of your decision making were the most/least effective, and why?  

Q13. How did you feel about your own personal reactions (feelings) to the emergency at the time, and how did you cope with these?  

RELEVANCE OF YOUR PREVIOUS EXPERIENCE

Q14. How far do you feel your training and experience had prepared you to deal with the incident?  

Q15. Which specific training, if any, do you think was of benefit to you in dealing with the situation?  

Q16. In what way, if any, did previous onshore or offshore exercises help you handle the situation?  

Q17. In what way, if any, did your knowledge of the installation help you handle the situation?  

THE RESPONSES OF YOUR COLLEAGUES

Q18. What were the significant strengths and weaknesses (ability/training) of the offshore emergency control team's performance?
Q19. What were the significant strengths and weaknesses (ability/training) of the onshore emergency control team's performance?

BENEFITS OF THE EXPERIENCE

Q20. What have you learned from the incident which helps you to do a better day-today job as an OIM?

Q21. What have you learned from the incident which would help you to handle another emergency situation? (i.e. what did the incident reinforce as being correct actions to take?)

Q22. What did you make a point of doing after the incident so that you would be better prepared in the future?

Q23. What advice would you give to an inexperienced OIM to prepare him to face an offshore emergency?

Q24. What training would you recommend for relief OIMs / Deputy OIMs to help them cope with an emergency?

Q25. Did you attend the OFTC Fire Control Course/Management of Major Emergencies course?

Q26. In what way, if any, was the experience of attending the training course of value?
APPENDIX F  SELECTION AND TRAINING OF NORWEGIAN OIMS

F.1  INTRODUCTION

Stage 1(i) of the project involved gathering information on the current practices for the selection, training and assessment of Offshore Installation Managers (OIMs) on the UK Continental Shelf (UKCS) (see Chapter 2 for a summary, and Flin and Slaven, 1992 for a full report). Stage 3 was intended to complement Stage 1(i) by surveying a sample of Norwegian oil and gas companies operating on the Norwegian sector of the North Sea on their current practices in this area with OIMs. A brief summary of this survey is given in Chapter 4. The term OIM will be used throughout to indicate the most senior manager on an installation, although in Norwegian companies this individual may be called Platform Manager or Field Manager.¹

All of the organizations contacted agreed to participate: six operating companies and three drilling companies. Between one and three company representatives from management were present at each interview. The job titles of the interviewees is presented in Table 1. A summary of the types of installations the participating companies owned is provided in the next section.

<table>
<thead>
<tr>
<th>Interviewees' position in the organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
</tr>
<tr>
<td>Operating</td>
</tr>
<tr>
<td>HR Manager</td>
</tr>
<tr>
<td>Platform Manager (OIM)</td>
</tr>
<tr>
<td>Personnel Officer</td>
</tr>
<tr>
<td>Production Manager</td>
</tr>
<tr>
<td>Snr. Superintendent of Operations</td>
</tr>
<tr>
<td>Operations Manager</td>
</tr>
<tr>
<td>Operations Supervisor</td>
</tr>
<tr>
<td>Personnel Section Leader</td>
</tr>
</tbody>
</table>

NOTE: at some interviews, more than one person was present.

F.2  COMPANY PROFILES

F.2.1  Type and function of installations

In order to appreciate the size and types of installations the OIMs were being selected to manage, each company was asked to provide details of the types of installations they were currently operating in Norwegian waters.

¹ We are grateful to the psychologists at Rogaland Research Institute for their help with this stage of the project.
Table 2
Number and type of installations owned by participants

<table>
<thead>
<tr>
<th>Type of installation</th>
<th>Number of companies</th>
<th>Total number of installations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drilling (n = 3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semi-sub</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Jack-up</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Production (n = 6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil platform</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Gas platform</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Both Gas &amp; Oil platforms</td>
<td>3</td>
<td>27</td>
</tr>
</tbody>
</table>

Table 2 shows that the sample ranged from drilling companies currently operating one or two rigs in Norwegian waters, to one production company operating more than 20 platforms. The sample of companies operated 39 installations in total.

F.2.2 Size of installations: Personnel on Board (P08)

Companies were asked, "What are the typical P08 complements of each installation, and where are they usually situated?”. Their responses are presented in Table 3. All installations operated in Norwegian Waters. In terms of installation size the majority of installations had between 51 and 100 staff on board, very similar to installations operating in UK waters (Flin and Slaven, 1992).

Table 3
Typical POB and location of Installation

<table>
<thead>
<tr>
<th>Number of personnel</th>
<th>Operating</th>
<th>Drilling</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NNM</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1-50</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>51-100</td>
<td>23</td>
<td>3</td>
<td>26</td>
</tr>
<tr>
<td>101-200</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>201-300</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>301-400</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>400</td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

NOTE. NNM = not normally manned.

F.3 OIM PROFILES

F.3.1 Numbers of OIMs

The next section asked about the previous job history and qualifications of the OIMs currently employed by the companies interviewed. Individuals were asked, "How many OIMs are in post, and how many men are also deputy OIMs for each installation?" In Norway offshore workers tend to work a different hitch schedule than UK offshore workers, usually two weeks on and three weeks off, then two weeks on and four weeks off. Hence there are usually three OIMs to each platform. A total of 109 OIMs and 111 Deputy OIMs were employed by the companies interviewed.
Table 4
Numbers of OIMs and Deputies employed

<table>
<thead>
<tr>
<th>No of OIMs</th>
<th>Operating</th>
<th>Drilling</th>
<th>TOTAL OIMs</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>2</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>9</td>
<td>2</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>60</td>
<td>1</td>
<td></td>
<td>60</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Deputy OIMs</th>
<th>Operating</th>
<th>Drilling</th>
<th>TOTAL Deputies</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>3</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>12</td>
<td>1</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>60</td>
<td>1</td>
<td></td>
<td>60</td>
</tr>
</tbody>
</table>

F.3.2 Range of Deputy OIM positions

In order to examine the range of personnel registered to deputise as OIMs, interviewees were asked “What positions do the nominated deputy OIMs hold?” The results are presented in Table 5.

Table 5
Job titles of Deputy OIMs by company

<table>
<thead>
<tr>
<th>Title</th>
<th>Operating</th>
<th>Drilling</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance Superintendent</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Stability Section Leader</td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Stability &amp; Safety Leader</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Safety Superintendent</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Offshore Prod. Manager</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Operations Supervisor</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Production Superintendent</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Asst. Platform Manager</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Amongst operating companies, a number of posts were considered suitable Deputy OIM positions, mainly production department supervisors or superintendents. (in the table it is highly likely that different job titles denote similar functions and responsibilities in different companies.) Drilling companies, though had only one Deputy OIM position, Stability Section Leader (SSL), sometimes incorporating safety responsibilities. This emphasis on marine operations for drilling companies is to be expected considering their rigs were mainly mobile installations, whose operation and integrity is dependant on ballast control and stability in the marine environment.

F.3.3 OIMs’ qualifications

A detailed breakdown of the OIMs’ qualifications is presented in Table 6 below in response to the question, “What qualifications do your current OIMs (ie. those in the post) hold?”
Table 6
Current OIMs’ qualifications

<table>
<thead>
<tr>
<th>Qualification</th>
<th>Operating</th>
<th>Drilling</th>
<th>TOTAL OIMs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Engineer</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Petroleum Eng. Degree</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Merchant Navy Engineer</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>BA Engineering</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Master Mariner</td>
<td>1</td>
<td>21</td>
<td>22</td>
</tr>
<tr>
<td>MA Mech. Eng.' Degree</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>TOTAL OIMs</td>
<td>25</td>
<td>21</td>
<td>46</td>
</tr>
</tbody>
</table>

NOTE some OIMs have more than one qualification. 1 company did not provide this information.

In terms of qualifications, all the operating company OIMs possessed formal qualifications; 44% had engineering degrees, 36% an unspecified degree and 20% a Merchant Navy qualification. All drilling company OIMs were qualified Master Mariners (foreign going). This is a similar pattern of qualifications held by UK OIMs, identified from an earlier survey (Flin and Slaven, 1992).

F.3.4 OIM’s previous jobs

In order to examine OIMs’ prior experience, interviewees were asked "What were their previous two jobs?". The responses are presented in Tables 7 and 8.

Table 7
OIM’s previous job title

<table>
<thead>
<tr>
<th>Prior job to OIM</th>
<th>Operating</th>
<th>Drilling</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platform Mgr/OIM</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Stability Section Leader</td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Maintenance Supervisor</td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Prod Supervisor</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Deputy OIM</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Field Manager</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Snr Operations Supervisor</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Section Head Operations</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Operations Superintendent</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Production Superintendent</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Maintenance Superintendent</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Project Manager</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Drilling Engineer</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Commissioning Supervisor</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Pipeline Supervisor</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Master</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Control Room Operator</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

OIMs employed by operating companies tended to come from a previous post as an OIM, or from a senior supervisory position in Maintenance or Production. Drilling OIMs came from a previous OIM post or an SSI- or other marine position, to be expected from data provided in Table 5.
Table 8
OIM's second prior job

<table>
<thead>
<tr>
<th>2nd prior job</th>
<th>Operating</th>
<th>Drilling</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Room Ops</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Master</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Chief Officer</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Mate</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1st Mate</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Marine Advisor</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Platform Mgr</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Prod Supt’</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Production Supervisor</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Maintenance Supervisor</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Supervisor 1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Structural Engineer</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Merchant Navy Eng.</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Ops Supervisor</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Prod Engineer</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Ass. Production Engineer</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Engineer</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Production Operator</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Quality Assurance</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Looking at Tables 7 and 8, it is apparent that operating company OIMs are drawn from mainly Operations and Engineering backgrounds, generally working their way up through lower offshore management positions. This is in contrast to drilling company OIMs who come almost exclusively from a Marine background. It should be born in mind though, that the individual companies may have different job titles covering similar responsibilities. The promotion routes for both operating and drilling company OIMs reflect the differences between senior management roles on fixed and mobile installations. Fixed installations usually require a knowledge of engineering processes while on mobile installations an appreciation of the marine environment is necessary. Both Norwegian and UK OIMs appear to come from similar career backgrounds.

F.4 SELECTION PROCEDURES

F.4.1 Sources of candidates

The next section asked for information on the selection procedure for selecting OIMs; covering sources of candidates, selection methods, the use of psychometric testing, and which staff participated in the selection process. The first of these questions asked interviewees, "What proportions of candidates are selected from internal, external and both types of candidates?". Their responses are provided in Table 9 below.

Table 9
Sources of candidates for OIM position

<table>
<thead>
<tr>
<th>Source</th>
<th>Operating</th>
<th>Drilling</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal only</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Internal &amp; external</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>
Six companies recruit only from within the company, while three companies accept candidates from outside the organization. None of the companies surveyed recruited only from external sources. As in the UK, Norwegian companies preferred to promote personnel from within the company to the post of OIM. Senior onshore management would have a much greater knowledge of internal candidates’ strengths and weaknesses, and possibly have knowledge of how the individual behaved under stressful situations. Internal candidates would know the installation, personnel, operating processes and company procedures, and would be much easier to integrate into the position than an external candidate.

The three companies who recruited from both internal and external candidates specified a preference for internal personnel, if available, though this was not always possible.

F.4.2 Information considered in selection decisions

To provide a brief outline of the selection procedure involved in selecting OIMs, interviewees were asked, 'What sources of information are used during the selection procedure, and what contribution does each make to the overall assessment (ie. % weighting)?'. Table 10 contains a summary of the sources of information companies used to select between their internal candidates.

(i) Internal candidates

<table>
<thead>
<tr>
<th>Table 10</th>
<th>Information used to select internal candidates</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INTERNAL</strong></td>
<td><strong>Operating</strong></td>
</tr>
<tr>
<td>Appraisal files</td>
<td>5</td>
</tr>
<tr>
<td>Personal recommendation</td>
<td>5</td>
</tr>
<tr>
<td>Interviews</td>
<td>4</td>
</tr>
<tr>
<td>CVs</td>
<td>3</td>
</tr>
<tr>
<td>References</td>
<td>2</td>
</tr>
<tr>
<td>Psychometric Tests</td>
<td>2</td>
</tr>
</tbody>
</table>

The most popular sources of information for internal candidates were appraisal files, personal recommendations (often including one by the person’s OIM or line supervisor), and interviews, though these were usually incorporated into the appraisal system. These are the same common sources of information as UK companies use. None of the companies mentioned simulations, though these exercises are often incorporated into personal development plans. Few companies were able to provide an estimate of percentage contribution made by each source of information, but most companies gave the majority weighting to personal recommendations and staff appraisal files. An example of a weighting by a drilling company is 90% personal recommendation and appraisals, with a 10% weighting for interviews and CVs. Examples of sample weightings by three operating companies are:

1. 60-70% for appraisal files with references 1 personal recommendations next, then the interview and CV.
2. Evenly split contribution from CVs, personal recommendations and staff appraisals (which involve interviews).
3. 75% Personal recommendations and appraisal.¹

¹ NOTE unless stated otherwise, the numbered order of companies’ responses are not
External candidates

Table 11
Information used to select external candidates

<table>
<thead>
<tr>
<th>EXTERNAL</th>
<th>Operating</th>
<th>Drilling</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviews</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>CVs</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>References</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Personal recommendation</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Psychometric Tests</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

For external candidates, all three companies specified interviews, CVs and references as sources of information, the same as mentioned by UK companies. Only one company was able to provide an estimate percentage weighting, with a 60-70% contribution by personal recommendations and references, 20% interviews, and 10% for CVs.

F.4.3 Selection process

The final question concerning companies' selection procedures asked for information to provide a more detailed picture of their selection process. It asked, "Could you just briefly outline your selection process, and who makes the final decision?" Respondents' answers are presented below for each company according to whether they were an operating or drilling company. (I = internal candidates, B = both internal and external candidates.) The general procedure for internal candidates is to examine staff appraisal files to identify potential candidates. Onshore management (usually comprising Personnel, Rig or Operations Manager and Executive management) decide on who to promote, most likely after interviewing the candidate. The same procedure is followed by UK operating companies, though they do not always interview the candidate. For a combination of external and internal candidates, candidates are short listed after replying to the advertisement, by Personnel and Operations or Rig Managers. Either one or two interviews follow with onshore management who then decide who is suitable for the post. Some UK companies use external consultants for the initial stages, and then interview candidates themselves, sometimes two or three times before offering the post.

Operating companies

1. Line management identify possible candidates on the basis of Position Analysis (precise job requirements), who are then interviewed. A personality test is also used. (I)

2. Candidates are interviewed and short-listed by the Operations and Personnel Managers, who then decide who is the most appropriate person. The Divisional Manager then interviews the potential job-holder to verify/authorise the decision. The Operations Manager is the OIM's next line supervisor and has the most influence in deciding who will fill the post, but the Divisional Manager has the final say. (I)

3. Interviews are part of the annual appraisal system which identity who is suitable for promotion. A dedicated person is responsible for ensuring each person develops to their full potential within the company. This is done in discussion with the individuals concerned, particularly when promotion is considered. From this annual interview personnel are identified as suitable for promotion to OIM, and the Executive Vice President of Operations decides who will be the next OIM from those

related from one section to the next, to preserve the anonymity of individual companies.
identified as suitable. Systematic competence planning is in the process of being developed. (I)

4. A placement summaries list is compiled annually from the appraisal system. This involves identifying who is suitable for promotion within the following year for identified posts from an individual's previous work record, and an appraisal interview with their line manager. Personnel examine this placement summaries list and prioritise the potential candidates with the Field Manager. The Production Manager and Field Manager review the lists and decide who to recommend for the post to the Divisional Manager. The Divisional Manager then makes the final decision with the approval from the company HQ. (I)

5. Operations Supervisor, Operations Manager and existing OIMs consider who is most suitable for the post from their knowledge of individuals. (B)

6. Advertised for applicants and reduced list of potential candidates for first technical interview. A number were then considered for a second panel interview and selected from this. A personality test is also used. (B)

**Drilling companies**

1. Personnel Department screen candidates initially, then the Rig Manager interviews them after looking through their company appraisal files. Unanimous decision with no one person having the final say, but formally the final decision rests with the Personnel Manager. (I)

2. Firstly check company personnel files and talk to existing OIMs on board installation. Next review annual appraisal files and personal recommendations. The Operations Manager discusses prospective candidates with the Personnel Manager. If an obvious candidate stands out, he is interviewed, and sometimes placed as a relief OIM before being given the job permanently. (I)

3. Advertise post, select suitable candidates from forms and reduce to three to five candidates for an interview by the Personnel Co-ordinator and Rig Manager. External candidates called for interview and reduce potential to two candidates. Check references - must check at least three. Second interview with Personnel Manager and Rig Manager who decide and draw up contracts. Operations Manager verifies final decision. No one person has overall decision. (B)

**F.4.4 Use of psychometric testing**

Within the interview section on selection procedures, companies were asked if they used psychometric tests during their selection procedure. If the company did not include them, interviewees were specifically asked if testing was included for any other offshore posts and whether they intended to use testing at some point in the future.

None of the drilling companies use psychometric tests, though one company might consider their use in the future, as one of their divisions uses them at present. Four operating companies do not use tests, though two are considering introducing them in the future. Of the two operating companies who were using tests, one company uses DAPA, (Data Assisted Personality Analysis), a Scandinavian personality questionnaire for management positions. A personal computer presents 184 questions, providing scores along 30 personality
dimensions. (DAPA, Stavanger Consulting Group, Riddergarten 12B, Stockholm 114353 The other company uses the GARUDA test of personality for all offshore workers. This measures three factors: Cognitive style, Social style and Ego-drive from 80 questions covering 16 traits. (GARUDA AS, Studstrup Strandvej 17, DK 8541 Skoedstrup, Denmark.) Tests appear to be used more widely in the UK. Five companies (three operating and two drilling) are using a variety of tests in the UK, mostly personality questionnaires. As one might expect, UK companies are not using Scandinavian, but British and American instruments. (See Appendix D for test details.)

F.4.5 Profiles of selection panel members

The next section of the interview schedule asked about the selection procedure for choosing OIMs. Firstly, interviewees were asked, "Who participates in the selection process, (job titles), and were any of them ever an OIM?". A summary of their responses is provided in Table 12. Numbers quoted refer to the frequency with which a particular position was mentioned.

Table 12

<table>
<thead>
<tr>
<th>Job title</th>
<th>Operating</th>
<th>Drilling</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operations Manager</td>
<td>3*</td>
<td>3*</td>
<td>6**</td>
</tr>
<tr>
<td>Personnel/HR Manager</td>
<td>3**</td>
<td>3</td>
<td>6**</td>
</tr>
<tr>
<td>OIMs</td>
<td>2*</td>
<td>1*</td>
<td>3*</td>
</tr>
<tr>
<td>Operations Supervisor</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Rig Manager</td>
<td>1*</td>
<td>1*</td>
<td></td>
</tr>
<tr>
<td>Personnel Co-ordinator</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Rig Manager</td>
<td>1*</td>
<td>1*</td>
<td></td>
</tr>
<tr>
<td>Production Manager</td>
<td>1*</td>
<td>1*</td>
<td></td>
</tr>
<tr>
<td>Dept Production Manager</td>
<td>1*</td>
<td>1*</td>
<td></td>
</tr>
<tr>
<td>Drilling &amp; Production Manager</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Director of Operations</td>
<td>1*</td>
<td>1*</td>
<td></td>
</tr>
<tr>
<td>Exec' Vice President Ops</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Off' Operations Manager</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Operations Superintendent</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Field Manager</td>
<td>1*</td>
<td>1*</td>
<td></td>
</tr>
<tr>
<td>Field Vice President</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Divisional Manager</td>
<td>1*</td>
<td>1*</td>
<td></td>
</tr>
</tbody>
</table>

*Note: In many cases more than one person was involved in the selection process. Each * denotes a person who had been an OIM.*

A range of management functions were reported to be involved in the selection of OIMs, though the most commonly reported were Operations and Personnel Management. Six companies included former OIMs, or current OIMs in the selection panel. These are the same positions as identified in UK companies.

The next question asked why the individuals mentioned in Table 12 had been chosen to be involved in the selection of OIMs. 'Who decides which people participate, and why have these people been chosen?' Most companies responded that it was line management responsibility to select for positions immediately subordinate to them, and because they were the most suitable people to select new personnel as they knew the job requirements. Some, but not the majority of UK companies had chosen their personnel for similar reasons. Though most UK company personnel tended to be involved for historical reasons, or because it was company policy or procedure. Responses from individual Norwegian companies are set out below.
Operating companies

1. These people had been chosen as they were the OIM's immediate line managers who had the experience to know the job requirements, and who were also responsible for the position holder. There was no written procedure, except that it was the norm for the immediate supervisor to choose personnel for the post below them.

2. Company procedure for line managers of the OIM to be involved, plus a representative from personnel, and the Divisional Head because he is two levels above the OIM.

3. The personnel involved have the experience to know the job requirements and have worked with the candidates. The Executive Vice President of Operations has the final say.

4. Line management responsibility.

5. Line management usually decide on replacement staff.

6. It is line management responsibility, in conjunction with those already in post for the position being filled.

Drilling companies

1. Personnel chosen because they know the job requirements and are the next line supervisor of the OIM.

2. Company policy states decisions must be made at the lowest possible level, and as these individuals have responsibility for the OIM they are involved.

3. The General Manager has chosen them because they are the most suitable: they know the job requirements and the installation.

F.4.6 Validity of selection methods

A final question on selection asked, "Is the validity of your selection method for OIM posts assessed, and if so, how?" As in the UK, no companies reported conducting any formal validation of their selection methods, though given the small numbers of OIMs involved for most of the companies surveyed, and the infrequency of vacant positions, this is not surprising. One company did have plans to set up a procedure for their ISRS application (International Safety Rating Scale). All companies did have some system of monitoring and assessing OIMs, which is discussed in Section F.7.2.

F.5 CANDIDATE CRITERIA

F.5.1 Selection criteria

A number of questions examined in more detail which qualifications and characteristics companies expected suitable candidates to possess for consideration as a potential OIM. The first of these asked, "Do you use formal selection criteria, and if so, may we have a copy?" Table 13 shows that four companies reported using formal criteria, while five did not. In the UK only 14 out of 38 companies used formal selection criteria. Out of the four Norwegian companies who did use formal selection criteria, only one company provided us with a copy (compared to seven in the UK). The general areas it covers are
outlined below. Two operators reported that they were working on developing formal selection criteria, and one operating company said it depended on the job (as different installations had different requirements).

Table 13
Use of formed selection criteria

<table>
<thead>
<tr>
<th></th>
<th>Operating</th>
<th>Drilling</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use formal criteria</td>
<td>YES</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Gave a copy</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

The content of the formal criteria supplied by one company detailed key management functions, e.g. Organisational Development, Reporting, Planning, Safety, Budgets; and how successful achievement in these areas would be observed, (usually through knowledge and skills based competencies). The formal criteria for UK companies tended to include required levels of qualifications, training, management and offshore experience,. technical competence and personal qualities. Only two companies provided detailed specifications incorporating methods of assessing required competency levels.

F.5.2 Formal qualifications

The next section of the interview focused on which characteristics companies expected suitable candidates to possess, for consideration as OIMs. The first of these asked “Formal qualifications: what is essential, and what would be useful for the post?” Table 14 presents a summary of the qualities considered essential for the post. One operating company said they did not require any formal qualifications, but wanted candidates with a knowledge of petroleum production techniques and of operation, planning, and execution, (i.e. Production Engineering). Another operating company said that they no longer required a Master's certificate, except for contracted personnel on their flotel. One company reported that while no formal qualifications were essential, they preferred candidates to have completed three years at engineering school. As with UK drilling companies, there was a preference for OIMs to have a Master's certificate, and for formal educational qualifications by operating companies.
Table 14
Essential formal qualifications

<table>
<thead>
<tr>
<th>QUALIFICATION</th>
<th>Operating</th>
<th>Drilling</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masters certificate</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Platform Manager’s</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>certificate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSL certificate</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Safety course</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Engineering degree</td>
<td>3</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Degree</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Few companies specified any extra formal qualifications which would be useful for the OIM post, but two operating companies said three years at a technical or engineering school would be useful, and one company specified a Safety Management course. One drilling company said any District College Certificates and an indication of a broader education e.g. maths physics, BSc or equivalent would be useful.

F.5.3 Managerial experience
The second question in this section asked, "Managerial experience: what is required for the post, and what would be useful?" As in the UK, most operating companies required several years offshore experience in a supervisory position. Drilling companies, as one would expect, wanted several years marine experience, either as a Stability Section Leader (SSL) or in a drilling position. (UK companies did not specify the preferred previous job titles.) Specific details of each company are given below.

**Operating companies**
1. At least 10 years relevant experience, preferably some of this time offshore, with proven leadership skills.
2. Know strengths and weaknesses of the offshore organisation, and be informed about emergency procedures. Be able to make decisions under stress.
3. Several years seniority at operational supervisory position with production or maintenance trade.
4. Probably three to four years supervisory experience.
5. 10 years experience in the petroleum industry, of which at least five years should have been in a senior operations supervisory position.
6. At least two years offshore supervisory experience.

**Drilling companies**
1. Documented experience of all offshore positions. Experience as a Sea Captain, five years as an SSL or three years as a toolpusher, administration experience or ability, and ability to delegate. Most personnel have had at least 20 years experience with the company.
2. Offshore experience for around five years as a Stability Section Leader (SSL). Any incomers to the organisation must have been in the same post before (i.e. no-one can be promoted into a post from out-with the company).
3. Should have been for one year in a leading position on a rig, normally as a Stability Section Leader or a Relief OIM.

Only four companies specified managerial experience they considered useful for the OIM position. One operating company said one year offshore in a managerial position would be useful, and another said operational and administrative experience. One drilling company specified leadership training out-with the company (two months full time in three modules), and another said it was preferable to have had some prior managerial experience. UK companies preferred instead for the OIM to have had managerial training courses, knowledge of drilling, experience of managing multi-disciplinary teams or to have been in command of a vessel.

F.5.4 Technical work experience

The fourth question in this section asked, "Technical work experience: what is essential and what useful for the post?": Operating companies specified a variety of engineering and production experience as essential qualities for successful OIM candidates. Whereas drilling companies wanted people with a marine background who had worked as a Master and Stability Section Leader. This is similar to UK companies who wanted the successful candidate to have knowledge of the company and marine operations, and five years experience in production and operations. Individual company's responses are provided in more detail below. No companies reported any additional, useful technical experience for the OIM post.

Operating companies
1. To have a technical background, i.e. a previous technical post in petroleum engineering or a refinery.
2. Varied experience from the petroleum industry in processing, drilling and production.
3. Experience in offshore production planning and production techniques and similar operational positions.
4. Need offshore experience, and certain technical experience on or offshore from different departments. Do not need specific drilling experience.
5. Minimum of one year offshore, with ten years experience in petroleum industry.
6. Considerable offshore experience and good technical knowledge of processes.

Drilling companies
1. Safety / SSL and Masters experience.
2. Stability Section Leader experience, but more important to be a good leader than to be technically expert.
3. Do not require any specific knowledge of drilling, more important to have a marine background.

F.5.5 Personal qualities
"What personal qualities are you looking for in the candidate, and how do you assess whether the candidate possess these?" Here, operating and drilling companies are looking for similar individual qualities. The emphasis was on good interpersonal skills, such as communication, co-ordination and being a member of a team. Leadership qualities were also important, with general managerial and supervisory skills. These were very similar to those specified by UK companies with the following differences. UK companies mentioned the requirement of a stable personality, and emphasised the ability to build up work teams, rather than membership of work teams. The three companies who answered the second part of the question on assessment, said that possession of such qualities was established from personal knowledge of the individual and their previous performance with the company. Individual company's responses are provided below.

**Operating companies**

1. It is important for the individual to fit in with the team. A team building consultant has been called in to establish the criteria and tools to match people within a team. This is a new development for the new platform, and has not been used in the past. Looking for a person who is not a trouble maker, who will listen to others, which has been based on managers' personal opinions of the candidates until now. Seminars were being held every six months to open up the management atmosphere. Must also have documented independence/ self-sufficiency, ability to make decisions and power to act under great stress, plus operative leader qualities

2. Look for leadership qualities, and ability to be a supervisor. Ability to handle people, technically strong, able to take decisions. Needs to be able to see a problem in the right perspective, and communicate well, verbally and in writing.

3. Safety minded, leadership qualities (from State-of-Readiness course), willing to take responsibility, open-minded and willing to co-operate, reliable, dynamic and enthusiastic.

4. Combination of being able to handle a crisis and handle people in general. Must be one of a team, who gets involved in people's problems.

5. Should be good at managing people and have a good understanding of the installation.

6. Should have a stable personality, understand interpersonal relationships and how best to solve conflicts in working relationships.

**Drilling companies**

1. Co-operative leader to deal with the authorities and operators, and have good communication skills. This is assessed by personal knowledge of the individual.

2. Open to others, co-ordinate effort, resolve conflicts, anticipate problems before they arise, be calm, smooth conflict, avoid panic, motivate, delegate, responsible, have ability to make decisions.

3. Ability to lead, to co-ordinate activities and able to make decisions in all kinds of situations. Assess this from previous performance within the company.
F.5.6 Crisis management ability

The penultimate question in this section, and of particular importance to this project was, “Is a candidate's ability to command in a crisis assessed in the selection procedure, and if so, how?” Three operating companies reported that OIMs' ability to command in a crisis was assessed, mostly from observations by line managers during drills, exercises and the individual's day-to-day decision-making. The three drilling companies, while not having a formal assessment of crisis command ability reported examining this during the interview situation, and considering how the individual would respond to an emergency, given their personal knowledge of the individual. In the UK, 23 out of 38 companies assessed OIMs crisis management ability using similar methods, such as track record with company, previous crisis handling experience and appraisal files. Details of each Norwegian company’s assessment procedure is provided below.

Of the three operating companies who did not report any assessment of the candidate's crisis command ability, one company said that candidates were asked in the interview if they had experienced emergency situations, what happened and what their responses were. This was verified by checking with company records or personnel present at the time. Another operating company said ability was not directly assessed, though feedback was provided from the candidate's line manager. The other company reported that evidence of previous experience was taken into account at the selection stage.

Operating companies
1. It is assessed, mostly on the basis of personal opinions from those managers who have worked closely with the individual. Indications of a person's ability is also gathered from the way they perform in courses and exercises, particularly their decision making ability under stressful situations, and how they prioritise their work. No-one has yet been rejected on this basis after being in post.

2. Yes, through previous experience and tactic training courses, most personnel usually will have had three to four years with the company, plus ten years total experience offshore.

3. Every week personnel offshore participate in emergency drills. Afterwards the safety project group have a meeting to discuss what went right or wrong etc. Each candidate would have been closely involved in these drills, so their immediate supervisor would have knowledge of how the individual behaves in such situations.

Drilling companies
1. Handling stressful situations - how would they deal with stressful situations. Ask them in interview. Also personal impression of individual's performance in interview.

2. Experience as a Master and in post with the company, experience of emergency situations within the company, and how he has handled pressure before.

3. Trust our own judgement of the individual, based on the information provided by Personnel and own knowledge of the individual. He also has the necessary training to cope with an incident, and a contingency manual.
F.5.7 Formal training

The final question in this section asked interviewees what formal training was required for the job, “Formal training: what is essential, and what is useful for the post?” Safety training, management, and leadership courses were reported as essential by four companies. Drilling awareness, crisis handling, production and legislation training were also mentioned by more than one company. Specific details from each company are provided below. Different training was mentioned by UK companies, reflecting legislative requirements. Survival training and the OIM regulations courses were the most reported essential training, with safety training, helicopter landing and safety representatives courses also frequently mentioned by UK companies.

Only two Norwegian companies mentioned any additional training which would be useful for the OIM post. One operating company said the in-house advanced management course they provided, which covered two, nine day modules plus 15 half days over two years on day-to-day management skills was useful. One drilling company said that all the courses which other personnel on the rig have been on would also be useful for the OIM.

Operating companies
1. Depends on the candidate, what work experience they have had and previous responsibilities. Though must familiarise themselves with other areas such as the onshore management team and who they will have to work with, drilling, engineering etc. Safety, emergency preparedness, crisis handling courses, various management courses, well control, production, drilling awareness and personal development. Probably will have served for at least one year onshore as a Platform Manager. This position is the staff person to the Field Manager, and through which all communication between the platform and onshore management is mediated. The position is equal to that of offshore OIM. In addition there are Superintendents on staff for each platform.

2. Field system, underwater systems and reservoir planning/field development. Basic management training and legislative requirements.

3. Company safety training, Platform Managers course, Emergency Response tactic course and refresher, work environment course, NPD regulations course.

4. All supervisors have been given leadership training, basic and extended supervisory training.

5. Engineering degree.

6. A range of prescribed training courses; management, safety and technical.

Drilling companies
1. Leadership training.

2. Leadership training within the company (by a consultant), which is biennial on two levels a) for OIM, b) for Roustabout. This is on day-today management, not emergency training.

3. Follow the NPD / OLF requirements on safety training, and any requirements from the Operating company. The company provides
internal three or four day management courses once a year, training on managing meetings twice a year, leadership training onshore, budgets and other general management skills training.

F.6 JOB DESCRIPTION

F.6.1 Job description use

A number of questions asked about job descriptions for OIMs, namely; “Do you have an OIM job description, and may we have a copy?” and “is it used in the selection procedure?” The responses summarised in Table 15 below show that all nine companies used them (compared to 34 out of 38 in the UK), and almost all (N=8) provided the researchers with a copy. However, not all the companies used the job description in their selection procedure -only seven out of nine (compared to 30 out of 34 in the UK). One operator reported that while the job description would not be formally used in the selection procedure, the candidate would at least want to see it.

<table>
<thead>
<tr>
<th></th>
<th>Operating</th>
<th>Drilling</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job description</td>
<td>YES</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gave a copy</td>
<td>YES</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Used in selection</td>
<td>YES</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

The next question in this section asked “When was the last time the job description was up-dated, and how often is this done?” Two drilling and two operating companies had up-dated their job description within the past year, while two operating and one drilling companies had up-dated it within the past two years. Two operating companies were unable to provide an answer. Two drilling companies up-dated their job descriptions on an annual basis, while the remaining companies up-dated it as and when required. Most UK companies had up-dated their job description within the previous year, and up-dated it as required.

F.6.2 Job description content

From the job descriptions provided by companies, two sample job descriptions have been distilled to illustrate the range of responsibilities required of an OIM in the Norwegian sector of the North Sea. Samples are provided for both operating and drilling companies, to highlight the differences in responsibilities for the different types of installations. These usually relate to differences in function, i.e. production vs. drilling and marine operations.

Operating OIMs

Main responsibilities: To be responsible for the safe and effective operation and administration of the platform, as well as be responsible for the co-ordination of all activities on board which include production, oil and gas transport, maintenance, drilling, new installations; and communication to other installations.
Main work tasks: Make sure all operations and work programmes are carried out within company safety demands.

Continually ensure that activities on the installation are carried out with care, particularly special safety measures, and a state-of readiness is maintained at all times.

Lead the platform's emergency organisations.

Represent the company with employees and their elected representatives with regard to personnel.

Ensure good and constructive co-operation with worker's organisations and create a healthy work environment amongst offshore personnel.

Ensure proper planning and supply of required resources and consumables in accordance with need.

Make sure that all established guidance systems and inspection routines are followed.

Maintain daily contact with other platforms on the field, the Platform Manager onshore and the necessary support and staff organisations within the division.

One company stipulated that there is: "great breadth in the area/extent of responsibilities in the job, including drilling, operation, maintenance, transport as well as all extra activities on the platform. The types of problems are many-sided and complex, often made up of many areas of expertise, where problems require quick and effective solutions. Wrong decisions can lead to large negative consequences. Optimisation of activities with regard to safe and effective operation of the installation is through goal-oriented leadership. Organizational and personnel cases are solved through meetings and agreed resolutions. Motivation and attitude to personnel is effected through conversations, meetings, campaigns and personal attitude." They also specified that the "position requires full concentration on work without periods of sleep, in total 24 hours state-of-readiness. Daily rhythms and work routines must be adapted to the work. The level of stress is affected by disturbances in operation and other factors (weather, sea, accidents etc.)."

Another company included the following, interesting descriptions of the job requirements:

Problems and decisions: In an emergency situation the job holder may have to make decisions, which if incorrect, could result in a major loss of production and bring a risk of accident.

Mental application: When not engaged in routine administrative activities the job holder must exert frequent attention and concentration.

Working conditions: The working conditions are normally office work on an offshore installation with occasional exposure to more than one disagreeable element.
UK companies' job descriptions tended to be more detailed, with a greater emphasis on the authority of the OIM and keeping logs and records for operating companies. UK drilling companies supplied us with very similar job descriptions.

**Drilling OIMs**

**Main responsibility:** Has highest authority on board and has overall responsibility for the safety of the drilling vessel's stability and safety during operation.

**Main tasks:**

- Understand the structural conditions of the vessel, and responsible for ensuring structural strains during anchoring, under tow, or drilling operations, lie below the limit of allowable strain on the platform.
- Consult with senior technical staff before making a decision in dangerous situations due to drilling or other problems.
- Ensure adequate supervision of all loading / unloading operations.
- Keep up-to-date all logs and journals concerning the vessel's movements and operations.
- Arranging rescue and safety exercises in accordance with the regulations, and ensuring proper training is provided in the operation and use of life saving equipment.
- Responsible for helicopter deck and equipment kept in working order, and suitably qualified personnel attending helicopter operations.
- Ensuring all required certificates are valid, and comply with regulations.
- Ensure there is at least one set of complete installation drawings on board.
- Maintain good working relationship with operating company.
F.7 INDUCTION, APPRAISAL AND TRAINING

F.7.1 Induction

The next section of the interview asked a number of questions about how newly appointed OIMs were inducted into their new job, how they were monitored and appraised once in post, and what training provision existed. The first of these questions asked, "What is your induction procedure for new OIMs?" While some company's reported that they did not have any formal induction procedures, most companies said the new OIM would spend some time with his back-to-back, lasting anything from one trip up to one year. The drilling companies tend to have much shorter induction periods (one trip or one week) than the operating companies. In the UK it was even less time, ranging from a few days to a few weeks for both operating and drilling companies. Individual Norwegian company responses are provided below.

Operating companies

1. No formal procedure, except platform orientation, and some time spent with another OIM as an advisor. How long is spent depends on the person, anything from six months to one year. Training could also be provided on technical areas the individual was not familiar with, e.g. drilling or production.

2. There is an introduction to the company, if they are a new employee, and also an introduction to the field they will be working in.

3. On the job training on knowledge of the installation three months with the back-to-back OIM, NPD regulations course, and work environment course.

4. Will have to overlap with back-to-back for two trips.

5. Deputy works closely with the OIM who trains him.

6. Installation is not yet operational. Newly appointed OIMs are part of the project team.

Drilling companies

1. Period with back-to-back of varied length (usually one week), depending on experience and familiarity with rig.

2. One week with back-to-back, and familiarisation with onshore personnel.

3. Sometimes the OIM will have been a relief OIM on the installation. For the first trip he would work with the existing OIM.

F.7.2 Appraisal systems

The second question in this section asked "What is the method of OIM appraisal once appointed and how often is this carried out?" Eight companies reported using an annual appraisal system, usually by the OM's line manager. One operating company said the OIM would also have a person nominated to oversee their personal development, and another operating company said the OIM would also have twice yearly reviews of objectives. One drilling company reported that they had no appraisal system yet, but were developing one in the near future, though they have an annual salary evaluation. There were many
different appraisal systems operated by UK companies, some annual and some quarterly. It was therefore not possible to provide any generalisations.

F.7.3 General training

Next, companies were asked, "What types of on-going training are available for OIMs?" to discover what types of on-going support were provided for OIMs once in post. Four companies specified safety, state-of-readiness (emergency), and management training provision. More than one company also specified some form of technical training, operations, legislative up-dates, work environment and leadership training provision. Individual companies' responses are provided below. UK training provided reflected legislative requirements, with up-dates on industry guidelines and survival training the most often reported. Other training mentioned was similar to that provided by Norwegian companies, in management and technical topics. Individual Norwegian companies' responses are provided below.

Operating companies
1. Safety and State-of-readiness, management (goal oriented, teamwork), technical well and reservoir training, introduction to offshore areas (logistics, drilling, economy, production, operations), and personal development. (in training profile.)

2. Basis management, operations, safety, state-of-readiness up-dates, legislation and up-dates, field-specific courses on system reporting etc.

3. Tactic and refresher course, technical training and individual training as required plus work environment training, and PTW.

4. As identified in the appraisal, though certain standard courses include communication skills, report writing, leadership.

5. Competence standards and technical safety.

6. Montrose OFTC four day course, in-house leadership training and management training.

Drilling companies
1. Management training, refresher courses, and training provided during drills offshore with emergency services.

2. Leadership refresher course, refresher emergency courses, safety courses in-house, mooring/handling, and anything else asked for.

3. Search and Rescue, Norwegian regulations, environment pollution control and word processing (increasing demand).

F.7.4 Crisis management training

Interviewees were then asked "Is any crisis management training provided, and what from does this take? (e.g. onshore/offshore, with or without a team)". All the companies surveyed provided some form of crisis management course, most of the operating companies provided a state-of-readiness in-house training course including tactics for handling offshore emergencies, while drilling companies tended to provide the Platform Manager's course. Each company's response is detailed below. Only 21 out of 38 UK companies provided some form of crisis management training, and there is no UK equivalent of the Norwegian Platform Manager's training course.
Operating companies
1. State of readiness training is a one week course whose purpose is to provide OIMs with knowledge of the company's emergency system, tasks and delegation of responsibility; the role of the authorities and support/co-operation with external resources; and how to make correct decisions under pressure. It is an onshore, in-house course using a simulator.

2. Emergency Planning training.

3. Safety Tactics course, two monthly team training offshore, and biannual training of offshore emergency response team carried out onshore using simulators, plus refresher training and any statutory requirements.

4. Offshore emergency exercises with onshore Emergency Response Team involvement. Refresher training is also provided.

5. Damage control course and emergency organisation tactics course, and three and a half day stress emergency workshop comprising extreme scenarios.

6. OFTC course at Montrose, in-house leadership course.

Drilling companies
1. Seminars for 2-3 days out-with the company on an OIM's responsibilities, government rescue services, table top scenarios. Also provide simulations of fires - exam with certificate for offshore personnel, distressed relatives and handling the press for onshore personnel.

2. Just existing OIM's course.

3. OLF training requirements and a damage control course.

F.7.5 Assessment of OIM performance in crisis management training
Companies were then asked "What assessment of the OIM, and feedback is incorporated into this training?" There did not appear to be any formal assessment incorporated into the crisis management training, as in UK companies, except for the company's own OIM's course (during which individuals usually have a written test). Three operating companies reported that there would be some form of informal feedback session after the course on the OIM's performance. Individual company's responses are detailed below with the same numerical code as their answer to Section F.7.4 for case of cross referencing between their two answers.

Operating companies
1. No formal assessment, though there are group projects and informal feedback on performance.

2. No formal assessment, but they are assessed offshore during drills and exercises by personnel running them.

3. Discussion after sessions and format reports in which they write up feedback and propose action for the future. No individual assessment, though some feedback might be given in private.

4. A wash-up meeting with the safety project group for a critical review.
5. Installation not yet operational.

6. No formal assessment.

**Drilling companies**

1. For the seminars there is no formal assessment only a certificate of attendance. For the simulations there is some feedback but it would not necessarily affect the individual's career. Individuals usually report back to Personnel on their impressions of the course.

2. They must successfully complete a written test at the end of the OIM's course.

3. No formal assessment

**F.7.6 Simulations and exercises**

The next section asked companies, "Could you provide some details about your existing simulations (off-and onshore) and exercises offshore." As in the UK, all companies are required to hold drills at least once every 14 days such as fire, lifeboats, musters etc. Almost all companies (n=8) also conducted a major emergency exercise at least once a year, usually involving the emergency services. There appears to be considerable provision of large scale emergency scenario training, more so than that provided by UK companies, though it is not possible to estimate how representative this sample of Norwegian companies is. The responses from each company are provided below.

**Operating companies**

1. Every fourteen days exercises are conducted offshore as per statutory regulations. Each year the company runs exercises with both the onshore emergency response centre and offshore emergency command centre co-ordinating their responses. There is no formal assessment, but a structured debrief immediately afterwards, and a written course critique from particular individuals for the benefit of the instructors. The company also has use of a full control room simulator, though this has only recently become available. It has full instrumentation facilities similar to all their platforms to enhance realism.

2. There are weekly drills and regular exercises as per NPD regulations, plus training offshore.

3. Weekly musters. Training every two months using emergency scenarios of major incidents: explosions, fire, helicopters, pipeline incidents, injured personnel, abandonment, rapidly developing situations, loss of key personnel, loss of muster point etc.

4. Weekly drills plus two major exercises per year.

5. Annual onshore control room simulations, in which each OIM is assessed. Plus weekly safety drills - most probably scenarios with systematic follow ups.

6. Bi-weekly drills, and a major scenario every one to two years involving the emergency services.

**Drilling companies**


1. Every two years in conjunction with operators there is a major exercise involving the emergency response teams offshore with the operating company. There are also staff exercises and table top scenarios. Every week there are regular drills as per regulations. Annual plan for emergency training also (part of ISRS to be completed).

2. Lifeboats, first aid, fire-fighting every 7 to 14 days, catastrophe training annually which also involves onshore Emergency Response Team.

3. One major exercise per year, with a larger ON exercise every two years, plus weekly drills as per regulations.

**F.7.7 Emergency procedures**

Companies were then asked, "What procedures does the OIM follow to deal with a crisis? (e.g. from where does the OIM control the emergency, who is with him, who is in contact with the beach?)" As in the UK, most operating companies (N=4) have a dedicated Emergency Control Centre from which the OIM co-ordinates the emergency response. Three operating companies also have a direct line from the OIM to onshore management, while the Radio Operator directs communications for the other companies. Each response is detailed below.

**Operating companies**

1. The company operates according to formal procedures. The radio operator puts on the general alarm, which brings the ON to the central control room. The radio operator also contacts onshore management to act as primary contact for the onshore emergency response group. The ON has a dedicated telephone (which can be an open line if wanted) to onshore management and deals with them directly. He is assisted by key team members, e.g. superintendents and supervisors.

2. Detailed in personnel safety handbook, plus training on interactive video - safety training within a personal computer, which is available on- and offshore. Open line from OIM to Onshore Emergency Response Centre.

3. Contingency plans on- and offshore, plus for pipelines, standing operating instructions, procedures for handling terrorism. Offshore there is an emergency control room with emergency management control group, and onshore there is an emergency response team who have a direct line to the OIM, and another to the Radio Operator.

4. OIM stays in his office beside the Control Room with the Operations Supervisor.

5. OIM goes to the emergency control centre, which will be either a dedicated corner of the control room or the radio room.

6. OIM goes to the control room with the control room operator. The OIM himself talks to the beach, or does so via the radio operator.

**Drilling companies**

1. The Control point and who is with the OIM depends on the incident, and the procedures cover who is to be contacted, depending on situation. Communication is via the radio operator but depends on rig's location.
2. As laid down in contingency plans on and offshore. OIM is in office, Stability Section Leader is the Fire chief, and all communications are via the Radio Operator.

3. This is outlined in the contingency manual. The OIM goes to the bridge with the Stability Leader, Technical Section Leader and Rig Superintendent.

**F.8 FUTURE CHANGES**

The final two questions focused on Norwegian companies' response to recent developments in the UK offshore oil and gas industry, and what changes, if any, companies planned in response to these. The first of these questions referred to the Standards of Competence for OIMs which have been drafted by an OPITO Work Group (OPITO, 1992). Companies were asked, "Are you aware of the developing national standards of competence for the position of OIM in the UK and what, if any, changes to your selection system are you proposing as a result?"

Six companies were aware of developments in the UK (four operating and two drilling), but three companies (two operating and one drilling) were not aware of the competencies initiatives. One company is aware of developments within the UK, but are not familiar with any specific details, and three others do not plan any changes as a result of UK changes, because they believe the UK is moving towards existing standards in Norway. One operating company has set up a system similar to that in the UK on competencies, and another operating company thinks the UK competencies will influence their selection procedures in the future.

The final question concerned companies' responses to Lord Cullen's recommendations following his 1990 Public Inquiry into the 1988 Piper Alpha disaster, as a result of which UK companies will now have to submit a Safety Case for each installation containing their criteria for employing OIMs. The next question therefore asked, "Will you now be amending your current selection procedures as a result of Lord Cullen's recommendations, and if so in what way?" The three drilling companies and three of the operating companies were not familiar with Lord Cullen's recommendations. Of the three operating companies who knew the report, one believes the report has influenced the company, as they are now aware of the areas in which they need to make changes, though they were unable to provide any specific details at present, in addition, they do not have the same relationship, with contractors. Another company knows the report and is in the process of re-evaluating company practices in the light of this. The other company is not planning any changes, as they have recently altered recruiting practices to emphasise the importance of technical training.
F.9 CONCLUSION

This section presents details from a pilot survey of nine Norwegian operating and drilling companies, covering their selection and training procedures for OIMs. The results present a very similar picture of selection practices for UK and Norwegian companies, but there appear to be some differences in training provision.

As with UK companies, operating companies preferred their OIMs to have formal qualifications (a degree, mainly in engineering), while the drilling companies required their OIMs to be Master Mariners. Only recently, one operating company reported a change in the formal qualifications required to be an OIM, as they no longer require a Master's certificate, except for contracted personnel on their flotel.

Like UK companies, they also tend to recruit personnel for the OIM position from internal candidates, and hence rely heavily on their appraisal files and personal recommendations from line management for information during the selection process. As in the UK, there are no formal criteria for the OIM's post specified by the NPD, though OIMs do not need to be registered with the authorities, as they are required to be in the UK.

Norwegian companies provide installation, and field specific training for OIMs, based on OLF guidelines. Companies also seem to provide frequent major offshore scenario exercises, though the extent to which the sample is representative of all Norwegian companies is not known. Operating companies also have well established State-of-Readiness and Safety Tactics training, including aspects of leadership tactics and strategies, training for correct decision-making under stress and the treatment of personnel in crisis situations. These types of training appear to be carefully constructed, involving professional expertise from psychologists/psychiatrists and an acknowledgement of the importance of stress management in emergency situations.

Although the NPD do not set explicit guidelines for OIM training, in practice, existing regulations ensure that OIMs undergo simulated emergency decision-making exercises. This was pointed out by Mr Magne Ognedal, the Director of the Safety and Working Environment Division within the NPD. At a recent conference (Ognedal, 1991) he reported on the Norwegian viewpoints to Lord Cullen's report.

"Further, Lord Cullen is also concerned about the command ability of the Offshore Installation Manager (OIM in emergency situations. This is recommended to be evaluated in the selection of [the] OIM. In addition, the OIM should regularly get practice in decision-making in emergency situations. This matter is not especially mentioned in the [Norwegian] regulations concerning emergency preparedness, but the intentions are taken care of by requirements concerning emergency preparedness organization and by the requirements concerning competence."

In Norway generally there has always been a strong focus on being part of a team, or community, and working within that team to complement the skills and expertise of others. Tied in with this emphasis on team work there is a strong emphasis on communication skills, particularly during decision-making. This is made explicit in some of the OIM's job descriptions. This has implications for decision making and the chain of command in emergency situations. On Norwegian installations the OIM is part of the offshore
management team, and team training appears to be emphasised. Personnel are expected to think and take actions by themselves should the OIM, for whatever reason, be absent from the scene of the emergency.

While some companies were aware of recent developments in the UK on management competencies, few were making any amendments. Rather there was a feeling that the UK is moving toward existing Norwegian legislation and industry guidelines.
APPENDIX G

G.1 UK COMPANIES OFFERING OIM CRISIS MANAGEMENT TRAINING

During Stage 1(i) of the project we collected information on the training organisations companies were using to give their OIMs emergency command training. In Stage 4 of the project we observed two different types of simulation exercise and reported our observations in Appendix A.

Details of the organisations being used to provide command/leadership/crisis management training (in June 1992) are listed below in alphabetical order. We have only included those companies currently being used or considered by operating, drilling and service companies. There are other trainers and consultants in this market currently interested in the OIM population some of whom have also provided us with sales material.

ABERDEEN DRILLING SCHOOLS
Union Glen,
Aberdeen. AB1 2ER Tel: 0224 572709 Contact: Stephan Hellar

Offer emergency command course using a simulated offshore incident control room. In discussion with at least one drilling company. Currently developing a joint course with Action Based Leadership.

ACTION BASED LEADERSHIP
The Old Coach House,
Chapel Road,
Rotherwas, Hereford. HR2 6SX Tel: 0423 341366 Contact: Tom Bufton

Offer a four day Leadership in Management course which is being used by at least one operating company. Currently developing a joint course with Aberdeen Drilling Schools.

FIRE SERVICE COLLEGE
Moreton in Marsh,
Gloucestershire. GL56 0RH Tel: 0608 51788 Contact: Robin Graham

Offer crisis management training with emergency simulations using one of their fire training structures which can be set alight or a smoke filled and which has an integrated control room. Two of their officers have been offshore with one operating company and have discussed running simulations for them.
Offer a two day Search and Rescue Course to representatives of the oil and gas industry in the UK, who may become involved in offshore SAR incidents affecting installations directly, or shipping in general.

They have been working for some years on emergency simulation exercises both onshore and offshore in both the U.K. and Norway. At least one operating company has used them for an offshore emergency simulation involving an assessment component. They now offer a four day Controlling Emergencies course based in an onshore simulator.

This company offers specialist command training for individual managers using lectures and offshore exercises on the Clyde. Rear-Admiral Larken, Admiral Woodward and Commander Evans have considerable naval experience both as submarine commanders and as captains of warships. Several operating companies have sent OIMs to their seven day training course and they also act as consultants for offshore exercises and OIM competence assessments.

They offer a four day Managing Major Emergencies Course (formerly the Fire Control Course) which uses both lectures and simulated emergencies which are rote played by participants. They have a large purpose built simulator which includes an offshore incident control room. They have the most experience in training OIMs on emergency management and OIMs are sent on this course by all the major operating companies both from the UK and abroad. They also run company-specific courses and provide facilities for OIM competence assessments.

This organisation design offshore emergency scenarios to specific client needs, and have now incorporated a one day command and control course on marine evacuation within a broader course covering well control, fire fighting and survival.
SSPA MARITIME CONSULTING AB
PO BOX 24001,
S-400 22, Gothenburg,
Sweden. Tel: 46031 63 9500 Contact: Karin Eriksson

This company offer a five day training course for semi-submersible vessels using their Ballast and Emergency Tactics Simulator (BETS) which was developed on behalf of one of the service companies.

TFCW
14 Albyn Terrace,
Aberdeen. Tel: 0224 624434 Contact: Tony Flynn

They have experience running offshore and onshore emergency response exercises for Norwegian as well as UK companies. At least one operating company is now using them for training OIMs and their teams using a three day onshore course involving table-top simulated offshore emergencies.

TM SERVICES
Deemouth Centre,
Aberdeen. AB1 3PB Tel: 0224 898400 Contact: Phil Channon

Have experience running onshore emergency response training and are now being used by at least one operating company for offshore emergency simulations.
G.2 LIST OF COMPANIES OFFERING SAFETY TRAINING

This list of recommended centres is worked out by a sub-committee under OLF’s Safety Committee. The sub-committee undertook a survey of the centres after being requested to by member companies and/or centres who wish to offer training to the industry. On evaluation the following quality system is used:

- Assessment of organisation, equipment/material, professional competence and unit/buildings.
- Assessment of the quality of the type of course, teaching, administration, course plans/course content, technical aids, etc.

The list is built upon Recommended Guidelines for Safety training, May 1982, last reviewed in December 1989, (OLF, 1991)

OLF RECOMMENDED TRAINING CENTRES FOR SAFETY TRAINING

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H.1 ROYAL NAVY I, MINISTRY OF DEFENCE (SCIENCE 3)

Objective
To identify the methods used to select Royal Navy officers.

Personnel
Alan Jones (Senior Psychologist, Naval)

Report

The initial selection procedure for the Royal Navy is an Admiralty Interview Board which is an assessment centre procedure to identify persons of officer quality with the ability to specialise in a particular function within the services (e.g. engineer). This selection procedure was established in 1947 and has been subject to evolutionary changes over the last 45 years. Candidates are seen in groups of four or five and are assessed by four assessors, two experienced naval officers, a civilian educationalist and a personnel specialist.

The assessment centre includes the following components:

i) Tests of verbal reasoning, non-verbal reasoning, clerical instructions and numeracy; ii) Service knowledge test: a test of knowledge about the Royal Navy; iii) Command exercise: a practical group exercise designed to assess leadership potential; iv) Discussion exercise: leaderless group discussion exercise with a problem scenario designed to assess leadership potential; v) Two interviews; vi) Written essay; vii) Headteacher's report; viii) General knowledge questionnaire

No personality tests are used in selection, because the MOD is not convinced they are robust enough for their purposes. They are looking to recruit individuals with the potential for command, rather than selecting individuals on the basis of whether they currently have the ability. Instead, the Navy uses the assessment centre procedure outlined above. Future promotion will be based on reports of performance from senior officers.

Officer recruits aged from 17 to 25 years old will be training for five to seven years before they take up a command role. All civilian entrants undergo initial training at a naval establishment where they are trained in and assessed on their professional/technical knowledge, leadership and general conduct. After this initial common phase trainees proceed to training within the fleet and then to specialisation training. Thereafter their training is a continual developmental process. Only those with the seaman specialisation can command a ship at sea.

There is a formal, annual reporting system in the Navy, supplemented with reports when a person changes jobs. Officers move round jobs as part of their career development. The promotion structure is based on seniority, experience and rank, e.g. promotion from Sub-Lieutenant to Lieutenant, and then to Lieutenant Commander are all non-selected posts with promotion automatic on seniority. Whereas promotion from Commander to Captain, and then to Rear Admiral are selective promotions based on annual reports. At certain ranges of seniority, officers may be promoted, the term being “in
zone". For further details of RN selection procedures, see Jones (Jones, 1991), (Jones et al, 1992) or Downes (Downes, 1991).

H.2 ROYAL NAVY II, HMS ROYAL ARTHUR, WILTSHIRE
ROYAL NAVY PETTY OFFICERS LEADERSHIP SCHOOL

Objective
To discover the methods being employed by the Royal Navy to train, develop and assess leadership skills.

Personnel
Commander Alan Jones Lieutenant Ball
CPO Keir CPTI Richardson

Introduction
HMS Royal Arthur is the RN Leadership School for training and assessing Petty Officers in Leadership skills. Training courses are of three weeks duration and include a mixture of lectures and practical exercises. The students are drawn from all branches of the RN, both shore based and seagoing occupations.

Observations
The main event observed was a 20 hour exercise conducted on Salisbury Plain, which included an overnight hike to prepare the course participants for a three day exercise in the Welsh mountains. A scenario was used which explained that their ship had arrived at a remote island during a conflict and that they had to establish and secure a base camp and to accomplish a series of objectives. Two trainers (POs) and an Officer managed and observed the exercise. Students were given the leadership role in turns, either for the entire group (25) or for smaller teams in turn as the exercises developed. The students were subdivided into three teams for an overnight hike of 12 miles on Salisbury Plain. Two hours after their return to the base camp they were required to accomplish a series of tasks involving team work (e.g. constructing a rope transfer across a river). On completion of this exercise, the Officer in Charge gave a full debrief on the performance of the designated leaders and on the group as a whole. Particular emphasis was placed on teamwork and on the maintenance of morale in adverse conditions (e.g., fatigue). Communication skills were emphasised e.g., the quality of team briefing, clarity of instructions, and receptivity to suggestions. The trainers also completed full written reports on each student following the exercise and prepared a full assessment of each individual's leadership ability at the end of the course.

Conclusion
This was an interesting exercise to observe and it was managed very professionally by the two trainers who were clearly experienced in this type of simulation for training and assessment. The students commented that the lecture course complemented the practical exercises, the latter being used to demonstrate the principles and skills of leadership. The emphasis on teamwork was very strong.

This course is designed for NCOs rather than senior commanding officers and the level of responsibility involved did not equate to that of an OIM. (Commander Jones advised that a visit to Portland would be more relevant,
The exercise and tasks observed, while ideal for illustrating the basic principles of leadership and teamwork, did not emulate the essential features of an offshore crisis situation. The fact that leadership skills are trained at this level does explain why in the Royal Navy, individuals below the level of commanding officer are prepared to take charge if necessary in a crisis.

H.3 ROYAL NAVY III

SUBMARINE COMMAND TEAM TRAINER - HMS NEPTUNE (FASLANE)
COMMANDING OFFICER QUALIFYING COURSE - 'PREACHER'S COURSE'

Objective

To investigate Royal Navy (Submarines) methods of assessment and training for command and control in an emergency and to determine whether these could have any application for the offshore oil industry.

Personnel

Commander David Charlton (COSMCC (A) - "Teacher A, Perisher")
Lieutenant Commander Paul Robinson (COSMCC (C) - "Teacher C, Perisher")
Lieutenant Commander Mike Proudlock (Training Officer) Lieutenant Commander Tim Lamb (Officer in Charge, SCTT)
Lieutenant Commander Dudley McKee (FASMAT Nuclear training) Warrant Officer Alan Reynolds (FASMAT Nuclear training)

Introduction

Shore Training facilities at Faslane utilise a number of simulators to train, qualify and re-qualify submarine personnel in the operation and use of their equipment. Visits were made to the Submarine Command Team Trainer (SCTT), the nuclear reactor control room simulator (FASMAT) and the dynamic ship control room simulator (NUSCOT).

Observations: General Training and Assessment

Assessment for competence is carried out in the simulator by trainer staff with recent sea experience and may involve the whole team or may concentrate on the assessment of an individual in the team. In NUSCOT, a junior officer was observed while he was being assessed in his role of directing the submarine assisted by a crew of two planesmen and three technicians. Sufficient realism was injected (by use of varying angles of inclination, sound effects, etc.) to ensure that the officer reacted in a representative manner. During one particular scenario, an uncontrolled dive, the assessee appeared to be under some stress which enabled assessment of his performance in that situation. His immediate supervisor carried out the assessment using input from the training staff.

Assessment is carried out based on the individual's knowledge of: Ship's Systems (Electrics, Hydraulics, Air etc.), Standard Operating Procedures, Emergency Operating Procedures, the Manoeuvring limitations and the Propulsion system. In FASMAT there are mandatory assessment periods for technical personnel both as individuals and as teams. Each drill is assessed by referring to a list of expected actions and noting failures to comply with procedures. The overall assessment is divided into a number of areas, each of which is graded 0 - 5: Drills, Knowledge of Plant, Operating Rules and Documentation, Team Work and Communication, Operational/Shipwide awareness and efficiency, Service to the Command and Individual Operator Readiness.
Observations: Commanding Officer Qualifying Course (Perisher)
The course lasts 21 weeks and is in several sections, initially involving
onshore simulation prior to transferring to 5 weeks of sea-going trials (See
Charlton 1992 for a detailed description of this course and the use of stress in
command training.) ‘Students’ have had 8 - 10 years experience in a sub-
command appointment. Approximately 20 - 25% of those entering fail the
course and as a result do not go to sea again in submarines. In effect
therefore a quarter of top grade submarine personnel are rejected as a result
of this assessment.

No written standards of performance are used. Assessment relies almost
exclusively on the judgement of the ‘Teacher’ and there is therefore
considerable subjectivity in the process. Personnel selected as Teachers are
of the highest ability, as demonstrated by their performance both during
training and while in operational command. Teachers come from a command
appointment at sea. Some commonalty of standard is established internally
with existing staff advising newcomers. In addition the course is subject to
external audit by the Captain Sea Training.

Categories of judgement which may be used include: Achievement of
Objective (Task), How the Team Performed, Focus on the Team and the
Individual, Command Presence, Managerial Skill, Controlled Aggression,
Safety, Technical Knowledge. (Note, however, that this was one teacher’s
personal assessment method). Command, safety and technical knowledge
can be judged from 0 - 5, remarks and “black marks” may be noted. The
process has been developed and refined since 1917. One officer undergoing
training felt that self confidence was an essential leadership attribute and
mentioned the type of 3 day exercises carried out in the Brecon Beacons by
trainees at the RN Leadership School HMS Royal Arthur (described above).

As the course progresses, the exercises increase in complexity and degree of
challenge. Having reached the required standard the candidate is pushed to
his own personal limits. “Push him to the limit so that he knows where his
limit is.” In this way each candidate in theory becomes aware of his personal
limitations allowing him to withdraw or otherwise deal with a situation prior
to reaching break point. This approach gives the individual “confidence in his
own operating envelope”. The teachers advised the following which is of
relevance to the OIM project:

- There is a strong correlation between behaviour in an onshore simulator
  and in carrying out major sea going exercises. The same set of stress patterns
  will be observed. If people are given the opportunity to react to stress, they
  know how they will react.
- Signs of stress include: tunnel vision, clamming up, overreacting/over-
  aggressiveness. Some effects of individual stress can be trained out. (See
  notes from the Battle Stress video below).
- The most effective method of training a person to handle a crisis is to
  subject them to a simulated version ensuring that as much realism as
  possible is injected.

Conclusions
Clearly the RN have well established and effective systems for regular
competence assessment and for the selection of submarine commanders. It
was interesting to note the lack of a written standard for the highest level of
competence relying rather upon the personal judgement of the Teacher
concerned. Without doubt the selection of the Teacher for this course is of the utmost importance.

Training and assessment were primarily based around simulated incidents with as much realism as possible. Considerable emphasis was placed on decision making skills, leadership and the ability to manage stress. Certain aspects of the selection and competence assessment process and elements of the training content would appear to have potential application for OIMs' emergency command training and competence assessment.

**BATTLE STRESS VIDEO (1987)**

Prepared by HMS DRYAD SCHOOL OF MARINE OPERATIONS Presenter: Surgeon M.R. O'Connell MRC Psych RN Consul Psychiatrist

**MAIN POINTS RELEVANT TO OIM EMERGENCY COMMAND**

- **Offshore Simulated Emergency Exercises.** Veterans from the Falklands War commenting on their experiences said that it was "just like a Portland exercise." They said that the training at Portland was very realistic and had provided an excellent preparation for their war time experiences. The Portland training exercises are described in H4 below. Central to coping is the knowledge and belief of the possibility of survival.

- **Symptoms of stress.** Typical symptoms include: tiredness, lack of sleep, change in facial expression, glassy eyes, flattening of face, becoming irritable and annoyed at small things. Under stress people become edgy, lose their sense of humour, become unstable, tend to be less reasonable. Can become excitable, explosive, suggestible - e.g. sounds become exaggerated, increasingly conscious of noise. Prolonged hours of work under pressure increases sense of confusion and uncertainty. Battle stress shows inverse U function of Efficiency x Time in Combat (i.e. performance improves initially up to a maximum but as time in combat continues, performance will begin to decline). Symptoms and signs of anxiety and fear are the same in peacetime training and wartime.

- **Causes of stress and techniques for managing stress.** At Action Stations - stress is increased by isolation and poor communications. This can be helped by good communications and briefing. High moments of risk are actually very short - let people know when to relax. It is important to keep the crew in the picture as to goal and task. One Officer said "You will lose them if you keep them in the dark". There is a strong belief that training helps people to cope with fear - training to the point of overtraining. Everybody feels fear. Cope because with friends, sharing emotional experiences. The use of a buddy - buddy system can be effective. It is important to know people well. Person who has just joined the ship is much more at risk - does not have the same corporate sense of identity.
Experiences of Falklands Commanders.
Command is stressful. You are conscious that people need to draw strength from you. You are in the limelight and "have to set an example". When things go badly, eyes tend to turn to the Captain to see if he's going into a decline. "Panic spreads very fast if the Captain is doing the wall of death."
Greater focus on the Captain as battle approaches. Important to identity who the leaders are by giving them special clothing which is clearly identifiable. How he carries himself is important. Key element in leadership ability is to care - putting others first. Setting of a good example - including the example of getting sleep. If you become tired, you become irritable and need sleep. May have difficulty in walking away from the situation. Main effects: i) lethargy ii) judgement impaired and vision appears to narrow.
If early warning signs of stress are not recognised, people are more likely to break down, more likely to become battle casualties. In terms of the management of battle stress - the quicker it is identified, the quicker people are returned to full and active service. Stress should be recognised as a very common phenomenon and should be discussed openly so that everyone is aware of the typical causes and effects and how to manage them.

H.4 ROYAL NAVY IV

FLAG OFFICER SEA TRAINING (FOST) PORTLAND, DORSET

Objective
To observe the Royal Navy's methods of training and assessment of Commanding Officers and ships' companies with particular reference to their methods of using simulated emergencies/action damage at sea and harbour to test the ship's command and control organisation.

Personnel
Rear Admiral M.C. Boyce OBE, The Flag Officer Sea Training (FOST)
Lieutenant Commander D R Atterbury, Royal Navy, Staff NBCD Officer to FOST Commander M F Prior, Royal Navy, Secretary to FOST
YMS NOTTINGHAM, HMS ACTIVE, HMS BEAVER, HMS JUPITER

Introduction
Flag Officer Sea Training (FOST) is an organisation within the Royal Navy which was established to train (work-up) and maintain the operational efficiency of ships in the Fleet. They conduct several types of training and assessment: Preliminary Safety Training (2 weeks) - for ships that have just been commissioned or have come out of refit and have a crew that have not worked together at sea before. Basic Operational Sea Training (6 weeks) undertaken prior to joining the fleet as an operational unit. Continuation Operational Sea Training (4 weeks) - carried out every 18 months.

The training includes a series of exercises (serials) carried out both at sea, and in harbour which increase in complexity as the work-up progresses. Performance of the ship's company, both individuals and teams, is assessed during these exercises by a small, highly qualified and experienced team of FOST Staff NBCD Instructors (nicknamed "Wreckers") who set up the exercises, observe them and then produce a detailed feedback report and overall rating. (See Atterbury, 1992 for a more detailed description of this organisation and its operation).

Observations
Four exercises were observed on three frigates and a destroyer. Two were at sea and involved simulated conflict scenarios. In each case the vessel was 'buzzed' by fighter aircraft resulting in simulated hits using explosives (scare charges) which were followed by 'fire', smoke (using smoke simulants) and 'loss of several key systems'. This seriously affected the ship's ability to maintain its Fight, Move, Float capability and provided a formidable challenge to its command and control organisation. Two 'harbour fire' incidents were also observed, where ships in harbour on minimum manning levels were faced with a simulated fire in an engine space.

The scenarios have been very carefully developed and are updated regularly. They are designed to test the overall command and control system and the competence of particular departments, e.g., damage control, weapons, engineering. The assessment team conduct a briefing with the senior officers on the day prior to the exercise. The assessors (a team of 6 - 16 depending on the size of the ship and type of exercise) arrive onboard 45 minutes prior to the exercise. The ship will already be at Action Stations if it is a war time scenario.

The scenario will run for 1.5 to 2 hours during which time the assessors will manage the exercise, escalating events if appropriate, as well as observing the performance of key players and their teams. They may ask questions to determine why a particular course of action has been adopted or of the "What if?" variety to test the range of an individual's knowledge.

The assessment of command and control performance is based on subjective judgements as well as a number of objective criteria which include:-
- Time to achieve key objectives
- Whether initial reactions were in line with established procedures.
- Completeness and accuracy of information recording, e.g. on incident boards.
- Communication of plan of action, quality of team briefing.
- Establishment of damage boundaries.
- Performance of fire fighting teams.
- Effectiveness of smoke control.
- Effectiveness of Command and Control.

On completion of the exercise the assessors sit down in private to compile their assessment reports. They work very closely as a team, writing up the incidents they have covered and discussing the performance and leadership of individuals in the Command and Control positions. Drawing on a consensus of opinion, the officer in charge prepares a report on the Command and Control aspects and an overall summary. Each of the principal staff officers covering the exercise give their own assessments i.e. Weapons Engineering and Marine Engineering as well as Damage Control. The time allocated for the writing up of the assessment is approximately one hour. As soon as this is finished, the three assessing officers give a structured "Hot" debrief to the Commanding Officer and key personnel on the ship. This lasts 15 - 20 minutes and will give a generalised and critical review of performance as well as the assessment rating. The detailed written report is also given at that time to the Captain and it is intended to be copied to the entire ship's crew.

The assessment process is taken very seriously and the resulting overall grade carries considerable weight with both the Captain and the ship's company. The assessment grading is strict and it is rare for high grades to be achieved. Relative gradings between ships are openly discussed and this element of competition clearly has a motivational benefit." Individual appraisal is provided on key personnel and also on personnel who have stood out either positively or negatively, although this will only be filed onshore in exceptional cases.
The final assessment is on a 7 point scale ranging from Unsatisfactory to Very Good. The former requires a repeated assessment and the latter is very rarely achieved.

Conclusions
The assessment procedures used at FOST were extremely impressive and to some extent are validated by the comments of those involved in the Falkland's war, (see Battle stress video above) as veterans commented that they were prepared and able to perform in battle conditions due to their training and the experiences of workups at Portland. Given the degree of responsibility placed on the assessment teams, it is obviously critical that these individuals are carefully selected and trained for this appointment. Their credibility and professionalism are an essential element in the obvious success of this operation. Interestingly, the officer leading the assessment team may be two ranks below the captain of the ship which is being assessed. There was a very strong emphasis in communication, teamworking and leadership skills in junior officers and NCOs as well as in the senior officers.

The scenarios used in the assessment had been very carefully developed and were regularly updated. They were obviously perceived as highly realistic by the ship's companies involved in the exercises. The feedback was carefully structured, notably critical, yet constructive, and was relayed very promptly to the ship's company. There appeared to be obvious benefits of using independent teams of assessors to judge emergency response capability in this way.

H.5 MERCHANT NAVY I

DEPARTMENT OF TRANSPORT (MARINE OFFICE), ABERDEEN

Objectives
To determine the selection and qualification procedures used by the Merchant Navy to ensure the competence of deck officers and ship's captains.

Personnel
Captain Francis Duffin, Principal Nautical Surveyor and Merchant Navy Examiner.

Background
The Merchant Shipping (Certification of Deck Officers) Regulations 1985 specifies the conditions to be satisfied for the issue of deck officer certificates of competency, and the command endorsement to those certificates for service in the Merchant Navy. The syllabuses for certification of competency and command endorsements contain the following items of importance related to the training and examination of Officers for Master (Limited and Extended European) Endorsement. (See Department of Transport (1988) Certificates of Competency in the Merchant Navy for further details).
EXAMINATION OF CANDIDATES FOR MASTER'S CERTIFICATES

Qualifications
Prior to sitting for the Class 1 Certificate of competency, the candidate must have obtained the following qualifications:

- Radiotelephony (Restricted)
- Electrical Navigation Systems
- Nautical control Course
- First Aid at Sea
- Ship's Captain Medical Training
- Certificate of Proficiency in Survival Craft
- Efficient Deck Hand
- Fire Fighting Course
- Sight test
- Medical Fitness

Most of these qualifications will have been completed at nautical colleges during their prior work experience at sea. Additionally, the candidate must be aged at least 23 years, and served for three and a half years on board a ship, (at least two years must have been as a Watchkeeper). Additional requirements on type of vessel and location depend on the type of Master’s certificate sought (Restricted European, Tug etc.) After the qualifications and work experience have been obtained, an oral examination by a certified Department of Transport examiner must be passed: Class 1 Certificate of Competency. Of specific interest to this study are certain items covered in the oral examination, which are detailed below.

a) (ii) Steps to be taken when disabled and in distress.
- Preservation of passengers and crew in the event of a wreck.
- Abandoning ship; survival procedure.
- Abandoning a wrecked ship.
- Communications with the shore.

a) (iv) Bad weather manoeuvres.
- Precautions at anchor and at sea.
- Anchoring and working anchors and cables in all circumstances.

a) (viii) Prevention of fire at sea and in port.
- Methods used to prevent spread of fire.
- Action to be taken to prevent spread of fire.
- Full knowledge of the use of fire appliances and the precautions to be taken in their use.

a) (x) A knowledge of personnel management, organisation and training on board ships. Crew representation. Routine inspections of living quarters and store rooms.

Master (Limited European) Endorsement: Business and Law
h) The safety of the ship, crew and passengers.
- Assistance to vessels in distress.
- Duties in the case of stranding, collision or other casualty.

c) (i) A thorough knowledge of search and rescue procedures.
- The use of direction finding for homing on to a casualty.
- Assisting a ship or aircraft in distress.
- Rescuing the passengers and crew of a disabled ship or ditched aircraft.

Master (Extended European) Endorsement: Ship board operations
a) Organisation and training of crew for both routine and emergency duties.
For most of the questions asked in the oral examination, mainly concerning 'rules of the road', there are right and wrong answers of which the candidate must answer 80% correctly in order to pass the oral. Other questions may have a subjective slant, in which case the examiner is looking for sensible answers on the application of knowledge, procedures, and rules as applied to specific situations. The assessment is only written up if the candidate fails, and detailed feedback is then given to candidates. Candidates need to have pre-planned possible scenarios and strategies for dealing with them in order to cope well with the examination, which is similar to how they would deal with real-life difficult situations at sea. Masters keep detailed notebooks of ports, their idiosyncrasies, their options in poor weather should plant or systems fail, so they have more time to cope with a situation or disaster when it occurs. The Master's Ticket must be updated every five years. Psychometric testing is not used in assessment for competency, but it may be brought in to select examiners.

Use of simulations
There is now a new system at Southampton Nautical College for the Navigational Control Course. It can simulate a number of different scenarios, e.g. one, two or three ships on a collision course and the candidate has to respond appropriately, or coming into port and running aground. It looks like the bridge of a ship and the whole exercise lasts about one hour and is very stressful. Other simulations are used in the training and examination of the Electronic Navigational Systems qualification.

On-the-job training
The employer is not responsible for training per se, rather the individual will pick up the necessary skills over the years from their work experience on ships and regulatory courses as they apply for promotion. Capt. Duffin was of the opinion that training should not be formal but dynamic, interactive, focusing on team responses rather than learned responses (i.e. thought out rather than rote learning).

H.6 MERCHANT NAVY II

ABERDEEN COLLEGE OF FURTHER EDUCATION
UNIT OF MARINE AND OFFSHORE TECHNOLOGY

Objective
To ascertain the extent of training offered to Marine and Offshore oil and gas company employees by the Marine and Offshore Technology Unit, and to observe ballast control simulator in action.

Personnel
Ian Giddings (Head of Section Marine Operations)

Introduction
Aberdeen College of Science and Technology offer a range of courses tailored to the needs of the offshore oil industry. Of particular interest are dynamic positioning, which covers the requirements on the training of operators contained in the guidelines issued by the Department of Energy; and three
stability courses which cover the three stages of training recommended in Department of Energy guidance note No. 4 - "Guidance and selection of ballast control operators. Stability courses are run under the auspices of the Department of Maritime studies. An outline of the three stage Stability courses and Dynamic Positioning is provided below.

STAGE 1 STABILITY THEORY A five day course, with a maximum of twelve delegates, for personnel with no previous formal stability training. Participants consider the principles of afloat stability and associated calculations are explained in detail.

STAGE 2 OFFSHORE STABILITY AND DAMAGE CONTROL A five day course, with a maximum of twelve delegates, for personnel who have passed Stage 1 or who have acceptable previous stability training e.g. Class 2 DTp. Cert. or equivalent. This course covers the stability and damage control of offshore structures including factors affecting stability both in intact and damaged conditions. Emphasis is placed on damage control and emergency procedures required as a result of damage, and/or systems failure. Reference is made to offshore incidents to aid learning.

STAGE 3 BALLAST CONTROL OPERATIONS SIMULATOR COURSE A four day course, with a maximum of four participants for personnel holding a Stage 2 certificate and suitable operational experience. Course involves practical training on a simulator of ballast control operations in simulated emergency conditions. An up-date refresher course is also offered, for completion every two years after the initial certification.

DYNAMIC POSITIONING A number of courses are offered involving use of simulators which can simulate three different types of DP vessels, ROV support, Monohull DSV and Semi submersible MSV. The training validated by the Nautical Institute for operators is:
   - DP induction course
   - Sea going experience (1 month)
   - Simulator course
   - Supervised DP Watchkeeping (6 months)

Comments
Much of the training undertaken with regard to ballast control and dynamic positioning is designed for positions below that of the OIM, however, many OIMs on drilling rigs will have had experience on these types of courses which include an emergency training component using the simulator and case studies of rig accidents.

H.7 MARINE ACCIDENT INVESTIGATION BRANCH
DEPARTMENT OF TRANSPORT, SOUTHAMPTON

Objective
To find out to what extent the Marine Accident Investigation Branch take into account the command aspects of a ship's organisation following a marine accident.

Personnel
Captain P B Marriott (Chief Inspector of Marine Accidents)

Introduction
The Marine Accident Investigation Branch was set up under the Merchant Shipping Act 1988, to be responsible for the investigation of all types of
marine accidents, both to ships and to those on board. It is within the Department of Transport, and its head, the Chief Inspector of Marine Accidents, submits his Reports of Inquiry direct to the Secretary of State. In investigating an accident the MAIB examine the command structure on merchant ships, but not with a view to changing it, rather to examine whether the command structure was followed after the accident and if it worked.

The Master of a vessel is a servant in law and an agent, both for the ship owner or operator and to some extent the owner of the cargo he may be carrying. He is absolutely responsible for the safety of his ship and remains in command at all times. His actions in the event of an accident invariably attract the closest scrutiny by the inspectors. The MAIB place a very high priority within their investigation on the ability and performance of the Master in any major accident.

When an inspector carries out an investigation his powers are extensive, and he has wide discretion as to how he carries them out. Most of the investigation, though, will take place on board the ship concerned. The inspector can require any person he considers to be useful to his investigation to attend before him, answer questions and sign a declaration of the truth of his answers. When his inquiry is complete, the investigator is required to make a report to the Secretary of State, and possibly publish his report where valuable lessons are to be learnt from the incident.

As well as full reports of major accidents, the MAIB publish a useful series of case summaries of shipping accidents (MAIB, 1991).

Comments
In order to investigate in detail MAIB's examination of command and control during marine emergencies, a specific list of shipping incidents would be required. However, a small scale exercise was carried out for this project relating to offshore installation incidents where a sample of OIMs who have handled crises were interviewed (see Chapter 3).

H.8 THE FIRE SERVICE COLLEGE
MORETON-IN-MARSH, GLOUCESTERSHIRE

Objective
To collect details of the Fire Service's methods of training and assessment of commanding officers.

Personnel
Assistant Chief Officer Robin Graham (Head of School of Operations)
Assistant Chief Officer Peter Jenkinson (Principal Officer, Command Training)
Divisional Officer Malcolm Leatherbarrow
Introduction
The Fire Service College trains over 6000 individuals a year in fire, safety and emergency skills. In over 250 courses, training ranges from practical fire fighting skills to senior command and leadership. The college is set on a 550 acre site which has a number of full scale buildings that can be set alight including industrial units, a house, a 5 storey shopping complex, a 4000 tonnes dry cargo ship with engine room situated in a lake, a chemical plant, a motorway and a railway system. They undertake training not only for fire service staff but also for industrial managers on leadership and emergency command and control courses.

Observations
This visit consisted principally of interviews with the ACOs. It was not possible to observe any training for senior officers at the time of the visit. A tour of the facilities included a demonstration of oil fire control and the shopping complex which has external walkways and its own control centre which they were intending to use as a simulated oil installation for command and control training (they had been holding discussions with one major operator).

For Fire Service officers command and control is a major part of their job and strategy and tactics training is an element of every course on the progression of training courses leading to senior officer appointments. The seniority of an on-scene fire commander will be determined by the severity of the incident. A Crew Commander could have one engine and a team of four to five. A Watch Commander might have two fire engines, a Station Commander might be in charge of four engines and twenty fire-fighters and Divisional Commander could be responsible for ten fire engines and fifty fire-fighters at a major incident.

Officers called to the scene of a fire are taught to "start making decisions and plans on the basis of available information before the vehicle stops." They are trained to take in as much information as possible and to react to the information the environment is giving them. The training emphasises - "Action creates information", that is their actions will generate new information which will enable them to take further decisions and amend their plans accordingly. A basic tenet of training is confidence building "Do not be frightened to act". Practice is seen to be important, for preplanning, developing a general action plan, learning how to react and to cope with a crisis, working with others, delegating and decision making. They must learn to be confident in making decisions but should also have the confidence to change their plans if necessary.

While real time fires are used in simulated emergencies, they also use table top simulations for command and control training and have also used an interactive computer simulation ICARUS developed by Brunei University which models a fire in a factory. Experiential training on the fireground tends to be carried out by brigades. At Watch Command level, basic leadership skills are taught, planning, briefing evaluating.

Most senior courses focus on preplanning for events, logistics and lessons from past experience. For example, part of the Brigade Command Course on Operational Command has the following objectives:

"(a) Officers who have brigade command responsibility normally assume incident ground command only at major or complex incidents, but they do have an overall responsibility to ensure that those under their command are capable of, and are, discharging their operational responsibilities effectively."
Upon completion of the course the student should:-

i) Understand the relationship between strategy, tactics and logistics and the responsibilities of brigade command in these areas;

ii) Be capable of applying such principles of command on the incident ground and to all brigade operational planning for major incidents;

iii) Be fully conversant with the implications of all safety legislation and its bearing on brigade command;

iv) Be capable of applying such legislative responsibilities to all major incidents, including hazardous materials and substances.

Assessment

Assessment of performance on training courses is carried out by peer observation and feedback as well as by tutors. On senior courses more one to one assessment and feedback is provided. The brigades have their own appraisal systems for ongoing assessment of job performance. The Fire Service is currently developing standards of competence and are reviewing methods of competence assessment.

Psychometric tests

Some brigades use tests for selection and the college runs an "Ability Range Test Administration" course to train staff to administer the Home Office recommended ability range tests to applicants for fire fighting posts. On the Divisional Command course at the College, the Myers Briggs personality test and Belbin team roles questionnaire are now being used for individual feedback which will not be recorded. Honey's Learning Styles Inventory is also used for personal feedback to students. These tests are used for personal development and are not used for assessment purposes.

Comments

Fire Service officers, like Police officers, are trained to take charge of an incident very early in their careers. In the nature of their work, a very junior officer may be first on the scene of a major incident and be required to take command until a more senior officer arrives. Command and control training is not therefore a subject taught only to prospective senior commanding officers it is an integral part of basic training. There were a number of features of their command and control training which were of interest, particularly those relating to decision making under stress and the development of confidence in handling major incidents. As in the Police Force, the role of the senior officer managing a major incident is to evaluate the situation, decide on an action plan and to co-ordinate and monitor its implementation.
H.9 BRITISH AIRWAYS
PILOT TRAINING CENTRE, HEATHROW

Objective

To collect information on British Airways' methods of selecting, training and assessing passenger aircraft pilots, with particular reference to their emergency command responsibilities.

Personnel

Captain Alan Harkness (General Manager Pilot Training)
Roseanne Beal (Manager Flight Crew Training)
Dr Jack Wheale (Head of Manpower Planning and Systems; Psychologist)

Introduction

British Airways employs 3000 pilots who fly on all major international routes. Their main pilot training centre is based at Heathrow and this houses 15 high fidelity cockpit simulators which are used for training as well as regular competence assessments. Pilots receive their initial qualifying training at Prestwick and thereafter training and regular competence assessments take place at Heathrow as well as in flight.

Observations

Selection At the initial selection stage candidates for pilot training will be given aptitude tests, general 10 tests, team work tests and interviews. This assessment centre procedure has a very high validity and less than 5% of cadets will fail to qualify. For qualified pilots, selection will include tests of flying on a cockpit simulator. Personality tests are also used in the selection process chosen on the basis of job analysis and critical incident analysis to identify defined job requirements.

When asked what characteristics would be desirable in a pilot, the following list was given: competent, relaxed but alert, involves and listens to crew, influences behaviour before using authority, patient, sociable, prepared to help.

Competence Assessment Commercial airline pilots may be responsible for managing a serious emergency involving several hundred passengers when their aircraft is in flight. To conform to Civil Aviation Authority regulations, airlines are required not only to train their pilots to certain standards but also to reassess their competence on a regular basis. This competence assessment covers not only the pilot's technical ability to fly the plane but also his ability to maintain command during an emergency. Every six months the cockpit crews come into the simulator for their particular aircraft for a two day assessment which is carried out by more senior pilots. They deal with set piece emergencies, e.g. engine fire, incapacitation, decompression, bomb warning. The scenarios are developed on a three year cycle and are regularly updated using details of real incidents. On the first day there is a training element as well as some manoeuvres which will be assessed. The second day involves a series of statutory tests in the simulator which the pilot must pass to continue flying, e.g. competence to fly on instruments, dealing with an engine out on take-off. It is not necessary to artificially induce an element of stress because pilots already experience stress in the simulator during competence assessments.
Training Pilots are given both Line Oriented Flight Training (LOFT) and more recently they have begun to attend a new three day Cockpit Resource Management (CRM) training. The latter, which was developed originally by NASA, has a very strong emphasis on team working between the cockpit and cabin crews. It focuses on improving communication, developing self awareness and accepting feedback from other team members. A personality test called ACUMEN which examines 12 competencies is completed by the individual and five colleagues for discussion. They are now developing appropriate simulator exercises in which management skills will play a major part.

The decision making model they use has the following features i) ensure that you understand the problem, ii) collect information, iii) use your crew to evolve solutions, iv) check solutions, v) apply solutions, vi) evaluate their effectiveness. It is also important that the decision maker remains aware that the model of the problem may be incorrect 'disavowing your model', and that the plan of action may required to be modified. Team working in an emergency is regarded as very important both within the cockpit and between cockpit and cabin crews. This is reinforced by analysing previous incidents and reviewing decision making. (A notable example of the need for teamwork is the British Midland accident in which the cabin crew knew one engine was on fire while the cockpit crew shut down the other). Situational awareness is emphasised, i.e., recognising when the situation is abnormal. pilots are trained to recognise circumstances and symptoms of problems. In most cases an emergency will be dealt with by well defined and rehearsed procedures. "Solutions for dealing with emergencies are usually pre-thought." Extensive use is made of manuals, quick reference handbooks and checklists which are also stored on the computer. Pilots routinely check emergency procedures (e.g., engine failure) before every flight when they carry out their pre-take off briefing.

Comments

The selection, training and competence assessment procedures for commercial airline pilots have been rigorously developed over many years. The relatively recent emphasis on team working and the new CRM training programmes may have implications for the management of offshore emergencies using teamwork principles. The basis of their competence assessments for a pilot's ability to manage an emergency is structured observations of performance on a series of realistic scenarios in high fidelity cockpit simulators.
H.10 ROYAL AIRFORCE
OFFICERS AND AIRCREW SELECTION CENTRE

Objective
To investigate RAF methods of assessment and selection of officers

Personnel
Air Commodore Pitchfork: Commandant
Group Captain Watkins: Board President
Wing Commander Pollock: Selection Board
Squadron Leader Egre: Selection Board
Wing Commander Yelden: Selection Board
Wing Commander Gasson: Selection Board
Wing Commander Jones: Selection Board
Squadron Leader Allison: Selection Board

Introduction
The Officers and Air Crew Selection Centre was located at RAF Biggin Hill in Kent but is now based at Cranwell in Lincolnshire. The Selection Centre selects for all Air and Ground Branch officers, and for Non-Commissioned Officer (NCO) Aircrew, during a two and a half day selection procedure. Visits were made to the Aptitude Section, and groups of candidates were observed during their interviews, class and hangar exercises, and the President’s conference at the end of the selection procedure.

Aptitude Testing
These tests measure performance over a wide variety of different natural aptitudes, such as eye/hand/foot co-ordination, deductive reasoning, spatial orientation, situational awareness, mental agility, intelligence and memory. Their aim is to provide an assessment of the candidate’s chances of success in training. Specific tests also exist for potential pilots, air traffic and fighter controllers, navigators and NCO Air crew. These include assessments of ability at standard mathematics and of solving time/distance/speed problems. At least two and a half hours are spent on aptitude tests, or six hours for Air crew applicants. Aptitude tests are validated against pass or fail in training, to produce a predictive score. They also produce a probability score which is a combination of measures predicting outcome of final training.

All candidates are interviewed by a Wing Commander and Squadron Leader who talk to the candidate about family background, academic achievement, reasons for joining RAF, previous positions of responsibility, and knowledge of current affairs. Interview duration is approximately 40 minutes. Failure to meet the required standards results in withdrawal from further testing. Interviews are conducted at a brisk pace. Great emphasis is placed on school activities, and extra curricula activities, as they (RAF) believe these to be indicators of command potential. Many ‘why’ questions are included in an effort to learn about the candidate’s motivation and initiative. Interviewers also look for signs of apprehension in candidates, e.g. being able to hold their own, show they can be part of a team, able to contribute their ideas on an equal basis. The candidate’s interview performance is assessed and recorded immediately following the interview. For all subsequent testing, candidates are placed in ‘syndicate’ groups of four to five individuals. They are assessed over the remaining days by a Wing Commander and Squadron Leader who are responsible for briefing and assessing the candidates.

Leaderless Test This is conducted in the exercise hangar, and involves a 20 minute practical exercise over an obstacle course. No leader is appointed in
an effort to allow 'natural' leaders to emerge and direct the activities of the group towards a successful conclusion. The assessment ratings are based on the process of doing the exercise rather than the outcome.

Command Situation This entails each candidate in the group taking turns to lead the syndicate group through a 20 minute practical exercise. Individuals are shown the task, given a couple of minutes to think out a plan of action, then brief the team before leading them through the exercise.

Discussion Group This is an informal discussion of matters of current interest. The Officers introduce and change the topics. Abilities looked for are leadership, clarity of speech and thought, knowledge, mental agility and influence.

Planning Exercise In this classroom exercise the syndicate group is given a problem which requires a team solution to be produced from discussion. The team is then questioned on their plan by the Officers, and finally asked to write a short essay (individually) outlining the team's plan. Qualities looked for include grasp of the situation, clarity of expression, vocabulary and grammar.

Individual Problem Each candidate works independently on a written brief describing a hypothetical situation requiring a solution. This generally involves some arithmetic, reasoning and attention to detail. Candidates present their solution orally, and are questioned on it.

Overall qualities looked for include: confidence, problem solving, decision making "must be able to think on your feet"; motivation, leadership "must be capable of showing firmness with consideration, for others - leadership is not just ordering people about", team working, communication, ability to tolerate stress.

Summary In all the hangar exercises great trouble is taken to put the candidates at their ease. A typed brief is spoken to each group to ensure uniformity of instructions to all groups. The two assessing Officers each have a check-list of qualities against which they allot marks out of 100 for each candidate, based on observed behaviour. The scores act as guide-lines, with each individual ranked in comparison with others in their syndicate team. This together with Officers' comments is used to compile an overall assessment after completion of the series of exercises. It is very difficult to estimate whether the inclusion of two officers is reinforcing or self-regulatory. There is discussion between the two officers during the exercise.

Comment The RAF have a well established and thorough assessment and selection procedure. The assessing Officers had long experience in the RAF and were specially trained in personnel selection. While they were looking for leadership potential and not current leadership ability, the assessment centre approach using interviews, tests and observed behaviour in practical tasks does also have potential application for the assessment of command ability.