

Report on the Hydrocarbon Drilling Industry



The report was written for EXITO by Chris Beardsley and Kris Cooper of Performance Matters Limited

Index	Page Number
Executive Summary	Executive Summary 1
The Report	
1. Introduction	1
2. Methodology	3
3. Results of the Survey	4
3.1 Demographic and General Data	4
3.1.1 Participation	4
3.1.2 Gender	4
3.1.3 Age Distribution	4
3.1.4 Ethnicity	5
3.1.5 Average Hours of Work	5
3.1.6 Contractors – Percentage of Work in Hydrocarbon Industry	5
3.1.7 Job Choice	6
3.1.8 Relevant Experience / Qualifications Before Entering the Industry	6
3.1.9 Experience in Other Industries	7
3.1.10 Number of Hydrocarbon Drilling Companies Worked In	8
3.1.11 Time Spent in Industry	8
3.1.12 Career Progression	9
3.1.13 Intention to Continue Working in the Industry	9
3.1.14 Age of Retirement	9
3.1.15 Intentions Regarding Retirement	11
3.1.16 Wages and Salaries	11
3.2 Operators' and Contractors' Views: Training and Training Delivery	13
3.2.1 Provision of Training	13
3.2.2 Interest in Training	13
3.2.3 Expected Benefits of Training	13
3.2.4 Further Training Wanted	14
3.2.5 Registering for EXITO Training and Accessing Record of Learning	14
3.2.6 Training Needs	15
3.2.7 Organising Training to Fit in With Work	15
3.2.8 Contractors' Specific Views on Training	15
3.2.9 Preferred Type of Training Delivery	16
3.2.10 Mix Between Theory and Practice	16
3.2.11 Expected Support From Manager Upon Completion of	

	Training Sessions	17
3.2.12	Important Qualities in a Trainer	17
3.2.13	Ideas for Improving the Way Training is Delivered	18
3.2.14	Training on New Equipment	18
3.2.15	Transfer of Learning	19
3.2.16	Reviews of Effectiveness	19
3.2.17	Refresher Courses	19
3.2.18	Other Comments From Operators	20
3.3	Managers' and Professionals' Views: Their Own Professional Development	21
3.3.1	Structure and Support for Professional Development	21
3.3.2	Professional Development Needs	21
3.3.3	Career Relevance	22
3.3.4	Professional Development Gaps	22
3.4	Managers' and Professionals' Views: Recruitment and Retention	23
3.4.1	Difficult to Fill Roles	23
3.4.2	Under-Supplied Roles	26
3.4.3	Over-Supplied Roles	27
3.4.4	Filling Staffing Gaps	27
3.4.5	Ideas for Attracting People Into the Industry	29
3.4.6	Attracting Women to be Operators	30
3.4.7	Career Paths for Operators	31
3.4.8	Apprenticeship System	31
3.4.9	Improving Staff Retention	32
3.4.10	Succession Planning	33
3.5	Managers' and Professionals' Views: Training Issues	35
3.5.1	Operator Training	35
3.5.2	Professional Development	36
3.5.3	Finding Good Trainers	37
3.5.4	Catering for Unique Workplace Work Processes	37
3.5.5	Ensuring Trainer Currency With Industry Standards	37
3.5.6	Training Time	38
3.5.7	Supervisory and Management Skills	38
3.5.8	Proportion of EXITO and Non-EXITO Training	39
3.5.9	The Future of Environmental Management Training and Health and Safety Training	39
3.5.10	Staff Literacy	40
3.5.11	Contractors' Involvement in Training	41
3.6	Managers' and Professionals' Views: Industry Predictions	42
3.6.1	Industry Growth	42

3.6.2	Technological Advances	43
3.6.3	Ensuring Training Keeps Up-to-Date	43
3.6.4	EXITO's Role by 2012	44
3.7	Managers' and Professionals' Views: Training Comments From Site Visits	46
3.7.1	Polytechnics and Universities	46
3.7.2	Pragmatic Approaches to Training	46
3.7.3	Availability of Work	47
3.7.4	Skill Shortages	47
3.7.5	System Bureaucracy	48
3.7.6	The State of the Industry	49
3.7.7	Survey Issues	49
3.7.8	Finally, a Call for Collaboration	49
4. Future Considerations and Issues		50
4.1	Questions Arising from Demographic and General Data Results	50
4.1.1	Age and Gender	50
4.1.2	Hours of Work	50
4.1.3	Education, Experience and Industry Career Opportunities	51
4.1.4	Retirement Plans	52
4.1.5	Wages and Salaries	52
4.2	Questions Arising from Views on Training and Training Delivery	53
4.2.1	The Environment for Training	53
4.2.2	Training Effectiveness	53
4.2.3	Identified Training Needs	54
4.3	Questions Arising from Views on Recruitment and Retention	55
4.4	Questions Arising from Views on Industry Predictions	56
4.4.1	Forecasting	56
4.4.2	EXITO's Role in the Future	56
5. Appendices		57
1	Questionnaire for Operators	57
2	Questionnaire for Managers/Professionals/Technicians	

Executive Summary

Introduction

During October, November and December 2007 the Extractive Industries Training Organisation (EXITO) national survey of the Hydrocarbon Drilling industry was conducted throughout New Zealand. The purpose of the survey was to obtain data and information to facilitate future EXITO policy decision-making and enable accurate planning for the training needs of those people entering or involved in the New Zealand hydrocarbon drilling industry.

A total of 62 people were surveyed in 19 hydrocarbon drilling companies and 7 training companies. The companies surveyed were in the regions of Taranaki and Wellington.

Methodology

Firstly two draft questionnaires were designed and circulated to EXITO personnel and industry experts for their comment – one questionnaire for Operators/Contractors, and one for Managers/Professionals. Amendments were made based on their feedback. A pilot test was conducted, and amendments made before applying the questionnaires with Operators and Managers.

The Survey Results

Survey results cover demographic and general data about respondents; Operators'/Contractors' responses to questions about training and training delivery; Managers'/Professionals' responses to questions about their professional development, recruitment and retention, training issues, predictions for the industry, and additional comments from site visits.

Demographic and General Data

- Men made up 77% and women 15% of the surveyed population.
- Only 28% of respondents were under 40 years of age, with 61% being 40 years of age or older – 11% unknown.
- Sixty-one percent (61%) of participants identified as NZ European/Pakeha, 18% as New Zealand Maori, with small percentages of other ethnicities.
- The (mean) average hours of work per week in the industry are 53, although individual hours vary widely.
- The most common reason for choosing their job is because of the interesting, challenging work or because they like the industry. Money is also a significant draw card.
- Fifty-two percent (52%) of Operators/Contractors and 28% of Managers/Professionals had no experience or relevant qualifications coming into the industry.
- Eighty-two percent (82%) of participants had worked in other industries before the Hydrocarbon Drilling one.
- Most participants had worked in only one company in the industry (37%), but 33% had worked in four or more companies.
- The (mean) average period of time in the industry was 4.4 years for Operators, 13.4 years for Contractors, and 21.7 years for Managers/Professionals.

- Sixty-one percent (61%) of Operators/Contractors specified that they had been encouraged to take on supervisory roles.
- An overwhelming majority of participants (95%) said they wanted to continue working in the industry.
- The (mean) average intended retirement age of participants was 60.6 years, but the range is spread from 30 to 70 years of age.
- The (mean) average period of time until intended retirement is 17.1 years, but on the basis of these participants the industry risk period is 2017 – 2025 when some 45% of participants in this survey intend to retire, followed by another 24% by 2030.
- Most participants intend to relax and have fun when they retire (45%), but 22% intend to reduce their hours, work on projects, consult or go into academia.
- By New Zealand standards, wages and salaries are relatively high in this industry.

Operators' and Contractors' Views: Training and Training Delivery

- Almost all companies provide their employees with training. The most commonly cited reason for the company providing training was safety (mentioned by 85% of respondents.)
- There is an overwhelming (97%) interest in training.
- As a result of training, all participants expected improvement in their skills, and 82% expected the opportunity for advancement.
- Forty-two percent (42%) of participants said they were registered for EXITO training, and 67% said they could access their Record of Learning.
- Sixty-four percent (64%) of participants said they were consulted about their training needs, and 73% thought there was a match between their training needs and the company's view of their training needs.
- Most people thought training should be organised during work hours (73%).
- Sixty-seven percent (67%) of Contractor respondents thought they did sufficient training, and 16% were unsure.
- Class room presentations and group work, and on-site supervised practice were the types of training delivery methods that worked best for the participants (73% and 64%, respectively). Most respondents thought there was currently the right mix between practice and theory.
- After training, participants expected their managers to support them by being available to discuss the course and answer questions, giving opportunities to use the skills, checking-in on effectiveness, and providing information about and opportunities for follow-up training, including time off to complete any necessary assignments.
- Trainers must have many qualities, but especially they must be knowledgeable and experienced (required by 94% of participants).
- Participants offered several suggestions for improving the way training is delivered.
- Most people are trained on new equipment as it is installed and used for the first time (46% of participants).
- Most people (58%) use new skills between 1 and 5 days of completion of the training.
- Forty-nine percent (49%) of participants said training was followed up with reviews of its effectiveness.
- Refresher courses are mainly organised by the employers (67%), and 61% of participants thought refresher courses were provided at appropriate intervals.

Managers' and Professionals' Views: Their Own Professional Development

- Eighty percent (80%) of Managers and Professionals said their companies offered structure and support for them to participate in professional development, and 73% of respondents thought there was a match between what they believed to be their own development needs and those their companies perceived to be their needs.
- Seventy-three percent (73%) of participants thought their professional development fitted with their career aspirations.

Managers' and Professionals' Views: Recruitment and Retention

- Difficult to fill roles were believed to be Professionals (e.g. geologists, engineers) (45%), Technicians (41%), Operators (41%), Managers (34%), and Support Staff (10%).
- Reasons for difficulties filling roles included intermittent work, lack of training, salaries and conditions, and perceptions about the industry.
- The most common reason given for why people are turning down employment offers was pay, especially in relation to competitive offers of employment.
- The impact of unfilled positions is mainly others working longer hours.
- The most popular methods of filling staffing gaps in 'non-traditional ways' were through recruiting staff from overseas and other industries (52% each).
- Suggestions for remedying expected skill shortages were through industry promotion; offering training, development and career progression; and improving working conditions.
- Ideas for attracting people to the industry centred largely around promotion targeting young people. Improving/promoting training and career options were also noted.
- Ideas for attracting women as Operators also centred around promotion.
- Forty-one percent (41%) of Managers/Professionals thought there was a clear career path for Operators, and 41% thought there should be. Very high non-response rates to these questions perhaps indicate not much thought has been given to this potentially important subject.
- Forty-eight percent (48%) of Managers/Professionals thought an apprenticeship system should be organised for the industry.
- Ideas for improving staff retention included valuing people's contributions, retaining people through low work periods, and giving attention to pay and conditions.
- Only 28% of respondents believed succession planning was done adequately in their business. Several people did not complete this question.

Managers' Views: Training Issues

- There were very high non-response rates in this section.
- Thirty-one percent (31%) of Managers/Professionals thought there was sufficient Operator training in their companies, but only 10% said there was not.
- Similarly, 35% of Managers/Professionals said they were getting the results they expected from Operator training, and only 3% said they were not. Most of these participants thought that training results showed through all of increased productivity, taking initiative, customer service, and improved safety.
- Thirty-eight percent (38%) of participants thought there was sufficient professional development provided for those in the industry, and 10% did not.

- Impediments to adequate provision of professional development in the industry were thought to be lack of continuous work discouraging investment, money, and availability of people for training (given the work demands).
- Twenty-one percent (21%) thought it would be possible to recruit sufficient quality trainers when training expands; 14% did not.
- Fifty-six percent (56%) of participating Managers/Professionals thought training should be provided in a 1 or 2 day time period, and 44% over a longer timeframe.
- Managers/Professionals thought that supervisory and management training was necessary and well provided in large (international) companies. Those in smaller companies thought training was less accessible due to affordability. Some suggestions for skill development were noted.
- The proportions of EXITO and non-EXITO training run by Company Staff or Outside Consultants is very variable in this industry. On average, most training is non-EXITO training run by Company Staff, closely followed by non-EXITO training run by Outside Consultants.
- While the importance of future training in environmental management and health and safety was agreed by some, those in large (international) companies believed these topics were already well covered by their internal training regimes.
- Literacy is a known issue for 48% of the Managers/Professionals taking part in this study.
- Managers/Professionals suggested Contractors could become more involved in training if there were processes to support them, and training was both paid for and a requirement.

Managers' and Professionals' Views: Industry Predictions

- Views on growth in the industry over the next 5 – 10 years varies from contracting, reaching a plateau and growing by differing amounts.
- Predictions on technological advances over the next five years ranged from 'none' to 'new drilling technology' to 'automation' that could result in no need for local labour within ten years.
- Participants thought investment in research and development would assist with ensuring training keeps up-to-date with advances, as well as making sure trainers and training material are current. Currency could be achieved by trainers working alongside the introduction of new technology, developing the learning resources.
- While some participants saw no role for EXITO by 2012 others suggested its role would be in reducing industry's training bureaucracy, promoting the industry to assist with labour supply, monitoring the work of the training organisations, and helping with specific industry training needs.
- Some participants particularly encouraged EXITO to keep up the good work.

Managers' and Professionals' Views: Comments from Site Visits

- During site visits, Managers and Professionals offered many perspectives on training and the industry in general that were not specifically queried in their survey. This section of the main report covers comments about polytechnics and universities, pragmatic approaches to training, availability of work, skill shortages, system bureaucracy, the state of the industry, survey issues, and a call for collaboration.

Considerations for the Future

As with most surveys, results raise several more questions, and some of these are included for EXITO's consideration at the end of the survey results. It is expected that these questions will stimulate and direct the Board in their thinking, decision-making and future planning. Importantly, most participants in this exercise were clear that training has a substantial contribution to make in this industry. The exact nature of EXITO's role is less clear.

Report on the National Survey of the New Zealand Hydrocarbon Drilling Industry

1. Introduction

During October, November and December 2007 the Extractive Industries Training Organisation (EXITO) national survey of the Hydrocarbon Drilling industry was conducted throughout New Zealand. The purpose of the survey was to obtain data and information to facilitate future EXITO policy decision-making and enable accurate planning for the training needs of those people entering or involved in the New Zealand hydrocarbon drilling industry. In particular, the expected outcome of the research is to:

- Identify industry skill needs for the future
- Identify areas of skill shortage / skill gaps
- Identify how to enable equity of access to all learners
- Extend industry training to more people
- Gather accurate information to be able to establish a system of training which responds to current and future skill needs for the industry.

Survey sites were provided by the Board of EXITO and PEPANZ. A total of 19 different hydrocarbon drilling companies were surveyed, and a further 7 training companies who deliver work in this industry. The companies were in the regions of Taranaki and Wellington.

The survey was conducted in conjunction with other research work commissioned by the Petroleum Exploration and Production Association of New Zealand (PEPANZ). At site visits conducted by Performance Matters Limited, the PEPANZ survey material was used in addition to the EXITO surveys. This enabled minimising survey fatigue in the sector.

Where possible, surveys were completed and discussions were held with personnel directly, either at scheduled break times or by arrangement during the working day. Most managerial input, though, was through discussion and completion of the questionnaire with the surveyor. Generally managers offered additional information and comments about training within their company and the industry. These comments are included throughout the report. Additional managerial forms were often taken from these discussions for colleagues to participate, and arrangements were made to pick up or mail back the completed surveys at a later date. Some operator questionnaires were also completed via this method. This overall approach meant that timeframes for completing the questionnaire and attending to work productivity expectations were managed as the companies themselves perceived to be appropriate.

In total, 33 operators (including 9 contractors) and 29 managers / professionals / technicians participated in this survey. A further 4 surveys were received after the report had been compiled and where possible their comments have been included. Most respondents were interested in the purpose of the exercise and were pleased to have their views sought. People were individually thanked for taking the time to assist with this project and (future) training for the industry.

This report considers the views of the 62 (plus 4, as noted above) industry members from 26 companies throughout New Zealand. Grateful thanks and appreciation is extended to all those involved, especially those managers and supervisors who generously gave their time and prepared their staff for the survey visit, and the 66 respondents, who willingly participated. As additional thanks, participating companies will receive a copy of the final project report.

2. Methodology

The EXITO Chief Executive and Board directed Performance Matters to research specific information required for the future planning needs of the industry to enable them to achieve the expected outcomes of the research noted in the Introduction. Survey questionnaires were designed and circulated to industry experts for their comment. Amendments were made based on their feedback. In particular, due to the contractor-rich nature of the industry, some specific questions were added to the Operators questionnaire for contractors to complete.

In addition a pilot test was conducted. The questionnaires were modified slightly as a result of feedback. Rather than getting the company to participate again, the results from the pilot test are included in this report.

As with other surveys completed for EXITO, we decided to conduct the surveys on site, on-the-spot and collect questionnaires immediately after completion. Doing this achieves a 100% yield of those available to complete the questionnaires at the time of the visit. In most instances, though, additional surveys were taken for colleagues to complete, and these were picked up or returned at a later date. All of the companies asked to participate in the surveys, except one, agreed to do so.

The surveys were conducted anonymously. Respondents were informed of the purpose of collecting the information (i.e. the questionnaire) and that the use and disclosure of the information would be limited to what is necessary to fulfil the survey purpose. We did not ask for people's names. Survey responses cannot be used to identify an individual because no personal information has been used that would enable identification of the survey respondent.

As noted in the introduction, visits to the 26 companies resulted in 66 people participating in the survey. One of the difficulties experienced in recruiting participants was the relative inaccessibility of the drilling crews, and some companies were laying off staff during the survey period. Nevertheless, those surveyed consistently thought the hydrocarbon drilling industry employed approximately 480 people, in which case 14% of the industry were surveyed. The information from the survey can therefore provide a sound basis for future planning.

3. Results of the Survey

This part of the report is divided into seven parts.

Part One considers Demographic and General Data.

Part Two covers Operators' and Contractors' responses to questions about training and training delivery.

Part Three covers Managers' and Professionals' responses to questions about their professional development.

Part Four covers Managers' and Professionals' responses to questions about recruitment and retention.

Part Five covers Managers' and Professionals' responses to questions about training issues.

Part Six covers Managers' and Professionals' responses to questions about predictions for the industry.

Part Seven covers Managers' and Professionals' additional comments from site visits.

3.1 Demographic and General Data

3.1.1 Participation

Total number of Hydrocarbon Drilling Industry companies	19
Total number of Industry Training companies	7
Total number of Companies	26

Total number of Operators	33 *
Total number of Managers / Professionals / Technicians	29
Total number of individual respondents	62

* Includes 9 contractors

3.1.2 Gender

Gender	Operators	Contractors	Managers / Professionals	Total
Male	71%	100%	76%	77%
Female	29%	0%	7%	15%
Unknown	0%	0%	17%	8%
Totals	100%	100%	100%	100%

3.1.3 Age Distribution

Age	Operators	Contractors	Managers / Professionals	Total
15 – 19 years	0%	0%	0%	0%
20 – 29 years	29%	11%	3%	15%
30 – 39 years	21%	33%	0%	13%
40 – 49 years	33%	33%	35%	34%
50 – 59 years	17%	11%	35%	24%
60 – 69 years	0%	11%	3%	3%
70 plus years	0%	0%	0%	0%
Unknown	0%	0%	24%	11%
Totals	100%	99%	100%	100%

3.1.4 Ethnicity

Ethnicity	Operators	Contractors	Managers/ Professionals	Total
NZ European/Pakeha	63%	89%	52%	61%
NZ Maori	37%	0%	7%	18%
Other European	0%	0%	14%	6%
South East Asian	0%	11%	0%	2%
American	0%	0%	3%	2%
Unknown	0%	0%	24%	11%
Total	100%	100%	100%	100%

3.1.5 Average Hours of Work

The following table outlines the averages and ranges for weekly hours of work for full time employees.

Weekly Hours of Work	Operators	Contractors	Managers / Professionals	Total
Average	50.0 hours	53.6 hours	55.1 hours	52.8 hours
Range	28 – 85	40 – 84	40 – 84	28 – 85

There appear to be very few part time workers in this industry. Only two people indicated that they worked part-time, with weekly hours at 28 and 30 hours per week. People who were working on the rigs at the time of completing the survey appear to be the ones with the extremely high hours per week. One respondent noted that the role was “24/7.”

The following table specifies the breakdown in weekly hours of work.

Weekly Hours of Work	Operators	Contractors	Managers / Professionals	Total
Part time hours	8%	0%	0%	3%
40 – 49 hours per week	50%	67%	24%	40%
50 – 59 hours per week	25%	11%	24%	23%
60 – 69 hours per week	0%	0%	31%	15%
70 plus hours per week	17%	22%	14%	16%
Unknown	0%	0%	7%	3%
Total	100%	100%	100%	100%

3.1.6 Contractors – Percentage of Work in Hydrocarbon Industry

Contractors were asked the percentage of their work that is Hydrocarbon Drilling related. Only 56% of those identifying as Contractors answered this question. The replies yield a mean average of 73%, but the answers were extremely spread: from 25% to 100%.

3.1.7 Job Choice

Operators / Contractors were asked why they chose their job, and Managers / Professionals and Technicians were asked what attracted them to the industry. The predominant answers for all personnel revolved around interest in the work, the challenge of the work and/or interest in the industry. Pay was also commonly noted, as well as experience to be gained and chance to travel.

Overall the responses to each questionnaire fitted into the categories summarised in the following table. The “other” reasons included desire to work for a “large international company,” ability to “work for a mate,” “people contact,” and being involved in “a new industry to the North Sea (UK),” because I can apply my profession as Mechanical Engineer,” and “[I was] born to do it.”

Reason for Choosing Job	Operators / Contractors	Managers / Professionals	Total
Interesting / challenging work/industry / like the industry	34%	26%	30%
Money / pay	12%	23%	17%
Travel / global / adventure / lifestyle	15%	13%	14%
Variety / experience / learning	7%	5%	6%
Opportunity for advancement / job prospects	0%	13%	6%
Hours / terms of work / ‘own boss’	10%	5%	8%
‘A job’	2%	5%	4%
Interest in earth sciences / geology	0%	8%	4%
Family in industry	5%	0%	2%
Other	15%	2%	9%
Totals	100%	100%	100%

3.1.8 Relevant Experience/Qualifications Before Entering the Industry

Participants were asked if they had relevant experience or qualifications before working in the Hydrocarbon Drilling industry. The table below summarises responses.

Relevant Experience or Qualifications	Operators / Contractors	Managers / Professionals	Total
Yes	45%	65%	55%
No	52%	28%	40%
Unknown	3%	7%	5%
Total	100%	100%	100%

Managers / professionals were the only ones who specified Bachelors or higher degree qualifications. Some managers / professionals had also worked their way through to their current roles based on their industry experience.

The following table outlines the qualifications and experience noted by the respondents.

Qualifications	Operators / Contractors	Managers / Professionals	Total
Trade / institute / safety / training qualifications	33%	25%	28%
Bachelors' Degree (engineering [mechanical and chemical], science)	0%	20%	11%
Masters or PhD (geology)	0%	10%	6%
Other ("Geologist," "Mechanical Engineer")	13%	0%	6%
<i>Total qualifications</i>	<i>46%</i>	<i>55%</i>	<i>51%</i>
Experience			
Roughneck	0%	10%	6%
Other drilling / petrochemical experience	27%	5%	14%
Trainer	7%	20%	14%
Related industries – service, maintenance, heavy mechanical	0%	10%	6%
Accounts	13%	0%	6%
Safety	7%	0%	3%
<i>Total Experience</i>	<i>54%</i>	<i>45%</i>	<i>49%</i>
Total	100%	100%	100%

3.1.9 Experience in Other Industries

Participants were particularly asked whether they had worked in other industries before the Hydrocarbon Drilling one. The next table outlines the responses.

Worked in Other Industries	Operators / Contractors	Managers / Professionals	Total
Yes	91%	73%	82%
No	9%	17%	13%
Unknown	0%	10%	5%
Total	100%	100%	100%

Most common responses were from the education/training sector and engineering. Building and construction was also a common background, as was farming and to a lesser extent the motor industry, dairy industry, steel industry, and fire service. However, participants had very diverse backgrounds. Other sectors mentioned included carpet, telecommunications, media, sales, importing/exporting, transport, seismic surveys, mining, manufacturing, boat building, electrical, textiles, publishing, water treatment, hospitality.

3.1.10 Number of Hydrocarbon Drilling Companies Worked In

Participants were asked the number of Hydrocarbon Drilling companies they had worked in. The highest proportion had worked in only one (37%), although a significant proportion had also worked in four companies (13%). Only 12% of participants had worked in more than five companies. The most mobile groups of participants were the Contractors and Managers/Professionals. The overall mean average of the number of companies worked in was 2.9.

Number of Industry Companies	Operators	Contractors	Managers/Professionals	Total
Worked in 1 (this one)	54%	33%	24%	37%
Worked in 2	13%	11%	11%	11%
Worked in 3	8%	0%	14%	10%
Worked in 4	0%	11%	24%	13%
Worked in 5	4%	22%	7%	8%
Worked in 6	0%	11%	11%	6%
Worked in 9	0%	0%	3%	2%
Worked in 15	0%	0%	3%	2%
Lots	0%	11%	0%	2%
Unknown	21%	0%	3%	9%
Total	100%	99%	100%	100%
(Mean) Average number of companies	1.6	3.1	3.8	2.9

3.1.11 Time Spent in Industry

Unsurprisingly, there is a progression to the average amount of time spent in the industry by Operators, Consultants and Managers. While 71% of Operators had been in the industry for five years or less, 67% of Contractors and 83% of Managers/Professionals had been involved for more than 10 years, with 52% of Managers/Professionals involved for more than 20 years. The lower percentage of participants in the 6 – 10 year range indicates potential issues for retention of industry knowledge as the more experienced personnel anticipate retirement. (See section 3.1.13.)

The following table shows participants' time in the industry, including the range of service and mean averages for each group.

Time Spent in Industry	Operators	Contractors	Managers/ Professionals	Total
Less than 1 year	8%	0%	0%	3%
1 – 2 years	34%	22%	3%	18%
3 – 5 years	29%	11%	3%	15%
6 – 10 years	21%	0%	3%	10%
11 – 19 years	8%	45%	31%	24%
20+ years	0%	22%	52%	27%
Unknown	0%	0%	8%	3%
Totals	100%	100%	100%	100%
Range	0.5 – 17 yr	1.5 – 30 yrs	1 – 35 years	0.5 – 35 yrs
(Mean) Average time	4.4 years	13.4 years	21.7 years	13.5 years

3.1.12 Career Progression

Sixty-one percent (61%) of both Operators and Contractors specified that they had been encouraged to take on supervisory roles. Project Management was the most commonly noted role that had been suggested to them. Other roles included training, stores supervisor, inspection supervisor, HSE, tool making supervisor, service leader, well testing and drilling, and “MISC Pumping and in Cementing.”

Requests for relatively high proportions of Operators / Contractors to be functioning at this level are helpful seeing as most participants wanted to continue working in the sector (see section 3.1.13). Vigilance on career progression will need to be maintained, though, as Managers/Professionals were largely unimpressed with the degree of succession planning in their organisations (see section 3.4.10), and intended retirement ages suggest there will be a (continuing) skill shortage in the industry (see section 3.1.14).

3.1.13 Intention to Continue Working in the Industry

Almost all participants said they wanted to continue working in the industry:

Desire to Continue Working in the Industry	Operators	Contractors	Managers/ Professionals	Total
Yes	96%	100%	94%	95%
No	4%	0%	3%	3%
Maybe / Don't know	0%	0%	3%	2%
Total	100%	100%	100%	100%

3.1.14 Age of Retirement

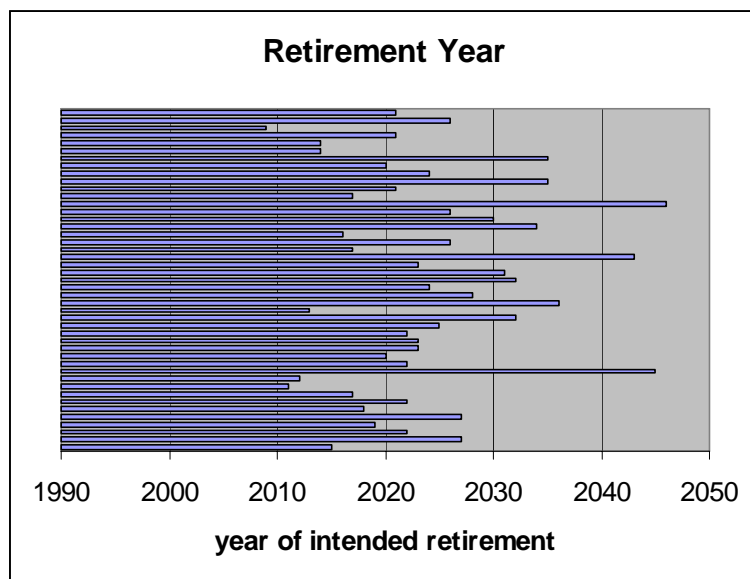
The mostly commonly specified intended retirement age was 65, which was noted by 48% of participants who listed a retirement age. Some people, though, intend to retire at an older age, with one person commenting that he would “stay as long as I’m useful without getting too pedantic.”

The spread of retirement intention by working group poses issues for the industry. On average, Operators and Contractors intend retiring before Managers and Professionals, and it is only their younger average age that helps give confidence that this may not exacerbate skill shortages.

The following table shows the intended retirement ages.

Age of Retirement	Operators	Contractors	Managers/ Professionals	Total
Less than 50 years of age	8%	11%	0%	5%
50 – 59 years	8%	56%	3%	13%
60 – 64 years	13%	11%	28%	19%
65 – 69 years	38%	22%	45%	39%
70+ years	4%	0%	7%	5%
Don't know	29%	0%	17%	19%
Totals	100%	100%	100%	100%
Range	30 – 70	40 – 65	55 – 70	30 – 70
(Mean) Average	59.4	55.2	63.4	60.6

Analysis of the participants who provided both current age and intended retirement age data indicates that there is a mean average of 14.8 years until Managers / Professionals retire, 21.5 years until Operators retire, and 13.4 years until Contractors retire. The industry average is for 17.1 years until intended retirement. The following graph shows the intended retirement year pattern, and helps determine that the industry risk period is 2017 – 2025. This is when a significant exodus of highly skilled personnel occurs – some 45% of these participants intend retiring during this period. The movement accelerates during the next five years. By 2030, another 24% of participants in this industry survey intend retiring. (Each line represents one respondent.)



Positively, this provides a ten-plus year planning period to ensure professionals and managers are brought through the industry system. They will not be as experienced as the people they are replacing, though, and some upgrading of qualifications may be necessary if current industry players are to take on the senior roles. (As noted in

section 3.1.8, many managers/professionals are degree qualified.) Interestingly, the following section (3.1.15) indicates that some managers/ professionals are already thinking about a ‘phase down’ to retirement via reduced hours when they ‘retire,’ or moves into project work, consulting, and/or academia. As an additional aid to boosting knowledge and experience of those coming through the industry, it may be important for business owners to encourage these ‘phasing down’ managers/professionals to be involved in work that transfers their skills and knowledge to other less experienced personnel (rather than working in more isolated ways).

3.1.15 Intentions Regarding Retirement

Many participants indicated their retirement intentions. Their replies are summarised in the following table.

Retirement Intention	Operators	Contractors	Managers/ Professionals	Total
Relax, take it easy, ‘go fishing’	33%	20%	18%	25%
Reduce hours / projects / consulting / academia	11%	20%	33%	22%
Have fun, pursue interests, live it up	17%	30%	18%	20%
Undecided	22%	0%	12%	13%
Travel / move overseas	17%	20%	7%	13%
Would prefer to go now / ASAP	0%	10%	12%	7%
Totals	100%	100%	100%	100%

3.1.16 Wages and Salaries

Average wage and salary information was collected on a company basis. Only Managers/Professionals were asked their particular remuneration brackets, and many were reluctant to state them. Their replies, summarised in the following table, indicate that managerial pay is relatively high in this sector. Pay is a reason many people said they worked in the sector (see section 3.1.7). However, remuneration was also noted as an issue by many Managers/Professionals in relation to recruitment and retention in New Zealand (see sections 3.4.1 and 3.4.9). There was a general perception that in the global market, the pay is mediocre.

Salary Brackets	Managers/ Professionals
\$40,000 - \$49,999	3%
\$50,000 - \$59,999	0%
\$60,000 - \$69,999	0%
\$70,000 - \$79,999	0%
\$80,000 - \$89,999	3%
\$90,000 - \$99,999	17%
\$100,000 or above	42%
No answer	35%
Total	100%

The company data gives a more accurate impression of industry pay. However, the average salary range for managers was difficult to ascertain accurately from this data too. Some managers are hired in as consultants and are therefore on higher rates than employee managers. As such, the base salary range for managers varied enormously. Also, some managers are reported as being paid in New Zealand dollars, while other are paid out of the United States with American dollars. This said, the figures provided by the industry lead to the following (mean) average salary conclusions:

Staff Grouping	(Mean) Average Salary
Managers	\$171,000
Team leaders / Supervisors	\$112,000
Operators	\$61,000*
Admin / Support Staff	\$50,000

*this is the base wage rate,
and does not include relief rates which are paid in addition

3.2 Operators' and Contractors' Views: Training and Training Delivery

Due to the relatively small numbers of Contractors completing the survey, this section combines results for Operators and Contractors.

3.2.1 Provision of Training

Almost all participants (94%) said their company provided them with training. The most commonly cited reason for the company providing the training was safety (mentioned by 85% of respondents). As shown in the following table, 'Technical skills development' and 'Operational/process understanding' were common reasons too. 'Computer skills development' was further behind, but it was 'Cultural understanding' that was least likely to be believed to be a reason for providing training. Only one 'Other' comment was made in this section: "Accounts."

What are the reasons your company provides training?	Operators / Contractors
Safety	85%
Operational/process understanding	64%
Technical skills development	64%
Computer skills development	45%
Cultural understanding	12%

3.2.2 Interest in Training

All participants except one (97%) said they were interested in training, and no one said they were not interested in it. Forty-eight percent (48%) said they were particularly encouraged to do training, and 24% said they were required to do it. During site visits, operators further emphasised that they are "legally required" to do training.

Interest in Training	Operators / Contractors
Interested in training	97%
Not interested in training	0%
Required to do it	24%
Encouraged to do it	48%

3.2.3 Expected Benefits of Training

Participants were asked the benefits they expected to get out of training. Everyone said they expected better skills and 82% said they expected the opportunity for advancement. At 70% slightly fewer participants said they expected the benefit for them personally was a safer workplace. This is slightly at odds with the major reason participants believed companies provided training (see section 3.2.1).

Expected Benefits	Operators / Contractors
Better skills	100%
Opportunity for advancement	82%
Safer workplace	70%

A few people ticked an “other” category and made the following comments:

- *General knowledge*
- *Every job we do is different, so experience is gained daily*
- *Efficiency, reliability of using software*
- *More qualifications.*

3.2.4 Further Training Wanted

Operators and Contractors were asked if there were skills or knowledge gaps where they would like further training. Seventy-six percent (76%) of participants indicated that they did have a desire for further training and noted the following:

Examples of Further Training Desired	Number of times mentioned
Computer / IT	6
Drilling (including directional drilling, drill pipe management)	5
Business, accounting, finance, purchasing / stock control in industry	4
Stuck pipe safety and management	2
QA/HSE/Safety	2
First aid	2
Overall industry	2
During operations – greater knowledge	1
Oilfield requirements (different tooling etc)	1
Specialised wire line training re new equipment and procedures	1
Training and support on new equipment	1
Pipe stressing, structural steel design, flow and pressure, software support and administration	1
Various inspection courses	1
Understanding geothermal operations	1
Geology	1
Mud rheology	1
Management training	1
Any new ideas	1

3.2.5 Registering for EXITO Training and Accessing Record of Learning

Participants were asked if they were registered for EXITO training. Forty-two percent (42%) said they were.

When asked if they could access their Record of Learning, 67% of participants said they could, 15% said they couldn't, and 18% queried what this was referring to, or did not answer the question. Overall, these results indicate that there is some confusion regarding the Record of Learning. Given the higher percentage of people who said they could access their Record of Learning than those who said they were registered for EXITO training, some participants may have been considering their ability to access the training records in their companies when they answered this question, rather than their national NZQA Record of Learning.

3.2.6 Training Needs

Operators and Contractors were asked if they were consulted about their training needs. Sixty-four percent (64%) said they were, 24% specifically said they were not, and 12% missed out the question. Seventy-three percent (73%) thought there was a match between their view of their training needs and the company's view of their training needs. Nine percent (9%) thought that there was not a match and 18% did not answer the question.

Those who believed there was not a match between their training needs and what the company thinks are their training needs were asked to comment. Only two comments were offered: "need mechanical engineering training," and "too much touchy-feely stuff. I'd rather have pragmatic stuff, related to operating the plant safely."

3.2.7 Organising Training to Fit in With Work

In order to fit in with work requirements, an overwhelming majority of participants wanted training organised during work hours. Training organised on weekends would not be well received in this industry. Some participants noted that they have a training roster and a certain number of 'rostered days off' each year are used for training.

The following table summarises views. Some participants selected more than one answer.

Training Organisation	Operators / Contractors
During work hours	73%
Rostered days off	21%
Evenings	18%
Weekends	3%

3.2.8 Contractors' Specific Views on Training

Contractors were asked some specific questions about training: who pays for it, and whether they receive enough. Small numbers of participants in this category mean caution must be taken with the replies. Sixty-seven percent (67%) of contractors said

the employer paid for their training. Eleven percent (11%) said they were unsure whether their employer paid or they did, and 22% did not answer the question.

Sixty-seven percent (67%) of contractors replied to the question concerning whether they received enough training. Of those, 67% said they did, 17% said they did not, and 16% said they were unsure.

Managers'/Professionals' views on training of contractors is discussed in section 3.5.11.

3.2.9 Preferred Type of Training Delivery

Operators were asked the type of training delivery that works best for them. The table below shows their preferences.

Training Delivery Method	Operators / Contractors
Classroom presentations and group work	73%
On-site supervised practice	64%
Videos	36%
Distance learning (learning by correspondence)	12%

3.2.10 Mix Between Theory and Practice

Most participants (64%) thought there was the right mix between practice and theory in their training, 12% thought there was not, and 24% did not answer this question. Of the people who answered the question, 84% agreed there was the right mix between practice and theory.

Three participants offered comments about a need for more practical work:

- *Not enough hands on*
- *There is a lot of theory training, but not enough practical*
- *Hands on - visual*

Two participants noted their current lack of knowledge to be able to answer the question effectively:

- *Don't know yet, haven't done any yet within this company*
- *Haven't done any training as yet*

3.2.11 Expected Support from Manager Upon Completion of Training Sessions

Participants noted that after training they expected their managers to support them, to be able to discuss the course and answer questions, give opportunities to use the skills, check-in on effectiveness, and provide information about and opportunities for follow-up training, including time off to complete any necessary assignments. Some people expected that the training would result in increased pay and/or responsibilities, or opportunities for self-employment. These are the specific comments:

General support

- *All the support I need*
- *Good support – follow up anything required*
- *Supportive*

Further assistance

- *Answer any questions*
- *Keeping in touch to ensure the training has been effective*
- *Occasional check-ins*
- *Follow up courses*
- *Informed updates*
- *Ongoing training and experience, recognition*
- *Time off to complete assignments if required*
- *Assessment, discussion*

Use of skills

- *Opportunity to use new skills*
- *To be able to use my new skills*
- *Opportunity to put training into practice*
- *Put it into practice*
- *For it to be used as it was provided*

Increased responsibilities

- *Expansion of responsibilities*
- *Promotions / salary increase / confidence*
- *Self employed*

3.2.12 Important Qualities in a Trainer

The most important qualities in a trainer were considered to be knowledge and experience. The following table summarises the responses to this question:

Important Quality in a Trainer	Operators / Contractors
Knowledgeable	94%
Experienced	94%
Supportive	64%
Goes at the right pace	61%
Patient	61%

Two participants also noted the importance of a ‘sense of humour.’ These other important qualities were suggested:

- *Being able to relate to all walks of life and keep people enthused*
- *Coming across at my level of understanding*
- *Interesting delivery of the material.*

3.2.13 Ideas for Improving the Way Training is Delivered

Fourteen Operators/Contractors offered suggestions for improving training delivery. These were:

Logistics

- *More time to train.*
- *Smaller classes - more 1-on-1 time.*
- *Start the training on time – trainers turn up at the right place at the right time.*

Practical training

- *In the classroom I believe the more activities, the better – keeping everyone involved is a must.*
- *For myself more practical training is better as I find learning by theory very difficult.*
- *More hands on teaching.*
- *More practical. Using equipment.*
- *Onsite practice.*
- *The drilling industry has a total reliance on on-job. A training provider should be contracted to provide some theory based training to support the on-job.*

New equipment training

- *With new equipment hands on training, before bought into service. Rather than winging it. (This issue is explored further in section 3.2.14.)*

Types of courses

- *Send me on advance courses. Monitor my work and make sure I'm doing it right.*
- *Minimum of 4 courses a year.*
- *Interactive DVD.*
- *Continue to update and run continued refresher courses. (See section 3.2.17 for further discussion on this topic.)*
- *More focus on the needs or requirements of personnel in vital positions.*

3.2.14 Training on New Equipment

When new equipment is delivered, most Operators and Contractors (46%) said they were trained to use and maintain it as it was installed and used for the first time. However, as one extreme, a person noted that there was equipment on site that “no one knows how to use.”

This is the summary of when they said they received the training on the new equipment:

Timing of New Equipment Training	Operators / Contractors
Before it is delivered	12%
As it is installed and used (commissioned) for the first time	46%
When it breaks	12%
Not trained on new equipment I am required to use	9%
Not applicable / not answered	36%

3.2.15 Transfer of Learning

Operators and Contractors were asked the length of time there was between completing training and using the new skill learned. The next table summarises responses. Some people noted more than one time period, but most participants (58%) said they used the skill within 1 – 5 days. This is helpful for skill development, as learning retention is best when practice is immediate.

Time Between Completing Training and Use the New Skill Learned	Operators / Contractors
1 – 5 days	58%
A fortnight	3%
A month	3%
More than a month	9%
Other	31%

Those who ticked the ‘other’ category commented that the amount of time until skill use depended on the type of training and the job. Training for emergencies was cited as an example of training where the length of time between finishing training and using it was variable. Other comments included that they used training “straight away,” or that in “some cases it has been two years.”

3.2.16 Reviews of Effectiveness

Participants were asked if training was followed up with reviews of its effectiveness. Forty-nine percent (49%) said it was, 39% said it was not, and 12% had unusable answers or no answer to this question. It appears that to some of these participants, some training may be reviewed for effectiveness while some is not.

3.2.17 Refresher Courses

Participants were asked if refresher courses were provided at appropriate intervals (for example, for first aid). One person had already suggested (earlier in the survey) that refresher courses at regular intervals would improve the way training is delivered (see section 3.2.13), so there is some thinking that refreshers could be managed differently. However, in this specific question, 27%, a reasonably sizeable minority said they

were not provided at appropriate intervals. Twelve percent (12%) of participants did not answer this question, and 61% thought refresher courses were provided at appropriate intervals.

Refresher courses are mainly managed by the employer – 67% of participants said the employers did this, 18% said they did not, and 15% did not know or did not answer the question.

3.2.18 Other Comments from Operators

- *There is quite a bit of touchy feely training – things like visual performance monitoring (VPM) and other stuff that is not really for the plant.*
- *We used to do distillation training. We still have to do the work on the job, so the older guys help the young ones. But we used to all do it in the training room. The young guys are missing out on the theory training.*
- *The DCS modules are done to make you a qualified panel operator. They're adding more modules to the existing qualifications. I'm doing it off my own back.*

3.3 Managers' and Professionals' Views: Their Own Professional Development

3.3.1 Structure and Support for Professional Development

Managers and Professionals were asked if their companies offered structure and support for them to participate in professional development. Eighty percent (80%) of participants said they did. However, only 3% of participants said their companies did not offer structure and support; 17% of participants did not answer this question. One person noted that his organisation had a "career road map" and it was "up to the person to decide how to use it." Internal web-based courses helped in this international business covering material such as safety, code of business conduct, ethics and 'doing the right thing, legal matters, contract management. However it was noted that the courses did not cater for New Zealand legislation and that perhaps this is an area where contractors could become involved (see section 3.5.11).

Seventy-three percent (73%) said they thought they did enough professional development; 10% thought they did not. (Again, 17% did not answer the question.) Those who said they did not do enough professional development were asked what stops them. Comments revealed this issue was to do with time and location (in terms of location of both the work they are doing and the professional development opportunity). These were some specific comments:

- *Not had professional development in NZ. Mostly need to go to USA, UK, Indonesia or Australia.*
- *Time and place; I work internationally.*
- *Available time.*
- *Next to a busy work life, having a family ... to spend some time with.*
- *Time is my issue; I don't have trouble getting support. We could choose when there were no fees at university, and we could change options/courses. The skills approach now doesn't give decent guidance. People don't want to get that locked in. It's a problem with the education system. Student debt is a problem.*

Some people who said they do enough professional development indicated they would do more if industry demand on time was not so great (17% of participants).

3.3.2 Professional Development Needs

Seventy-three percent (73%) of respondents thought there was a match between what they believed to be their own development needs and those the company perceived to be their needs. Those who thought there was not a match between organisational views and their own were asked to comment. Not everyone did so. This is the information that was provided:

- *Do Adult Education with EXITO. In process of finding myself a business mentor.*
- *Funded own profession; have been sponsored occasionally by companies.*
- *Provide my own.*
- *All my professional development has been in USA.*

Sixty-nine percent (69%) of respondents said they choose to do professional development, 7% indicated that they choose some and are told to do some, and only 7% said they did professional development because they were told to. Some 17% did not answer this question.

3.3.3 Career Relevance

Only 3% of Manager/Professional participants said the professional development did not fit with where they wanted to go in their careers; 73% said it did (and 24% did not answer the question).

3.3.4 Professional Development Gaps

Managers/Professionals were asked what current gaps there were in their professional development – areas where knowledge and skills are now needed but which are not being addressed. Most participants (79%) indicated satisfaction that there were no current gaps. Of those that noted gaps, this is what they were:

- *New rig technology*
- *Training on completions technology would be helpful*
- *Understand reservoir engineering more coming from drilling completions / production engineering background*
- *Need more hands-on courses in specific business skills e.g. 6 sigma*

Future gaps were similarly difficult for participants to identify, with 73% of participants saying ‘nil,’ ‘none that can’t be addressed,’ or offering no suggestions. The most commonly noted future gap was “keeping on top of” and “catching up” technically and maintaining technical currency when organisations are continuing to introduce new technology. Managerial, project management and business skills were also commonly noted. One person said “high level computer skills” would be important. Another suggested future gaps be addressed “through networking and talking to other people - problem solve with them.” Conferences were thought to provide this opportunity.

3.4 Managers' and Professionals' Views: Recruitment and Retention

3.4.1 Difficult to Fill Roles

Some people noted that it was “extremely difficult” to recruit people in the industry. Managers/Professionals were asked which positions in the industry were difficult to fill. The following table summarises their views. (Also see section 3.7.4 for more comments on skill shortages.)

Position	% of Respondents Believing It Is Difficult to Fill
Professionals (Geologists, Engineers, etc)	45%
Technicians	41%
Operators	41%
Managers	34%
Support Staff	10%

Participants were asked to define the particular positions that are difficult to fill. They offered these clarifications and comments regarding each group of personnel:

Managers

- *Drilling Manager*
- *There is presently a great deal of drilling work worldwide.*
- *Tool pushers/night pushers, company men.*
- *Supervisors.*
- *Experienced people who are able to fill operation roles.*
- *HSE.*
- *Managers with oil industry experience.*
- *With petroleum engineering background to manage appropriately their department.*
- *Operations, drilling, geology, petroleum engineering, development.*
- *Probably not as many professionals tend to migrate to a managerial role (more difficult to get experienced managers).*

Professionals

- *Engineers (field) and Geologists*
- *Geologist, Senior Geologist*
- *Geoscientists, engineers (petroleum, operational – most type).*
- *Engineers for controlled pressure drilling, completions, artificial lift etc.*
- *Engineers in many areas e.g. production enhancement, completions, construction etc etc*
- *Engineers with relevant experience*
- *Process engineers*
- *Experienced Petroleum Engineers, Reservoir Engineers, Production Engineers*
- *Reservoir Engineers, Geologists, and Production Technologists*
- *Drilling engineers, production engineers, seismic interpreters (no NZ training available).*
- *Drillers*

- *Rig Managers*
- *Mud doctors / Mud loggers*
- *We hire in.*

Technicians

- *All types – aging workforce.*
- *Electricians, instrument technicians, fitter/welders.*
- *Trades, Electricians, Mechanics, Fitters.*
- *Experienced tradesmen i.e. electricians and mechanics*
- *Directional drillers, liner hanger technicians, completions technicians, mechanical fitter and machinists.*
- *Machinists, trades qualified.*
- *Tool Pushers, Drillers.*
- *Field technicians – prepared to go on rigs.*
- *Field positions and also when must travel required.*
- *Production.*
- *Off shore production operators, HV electricians, control room operators (if you need experienced ones).*
- *Subsurface Technical Assistants with downhole understanding.*
- *Trainers.*
- *Can get the Marine people from outside NZ. No tanker fleet in NZ so getting people with tanker experience out of NZ difficult. Also problem of no marine industry left in NZ. Our people need good marine qualifications so we can go off shore to places like India.*

Operators

- *All types – aging workforce.*
- *Senior positions. Easy to get trainees, but they tend to leave before fully trained.*
- *Skilled non trade.*
- *Lack of competent trained operators.*
- *Wire liners / Supervisors.*
- *Some electricians, mechanics.*
- *Digger operator for tripping of pipe.*
- *Field.*
- *Maintenance, rigging.*
- *Production.*
- *Off shore production operators, HV electricians, control room operators (if you need experienced ones).*

Support Staff

- *Logistics and expediting.*

Other comments

- *Company is doing succession planning. Industry recognised the need for that. Now to 2008 need 65 brand new rigs on stream.*
- *Would be keen to be able to easily bring in specialty help. Have immigration issues – often difficult to prove the skills are specialist. Immigration has been good to us, but it's a slow process.*
- *No issues finding Accountants.*
- *Transferable staff, like H&S Managers are not an issue in New Zealand.*

Reasons for Difficulty Filling Roles

Reasons given for difficulties filling roles included intermittent work, lack of training, salaries and conditions, and perceptions about the industry. These were the specific comments:

Intermittent work

- *The work is intermittent. People want security.*
- *Ebbs and flows in demand for the industry.*
- *Fluctuating industry - no full time work.*
- *Short term positions/lack of job security.*
- *People are going overseas to get permanent employment.*

Lack of training

- *Not enough training provided to ensure enough trained people.*
- *Lack of training and recruitment in the 1990s.*
- *Not enough good training and money in NZ.*

Salaries and conditions

- *Non comparable salaries in NZ.*
- *Other opportunities - better conditions, better pay, preferred work.*
- *Low unemployment, low wages compared with overseas.*
- *Remuneration package to come to NZ compared to the rest of the world that is booming.*

Perceptions about the industry

- *The industry wasn't a preferred area to work in due to 'bad' reputation (dirty industry, not reliable employment etc).*
- *Perception that industry pollutes and contributes to global warming.*
- *Perception that oil and gas is a dying industry (not helped by comments from the Prime Minister).*
- *The industry and it's quick growth rate.*

Reasons for Declining Employment Offers

Managers/Professionals were asked to note any reasons given if applicants have turned down offers of employment. While some people indicated they did not know, that no reasons had been sought or offered, the most common reason given was pay, especially in relation to competitive offers of employment. However, at least one company said they were now in the perhaps enviable position of turning down candidates. These were the particular comments:

- *Industry at high activity level*
- *A better offer - is a world wide industry*
- *Salaries compared to cost of living in NZ*
- *Not enough money offered*
- *Money*
- *Now we turn them down*

Impact of Unfilled Positions

Participants were asked the impact any unfilled positions have, and how they are currently compensating for this. This appears to be mainly through working longer hours, and giving people opportunities to work in other roles, which can be helpful and unhelpful given the level of training (time) available. Some creative solutions have worked for others: hiring from outside the industry, or overseas, and using more supplier services.

- *Extra work load on existing employees*
- *Everyone is working harder*
- *Impact - greater workload on everyone else. Not compensating for this at present. Ignoring sometimes if too difficult*
- *We work longer hours*
- *Slows operations*
- *Untrained people filling positions they do not have the capacity for*
- *Some company's attitudes don't believe in training*
- *People can work anywhere they feel like it*
- *On a couple of instances, key positions were filled with people from outside industry and trained to suit*
- *Employ personnel from overseas then there are no locals being trained in the industry*
- *Get good design engineering and fabrication in NZ resources for services to our equipment and needs. We do a lot of local purchasing here.*

For more managerial/professional comments on skill shortages, see section 3.7.4.

3.4.2 Under-Supplied Roles

Managers were asked to list the types of skills or occupations likely to be most significantly under-supplied in the future, and why they believed that.

Engineers were commonly mentioned, with reasons being that there is “not a petrochemical course in NZ and too few mechanical engineers are being trained.” Scientists were also frequently mentioned, notably geologists, senior geologists and geophysicists “Technical positions” were also specified, including “operators,” “technicians,” and “all trades.” “drillers,” “rig crews” and “rig managers” were repeatedly listed too. “Experienced,” “oil industry skilled” people were noted as being in short supply in both technical and commercial positions. Other ‘one-off’ mention was made of “wire liners, control room operators / team leaders, OIMs.”

Few reasons were offered for all these positions being under-supplied. Those offered included: “NZ has no petrochem engineering degree so we have to employ mechanical, civil, process engineers and train them specifically for what they need to do,” “not enough people around,” “oil industry is not sexy,” and “what we used to offer [in terms of benefits is] now the same in other industries.” The belief that the industry is “nearing peak oil production globally” was also thought to be a contributing factor, especially to the shortage of / demand for drill crews.

One solution was offered: “up the profile in Universities of the oil industry.”

3.4.3 Over-Supplied Roles

While some Managers / Professionals thought that no positions would be over-supplied in future, others suggested these roles: manual labour, roustabouts, roughnecks, catering, base level i.e. leasehands, lawyers and accountants, and inexperienced managers. A few people also mentioned administration and clerical roles. The only reason offered was: “drilling goes through peaks and troughs, [so there] will be over-supply eventually.”

One person suggested, “Personnel at all levels are available in China but there are significant language and cultural barriers to overcome.”

3.4.4 Filling Staffing Gaps

Participants were asked whether it would be feasible to fill staffing gaps in non-traditional ways. The most popular options were recruiting from overseas and from other industries. One person commented that it was “scraping the barrel” to recruit from out of the labour force and another that “we don’t have labouring jobs to recruit out of the labour force.” However, this is where individual companies vary, as another said, “at ground zero level we need people with a hands-on background; there are minimal education requirements.” It was also noted that “we don’t have under-represented people apply.” The following table shows responses to filling staffing gaps in non-traditional ways.

Method of Filling Staffing Gap	% of Respondents Believing It Is a Feasible Method
Recruit staff from overseas	52%
Recruit staff from other industries	52%
Recruit staff from people out of the labour force	31%
Recruit staff from under-represented groups (e.g. gender, ethnicity, age)	24%

While it was suggested “young people are not interested [in the industry], they have lots to choose from and options. Young people expect to be seniors when they start,” the following comments were offered regarding what can be done to remedy the expected skill shortages:

Industry Promotion / Image

- *Industry needs to improve its image – long term, clean future.*
- *Industry needs to realise they have an issue and support training organisations and get behind them*
- *Need to promote industry more and job availability.*
- *Promote the industry at school level onwards – 4th and 5th form – and engineering and sciences. We’re trying to overcome the climate issues and the*

fact that Helen Clark says there is no need for gas fired power stations when none of it is proven. The long term supply is actually confirmed and that's important, but we're losing the battle of convincing the politicians. And that filters through to schools where kids get brainwashed.

- *Promotion of the industry is important, but it's a tough industry and difficult to promote. The length of time away from home (two weeks on and two weeks off, or month on and month off) makes it difficult. We're mainly talking about money. There are not many industries where the average salary is \$100K (\$70K , plus allowances and bonuses).*
- *Advertise overseas.*

Training, Development, and Career Progression

- *Research future requirements and train to suit.*
- *Industry/Engineering and Sciences. Promotion at Year 10 and 11 onwards in schools*
- *Advertise internally; allow sufficient lead-time to source future employees.*
- *Staff retention is the key, with formalised succession training/career paths.*
- *Provide financial support to company who are willing to provide cadetships. Apprenticeships to young people.*
- *Go back to old apprenticeship system.*
- *Block courses from other industries; new graduate training.*
- *Increase training opportunities to train the next generation.*
- *Get repatriating Kiwis – there are thousands around the world.*

Working Conditions

- *Improve wages/conditions.*
- *Incentives, work rotation, benefits (pension).*
- *Create full time employment.*
- *People get four weeks work and then laid off. They have skills.*
- *More female-friendly job rules/conditions.*
- *Increase level of computerisation.*

During a site visit, one Manager gave additional insight into how his business fills staffing gaps:

- *“If we require additional resources, we go through the drilling companies and the contractors etc. It's really easy to find companies to employ the workforce we need. The difficulty is knowing they have skilled and experienced employees (to deliver on the promises). Training is an obvious area to build locally, but experience is as important, if not more so. Most companies would rather people practice somewhere else and bring you their experience. Plus it's an international industry. It's rare to have all people from the area you're working in. It's multicultural everywhere, and people get experience in different environments. In the industry there is the expectation that you'll travel the world and apply the trade, and sometimes they come back and sometimes they don't. Internationally there is a big skill shortage and New Zealand is a long way from a lot of places. It's hard to attract people here for any length of time.*

3.4.5 Ideas for Attracting People into the Industry

Managers/Professionals were asked to give their ideas for attracting people into the industry. Some people did not have ideas to offer, and a couple of participants thought it was not necessary – that people were already attracted because of the money, and they had to wait for opportunities to get in. Perhaps some companies are faring better than others in this regard.

More participants, though, specifically said the money was not attractive enough on its own, and that there was a need for continuous employment and good career opportunities. Many people noted the need for effective promotion of the industry in general and the opportunities it provides. Young people at school and/or university were suggested as particular target markets.

These were the Manager's / Professional's specific comments:

Promotion, Especially Targeting Young People

- *Industry needs to improve its image – long term, clean future.*
- *More background on what the industry is about, and more general skill background.*
- *Make a bit of a thing re NZ lifestyle.*
- *Promoting – highlight rewards of hard work, money.*
- *Advertise – make people aware of industry with different jobs available. Target high schools.*
- *Start at university level.*
- *Start young. High school presentations. Strong affiliations with universities (strategic) and other training facilities.*
- *Be able to give young people insight into the industry and great lifestyle and opportunity to travel and work internationally.*
- *Look at more upper bracket in schools – 7th formers.*
- *Links to universities. Tracing new grads with interesting work.*
- *Emphasise company's diversity to attract candidates.*
- *SAG is producing a video.*

Money Already Attracts

- *Money attracts people into the industry. People have to wait to get opportunity to step into industry.*
- *Wait for them to come to us.*

Other Attractors

- *Money isn't going to do it – must have continuous work.*
- *Competitive packages and reliable employment.*
- *Develop the theme of 'career' rather than money.*
- *Higher salaries, commensurate with industry profits.*
- *Incentives, work rotation, benefits (pension).*
- *Remuneration, overseas travel (OE for free), conditions.*
- *Apprenticeships/bonding. Customer reward service.*
- *Training, cadetships, travel, money.*
- *Find time off and money attractive,*

At site visits, some managers gave more detail:

- *To market industry, start at school level. They think the oil industry is a dinosaur industry and they have no idea what is available. We need a presentation for schools, because they don't even look at the industry – even university students don't realise. There is an 'oil industry is bad' mentality. We have to get them thinking about it at the start, and education at a basic level is required.*
- *Money is related to experience in this industry, and the New Zealand lifestyle is definitely attractive to overseas people with experience.*
- *Sponsorship is something we should think about. The amount going on student debt puts young people off university. The company could sponsor students through courses and then give them a job for two years afterwards at reasonable rates. But we would need to agree this across the company to agree where the funding goes. That would do it – money talks.*
- *We're doing a DVD on the drilling industry for schools. We could have a block course when kids leave school, but need to be able to assess suitability for training – whether they are mature enough.*
- *The job applications are often difficult to complete. They lose people because the forms are not user-friendly.*
- *Internationally there is a significant reduction in the numbers of people attracted to the industry. It's a boom or bust industry – all on or all off. The pay rates are not significantly different from other industries any more. New Zealand probably suffers from that, plus there's not been a lot of industry here. Combine all that and you get lack of people and awareness of the industry.*
- *Training feeds the international market: companies train people and then they go. They should expect this, the same thing happens again. The company should expect it and look more than locally for its new people. Those in the industry accept this is what you have to do.*

3.4.6 Attracting Women to be Operators

Those Managers / Professionals who worked in organisations where there were not even numbers of men and women were asked how more women could be attracted into the operator/hands-on side of the industry. People generally acknowledged the difficulty, with one person suggesting “a lot of big companies are masters of their own demise” in this regard. The type of work was noted as a contributing factor to the difficulty; “it's heavy and dirty. Some women could do it.” Another person offered “When we leave I am taking 70% of locals with me (New Zealanders) i.e. two Derrick hands, Assistant drillers.” It is not clear, though, whether these are female New Zealanders.

Coming up with solutions to attracting more women was not straight forward. Suggestions were made to “publicise the industry to women,” and a couple of people said it was important to “show them what it's about and the type of work involved” “and the skills needed.” Letting girls know about the industry in high school was also noted.

Featuring more women in recruitment advertisements was offered as an attractor of both women and men to the industry. Similarly, recruitment videos which show a balance of sexes was thought to be a good idea.

Within companies, it was noted that “no discrimination needs to be promoted,” together with “family friendly policies.” One person said the industry “has moved from being very male oriented to being tolerant. There is no discrimination. Ten years ago there were no women’s toilets and shower blocks on the rigs, and now there is. Shell Todd has lots of women on the rigs in petroleum, production and drilling engineering roles.”

Increasing the level of computerisation and automation was also thought to make the industry more attractive and feasible to increasing number of women. Ultimately, though, one person suggested that “they have to do an appropriate degree and have the interest of the industry at heart to stay and enjoy it.” Perhaps a degree is not always necessary in operator roles, but the sentiment is important and could perhaps be built into the suggested promotional work targeting women.

3.4.7 Career Paths for Operators

Participants were asked if there was a clear career path for operators in the industry and whether there should be. Forty-one percent (41%) of participants thought there was a clear career path for operators, with another 3% suggesting it depended on the company. Forty-nine percent (49%) did not answer the question. Similarly, 41% thought there should be a clear career path for operators, but 59% did not answer the question. The very high non-response rates to these questions perhaps indicate not much thought has been given to this potentially important subject.

3.4.8 Apprenticeship System

Managers / Professionals were asked their views on whether an apprenticeship system should be organised for the industry. Forty-eight percent (48%) said “yes,” 10% said “no,” and 42% did not answer the question.

These comments were offered:

- *The rig crew has career progression, which is in itself the apprenticeship.*
- *NCEA is a problem. We have to make university more elite. Some people prefer trades and we definitely need apprentices. We need a lot more of them and more formalised. It’s about hands-on work. They need to learn under someone whose done it before.*
- *You can’t have an apprenticeship system when the numbers are not there. Some aspects of ‘exploration support’ can support an apprenticeship system – e.g. instrument technicians who are required in oil and gas as well as dairying, methanol laboratories and anywhere where there are automated processes. But not wire line or cure test – there’s not enough numbers. You could if oil exploration was constant, but it’s not. It goes in fits and starts.*
- *A government funded apprenticeship system would be a good thing to do – tying it in with day release etc. It has to be for the right people at the right levels.*
- *I’m keen to have the old apprenticeship system in place.*

- *Yes, we need more of them.*
- *Yes, go back to old apprenticeship system where trainee working alongside journeyman.*
- *Yes, like the old system.*
- *Go back to old apprentice system.*
- *Yes - a nice idea but be aware that this is an international industry, so not easy.*
- *Not necessary for my company (sort of in place). But may be useful.*
- *No because of lack of continuous work - the paperwork is horrendous.*

3.4.9 Improving Staff Retention

Participants were asked for their opinions on what can be done to improve staff retention. In some of the surveyed companies, retention was “not a problem.” One comment was that “retention is not a major problem for a small company with such varied roles.” However, others wanted to see some improvement. One person suggested there “should be some sort of benchmarking and standards to achieve a certain level” of retention. It was considered that “a lot of companies have taken a long time to get over the 1990's attitude, where they cut staff off at knees.”

Retention ideas again centred around providing stability in terms of continuous employment and appropriate pay, opportunity and recognition. However, one person cautioned, “with the inconsistency of industry, we can't retain people. It [the industry] would break and fall down.” Another said, “There are so many jobs in oil around the world. If people are single with no kids, then they'll leave New Zealand. Once they are married with kids, they stay put, or we import people. But often their wives don't like it and so they want to leave.”

These were the other specific suggestions for improving retention:

Valuing People

- *Get staff to be more involved in company become part of it, recognition for achievement - open dialogue with staff.*
- *Valuing people and communicating that value/appreciation of the job they are doing. - It's not just the money that gets people to stay (although my bosses say differently).*
- *Ensure conditions are in place that enable employees to feel satisfied with their workload and outcomes.*
- *Get their 'ownership' for what they are working on.*
- *Incentives, work rotation, benefits (pension).*
- *Train them well - offer perks.*
- *Promotion, responsibilities, appreciation merit/bonuses, fair treatment.*
- *Be a good employer.*

Retaining People Through Low Work Periods

- *Continued work programmes.*
- *We don't retain people. I carry out redundancies with my employees about five times a year as work stops.*
- *Retain staff through low periods.*

Pay and Conditions

- *Money is important.*
- *Pay and conditions.*
- *More flexibility in contractual packages - with regards to work time, salary, annual leave, bonus schemes, etc.*
- *Improve wages/conditions.*
- *Salary competitiveness. It is a market and NZ firms need to realise this – not make excess profits and pay poorly.*

At site visits Managers/Professionals noted further thoughts about retaining staff:

- *I'm teaching new guys on on-job training. Turnover is high. We have new guys all the time. There is a lot of responsibility on the floor. We have constant talking to help us all learn.*
- *Lots of guys don't know what they are in for (when they come into the industry), and when they find out, it's not their thing.*
- *Continuity of work is crucial for retaining staff too. The market dictates the continuity of work. Guys will jump from rig to rig to chase the money. Then when it's real busy, that's when the green-horns come in. They lack experience, work takes longer and people get hurt. It's hard when it's like that.*
- *Team spirit is important. If companies don't look after guys, morale goes down.*
- *The plan in this company is to keep rigs going to give continuous work. We need to design better shift and leave systems so there is no favouritism to crews – therefore nobody losing money.*
- *The whole problem is we can't get the industry cooperating. It's legalistic, and joint funding is very difficult.*
- *The desire to drill is there. You have to tell people you are bringing it in as a career. The problem area is the middle age gap. We need to replace the young guys when they leave. Employers are not doing enough to sell this as a career – in Australia the work is permanent.*
- *The guys need to be told there is a career, and its up to industry to organise ongoing work for the guys.*

3.4.10 Succession Planning

Only 28% of respondents believed succession planning was done adequately in their company, with a further 3% saying it was “okay” in some departments, but “very poor” in others. Twenty-one percent (21%) said it was not done adequately, and 7% were unsure. Forty-one percent (41%) of Managers / Professionals did not answer this question. These results are concerning, given comments throughout visits and in the rest of this survey that the industry suffers from the current (international) skill shortages. Comments from a couple of companies indicated that while succession planning is done adequately it could still be improved. One such company shared that “We promote from within. Have done this too quickly, because of lack of people.”

Those who said that succession planning was not done adequately in their company were asked what should be changed. Some people were unsure, and others offered these suggestions:

- *If one university geared up for post grad in Petroleum studies that would be great for everyone.*
- *Forward planning.*
- *Implement and maintain a plan for all positions at foreman level and above.*
- *Better management.*
- *More communication.*
- *Commitment to carrying out.*

It was also noted that “Everyone has a part to play. – My strategy is to train process operators from zero-skill base.”

3.5 Managers' Views: Training Issues

3.5.1 Operator Training

Managers / Professionals were asked if enough operator training was being provided in their companies. From the responses, many people did not know or said the question was not relevant for their companies (35%), which did not employ operators. A further 24% did not answer the question. More specifically, then, 31% said their company did provide sufficient operator training and only 10% said they did not.

When asked if they were getting the results they wanted from their operators being trained, 35% said they were, and only 3% said they were not. (Again, this question was deemed “not applicable” by 35% of respondents, and a further 28% did not answer.) One participant said, “We can’t afford to train them when they work short term.”

Participants were asked where the results of training are shown most. Although some Managers / Professionals said they didn’t know, most people who answered this question (63%) thought that training results showed through all of “increased productivity, taking initiative, customer service, and improved safety.” One person thought these areas were relevant too, but that customer service was not an area where results showed. Another suggestion was a “safer workplace, and traceable work.” One person offered that Technical Expert (as opposed to Operator) training results showed most in “analysis of complex projects, and new techniques.”

These comments were offered about operator and operations training during site visits:

- *The impression I get is most training is HSE.*
- *The best place for training is on the job. Companies will have to provide this.*
- *The biggest hurdle is continuity and fluctuations. There are transferable skills in a general sense. But the work is unique, so not very transferable. It would transfer to water wells construction geothermal.*
- *There’s lead time require to train, but we need that done quickly because there’s a shortage of people, so university people (rather than technical people) may have a better handle on technology and be faster to train.*
- *Some places won’t do training as crews become redundant 4 – 5 times a year.*
- *We have good on-job training.*
- *People get training but poor sods have nowhere to go. In four years they only work one year total.*
- *We put people into more skilled jobs after 1 year on job when in fact they should have been doing the job for at least 3½ years before being put in this position. It scares the hell out of me, we lay too much on these people. We need regular work.*
- *The industry is a bit small in New Zealand. On-the-job training is crucial. We have a trainee on with a full time Operator. It has always been like this.*
- *It’s hands-on, labour intensive work that requires practical skills. We have working class people, some with literacy problems – learning to read and write and numeracy. We can’t do the training by computer, by sitting them in front of a screen.*

-
- *Theoretical training is too often thought of as sufficient. (It's legislation driven.) Guys turn up with credits, and often the credits don't match the time spent in training, which is a concern – especially when they get preferential employment treatment. The industry has its own internal standards. It's a men's industry. The ITO needs to take responsibility for this. I have talked to them about it. It destroys faith in the industry. We need consistent standards in training.*
 - *Teach the core generics, but they must learn on-the-job as well. Block courses back up what is learnt on-the-job.*
 - *They need to work in isolation and team, and in confined spaces, all with vapours. They are very transferable skills.*
 - *Learning how to work with other people is critical.*
 - *Life skills need to be taught.*
 - *There is a lack of people caring about trainees in training. Training needs to have a worthwhile result. If you want people to work, you have to work with them.*
 - *Too many providers do not do thorough training.*

3.5.2 Professional Development

Managers and Professionals were asked if they thought enough professional development was being provided for those working in the industry. Unfortunately, 52% of participants did not reply. Of those who did, 79% thought there was sufficient professional development, and 21% did not (38% and 10% of survey participants, respectively).

While some people did not believe there were any barriers to adequate provision of professional development, others noted impediments as lack of continuous work discouraging investment in training; money; and availability of people for training. One person commented, “Some companies are too mean and don't care for their employees.” However, the most commonly noted barrier was lack of “time”, given “the pressure of work operations.” Interestingly, some people thought the availability of courses was an impediment, while others noted that courses were available, but their far-flung location was the issue (“KL, Singapore or even Aberdeen”). It was also suggested that individuals' self-motivation and abilities to promote themselves for professional development may be a barrier. Having a “good boss to promote your requirements” was thought to be important.

The following comments on professional development were offered during site visits:

- *Because our project is short term, there is not lot of professional development, but in a typical oil company regular training is provided. There is little university education after the first degree, but usually consultancy organisations provide training seminars and they are in the industry.*
- *In big companies they have formal professional development schools and you are on career ladder. A lot less goes on in smaller companies (like those in the New Zealand scene). It's on the job training.*
- *The industry has a professional organisation. It's very active and involved with other organisations. It offers networking, distinguished lecturer series.*

3.5.3 Finding Good Trainers

Managers and Professionals were asked for their views on whether the industry would be able to recruit enough good trainers when training expands. Again, a lot of participants (65%) did not directly answer this question, although some did offer suggestions for how trainers could be recruited. Twenty-one percent (21%) thought it would be possible to recruit sufficient quality trainers, and only 14% said it would not. Fifty-nine percent (59%) of participants thought that trainers would need training in how to interest and motivate trainees.

In terms of what could be done to recruit enough good trainers, it was noted that “a lot of trainers are close to retirement, so there needs to be better succession planning for training.” Other suggestions for recruiting good trainers included ensuring adequate pay (“pay will be an issue”) and incentives to stay in the industry, combining the role of user and trainers, encouraging “senior referees to become trainers,” hiring in specialist trainers when they are needed (rather than having in-house trainers), and recruiting overseas. Another comment was that “universities have not kept relevant staff. [It’s important to] look at industry needs versus training provider needs.”

3.5.4 Catering for Unique Workplace Work Processes

The survey stated that sites have different work processes unique to the individual companies. Participants were asked to comment on how companies/trainers manage this.

While it was suggested by some participants that this is “not such an issue; our industry is fairly consistent” and solutions are “an individual thing,” most respondents suggested “site specific training” overcame this matter. Others suggested that “the most stringent requirements are taught, then adjusted to suit” the particular workplaces on site. “Trainer/client partnerships” were thought to be helpful, as well as, for the international companies, using “company trainers from overseas.” It was further noted that the “key component is people skills as trainers,” and that “the quality of NZ trainers is high.”

3.5.5 Ensuring Trainer Currency With Industry Standards

Ensuring outside trainers/consultants keep up-to-date with new industry standards was also explored in the survey. It was noted by one Manager/Professional “We have excellent feedback from our employees. Training in NZ is way up there internationally. NZQA standards really help, as people get recognised.”

Overall many participants were at a loss to make suggestions for how it could be ensured that trainers/consultants keep up-to-date with new industry standards.

Those from training organisations suggested they needed to “try and maintain our Industry Leadership” to stay current. EXITO was noted as a key player, and it was stated that trainers “are vetted by ITOs so they need to [be up-to-date with the industry standards]”. A couple of straight talking respondents suggested currency “should come from companies with high standards re training” and that remaining up-to-date will be “driven by market supply and demand to remove the weak.”

Other participants offered pragmatic suggestions for ensuring trainers/consultants remain up-to-date with the industry standards:

- *By regular visits offshore and to onshore installation and being aware of new companies.*
- *Attending conferences.*
- *Consultation and relationships via research grants with universities.*
- *Training.*

3.5.6 Training Time

Managers / Professionals were asked if training should be delivered in 1 or 2 day modules, or in longer modules. Fifty-six percent (56%) of those who responded said 1 or 2 days (“the shorter the better”), with the remaining 44% saying longer (“longer for out of town courses”). Some people, though, did not answer this question, noting comments such as “as required.”

3.5.7 Supervisory and Management Skills

Participants were asked what skills related to managing people, work relationships and leadership were needed for those in supervisory and management positions. The importance of investigating this was reinforced with the observation from one participant that “technical people can be poor people managers and poor motivators – they need some management and personnel skill training.” Unfortunately there was also the perception that “lots” of such training was needed, “but we can’t afford to do this.” Other larger companies were more fortunate and said that training in these skills was run by their HRD department. For these companies, “teaching people how to be better leaders in the field” was a priority. There was also the suggestion that “standards” needed to be set “by government, OSH or somebody wishing to be accountable.”

Managers / Professionals suggested the following skills were necessary for those in supervisory and management positions:

- *People skills.*
- *Man management, time management and moderator training.*
- *Off shore we have marine/maintenance and production. They need to work well together.*
- *Ability to communicate and listen.*
- *Communication, Safety Leadership, Front Line Field Supervision Training.*
- *Communications, management, dealing with various situations e.g. conflict, negotiating, motivation, leadership etc*
- *Communication, interpersonal skills, general supervisory skills.*
- *Handling conflict, communication and leadership skills*
- *Learn softer side of supervising people to motivate and get them to deliver.*
- *Interpersonal skills, prioritisation, accepting differences.*

Thirty-eight percent (38%) of Managers/Professionals thought that training was

needed for supervisors and managers in how to organise a site so that jobs hold the interest of operators; 17% did not, and 45% did not answer this question. One person commented, “No one gets bored in our industry. There’s always something happening.”

3.5.8 Proportion of EXITO and Non-EXITO Training

Managers / Professionals were asked to indicate the percentage of their training that was EXITO training, non-EXITO training run by their own staff, and non-EXITO training run by outside training consultants. There was not a high response rate to this question: 41% of participants responded in one or more sections (with not all categories completed and not all percentages adding to the total of 100%). One person remarked “I have no idea what EXITO is.”

Answers were very variable. The following table summarises the statistics of the replies.

Type of Statistic	EXITO Training	Non-EXITO Training run by Company Staff	Non-EXITO Training run by Outside Consultants
Range	0% – 90%	5% – 95%	5% – 95%
Mean average	32%	48%	33%
Mode	0%	5%	10%
Median	0%	50%	25%

3.5.9 The Future of Environmental Management Training and Health and Safety Training

Managers / Professionals were asked what they thought was needed for future training in environmental management, and health and safety training. Many respondents indicated the same general answers for both disciplines.

While some people thought there was an “increasing requirement,” “needs to be more of this” and “more commitment at all levels,” in relation to both topics, others believed they were “already covered” and “covered internally.” Similarly, while some thought “awareness” was important, they also argued for “nothing formal when we have experts in-house.” One participant noted, “Again, training is too costly, when we work on and off.”

In general, people were “not sure” about what was specifically needed for future training in environmental management. One person suggested “all staff” need to be exposed to the concepts and another that “knowledge of environmental issues and regulations that affect our industry” is important.

In answer to both future environmental management training needs and future health and safety training needs, setting standards was mentioned by a couple of respondents (“set standards and implement,” and “set standards for company personnel to achieve

standards set by DOL and Government”), and one person suggested a particular emphasis on “Hazard and Effect Management Process (HEMP) and safety cases.”

Participants were similarly unsure about what was specific needs there were for future training in health and safety. Again, one person suggested “all staff” need to be exposed to the concepts, and others that “job and site specific H&S training” and “application to industry” were required. Another thought “we already have very good in house training,” and another that “this is reasonably okay at the moment, but don’t lose focus on it.”

Specific health and safety training needs that were highlighted were “incident investigation and preventative measures,” and “connecting the office with operations. Increasing the understanding of office staff and technical experts so they create the operating environment for front-line staff.”

Interestingly, Private Training Providers thought these questions about environmental management and health and safety (and actually several others, including supervisory and management skills, professional development, ensuring trainer currency with industry standards, what EXITO should be doing) did not relate to them, but only to industry. To outsider observers it might appear that when these views prevail, the relationship between such external training providers and industry is a master-servant one, rather than a business partnership. Surely they have a very valuable perspective to add to the state of training and training needs in the industry, yet some of these companies or their trainers seem reluctant to voice it.

3.5.10 Staff Literacy

Managers were asked for what percentage of staff literacy was a problem. The table below summarises responses.

Percentage for Whom Literacy is a Problem	% of Responses
Nil	17%
1% – 6% / a few	17%
10% or more / it’s a big problem	31%
Don’t know	7%
No answer	28%
Total	100%

Overall, then, literacy is a known issue for 48% of the Managers/Professionals taking part in this study. Actual percentages for whom staff literacy is perceived to be a problem ranged from 0% to 60%, so this is obviously a bigger issue for some companies than others. Some commented that literacy is a “huge problem for trainees” and that “I have worked with lots who can’t write or read [but it] is better than it was.” It was suggested that “they need computer skills. Improvement is needed in education.” Literacy was a relatively small problem (5%) for one participant who offered “English is not their first language.” Another noted literacy issues at “20%, but can still do the work”. One person, who said literacy issues were at 30%, commented the situation was “not as bad as it was. We are screening that more today than we did in the past, and assisting people with literacy problems.”

3.5.11 Contractors' Involvement in Training

Participants were asked how contractors could become more involved in participating in training. One person noted “ they are involved” and another queried what was meant by ‘contractor’: “What’s a contractor in this regard? ‘Employee’ on term contract or ‘service provider’!”

Others offered these suggestions:

Processes to support

- *Company needs to have a set process on a training matrix that industry needs - agreed between companies. There is a lack of consistency e.g. Drilling Units are on framework, but drilling companies not following it. They don't give opportunities to their employees.*
- *Have a good contractor support base here - small but capable. As a company we need to work more closely together to plan i.e. regarding shutdown, so we are not short of contractors.*
- *By having more consistent work available to justify ongoing training costs.*
- *One-on-one tuition.*

Require training

- *Make it a requirement.*
- *Legislation.*
- *Not needed, due to internal methods "I learn" web-based. Possibly NZ Legislation, H&S and Petroleum mining.*
- *Gain industry experience.*

Paying for training (also see section 3.2.8)

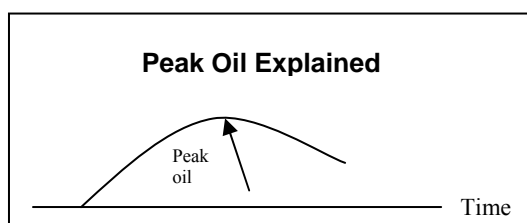
- *Pay to train*
- *Their companies need to pay to train their staff*
- *They need to meet the same safety requirements as employees at the very least. Perhaps employers could involve contractors in training for cost of training? But also don't want to train contractors in your methods when they also contract to competitors ...*

3.6 Managers' Views: Industry Predictions

3.6.1 Industry Growth

Participants were asked how industry output is expected to grow over the next 5 to 10 years. Answers were variable. While some people thought it was not possible to predict, others suggested contraction, still others predicted staying the same, and some thought growth would occur but were not usually specific about the extent of it. Perhaps this is partially related to lack of clarity of industry output, as one participant commented “industry output in terms of what?” One person suggested that the industry “needs staff” to be able to realise any growth potential.

At site visits, several people talked about “peak oil.” This diagram was offered, together with the comment that “some people say we’ve passed the peak; others don’t think we’ve reached it. [Certainly,] it is getting harder and harder to find oil and gas and the cost of finding it is increasing, and the price is going up as a result.”



These were the comments from people who predicted industry contraction, plateau and growth.

Contraction

- *No bigger than now – if anything may be smaller (in NZ).*
- *Back to size of early 1990s.*

Plateau

- *Same high level.*
- *“Industry output”??? Plateau is good*
- *Can’t see growth. Oil is running out – many idle rigs in Canada – can’t see it growing much.*

Growth

- *Will increase, but don’t know how much.*
- *Contract is 5 years, then 5 year renewals after that. The field is performing very well (in NZ).*
- *Discovery of new fields.*
- *Very significant.*
- *Considerably.*
- *About 20% new growth per annum in our company over the next 5 years – as a combination of price and activity uplift. Industry?*
- *About 30%.*
- *Hopefully double.*
- *In line with rest of world.*

3.6.2 Technological Advances

Managers / Professionals were asked what technological advances they thought would impact on the industry over the next five years, and what needed to be done to ensure training is up-to-date with those advances.

Some participants thought there would be no technological advances in the next five years (14%). Others said they were uncertain what they would be (7%, although this may be higher, given that 45% of participants did not answer this question).

These are the technological advances that were suggested:

- *Lots and lots of technological advances; changes one year to next in improvements. In 10 years we won't need local labour. We will be automated – it's already happened in Norway.*
- *More information coming in. Will need less people but more qualified material, mechanical.*
- *Automation.*
- *Continued growth of advanced software.*
- *New drilling technology (laser, plasma) and more hi-tech intelligent completion developments.*
- *Deeper drilling, advanced directional drilling, well injection/pressurisation.*
- *Deep water extraction (Great South Basin and Taranaki). Renewables growth, but there will still be a use and market for gas and oil. It will just become specialised. Market forces control it. Climate change is not a technological advance, but I'm including it because it has a huge influence, including the politics of it.*
- *SMART Completions – downhole / production data integrated into an expert system to maximise reservoir output.*
- *Cheaper deep exploration, better exploration techniques.*

3.6.3 Ensuring Training Keeps Up-to-Date

To ensure training is up-to-date with the advances, it was noted, “We have to ride it. I don't think there's anything an external training organisation can do. Industry will have to train itself.” Participants commonly thought investment in research and development would assist, as well as making sure trainers and training material are current. Currency could be achieved by trainers working alongside the introduction of the new technology, developing the learning resources.

These specific suggestions and comments were offered:

- *Research and development.*
- *Innovation and technology development.*
- *Increasing subsidy (tax relief) for R&D. No tax for investing in start up companies in particular sectors.*
- *Pay for trainers to go out in industry.*
- *Ensure trainers are adequately rewarded and stay in the industry.*
- *Identify training needs aligning with role expectancy and do it.*

- *Use different and new training packages.*
- *Make easier / user-friendly software packages.*
- *We need to train for what we've got. We haven't done training on specific equipment. Need tech training doing it as we commission the gear. We have a company training and development strategy.*
- *Training as advances made – training for all relevant people.*
- *Prepare training material and schedules as prepare technology.*
- *The companies need to train with new tech.*
- *Specific training, but these will typically be organised by the operating and service companies.*
- *Bolstering university course in science/engineering.*
- *Universities are out-of-touch and don't have appropriate staff. (See section 3.6.5 for a different view expressed at site visits.)*

3.6.4 EXITO's Role by 2012

Managers / Professionals were asked what EXITO industry training needed to be doing by 2012. Seeing as one respondent said, "I have no idea what EXITO is," and 41% of participants did not answer this section, developing industry engagement and awareness is one area of need. This may not be universally popular, as at least one participant thought there was no role for EXITO: "Nothing here to interest our company. We managed well enough before EXITO and will just as well when they go. The 'industry' created the dearth of skills and can just as easily bring it back." Others saw restricted roles for EXITO: "We're best to keep doing our own training. EXITO has a role to play more in the labour side of the industry, but industry is doing that itself with the likes of the New Zealand Training School (Taranaki Drilling School)." Similarly, other participants thought it would be important for EXITO to reduce training bureaucracy.

On more positive notes, participants thought EXITO needed to be promoting the industry to help ensure labour supply; monitoring training companies to ensure provision of quality, practical training; helping with specific industry needs; and generally building on the good work done to date.

These were the specific suggestions from Managers / Professionals:

Reducing bureaucracy

- *Have less bureaucracy and make system simpler to use.*
- *Concentrate on the training and less about the money?*

Promoting the industry to ensure labour supply

- *Concentrate on labour supply side of industry.*
- *Identify roles good for women to do and publicise them in training institutions. Seismic acquisition side has quite a lot of women working in it. Recruitment - it's all word of mouth in Taranaki.*
- *Note: 10,000 Kiwis working overseas as oil people.*
- *Concentrating on long term "careers" strategy.*

Monitoring training organisations: practical training

- *Make sure training which is not done with integrity is stopped as some training companies are ripping off trainees. EXITO is not addressing this.*
- *EXITO puts too much emphasis on theoretical training, but is not sufficient. Need much more practical training (training is legislation driven) not learner driven. Often the credits don't match the time a trainee spends in training - this is a concern. e.g. have seen trainees records of learning. Sometimes they have done a Unit Standard of 220 hours and completed it in a two-week course. So some training companies are not being honest or working with integrity. This is, in my book, fraud. This destroys the industry and destroys faith in the industry. But when trainees like this apply for a job they get preferential treatment. EXITO needs to produce Training Manuals which are recognised by the industry and which are done to a standard so consistency of training and learning happen across the industry.*
- *EXITO doesn't produce Training Manuals, but there needs to be a recognised, moderated standard for people to be trained to the same level.*

Helping with specific industry needs

- *Competency for OIM's/CRO's in dealing with emergencies off shore.*
- *See if you can get buy-in for an E&P specific apprenticeship. See if a local tertiary institute will run a diploma or similar course in E&P technology.*
- *Apprenticeships, HEMP and safety case training, industry conversion courses.*

Building on the good work

- *They are doing extremely well. Industry must get on board with them i.e. to understand work place assessors and what EXITO offers. Operator companies should challenge the drilling companies to get on board with training. There are people getting promoted too quickly - companies must spend some money on those people and go through the competency/training process. They must address the issue. Petro and drilling attitude change is needed - too much of 'it won't happen to me' scenario. We must look for opportunity to improve the skill level of staff by spending some money.*
- *What they are doing now is great, continue to communicate well with employers - give us more feedback.*
- *EXITO do a good job, but need a better understanding of the industry they work with. Visit rig locations and sites. Look at what we do. - Realise 14 days on and 14 days off and allow for that in the way they organise training. Is not a static location - can't do that in this industry. Need to get their head around that.*
- *Keep up with technology. Broaden range of courses covered by EXITO.*
- *Keep pace with the industry.*

3.7 Managers' Views: Training Comments from Site Visits

During site visits, managers / professionals offered many perspectives on training and the industry in general that were not specifically queried in their survey. This penultimate section of the Hydrocarbon Drilling Industry report summarises those comments.

3.7.1 Polytechnics and Universities

- *This is a great business - good ops but good people - they need a career path. Company need to validate these people. Need to be with WIT, not company based.*
- *There is a lot of politics in this game. It can't own knowledge, needs to be with Polytechnics. Always the industry will be fluid, PEPANZ needs to talk to careers people to put oil on the map.*
- *There is a lot of uni/professional societies/industry interaction. They're not an ivory tower. They put their students into projects.*
- *We registered interest in a local course – 2-4 week placements, and we've registered people for it.*

3.7.2 Pragmatic Approaches to Training

- *Training is becoming narrow in focus. There's no big picture, and unit standards don't help in that way.*
- *Training is currently geared towards big companies*
- *Hands-on training is most important.*
- *On-job training for lower levels on rig: roustabout, roughneck, deckhand, assistant driller, driller. Also basic fire fighting, helicopter survival.*
- *I'm in favour of the industry taking a broad view of training. There's a shortage of junior and middle ground people and one company can't address that alone. One very large company has been the main operator in the country, and many – even most – of the other companies have employees from this company. As an industry, we need to stop relying on one company to train them up.*
- *This questionnaire is sensible and germane, but the point is irrelevant. For example, a wireline hand – it's an art form. You can't train him in university or with unit standards. He needs on-the-job help – there's a degree of art and skill. Most don't become good, and they go and do something else, which is why they are hard to find. The current system doesn't help because people aren't prepared to have trainees on-the-job. That's mostly an insurance issue after 'Pipa Alpha' when the rig blew up, and the industry tried to push the first \$20 million of cover onto the service providers. Insurance cost rocketed with huge excesses if people have trainees. So it's not all the industry's fault. Growth in welfare-ism in the western world is a major component that feeds into it.*
- *To train people we sent them to Canada and USA. Unit standards just add another layer of compliance to our own training. They are unnecessary, and you make your own judgement on someone's skills.*
- *We have a training matrix (Australian), and a career path.*

3.7.3 Availability of Work

- *There are no permanent station off-shore rigs, because the market is not continuous. Can continuous be viable? We need Government flex to gain their permit requirements – it's not concurrent but staggered.*
- *At the exploration stage, the Company centralises the functions, and has three or four staff – all professionals. Then when work starts we get numbers on the rigs and vessels. We use consultancies or a project management company to provide the staff.*
- *Turnover in our business is 25-30%, because overseas the money is better, and by the time they go they are trained and experienced. We have to accept we're a training ground. But we can't train them fast enough.*
- *We're importing people from overseas – we've had four new managers imported from overseas this year.*
- *We're not sure yet if the trained people do eventually come back to us.*

3.7.4 Skill Shortages

- *Once we're working more it will be difficult to find operators. People already know the lifestyle in New Zealand, the quality of life, so we can attract staff that way.*
- *We are experiencing skill shortages. The worse problem is competing with the mining industry, it is in growth mode and they poach people from us.*
- *Our need for people is exploration dependent. The industry is aging, so for people who join the industry, they don't need to worry about having no job – as Australia is a good option.*
- *The issues for this company are clear and understood. We don't have operators – we're purely exploration and production – but we're lean on geoscientists, engineering, scientists and corporate.*
- *The significant gaps are for engineers, geoscientists and project managers with 15 plus years of experience, and it's rapidly getting worse internationally. International surveys suggest the average age is about 50 years – this is including the younger ones who are largely in support areas, so it's really worse. The senior geo scientists are all 55 plus in our company. They have been working in the industry their whole career, and they've earned enough to retire at 50 – 55. All this has obvious effects on recruiting, retaining and salary expectations. It's a worldwide issue. We all know why it's happened: it's a cyclical industry, we laid off plenty of people at various times, and we've not build for the future. The industry lost favour during the 1990s, and people went to IT and other more attractive industries. It was and is seen as a sunset industry, especially here in New Zealand where people want to go down the environmental ways. But predictions are not for contraction. For example, in the oil side of the business, currently we're producing 86 million barrels a day. The forecast is for 120 million barrels per day by 2020. To deliver this requires industry experts who aren't there. We're a small subset in New Zealand and in our company. But this is a well understood industry trend. So it is not really a sunset industry. Demand is there worldwide, in the emerging economies especially. It's a well known fact*

that if you want economic growth, you need energy. The preferred international energy is gas and oil. In China there are 40 million people in the emerging middle class who are deciding they want cars instead of bicycles. That's huge fuel consumption. And that does not include India and Eastern Europe.

- *I know of one company that is taking mathematicians and training them in-house to be geophysicists. That's okay if you've got a workforce of 30,000, but we're much smaller, so we can't carry that sort of training.*
- *In New Zealand we don't train people across those industries. We have to recruit from the worldwide market, but there's a shortage worldwide.*
- *We're not helped by immigration – they decide there is no shortage of geoscientists in Wellington, only in Auckland and New Plymouth.*
- *At the level we're working, it's twenty years from when people go to university until we need these people.*
- *The problem is well understood and it creates enormous wage inflation and expectations. All our managers earn 6 figures and are way over the highest salary in this questionnaire.*

3.7.5 System Bureaucracy

- *There used to be two attractive reasons to be in the oil industry: firstly, equal time (seven 12-hour days, and 7 days off) and, secondly, money you could not comprehend. Nowhere else could you work where this was the case. In the 'old days' they paid a day rate – handsomely. You risked your life, liver, reproductive capability to do it, but you were young and water-proof and the money was amazing. Now all the money is sucked out by a layer of people who don't do anything for the industry, except protect the big boss – like safety writers and liaison people. They're draining money from the top and keeping it from the people on the front line. So now it's just a job and the pay is not as high, and the career is not worth it. 'Sir's army is draining the money.' Those in the industry aged 50s plus know the 'old days.' Overnight the ability to take trainees to the job was removed – they wanted them to have ten years' experience. I know people who have been taken out of retirement twice, because they have the experience. The only way to get the numbers back is to let the trainees work. Trainees are good. Trained used to earn, say, \$500 a day, and it was \$250 for the trainee and that was the pay-back of the apprenticeship. Then the government interfered and destroyed the apprenticeship system. Small employers found it too hard.*
- *Compliance is costly for the industry eg ERMA, HASNO. In fact, there's ridiculous compliance that just adds cost. People are getting sick of it and leaving. For example, we have a dinner to discuss compliance safety posters. 'We live it!' People are acutely aware of imminent death and constantly alert. We're not distracted by 'frippery, faff and nonsense' of signs having to be in certain places. The industry has to take back the command. And 'stop cards' are another example of 'idiot nonsense.'*
- *The issues are firstly, getting people trained and secondly, for us service providers to the industry, getting paid by our customers to do that.*

3.7.6 The State of the Industry

- *'It's entirely and utterly the fault of the explorationists' – the likes of X,X,X and X!!. The current predicament is of their own making and abetting. They've continued to foster this growing bulge of people between 'Sir'(in Houston) and oil out of the ground. They insist on competitiveness and competitive bidding. The savings they make are more than lost by getting the internal support structure to get the reduced bid. – There's huge money for the infrastructure – for instance, \$1 million on 10 people in an office, all to save \$10K in a contract. And then they pretend the costs are somewhere else...*
- *I care about the industry and so have completed the questionnaire, but I fear it will make no difference. Career paths come first, not the industry.*
- *X company is the biggest and most epitomised of the problem but they are all the same. The culture is industry wide. People go to work for the big companies and come back. – The big companies are not all that people expect. It's a career process.*
- *The feeling in one sector of the industry is that this is an utter waste of time. You know the problem and created it with careerist bullshit.*
- *Taranaki Regional Council does the economic impact and size of the industry. When I last worked in New Zealand PEPANZ (or its predecessor) was constantly doing surveys.*
- *PEPANZ is useless as a lobby group.*

3.7.7 Survey Issues

- *My concern is the service company jobs are very specialised. The need for training does not exist because we have to start from scratch or poach them from competitors, depending on the job level. That's the biggest problem with these surveys – they are not directly relevant.*
- *How does EXITO think the industry got on before they turned up? We trained our own people, through the American Petroleum Industry (API). Every facet of the industry is covered by an API code – wireline, cementing etc. They organised it and hired university people in Oklahoma in Texas to research on their behalf. There is one governing body worldwide – the American Petroleum Institute. If a manufacturing shop is making products to be used in the oil industry, they can ask for an API audit, and they will do that and licence the shop and issue a stamp, which they can then monogram on their products. It works well and its universal. There is no role for EXITO. There is no need for it to exist. It just adds bureaucracy. EXITO gets money out of the industry and that gives it the reason to exist, but they do nothing for us; they're just eating money. [The big companies] train their own people and it's worldwide assessed – it has to be to be of use. They don't need government funding. EXITO should get their oar out of the industry.*

3.7.8 Finally, a Call for Collaboration

- *There needs to be transparency, openness, and we all need to work together. The purpose should be to have hope. You can't take that away, or [people who want to work in this industry] have nothing.*

4. Future Considerations and Issues

Participants in this survey were clear that training has a substantial contribution to make in their industry. However, as with most surveys, results from this training study raise several more questions from those that were asked. Some of these next level questions are included here for EXITO's consideration, in anticipation that they will stimulate and direct the Board and the industry in their thinking, decision-making and future planning for the Hydrocarbon Drilling industry. We encourage the Board to do its own analysis to uncover further questions.

4.1 Questions Arising From Demographic and General Data Results

4.1.1 Age and Gender

Issues:

- A common theme in conducting this survey was that there is an aging workforce in this industry. There is a relatively small proportion of people under the age of 40 years.
- The industry is also largely male dominated.

Questions:

1. How much does the aging, male-dominated workforce contribute to the skills shortage in this industry?
2. Is male domination an issue in this industry, or merely symptomatic of the nature of the work? Should and can EXITO do anything to help industry implement the ideas suggested in this survey for attracting more women?
3. What can EXITO do to help the industry build on the ideas noted in this survey to improve the image of the industry and encourage more young people into it?

4.1.2 Hours of Work

Issues:

- Hours of work appear to be impacted by the on-off patterns of drilling work. However, they reportedly average out to be reasonable over a year, and the time off provides a lifestyle option that is attractive to some people.
- Intermittent work, though, and the on-off nature of the industry itself – in terms of when it employs people and lays them off – is believed to compromise retention, and even recruitment.

Questions:

1. What would be the impact on industry numbers and productivity possibilities if work could be more regular/consistently offered?
2. What can be done to support industry to offer more regular/consistent employment opportunities? Should this be done?

4.1.3 Education, Experience and Industry Career Opportunities

Issues:

- Once people are in the industry, it appears they remain keen to stay in it. Career-pathing will be a critical future issue, yet taking time to train is problematic, and there are issues concerning the intermittent nature of the work, as well as the significantly different expectations from Operator and Manager/Professional roles. Response to the ideas of apprenticeships was generally positive, but not strong. There are certainly many unanswered questions on how apprenticeships might work.
- There are skill shortages, and succession planning may not be working well in many companies.
- Managers and Professionals are more qualified than Operators.
- A relatively small proportion of Managers/Professionals have Operator-level experience.
- Managers/Professionals have more industry experience compared to the Operators.

Questions:

1. Do these significant gaps in qualifications and experience result in:
 - a) an unhelpful 'us and them' divide in the industry?
 - b) stifling career development opportunities?
 - c) hindering effective succession planning?
 - d) Stymieing industry development?
2. What can EXITO do to minimise any adverse affects of the above?
3. What can EXITO do to prioritise and actively assist with implementation of the ideas raised in this survey for attracting people into the industry? Should EXITO take on this role?
4. How can career planning be introduced throughout the industry without undue disruption to productivity?
5. Would apprenticeships assist with career opportunities? What would be the expected career path?
6. What support would be necessary for apprenticeship training – for the apprentice and the workplace?
7. Is the industry big enough for an apprenticeship system, or will it have to piggy-back off other generalist trade apprenticeships?
8. Over what time period would an apprentice system be sustainable – for individual companies (remembering that many are small)? And for the industry?
9. How can EXITO assist companies with the skills they need for succession planning? Should EXITO take on this role?

4.1.4 Retirement Plans

Issues:

- Operators and Contractors intend to retire at a younger age than Managers/Professionals.
- The industry is at risk of significant skill loss during 2017 – 2025, with many more experienced people intending to exit the industry by 2030.

Questions:

1. Is management/professional succession a significant issue?
2. Is it sustainable to continue to get people at this level from other industries rather than 'growing our own'?
3. What will the industry do in the next 10 years to effectively prepare for the exodus of experienced and skilled people? What is EXITO's role?
4. How can more people be trained and encouraged into the industry (at all levels)?
5. What can be done to encourage managers / professionals to mentor younger, less experienced people to take over in the coming years?
6. What can companies do to support a 'phase down' to retirement to minimise industry skill loss at the same time as promoting effective work-life balance for older employees?

4.1.5 Wages and Salaries

Issues:

- Pay is high in this industry by New Zealand standards. Pay for the industry, by international standards, is not perceived to be high enough.

Questions:

1. How can companies ensure they do not use the high pay rates as an excuse for not taking action regarding the less attractive working conditions of the industry (as this will be necessary for recruitment and retention during the skills shortage)?
2. Should action be taken to redress perceived inequity in international pay relativities? If so, what?

4.2 Questions Arising from Views on Training and Training Delivery

4.2.1 The Environment for Training

Issues:

- Workplaces appear to have variable approaches to training. Some have a positive approach and do their own in-house training. Others appear to see it more as a time burden because of work contract requirements. Others still do not see the point in investing in training when work is intermittent.
- Managers/Professionals are not very knowledgeable or are apathetic about Operator level training.
- Some training personnel do not have views about the industry and appear to be operating in a master-servant relationship, rather than being strategic business partners.

Questions:

1. What is EXITO's role in taking account of the nature of the industry and assisting workplaces which appear to have low training cultures? What can be done to develop cultures where training is valued more highly? What can be done to assist Managers/Professionals with taking a broader view of the training needs in the industry – especially the needs at Operator level?
2. How can companies with low training cultures be supported to accurately establish training needs and provide more training?
3. What can be done to improve industry knowledge of the benefits and paybacks from training?
4. What factors need to be in place to enable small, potentially vulnerable companies take advantage of training opportunities? How could these factors be realised?
5. What can be done to encourage more trainers to speak out about their roles as industry partners and take a more strategic view of the industry and its future?

4.2.2 Training Effectiveness

Issues:

- It is not yet common for training to be reviewed for its effectiveness.
- Some concerns were raised about the inconsistent application of unit standard delivery, assessment and hence learning in the industry. There are flow on concerns that (inappropriate) job preference is being given to unit standard qualified people, and that the actual work standard of these people is, in turn, giving the unit standards a bad reputation.

Questions:

1. What can be done to assist companies understand the value and importance of determining training effectiveness?
2. What can be done to assist companies to actually determine the effectiveness of the training they have invested in, or even that they intend to invest in?
3. How can EXITO address concerns that some training providers are 'taking shortcuts' in the delivery and/or assessment of unit standards?

4.2.3 Identified Training Needs

Issues:

- Several industry training needs have been identified for both Operators and Managers/Professionals. Numbers are not large.
- Literacy is an issue in the industry.

Questions:

1. How can EXITO assist with literacy issues in this industry?
2. What training is already being provided that industry members may not be aware of?
3. What can be done to meet the training needs identified in this survey? What is EXITO's role in the identified needs?
4. How long will it take?
5. What will it cost?
6. Is that feasible? What's the break-even point?
7. How can industry members be informed of training availability?

4.3 Questions Arising from Views on Recruitment and Retention

Issues:

- Managers believe many industry roles are difficult to fill.
- Some companies have had no trouble attracting staff to date, but most find it difficult.
- Perceptions about the industry are a significant reason for difficulty recruiting people. As such, industry promotion is seen as important in overcoming recruitment issues.
- The major ideas for overcoming retention issues (retaining people through low work periods, and giving attention to pay and conditions) are costly with far-reaching impact for the industry.

Questions:

1. What can be done to assist Managers with learning more about recruitment, retention, and succession planning during periods of skill shortage?
2. Is there a need to widen industry perspectives on where staff might be able to come from? What can be done to assist companies with recruiting staff from non-traditional methods? For example, as noted earlier, what can/should be done to help implement suggestions for attracting more women into the industry?
3. What can be done to assist them with the non-traditional recruitment processes in general, and then with managing the new (non-traditional) staff in the workplace?
4. What can EXITO do to prioritise and actively assist with implementation of ideas raised in this survey for promoting the industry?
5. How can companies that find it easier to attract and retain staff pass on some of their methods to those who are having difficulty? – Or how can those having difficulty be encouraged to learn from those who find it easier?
6. Is it worth assessing the feasibility of retaining people through low work periods and giving attention to pay and conditions? How could this be done on an industry-wide basis and on a company-by-company basis?

4.4 Questions Arising from Views on Industry Predictions

4.4.1 Forecasting

Issue:

- Industry predictions were variable and somewhat vague. So were the predicted technological advances and suggested training solutions.

Questions:

1. What can be done to assist Managers with having enough knowledge or courage to inform others of their predictions for the industry?
2. How can EXITO find more information to enable more forecasting? How will it share this information with the industry stakeholders?

4.4.2 EXITO's Role in the Future

Issues:

- Some participants have strong views that EXITO does not have a (significant) role to play in the industry; that they do their own training and that the unit standard approach is not conducive to their work.
- Otherwise, broad and diverse roles are suggested for EXITO as the industry moves into the future.

Questions:

1. What is EXITO's role and how does it add value in this industry? How can, and should, this be explained to its critics?
2. Otherwise, are industry's expectations of EXITO reasonable?
3. What predictions does EXITO have for its own future in relation to this industry?
4. What can reasonably be delivered?
5. How can EXITO's business planning take these combined expectations into account?
6. How will plans be shared with the industry stakeholders?
7. What role can/should EXITO play in assisting the industry collaborate in relation to recruitment, training and retention of the New Zealand Hydrocarbon Drilling workforce?

Hydrocarbon Drilling Industry

Questionnaire for Operators, Technicians, Leading Hands, Foremen and Contractors

EXITO (The Extractive Industries Training Organisation) has developed this *confidential questionnaire* to gather information about the Hydrocarbon Drilling Industry. Your answers will help us understand how to provide the kind of training you think the industry needs to meet the demands placed on it in the future.

Thank you very much for taking part in this *confidential survey*. We really appreciate your help.

Part 1 - General Questions

1. Name of Company _____
 2. Job Title _____
 3. Contractor **Yes/No**
 4. Age: _____
 5. Male Female
 6. Ethnicity: (Not Nationality) – Please tick relevant box
NZ European/Pakeha NZ Maori Samoan
Cook Island Maori Tongan Niuean
Tokelauan Fijian Other Pacific Island
Indian South East Asian Other Asian
Chinese American Other European
African Middle Eastern Latin America/Hispanic
 7. How many hours do you work per week? _____
 8. Why did you choose this job? _____
 9. Did you have relevant experience/qualifications before you started working in the Hydrocarbon Drilling industry? **Yes/No**
If yes – what? _____
 10. Did you work in other industries before working in the Hydrocarbon Drilling industry? **Yes/No**
If yes – what? _____
 11. How many different Hydrocarbon Drilling companies have you worked in? _____
 12. How long have you have spent working in this industry? _____
 13. Have you been encouraged to take on supervisor roles? **Yes/No**
If yes – what? _____
 - 14a. Do you want to continue to work in this industry? **Yes/No**
 - 14b. At what age do you plan to retire from the industry? _____
 - 14c. What are your intentions regarding retirement? _____
-

Part 2 - Training Questions

- 1a. Does the company provide training for you? **Yes/No**
- 1b. If 'Yes' what are the reasons your company provides training? Tick box
 - Safety
 - Operational/process understanding
 - Technical skills development
 - Computer skills development

-
- Cultural understanding
 - Other

Please comment if you ticked Other _____

2. Are you? - Tick box

- Interested in training
- Not interested in training
- Required to do it
- Encouraged to do it
- Other

Please comment if you ticked Other _____

3. What benefits do you expect to get out of training? Tick box

- Safer workplace
- Better skills
- Opportunity for advancement
- Other

Please comment if you ticked Other _____

4. What are the skills or knowledge gaps where you would like further training? _____

5. Are you registered for EXITO training? **Yes/No**

6. Can you access your Record of Learning? **Yes/No**

7. Are you consulted about your training needs? **Yes/No**

8a. Is there a match between your training needs and what the company thinks are your training needs? **Yes/No**

8b. If not please comment. _____

9. How should training be organised to best fit in with your work? Tick box

- During work hours
- Evenings
- Weekends
- Rostered days off

10. *For contractors only* - What % of your work is Hydro Carbon Drilling related? _____

11. *For contractors only* - Who pays for your training?

My Employer

The Contractor

12. *For contractors only* - Do you receive enough training?

Yes/No

Part 3 - Training Delivery Questions

1. What type of training delivery works best for you? Tick box

- Classroom presentations and group work

-
- On-site supervised practice
 - Videos
 - Distance learning (learning by correspondence)
2. In your training is there the right mix between practice and theory? **Yes/No**
If no, please comment. _____
-

3. When you do training what support do you expect from your manager afterwards? _____

4. What factors are important in a trainer? Tick box
- Knowledgeable
 - Experienced
 - Supportive
 - Goes at the right pace
 - Patient
 - Other – say what _____
-

5. What are your ideas for improving the way training is delivered? _____

6. When new equipment is delivered when are you **trained to use** and **maintain** it?
Tick box

- Before it is delivered?
- As it is installed & used (commissioned) for the first time?
- When it breaks?
- Not trained on new equipment I am required to use
- Not applicable

7. After you complete training, what length of time is there between getting the training and using the new skill? Tick box

- 1-5 days
- A fortnight
- A month
- More than a month
- Other

If you ticked Other, please say how long _____

8. Is training followed up with reviews of its effectiveness? **Yes/No**

9. Do you get refresher courses at an appropriate interval? (E.g. first aid refreshers) **Yes/No**

10. Are refresher courses managed by your employer – (who reminds you or books you in for these?) **Yes/No**

Thank you for participating in this survey

*5.1 Appendix 2 - Questionnaire for Managers,
Engineers/Supervisors/Team Leaders*

Hydrocarbon Drilling Industry

Questionnaire for Managers, Professionals, Supervisors, Team Leaders

EXITO (The Extractive Industries Training Organisation) has developed this confidential questionnaire to gather information about the Hydrocarbon Drilling Industry. Your answers will help us understand how to provide the kind of training you think the industry needs to meet the demands placed on it in the future.

Thank you very much for taking part in this confidential survey. We do appreciate your help.

Please Note: When the term 'Operator' is used it covers all those employees who work in a hands-on role as operators, technicians, leading hands or foremen.

Part 1 – General Questions

1. Name of Company _____

2. Job Title _____

3. Age: _____

4. Male Female

5. Ethnicity (not Nationality) Tick relevant box)

NZ European/Pakeha <input type="checkbox"/>	NZ Maori <input type="checkbox"/>	Samoan <input type="checkbox"/>
Cook Island Maori <input type="checkbox"/>	Tongan <input type="checkbox"/>	Niuean <input type="checkbox"/>
Tokelauan <input type="checkbox"/>	Fijian <input type="checkbox"/>	Other Pacific Island <input type="checkbox"/>
Indian <input type="checkbox"/>	South East Asian <input type="checkbox"/>	Other Asian <input type="checkbox"/>
Chinese <input type="checkbox"/>	American <input type="checkbox"/>	Other European <input type="checkbox"/>
African <input type="checkbox"/>	Middle Eastern <input type="checkbox"/>	Latin America/Hispanic <input type="checkbox"/>

6. How many hours do you work per week? _____

7. What attracted you into this industry? _____

8. Did you have relevant experience/qualifications before you started working in the Hydrocarbon Drilling industry? **Yes/No**
If yes – what? _____

9. Did you work in other industries before working in this industry? **Yes/No**
If yes – what? _____

10. How many different Hydrocarbon Drilling companies have you worked in? _____

11. How long have you have spent working in this industry? _____

12. What is your current salary range?

\$30,000 - \$39,999 \$40,000 - \$49,999 \$50,000 - \$59,999

\$60,000 - \$69,999 \$70,000 - \$79,999 \$80,000 - \$89,999

\$90,000 - \$99,999 \$100,000 or above

13a. Do you want to continue working in this industry? **Yes/No**

13b. At what age do you plan to retire from the industry? _____

13c. What are your intentions regarding retirement? _____

Part 2 – Your Professional Development

1. Is there a match between your professional/training development needs and what the company thinks you need? **Yes/No**

If no match, please comment _____

2a. Does the company offer structure and support for you to participate in professional development? **Yes/No**

2b. Do you do enough professional development? **Yes/No**

2c. If no what stops you from getting enough professional development? _____

3a. Did you choose to do it or because you were told to? **Chose** **Told**

3b. Does it fit with where you want to go in your career? **Yes/No**

3c. What current gaps are there in your professional development – i.e. knowledge/skills needed now which are not being addressed? _____

3d. What future gaps will occur in your professional development given possible future changes in your work role? _____

4. How could contractors become more involved in participating in training? _____

Part 3 – Recruitment and Retention

1a. Currently what positions within the industry are difficult to fill?

▪ **Managers** **Yes/No**

Please define which positions _____

▪ **Professionals** (Geologists, Engineers etc.) **Yes/No**

Please define which positions _____

▪ **Technicians** **Yes/No**

Please define which positions _____

▪ **Operators** **Yes/No**

Please define which positions _____

▪ Support staff **Yes/No**

▪ Other **Yes/No**

Please provide brief detail of ‘Other’ _____

1b. What do you believe is the reason for this? _____

1c. If offers have been made for the vacant positions but declined were any reasons cited?

1d. If positions are not filled what impact will this have and how are they compensating for this at present? _____

2. What types of skills/occupations are likely to be most significantly under or over-supplied in the future and why? **a. Under-supplied** _____

b. Over-supplied _____

3a. Will it be feasible to fill staffing gaps by recruiting people to fill skill shortages from the following groups?

- Recruit staff from under-represented groups, (e.g. gender, ethnicity, age) **Yes/No**
- Recruit staff from other industries **Yes/No**
- Recruit staff from people out of the labour force **Yes/No**
- Recruit staff from overseas **Yes/No**

3b. What should be done to remedy any expected skill shortages? _____

4. What are your ideas for attracting people into the industry? _____

5. If there are not even numbers of men and women in your workplace how could more women be attracted into the operator/hands-on side of the industry? _____

6. Is there a clear career path for operators in the industry? **Yes/No**
Should there be? **Yes/No**

7. Should an apprenticeship system be organised for the industry? **Yes/No**

8. What can be done to improve staff retention? _____

9a. Is succession planning done adequately in your company/organisation? **Yes/No**

9b. If not, what should be changed? _____

10. How is industry output expected to grow over the next 5 to 10 years? _____

11. What major technological advances do you think will impact upon the industry over the next 5 years? _____

12. What needs to be done to ensure training is up to date with these technological advances? _____

Part 4 - Training Issues for the Company

1a. In your company is there enough operator training being provided? **Yes/No**

1b. Are you getting the results you want from your operators being trained? **Yes/No**

If not, why not? _____

1c. Where are those training results shown most? (For example: increased productivity/taking initiative/customer service, improved safety) Please comment _____

1d. Is enough professional development being provided for those working in the industry? **Yes/No**

1e. What are the barriers to adequate *provision* of professional development? _____

2a. When training expands will industry be able to recruit enough good trainers? **Yes/No**

Yes/No

If no what will need to be done? _____

2b. Will trainers need training in how to interest & motivate trainees? **Yes/No**

2c. Sites have different work processes unique to the individual companies. Please comment on how companies/trainers manage this. _____

2d. How do you ensure outside trainers/consultants keep up to date with new industry standards? _____

3a. Should training be delivered in 1 or 2 day modules or in longer modules?

1 or 2 days or Longer

3b. What skills related to managing people, work relationships and leadership are needed for those in supervisory and management positions? _____

3c. Is training needed for supervisors and managers in how to organise a site so that jobs hold the interest of operators? **Yes/No**

4. Of your total training what percentage is?

- EXITO training _____
- Non-EXITO training run by your own staff _____
- Non-EXITO training run by outside training consultants _____

5. The importance of environmental management and health and safety is increasing. What is needed for future training in these 2 areas? Please comment.

a. Environmental Management training

b. Health and Safety training

6. For what % of staff is literacy a problem? _____

7. By 2012 what does EXITO industry training need to be doing? Please comment

Thank you for participating in this survey