

CURRICULUM VITAE

Mr Richard Haines

ACADEMIC QUALIFICATIONS

1. Natal Senior Certificate with merit (1973) - Maritzburg College.
2. National Technical Diploma (1984) - Pietermaritzburg Technical College.
3. B.Sc. (Mechanical Engineering) (1986) Cum Laude - University of Natal, Durban, South Africa.
4. M.Sc. Engineering (1990) - University of Natal, Pietermaritzburg, South Africa.

Thesis: Compression-ignition Combustion of Synthesised Hydrocarbon Fuels.

TRADE QUALIFICATIONS

Completed an apprenticeship and qualified as a Fitter at Hulett Aluminium (previously ALCAN) - 1982.

ENGINEERING EXPERIENCE

1. **Turner's Engineering:** Apprentice Turner Machinist: July 1980 - December 1980.
2. **Hulett Aluminium:** Apprentice, Maintenance Fitter and Engineering Technician: February 1981 - February 1984.
3. **Umgeni Water Board:** Mechanical Maintenance Engineer: January 1987 - March 1988.
4. **Department of Agricultural Engineering, University of Natal:** Research Engineer - Alternative Fuels for Compression-Ignition Engines: April 1988 - January 1990.

Testing of diesel engines and heat release analyses of synthesised hydrocarbon fuels.

5. **Atlantis Diesel Engines:**

- a) Senior Development Engineer: February 1990 - June 1994.
 - i. Establishment of test procedures, programmes and calibration routines;
 - ii. Stipulating engine build levels and component tolerances for test engines (in-line 4 and 6, V8, V10, V12 engines);
 - iii. Development of engine ratings to meet customer requirements;
 - iv. Development of engines and injection equipment to limit exhaust gas emission levels (NO_x, CO, hydrocarbons, smoke);

- v. Diesel fuels, oils and additive testing;
- vi. Validation of engine components for local content programme;
- vii. Wear and failure analysis of components;
- viii. Vibration and stress analysis of engine components;
- ix. Engine noise measurement and analysis;
- x. Management of technicians-in-training;
- xi. Development of a data acquisition system for the measurement of in-cylinder pressures during combustion;
- xii. Project Manager/Engineer for installation of a computer management system for eight diesel engine test cells. The project included the initial design concept, plant interface, instrumentation, commissioning and maintenance;
- xiii. Five week visit to Daimler Benz - AG (Stuttgart - Unterturkheim) for extra training in diesel engine combustion, mechanical and vibration testing.

b) Chief Engineer - Product Testing: July 1994 - June 1996.

Control and co-ordination of all testing functions in the Product Engineering Department including management of two test engineers, test cell charge-hand and five fitter-testers plus the control of eight computerised test cells including all upgrading, refurbishments and capital projects.

6. Stellenbosch University - Centre for Automotive Engineering (t/a CAE): Chief Researcher: July 1996 - June 1999.

- i. Retained by Atlantis Diesel Engines (ADE) as consultant for all testing and development requirements. This required over one hundred hours of consulting time per month. Job content as per previous job functions at ADE;
- ii. Control and co-ordination of all engine testing requirements for ADE. Facilities at Centre for Automotive Engineering as well as at ADE (Test Cells, Workshops, Injection Pump Rooms, Material Laboratories, Measuring Rooms);
- iii. Technical input into various research projects and student theses at the Centre for Automotive Engineering;
- iv. Member of project team for the design and specification for three new engine test cells built at the Centre for Automotive Engineering;

- v. Set up test cell for testing touring car motor sport engines and co-ordination of testing with racing teams.

7. Cape Advanced Engineering (t/a CAE):

- a) Project and Test Engineer: February 2000 – December 2001.

Testing of diesel and petrol engines, fuels and fuel additive packages.

- b) Manager - Manufacturing and Assembly: January 2002 to December 2004.

Management of the company facilities and personnel for manufacturing, measurement and engine assembly functions.

- c) Manager - Operations Division: January 2005 to December 2008.

Management of the company facilities and personnel for testing, manufacturing, measurement and engine assembly, instrumentation and electrical, and logistics functions.

- d) Company Director: 2001 and 2002.

8. Stellenbosch University - Department of Mechanical and Mechatronic Engineering:

- a) Temporary Senior Lecturer: January 2009 - June 2009.

- b) Senior Lecturer: July 2009 to date.

- i. Modules presented: Machine Design A314, Thermofluid Dynamics 214, Food Factory Machinery 414, Food Factory Machinery 444, Thermal Energy Systems 746/846.
- ii. Postgraduate student supervision.



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Date: 01.03.2018