

**IMarEST Professional Development Report for
CEng/IEng/EngTech/CSci/RMarSci/CMarTech/RMarTech/MarTech Registration**

A.N Exemplar – IMarEST no. 80123123 1st January 2018

Personal Details

Name:

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Academic Qualifications

MSc Marine Engineering/Science/Technology, University, 20xx-20xx

CEng accredited degree – ACAD reference 1000

BEng (Hons) Marine Engineering/Science/Technology, University, 20xx-20xx

CEng accredited degree – ACAD reference 1001

A Levels: 3 x Grade A (Science, Physics, Chemistry), 19xx-20xx

Career Overview – Positions Held

Current Position and Duties:

Marine Engineer/Scientist/Technologist

Company: 20xx to present

Previous Positions and Duties:

Marine Engineer/Scientist/Technologist

Company: 20xxx to 20xx

Marine Engineer/Scientist/Technologist

Company: 20xxx to 20xx

Career Overview – Introduction

More than x years of working in Marine Engineering/Science/Technology, primarily focused on x. My career has recently taken me in to the x sector, having primarily been focused on the x sector.

Educated to Masters/Bachelors/HND level, with extensive management experience.


This report is written as part of my application to apply for registration as a (*level of registration applying for*) with the IMarEST. The report will attempt to demonstrate technical and leadership skills and responsibilities in line with the requirements set out in the Engineering Council UK-SPEC guidelines/Science Council competencies/IMarEST competencies.

The academic requirement for CEng/IEng//EngTech/CSci/RMarSci/CMarTech/RMarTech/MarTech registration is satisfied by possession of a (qualification and accreditation status).

(please note that from this point onwards the exemplar report is tailored to an applicant for CEng registration)

The UK-SPEC competencies are listed as follows, matched to relevant evidence from throughout my career.

A1



On completion of my degree (specialising in finite element (FE) computer analysis) I joined a subsea engineering company. After learning the initial basis pipeline calculations I soon started taking part in small lateral buckling studies. I initially began by examining various papers and formulae which allowed me to develop a simple but effective buckle onset worksheet. I then progressed into performing FE analysis of sections of pipeline. The initial work was fairly theoretical however soon progressed into aiding a client whose pipeline had buckled and wanted to know if these buckles were catastrophic to the pipeline or not. I was able to prove that they were not catastrophic as well as showing that they would aid in limiting future buckles.

Recently I took part in a large design project which produced new problems, as I had to find ways to limit the pipeline from buckling due to temperature. This was performed using various methods however the outcome for the client had to be the “best” solution from a cost, installation and operational point of view. On completion of this work I then started to examine the effects of lateral buckling due to external pressure and seismic faults due to the pipeline lying in 2000m water and crossing between two continents. Having completed this I am currently looking at extending my knowledge from lateral buckling into upheaval buckling.

A2

As part of a team working for a gas company, my role was to research the current state of the offshore oil and gas industry with respect to High Temperature High Pressure (HTHP)

projects. On completion of this I presented my results to BG who asked for my assistance with examining the technology and infrastructure limitations as well as taking part in BG internal workshops. The outcome of these workshops was to aid BG with its cost estimation and understanding of all aspects of HTHP fields and how feasible their portfolio of HTHP fields was and areas where possible research, investment and development may further the extremes.

B1

While providing offshore support for a state owned natural gas company, who were in the process of taking over a recently installed pipeline that required span rectification work, I highlighted that their proposed solution would only work for a short time and that a better solution would be to rock dump exposed sections of the pipeline.

I presented to them a detailed review of how scour can effect pipelines and gave them examples of this that we had witnessed while performing the span rectification work. I was then asked to prepare CTR's outlining a proposed work scope for designing the rock berms, preparing the ITT package and installation supervision for the clients.

B2

A company introduced a new cathodic protection code. I initially prepared a CTR outlining the process, this was approved and then (with the help of other) created a piece of software that was used in the analysis for us. The software was reviewed in house and externally by ourselves who approved our design methodology.



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B3

The software has successfully been used on a project and the resulting anodes are now installed subsea in an African country. I was present at the installation of the pipeline and anodes and have since recommended a small warning/upgrade to the software due to my in the field experiences.

C1

I am currently the lead engineer for a deep water tie back from 4 wells to the shore based in the Mediterranean. With a small budget and not many personnel available, I am having to make the most of my available resources and motivate the team to keep on top of the schedule.

I have also tried to find out how the engineers would like to further their knowledge and have encouraged them to take an active role within that area on the project thus expanding everyone's knowledge of the project and pipeline design.

C2


Recently I have been responsible for creating the budget, man hours and schedule for a small project in a Middle Eastern country to review the available survey data and then design the required mitigation measures to prevent further scouring of a pipeline and to provide additional protection. The proposed solution is to rock dump the pipeline, and the scope included the design for the rock, the bid preparation, the bid evaluation and tender process as well as offshore support during the construction phase.

C3

As the lead pipeline engineer on a major pipeline project I was responsible for a team of 6 engineers covering all aspects of offshore pipeline design. The project was particularly challenging as the first 10km had to be constructed of stainless steel due to a high inlet temperature and very corrosive contents. The high inlet temperature also caused severe buckling problems and required some innovative solutions.

C4

As manager of the in-house software development I regularly have to put together work scopes for people to create or update our in-house software, as well as review and manage our technical needs. I encourage people to pass on their knowledge to the team members, build manuals of our software which other people can use as well as encouraging knowledge sharing where projects allow. I am also persuading people to perform "lunch and learns" where people give presentations about their experiences or about something new they have learnt.



I have also taken on the role of helping our HR department as the IMarEST Champion, trying to first motivate myself to become chartered and then help establish a system for helping and encouraging others to do the same.

D1

While at a Subsea Engineering Company I was part of a small team of personnel who helped some non-native English speaking clients who had recently purchase some software. I provided individual and group training for 6 of their engineers on a finite element program which designed offshore risers and spool pieces. I was required to communicate at a very high technical level while struggling with the language barrier. I also provided them with support for the following 6months while they learnt how to use the software.

D2

I have been part of proposal teams who have been bidding for work with clients who have requested to see our engineering capabilities and past project experiences. I have presented numerous presentations on our finite element and technical capabilities.

D3

I was recently the sole client offshore representative for the repair of 3 pipelines which had excessively long spans. The pipelines were originally installed by a contractor for the government and the remedial work had been subcontracted to a firm from another country. With three languages and four nationalities on board, all with different priorities, the working atmosphere was very intense.

As sole representative it was my responsibility to make sure that the correct rectification measures were adopted and that all work was performed in a safe and effective manner, with no short cuts were taken.

I was required on numerous occasions to justify my engineering judgement, back it up with knowledge and facts and to insist that the work was completed in the correct manor so that the client was left with a pipeline that could be placed back into operation.

E1

I have been the individual responsible for maintaining and promoting legislative compliance with necessary codes, regulations and standards on several projects. Part of my work was to ensure that the company in question was well-placed to demonstrate compliance with existing standards, and future-proofing for those in development.

E2

As I have gained greater responsibility in the roles mentioned in this report I have been designated as the Health and Safety representative on several projects. This requires me to have a detailed knowledge of HSEQ standards (HASAW 1974, CDM regulations, OHSAS 18001:2007 etc.) for myself and colleagues, ensuring that they have received adequate training in order to work in safe environment.

E3

I am responsible for carrying out environmental impact assessments for pipeline projects. I plan and implement best practice using environmental management systems (ISO 14000).

E4

I record all of my CPD using the IMarEST Echo tool. After attending a conference in Norway I was able to upload a photograph of my attendance ticket through the app on my phone. As such I have a record of my CPD which I am able to demonstrate whenever required. I also read the Marine Professional every month and reflect on what I have read in my Echo CPD log. I feel that reflective analysis on my CPD such as this enables me to develop as an engineer and apply what I have learned in practical situations.

E5

At various points in my career I have been in a position where I advise on the selection of work which is contracted out. As a result, I often receive invitations to corporate events. Because of my responsibilities to ensure impartial contractual award, I never accept gifts or invitations of more than a nominal value. I ensure that the team members under my supervision abide by this ethical guidance.

Professional Development Activities

Professional Membership

IMarEST – Affiliate Membership (Membership Number)
SUT – Member (Membership Number)

Key Professional Development Courses

Technical Development

Subsea Pipeline Installation (Short Course) – Uni. Aberdeen (date)
Offshore Pipeline Installation (Short Course) – Robert Gordon Uni. (date)
Corrosion Engineering and Control – Uni. Aberdeen (date)
Mechanical Fatigue and Stress Analysis (Short course) – Texas A&M Uni. (date)

Safety and Risk Assessment

Offshore Safety Induction – Internal Course (date)
Understanding Process Hazards Analysis (HAZOP, FMEA, etc.) – Internal Course (date)

Management and Leadership

Introduction to Project Management – Internal Course (date)
Key Performance Planning – Internal Course (date)
Pipeline Legislation Awareness – Robert Gordon Uni. (date)
Lead Auditor/ISO9000 Training (date)

Conferences

I have contributed lectures at international conferences, most recently a lecture on pipeline repair systems at OTC Houston (date)

Selected Recent Published Papers

Exemplar, A. N., 'Advanced Finite Element Analysis in Deepwater Pipeline Installation', Deep Offshore Technology Conference (date)

Prepared by Tom Fanthorpe, Version 1.0, April 17th 2018

