

2012 to present

Software Development

CalQlata

Design and compilation of technical calculation software for numerous disciplines including; engineering, hydrodynamics, process, chemistry, mathematics and physics (astronomic and atomic).

In detail:

- 1 Owner and creator of CalQlata
- 2 Create (≈ 100) technical calculators (mathematics and programming)
- 3 Create installation packages
- 4 Design and compile software security
- 5 Design, compile and maintain website (≈ 500 pages)
- 6 Project (technical) work for external clients

Books:

Philosophiæ Naturalis Principia Mathematica Rev. IV {ISBN 978-1072156055}
The Atom {ISBN 978-1086100297}
The Life & Times of the Neutron {ISBN 978-1082516832}
The Universe {ISBN 978-1707538782}
The Physical Constants {ISBN 978-1708802967}
Spin Theory {ISBN 978-1671837928}
The Mathematical Laws of Natural Science {ISBN 979-8610294490}
The Flying Saucer {ISBN 979-8444818626}

Patents:

A CALENDERING MACHINE; GB2498227 (A)
TERMINATIONS FOR HIGH-PRESSURE/HIGH-TEMPERATURE HOSES; BRPI0614357 (A2)
A HIGH-PRESSURE FLEXIBLE PIPE; WO2011073904 (A2) WO2011073904 (A3)
FABRICATION OF HOSES OR OTHER ELONGATED ARTICLES; PT1255943 (E)
FLEXIBLE PIPES; NO20080998 (L)
HOSES AND FLEXIBLE PIPES; US6505649 (B1)
FLEXIBLE DUCT; EP1047898
RISER SYSTEM; US6685397 (B1)
RECOVERY OF SUBMERGED STRUCTURES; NO20011595 (L)
WIRE WRAPPING; WO9914150 (A1)
PIPE OR VESSEL WITH LINER ANNULUS VENTING CONSTRUCTION; WO0246654 (A1)

Subjects Covered

Pure and Applied Mathematics
Metallurgy (composition and physical properties)
Physics (celestial and atomic)
Mechanics & Structures
Pipes and Pipelines
Hydrodynamics
Aerodynamics
Optics

Recent Discoveries and Inventions

The Molecular Calculator
The Theory of Spin
Centrifugal Force in Elliptical Orbits
Orbital Station-Keeping
Mantle Energy
Drag Reduction
Neutron Energy
The Neutron Energy Cell
The Impulse Drive
The IDV
The Liberty Belt

Aug 1998 to 2011

Flexible Pipe Design & Business Development

PipeFlex

Responsible for all engineering and Business aspects of the invention, research, design, manufacture, marketing, Legal, Suppliers and Materials for and a new 3rd Generation flexible pipe. Generate engineering software

In detail:

- 7 Invent product and components (patents in place and applied for)
- 8 Compile comprehensive Feasibility Study for the PipeFlex project
- 9 Generate all documentation for legal case
- 10 Specify product
- 11 Design HPHT flexible pipe structure
- 12 Compile Design Manual (8 Volumes)
- 13 Material selection for HPHT flexible pipe structure
- 14 Management of EU research programme
- 15 Procure project funding from Industry and Government sources
- 16 Find and review all suppliers
- 17 Design, oversee manufacture and commission all manufacturing plant (including but not limited to, 50m wrapping lathe, novel reinforced strip Calender, 50m spray booth, 120t crimping machine, end preparation machine, etc.)
- 18 Compilation of numerous calculation spreadsheets for engineering applications
Including; 3-D stress & fatigue, catenary, vortex shedding, large deflection beam theory, dropped objects, wave analysis (Stokes II, II & V, Cnoidal, Hyperbolic, Solitary and Linear), unit conversion, section properties. etc.

Calculations and documentation completed on computer and by hand.

Project currently nearing qualification completion.

Entire project funded by personal funds (Author & Partner) until Nov 2009

Timeline:

3 years research (UK & EU)

5 Years legal battle to recover stolen technology from multi-national

2 years designing and manufacturing equipment

2 years developing manufacturing methods and qualifications

Aug 1998 to 2001

Design and Project Engineer

RCC/K & B Beattie/GreenSeas

Senior consultant engineer on the MSO Shuttle project. Research, design and business aspects of the Aqua-Frame. Design, management and site control of pressure vessels in willow burning power station (Arbre Project) and Flexible pipe consultant to K & B Beattie. Devise options for Valhall redevelopment programme.

In detail:

- 19 Evaluate MSO designs and verify analyses
- 20 Recommend alternative approaches for the design of the Offshore Shuttle
- 21 Design and research specifications for a new system for removing offshore platform Jackets
- 22 Compile comprehensive Feasibility Study for the Aqua-Frame project
- 23 Design Aqua-Frame structure
- 24 Evaluate world market for Jacket removal
- 25 Procure project funding from local Government sources
- 26 IR holder of patent for the AquaFrame
- 27 Search for partners and funding for the Aqua-Frame project
- 28 Liase with all potential clients and investors for both projects (including Amec, Aker, Shell, BP, Phillips, Coflexip/Stena and government bodies responsible for project funding).
- 29 Investigate and evaluate numerous options for redevelopment of the Valhall project
- 30 Compile a logistical and financial evaluation of each option
- 31 Present findings to the Client

Calculations and documentation completed on computer and by hand.

Jan 1997 to Jun 1998

Consultant, Subsea Installation & Pipeline Engineer

McDermott/DNV/Rogaland Consultants/K & B Beattie

Responsibility for engineering associated with pipeline/riser design and installation from the Norlift reel lay vessel. Various verification and review projects for Det Norske Veritas Pipelines department in Høvik. Flexible pipe systems; design and specification. NMD/NPD verification engineering. Schelde - Arbre clean-energy power project, Shellien offloading facility, flexible pipe dynamic test rig.

In detail:

- 32 Manufacturing equipment design (flexible pipes)
- 33 Flexible pipe design and specification
- 34 Steel riser/J-Tube pull-in analyses (DNV)
- 35 NPD/NMD verification of the Borgland Dolphin conversion project
- 36 NPD/NMD verification of the Esso Balder FPSO conversion vessel
- 37 catenary calculations
- 38 pipeline stress based / strain based calculations
- 39 vessel motion calculations
- 40 rigging and installation equipment design
- 41 installation procedures
- 42 numerous and varied associated calculations/analysis
- 43 Cost analysis (for 3 off K & B Beattie projects)
- 44 Design and project manage manufacture of flexible pipes dynamic test rig
- 45 Contractor/Client liaison
- 46 Compilation of client specification, operational philosophy, risk requirements, and various other technical documentation associated with platform decommissioning
- 47 NPD/NMD assessment of the Offshore Shuttle

Calculations and documentation completed on computer and by hand.

Feb 1995 to Jan 1997

Subsea Installation & Pipeline Engineer

McDermott/NOS/DNV/Kværner

Responsibility for engineering associated with pipeline installation from Norlift rigid reel vessel for McDermott/NOS and, various calculations for pipelines in the Durward/Dauntless Field for Kværner Earl & Wright. Various verification and review projects for Det Norske Veritas Pipelines department in Høvik.

In detail:

- 48 catenary calculations
- 49 pipeline stress based / strain based calculations
- 50 vessel motion calculations
- 51 rigging and installation equipment design
- 52 installation procedures
- 53 numerous and varied associated calculations/analysis
- 54 Steel riser/J-Tube pull-in calculations (DNV)
- 55 Statoil - Gulfaks Satellite project pipelines proposal
- 56 Oman-India (vortex shedding)
- 57 NPD regulations with respect to flexible pipes
- 58 Pipe-in-Pipe review
- 59 Vortex shedding calculations
- 60 Lateral buckling calculations
- 61 pipeline sizing calculations
- 62 Dropped objects and protection calculations
- 63 Flexible riser installation

Calculations and documentation completed on computer and by hand.

June 1993 to Feb 1995

Specialist Engineer/Consultant

Shell, Stena, Rogaland Consultants & DNV

Stena Offshore (Stavanger), DNV (Høvik), Rogaland Consultants and Shell Norge (Kristiansund) with special responsibility for calculations and analysis for vessel seafastenings, riser installation/removal, Hazop chairman, offshore representative and HPHT flexible pipe evaluation.

In detail:

- 64 hazop chairman for vessel operations on behalf of DNV
- 65 trenching engineer for Shell (offshore representative on Draugen project)
- 66 seafastening calculations for vessel nitrogen spread
- 67 GBS 16" riser removal procedures (inc. calculations)
- 68 hazop chairman for steel riser installation on behalf of Stena Offshore
- 69 flexible pipe specification for joint industry HPHT drilling project (minimum rig requirements)
- 70 Europipe expansion loop verification
- 71 Riser systems design and analysis verification
- 72 Titanium flexible steel riser installation procedures (Visund project)
- 73 Verification of DNV Non-Linear analysis (strain based pipeline design) software
- 74 Rigid steel J-Tube pull-in analysis for DNV/Statoil Gulfaks C J-Tube Study
- 75 NPD design verification project (PPCoN pipelines)
- 76 NPD safety evaluation (PPCoN platforms)

Calculations and documentation completed on computer and by hand.

1990 to 1991

Subsea/Construction Engineer

Ocean Industries/Davy Offshore/Sovereign Oil & Gas

Subsea engineer with special responsibilities for flexible pipelines and risers.

On completion of all subsea activities, seconded to the construction team of the Ali Baba semisubmersible as lead site engineer. Responsible for overseeing corrective actions and vessel completion activities.

Later employed by Davy Offshore's client, Sovereign Oil & Gas as their senior offshore commissioning engineer on the Ailsa Graig storage monohull vessel for topsides and subsea equipment.

In detail:

- interface with vendors and suppliers
- vendor design, installation procedure and as-built documentation review
- in-house as-built documentation compilation
- vessel motion analysis re. subsea equipment installation
- flexible riser analysis
- client offshore representative overseeing subsea equipment installation and commissioning
- control and instruct site team engineers on final stages of semisub construction
- quality and certification review/assessment of the vessel and installed equipment
- commissioning documentation review
- oversee semisub subsea and topsides commissioning (re. engineering requirements)
- instruct monohull subsea and topsides commissioning team

Analysis carried out using hand calculations and personally written computer programs (verified using independent sources).

Verification responsibilities included client interface, philosophy review, report review, independent verification analysis and report compilation.

1986 to 1990

Project Manager

Dunlop Armaline

Project manager in control of the design, manufacture and delivery of the Scapa and Emerald field flexible pipes and risers.

Also consultant and design engineer on various aspects of the flexible pipe components such as crimp fittings, bend restraints, bend restrictors and design of the mid water support buoys used on the emerald field flexible riser system.

Offshore representative overseeing the installation of various flexible pipes.

In detail:

- manage design/manufacture of long and short lengths in Grimsby and Newcastle.
- design review
- manufacturing method review
- flexible pipeline and riser analysis
- devise and computerise flexible beam theory
- installation procedure review
- 'steel Vs flexible' cost and design comparison report
- involvement in crimp fitting design
- ancillary equipment design
- mid water support buoy design
- cathodic protection system review
- flange and connector design
- performance characteristics (globally, locally with respect to fluid transportation)
- manufacturers offshore representative
- riserbase design (flexible risers)

Project management responsibilities included personnel, reporting, budget and delivery control, along with usual client interface activities.

Consultancy responsibilities included analysis, vendor/client documentation review and making recommendations as appropriate.

Dunlop's clients for the above included: Occidental Petroleum Caledonia (UK)
Davy Offshore Sun Oil Conoco

1984 to 1987

Subsea Engineer

BUE/Oceanengineering

Employed as project engineer for the Balmoral field installation. Responsible for the procurement of flexible pipes and their analysis with respect to installation and use. Also responsible for the compilation of all installation and tie-in procedures.

Also used as analyst for various hydrodynamic interface situations. Including structures, flexible and steel tie-in spool pieces, vessels, etc.

In detail:

- monitor and expedite flexible pipe manufacture
- compilation of flexible pipe installation procedures
- seafastening design
- vessel loadouts (layout and organisation)
- hydro-analysis
- soil characteristic analysis
- pipeline transportation analysis
- deep water Jacket repair engineering (Green Canyon)
- topsides installation of temporary dive spread
- as-built documentation compilation
- maintenance procedures for subsea pipeline repair system
- client interface
- project control and reporting

Project engineering responsibilities included the control of a small team of draughtsmen and structural engineers for the Balmoral field template tie-in and in-field pipeline installation project, along with the usual client/vendor interface activities. Responsibilities included the review of others' documentation and designs and make recommendations as appropriate.

All analysis carried out by hand.

BUE/Oceanengineering's clients for the above included: Elf Petroleum Sun Oil
Conoco Big Inch Heerema

1979 to 1984 & 1989(ICS)

Petroleum Industry Experience

ITS/Mapel Norge/Canocean/Bligh Engineering/Heerema/ICS

Positions and experience varied according to client requirements but usually centred around subsea and vessel engineering.

Whilst responsibilities varied from analytical to design of topsides and subsea systems, they centred around piping, pipelines and risers. Including termination systems.

In detail:

- overland gas pipeline design
- pipelay analysis
- stinger design and analysis
- steel riser/J-Tube pull-in analysis
- topsides production and ancillary piping stress analysis
- fluid transportation analysis
- project control
- LNG & LPG spherical storage tank design verification (location Turkey)
- steel riser design
- subsea pipeline routing (survey, seabed profiles, crossings, soils, etc.)
- subsea pipeline design (strength, installation, transportation, stability, etc.)

Client's for the above included:

ICI

Conoco

Phillips Petroleum

BP

Shell

Britoil

SPLAJ

Aramco

Heerema

Hyundai

Bilen

1974 to 1979 & 1984/5(SAC)

Non-Petroleum Industry Experience

ITS/SAC

Employment with ITS varied from office manager over a contract drawing office to junior design consultant.

Responsibilities varied from design to analysis of aero/weapon and special purpose equipment and components, covering mechanical, electrical and fabricated systems.

Employment with SAC was as consultant to their design engineering team(s) with special responsibility to the aero industry projects.

In detail:

- cryogenics systems design
- complex castings design
- mini-chemi-labs design
- NDT/NDE systems design
- stress analysis
- mass market consumer tools design
- production conveyance systems design
- project planning
- hydraulic and pneumatic systems design
- aerodynamics analysis
- plastic moulding design
- jig & fixture design
- complex linkage design
- PCB design
- high speed shaft design and analysis
- multi-stage centrifugal pump design

Position as office manager with ITS involved control of a team of approximately 10 in-house and 20 onsite personnel based in Manchester. Responsibilities included client interface, work procurement, budgetary control and in-house work verification.

Position as junior design consultant with ITS involved the detail design of client system requirements including design philosophy, operational parameters and characteristics, system/component design, maintenance requirements and prototype testing; reporting to a senior design engineer for clarification as required or appropriate.

Position as consultant with SAC involved control of small engineering team designs and detailed design and analysis of complex aircraft components.

Clients for the above included:

Rank Xerox

DON

ITT

Simon Carves

British Rail

GEC

Lancer Boss

BAe

Rolls Royce

UKAEA

CEGB

Black & Decker/Buck & Hickman

SERL

Daresbury Research Authority

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1968 to 1975

Armco/Kodak

Toolmakers apprentice and undergraduate trainee.

Name: KEITH DIXON-ROCHE

Date of Birth: 09/10/51
Place of Birth: London England

Education: Letchworth Technical College
HNC/HND Bridging - Pure & Applied Maths
Hatfield University
BSc Hon. - Industrial Engineering
Open University
BA Open - Science & Technology
Offshore Survival (RGIT) 1987/1990/1996

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Children: one child (DOB 27/03/89)

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