

# Engine Room



Issue 18 Winter 2008 / 09

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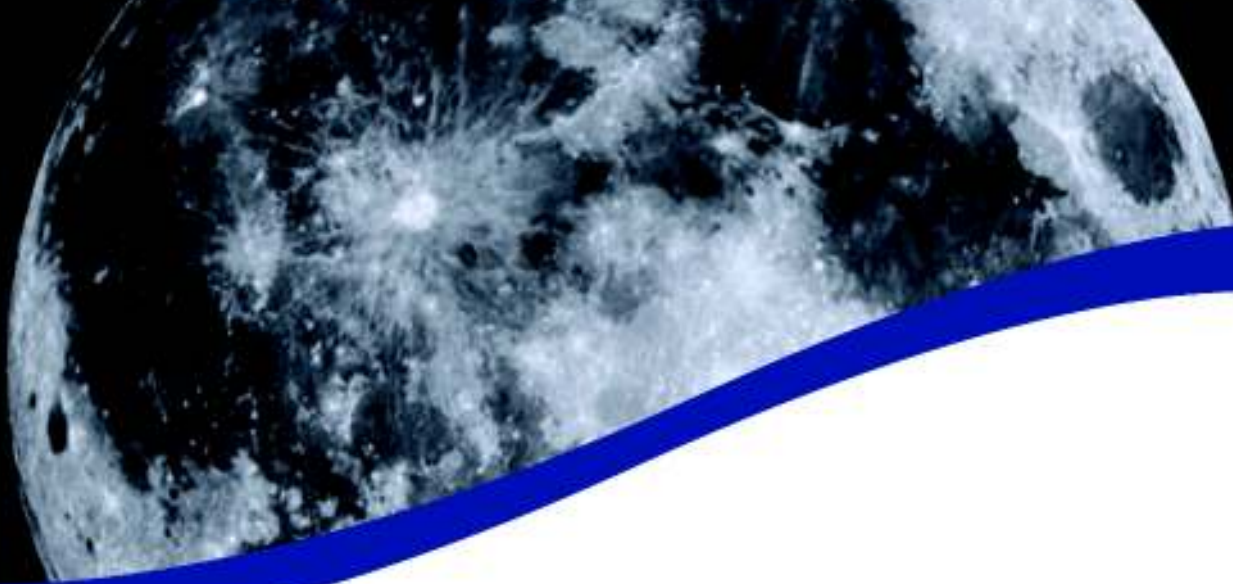
Engineering People ♦ Manufacturing Success

A photograph of a large industrial engine room, likely a power plant or refinery. The image shows large, curved metal structures, possibly turbine casings, with a blue and green color scheme. The lighting is dramatic, with strong highlights and deep shadows.

Pioneering  
the Future

TRAINING  
QUALITY  
STANDARD

Engineering People ♦ Manufacturing Success



## Achieving New Heights



Last year was another good year of achievement for our apprentices.

The numbers who completed their apprenticeship successfully during August 07 to July 08 was again greater than the previous year, and is **ahead of the national average** and our own high targets.

We are already **on track to raise overall performance still further**. Congratulations to all the young people and their employers who have worked hard to achieve this success.

LEFT: AVT's **Mark Bennett** (centre) with successful apprentices **Johnathan Beckett** & **Laura Oliver** from **South West Trains**.

## What's Special about 1969?

### *"We Came in Peace"*

American **Neil Armstrong** has become the first man to walk on the Moon. The astronaut stepped onto the Moon's surface, in the Sea of Tranquility, at 0256 GMT, nearly 20 minutes after first opening the hatch on the *Eagle* landing craft.

Armstrong had earlier reported the lunar module's safe landing at 2017 GMT with the words: **"Houston, Tranquility Base here. The Eagle has landed."**

As he put his left foot down first Armstrong declared: **"That's one small step for man, one giant leap for mankind."**

He described the surface as being like powdered charcoal and the landing craft left a crater about a foot deep. Armstrong spent his first few minutes on the Moon taking photographs and soil samples in case the mission had to be aborted suddenly.

He was joined by colleague **Edwin "Buzz" Aldrin** at 0315 GMT and the two collected data and performed various exercises - including jumping across the landscape - before planting the Stars and Stripes flag at 0341 GMT. They also unveiled a plaque bearing an inscription reading: **"Here men from the planet Earth first set foot upon the Moon July 1969 AD. We came in peace for all mankind."**

### **Avon Vale Training was Born!**

Around the same time, different pioneers were venturing into uncharted territory, when a group of engineering employers came together to found Avon Vale Training. We have come a long way since then. **In 2009 we will be marking the milestone of a Ruby Centenary.**

We plan to celebrate this with everyone who has played a role in our past and with those who are shaping our future.

**We hope you will be part of our celebrations. Stand-by for more details soon.**





# Fresh Approach to Vocational Teaching

**Writhlington School** in Radstock is one of the leading schools in England. It leads not just in the quality of teaching, but also in the imaginative ways that it achieves excellence for its students. One such innovation is its new venture with **Avon Vale Training**.

Writhlington has **Business & Enterprise** specialist status with an additional specialism of **Applied Learning**. Its latest Ofsted report was glowing with its activity classed as either "good" or "outstanding". Building on this, it has designed a pathway to professional employment for its students with a mix of traditional subjects like Maths, English & ICT with a work placement and included a NVQ, which **Avon Vale** has been asked to deliver.

NVQs are one of the major components of the **Advanced Apprenticeship** programme and means Writhlington students will have a huge advantage when they leave school. It means that they are "work ready" and able to fast track an apprenticeship. The initiative precedes the forthcoming Diplomas which will bring schools closer to business, colleges and training providers like **Avon Vale**.

*"fantastic impact on the students"*

*"At Writhlington, students really enjoy and are enthusiastic about learning. This is because we have developed a personalised learning programme where all students really can be successful. The new relationship with Avon Vale Training is yet another example of this and explains why we have achieved 95%*

*A\*-C GCSE grades this year"* says **James Fox**, (Deputy Head).

## Class Act

This is a big departure for **Avon Vale** as we have always delivered our training in the workplace to young adults and older employees. Teaching children in a school is a different kettle of fish. However we are experts in delivering NVQ engineering qualifications, and with that expertise we bring a different way of studying, much more based on practical and hands-on learning.

*"able to fast track an apprenticeship"*

*"The students are really enjoying their new course and are the envy of their peers"* says **James Fox**. *"It has had a fantastic impact on the students. They are more switched on in their other subjects. They see themselves as a team of young engineers and relate what they are doing now to what they want to do in the future. So in English they might write a leaflet on how to use a piece of equipment or in Maths they might look at how to price a job quotation"*.

Avon Vale is teaching the **Performing Engineering Operations** (Electrical) NVQ, one day a week on Wednesdays over the next 3 years. Students start in Year 10 (14-15 year olds) and complete at the end of a year in sixth form. We are also using our business relationships to help arrange work placements with local employers.

**Mark Bennett** (Avon Vale's course tutor) says *"The students are very enthusiastic to learn. They are raring to*

*go and particularly enjoy the hands-on things like wiring light circuits."*

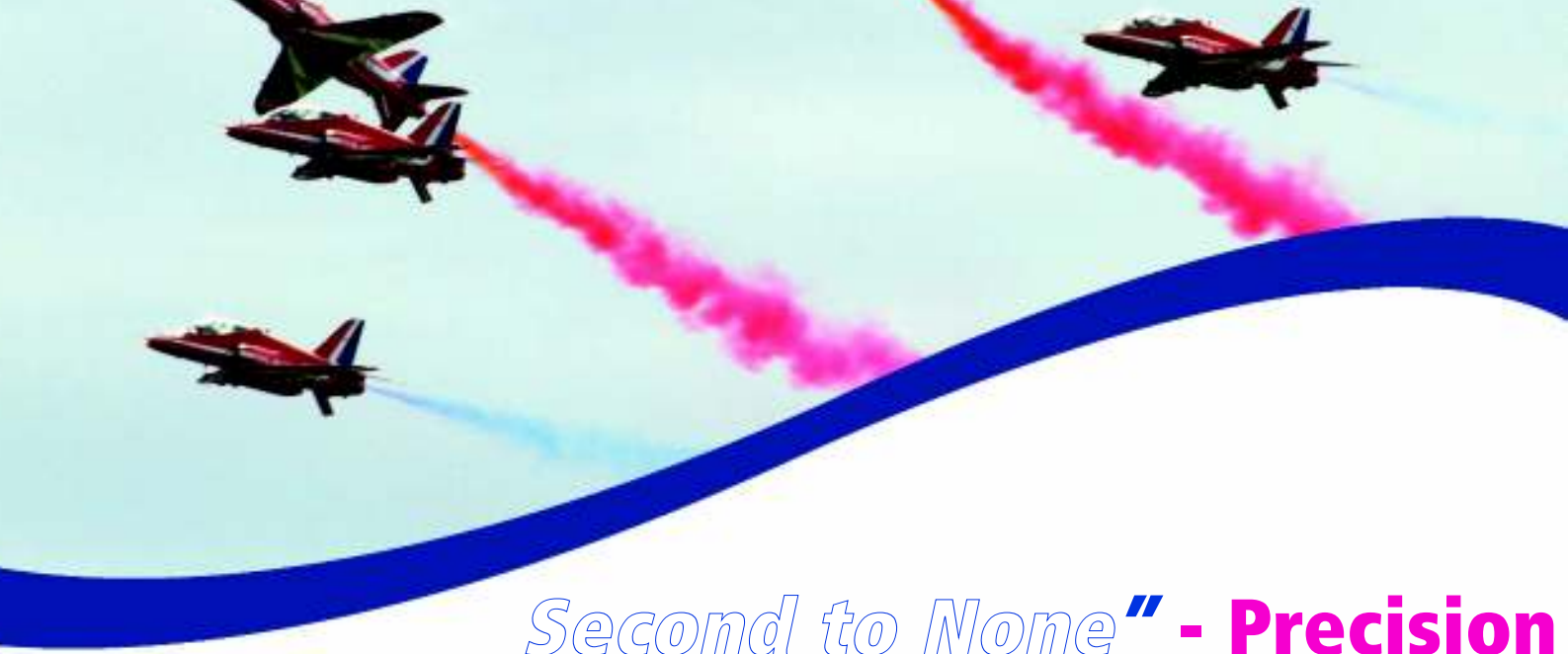


ABOVE: AVT's **Dave Bissell** with a Writhlington student.

## Building for the Future

Writhlington students have a bright future. Construction has just begun on a wonderful £26M new school building due to open in 2010. This will have excellent facilities and there will be major investment to create a well resourced department teaching engineering & manufacturing. This will be in time for delivery of the Manufacturing Diploma planned to be available in 2011.

It is hoped **Writhlington** and **Avon Vale** can build on the success of their collaboration to enrich the skills and expectations of young people.



## *Second to None*" - Precision

**Thomson Machine & Tool Co. Ltd** are a world-class precision engineering company based in Frome, Somerset. A third generation family owned enterprise, they produce precision components of high complexity and quality for the aerospace, marine and energy sectors.

Their main customer is **Rolls Royce** but they also supply to several companies including **GKN Aerospace** and **Cross Manufacturing**. The **Rolls Royce** business has grown steadily over the last few years. They produce key engine components for several engine families used by Boeing & Airbus and in military applications such as the Eurofighter-Typhoon, Tornado, Harrier and Hawk (above).

*"titanium & exotic nickel based alloys which are extremely durable"*

### Expansion

About 5 years ago they acquired a second site in Frome, to house an increasing number of state-of-the-art CNC machines, some costing up to £1/2M. Due to their high tensile strength to density ratio and high corrosion resistance, titanium alloys are widely used in aerospace. In fact, about two thirds of all titanium metal produced is used in aircraft engines & frames.

*"We manufacture un-classified, sensitive and critical aero-engine components" says **Fraser Thomson**, General Manager. "We mainly work with titanium and exotic nickel based alloys which are extremely durable."*

It can take 12 months to procure the necessary raw materials and so Thomson's have an order book with **Rolls Royce** stretching 3 years forward. Materials come from designated **Rolls Royce** suppliers working under contract, which means

they are of a designated quality, and are insulated from fluctuations in the commodity price of metals.

The company has grown significantly in the last few years with the workforce increasing from 50+ to 80+ as turnover approaches £10M. This has brought its own challenges, and has meant restructuring to achieve a more effective organisation. As from January '09 the company are updating their identity and will be known simply as "**Thomson Aero Ltd.**"

### Recruitment

*"We are successful because of our staff. They are our company's single biggest asset, but it is increasingly difficult to recruit engineers with the right skills" says **Fraser Thomson**. "That's why we are working with **Avon Vale** to bring in young talent through apprenticeships."*

This year Thomson's started their second apprentice as part of a rolling programme to provide a steady stream of engineers. **Joe Gooding** mentors the apprentices at Thompsons. Joe was an **Avon Vale** apprentice himself, doing a tool-making apprenticeship at



ABOVE: **Joe Gooding** machining a drill head used in the oil industry



# Engineering at Thomson Machine & Tool Co. Ltd

**R Mathew Ltd** in Westbury '97-2000. He then moved to the US for 3 years to oversee CNC milling at an American subsidiary, before returning to the UK and joining Thomsons.

*"Apprentices bring enthusiasm and flexibility, which is great. They develop the particular skills the business needs" says Joe. "As well as their practical learning, apprentices have to do some written work. I know from my own experience the danger of letting this build up, so I encourage the lads to do a little bit often. They aspire to be good engineers and are producing some good work."*

*"We are successful because of our staff"*

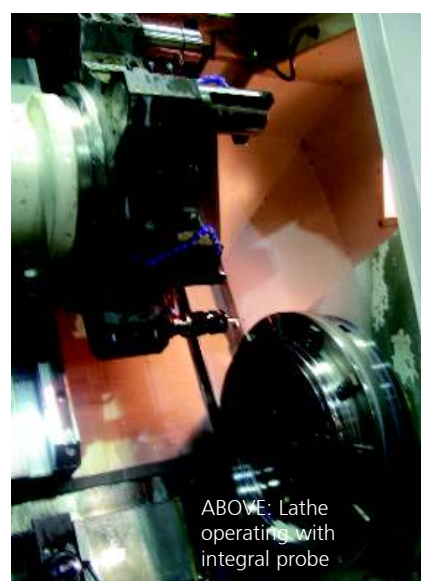
## Made to Measure

**Joe** also oversees the company's milling operations. He has recently helped to design a new way to machine jet engine casings. Changing the milling path has saved 2 production days and has increased the component strength.

He has also been involved in an innovative project to develop integrated measurement probes into their turning lathes. Although probes are common to many milling machines they have not until now been fitted to lathes.

Working in partnership with **Renishaw** they are now uniquely able to provide parts finished to incredibly tight levels of consistency measured in a only few microns. They were already producing parts with a quality superior to the competition, but the extra improvement has delighted customers and means they have extended their world-class advantage.

*"I'm really proud to be involved with a team of people striving to be second to none," says Fraser Thomson. "We really enjoy the engineering challenges and succeeding against the odds."*



ABOVE: Lathe operating with integral probe



LEFT: Engine Casings used to hold **Rolls Royce** jet engine to the airframe.



## Bridge under Troubled Water

Around 600 school children from across Bristol, South Gloucestershire and North Somerset were given a 'taste of engineering' at the fifth annual "**Engineer your Future**" exhibition.

Hosted by City of Bristol College it highlights the different types of engineering and **dispels some of the myths** associated with the industry. It aims to promote engineering careers to Year 9 and 10 students by bringing engineering to life via hands-on, interactive activities.

Employers were on hand to run practical

demonstrations and activities ranging from an orange bungee jump, and an egg drop challenge, to programming robots and computers. **Avon Vale Training** organised a bridge building competition to see how many water bottles cardboard suspension bridges could support.

*"There was a really positive atmosphere among the students, teachers and exhibitors. We've had lots of fun and some spectacular bridge collapses. Hopefully it will produce the Brunels of tomorrow"* said **Phil Tavener**, AVT's Training Co-ordinator.

## Plastic Fantastic

Seven hundred of Britain's top 'plastic people' gathered last month, for a gala dinner at the Park Lane Hilton for the **Plastics Industry Awards 2008**.

The awards celebrate achievement throughout the scope of the UK plastics industry. They offer an insight into current developments in materials usage, product design and innovative manufacturing. Entries came from all industry

sectors, highlighting the wide range of novel solutions that exist to manufacturing issues.

We are delighted that **Avon Vale** apprentice **Daniel Pearce** has won the "Apprentice of the Year". Daniel has seized the apprenticeship as a "second chance". He demonstrates a high level of personal commitment, and is building strong a strong skill set for his employer - the cleaning equipment company **Numatic International**. He is a shining example of how apprentices add real value to a company.

Daniel's college work has merited distinctions, and his articulate and mature approach at work has led to him being entrusted with ever greater responsibility. He now frequently stands in for the manager of the department in making decisions and sorting out problems in the production department. He deserves this recognition and the **cheque of £1,000** that goes with it.

Organiser **Steve Crowhurst**, said: "*The Plastics Industry Awards is a vehicle that the industry has truly embraced. The night itself was a huge success and a fantastic time was had by all. A big thank you needs to go out to all the people who supported the awards.*"



LEFT: **Daniel Pearce** from **Numatic International** receiving a big cheque.



## Minimum Wage Increase

**The minimum wage for all apprentices in England will be increased from £80 to £95** per week from April next year, as announced by the Secretary of State for Children, Schools and Families, **Ed Balls**.

The Government wants to ensure that the earnings of all apprentices are fair and that

they should reflect the support given to young people pursuing other qualifications.

The new minimum wage will benefit an estimated 26,000 apprentices mostly in traditional less well paid sectors such as hairdressing and social care.

## Diplomas - the New Alternative

### What are Diplomas?

Diplomas are a new type of qualification aimed at 14-19 year olds, which are designed to be **an alternative to existing qualifications such as GCSEs, A levels, GNVQs and apprenticeships**.

### How Do They Work?

Diplomas are a combination of two types of learning. The first is 'generic learning', which includes English, Maths and ICT. Secondly, there's 'principal learning', which is at least 50 percent of the qualification and focuses on vocational learning.

Students will be expected to complete practical projects and at least 10 days of work experience. They can also complete optional units of 'additional and specialist learning'.

### How Do They Compare?

There are three levels of the Diploma available, each of which would normally take two years to complete. The table below compares the Diplomas with existing qualifications:

Course	Equivalent	Time/Week
Foundation	5 GCSEs (grade D-G)	2-3 days
Higher	7 GCSEs (grade A*-C)	2-3 days
Advanced	3.5 A levels	4-5 days

The Diploma doesn't replace existing qualifications, like GCSEs, A levels, NVQs and Apprenticeships. **Rather it is another option.** Moreover, students can still do these other qualifications as part of their Diploma course.

### Which Subjects are Offered?

Students will learn about the area of work they're interested in as well as the normal compulsory subjects. However, in the Diploma, students will learn how English, Maths and ICT are used in a work situation related to their Diploma subject area.

Not all Diplomas will be available at once - the Government has plans to phase courses in on a yearly basis. See launch dates below:

**The Engineering Diploma** was launched in some areas this September & will be followed next year by **Manufacturing and Product Design**.





## That's the Way to Do It !

### "Anytime" Apprentices

Just like the rain, apprentice recruitment is not just confined to the summer. Traditionally, taking on an apprentice has been as much a part of the British summer as knotted hankies, **Punch & Judy** and donkey rides on the beach.



But it doesn't have to be that way. You can recruit and start apprentices at any time – whenever suits your business best. Flexibility is the key and apprentices are not tied to the academic year.

We have the details of an army of young recruits all raring to go. So if you have an opportunity now or in the future get in touch with **Gwen Byrne** on **01249 665915**.

### Surviving the "Crunch"

As the economy slides into a period of downturn it worth remembering that an apprentice is an **inexpensive way of meeting your recruitment needs**. They bring new skills to your company and you get to shape them into the engineer your business needs.

*recruit & start apprentices  
at any time*

Our apprentice recruitment is **up by over 60%** from the same period last year. So don't wait until your next BBQ before thinking about another young recruit!



## Who are Avon Vale Training ?

Avon Vale Training is a leading provider of work-based training. We serve the engineering and manufacturing sectors, and strive to develop workforce skills to help industry compete more effectively.

Our training is award winning and our achievement rates are excellent. We provide a comprehensive service of all training requirements, which includes management qualifications, Apprenticeships & NVQs, specialist technical skills, to bespoke training solutions.

Operating across the South of England we have almost 40 years of experience of supporting business. We work with small family companies to major multinationals, and design ever training programme around the particular requirements of both learner & employer.

This newsletter is distributed to hundreds of engineering companies, industry & educational bodies across the region. If you would like to feature your company or services then please get in touch.