

# Graduates -- Work Ready Day 1

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Gordon D Grant  
General Manager  
INEOS Grangemouth

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Overview

12-Jan-09

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## INEOS Background

- 2008 Sales approx \$48bn
- 16,000 employees\*
- 4,500 employee shareholders
- 70 manufacturing sites worldwide\*
- 40 million tonnes of chemicals capacity
- 20 million tonnes of refinery products (400,000 bbls/day)
- **3<sup>rd</sup> largest chemical company globally**
  - *Largest refinery in Southern France*
  - *Largest refinery in North Britain*
  - *Largest Olefin producer in Europe*

\* *excl. joint ventures*

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## Grangemouth

- 1700 acre site
  - 4000 kilometre of pipework
  - 9m litres of clean fuel per year
  - 1 million tonnes of chemicals per year
- 1400 direct employees incl.
  - 99 apprentices
  - 18 graduates in development programs
- Estimated 7000 indirect jobs supported in Central Scotland
- Generate £4.0bn turnover
- Export £2.0bn sales



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## Education and Training of Engineers during a recession

### Graduates, Work Ready Day 1

#### Engineers of the Future



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## Our Shopping List i.e. Customer Requirements

- Our Sites need
  - Engineering Graduates
    - Chemical, Mechanical, Electrical & Instrument
      - Capable of reaching Chartered Eng. Status
      - Technical expertise in the Process Industry –[problem solving/innovation](#)
      - People Managers, from technicians to professional staff
      - Financial/Commercial Awareness
- Our Businesses need
  - Graduates with analytical skills – [problem solving/innovation](#)
  - Commercial, Sales, Marketing, Financial
  - Could be Engineers – but 2x training load
- Most of all we need **speed** to the Market Place
  - Do a Job from Day 1
  - This is critical as we move out of recession



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## Traditional Route

- School to University
- Graduate with 2/1 or better
- Join Process Industry
- 4 year 'apprenticeship'
- Year 1 & 2 training, Year 3& 4 --50%--75% effective
- Cost to train ( Salary, NI, Bonus, Pension etc) ---- £170K+

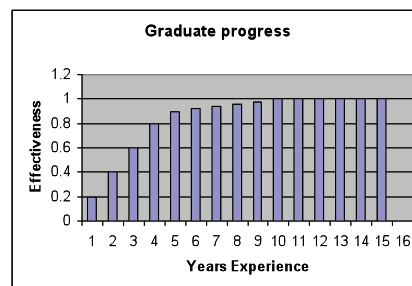


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## The Issue

- Under stable economic conditions experience level is constant
  - Recruitment of grads ensure that retirees are replaced
  - Recruitment of experienced Engineers ensure experience level is maintained



Total experience = 114 years

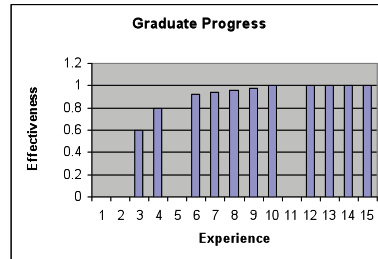
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## The Issue Under Recession

- Under Recession Conditions
  - No recruitment of Graduates
  - No replacement of experienced leavers

- How do you resource the recovery?
- How do we accelerate the effectiveness curve
- Speed to close gap – **Speed to Market**



Total experience = 97 years

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## Engineering Graduates—Speed to market place?

### What do we mean?

1. Deep understanding of **our** plants from day 1
2. Risk Assessment— **our daily life** —starts day 1
3. Working knowledge of Industry Standards
4. Working knowledge of Legislation
5. Social Skills



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## Engineering Graduates—Speed to market place?

- 1& 2 are not achievable **in the short term**
  - Deep knowledge of plant
  - Risk assessments

### **However**

- 3,4,&5 can be accelerated in the short term
  - Industry Standard
  - Legislation
  - Social skills

I'll come back to the longer term— but what can we do to **aid** quick recovery?

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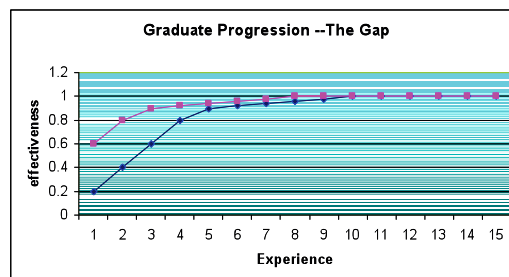
## The Prize

If we can reduce the time to 90% effectiveness by half

The cost saving will be approx £90k per graduate

**AND**

The experience levels recover much quicker



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## Short Term Speed to Market What Can Academia do in the short Term

### 1. Industry Standards

- BSi, DIN, ANSI
- Inches, psig, feet/second, gallons, barrels, etc etc
- HV, Pneumatics, Flow measurement, Control Schemes

### 2. Legislation

- COMAH, IPC, Employment, H&S at Work Act

### 3. Social Skills

- Team Work, Leadership, Communication, Report Writing, Verbal Feedback, Hard Edge, Community Involvement

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## Engineering Graduates—Speed to market place Long Term?

*What do we mean?*

1. Deep understanding of **our** plants from day 1
2. Risk Assessment— **our daily life** —starts day 1

- Hazops, Work Place Take Five, Safe Systems of Work,
- Safety Rules
- Environmental rules

**And of course we still need**

3. Industry Standards
  - BSi, DIN, ANSI
  - Inches, psig, feet/second, gallons, barrels, etc etc
4. Legislation
  - COMAH, IPC, Employment, H&S at Work
5. Social Skills
  - Team Work, Leadership, Communication, Report Writing, Verbal Feedback, Hard Edge, Community Involvement



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## Alternative Route –Long Term

- 5 year sponsored training
  - 2 year accelerated apprenticeship
  - Master Degree after 5 years
  - Work experience on Site during sponsorship
    - On plant
    - Working with INEOS staff
    - Utilising INEOS processes and systems
    - Working to the Site/ Industry standards
    - Part of a team
    - Understand the role/job



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## Alternative Route – Long Term

### How can it Happen?

- Partnership
  - **Industry**
    - Provides the money (with help from Government)
    - Provides the work placements
    - Provides the Industry Knowledge
  - **Local College**
    - Provides the practical , hands on , basic apprenticeship skills
    - Takes the students to HNC level and SVQ3
    - Employees the Students
  - **University**
    - Develop the Academic ability via the Masters Degree
    - Support Colledge academic development e.g. Maths



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## Alternative Route- Long Term

### What's In It for Everyone?

- **Student** – paid to train and study followed by an initial higher starting salary
- **College and University** – more income and close links with Industry
- **Industry** – A graduate able to do the job on day 1 at half the training cost of the traditional route.

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## Alternative Route – Long Term

### Will It Work?

- We will know in 3 years time
- Currently in the second year of our pilot
- We are recruiting our second batch now
- So far – It's going Ok
- **Who's Involved? ----**



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**Engineers of the Future**  
Leading the Way

If you're thinking about a career in engineering think about this

Engineers of the Future is a bespoke five-year company-sponsored programme aimed at talented students interested in a career in Mechanical, Chemical, Electrical and Electronic Engineering.

It offers the unique opportunity to combine vocational training and an M.Eng Degree with hands-on industrial experience at INEOS.

Throughout your course, you will be sponsored by INEOS, one of the world's largest petrochemical companies. Not only will they pay your university course fees, you'll also receive a salary while you are working towards your qualification.

You will study initially at Forth Valley College completing a Modern Apprenticeship in Engineering and a Higher National Diploma. Then, when you will progress to a Masters Degree in Engineering at Heriot Watt University, one of the UK's leading universities for business and industry.

You will need a personal file for the subject with a maximum of 3 highest GCSEs in Science, 2 of which must be Maths and Physics.

**Interested?  
Of course you are!**

To apply contact us on:  
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or call (01324) 463272

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**Business to College Awards**  
Innovation Category Winners  
2009

**Engineers of the Future**

- Bespoke training programme
- Award winning
- Five year company sponsored
- Masters Degree qualification
- Site-based experiences from 'day one'
- Unique partnership with Forth Valley College and Heriot-Watt University



**Alternative Route**

Question



***We have thought of one alternative to the issue of getting graduates to the market place on day one***

***What is your alternative?***



## PHEE Congress 2010

-Thanks You for allowing me  
the opportunity to present  
today

-Questions ?

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