

# Royal Mail News

## Medical Discoveries Stamps

This year's Europa issue, on the theme of Medical Discoveries, will go on sale at post offices, the British Philatelic Bureau, and Post Office philatelic outlets on 27 September 1994.

Technological advances that have enabled doctors to look into the human body have transformed medical diagnostics over the past half-century. British scientists have played a key part in these discoveries.

The **25p** stamp (UK 1st class and European Union basic rate) features Ultrasonic Imaging. An ultrasound scan for pregnant women is now a standard part of antenatal care in Britain, producing a "photograph" of the unborn baby. Less than 40 years ago scientists at Glasgow University saw the possibility of sonar technology (developed for submarine detection) to create fetal images. Ultrasound is a safer alternative to X-rays for examining pregnant women.



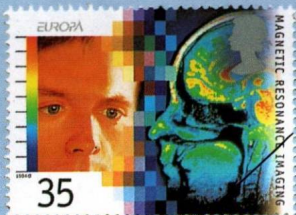
The **30p** value (non-EU European countries) depicts Scanning Electron Microscopy which allows imaging of objects less than a few thousandths of a millimetre across. Ordinary microscopes use light and optical lenses to create their magnified images. Electron microscopes, using electrons and electromagnets, can form images magnified up to 100,000 times. A "scanning" electron microscope is so-called as it builds up its images by examining the surface of a specimen directly. The first of these machines were manufactured by the Cambridge Instrument Company in 1965.

Magnetic Resonance Imaging is the subject of the **35p** stamp (overseas postcard rate). This form of imaging allows doctors to examine the atoms that make up the human body, by interrogation with precisely tuned radio waves. The technique exploits the fact that much of the human body is made of water. The nuclei of hydrogen atoms in this water behave like tiny magnets when inside the strong magnetic field of an MRI machine. As these nuclei "relax", they give off tell-tale signals that are valuable clues for doctors on the state of a patient's health.



The **41p** denomination (basic airmail letter rate) features Computed Tomography which uses precise beams of X-rays to take a picture of a slice through the body. The technique was the idea of Godfrey Hounsfield who worked on radar during the Second World War.

The four stamps were designed by Pierre Vermier of Halpin Grey Vermier design group. These are his first stamps for Royal Mail. The left-hand illustrations featured on the stamps are by Jean-Paul Tibbles; the right-hand illustrations courtesy of Acuson Corporation (25p stamp), Science Photo Library (30p and 35p), and the Royal Victoria Infirmary, Radiology Department (41p).





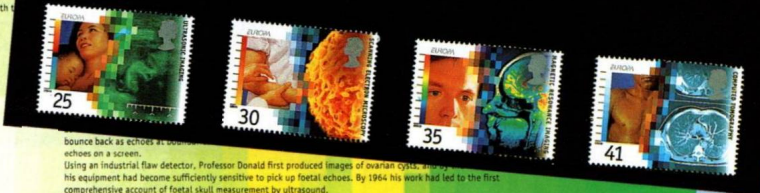
MEDICAL

DISCOVERIES

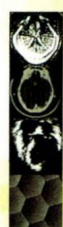
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ROYAL MAIL MINT STAMPS

image of Professor  
year later.  
Within ten years,  
been installed in  
more information  
associated with t



bounce back as echoes at  
echoes on a screen.  
Using an industrial flaw detector, Professor Donald first produced images of ovarian cysts. His  
his equipment had become sufficiently sensitive to pick up foetal echoes. By 1964 his work had led to the first  
comprehensive account of foetal skull measurement by ultrasound.  
Measurement of the size of a baby's skull was to prove an invaluable guide to its development, and this helped  
to establish ultrasound as a safer alternative to X-rays for examining pregnant women.



- 1 An historic first - a human magnetic resonance scan of the human head, recorded in October 1976.
- 2 An image of an early CT scan of the brain.
- 3 An echo, magnification that from a heart, produced by an ultrasound scanner.
- 4 This image, produced by the Cambridge electron microscope, shows with astonishing clarity part of the surface of a man's eye.

**The scanning electron microscope**

Electron microscopes take imaging of objects down to the unbelievable scale of less than a few thousandths of a millimetre across. Ordinary microscopes use light and optical lenses to create magnified images and so, at best, are limited by the size of the photon, the smallest particle of visible light. Electron microscopes, however, use electrons, with a wavelength many tens of times shorter than this, and electromagnets as lenses to bend these electrons. The result is a machine that can resolve image magnifications up to 100,000 times life size.



4 A part of a man's eye, which is imaged with the surface of a scanning electron microscope. Produced by a scanning electron microscope.

A 'scanning' electron microscope is so called because it builds up its images by examining the surface of a specimen directly. Its images have a striking three-dimensional appearance, created bit by bit in spots on a screen, in much the same way as the picture on a domestic television set is formed. A fine beam of electrons zigzags across the surface of the specimen, knocking electrons off as it scans. These electrons control the brightness of the spots on the screen, giving detailed information on the surface and fantastic sharpness and clarity. These machines can be used to examine blood cells, picking up abnormalities in cell membranes, such as those seen in sickle-cell anaemia. Cambridge Instrument Company manufactured the first batch of machines in 1965, taking up earlier research by the engineering department at Cambridge University under Charles Oatley.



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### Technical Details

*Printer:* Joh Enschedé Security Printers

*Process:* Photogravure

*Size:* 41 x 30mm

*Sheets:* 100

*Perforation:* 15 x 14

*Phosphor:* Phosphor coated paper

*Paper:* OBA free (OBA=Optical Brightening Agent)

*Gum:* PVA

*Presentation Pack:* No. 251, price £1.65

*Stamp Cards:* Nos. 164a-d, price 25p each

### First Day Facilities

Unstamped Royal Mail first day cover envelopes will be available from main post offices, the British Philatelic Bureau and Post Office philatelic outlets around one week before 27 September, price 25p.

The Bureau will provide a first day cover service – collectors may order the Royal Mail cover bearing the stamps cancelled with a pictorial “First Day of Issue” postmark of the Bureau or Cambridge, price £1.95 (including VAT) to UK addresses, £1.66 to overseas addresses (no VAT). Orders for first day covers must be received at the Bureau by 27 September.

Collectors may send their own stamped covers, on the day of issue, for the Bureau or Cambridge cancels, to: British Philatelic Bureau, 20 Brandon Street, EDINBURGH EH3 5TT, or South East Special Handstamp Centre, Royal Mail, Wexham Road, SLOUGH SL1 1AA (Cambridge postmark). The outer envelope should be endorsed “Pictorial First Day of Issue postmark”.

First Day Posting Boxes will be provided at most main post offices for collectors who wish

to post covers to receive the standard, non-pictorial “First Day of Issue” handstamps.

Details of other special handstamps, sponsored by Royal Mail, stamp dealers and others, will be found in the *British Postmark Bulletin* – Royal Mail’s magazine for postmark collectors. It is available on subscription from the British Philatelic Bureau: £10 UK and Europe, £21.75 Rest of World (Airmail).

### StampMaster GB – Demonstration Discs

In response to numerous requests from customers, demonstration discs are being developed to allow up to 3 months use of the StampMaster GB programme. Thereafter the software will be erased automatically.

With over 1000 computer discs already sold for this revolutionary computerised stamp cataloguing system, Royal Mail are planning to increase the range of computer types that can run StampMaster – starting with the 1995 update, due for launch in January 1995, with versions for Acorn and AppleMacintosh computers. Version 2.0 of StampMaster will include system enhancements as well as all the new 1994 stamps. Demonstration Discs suitable for Acorn and Macintosh are to be added to the existing IBM compatible format in October 1994 and January 1995 respectively.

Royal Mail are extremely pleased with customer reaction to StampMaster, with nearly all users impressed by the range of functions offered and the huge flexibility it allows. In addition to an excellent database handling system, product manager Steve Griffiths points out the information contained in the database alone (in the form of the National Postal Museum’s copyrighted “Chronolist”) is worth far more than StampMaster’s retail price of £49.95, and this is available nowhere else.

StampMaster demo discs are available from: British Philatelic Bureau, 20 Brandon Street, EDINBURGH, EH3 5TT for £1.50. Please state clearly which type is required.

IBM HD 3.5" code PB059

IBM HD 5.25" code PB061

IBM DD 3.5" code PB058

IBM DD 5.25" code PB060

ACORN code PB062

AppleMacintosh\* code PB063

Please allow up to 28 days for delivery.

\*AppleMac software available from 2 January 1995.

### Machin NVI in Miniature Sheet Format

Royal Mail, in conjunction with Boots the