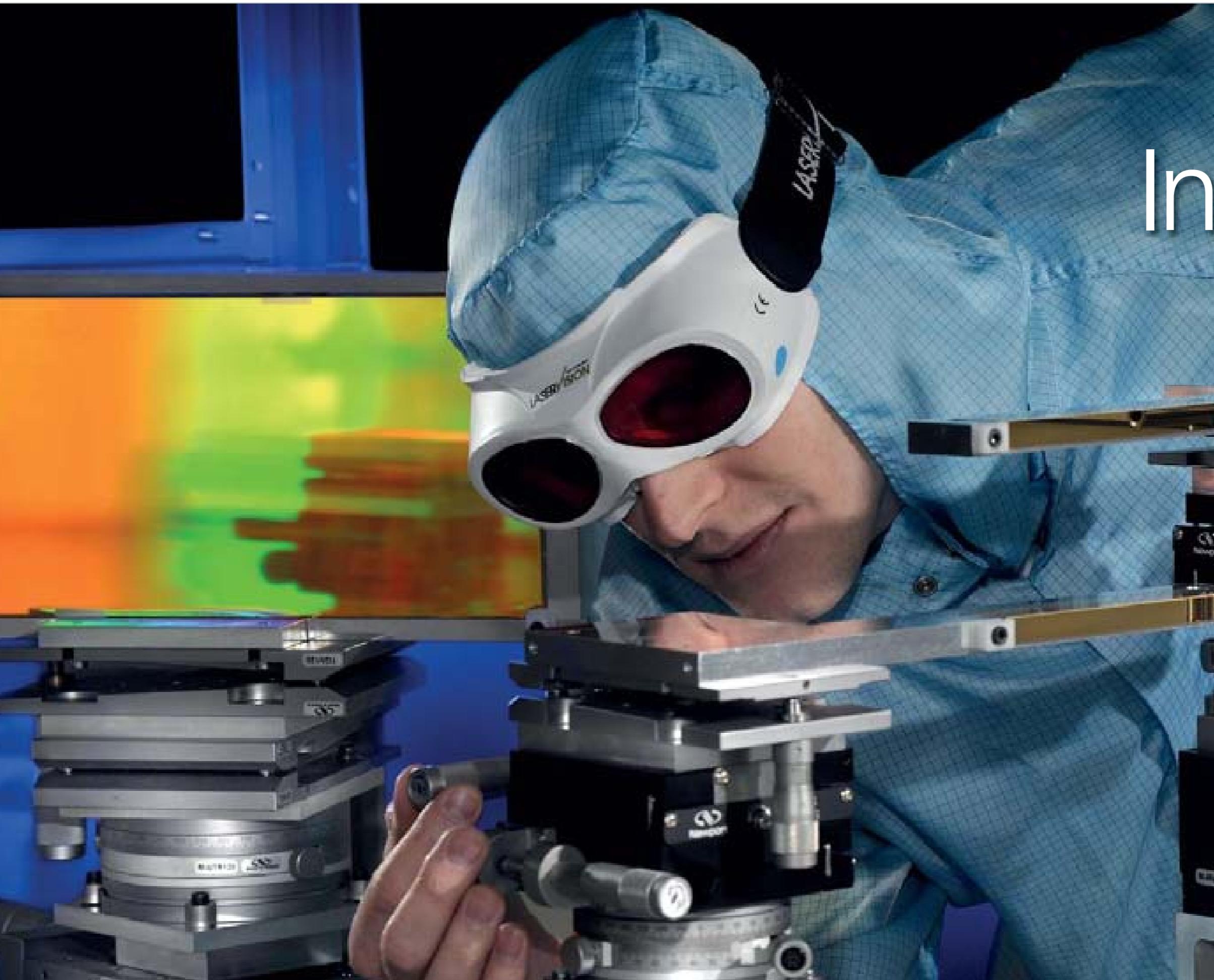




AWE
ANNUAL
REPORT
2008-9



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About AWE

The Atomic Weapons Establishment (AWE) designs, manufactures and maintains warheads for the United Kingdom's nuclear deterrent. It has done so for more than 50 years, serving the country safely and securely.

AWE also plays a pivotal role in support of the UK contribution to the Comprehensive Test Ban Treaty and counter terrorism.

The UK's sole nuclear weapon system is Trident – a submarine-launched ballistic missile. The current nuclear warhead design is expected to last into the 2020s. No Government decisions on any refurbishment or replacement have yet been taken.

AWE plc holds a 25-year contract to manage and operate AWE on behalf of the Ministry of Defence (MOD). The company is a wholly-owned subsidiary of AWE Management Ltd, a consortium whose three equal partners are Lockheed Martin, Serco and the Jacobs Engineering Group. It was announced in December 2008 that Jacobs had agreed to acquire the one-third shareholding previously held by the British Nuclear Group. The Secretary of State for Defence retains a "special share" in AWE plc.

AWE operates on two major sites in Berkshire:

- Aldermaston is the company headquarters where design, research and manufacturing take place
- At Burghfield the company carries out final assembly and maintenance of warheads as well as decommissioning
- We employ around 4,900 people
- AWE contributed more than £460 million to the local economy during 2008

For more information and our latest news, visit our website at www.awe.co.uk

Busy year of progress

Welcome to our 2008/9 Annual Report which reflects another busy year of progress and change at AWE.

Successful delivery of the Government investment programme in improving AWE's infrastructure to support the Trident programme is one of our highest priorities.

Work began on installing the laser equipment into the Orion building, our replacement laser facility. Planning consent was also secured for other important projects, including the warhead assembly/disassembly facility to be built at AWE Burghfield.

In the fields of science and technology, we continue to make excellent progress. Highlights included successful firing of the second of two important contained hydrodynamics trials during the year.

In addition, the Institute for Shock Physics, formed as a result of a ground-breaking partnering agreement between AWE and Imperial College, London, has gone from strength to strength since its launch last year.

Clearly, we could not have accomplished the achievements and progress that we have during the period of this report without the commitment and outstanding expertise of our staff.

I would like to thank all of them for their individual efforts which have contributed to the overall continuing success of AWE.

In nurturing the capabilities of our people, we are proud of our record in developing their skills. For example, already highly respected, AWE's Apprentice Academy notched up a further accolade in 2008 with the award of Ofsted Grade 1 status. This puts our scheme among the top five per cent of adult learning providers in the UK.

Following the restructuring of the BNFL business, it was announced in December last year that its one-third shareholding in AWE Management Limited would be acquired by the Jacobs Engineering Group.

The acquisition was completed in May 2009. Jacobs has been a strategic partner at AWE for several years. The other shareholders – Lockheed Martin and Serco – look forward to their wider contribution as a shareholder as we work to ensure AWE can continue to support the Government's requirements for maintaining the UK deterrent programme in future.

Towards the end of the reporting period, it was announced that Don Cook planned to step down as AWE's Managing Director.

I want to acknowledge the valuable contribution Don made over the last three years in leading AWE's delivery of its mission, and thank him for all his efforts, especially in enhancing the UK/US relationship.

In his place we are delighted to welcome Robin McGill who joins us from the Institution of Engineering and Technology where he was Chief Executive. Robin has a

background in safety-critical operations in the oil industry and brings to AWE a wealth of experience in complex technology businesses which are safety-critical and customer-oriented.

AWE has played a unique role in the defence of the United Kingdom for more than 50 years. Its success has been squarely built on the quality and achievements of the people who work there. We look forward to the challenges that the future will undoubtedly bring.

Ian Downie
Chairman



Background of change

For AWE, 2008/9 has been a successful year set against a background of change.

The replacement of some of our ageing facilities has been a priority as we have taken forward our sites' development plan. The western approach to the AWE Aldermaston site is being transformed. The impressive Orion laser facility has been joined by Gemini, a new office complex which will be occupied by AWE's design, engineering and research community later this year.

Substantial transport improvements which enhance safety for our staff and our neighbours are visible to anyone who travels around the perimeter of the Aldermaston site with new roundabouts and improved road layouts at several points.

During the past year, we received planning consent for a high explosives fabrication facility to be built on the Aldermaston site. This will allow us to consolidate under one roof the work carried out in several older facilities.

Later in the summer the local planning authority approved the construction of a conventional manufacturing rationalisation facility at AWE Burghfield. Again, this facility will enable us to bring

together within a single customised building at Burghfield, existing operations currently undertaken in separate buildings at Aldermaston.

In March 2009, we received permission to construct a replacement warhead assembly and disassembly facility at Burghfield. When operational, this facility – known as Mensa – will replace the existing assembly and disassembly facilities, including what are popularly known as "gravel gerties".

Ensuring our stakeholders understand what we do remains a high priority for AWE. This is an important function of the Annual Report, but we also maintain a continuous dialogue with the local community through channels such as our Local Liaison Committee.

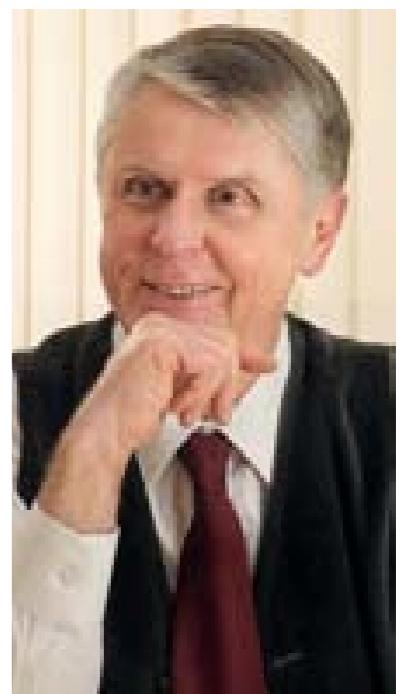
Many people now turn to the internet as a source of information, and I am pleased to report that we also updated and relaunched our external website during the year (www.awe.co.uk).

I have absolutely no doubt that AWE is a great place to work – but it is always good when other people confirm this. It was encouraging to hear that AWE was ranked 10th in Britain's Top Employers 2008 survey – improving on our 2007 ranking.

On a personal note, after three years at the helm, I am standing down as Managing Director to return to the United States. I have already handed over to my successor, Robin McGill.

Looking forward, I have no doubt that the challenges for AWE will continue to get tough in a changing world. However, I believe we are in excellent shape to play our vital part in maintaining the UK nuclear deterrent.

Don Cook
Managing Director



Delivering in a changing world

Over the past year, AWE has continued to perform well, delivering the vast majority of the requirements of our customer – the MOD – on time. Our contract incorporates a challenging range of fee-earning deliverables that assure the MOD that the Company is meeting its obligations. These deliverables cover the full scope of our activities, including scientific, technical and business performance goals.





We celebrated 50 years of the Mutual Defence Agreement signed in 1958 between the UK and USA

Preparing for the future

AWE's mission is to deliver the United Kingdom's requirement for nuclear warheads and support for national security. The Government has stated that decisions on whether the Trident warhead should be refurbished or replaced are likely to be needed during the next Parliament.

For AWE this means ensuring that we remain focused on providing support to the Trident programme throughout its lifetime, while maintaining the capability to meet the Government's requirements should they change in the future. With significant investment in people, skills and facilities at AWE over the last few years, we are in good shape to meet the challenge.

A review of our strategic plan during the year has confirmed the need to focus on improving stakeholder relations, continuing to make improvements in safety performance and delivering value for money to the MOD.

Systems Engineering

Last year, we reported the formation of a Directorate of Systems Engineering (DSE).



... the annual assessment of the stockpile health, confirming that Trident continues to meet its safety requirements



The directorate made considerable progress through 2008, providing the product focus for AWE, integration of all life-cycle phases of UK nuclear warhead systems, as well as technical decision-making, and the maintenance of national security capabilities.

We undertook the annual assessment of the stockpile health, confirming that Trident continues to meet its safety and performance requirements. Organisational arrangements have been reviewed for both programme and resource management and the appropriate changes applied.

Early in 2008, the MOD appointed AWE as Co-ordinating Design Authority (CDA) and Systems Integrator for any future warhead system required by the Government, in addition to its role as co-ordinating design authority for Trident. This was an important demonstration of our customer's confidence in AWE's ability.

Under the provisions of the 1958 Mutual Defence Agreement, AWE participated in a joint project with US colleagues at the Nevada Test Site in October. The project successfully demonstrated capability across a wide range of specialist areas vital to the work of AWE's Threat Reduction team in its role of supporting national security.

Corporate change

In order to meet the targets set for us by the MOD, we are committed to embracing change, working in smarter and more efficient ways. The Company is driving through a series of programmes to improve the efficiency of our design to manufacture process, to promote better ways of working in soon-to-be-delivered office



Technical Outreach at AWE involves external interactions with the UK science, engineering and technology community across a broad range of disciplines



accommodation and to streamline our file-sharing capacity.

These programmes will ensure all staff are supported in reaching their personal aims as well as wider organisational goals.

CONNECT

Project CONNECT aims to reduce time and cost in the design to manufacture and assembly process at AWE and involves many aspects of AWE's technical work.

The project has continued to make solid progress and is delivering its key elements of process change, supporting technology and enabling support using Lean Six Sigma process improvement techniques.

A phased implementation of the design to manufacture processes has been adopted starting with the process "governance" arrangements, followed by concept, feasibility, design and manufacturing. Workshops have been held to define each stage and demonstration projects are being run to trial each process before implementation.

Mutual Defence Agreement

During the year, we celebrated 50 years of the Mutual Defence Agreement signed in 1958 between the UK and USA following the successful conclusion of the Grapple series of nuclear tests.

A well-received exhibition, charting the history of the relationship between AWE and the US, provided a focus for

celebration at AWE during the summer. This was subsequently displayed at the MOD's Main Building in London and at various locations in the United States.

Technical Outreach

Technical Outreach at AWE involves external interactions with the UK science, engineering and technology community across a broad spectrum of disciplines.

These interactions are aimed at developing the capability and resources needed to fulfil the company mission and achieve its longer-term vision, and also at enhancing and sustaining AWE's reputation and influence in the wider technical community.

AWE currently sponsors the William Penney Chair – named after our founding director – at Strathclyde University, and seven William Penney Fellowships at other UK universities.

The company also has four close university partnerships or strategic alliances with Heriot-Watt, Cranfield, Cambridge and Imperial College. A strategic alliance with AWE enables both parties to collaborate – to their mutual benefit – in areas of science and engineering, including the use of each other's facilities, and promotes the development of staff.

We also collaborate on various topics with a number of national laboratories, including Rutherford Appleton Laboratory, the National Physical Laboratory and a number of overseas laboratories, mainly in the USA.



In order to meet the targets set for us by the MOD, we must embrace change, working in smarter and more efficient ways



Applying our science

AWE relies on cutting edge science to verify the safety and effectiveness of the warhead stockpile without recourse to live nuclear testing.

This means having the right skills and technical facilities available as well as innovative collaborations, such as that which led to the creation of the Institute for Shock Physics in 2008



Chief Scientist

Last year, we said farewell to Dr Clive Marsh who retired as Chief Scientist after a 40-year career at AWE. Clive's outstanding contribution to our mission was recognised with the presentation of an AWE Lifetime Achievement Award during the Company's Science Engineering and Technology Awards 2008 ceremony.

A significant contributor to the development of AWE's world-class science programme, Clive received a CBE from Her Majesty The Queen in 1999 in recognition of his services to the defence industry.

Clive's successor as Chief Scientist is Professor Richard Clegg. Richard joined AWE in September from the University of Manchester where he was the founding Director of the Dalton Nuclear Institute and Research Dean of the Faculty of Engineering and Physical Sciences.

Richard had previously worked for British Nuclear Fuels for more than 20 years. A chemist by background, he holds a PhD in radiochemistry and has particular experience in nuclear waste disposal.

Institute for Shock Physics

The ground-breaking partnering agreement between Imperial College, London and AWE which led to the formation of the Institute for Shock Physics (ISP) in March 2008 has gone from strength to strength.

The new Institute – a first for the UK – specialises in the development of expertise in hydrodynamics, the science which explores the response of materials to the high pressures generated by extreme shocks in a variety of environments.

The team, led by ISP director Professor Steven Rose, is dedicated to studying the fundamental science behind shock waves, high-velocity collisions and extremes of pressure and heat. The first PhD project started in May with several others in the pipeline.



Opposite page and above: the Cedar computer

The teaching and research will enable the recruitment of new graduates, provide enhanced learning in a relaxed and assured environment, permit access to different innovative research areas, build the generation of ideas and promote short courses (some starting in 2010) and experimental secondments.

At the end of the five-year contract, it is expected that clusters of AWE staff will have benefited from the training and research at ISP. It is also hoped that a vibrant UK community in shock physics will have developed through partnerships across academia, UK industry and with international laboratories.

Workshops

AWE hosted two workshops during the year which brought together experts from around the world in pulse power and X-radiography. This is an area of science which is key to the success of the science-based underwriting of the UK's nuclear deterrent under the constraints of the Comprehensive Test Ban Treaty (CTBT) era.

Hydrodynamics

Hydrodynamics is the science of forces acting on, or exerted by, fluids. This is important to AWE as, in a nuclear detonation, solid materials behave like

fluids as they are subjected to extremes of pressure or shock.

During the year a major milestone was passed for the Hydrus project, which aims to replace existing hydrodynamics experimental facilities with a modern and environmentally-friendly facility.

The second of two important contained hydrodynamics trials was fired during the year. The capability to conduct these trials requires effort from across AWE and is the culmination of more than 10 years of hard work.

The data provided is essential to underpinning the science-based stockpile stewardship of AWE and a key element in the UK's CTBT certification methodology. The trial was conducted under full regulatory scrutiny, demonstrating AWE's commitment to both safety and scientific achievement while re-assuring our stakeholders of our continuing excellence in both these areas.

Supercomputing

Supercomputing provides AWE with the ability to create the three-dimensional modelling and simulation requirements of our physics, engineering and materials departments.

In 2008, the Company reassessed its High Performance Computing (HPC) strategy and decided to move towards a multi-platform supercomputing solution centre to meet the evolving needs of our scientists.

Our supercomputing solutions centre is responsible for providing HPC solutions to AWE scientists and engineers who need to simulate the complex processes required to underwrite our mission.

Services are based on a number of platforms: Redwood, a capability system; Willow, a future capacity system; and Sirius and Sloth, which are specialised systems for high memory applications and data visualisation.



... clusters of AWE staff will have benefited from the training and research at ISP



In 2008, the new file server, Cedar, was added to Redwood, providing a Global Parallel File System (GPFS) as part of our storage strategy. Cedar also provides a capacity role for work overflowing from other systems. This system of 25 computer nodes was one of the first installed in the world.

AWE's supercomputer solution centre has strengthened its links with the University of Warwick in the computer performance modelling area. It also initiated collaborations with the University of Edinburgh in novel architectures through the placement of jointly-supervised PhDs. An agreement was also reached with the University of Cardiff to provide capacity systems procurement support.

A further achievement came when the British Computer Society granted AWE a licence to award Chartered Professional Status to employees. AWE is one of only a handful of companies in the UK to have been granted this privilege.

Plasma Physics

Plasma Physics is the field in which we use high-powered lasers to replicate the physical conditions at the heart of a nuclear explosion – albeit on a minute scale.

AWE's Plasma Physics department worked closely throughout the year with researchers in the USA, both from the Department of Energy national laboratories and universities, on several different experimental series using the OMEGA laser at America's University of Rochester.



A scientist checks on a shock physics target in the Magpie chamber at Imperial College, London, watched by Professor Steven Rose

These included experiments exploring the evolution of astrophysical jets, the development and testing of a diagnostic for fusion research, as well as other experiments relevant to warhead stockpile stewardship.

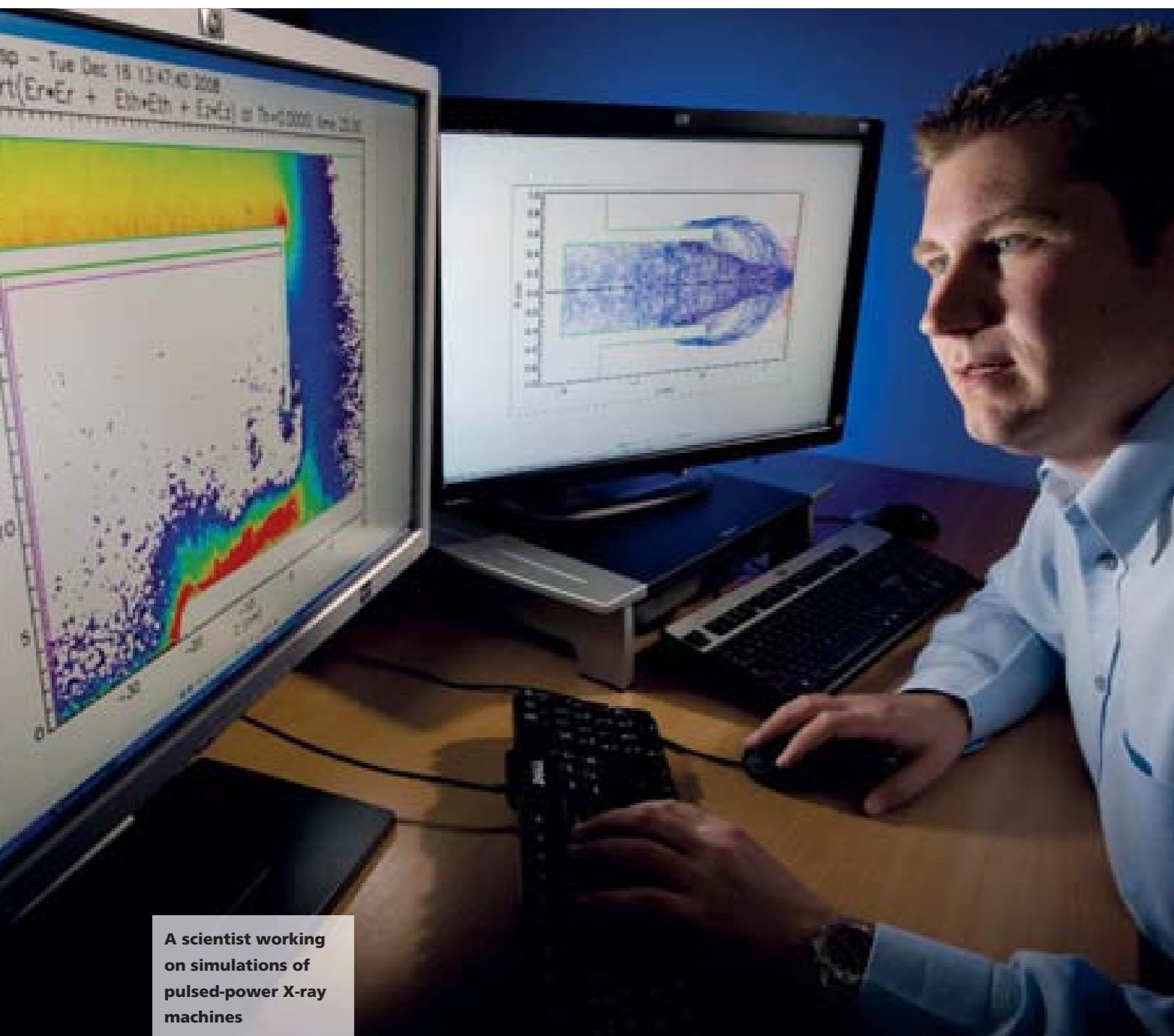
Outreach and collaborative activities

AWE continues to promote and participate in conferences which bring together worldwide experts in our areas of scientific focus.

We were represented at the Plutonium Futures Event, held in Europe for the first time, in July.

The event, at Dijon in France, gave delegates the opportunity to discuss and debate issues relating to condensed matter physics, materials science, surfaces, interfaces, colloids, corrosion, actinide chemistry, fuel cycle issues and speciation and detection.

In September, AWE brought together for the first time leading academics from the



UK's top universities to discuss ways to maximise our Strategic Alliance partnerships.

AWE hosted a conference which was attended by academics from the University of Cambridge, Cranfield University, Heriot-Watt University and Imperial College. They were joined by AWE scientists, engineers and technologists.

In October, AWE successfully hosted a conference of Projects On Nuclear Issues (PONI), run by the Centre for Strategic and International Studies, in Washington.

This forum attracts many early career academics and industry attendees from the UK and the USA. The conference discussed global nuclear issues, ranging from national nuclear infrastructure to eventual nuclear disarmament.

Awards

Achievement in the Science, Engineering and Technology (SET) fields was acknowledged in an annual award ceremony in May. Awards were presented by Dr Bob McGuiness, Chief Executive of Serco Defence, Science and Technology, and a member of the AWE Management Limited Board.

AWE's Deputy Chief Scientist, Professor John McMordie, was awarded The John Challens Medal, which recognises the sustained, high-quality and valued contribution of an individual to the work of AWE in the SET field.

Dr Peter Morrall won the Discovery Award for having made the most innovative and significant contribution in the SET field, demonstrating flair and creativity, during the early stages of his career.

Two JC (Charlie) Martin Awards recognise excellent technical content, originality and presentation demonstrated in an AWE internal report or externally published paper.

The internal report winner was Dr Andrew

Barlow for his publication *Compatible Finite Element ALE Hydro*. The external award went to Dr Mogon Patel and Dr Anthony Swain for their publication *Polymers Incorporating Icosahedral Closod-Carbaborane Units*.

Backing young scientists

In 2008 AWE once again sponsored an award at the Science, Engineering and Technology Student of the Year Awards, organised by the World Leadership Forum. This is Britain's most important and prestigious awards scheme for science and engineering undergraduates, recognising exceptional achievements of both students and universities.

The awards are supported by British industry and the country's leading scientific and technical institutions. AWE was represented on the panel of three judges by Keith Hall, Head of Profession for Chemical Engineering.

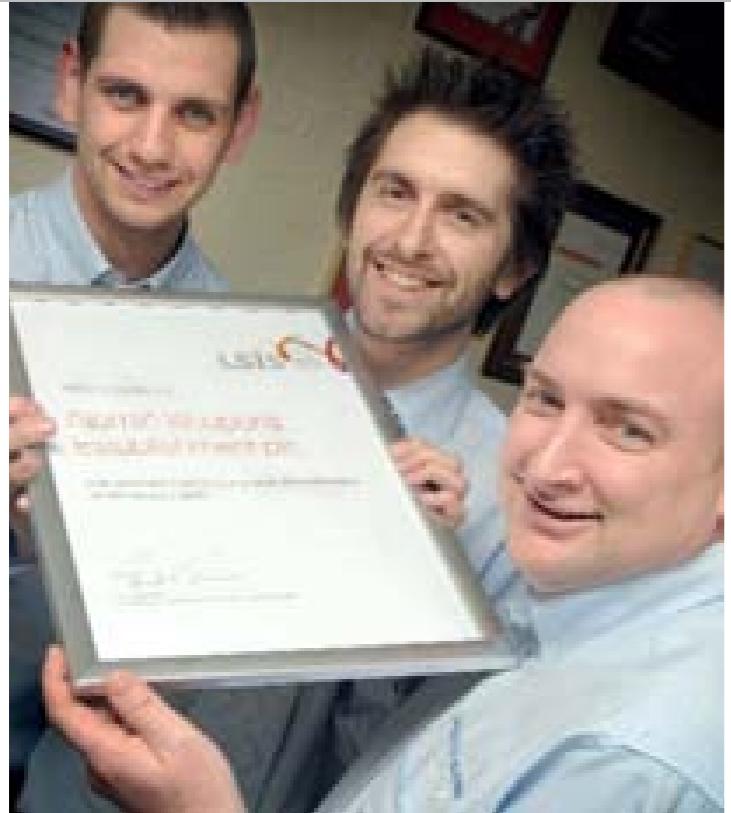
A worker cleaning the outside of the Orion target chamber



Supporting our people

The skills and commitment of our people lie at the heart of AWE's success. At AWE we are committed to developing each member of our workforce to their full potential. Over the last year we intensified our efforts to address particular skills shortages and strengthen our programmes





The Apprentice Academy celebrates after being awarded Beacon status by the Learning and Skills Improvement Service – one of only 34 work-based learning providers across the UK to have been assessed at this level

Previous page: An AWE apprentice in the workshop



AWE Programme Management Academy... more than 1,500 employees and contractors benefited from its courses



Apprentice Academy

Already highly respected, AWE's Apprentice Academy notched up a further accolade in 2008 with the award of Ofsted Grade 1 status. This is a huge achievement and places the scheme among the top five per cent of adult learning providers in the UK.

Steve Purchell, then in the final stages of his AWE apprenticeship, was also recognised by the Learning and Skills Council as the Best Advanced Modern Apprentice in the South of England.

The Frontline Worker Programme, introduced two years ago, has seen a surge in the number of staff passing through with more than 180 completing the learning curriculum. This programme means core staff can get a broader set of skills that will be of the greatest use to different parts of the company.

Graduate training

One of the ways that AWE builds and refreshes the skill of its workforce is by maintaining a strong graduate development programme. Following a review, the programme now offers a wide range of personal development in addition to technical experience in the work place.

The Company supports all graduates who wish to work towards achieving professional accreditation – and a high proportion do. In addition to their own development, many are keen to help the development of others. They do this by providing help and expertise with school science and engineering challenges or by offering mentoring to local schools.



An apprentice using a drill



An Apprentice Academy instructor watches over an apprentice as she solders a circuit

Progressive learning

Learning and improvement does not stop at the gate when people join AWE. The Company encourages people to continue their development under our professional development strategy.

Development is supported by a team of training professionals working across a range of disciplines including physics, engineering and computing, to help keep staff up to date and in touch with current thinking and best practice.

During the last year the design phase of the AWE competency framework has been completed. This was an extensive piece of work and it means the Company is now able to highlight the broad range of disciplines and skills required to support operations across AWE.

Rewarding achievement

Recognition of individual and team success is a key feature of AWE's culture. Our Celebrate@AWE scheme allows us to acknowledge achievement through a series of steps from awarding vouchers, to bronze, silver and gold awards. Gold award winners are carefully shortlisted before being put to a "people's vote" which culminates in presentations at a "Celebrate Success" awards evening.

In 2008, front line worker Agnes Vent, of the Company's Precision Engineering Business Unit, won the individual gold award by helping the Company to make substantial cost savings. The team gold award went to a cross-directorate team responsible for developing laser detonators.

Recruitment

AWE is a great place to work – that's official! AWE was ranked 10th in Britain's Top Employers 2008 survey – up from 24th place in 2007. The survey was compiled by the Corporate Research Foundation and the event was sponsored by *The Guardian*.

The Company secured an overall score of 83 per cent from the judging panel which included professionals from Cranfield University, Croner Reward and the Hay Group.

During 2008, 373 new recruits joined AWE. Around a quarter were encouraged to join by employees who are family and friends, while approximately a third of recruits were attracted through information on AWE's website. AWE now employs 4,885 members of staff, as well as several thousand contractors.

One strong measure of AWE's status as a good employer is the fact that people stay with the Company. The rate of people leaving the Company, including those retiring, is currently just over five per cent – well below the average in industry of 15 per cent.

Information technology

Following the successful introduction of the Chief Information Officer function at AWE, the Company's information technology structure has been overhauled to create a more service-orientated environment.

Our IT service centre has been enhanced by driving through process and technology improvements. Calls are being answered speedily with an abandoned call rate of less than seven per cent achieved. Outstanding faults have been reduced by more than half and customer satisfaction ratings are consistently above 90 per cent.

Greater emphasis has been placed on service delivery management, allowing issues to be escalated and dealt with rapidly. Board level approval of priority services allows us to review and monitor quality standards routinely.



AWE graduates training.
The Company supports all graduates who wish to work towards achieving professional accreditation



AWE Apprentice Academy... among the top five per cent of adult learning providers in the UK



An enterprise architecture function has been set up to help us identify business opportunities which would benefit from IT investment.

Cyber protection

A cyber team has been created to bring together traditional security skills with those of IT professionals to ensure we can deal with cyber threats. Close links are maintained with other government agencies and education of AWE staff on the IT risks is a priority.

Building our future

Ensuring we have the facilities and infrastructure to support our mission is a major driver at AWE. The past year has been a busy one for both the construction of new facilities and refurbishment of existing ones. The essential programme of replacing or refurbishing facilities is providing AWE's research and manufacturing teams with modern buildings that are more energy-efficient, provide a safer sustainable workplace and use up-to-date processes to the highest environmental standards



Change at AWE Aldermaston

Orion

At Aldermaston, a stunning visual testament to world-class scientific achievement has taken shape. The building which will house our replacement laser facility is now complete. When operational, at the end of 2010, it will house one of the world's most powerful lasers.

Laser equipment is currently being installed in a specially-constructed, dust-free environment.

The Orion target chamber was delivered to Aldermaston in October and installed into the target area in early November.

Physics prototypes of Orion's front-end systems – where the laser light is generated – have been built. This has allowed staff to gain operational experience of optical parametric amplification, a non-linear optical technique which allows short-pulse laser beams to reach improved levels of performance.

Gemini

The twin-building Gemini complex, for AWE's design, engineering and research community, is also nearing completion on the Aldermaston site. It will house more than 1,300 scientists and engineers who will move in later this year.

The offices provide a modern and stimulating working environment, and will enable the integration of teams which have been working across different locations on the site.

High explosives

Planning consent for Circinus, the replacement high explosives fabrication facility, was granted in February 2008. This facility will replace a number of existing operations currently undertaken in separate buildings, bringing operations together in a single new plant at

The Orion laser... a stunning visual testament to world-class scientific achievement has taken shape



Aldermaston. Construction of the facility is expected to take around two years.

Opposite page:
The Orion building

Refurbishment

A number of refurbishment projects covering all operational areas are in hand. Sustainability appraisals are now conducted for these projects, which include evaluating energy efficiency and resource utilisation. As these and various build projects come on line, they will help to make AWE an increasingly desirable place to work.

Updating AWE Burghfield

Major remediation work has taken place across the Burghfield site in preparation for future site development. This has included the demolition of 85 former production buildings.

Mensa

Project Mensa will see the replacement of existing warhead assembly and disassembly facilities – including the so-called “gravel gerties” built up to 50 years ago – with a facility incorporating modern



A model of the Mensa development

environmental and safety standards. A planning application for Project Mensa was approved by West Berkshire Council in March 2009.

Conventional manufacturing

In July 2008, planning consent was granted for the construction of a Conventional Manufacturing Rationalisation (CMR) facility on the AWE Burghfield site.

This facility will be used for the production of precision components including exact replicas of weapon components which will be used for research and testing. It will also manufacture specialised tools.

Construction of the CMR facility will allow the consolidation of existing operations, currently undertaken in three separate buildings at AWE Aldermaston, to a single customised building at Burghfield. The



Project Mensa... a facility which will incorporate modern environmental and safety standards



facility will allow the Company to rationalise existing floor space, improving working conditions, efficiency and environmental performance.

Other developments

Elsewhere on the AWE Burghfield site, an upgraded electrified perimeter fence has been installed to improve security. A new dog kennel complex has also been completed to house the Ministry of Defence police dogs.



The twin-building Gemini complex is nearing completion



MDP police with their dogs outside the new kennels

Engaged in our community

Building a strong and positive relationship with our neighbours and stakeholders and creating social and economic progress in local communities are two of our priorities. We pursue these both through formal links with councils and through a variety of schemes which enable us to play an active part locally





Over 50 Year 10 pupils tackled the Schools Engineering Challenge

Previous page: The "Out of this World" competition for primary schools

Local Liaison Committee

AWE has a thriving Local Liaison Committee (LLC) which brings together around 50 representatives of local authorities in Berkshire and Hampshire for quarterly meetings.

The LLC provides a forum through which members can meet with the Company's senior management team to build an understanding of AWE's focus on safe operations.

During 2008 the committee received presentations on subjects including travel and transport, health and safety and the environment. They also visited various AWE facilities on the Aldermaston and Burghfield sites.

Schools Liaison Scheme

As part of our community engagement, AWE's Schools' Liaison Scheme worked

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AWE's Schools' Liaison Scheme worked with over 80 local schools throughout the year to support the teaching of science and technology

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with over 80 local schools throughout the year to support the teaching of science and technology.

One highlight was the running of the "Out of this World" competition for primary schools on the scheme. The aim was to encourage pupils to use technology and science, as well as their imaginations, to create a "new" planet. The winning school, Chalk Ridge Primary, enjoyed a visit to the Science Museum in London hosted by AWE.

The annual AWE "Books for Schools" scheme once again saw 50 local schools benefiting from a £200 donation toward resources such as books and software.

This year saw the successful completion and opening of the Ufton Court herb garden at this historic property which AWE has regularly supported. The garden was officially opened in September 2008 by the High Sheriff of Berkshire, Dr Carolyn Boulter.

Science and engineering challenges

A key element of AWE's outreach to schools is the organisation of a series of challenges designed to get young people thinking about the possibilities of science and engineering. Each challenge is prepared and run by a team of AWE graduates as part of their development.

Over 50 Year 10 pupils from 12 Berkshire and Hampshire schools put their engineering and design skills to the test in June at the annual Schools Engineering Challenge. The students had to design, build and test a car using ordinary



An AWE graduate mentoring pupils in the A-Level Science and Engineering Challenge



materials, demonstrating the importance of teamwork, material selection and planning – all vital aspects of a career in engineering or science. The winning team came from the Robert Mays School in Odiham, near Basingstoke.

Children from seven local primary schools took part in a Chain Reaction Challenge in July. Each team was asked to design and build a chain reaction machine from everyday materials. Burnham Copse Primary School from Tadley was the winning team.

Senior pupils got their chance to show their skills in the AWE A-Level Science Challenge held in October. Teams, from the eight different schools and colleges in the Berkshire and Hampshire area, took part in challenges covering chemistry, optics, logic, mathematics, engineering and environmental science. Top honours went to Park House School, Newbury.

Supporting charities

AWE values its links with the charitable sector and supports the efforts of our staff in fundraising activity. To provide a clear focus, we engage staff in selecting two AWE Charities of the Year, one local and one national. A team of AWE graduates co-ordinates the fundraising efforts.

Last year over £19,000 was raised and this was shared between the Naomi House Children's Hospice at Winchester and the Alzheimer's Society. Diverse fundraising efforts included a fun run, a "battle of the bands" and the creation of a mile of coins.

Requests for support from individuals and local good causes were handled by AWE's Community Committee. They also made a one-off donation to a staff-nominated cause, with £5,000 going to the West Berkshire branch of Mencap.

An impressive contingent of 85 people from AWE took up the challenge of the 54-mile London to Brighton Bike Ride in June, raising in excess of £10,000 for the British Heart Foundation.

Travel plan

AWE is continuing to work towards minimising our impact on the local transport infrastructure and the environment. Good progress is being made to implement our travel plan, first published in 2006, which continues to be monitored closely by the local authorities.

A significant reduction has been achieved in the number of vehicles entering our sites with a single occupant and around 20 per cent of people now choose to car-share.

Shuttle bus services have been introduced at both the Aldermaston and Burghfield sites. This has helped reduce the number of vehicle journeys being made around, and between, AWE sites. Throughout 2008, the use of the shuttle services has steadily increased with over 17,000 passengers being carried each month. Recently, two new "urban" buses have been added to our transport fleet. They are specifically designed for frequent stop-starts, are more fuel efficient and have smaller, quieter engines than standard coaches.



Around 40 AWE employees are reservists with the Territorial Army, the Royal Naval Reserve and Royal Auxiliary Air Force. They are pictured here with Brigadier Robert Sutcliffe, who visited AWE to mark the 100th anniversary of the TA

Delivering with assurance

At AWE we use the term "assurance" to cover our commitment to the management of health and safety, environment, quality and security. The Company's energy, biodiversity and integrated waste strategies are interwoven in our day-to-day business operations and together help to demonstrate AWE's commitment to being an environmentally and socially responsible company





Director of Assurance Heather Young, foreground, with her team and the RoSPA trophies

Previous page: A reed bed is floated on to Decoy Pond at Aldermaston

Target Zero

Health and safety continues to be a key driver as we work towards our vision of becoming recognised as world class in this field.

Target Zero is the brand name for AWE's safety culture improvement programme. It is based around a "road map" of integrated programmes designed to take AWE towards its goal.

A key theme of Target Zero is the Incident and Injury Free (IIF) programme based around our philosophy of not only doing no harm, but also of looking out for each other. IIF workshops have been delivered to 7,200 staff and contractors.

This has driven a fundamental change in ethos which has affected the lives of many people at AWE. We have gone on to share our experience with others we work with including our supply chain and the Environment Agency.



AWE's commitment to occupational health and safety was recognised with a triple success in the Royal Society for the Prevention of Accidents (RoSPA) awards



Recognition

AWE's commitment to occupational health and safety was recognised with a triple success in the Royal Society for the Prevention of Accidents (RoSPA) awards in 2008.

The Company won the Astor Trophy for Occupational Health for the second time, along with the National Defence Sector Award for Health and Safety and the Dilmun Award for our approach to the environment. Securing the Dilmun Award in what was only the second year it had been presented was a major accolade for AWE.

Health and wellbeing

AWE has developed health arrangements to enhance the wellbeing of the workforce and is supporting the national "Working for a Healthier Tomorrow" campaign. This encourages employers and employees to recognise the importance of preventing ill health and the key role the workplace can play in promoting health and wellbeing.

Last summer over 500 people took part in our "GetFit@AWE" challenge. Participating staff were given pedometers to record the distance covered and calories used during the challenge. A programme of events included historical walks, escorted jogging, swimming sessions, personal stress workshops, dancing exercise, tai chi and fun runs.

Wellbeing Clinics have been run to help staff quit smoking or lose weight. The AWE success rate for stopping smoking exceeds



AWE staff monitoring a water sample

the NHS average. Awareness workshops for prostate and breast cancer proved extremely popular and repeat events are planned. More than 2,600 high-visibility waistcoats have been distributed to AWE employees under our commitment to Target Zero. This initiative aligns with our promotion of cycling and walking as part of the AWE Travel Plan.

AWE entered the National Business Awards Programme in 2008. Our entry was singled out for special praise and we were Highly Recommended in The Health at Work and Wellbeing Award category.

Operational experience

AWE has a growing commitment to learning from experiences. In August 2008, the Operational Experience, Feedback and Learning Group was formed to help to create an environment that builds on the sharing and understanding of information resulting from incidents.

Security

During 2008, a new approach to security training, education and awareness was rolled out across the Company. Upgraded protective security education and computer user security awareness is now delivered to

new recruits as part of their orientation programme.

A dynamic new approach was adopted by the security team to broaden understanding of personal security matters and how they can affect staff in their daily lives. The team was supported by external specialists to deliver awareness training on topics including mobile phone security, identity theft, passport and document control verification and internet threats.

A series of exercises was held during the year at both Aldermaston and Burghfield to test AWE's reaction to potential security incidents.

Managing our environmental impact

AWE's commitment to minimising our impact on the environment and our local communities is a key element of our corporate social responsibility. We have a number of significant construction projects on our sites and our ambition is to manage these effectively while building sustainability into our business for the future. One way we help to reduce impact on the local environment is to work with our suppliers to minimise the number of lorries entering and leaving our sites while



Last summer over 500 people took part in the "GetFit@AWE" challenge

construction work is taking place.

Wherever feasible, concrete and brick from demolition is being processed and re-used elsewhere on our sites. This reduces the impact of construction traffic on the local roads and also reduces costs.

Other creative approaches include the reuse of storm-damaged and felled trees as mulch for landscaping which is aesthetically improving areas of the site and reducing the need for weeding, watering and the cost and impact of off-site disposal. Biodiversity has been taken into account during new building work. This includes protecting mature trees, scheduling work outside the bird nesting season and following professional ecological advice, and replanting suitable trees where possible, which enhances the look of the site. More than 4,100 trees and shrubs were planted in 2008 and many of our employees volunteer to get involved with environmental issues on site, with the conservation group proving the most popular.

One of AWE's sustainability targets is to "reduce total water consumption, maximise efficiency of use and encourage reuse". In 2008, we identified a new technology that could replace existing pumps used on some of our furnaces and has helped achieve a 95-96 per cent saving on water at facilities where it is installed.

The Company aims to share its experience in environmental management in order to promote good practice. In 2008, we presented at various industry conferences to disseminate our experience of ground remediation projects and participated in a number of inter-industry meetings that share best practice between companies. We also worked with Southampton, Brighton, Bristol and Manchester universities to disseminate the contaminated land research that we are undertaking with them. Internally, our Sustainability Exhibition – held to coincide with World Environment Day in June – provided an opportunity for employees to find out more about AWE's commitment to

AWE is the first nuclear operator to calculate our carbon footprint. We are demonstrating best practice and give a lead for the rest of the nuclear industry to follow



sustainability. We hold an Annual Review of Environmental Performance with the EA, which is enhanced by regular inspections to our sites by environmental regulators, with over 100 taking place in 2008.

Energy management

AWE is the first nuclear operator within the Environment Agency's Nuclear Sector Group to calculate its carbon footprint. The Company has now established a baseline of carbon emissions to ensure it has a realistic target for future years. To support the achievement of this target, energy metering coverage is being expanded, energy data is regularly reported to senior managers and practical guidance is disseminated to facility managers and staff.

The scope of the carbon footprint includes direct emissions from on-site energy generation, indirect emissions from energy generated or supplied off-site, and other emissions from sources such as employee commuting and business travel. In 2008, AWE again bettered our EU Emissions Trading Scheme carbon dioxide target: with our actual emission estimated to be 54,480 tonnes against the allocation set at 57,171 tonnes. We are demonstrating best practice and give a lead for the rest of the nuclear industry to follow.

The Company has been running an energy awareness campaign which has been a great success. This has featured a Carbon Awareness Exhibition, sponsored by our supplier Emcor, and a "Switch It Off" weekend over a Bank Holiday which led to a reduction of about four per cent in energy consumption compared to a similar period. New electric and hybrid vehicles

used by our contractors MacLellan, Emcor and National Car Hire have helped us to reduce our carbon footprint.

Waste management

AWE's Integrated Waste Strategy is updated annually to ensure that the Company continues to focus improvement in the most effective areas.

In September 2008, our Executive Committee agreed to the formation of a single Waste Department, led by a newly-appointed Head of Waste. This move was intended to pull together the range of waste services and expertise across AWE to deliver improved waste services in line with the six Integrated Waste Strategy objectives:

- Improve AWE employee/contractor ownership of their waste management duty
- Improve communication and provide easily accessible technical support and advice
- Improve processes for sustainable waste management
- Improve strategic planning for future waste management
- Minimise waste production and increase segregation, re-use, recycling and recovery, and
- Manage residual waste in a sustainable way (e.g. limit disposal to landfill).

Our long-term vision is zero waste to landfill. The 2008-2009 company target for waste diverted away from landfill (and therefore available for reuse, recycle or recovery) was set at 20 per cent with an increase of 10 per cent per year to meet the national sustainable construction target of 50 per cent by 2012. In-year recycling performance has exceeded our expectations (we actually achieved 67 per cent) and the target for 2009-2010 has been revised to 50 per cent.

We re-used, recycled or recovered the following quantities in 2008:

- 1,149 tonnes of scrap metal

- 70 tonnes of Waste Electrical and Electronic Equipment (WEEE)
- 7,643 printer and toner cartridges
- 9.8 tonnes of glass
- 9.6 tonnes of cans and plastics
- 186 tonnes of paper
- 64 tonnes of card
- 2.7 tonnes of batteries
- 74 tonnes of wood
- 2.45 tonnes of depleted uranium contaminated oils, and
- We laundered 1.88 tonnes of coveralls.

A variation to AWE's Radioactive Substances Act authorisation has allowed us to reduce the quantities of contaminated oils stored on site. We can now transfer uranium-contaminated oils and cutting fluids to the National Nuclear Laboratories at Springfields in Lancashire for treatment by acid washing.

A radioactive Low Level Waste Strategy has been developed by AWE based on a strategic Best Practicable Environmental Options study published in early 2009. Together with the IWS, this LLW Strategy is driving investigation of enhanced segregation, monitoring, decontamination techniques and disposal routes. We are introducing state-of-the-art assay systems sensitive enough to classify potential RA waste for "exempt" disposal.

Reaching our goals

To reach our environmental goals we recognise that best practice must become second nature. By working closely with colleagues across the Company, significant steps have already been taken.

- All construction projects, big or small, must now conduct environmental and sustainability appraisals. Therefore, all new builds are designed to achieve the BREEAM (Building Research Establishment Environmental Assessment Methodology) excellent rating for environmental performance
- The Company has introduced a Sustainable Procurement Programme and is rolling it out to our suppliers. Significant advances have been made in



- sustainable construction procurement, including for the major project HEFF
- Processing of crushed concrete and brick from demolition for on-site re-use in construction projects is helping us meet our sustainability commitment of sending no waste to landfill where there is a viable alternative
- Our Major Projects logistics group is working on material delivery schedules and “just in time” delivery to reduce double handling and possible waste
- Training in construction-related sustainability has been developed and delivered for AWE project sponsors, project managers and others.

Measuring our performance

Like all UK companies, AWE has a legal obligation to meet regulatory requirements in all areas of health, safety and environmental performance. As a nuclear operator and licensed explosives site, we are subject to intensive review of our performance by a number of independent bodies. During 2008, we again met all these requirements by a significant margin and continue to deliver improvements in many key areas.

In addition to these regulatory limits, we have developed a number of challenging Company performance targets. We use these self-imposed targets to drive improvements on our journey to achieving world-class safety performance and measure our progress to support continuous improvement across the Company. Some of them are designed specifically as a management tool and are only relevant to AWE staff. Others cover key issues such as our environmental performance and the health and safety of our workforce.

Radiation exposure

The Environment Agency regulates the implementation of the Radioactive Substances Act 1993 in line with its regulatory roles to protect the environment.

All forms of radioactive waste, including discharges of liquid and gaseous effluents, are regulated under this Act. Conditions imposed in authorisations to dispose of radioactive waste require holders to use the Best Practicable Means to minimise discharges, and to ensure that discharges of specified radionuclides are kept within prescribed limits. The prescribed limits for all AWE discharges are set well below any level that could pose any hazard to the public or the environment.

The Ionising Radiations Regulations 1999 impose a system of radiological protection in all premises using radioactive materials or radiation emitting equipment. These regulations specify a dose limit of 20 mSv (microSverts) for a classified radiation worker and a dose limit of 1 mSv for a member of the public. To put this in context, a dose of 1 mSv is less than the equivalent radiation dose likely to be received from a single medical CT scan and the average annual background radiation dose in the UK is approximately 2.7 mSv.

■ Individual radiation exposure

We continue to minimise the individual doses received by our staff to ensure they do not challenge any company or statutory dose limit. We have maintained a challenging target of 3.4 mSv and our maximum reported individual dose was 2.93 mSv.

■ Collective radiation exposure

As well as individual doses, we also measure the dose received collectively by our radiation workers to demonstrate that we are managing the total dose within the Company. We set ourselves a target of 235 man mSv and our performance at the end of January 2009 was 124.6 mSv.

■ Public dose assessment

The European Commission methodology for the assessment of environmental discharges has been specifically adapted by the Health Protection Agency (HPA) (formerly The National Radiological

Protection Board) to model the discharges from AWE, and to make an assessment of the maximum doses to typical members of actual or hypothetical groups, living in proximity to AWE.

The table below captures the dose levels measured and shows that the calculated doses represent minute fractions of the guidance levels set by the HPA of 0.5 mSv per year for a nuclear site.

Discharge	Aldermaston	Burghfield	Guidance Levels
	Jan 08 to Dec 08	Jan 08 to Dec 08	HPA
Atmosphere	0.000022mSv	0.00000001mSv	0.5mSv
Aldermaston Stream	0.0000006mSv		0.5mSv

The model concludes the risk to members of the public is insignificant.

Reportable and recordable events

As an employer in the UK, AWE has a legal obligation to meet regulatory requirements to report certain events that are detailed in The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR) to the Health and Safety Executive (HSE). In addition, we record events under a number of the Occupational Safety and Health Administration (OSHA) system classifications. The OSHA system was developed in the United States.

We use the number of RIDDOR and OSHA events per rate of hours worked to measure our performance against other UK-based industries that use this system, and to chart our own progress.

We have set our targets for accidents at zero, recognising that this is an aspirational target which reflects our philosophy and desire that, as no one should be injured as a result of their work, there is no other acceptable target.

In the 12 months rolling period to end of March 09, under RIDDOR the total reportable rate per 100,000 hours worked was:

- 0.19 for staff
- 0.00 for Ministry of Defence Police
- 0.15 for contractors.

In the 12 months rolling period to end of March 09, under OSHA the total recordable injury rate per 200,000 hours worked was:

- 0.83 for staff
- 0.32 for Ministry of Defence Police
- 0.83 for contractors.

Both these rates include events that have merited recording because the person involved was absent from work, or unable to perform their normal duties.

RIDDOR lost time accidents

We report any injury that means an employee cannot perform their normal duties for more than three days to the HSE as a “Lost Time Accident” (LTA).

For the 12 months rolling period to end of March 09, under RIDDOR the LTA rate per 100,000 hours worked was:

- 0.16 for staff
- 0.00 for Ministry of Defence Police
- 0.11 for contractors.

OSHA days away cases

We record any injury where a person was absent from work for one or more days (not counting the day of the incident) due to work-related injury or illness as a “Days Away Case” (DAC).

For the 12 months rolling period to end of March 09, under OSHA the LTA rate per 200,000 hours worked was:

- 0.60 for staff
- 0.32 for Ministry of Defence Police
- 0.49 for contractors.

Improving our business

The formation of a separate Finance Directorate was one of the steps taken to sharpen our focus on improving the business in 2008. AWE's sound financial performance continued as we delivered against our core mission to support the UK deterrent



Andrew Kershaw was appointed to the new Board level post of Finance Director towards the end of 2008. With extensive experience working with blue chip industrial companies, in construction and the public sector, he joined AWE from CityWest Homes Ltd where he was Director of Finance. At AWE, Andrew will lead the Finance Directorate, reporting to the Company's Managing Director. His appointment made possible the creation of two new directorates: Programme and Business Management (DPBM) under Jason Smith and Finance (DF) under Andrew.

Internal audit

The introduction of a Corporate Internal Audit team has strengthened the Company's corporate governance arrangements. The new team undertakes a programme of financial and operations audits and reviews agreed by the AWE Management Limited Audit Committee, covering all AWE activities. The team works closely with the external auditors, AWE's executive board members and senior management.

The audit programme includes independent reviews of the systems of internal control and risk management. The findings and the status of corrective actions taken to address these are reported to the Audit Committee on a quarterly basis.

System advances

The Company's new business system continues to support improvements to our financial reporting arrangements. New reporting tools have been introduced, allowing information to be accessed more readily and provided more quickly to those who need it. This, combined with process improvement activities, has led to a reduction in the time taken to close the month end accounts and make data available to the business.

Protecting investment

All investments at AWE are approved by an Investment Sanction Board (ISB). A team



Andrew Kershaw was appointed Finance Director towards the end of 2008

Opposite page: An AWE worker gets to grips with welding

has been established to inform ISB decision-making by independently scrutinising investment proposals before they are submitted.

Training and guidance has been provided to help AWE's internal project sponsors prepare good quality and sound proposals. The Company is committed to ensuring that our investment bids represent the best value for money.

Other areas of business

While our core mission is to support the UK deterrent, as has been detailed in other areas of this report, there are spin-offs from this work which provide the business with commercial opportunities.

One source of commercial work continues to be in the area of national security, with support being given to the Home Office, intelligence services and the MOD's counter terrorism centre. All Intellectual Property created at AWE is owned by the Secretary of State for Defence.

During the summer of 2008 – in partnership with the Defence Science and Technology Laboratory (Dstl) – AWE secured government funding to help develop commercial uses for new technologies generated by its scientists and engineers.

A grant of £780,000 was awarded by the Department of Innovation Universities and Skills (DIUS) Public Sector Research Exploitation Fund, which supports the development of research ideas, or intellectual property (IP), from all areas of the public sector. The partnership with Dstl will draw on the established experience of the MOD-owned Ploughshare Innovations Limited (PIL) which has already been successfully managing Dstl IP assets.

The funding over a three-year period will enhance AWE's capacity to capture intellectual property at an early stage, increasing the likelihood of filing patents and improving their assessment for commercial exploitation. This will mean that innovative ideas, which emerge as a natural by-product of AWE work on the UK nuclear deterrent, can be developed for commercial use in other industry sectors.

An element of the award will provide proof of concept funding which will be used to accelerate the best ideas from the concept stage to practical industry solutions. AWE and PIL will use their combined marketing skills, business networks and knowledge to identify potential companies to license these solutions.

Other opportunities

New work is arising as MOD moves some of its previous external convoy support operations into AWE. The replacement nuclear road convoy vehicle fleet, due for delivery into operational service by AWE in late 2010, is proceeding to plan.

Financial performance

AWE's sound financial performance has continued during 2008. The turnover for AWE plc for the year was £833.7million. Of this figure £19.5million represented commercial work. AWE has spent over £540million during 2008 in the procurement of materials and services.

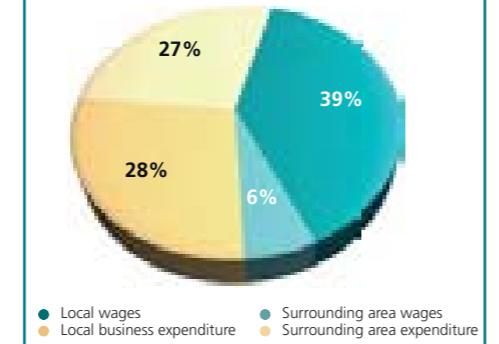
AWE continues to play an important part in the lives of the local community. AWE has

*During the summer of 2008...
AWE secured government funding to help develop commercial uses for new technologies generated by its scientists and engineers*



contributed more than £463million to the local economy during 2008. Around 45 per cent of this input consisted of wages to staff in the local and surrounding areas, with local businesses receiving the remaining 55 per cent by way of payment for materials and services.

AWE contributes more than £463million to the local economy



Earned value

The successful introduction of Earned Value Management (EVM) techniques, piloted on the Orion replacement laser project, has provided the AWE management team with a greater insight into the performance of projects. The rollout of EVM has continued across major facility projects, testing and trials programmes, decommissioning activity and major operational facility refurbishment programmes.

An Integrated Baseline Review (IBR) process has been adopted to underpin the EVM approach, with the emphasis on independent reviews of baseline schedule, budget and risk at key stages in each project's lifecycle.



AWE staff set up an experiment on the centrifuge



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For further information about AWE, contact AWE Corporate Communications on 0118 982 4811 or visit our website www.awe.co.uk

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