What's New

Every description of the items on the following three pages was condensed from information supplied by its manufacturer. They are published as a service to the professionals working in the field of nuclear medicine and their inclusion herein does not in any way imply an endorsement by the Editorial Board of the JNMT *or by the Society of Nuclear Medicine.*

Radiopharmaceutical Analyzer

A radiopharmaceutical analyzer for kit tagging that rapidly provides direct readout of percent bound is being introduced by New England Applied Research, Inc.

The Analyzer is a radiopharmaceutical analysis instrument that provides a direct readout of percent bound in less then 30 seconds with ± 3% repeatability. The operator simply places a chromatographic test strip on the stainless steel positioner, selects the appropriate counting range, and depresses the start button.

Providing a statistical accuracy of ± 3% @ 1000 counts, ± 1% @ 10,000 counts and 0.5% @ 50,000 counts, the New England Applied Research QA Analyzer has a maximum count rate capability of 300,000 counts/min. The table top instrument incorporates Geiger Muller (GM) tubes, has no moving parts, and operates on 110VAC.—*New England Applied Research, Inc., 15 Tech Circle, Natick, MA 01760.*

Dose Calibrator

MICRO CAL, a microprocessor controlled dose calibrator, automates the key phases of radiopharmaceutical activity measurement and dose calculation. In addition to measuring radionuclide activity, the MICRO CAL will calculate dose volume and correct for radionuclide decay of selected isotopes. With this feature, patient doses for an entire day's procedure may be prepared at one time for later use. MICRO CAL will automatically calculate and display the amount of Molybdenum-99 contamination in the Technetium-99m sample. The MICRO CAL Printer records pertinent data, simplifying record keeping.

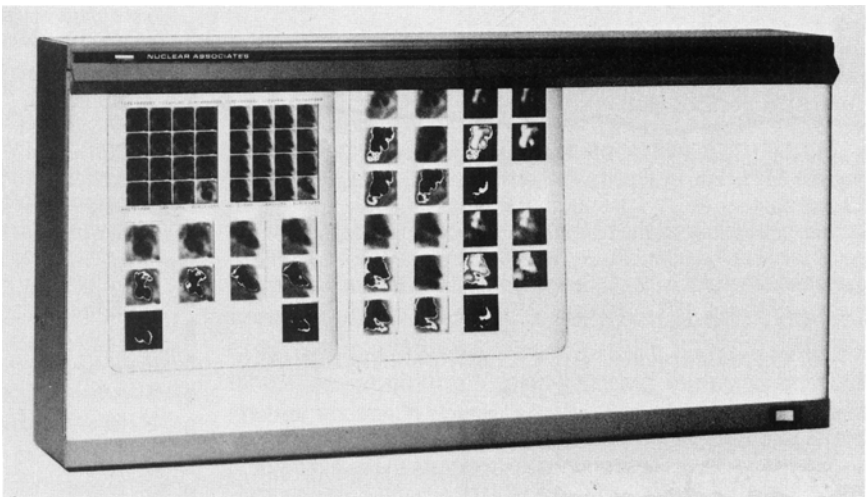
A unique, lighted prompting panel and keyboard replaces the traditional knobs, buttons and dials of earlier instruments. For each patient dose of selected isotopes, the technologist need only enter the desired activity and the time the dose is to be administered; the MICRO CAL then automatically computes and reports the volume to be injected. Compliance with regulatory and hospital accreditation standards is aided by the addition of the MICRO CAL Printer which provides a hard copy record of results.—*Picker Corp., 12 Clintonville Rd., Northford, CT 06472.*

Radiopharmaceutical Quality Control Kits

Ashley Enterprises has announced Qualitymate instant thin layer chromatography test kits, used to detect radiochemical impurities in any Tc-99m tagged radiopharmaceutical compound. Research conducted on test samples with known radiochemical impurities shows that the Qualitymate test is capable of indicating the presence of such impurities. The test results are used to determine whether the radionuclide is suitable for clinical use, prior to administration of the material to the patient.

Each Qualitymate test is performed in a separate disposable chromatography chamber which is prefilled with a measured unit of developing solvent. Upon completion of the test, the entire unit is discarded.—*Ashley Enterprises, P.O. Box 344, Station "C", Flushing, NY 11367.*

Illuminator



The "Multi-Lux" provides multi-image camera users with bright, evenly-diffused light in a space-saving configuration which is ideal for nuclear medicine, CT and ultrasound departments. When 8" x 10" film is viewed on a standard (14" x 17") illuminator, two thirds of the viewing area is unused. This empty area produces glare, promotes eye strain, and diminishes the ability to differentiate subtle details and density variations. The "Multi-Lux" eliminates such glare with a reduced surface area designed for viewing three multi-image films simultaneously. —*Nuclear Associates, 100 Voice Road, Carle Place, NY 11514.*

Positron Imaging System

A multi-slice positron imaging system designed specifically for neurological research is offered by The Cyclotron Corporation. The Model 4600 Positron Camera Tomograph (Neuro PCT™) is an advanced system providing rapid, high resolution, quantitative evaluation of the distribution of positron-emitting isotopes and labeled compounds.

The physical configuration of the detector system has been optimized for neurological studies. A tightly packed bismuth germanate (BGO) ring detector system affords high sensitivity, while the multiple, discrete crystal design provides high resolution and count rate capability.

The data acquisition system is designed for high rate, high volume physiologic studies. Stringent data handling and storage requirements are met through extensive buffer memory and disk storage capacity.

The computational requirements related to data correction and multi-slice, multi-frame image reconstruction are met through the use of a large memory, high speed array processor.

A complete nuclear medicine software system is provided for image processing, display, and patient filekeeping.—*The Cyclotron Corporation, 950 Gilman Street, Berkeley, CA 94710.*

Video Hard Copy Unit

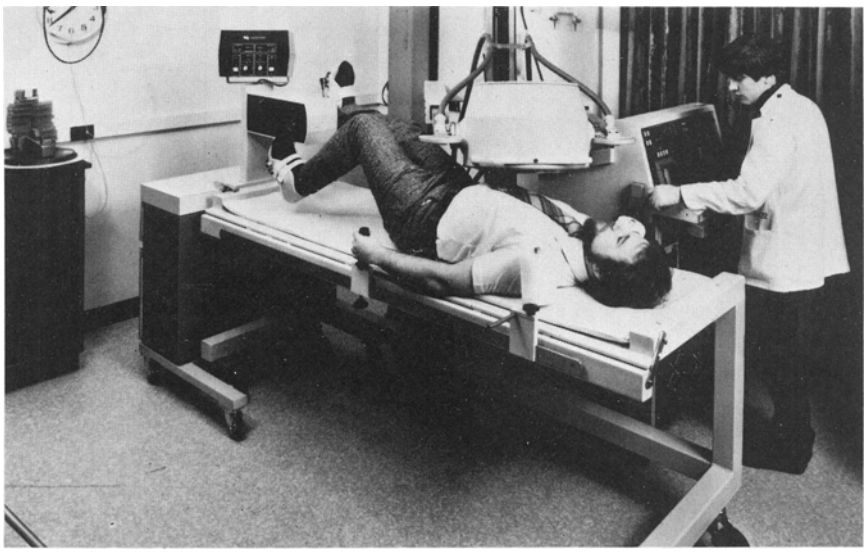
Components Corporation has introduced to its Medical TV Systems product line a Video Hard Copy Unit, Model 947 which provides permanent Polaroid copies of video images directly from an NTSC composite video signal. The Model 947 is a self-contained unit consisting of a Polaroid CRT camera with a film pack back and is securely mounted to a 5″ high resolution (600 line) monochrome TV monitor.

Single frame exposures are made possible with the use of 3000 speed film. Type 665 positive/negative film can also be used with increased exposure time because of the film's slower speed. Video-cassette playback can be copied at normal playback speed with the use of 3000 speed film. The lens aperture setting is adjustable from *f*4.5 to *f*45 and the shutter is adjustable for 1/125 down to 1 second with time and bulb settings as well.

A hooded viewing port is provided on top for direct observation of the monitor face. This together with the top mounted controls allows rapid setup. The video loop thru feature enables the unit to be used with other video monitors in a TV chain or video cassette recorder.
—*Components Corporation, 6 Kinsey Pl., Denville, NJ 07834.*

Cardiac Imaging Accessories:

Cardiac Stress System



The Cardiac Stress System combines an electronic controller with a rigid table and pedal ergometer unit for automatic control of patient heart rate and workload during camera imaging. The control unit features digital display of heart rate, workload, elapsed time and pedal rpm. This allows the operator to coordinate patient workload to get the heart rate desired and maintain that heart rate throughout imaging. The Cardiac Stress System immobilizes the patient in a supine position. This facilitates immediate and continuous imaging of the heart during stress protocol.

The Cardiac Stress System is completely mobile and the imaging table can be quickly released from the pedal ergometer to permit its use with the whole body imaging cameras. The table's rigid, cantileveled design includes a radiotransparent top for posterior imaging.
—*Engineering Dynamics Corp., 120 Stedman St., Lowell, MA 01851.*

Radio-transparent Electrodes

Until now cardiac catheterization, nuclear medicine procedures, and cardiovascular surgery have had two problems with ECG monitoring when conducting radiographic procedures. It was necessary to choose between placing the electrodes out of the viewing field (limb leads) and settling for less than ideal ECG waveform vs. placing the opaque electrodes and leadwires in the chest positions (V1 thru V6) and trying to "see" around them.

Newly developed Gold R-T Electrodes™ from Concept, Inc., in Clearwater, Florida, solve these problems. Both the chest electrode and the leadwire are radio-transparent. Ideal precordial chest lead locations can now be used. Results: (1) the ability to distinguish between ventricular ectopy and aberration by utilizing the right and left chest leads (V1 and V6) as well as immediate recognition of developing bundle branch block. (2) a stable baseline with no wander before, during and after dye injection and unobstructed visualization during the radiographic procedure.—*Concept Inc., 12707 US 19 South, Clearwater, FL 33518.*

Bifocal Diverging Collimator

The Bifocal Diverging Collimator from Engineering Dynamics Corporation allows simultaneous imaging of both the RAO (Right Anterior Oblique) and LAO (Left Anterior Oblique) on a 10″ field-of-view camera. This provides two crisp juxtaposed views of ejection fraction and wall motion on any mobile or standard gamma camera.

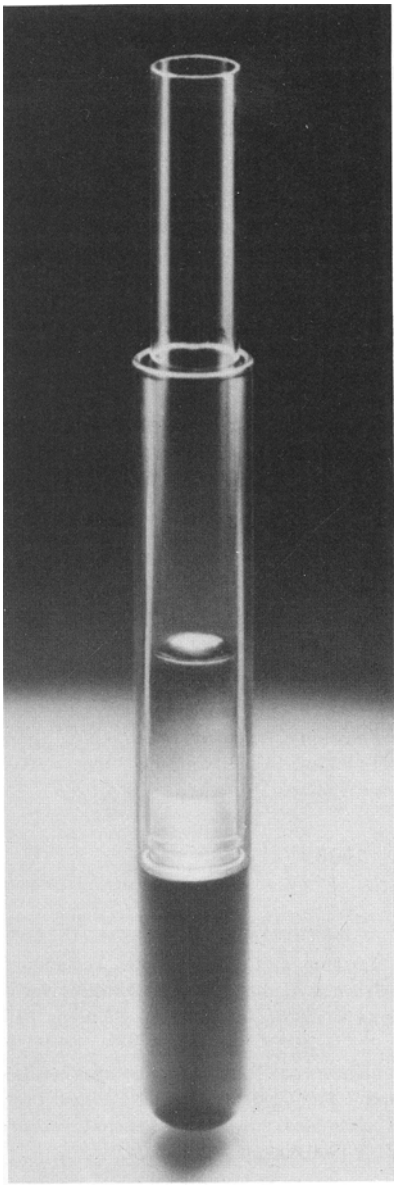
The Bifocal Diverging Collimator is constructed so both LAO and RAO views are simultaneously viewed at an angle 50° apart, or each image is equal to a 25° oblique.

Image integrity using the Bifocal Diverging Collimator has been clinically proven to be equal to that of parallel hole collimators, with a correlation factor of R=0.97 (R=1.00 is maximum.)

The Bifocal Diverging Collimator from EDC can be mounted in any standard or mobile gamma camera such as the Ohio Nuclear, Searle, Picker, or G.E.
—*Engineering Dynamics Corp., 120 Stedman St., Lowell, MA 01851.*

What's New in RIA Products

Particulate Filter



Acculab introduces the new Accu-Filter, a disposable filter which filters fibrin and other particulate matter from centrifugated blood serum or plasma specimens.

The Accu-Filter is an especially designed plastic collection tube atop a tightly fitted micron filter disc through which serum or plasma must pass during collection. The disc effectively "locks out" foreign matter which would interfere with test results and require additional drawing of blood.—*Acculab, 50 Maple St., Norwood, NJ 07648.*

Prostatic Acid Phosphatase (PAP) RIA Kit

The NEN Prostatic Acid Phosphatase [^{125}I] RIANEN™ Assay System Kit is designed to specifically measure acid phosphatase of prostatic origin in the serum. Unlike traditional colorimetric methods, which depend only upon intact enzyme activity on a substrate, the RIA technique measures immunologic enzyme activity, which is known to be more stable. This method has been shown to be more sensitive and specific than colorimetric assays for diagnosis in many cases of prostatic cancer. The analysis protocol requires one 4-hour incubation at room temperature. An equally reliable overnight convenience protocol is also available. —*New England Nuclear, 549 Albany St., Boston, MA 02118.*

T-3 Uptake (MAA) Kit

Amersham Corporation announces the availability of its new T-3 Uptake (MAA) Kit. The kit is designed to provide a rapid and convenient assessment of thyroid hormone binding capacity in human serum. The kit protocal depends upon the distribution of ^{125}I-thiiodothyronine between vacant binding sites on endogenous binding proteins and a secondary binder in the form of macroaggregated albumin. Speed, accuracy and convenience are assured with a 50 μl sample, 10 minute room temperature incubation and excellent correlation with the clinical picture. Kits containing sufficient reagents for 50, 100 and 400 single determinations are available. —*Amersham Corp., 2636 Clearbrook Dr., Arlington Hts, IL 60005.*

Automated RIA System

Union Carbide's Centria System 2 is an automated RIA system composed of three separate modules: a pipettor, incubator/separator and counter/computer. The pipettor module measures and dispenses antiserum onto a disposable plastic transfer.

A double antibody tablet is the most important feature of Centria System 2. Union Carbide's unique method of covalently binding a second antibody to agarose and then tableting it provides state of the art separation technology in a convenient, stable form.

After a preset incubation time, the incubator/separator transfers the incubation mixture onto the column and tablet where separation takes place. During approximately 10 minutes the tablet swells to provide a large surface area for rapid, complete binding of the first antibody to the second antibody. Eluant is then pumped to rinse the transfer disc and wash the free fraction from the antibody tablet.

The bound fraction on the column is counted by the counter/computer in one easy operator action. The counter/computer is a triple well sodium crystal counter. The probes are electronically matched for counting ^{57}Co or ^{125}I. A microprocessor converts raw counts to concentration units and prints out hard copy results for 36 tubes in less than 15 minutes. The counter/computer can be run in a convenient pre-programmed mode or the operator may interact via a keyboard to customize assay parameters such as count time, units, data transformation, standards and number of replicates. Raw counts may also easily be obtained. At a standard one minute count time up to 144 tubes/hour may easily be processed.

Union Carbide will have 14 assay available by December, 1979—digoxin, T_4, T_3U, insulin, coritsol, TSH, B_{12}/folate, dilantin, HPL, ferritin, LH, FSH. In addition, the nature of the separation technology make it possible to adapt other reagent kits to the Centria System 2. —*Union Carbide Corp., Clinical Diagnostics, 401 Theodore Fremd Ave., Rye NY 10580.*