About Tandem van de Graaff Aused since the 1930s. ccelerators have been

accelerator in Hangar 8. need for higher energy accelerareactor and a 5 MeV 1946 to build the GLEEP and construction started in Van de Graaff accelerator moderated reactor and a included a graphite-Plans for AERE Harwell As research expanded the

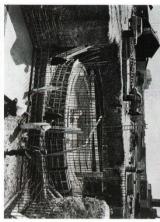
tandem' the energy doubled to above 6 MeV but by putting two accelerators back-to-back or 'in tors became more urgent accelerators could not operate Conventional Van de Graaff

(B477) was built in 1958 and used until 2002. It embodied state-of-the-art technology for its time, using closed circuit TV to The Tandem accelerator

recycled Cards



funds generated are donated to the Woodland Trust. they are recycled and locations around the site and collected up at the end of were placed at various on behalf of UKAEA at Culham. Recycling boxes amounted to an impressive 94kg. This is the third year that JCI has run the scheme cards recycled at Culhan sent to a local centre where The weight of Christma January. The cards were then



The foundations for Harwell's in 1957

pressurised nitrogen atmosphere inside a steel vessel, 15m long by electric charges onto a moving 3m diameter, weighing 40 tons. particles were accelerated in a view electronic meters operating It worked by spraying high voltages. Atomic

injected into the top of the vessel and, attracted downwards by the highly charged sphere, accelbelt that carried them upwards to the mid-point of the steel on a metal sphere reaching six vessel, where they were stored erated ions lost electrons erated towards it to strike a very million volts charged atoms (or ions) are carbon foil. Here the accel Meanwhile negatively the maximum synchrotron currently under construction

The Tandem was used to investigate the properties of atomic nuclei but in later years now, being repelled by the high voltage sphere, escaped from it by accelerating down to the base of the tower. Here the ions were bent by a magnet to emerge as a effectively accelerated by

and the spectacular Diamond include the accelerator used by Ebis Iotron, the ISIS at was used for specialised treatsupersede the Tandem. These the Harwell-Chilton campus ments to sophisticated materials. Rutherford Appleton Laboratory Today's machines operating on source





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4 Hawk rescue

remembered

THE NEWSLETTER OF HARWELL CHILTON CAMPUS AND CULHAM SCIENCE CENTRE

....

collapse into the ready prepared trench. hours later it finally fell to the ground, taking just seconds to after explosives were detonated at 11am on 22 February. Three aving stood as a landmark building on the Harwell skyline for nearly 50 years, the Tandem generator was still standing

charges had been placed at key points around the base of the 40-metre tower and detonated on schedule. When the dust settled the tower was still intact, Small plastic explosives or sheering

rods. A pneumatic JCB 'pecker' was used to cut through the rods and the 1,000-tonne tower fell majestically to the held in place by two steel reinforcing nd at 2.15pm.

5 TV tenant 6 Run for fun 8 Tandem

In this issue

THE COPY DEADLINE FOR THE NEXT ISSUE IS: Monday 21 March for publication on Wednesday 6 April 2005

A Tandem beam being used to mea

Obituary

Arnold Millman 1924-2005 Allen CBE



Arnold Allen, aged 80 the death of form

Cambridge University in 1945 with first class honours graduated from Peterhouse Born in London, Arnold

UKAEA, before leaving the Treasury in 1959 to become to the financial secretary in seconded for two years as and became private secretary Plowden, chairman of private secretary to Lord He joined HM Treasury In 1956 he was Helms

1951.

Group at Risley director of personnel and administration in the Reactor Between 1963-8 he left

appointed secretary of the authority and in 1976 board as authority personnel officer. In 1971 he was UKAEA to become general manager of the British to UKAEA's London office National Radiological the Radiochemical Centre, He was also on the board of finance and administration member responsible for Waterways Board, returning Protection Board in 1974. Amersham, in 1971 and the

Arnold was awarded a CBE in 1977, becoming deputy chairman of UKAEA December 1986 but was 1984. He retired to Dorset in 1981 and chairman in

Innovation in finance

Oxford Innovation, the networking event provided a business angels - and entrepreneurs. platform for Oxfordshire's leading private investors the businesses and research communities. Organised by over 180 investors, entrepreneurs and representatives from Rentrepreneurs' event held at Harwell which attracted

Oxford Innovation's chief entrepreneurs and investors," expand and grow, so we technology companies to play in enabling innovative small amounts of capital can examples of the crucial role that comments Dr David Kingham finance, from academics to interest in how start-ups raise bring together all those with an thought it would be good to "We have seen many

nology businesses through its 11 innovation centres - including Oxford Innovation supports the growth of hundreds of techthose at Harwell and Culham and four business angel

member of Oxfordshire George Brown, founder of Brown & Co, and a

as Troy, and computer games.

Dr Peter Wrighton-Smith ters has been used in films such approach to animating charac-Oxford-based He spoke about his own involveon 'attracting angel investors' Investment ment with NaturalMotion, an Network (OION), provided tips Opportunity software

preneur with Celoxica, to his Investments, related his exciting and business development director of Seven Spires tackled fundraising for business tics company developing a new test for TB, described how he rapidly growing clinical diagnos-CEO of Oxford Immunotec, a journey from academic to entre-Page, founder of Oxford University spin-out, Celoxica, While Professor Ian

four years.

companies seeking £20,000 to £150,000. It complements

Early Investments for early stage

raise finance from £150,000 to £2m. OION has raised £14.8m OION which helps businesses

for 61 companies during the last

recently expanded its angel networks by launching Oxford

Oxford Innovation has

present role as angel investor in

fundraising Isunami

Organisers would like to B220 held a coffee aised over £425, morning and raffle that JKAEA Harwell staff in tsunami is continuing devastated by the Asiar ack Horse Inn at Miltor ocal businesses, like generosity including hank everyone for their poosted by Gift Aid. \&J Catering and the whose lives have been upport to help those who donated raffle



Dr Iredale was able to see chaired the Oxfordshire After leaving UKAFA he

taken place over the last 10 acilities that are under develop am particularly impressed by the and other new developments ears, including extensive refurbished Library building Health Authority and main site entrance was named which he was pivotal in initiatmaintains an involvement in a

hosing down a tank and a con-tractor hurt his knee during

SAFETY

Update

making the events reportable to the HSE under RIDDOR. tractor hurt his knee during main-tenance work. Both resulted in more than three days off work

What a difference a year makes!

To learn more about Diamond visit www.diamond.ac.uk

early stages of above over a year ago the site that will house the new was a snowy scene in the nard to believe that just Diamond synchrotron, it is Then you look at the formidable building Alongside this major con-

they have clocked up in excess of extremely busy. So busy that tractors on the project have been 1 million man-hours on Diamond so far. In addition, Costain and the other con-

> roofing has been put up. poured on-site and 33,000 m2 of 35,000 m3 of concrete has been tonnes of steel has been erected building. To be precise, 2,100 materials have gone into the

struction project, the Diamond office building has been efficient moving team, staff January 2005. into Diamond House on 24 experienced a smooth move completed and, thanks to a very

The synchrotron building is on schedule to be completed this

side, great progress is being made. In December a successful trial paving the way for the magnets and vacuum vessels to come over girder installation took place, autumn and, on the technical rom the technical building to the

tioned around the ring, they lose energy, which emerges as beams chamber through which electrons hurtle at nearly the speed of light. The storage ri As these electrons circle through specially designed magnets posidoughnut-shaped vacuum The storage ring is at the heart of Diamond. It is a

of very bright, highly-focused light of different wavelengths. It is this light that scientists will use to drive their experiments.

mental and materials science. medicine, biotechnology, environand materials, leading to scientific breakthroughs in the fields of into the basic structure of matter entists and engineers to delve deep The light beams will enable sci-

When Diamond becomes operational early in 2007 it will from the worldwide research offer state-of-the-art research methods and will attract users

Weigh-in challenge



(I-r) Glen Thistlethwaite, Netcen fundraiser, Jacquie Berry, director of Netcer Kath Morris and Holly Goodall of Sobell House fundraising department.

Metcen, an environmental consultancy within AEA Technology, decided to raise some funds for Sobell celebrations. House Hospice as part of its tenth anniversary

our director, Dr Jacquie Berry." Through this and other Netcen who thought up the challenge. "Staff were asked to four senior managers, including name the combined weight of says Glen Thistlethwaite of management team' competition," limiting 'guess the weight of the "We held a potentially career-

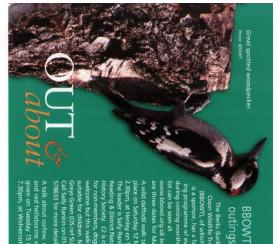
Alan Collings, received £100 of vouchers for his guess which efforts around £320 was raised actual total. was just 0.1kg away from the for the hospice. The winner, Dr Sir Michael Sobell House

Hospice is the palliative care unit attached to the Oxford Cancer Centre at Churchill Hospital

which this year sees its 30th anniversary. It provides an essential and sensitively managed support and care unit for local cancer patients and their families and friends. The income. up 40 per cent of its annual unit relies on donations to make

anyone who might be interested can call Sobell House on 01865 unteers in the Didcot area and charity is looking for more volcounsellors. to fully trained bereavement from reception staff to gardeners teers who have diverse roles 857007 There are some 400 volun-At present the

was married and had three



Spring science

Friday 11 March, 7pm, at

@cclrc.ac.uk. The

Male voice choi

ge Male Voice Choi

Rescuing

two days in the post room. got a closer look at the beautiful bird when he spent the site it might be 'Sparky'. Those who work for ISS f staff at Harwell see a sparrow hawk hovering over

weekend approached." couple of days and as the might fly out through the doors but no luck. Plenty of water area. In the evening we switched off all the lights so he stayed perched on the roof got more desperate after a trusses near the transparent roof was left around for him but we facilities manager of ISS. "He prey," recalls Phil Whitaker Phone calls were made to the

RSPB, RSPCA and other organi-sations. Help was finally found Candblin, who is also the county ringing co-ordinator. He had through Tiggywinkles, the Ornithology. They alerted the chairman of the Oxfordshire Ornithological Society, George vildlife charity, who contacted British Trust for

his way home to Witney.

through the large double doors,

"He inadvertently flew in

probably while chasing some

of prey - wouldn't retract them.

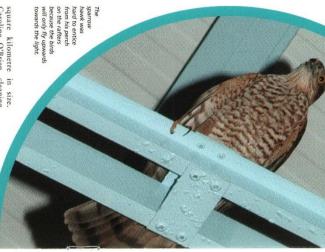
Before release George was able to give him a quick check Phil's finger and - like most birds soon tangled up in the netting. It in between. While preparations were being made the hawk room and drive the bird down The plan was to set up nets blocking off the sides of the sunk its long curved talons into decided to take flight and was into some light mesh suspended

was ringed and then set free. customary for Oxfordshire's measuring 13" in height and weighing about half a kilo. As is and found that he was a young male in excellent health, ornithological records the hawk

aged him from his territory which is usually about one The ordeal has not discourpromised to call into Harwell on been in Lincoln that day but

Caroline O'Brien, cleaning manager at ISS starts work early and has seen him on a number of preferred diet. tits, finches, sparrows and other small birds that make up his occasions since in pursuit of blue

see the sparrow hawk up close, even though it was a rather painful experience!" says Phil. prey and it was a great honour to interest in birds of "I take an



Echo completes the story of the scientists who are honoured in Harwell's road names. WHAT'S IN A NAME? PART II. Origin of the avenues reative olte

ideo production

time for chemistry. but in 1911 she won outright a second Nobel Prize, this research, in primitive conditions at the Sorbonne in married the French scientist Pierre Curie and their early won the Nobel Prize for Physics in 1903 with Becquerel radium and polonium. For her work on radioactivity she 1897, led to her discovery of the radioactive elements, of the nine avenues only one commemorates a woman - Marie Curie. Born in Warsaw in 1867 she

the Nobel Prize for Physics in at the Cavendish Laboratory, trostatic forces. to suggest that an atom atomic physics. He was the first discovered the electron in 1897 1906 and was knighted the nucleus. Thomson received who later determined the size of Rutherford, one of his students greatly influenced Ernest particles held in position by elecmatter surrounded by electron consisted of a sphere of positive and heralded the new field of Joseph John (JJ) Thomson His ideas

magnetic fields were propagated at the speed of light; but his this. He calculated that electrograduated as a mathematician in moving to Cambridge where he develop the four 'Maxwell greatest achievement was predicted the true nature molecular movement and he tures and heat transfer involved born in Edinburgh in 1831, later before space probes confirmed Saturn's rings over a century 1854. He showed that tempera-Equations' to describe Faraday's James Clerk Maxwell was

elements as being composed of and meteorology explained how the 'Northern Lights' were His masterpiece described to assemble a Table of Elements gases and in 1803 was the first laws governing the behaviour field. He postulated chemical behaviour of the atmosphere meticulous observations on the and physicist, developed affected by the earth's magnetic atomic theory of matter. His

was born in Germany in 1845 and subsequently occupied the experimented with electrical crystals and polarised light he Following his early work on He discovered an entirely new currents in gases at low pressure. Chair in Physics at Leipzig. Wilhelm Conrad Röentgen

tiny indivisible atoms

3

medical X-ray. graphic plates could capture images of the human hand so producing the world's first X-rays. He showed that photophenomenon, which he called A roll-call of scientists who

names of Harwell's avenues. of the world are honoured in the have changed our understanding



NRPB training 2005

Chilton headquarters of 2005, to be held at its courses for the first half radiation (NIR) training wo non-ionising RPB has organised

adiation, as well as optical and magnetic fields, radiofre (23 March 2005) which gives visible and infra-red rypically found in industry a NIR, the effects of exposand a discussion of sour The first is entitled No and second,

John Dalton, British chemist

provides a basic understanding

of the hazards associated with working near a source of RF course is designed for those exposure and risk manageproposals for changes in UK intennas and microwave link adiofrequency (RF) sources nent, procedures for safe ddition to current mobile Further information It covers recent will be given

the NRPB website at www.nrpb.org. To book a place call 01235 822701 or these courses can be found on the NRPB website at

есно



Conic Relefton an

On Red Nose Day, Friday 11 March, Harwell Running Club will stage a fun run in aid of Comic Relief.

to Comic Reliet. minimum £5 donation is requested with all funds going directly rugby pavilion just south of Harwell main gate. The 12.30pm start is located next to the Diamond / Gemini roundabout. A Anyone wishing to take part should register by 12.25pm at the The 5km course will be run on a mixture of grass and tarmac

faster stripes? wear a wig, shave your head for speed or give yourself some go-This year's Red Nose Day theme is 'Big hair and beyond - just do something', so have fun with some wacky ideas. Why not

running club's website www.geocities.com/harwell_runner. pavilion for women. More details and an entry form are on the ties are available in the cricket pavilion for men and in the rugby Courtesy of Harwell rec. soc. changing and showering facili-



Echo would be very keen to hear from any readers who are running the London Marathon in April. Through the magazine we can marvel at your relentless training schedule, share your ups and downs and even boost your fundraising. Contact the editor, Valerie Judd, at vjpr@globalnet.co.uk

Cricket is coming

evenings with games for players of all standards. club runs teams on Saturdays, Sundays and Wednesday The site has some of the best facilities in the area and the offer your services to Harwell International Cricket Club? thoughts may be turning to cricket. What better time to With England victorious in the Test series over the South Africans and the days gradually lengthening. On Saturdays the club competes in division 3 of the Oxfordshire

Cricket Association and on Wednesdays in the Berkshire Downs players and ensure they get a good opportunity to bat or bowl. enjoyment of the game. Every effort is made to welcome new Although the club takes its cricket seriously, the main priority is eague. Sunday games are friendlies against local village teams.

your skills before the season begins. If you are interested in playing please contact the club secretary, Penny Oliver (penny oliver@ukaea.org.uk) or Rick Tanner (rick.tamner@mpb.org or 01235 822727) Winter nets are about to start so there is an opportunity to hone

C4688, 01235 464688.

Culham charity ookshop



social club building. Wednesday of every month from 12.15 - 1.15pm in the Association (CSSA) the bookshop is held on the first New to the Culham site is a second hand charity

bookshop. Organised by the Culham Sports and Social

a good stock of new titles McWhirter, Julie Forrest, Irie Kutsuna and Vicki Hillier. If donated items are most welcome to local charity shops. To ensure magazines are sold in aid of records, cassettes, videos and there is sufficient demand the run the shop, namely Linda and can be given to the staff who after a few months are donated charity and any that do not sell Donated books, CDs, DVDs

new membership cards shortly logo was unanimously approved and existing members will receive that meeting a new name and Recreational Society AGM. At following came into being last September tiative from the new CSSA which The bookshop is just one ini-Culham

if anyone has any comments or the committee's principal aim so, malcolm.kear@jet.uk or telephone chairman Malcolm Kear at ideas for events, please contact tion. Serving the membership is trips to concerts, shows and the the coming year. These include proposing a range of activities for inter-tenant tug-of-war competitheatre, summer cricket and an The CSSA committee is now

volunteers

shop will open more frequently. ers are wanted to help

e Avenue, Harwe ness Centre. Anyon

All ads, apart from holiday accommodation, will be run for one month. Please resubmit any ads to be repeated. Telephone prefixes are: C Culham; H Harwell; JJET; M MRC; NI NIFex; N NRPB; and R Rutherford Appleton Laboratory. Adverts on this page are tree to an starr of the Valerie Judd, by a mail vipr@globalnet.co.uk ORA. For next copy deadline see back page. FOR SALE ee to all staff at Culham, Harwell, JET, MRC, Nirex, NRPB and RAL. Please submit your ad (30 words maximum) to the editor, regional regional factors and the control of the

FOOTBALL BOOTS, size 10, plus shin pads, vgc £10: England cricket shirt, large, blue with black sleeves and side strip, £5. 01235 PLAY STATION ONE GAMES x13, £1 each or all for £10. Original b/w Game Boy, plus 8 games, £20. Sega Dream Cast games console, two controls and

RIO ELECTRIC MOBILITY SCOOTER, only used six times. £750. Contact Mrs (

SOFAS, 3 seater + 2 seater recliner.
Colour neutral thorn/pink. As new - 18
months old. Buyer collect. £250 ono.
@mrpb.org ext 2612 or

ortoise family, ideal or to add to a ilable. Prices £1-£25,

WELSH COB MARE, 14.2, palor needs new home. Mid-twentie ridden for 2 years but suitable f

DAILY LIFT REQUIRED, I am seeking a regular lift fromto South Abingdon and B149 Harwell. Can be flexible with regard to times. Prepared to contribute towards costs. Ian, 0870

GOOD HOME URGENTLY NEEDED for 3 Khaki-Campbell laying ducks (c.20 eggs per week). Approx. 1 year old. Must have water for swimming, be secured away at night and be treated as pets. Ring Tony on 01235 (M). 07851

hacking or as a companion. Not a novice ride. Live outs and does not need a lot of maintenance. Tel: 01235 or 07977

WANTED

ight 01235

CHILTON, independent, spacious dbl

except phone calls). Call Vinny on 01235 or 07776

NORTH MORETON, bed and breakfast in nearby village country house. From £38 per night. Further information at www.northmortonhouse.co.uk. Tel

own 5 miles away. 01865
ail @iffley.fsnet.co.uk

HARWELL, NORTH DRIVE, 2 bed hou furnished, available to let 1 April for

ACCOMMODATION

uk/chad or phone

ACCOMMODATION

LAND ROVER FREELANDER 1.8XEI
Station Wagon 5dr, 1998, 47k miles, aircon, sun roof, full service history,
excellent condition, 6 months MOT/hax,

WANTAGE, room to let, close to town centre. Would suit professional non smoker. £75 per week. Contact 0779 or 01235 NANTAGE,

etc. For further

the whole of Oxfordshire. Tutors

SW FRANCE, converted barn, sleeps 6 Quiet location or river with stunning

scenery, canoeing, caves, Neolithic wa paintings, underground lake. S. pool less than 1km. Picturesque medieval

new Technogym equipment, air conditioning and enteroffers a brand new air condi-tioned dance studio. Classes aerobics sessions such include a variety of the latest Wantage Leisure Centre now tainment systems. In addition

the leisure centres in Wantage and Faringdon which SOLL

fitness gyms can be found at

The SOLLutions health &

new gyms at Wantage and Faringdon.

OLL Leisure, the Culham-based charity leisure Two new gyms

management company, has opened two brand

investment which includes facilities represent a £440,000 District Council. The new with Vale of White Horse Leisure runs in partnership

spin bike.

MOTORS

MONTEGO 2.0 Diesel Estate, M reg. Taxed, no MOT. £75 ono. 01235

ABINGDON KUMON STUDY CENTRE

MISCELLANEOUS ntain views. Shared pool.

ort road parking, Part furnished or unfurnished, available April 2005. £ 1150 per month plus all usual bills. £ Phone lan on 07971 VOODSTOCK, 4 bed detached hous

PARTYZGO, for all your party needs, whether children's or adult parties/wedding/fetes we also supply helium balloons. Please call Jacqui on 07879 or view website at www.part/Zgo.co.i/v

TAI CHI, learn the ancient art of Tai Chi. The ultimate in relaxation. Class on Wednesdays from 12.15 - 1.15pm at RAL Rec Soc Hall. For details of other classes 01235

WANTED costume jewellery, old cutlery, watches and bric a brac. Tel. 01235

Anyone searching for the motivation to get fit should be inspired by UKAEA's Helen Gilmour. Since last personal trainer at her gym and often this is the difference between success energy. Helen has the help of a feeling much healthier with more over a stone in weight, as well as has lost the double chin and well with her fondness for red wine, she around 1000 calories a time. Even session and now she burns was using up 250 calories each gym workouts. Six months ago she July she has gradually built up her

Feeling fit

floor, get yourself a programme and some inspiration." you're paying your subscriptions for? Talk to the team on the gym exercise bikes at Level 1 reading a magazine, is that really what "Come on guys, don't sit on those and failure. Her message



March 2005 есно