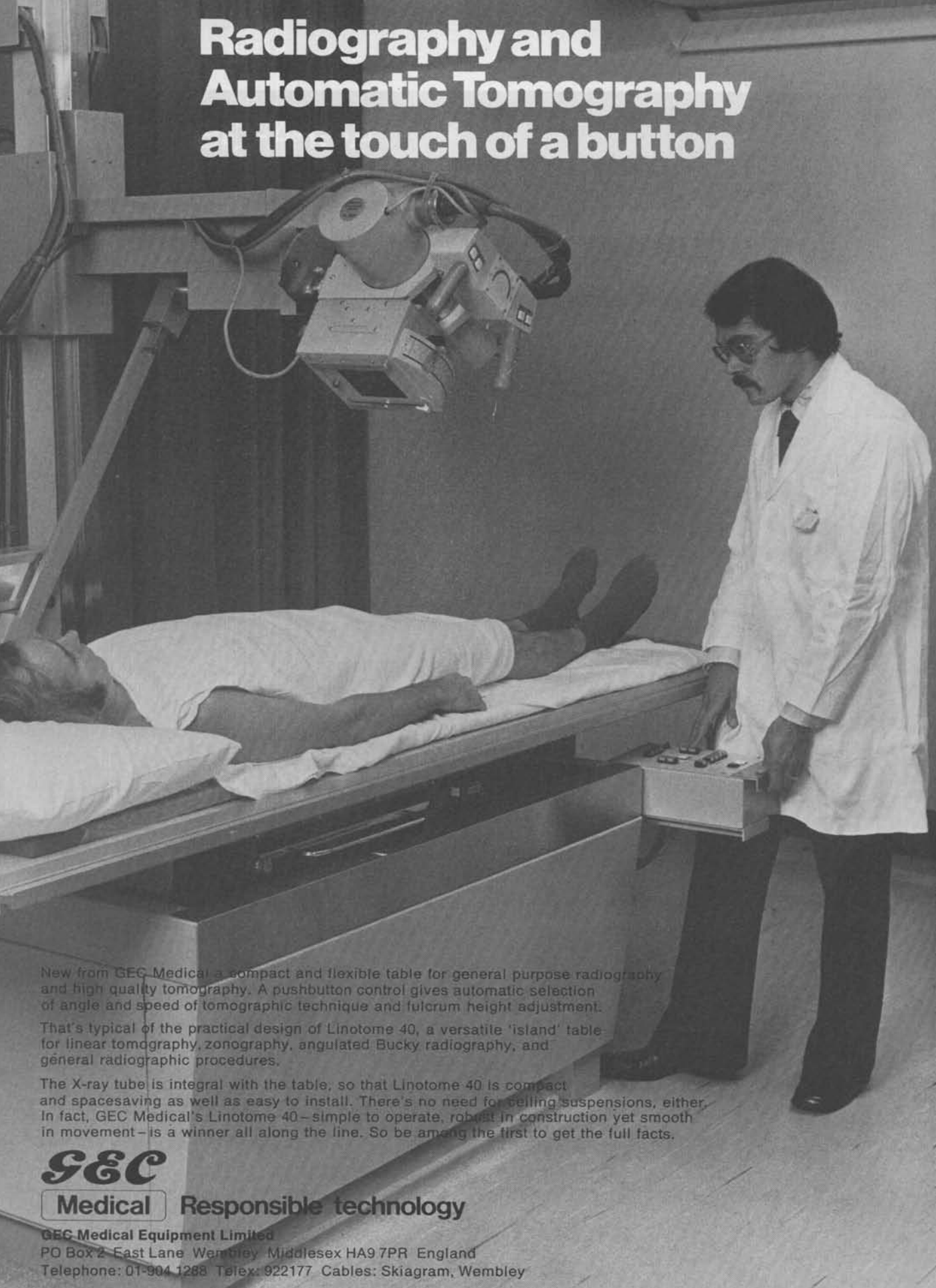
Radiography and Automatic Tomography at the touch of a button



New from GEC Medical a compact and flexible table for general purpose radiography and high quality tomography. A pushbutton control gives automatic selection of angle and speed of tomographic technique and fulcrum height adjustment.

That's typical of the practical design of Linotome 40, a versatile 'island' table for linear tomography, zonography, angulated Bucky radiography, and general radiographic procedures.

The X-ray tube is integral with the table, so that Linotome 40 is compact and spacesaving as well as easy to install. There's no need for ceiling suspensions, either. In fact, GEC Medical's Linotome 40 – simple to operate, robust in construction yet smooth in movement – is a winner all along the line. So be among the first to get the full facts.

GEC

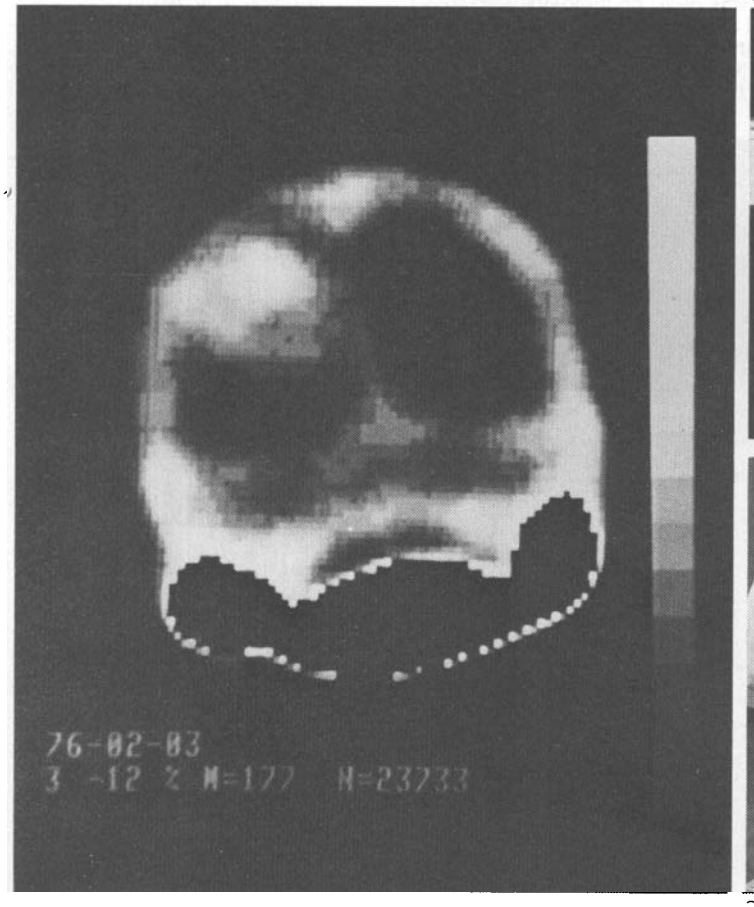
Medical Responsible technology

GEC Medical Equipment Limited
PO Box 2 East Lane Wembley Middlesex HA9 7PR England
Telephone: 01-904 1288 Telex: 922177 Cables: Skiagram, Wembley

Philips Nuclear Medicine Programme:

Everything for the modern clinic

1.



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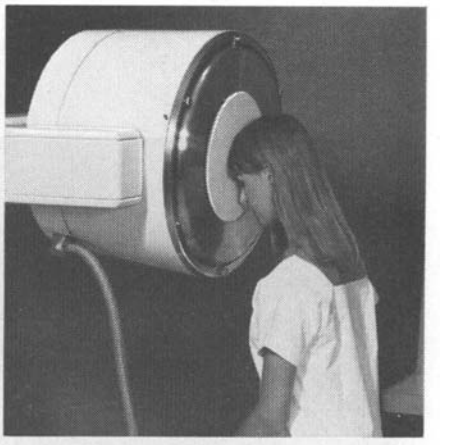
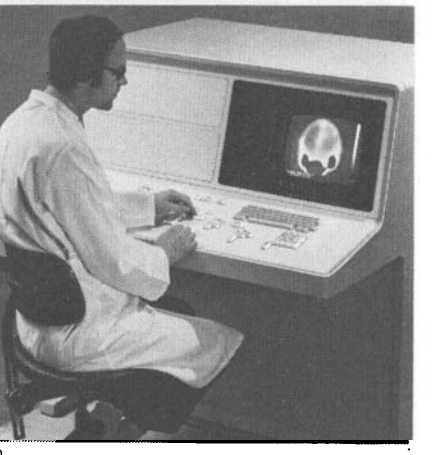




3.

For example:

The Gamma Camera, for static or dynamic studies of organs such as brain, liver, lungs or kidneys.

The radiation from the radio-active isotopes is detected by the Gamma Camera and fed to the Philips Processing and Display System (PDS) for registration. Analysis of the images is simple and quick. The system is convenient in operation. Pictures can be displayed in colour or black-and-white. If you are interested to learn more about our range of nuclear medicine equipment, contact Philips Medical Systems Ltd., 45 Nightingale Lane, London, SW12 8SX. Tel: 01-673 7766.

1. Gamma Camera picture after having been processed by the Philips Processing and Display System.
2. Position for brain examination.
3. Philips Processing and Display System.

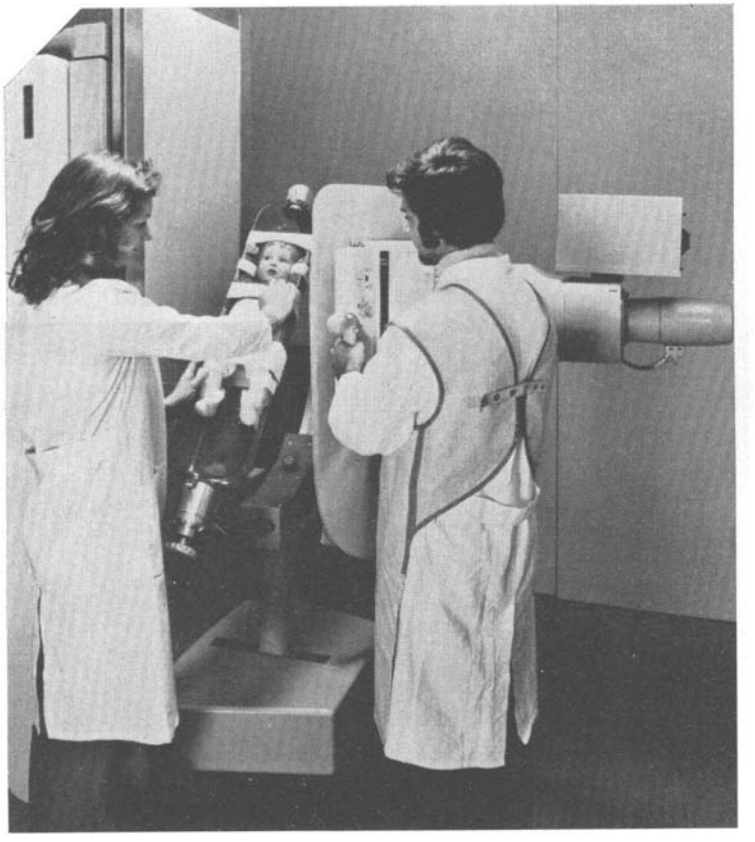
PHILIPS Medical Systems

PHILIPS

Major requirements in paediatric radiology...

Though varying greatly in size, neonates and adolescents both belong to the domain of the paediatric radiologist, thus special requirements are imposed on the radiological equipment used.
In the case of newborns, accurate positioning and short exposure times are of primary importance. Some older children are already of adult size. This again, imposes other requirements.

...now recognised by Philips ....



1. The change-over from examinations in adults to children is quite literally a matter of seconds. The paediatric supports are quickly installed and removed; parking when not in use is easy and convenient.
The supports are mounted on a column inserted into a permanently installed footrest; this latter feature greatly facilitates the change-over procedure whilst ensuring maximum safety.

2. The assembly can be moved in its entirety towards and away from the tabletop by motordrive. In this way a short object-film distance and a longer focus-object distance are obtained for serial changer radiography and image intensifier fluorography. As a result images are sharp and the radiation dose to the patient is minimum.

3. The serial changer parks aside, clearing the tabletop for bucky work with an over-table tube.

1.

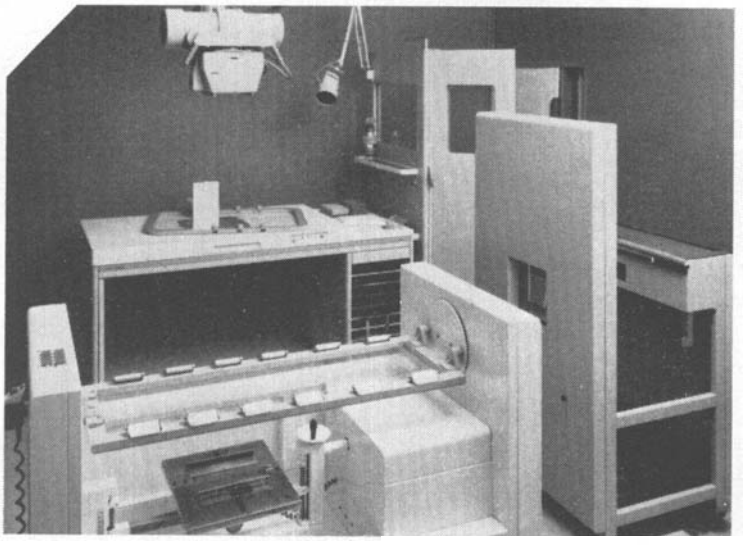
2.

3.

in two largely complementary X-ray systems which, together, ideally meet all these requirements:

The Junior DIAGNOST System - a special paediatric system for the radiography of patients up to some seven-years "tall". Rapid, convenient patient positioning, excellent image quality are among the outstanding features of this system. In essence, the Junior DIAGNOST comprises three separate stands: one for thorax studies, one for general radiography and the third for tomography. They are operated from a single, ceiling-suspended X-ray tube powered by a single, high-output H.T. generator. The entire system fits neatly into one small examination room.

The DIAGNOST 73 P - a dedicated paediatric system for fluoroscopic and radiographic examinations in children regardless of their age or size. At the same time, however, it offers all the facilities of a universal X-ray system. The ancillary equipment for the DIAGNOST 73 P includes easily fitted supports for babies, for children from two to about six years and also a set of special supports for use in pneumo-encephalography and urology.



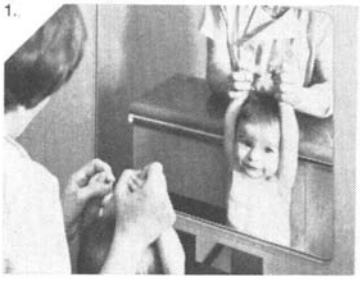
....and met to the full at Karolinska Sjukhuset.

The systems can be seen in everyday use in the Children's X-ray Department of Karolinska Sjukhuset in Stockholm. They were installed some time ago, and the personnel have now become thoroughly familiar with their operation.

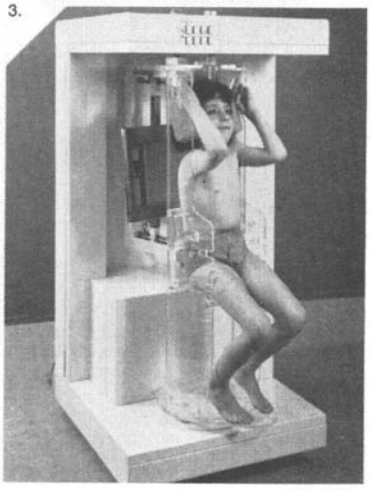
For lectures describing clinical experience with the systems, given during the 13th Meeting of the European Society of Pediatric Radiology, and descriptive brochures on the systems contact

Philips Medical Systems,
Eindhoven, The Netherlands.
or Philips Medical Systems Ltd.,
45 Nightingale Lane,
London SW12 8SX.

PHILIPS **Medical Systems**



1. Thorax studies are easily made with the Junior DIAGNOST V.
A footswitch enables the exposure to be triggered exactly at the correct respiratory phase. The collimator has been designed to ensure that stray radiation reaching the hands of the radiographer is kept to the safe minimum.



2. In the case of the Junior DIAGNOST H, positioning is simplicity itself - the tray is moved and not the child.
The extremely short object-film distance of approx. 9 mm results in excellent image quality.

3. Tomography with the Junior DIAGNOST T can be performed with the stand horizontal, vertical or in any intermediate position.
The tomographic effect is produced by a combined movement of patient support and film cassette with the X-ray tube remaining stationary. The very short time required to complete the blurring movement viz. 0.01 sec. per 4 degrees of arc solves the problem of immobilisation.

PHILIPS

How the ILFORD
can give you a

R300 processor helping hand.

1. It can process 350 mixed films an hour.

2. It uses cold water processing with the same convenience of installation and economy in use as the R200.

The ILFORD R300 processor. Quick. Efficient. Prolific.

3. You can choose rapid or half cycle processing at the flick of a switch.

4. The positive-displacement replenisher pumps are easily set. And stay set.

5. The impingement dryer is thermostatically controlled.

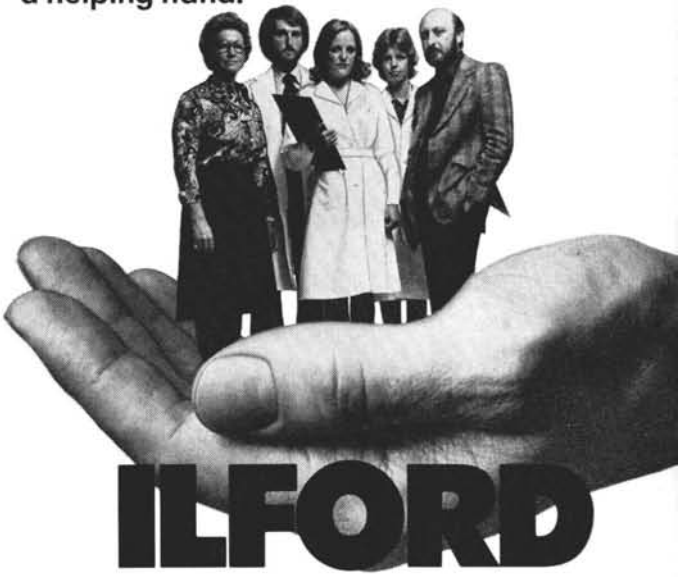
6. The construction is of stainless steel. Most components are interchangeable with the R200.

7. An efficient and prompt after sales service is available at all times.

8. The R300 is backed by a two year guarantee.

For further information on the R300 call our local representative or ring us direct.

When it comes to X-Ray we'll give you a helping hand.



ILFORD

ILFORD Limited, Basildon, Essex. Tel: 0268 27744

At last, a 5MV linear accelerator that's good enough for the Philips integrated therapy programme.

The Philips Integrated Therapy Programme ensures increased efficiency in the modern radiotherapy department by having a common design philosophy, similarity of operational procedures and simplified service.

The programme embodies maximum reliability and patient safety. It incorporates a long-term plan providing the clinic and hospital with the essential equipment for today and the future.

The new Philips 5MV linear accelerator is the latest introduction to the Programme.

A machine that has been specifically designed for the radiotherapy department needing a unit for X-ray treatments when electron therapy is not required.

Fulfilling an important role.

For the smaller clinic, the SL.75/5 offers all the sophistication of the higher energy linear accelerators in the same series, but it has also been carefully designed to match other units in the 4–6MV range.

For departments where the higher energy machines are already in operation, the common design philosophy of the 5MV enables it to be readily integrated into the department.

All this makes the 5MV ideal as a primary treatment unit or a secondary unit for the larger overworked clinic.

This is what you can expect in performance.

The SL.75/5 will handle 60 patients a day.

The X-ray energy can be set in the 4–6MV range and is monitored and controlled by the same system that is used in the other Philips linear accelerators and so ensures accurate energy stability.

Dose rates at 350 rads per minute at one metre can be achieved at 5MV. (Equivalent to 550 rads per minute at 80cm.)

The maximum field size is 40 x 40cm at one metre F.S.D.

A 420° gantry rotation has been included to ensure rapid setting up of patient treatments.

All movements are motorised with variable speed control and have simultaneous movement capabilities.

There is also a choice of treatment tables. Either a high lift ram type or an above floor version. (A combination of table side supports and centre spine construction allows beam access from any angle.)

Safety as always.

A major aspect of the SL.75/5 design concerned safety.

The dual channel dosimetry system is backed by a timer. Select and confirm routines ensure maximum patient safety and reduce operational errors. And if required, a verification system can also be added.

Where room protection is limited, a retractable beam absorber is available that can be interlocked to prevent irradiation to unsafe directions.

Dose and time LED displays are automatically maintained in the event of an electrical supply failure.

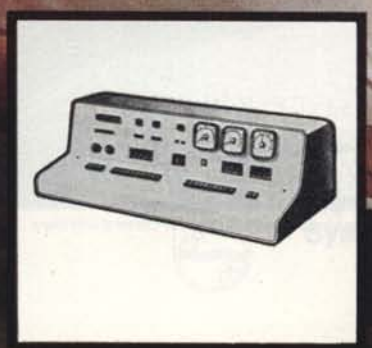
Find out more about the 5MV and the entire Philips Integrated Therapy Programme.

Here we have made a brief mention of just a few aspects that make the SL.75/5 an important addition to the Philips Integrated Therapy Programme.

The entire Programme includes cobalt units, localiser/simulator, a treatment planning system and ortho-voltage therapy units.

Philips are constantly developing new equipment for the highly specialised radiotherapy field.

If you would like to know more about the Philips Integrated Therapy Programme, please write to: N.V. Philips, Medical Systems, Eindhoven, The Netherlands, or The M.E.L. Equipment Company Ltd., P.A.D. Manor Royal, Crawley, Sussex, England, or Philips Medical Systems Ltd., 45 Nightingale Lane, London SW12 8SX,



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Medical Systems

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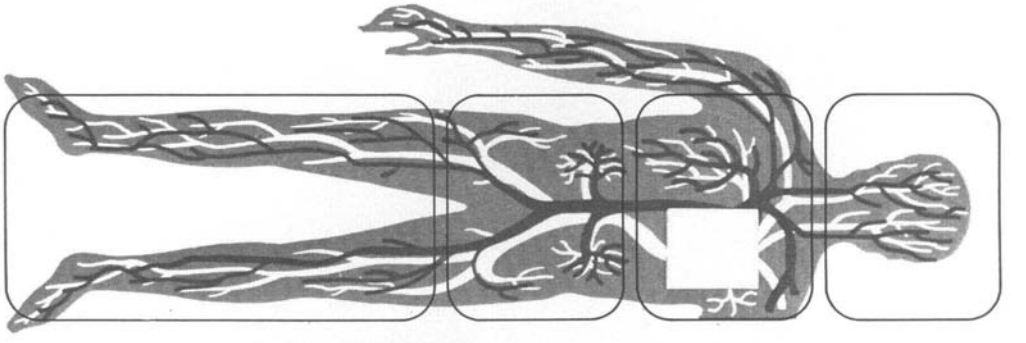
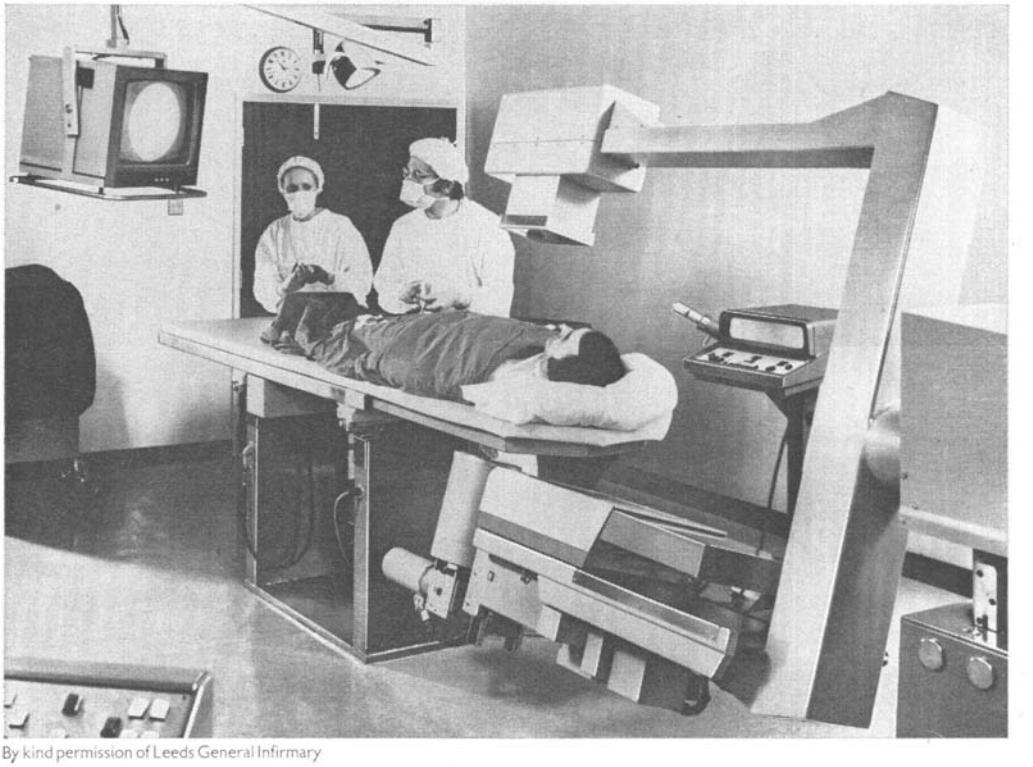
angio U.P.I.

U–arm
Puck U35
Image intensifier

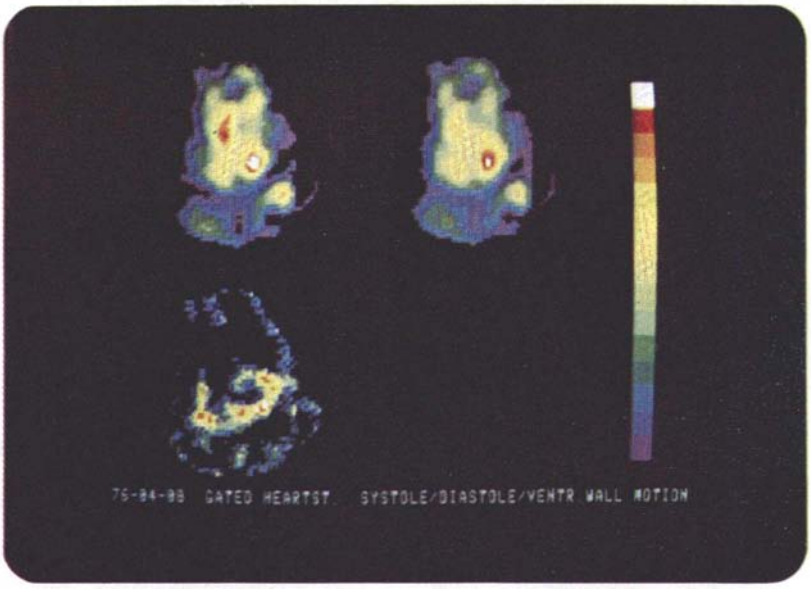
A unique system for general angiographic examinations

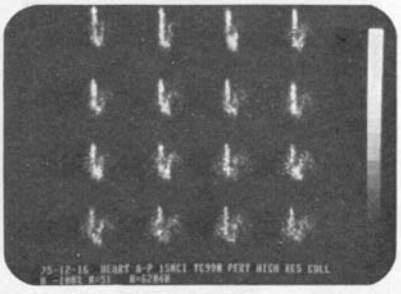


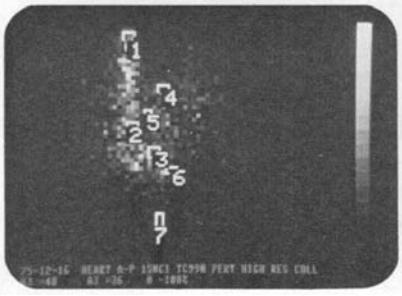


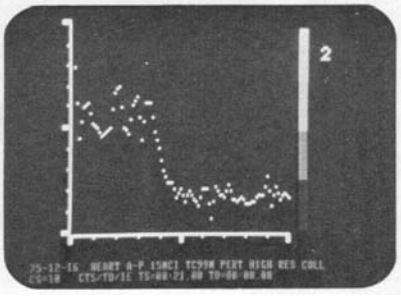
By kind permission of Leeds General Infirmary

Indepth evidence









PHILIPS **Medical Systems**

Modern radio-isotope techniques enable non-invasive vizualisation of ischemic areas of the heart . . . and processing the mass of data obtained is a task for a Philips Processing and Display System. In the colour video display, the two upper images show the heart in systole and diastole, acquired under ECG gating, while the third image, corresponding with the motion of the ventricular wall, is generated by a special program. If desired the user can also compose special programs – by simply linking existing sub-routines – and call them at any time by pressing the relevant program number.
Replay of the total study with 16 images at a time enable the optimal replay mode to be selected. Replay can be interrupted for the selection of regions of interest from which the computer calculates the time/activity graphs corresponding with the organ function.

This indepth evidence admirably illustrates the effectiveness of the Philips Processing and Display System in providing rapid quantitative and qualitative diagnostic information obtained during dynamic investigation in nuclear medicine.

The system employs a Philips mini-computer with a 32k 16-bit memory which, together with disc-operated software programs, provides considerable processing speed and flexibility. Furthermore, it has been designed specifically for use by medical personnel and program execution requires no specialized knowledge of data processing techniques.

1 **Direct access** to disc-stored programs covering a complete range of routine examinations is by means of ergonomically grouped key arrangements; the results being immediately displayed on the 30 cm black-and-white video monitor. The system can be extended with a colour monitor. Frequently used procedures can be combined to form new programs. In cases where a single key offers the choice of more than one routine, the program assumes a 'question-answer' mode enabling the operator to make a suitable choice. Incorrect operation is not possible. If a non-acceptable procedure is inadvertantly selected, the keyboard is immediately blocked and an 'error' condition displayed on the monitor.
2 **Software programs,** including standard as well as improved routines, are introduced via the system's built-in compact-cassette recorder. This facility also enables results to be recorded for eventual image playback and appraisal.
3 **FORTRAN IV option.** The capability of Philips Processing and Display System can also be extended to solve special problems. In such cases data can be pre-processed in the convenient PDS way and further analysis carried out using the FORTRAN IV option. Programs can be written in FORTRAN language by the user and results monitored on the PDS display or printed-out on the same terminal that is used to enter or retrieve the FORTRAN program.

Part of a complete program of nuclear medicine equipment and systems, and fully supported by an international service organisation, the Philips Processing and Display System represents the perfect integration of operational simplicity and efficiency with applicational flexibility and reliability.

COUPON

If you would like further evidence on Philips Processing and Display System, or on any other equipment in our nuclear medicine programme, complete this coupon and send to: Philips Industries Medical Systems Division, Building QM, Room 326, Eindhoven, The Netherlands.

Company: _____

Name/Position: _____

City/Country: _____

Street/P.O. Box: _____

PHILIPS

AUSTRALIA

BRISBANE, QUEENSLAND
ROYAL BRISBANE HOSPITAL
DEPARTMENT OF RADIOLOGY

DEPUTY DIRECTORS (3 positions)

Applications are called for the positions of Deputy Directors of Radiology (3 positions) in the Department of Radiology at the Royal Brisbane Hospital. The appointees will work under the general direction of the Director of Radiological Services to the Royal Brisbane Hospitals Group. The Royal Brisbane Hospitals Group consists of the Royal Brisbane, Royal Children's and Royal Women's Hospitals. The appointees will have close association with the Radiologists at the Royal Children's Hospital, each of the three positions will have special responsibilities. It is envisaged that the special responsibilities will be–

1. Neuro-radiological Services
2. Special Procedures
3. General radiological services Casualty radiological services and Obstetrical radiological services.

Applicants should state their special interest or preference for any of the three positions.

The Royal Brisbane Hospital has some 1,100 beds and the Department of Radiology performs some 130,000 procedures per year. The equipment in the Radiological Department is at present being up dated and the department itself is being extensively enlarged by an extension to the new department in an adjoining new block.

In the General Department all types of radiological procedures are carried out and it is contemplated that ultrasound and body scanning will be added as soon as these procedures become an established reality.

The Neuro-radiological Department is situated within the Department of Neurology and Neurosurgery and is equipped with a Mimer III Neuro-radiological Unit and an E.M.I. Head Scanner.

In the Department, as well as the Deputy Directors, there is an establishment of a Director, 8 Staff Radiologists and 11 Registrars in training. Close co-operation is expected between the department and the newly created Chair of Radiology within the University of Queensland.

The positions are permanent after a period of 12 months probation. Superannuation, 5 weeks annual leave, sick leave, conference leave and overseas study leave are provided.

Salary is $A.29,458 per annum.

Further information available from the Agent-General for Queensland, 329 The Strand, London WC2 0LZ to whom applications should be sent giving full details of qualifications, age and experience, together with names and addresses of three referees. Closing date 18 February 1977.

BIOLOGICAL PRODUCTS IN THE TREATMENT OF CANCER

An open symposium to be held by the International Association of Biological Standardization

London, April 13th–15th, 1977

Topics
Principles governing the use of biological preparations in the treatment of cancer
Materials B.C.G., C. parvum, Interferon, etc.
Production
Quality control
Mode of action
Immunology
Pharmacology
Experimental oncology
Toxicology in animals
Clinical relevance of experimental data and design of trials
Clinical Studies

Further information and registration forms may be obtained from the Organizing Secretary, Dr. A. H. Griffith, The Wellcome Research Laboratories Langley Court, Beckenham, Kent.

Persons interested in presenting papers at this symposium are asked to submit the proposed title to the Organizing Secretary before December 31st, 1976.

Progress in Computerized Tomography

The Department of Diagnostic Roentgenology, Mayo Clinic, announces a 2½ day continuing education course entitled, "Progress In Computerized Tomography". The course will be held on May 25, 26, and 27, 1977, at the Mayo Clinic in Rochester, Minnesota. The program will emphasize computerized tomography of the body but will also include certain aspects of CT physics and economics and will include certain aspects of computerized tomography of the head and breast. The course is approved for AMA Category I credit on an hour for hour basis. Registration fee is $200. For further information contact Patrick F. Sheedy II, M.D., CT Course Director, or Robert R. Hattery, M.D., David H. Stephens, M.D., and O. Wayne Houser, M.D., Co-directors, Mayo Clinic, Mayo Foundation, Rochester, Minnesota 55901.

A difficult choice for your gamma camera?

Do not be concerned...

now you can have:

High resolution
and
Large field of view
and
Energy independence
and
Up to three analyser channels

All on one instrument

The new Selo Supercamera KR7/L gives you:
highest resolution (3.2 mm bars) with a large field (39 cm diameter) with up to three analyser windows plus automatic peak tuning, automatic uniformity correction, and a high count rate.
This gives a high level clinical capability with **proven reliability.**

This new camera ensures that the fine reputation earned by Selo in nuclear medicine will continue to grow.

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Care consists of a simple, speedy and extremely accurate Light Beam Positioning Unit; a versatile Cassette Carrier system; and a choice of trolleys. The work of hospital staff is simplified by using the same light-weight purpose-designed trolleys from Ambulance through X-ray department to operating theatre or ward.

Care is available for demonstration at our Wembley showroom. Find out more by telephoning and ask for the brochure.

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PO Box 2 East Lane Wembley Middlesex HA9 7PR England
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SAAB-SCANIA

Multiplane aids fracture surgery

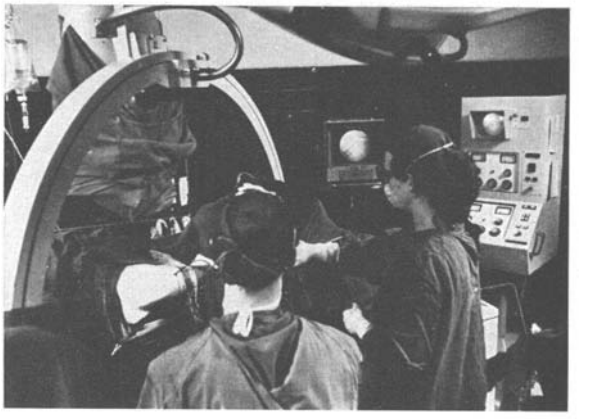
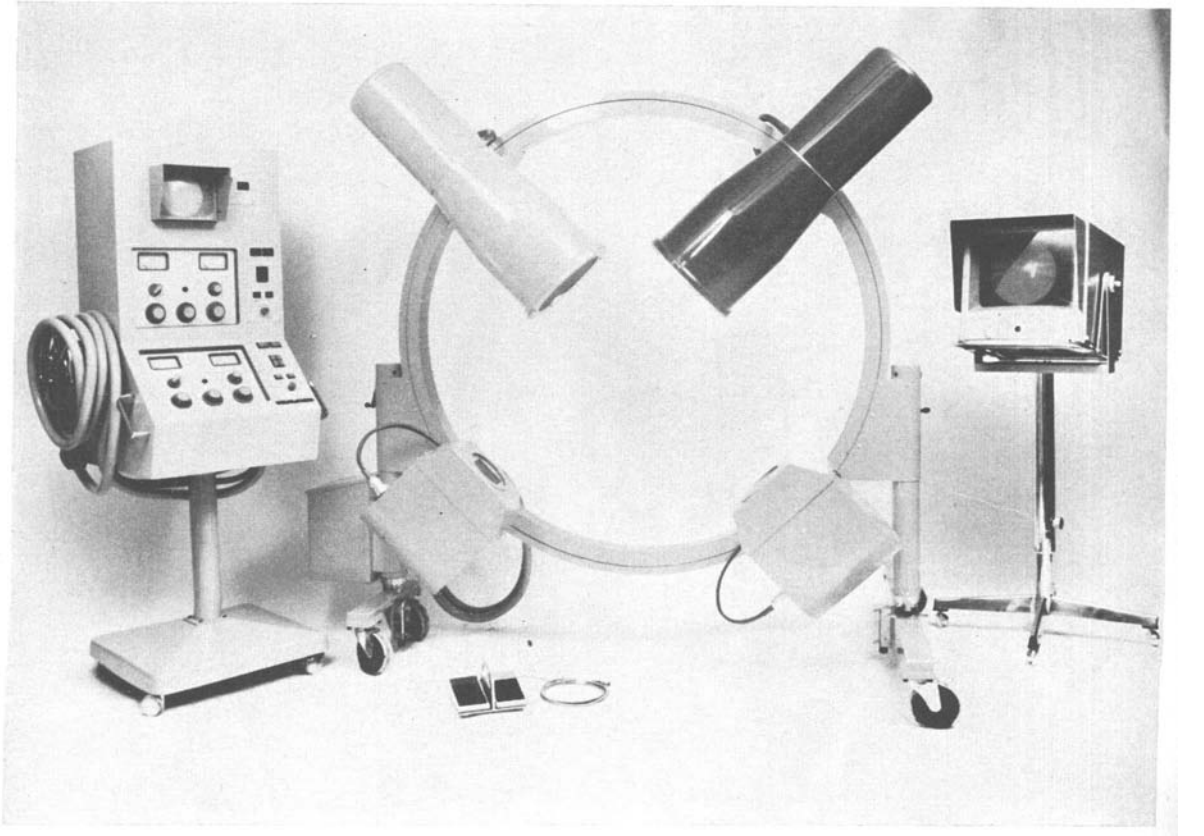


Image quality is outstanding, the amount of time saved is impressive. Its compact ringstand design allows the tv systems to be rotated through 90° while remaining at right angles to each other. The X-ray tube is centred on the image intensifier whatever the angle. There is no need for adjustment during the operation, so avoiding such frustrations as slipping surgical drapes. Multiplane is compatible with most modern orthopaedic tables and blends into the theatre environment. It is fully mobile and easy to connect to the power supply.

Above all, Multiplane is a proved unit, working for Hospitals in many parts of the world. Can *your* Hospital afford not to have the undoubted benefits of Multiplane?



DHSS item No.24/040232

For full facts about Multiplane and details of a short colour film showing Multiplane in action, contact the exclusive U.K. distributors, Todd Research Limited, Robjohns Road, Chelmsford CM1 3DP; Tel (0245) 62233, Telex 99327.

Your enquiry will meet with prompt attention.

Yes-

Cobalt 60 is still an important part of AECL's business

— But there is MUCH MORE!

Like the Therac Series — a totally new line of linear accelerators with energy output from 6 to 40 MeV.

Like the Therasim 750 Universal Simulator — AECL pioneered the design of therapy simulators for use with all makes of accelerators, betatrons and Cobalt 60 units.

Like the T.P. 11 treatment planning system — a sophisticated blend of computerization and electronics which adds a new dimension in the preparation of reliable therapy treatment planning.

Like the Gammacell 40 Biological Research Irradiator — Hundreds of AECL research irradiators are in daily use around the world.

Like the Cobalt 60 Units — AECL built the world's first commercial Cobalt 60 teletherapy machine — now AECL's units serve mankind in over 70 countries.

Like medical isotopes — AECL has provided thousands of cobalt therapy sources, nearly 10,000,000 curies of medical cobalt and millions of curies of isotopes for diagnostic and treatment use.

Like the JS 6500 — one of a series of AECL's production line gamma sterilizers for medical disposables in operation on all continents.

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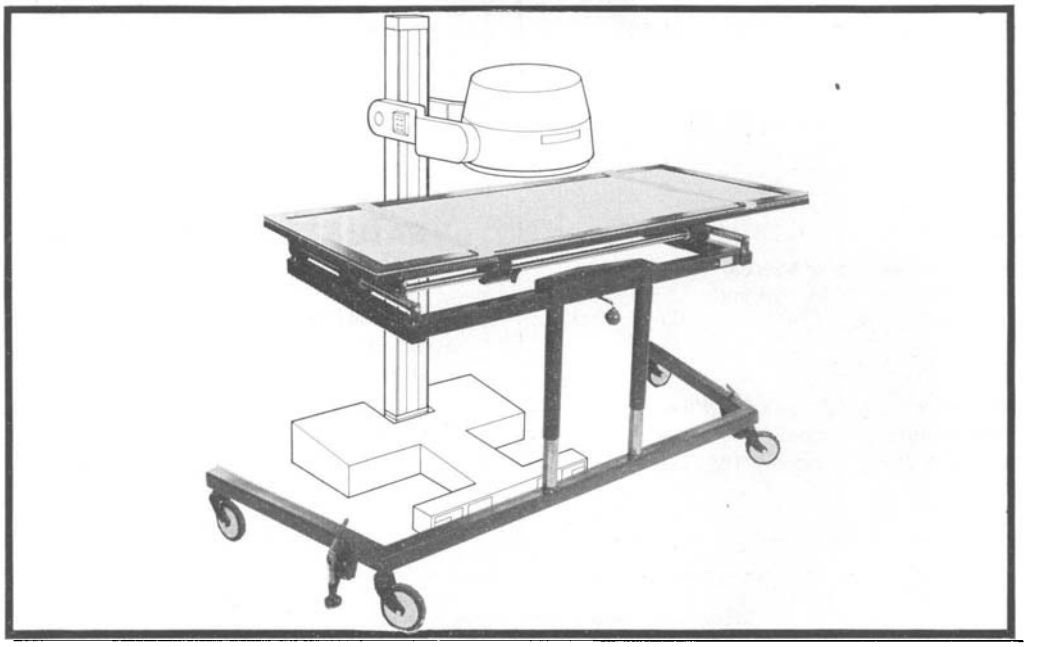
Total Dedication to Medical Treatment and Research

75.7 M

The ABC of our XYZ imaging and transfer table



A) Today's scintillation cameras, gamma cameras and X-ray units are designed for high speed operation and rapid patient throughput. Yet when it comes to the imaging table, many users compromise and so never fully realise the potential their equipment has to offer.

B) Our Model XYZ-101 Imaging and Transfer Table is specially designed to complement today's equipment and techniques. Mounted on four 5" diameter moulded rubber castors, it provides maximum patient mobility, while floor locks at each end secure the table rigidly during visualisation. The height of the Model XYZ-101 Imaging and Transfer Table is continuously adjustable from 30½" to 39½" so that the patient can be raised or lowered to the correct height for imaging. In addition, the top moves 5" in both the X and Y directions, graduated scales facilitating repeat procedures. Thanks to the cantilever design, detectors can be used both above and below the table.

C) The Table has a high quality stove enamel finish and ¼" thick transparent lucite top. A Model PH-101 polyurethane mattress with conductive vinylcover and two velcro retaining straps is supplied as standard equipment.

Also Available Model EZ-101 Imaging and Transfer Table with similar specification to the above, with continuously adjustable table height from 24" to 36" but without X and Y adjustment.

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Yet, in 1972, when we already had amassed five years of research experience, we clearly saw that its immediate benefits would inevitably be surpassed by its future promise.

And EMI-Scanner still lives up to that promise.

In four years we have improved the spatial resolution by a factor of 16.

We have more than doubled EMI-Scanner's accuracy.

We have introduced the first truly practical general purpose Scanner.

We have cut scanning time from minutes to seconds.

We have sold well over 600 EMI-Scanners, and installed some 360 systems around the world.

We have ensured that every EMI-Scanner in the field can be updated to the performance of its most recently introduced counterpart.

And overall, EMI-Scanner systems have been used to examine more than one million patients.

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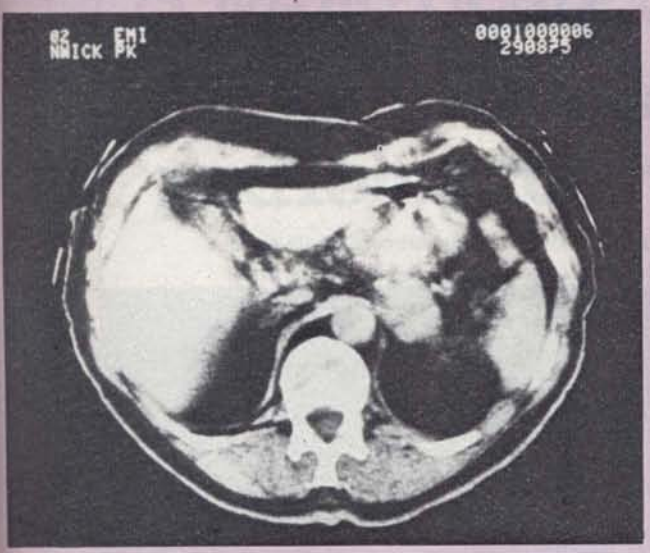
Patient Code 15, 8A.

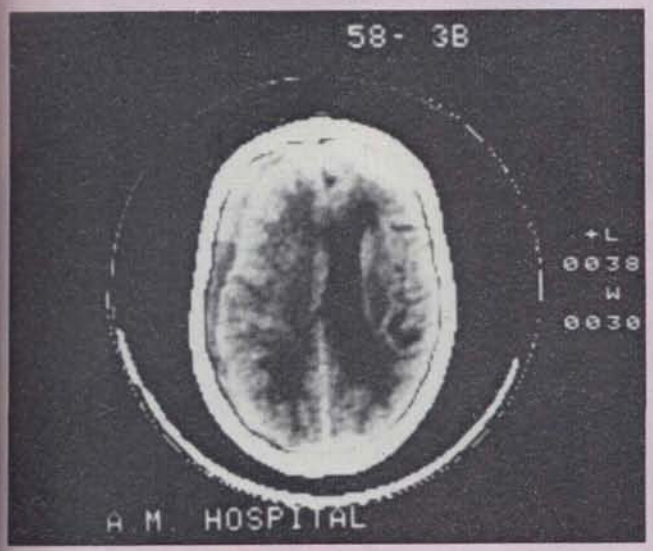
Patient suffering from hypopituitrism. The EMI-scan shows a pituitary adenoma. The scan, taken after the injection of contrast, clearly shows the suprasellar extension into the chiasmatic cistern.

for selecting EMI-Scanner

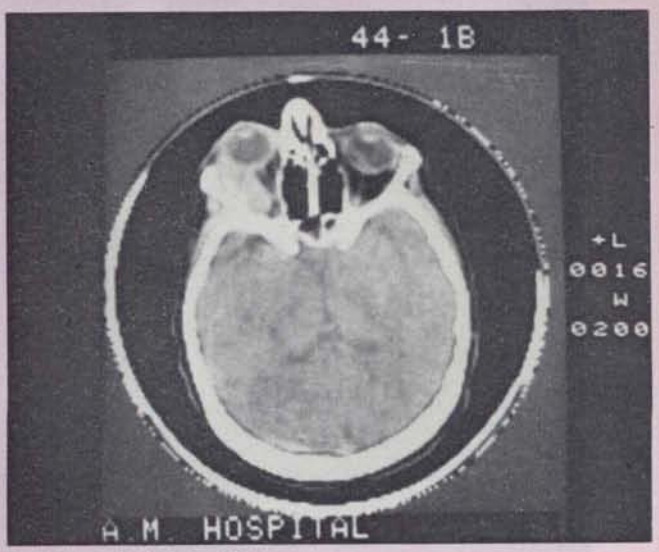


Scan 02.
Scan through 1st lumbar vertebra, demonstrates pancreatic cyst.

Scan 30.
This scan clearly demonstrates interstitial fibrosis in the lungs. Due to the short scan time of the CT5005, the patient was able to suspend respiration for the duration of the scan, thus allowing the lung vessels to be clearly demonstrated without blurring.



Patient Code 58, 3B.
79 year old female with a history of two falls in the month previous to admission. She was admitted in a confused and drowsy state. The EMI-scan clearly demonstrates a left subdural haematoma.
Note: Scan taken in "high sensitivity" mode. Note the clear delineation between grey and white matter.



Patient Code 44, 1B.
Young male patient with a 12 month history of increasing proptosis and limitation of lateral occular movements. Lately he has suffered from conjunctival oedema. The EMI-scan demonstrates a mass in the lateral section of the left orbit, with early calcification visible within the mass. Note the detail visible in the orbital regions.

1976

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The Pathogenesis of Reflux Nephropathy

By Professor C. J. Hodson, T. M. J. Maling, P. J. McManamon and M. G. Lewis

The association between vesico-ureteric reflux and renal damage has been recognized for some time, but it has usually been assumed that the damage is due to infection promoted by the reflux. However, observations by Rolleston and his colleagues in New Zealand have indicated a link between the severity of reflux and renal damage. Furthermore they have suggested that reflux penetrating into the renal substance is the factor most likely to explain the production of renal scarring.

These observations have been given a firm experimental basis by Professor Hodson and his associates. Their careful work on the growing pig has shown that the sites of intra-parenchymal or intra-renal reflux (I.R.R.) are the sites of subsequent and atrophy. I.R.R. only occurs above a critical pressure level; reflux at lower-pressures produces no evident damage. Infection aggravates scarring, but in the presence of I.R.R., scarring can occur with sterile urine.

The work set out in this monograph has wide practical implications, and is of interest to paediatricians, nephrologists, urologists, radiologists and others concerned in the management of patients with urinary tract infection.

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