



# Rolls-Royce

## Career Opportunities & Development

Alasdair Gardner, 21<sup>st</sup> July 2011

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# Alasdair Gardner - Profile

2003 - 2007

Cambridge Aerothermal M.Eng (3rd year at MIT)

2007 - 2008

Royal Academy of Engineering “Leadership Awards Programme”

- CFD project with automotive supplier, Delhi
- Chinese language and business short course, Beijing
- Design project with solar power start-up, San Francisco

2008 - 2010

Rolls-Royce Graduate Programme

- Certification of BR725 engine for Gulfstream G650 corporate jet, Berlin
- Hydrodynamic design of turbine blades for a tidal power demonstrator, Bristol
- Postgraduate qualification in Aerospace Design & Management (Bristol University)

May 2010

Rolls-Royce Civil Aerospace - Future Programmes

- Thermodynamic design & optimisation of advanced engine cycles
- Design of advanced Secondary Air Systems for gas turbines
- Member of Cambridge University Liaison team



# Overview

- Intro to Rolls-Royce
- Career development
- Transferable skills
- Questions



# Power Systems for Land, Air & Sea



Civil  
Aerospace



Defence  
Aerospace



Marine



Energy



Nuclear

# Civil Aerospace

The fuel efficiency of the Trent family has improved by over 15% since the first engine entered service in 1995.



Rolls-Royce engines keep up to 400,000 people in the air at any one time.



We predict that over the next 20 years 140,000 engines, worth over US\$800 billion, will be required for more than 65,000 commercial aircraft and business jets.



# Defence Aerospace

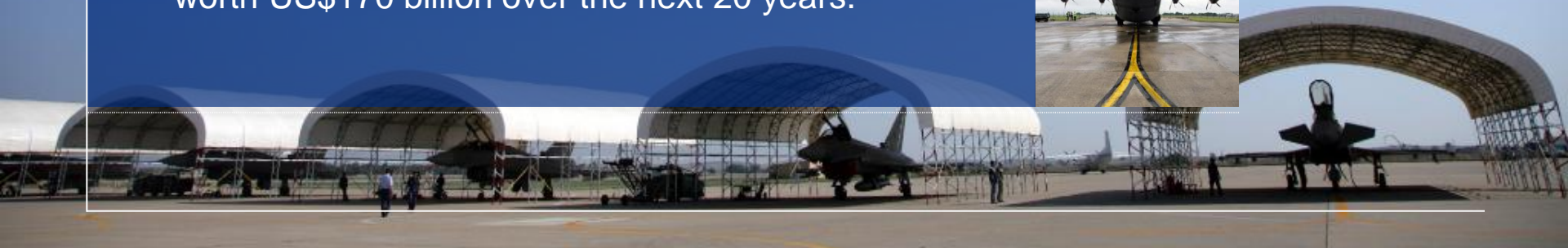
Rolls-Royce designs and manufactures the LiftSystem technology that allows the F-35B JSF to land vertically.



Rolls-Royce is a global provider of defence aero-engine products and services, with 18,000 engines in service for 160 customers in 103 countries.



We forecast that demand for military engines will be worth US\$170 billion over the next 20 years.



# Marine

Designed and equipped by Rolls-Royce, Far Samson is the most powerful offshore vessel ever built, capable of subsea installation work at depths of 1000m.

Our marine business has more than 2,000 customers, including 70 navies, and our equipment is installed on over 30,000 vessels worldwide.

The Group forecasts a demand for marine power and propulsion systems valued at more than US\$200 billion over the next 20 years.



# Energy

The Bergen K liquefied natural gas engine, designed for ferries, emits 90 per cent less nitrogen and 20 per cent less carbon dioxide than traditional diesel engines.



With customers in over 120 countries, our Energy business supplies power systems for on and offshore oil and gas applications, with a growing presence in electric power generation.



The Group's 20-year forecast values the total aero-derivative gas turbine sales in the oil and gas and power generation sectors at more than US\$70 billion.



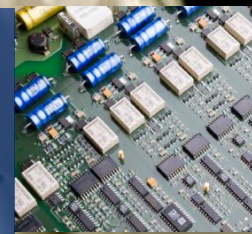


# Nuclear

For the past fifty years, we've been the Technical Authority for the UK Nuclear Steam Raising Plant (NSRP), which is responsible for powering the whole of the UK's Royal Navy submarine fleet.

183 nuclear reactors worldwide are currently benefiting from our proven expertise.

We have developed 6 classes of reactor plant, for 27 different submarines.



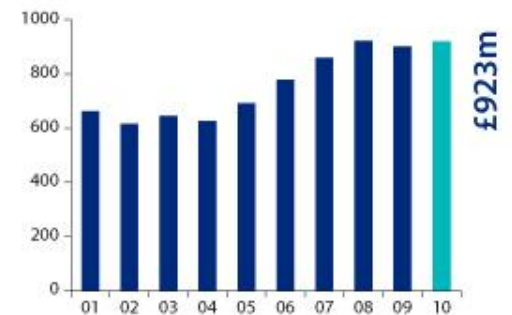
# Research and development

We develop technologies and intellectual property that allow us to compete on a global basis in highly competitive markets.

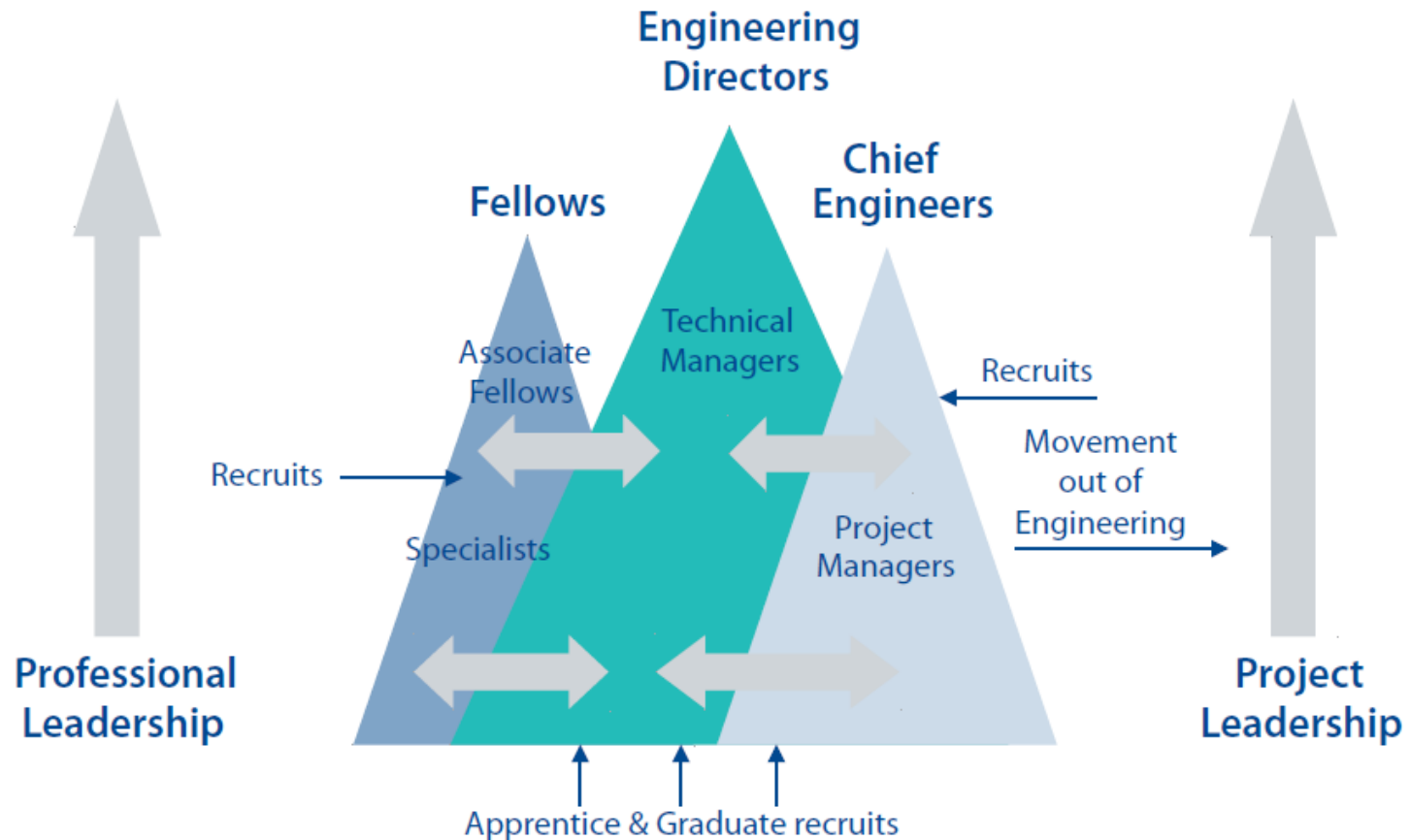
- £923m invested in R&D in 2010
- nearly £8bn invested in R&D over the past ten years
- over 450 patent applications annually
- 28 University Technology Centres worldwide



Gross research and development expenditure (£m)



# Career Development Model



# Career Development Support

- Career mentoring and coaching
- Membership of Professional Institutions
- Internal training programmes
- Further study & research
- Secondments to broaden experience



# PhD Transferable Skills

- **Self motivation**
- **Independence**
- **Inquisitiveness**
- **Understanding context**
- **Project mgt**
- **Time mgt**
- **Experimental research**
- **Problem solving**
- **Data gathering & analysis**
- **People skills**
- **Network & communication**

# Alignment to Rolls-Royce “competency framework”

- Self motivation
- Independence
- Inquisitiveness
- Understanding context
- Project mgt
- Time mgt
- Experimental research
- Problem solving
- Data gathering & analysis
- People skills
- Network & communication

## Courage

The readiness to reach independent conclusions and express them

## Breadth

The ability to look at complex business situations/people/data from a high level and with attention to relevant detail

## Delivery

The will, confidence and determination to turn plans into substantive actions and deliver results

## Judgement

The ability to take full account of the business and commercial realities of a situation, identify priorities and make sound decisions

## Influence

The ability to form and maintain relationships with relevant people, to communicate clearly and simply, to gain trust from others

[www.rolls-royce.com/careers](http://www.rolls-royce.com/careers)

