

Curriculum Vitae

Name: Magne Haukaas
Title: MSc. Marine Engineering
Self Employed Consultant

Nationality: Norwegian
Date of Birth: June 19, 1974
Location: Oslo

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Key Qualifications

Senior Subsea Engineer. Structural engineering, Marine operations, Rigid pipelines, Project engineer. Thirteen years of experience.

Current Status

Hired by Technip Norge. Planned end date: End of June 2011

Professional Experience Summary

From March 2006.

Technip (consultant) - Senior Engineer Subsea Installation / Senior Structural Engineer

Employed in privately owned company doing consultant work. Hired by Technip Norge. Working on various subsea development projects, most recently Goliat and Gjøa. Experience in subsea installation work (spools, structures, GRP covers etc), pre-commissioning/RFO, rigid pipeline installation and tie-ins. Responsible for specifications and offshore and mobilization procedures. Structural engineering and design, both temporary and permanent equipment as PLEMs and Tees. Experience with both tender work towards oil companies and evaluation of incoming tenders. Subcontractor and fabrication follow up.

March 2005 – March 2006

EDR - Senior Solution Consultant

Employed at EDR a.s. Working with ANSYS on support, holding courses and doing consultant work.

November 1998 - February 2005.

Offshore Design/Safetec/CorrOcean/Force Technology - Structural Engineer / Senior Engineer

Employed at Offshore Design/Safetec/CorrOcean/Force Technology. Engineering and consultant work for the offshore industry and for industry onshore, including transportation and car industry. Special emphasize on advanced structural analyses as non-linear, dynamic FE analyses as a result of accidental situations. FE programs used include ANSYS, LS-Dyna, MARC, SESAM. Experience also includes programming, engineering and project management of small projects.

1998

Norwegian University of Science and Technology

Military Service. Norwegian University of Science and Technology, Division of Structural Engineering. Part of PhD research project. FE Analyses using LS-Dyna.

Academic Attainment

1997

NTNU

Main thesis: Gas Explosion Strength Assessment of Topside Structures. Investigation into different methods for calculation of response of structures exposed to explosions, using FE analysis (MARC/LS-DYNA3D) and simplified methods.

1993 - 1997

NTNU

Norwegian Institute of Technology/ Norwegian University of Science and Technology , Trondheim - M.Sc. Division of Marine Structures.

Courses

Offshore survival course

Various HSE courses

Fast Track to Pro/ENGINEER Wildfire.

LS-Dyna. Crashworthiness Engineering. Held by Paul Dubois.

LS-Dyna. Finite Element Analysis Software Training Course,

Trondheim, Norway. Held by James M. Kennedy, KBS2.

Microsoft Project. Held by Arve Heieren, Ergo Group.

March 2006 to present

**Employer: magento
Self Employed Consultant**

Technip Norge

Goliat
March 2010 -
Goliat field development. Inline Tee design. Marine operations.

Technip Norge

Gjøa
Februar 2008 - March 2010
Gjøa pipeline installation and subsea development project.
PLEM design. Various subcontractor follow up. Various offshore procedure. Offshore work on installation, tie-in, pre commissioning.

Technip Norge

Yttergryta
October 2007 - March 2008
Yttergryta project. Pipeline installation.
Various subcontractor follow up.

Technip Norge

Alve
October 2007 - March 2008
Åsgard project. Pipeline installation.
Design of PLETs, subcontractor follow up.

Technip Norge

Åsgard J-101
July 2007 - October 2007
Åsgard project. Change out of spools and pipeline.
Seafastening design and mobilizations.

Technip Norge

Tambar
January 2007 – July 2007
Tambar project. Supply and installation of spools and pipelines.
Planning of spool installation and barge operations.
Seafastening design and mobilizations.

Technip Norge

Vilje
March 2006 – January 2007
Vilje project. Supply and installation of spools and pipeline. Installation of flowbases and protection structures.
Subcontractor follow up. Package Responsible Engineer for GRP protection covers. Seafastening design and mobilizations. Responsible for GRP cover installation.

March 2005 –
March 2006

Employer: EDR a.s.
Technical Consultant

Consulting

Blane

March 2006

The design on the outboard termination assembly for the JSS installation on Blane is checked for occurring load conditions during installation and operation.

Client: Vetco Gray

Skinfaks/Rimfaks Tie In Manifold

May 2005 – March 2006

FE Analyses and engineering on sub sea tie-in manifold for all operation and installation load conditions. Global and detailed analysis using FE analyses and hand calculations. All main structure, connections, welds, bolt connections etc. checked. Documented in a Design report.

Client: Nemo Engineering A.S and FMC Kongsberg Subsea

Icarus Tie-in Tool

September 2005 - March 2006

The Icarus tie-in tool, porch and torque tool has been verified for increased tie-in forces. FE analysis using Ansys WB has been used, together with hand calculations.

Client: Vetco Gray

Stybarrow JSS – Outboard Termination

December 2005 – January 2006

The design on the outboard termination assembly for the JSS installation on Stybarrow is checked for occurring load conditions during installation and operation.

Client: Vetco Gray

ACG3 Stab and Hinge Over (SHO) System

August 2005 – September 2005

A subsea SHO is analysed for installation loads using FE analysis.

Client: Vetco Gray

Norne Satellite Development.

June 2005

FE Analyses and engineering on sub sea pipe line end module.

Client: Nemo Engineering A.S.

Courses held

Explicit Dynamics with ANSYS LS-DYNA.

Technical Support

Technical support on ANSYS for EDR customers.

June 2003 –
March 2005

Employer: **FORCE Technology Norway AS**
Structural Engineer / Senior Engineer / Principal Engineer

Verification and FE Analyses	Ekofisk 2/4T Third party verification and consultant work on the decommissioning work on Ekofisk 2/4T. Client: AFDecom Computer Software: LS-Dyna
FE Analysis and Fatigue Calculations	White Rose Capacity calculation and fatigue evaluation of a damaged anchor pile. Client: NGI Computer Software: Ansys
FE Analysis	Ormen Lange Local FE analysis of clamp, investigating the effect of weld profile on local stresses using a 3D solid model. Client: Vetco Aibel/Statoil Computer Software: Ansys
Joints	Ekofisk 2/4C The ultimate capacity and progressive collapse of the deck leg area of EkoC has been established using non-linear FE analyses of rows of the jacket. Client: ConocoPhillips Computer Software: LS-Dyna. Ansys as Preproc.
Fatigue of Piles	White Rose Calculation of pile driving fatigue and fatigue due to operational loads, using software developed within the project. Client: NGI
TEE and pipeline	Langeled FE analyses and hand calculations, using DnV and ASME regulations, of TEEs. Installation and operational load cases. Client: Nemo Engineering AS Computer Software: Ansys
Fatigue	Ormen Lange Deterministic fatigue analysis of Dead Weight using FE analysis and software developed within the project. Client: ABB/Statoil Computer Software: Sesam, MS VB.
Local and global FE analyses	Mooring The Rigmar Jackup is to be attached to the Ekofisk 2/4C and 2/4 X jackets. The jackets are checked globally and locally. Client: ConocoPhillips Computer Software: Sesam, MARC
Fatigue	Gyda Riser A linear FE analysis was performed to assess stress concentration as results of damages to the Gyda riser. Client: Talisman Energy Computer Software: MARC

Tie-in	Spool Tie-in Spool Tie-in against manifold and flow line was simulated. Client: Technip Coflexip Computer Software: LS-Dyna and MARC
1998 – June 2003	Employer: CorrOcean ASA (Former Safetec Nordic AS and Offshore Design A.S) Structural Engineer
Crash simulations	Vehicle Restraint Systems Analyses of cars crashing into VRS for roads were done, evaluating new designs for VRS. Computer Software: LS-Dyna Client: Ørsta Stålindustri
FE analyses	Pile Sleeve Local FE analysis of grouted pile-sleeve connection. Computer Software: Patran and LS-Dyna Client: BP
FE analyses	Analysis of Pile-tip Failure The Grane piles pile-tip was modelled, and analysed using LS-Dyna. Structural Capacity when hitting a rigid boulder and post collapse behaviour was found for several load-cases / configurations. Computer Software: Ansys and LS-Dyna Client: NGI, Norsk Hydro AS
Heat & structural analyses	Snorre TLP – Fire Analyses Analyses of structure exposed to fire. Structural in-place analysis, heat analysis and structural consequence assessment. Project manager. Computer Software: Sesam, Patran and MARC Client: Norsk Hydro
Fatigue	Dan FF and Tyra East B FE analysis of complex joint structure for SCF purposes. Project manager. Computer Software: NISA Client: Maersk Oilie & Gas
FE analyses	FE analyses of Test rig Analyses of test rig for testing add-ons. Computer Software: LS-Dyna Client: Hydro Automotive Structures Vækerø
FE analyses	Simulation of the Airport Express Train FE simulations of the behaviour the air port express train when accidents cause the train to leave the tracks. Computer Software: LS-Dyna Client: Flytoget AS
Electric field analyses	FE Simulation of Electric Current Simulation of the current in plates and tubes. Computer Software: MARC Client: CorrOcean MOT

Conductor design	Ekofisk 2/4 B. Design of conductors. Computer Software: SESAM/Matlab/Mathcad Client: PPCoN
Fatigue	Norne FE analyses of joints on the Kvitebjørn topside for SCF purposes. Computer Software: SESAM Client: ABB
Fatigue	Kvitebjørn Topside FE analyses of joints on the Kvitebjørn topside for SCF purposes. Computer Software: SESAM Client: ABB
Fatigue	Halfdan A. FE Analyses of Caisson Support Structure FE analysis of complex joint structure for SCF purposes. Project manager. Computer Software: NISA Client: Maersk Olie & Gas
Car Bumper Design	Design of Bumper Beam, Crash Boxes and Hooks Design of bumper beams, crash boxes and hooks (BMW and Opel). Computer Software: LS-Dyna Client: Hydro Automotive Structures Raufoss
FE analyses	Modification of Safety Line Development of new post for the wire barrier Safety Line. Computer Software: LS-Dyna Client: Gunnebo Protection
FE modelling	Fire Study Eldfisk 2/7B Modelling of modules on Eldfisk 2/7B for fire study purposes. Computer Software: Preframe, Sesam, USFOS.
Heat analyses	Heat Analyses FE heat analyses of Grane platform leg, as part of a risk assessment. Computer Software: Marc
Reassessment	Reassessment of TWA, TWB and TWC. The platforms were reassessed for increased operational life. The work consisted of FE analyses of numerous joints. Computer Software: LS-Dyna3D Client: Maersk Olie & Gas
FE analyses	Redesign of AMCV The project was aimed at improving the design of an AMCV, by performing FE analyses of the separate parts of the vehicle and the complete vehicle, as a continuation of <i>Local Design of AMCV</i> (below). Computer Software: LS-Dyna3D Client: Heggland Moelv

Tubular joints	<p>Re-analysis of Dan A Guiding in FE analyses of ultimate capacity of tubular joints. Computer Software: LS-Dyna3D Client: Maersk Olie & Gas</p>
FE analyses / Programming	<p>Development of Grouted beam Element for Pushover Analysis / Development of Capacity Formulation for Capacity Check of High Strength Grout Reinforced Tubular Members The aim of the project was to develop complete description of a grout beam element, for implementation into a frame program, suitable for pushover analyses. A large number of FE analyses were used to establish buckling curves and cross section capacity. Programs were developed to guide the process, for automated input and post processing. Computer Software: LS-Dyna3D, MS Visual C++, MS Visual Basic Client: Maersk Olie & Gas / Densit AS</p>
FE analyses	<p>Development and Validation of FE fracture Model The aim of the project was to establish fracture models to establish the ultimate capacity of members, as a continuation of <i>General Conditions Related to Subsidence</i> (see below). The project included work with weld modelling and use of- and establishing of fracture criteria. Computer Software: LS-Dyna3D Client: Maersk Olie & Gas</p>
Design of AMCV	<p>Local Design of AMCV (Armoured Mine Clearing Vehicle) The project was aimed at improving the design of an AMCV, by performing FE analyses of the separate parts of the vehicle and the complete vehicle. Computer Software: LS-Dyna3D Client: Heggland Moelv</p>
Programming	<p>Gas Explosion Engineering Joint Industry Project Phase 3 This is part of a project aiming at establishing a handbook for explosion engineering. The work consisted of development of various programs for, among other things, linearisation of explosion loads from experiments and other tools for hazard engineering. Computer Software: LS-Dyna3D, MS Visual Basic, MS Visual C++, MS Fortran Powerstation Client: Oil companies / Steel Construction Institute (SCI)</p>
FE analyses	<p>General Conditions Related to Subsidence The aim of the project was to create general procedures for FE modelling techniques to correctly assess the ultimate capacity of components as tubes and joints. The work was verified by comparing FE analyses with experimental results. The work consisted of:</p> <ol style="list-style-type: none"> 1. Modelling of a column filled with concrete. The column was exposed to compressive load, causing global buckling. 2. Modelling of columns filled with concrete exposed to cyclic loading. 3. Sensitivity analysis of local buckling of tube, with a range of different geometrical properties, grout filling and external water pressure. Programs were developed automate post processing. <p>Computer Software: LS-Dyna3D, MS Visual Basic, MS Visual C++, Client: Maersk Olie & Gas</p>
Design of Car Bumpers	<p>Design of Bumpers The project consisted of FE analyses of bumpers. Computer Software: LS-Dyna3D Client: Raufoss</p>

Verification	<p>Heimdal Riser Platform The project was a third party verification of analyses of the Heimdal Riser Platform. The work consisted of FE analyses of beams. Computer Software: LS-Dyna3D Client: ABB</p>
Design of Blast Wall	<p>Malampaya The objective of this project was to design the blast walls at the Malampaya platform for the specified gas explosion pressure, by use of dynamic FE analyses. Computer Software: LS-Dyna3D Client: DSC Engineering</p>
Fatigue	<p>Fatigue Analysis of Harald A flare boom. The objective of the project was to establish the fatigue capacity of the Harald A flare boom. The work consisted of modelling of a tubular joint. Computer Software: DISPLAY Client: Maersk Olie & Gas</p>
Capacity Prediction of Blast Panels	<p>Structural Response Model Evaluation This is an extension of an earlier project, which was aimed at simulating structural behaviour of six panels exposed to explosion, to be compared to full scale experiments. In this project, the dynamic capacity of three of the panels was established. The work consisted of dynamic and static FE analyses. Computer Software: LS-Dyna3D Client: Steel Construction Institute (SCI)</p>
Design of Blast Wall	<p>Snorre B The objective of this project was to design the blast walls at the Snorre B platform for the specified gas explosion pressure, by use of dynamic FE analyses. Computer Software: LS-Dyna3D Client: DSC Engineering</p>
FE analyses of Structures exposed to Gas Explosions	<p>Gas Explosion Engineering Joint Industry Project Phase 3 This is part of a project aiming at establishing a handbook for explosion engineering. The work consisted of analyses of decks and beams subjected to gas explosion loading. Capacity predictions and investigation of effect of modelling of welds and element mesh, and investigation into methods for controlled progressive collapse was also a part of the study. Computer Software: LS-Dyna3D Client: Oil companies / Steel Construction Institute (SCI)</p>
Adding new Features to LS-Dyna	<p>Internal Study Adding User Defined Solution Control to LS-Dyna3D for increased possibility for result generation. Computer Software: LS-Dyna3D, Fortran Client: Offshore Design AS</p>
Strength Assessment of Decks, Probabilistic Assessment, Load Analysis.	<p>Nelson The project included simulation of explosions, structural integrity and probabilistic analyses. The work included strength assessment of decks subjected to explosion loading, probabilistic assessment of design explosion load and structural strength on the Nelson platform and generation of result plots from FLACS analysis by developing program in Excel/Visual Basic. Computer Software: LS-Dyna3D, Problast (internal), Excel / Microsoft Visual Basic for Applications Client: Enterprise Oil</p>

1998**Employer: Norwegian University of Science and Technology, Division of Structural Engineering Military Service. Structural Engineer****FE Analyses of Panels Subjected to Projectile Impact****Analyses of Panels Subjected to Projectile Impact**

The project was a PhD research project, sponsored by Hydro Aluminium, aimed at increasing the knowledge of the behaviour of structures exposed to projectile impact, and in particular the response of stiffened aluminium panels. The work consisted of FE analyses, hand calculation and experiments.

Computer Software: LS-Dyna3D/FEMB, MS Visual Basic

FE Analyses, Student Guidance.**Various Projects**

Other activities at the Norwegian University of Science and Technology consisted of, among other things, FE analysis of blast wall, simulations of aluminium panels in buckling experiments, guiding of project student and exam evaluations.

Computer Software: LS-Dyna3D/ABAQUS

1997**Employer: OFFSHORE DESIGN A.S, Summer Job. Structural Engineer****FE analyses of Panels exposed to Gas Explosions****Gas Explosion Engineering Joint Industry Project Phase 3**

The objective of the project was to assess the capability and accuracy of available techniques to predict the structural response of panels subjected to explosion loads. This was done by comparing experimental results from a full scale explosion experiment with simulations using a FE code.

The work consisted of dynamic FE analyses of six test panels of varying geometry and support conditions.

Computer Software: LS-Dyna3D

Client: Oil companies / Steel Construction Institute

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