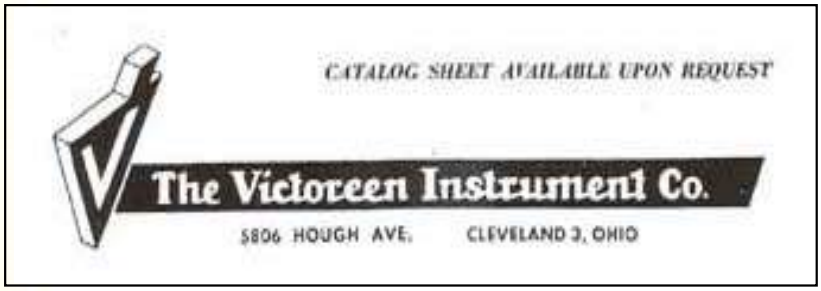
**Victoreen Instrument Company**

Victoreen Instrument Company started in 1928 by John Austin Victoreen, a self-taught engineer, as a group of x-ray dosimeter manufactures. He developed several instruments in the 1930's but he commented " no one wanted what he made" so he just put them on the shelf. These early instruments resulted in the early version of the Model 241.


Victoreen Logos 1947


Victoreen Logo 1948


Victoreen Logo 1950



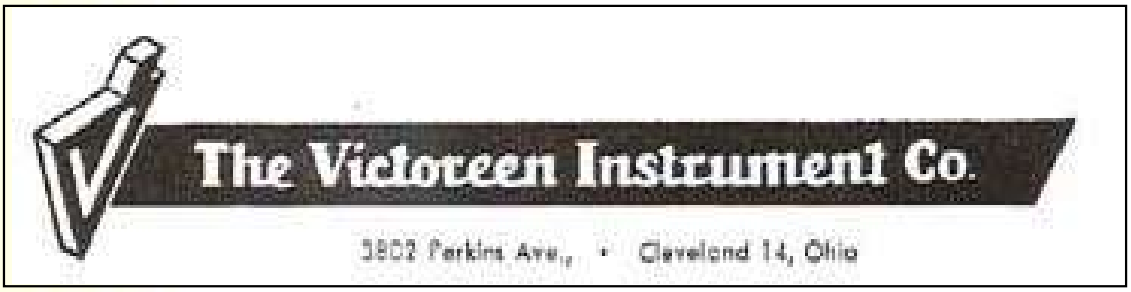



Victoreen Logos 1952

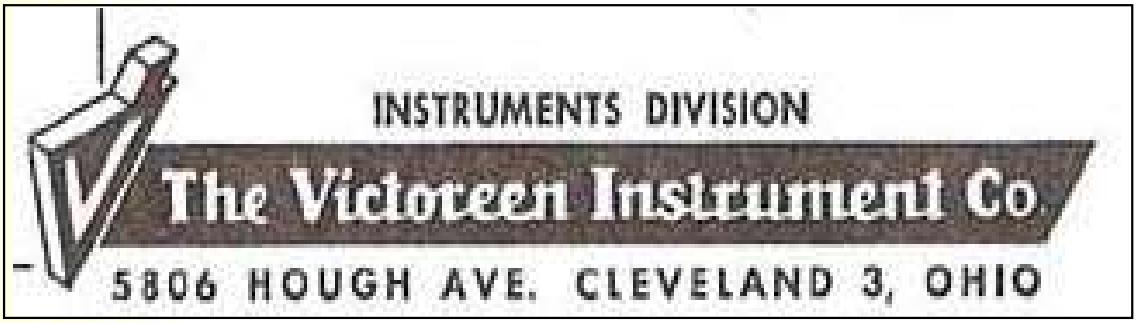

Victoreen Logo 1953


Victoreen Logo 1954


Victoreen Logo 1955

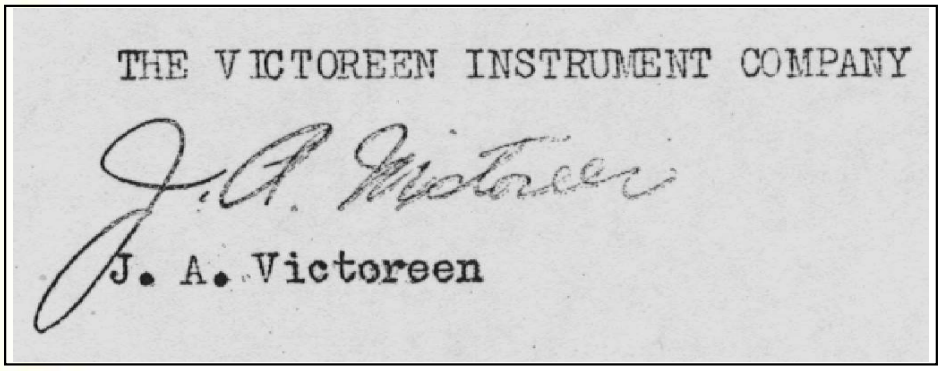



Victoreen Logo 1956




Victoreen Logo 1956


Victoreen Letterhead 1955

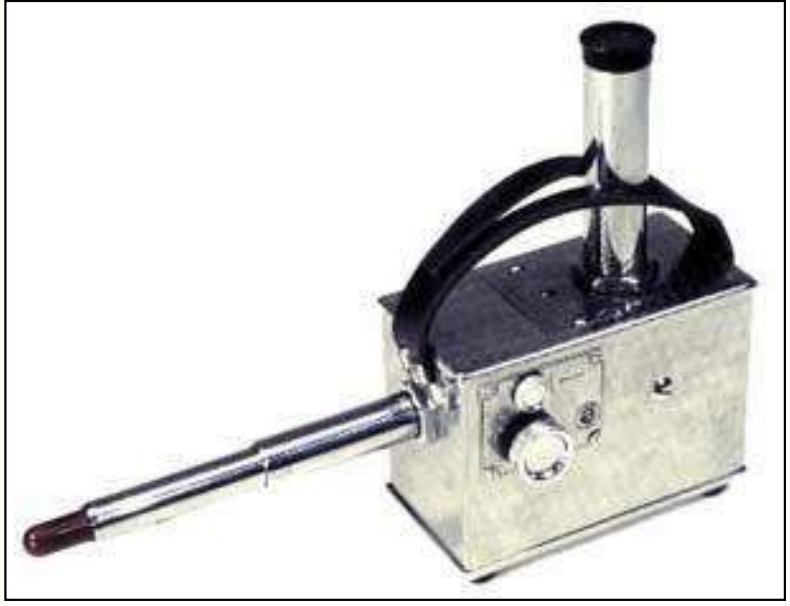



J.A. Victoreen Signature 1938

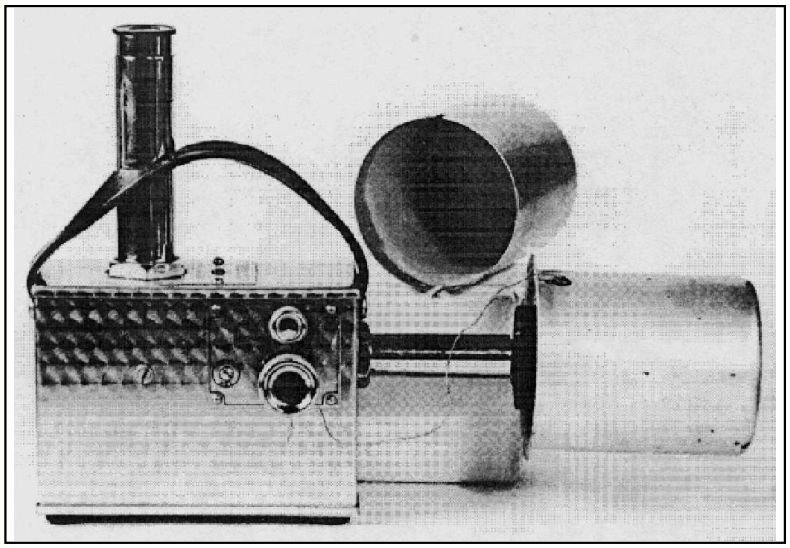
He later received an honorary doctorate in science. Until 1946, they were the only makers of nuclear instruments. In 1937, a market for nuclear instruments began to develop at the University of Chicago, Met Lab and the Critical Pile-1 (CP-1). Victoreen only had to go to his shelf of previously developed instruments and they met the need. He also developed a few special instruments for the University of Chicago, home of the first nuclear pile, CP-1. Critical to the instrument work was the development of high resistance resistors with magnitudes of $10^{14}$ to $10^{15}$ Ohms. These resistors required a technique development to put graphite on glass. Dr. Victoreen has noted that the code names were classified but the designs were not since many had been developed before the Manhattan Project. The contract between Victoreen and the Manhattan Project was secret, however, it should be noted that Victoreen made significant contributions to the Manhattan Projects success.

Victoreen is credited with building several condenser-type ionization chamber instruments in 1927 which were stored in the laboratory due to lack of need. The chamber used a carbon wall and aluminum electrode and was 1 cm3 chamber charged with a friction wheel. Glasser and Seitz made an experimental condenser-type ionization chamber with a removable chamber that could be separated from the electrometer. Glasser turned to Jack Victoreen in 1928 to market the first commercial instrument know as the Condenser R-Meter. It was an ionization meter connected to an electrometer. It soon became the industry standard. Victoreen provide 95% of the instrumentation for the South Pacific atomic bomb tests and became known as the “First Nuclear Company”. These would later become the first commercial U.S. ionization chambers developed by Victoreen in 1930. The first units were friction charged with a battery powered light for the meter. It was later known as the Victoreen R-meter.

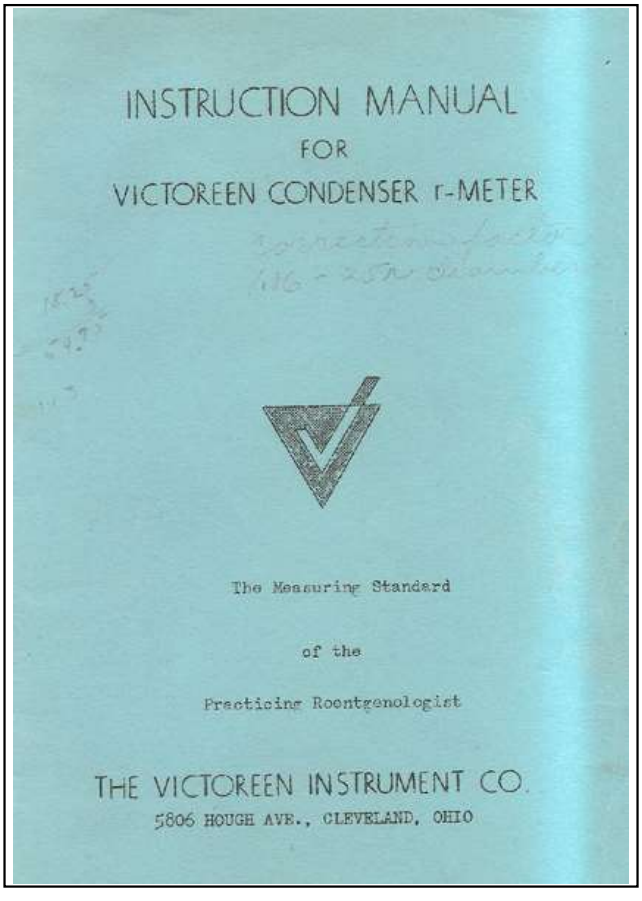
Around this time, there was also a commercial Solomon’s Ionometer, designed by Iser Solomon, a French radiologist. It was also at this time in 1928, that Geiger and Mueller published an announcement of the developed of a device for measuring radiation. Another condenser ionization chamber was developed by William Duane. Glasser and Fricke of the Mayo clinic also developed a unit in the 1920’s. In 1929, Lauriston Taylor at the National Bureau of Standards developed the first portable survey meter incorporating interchangeable chambers for various radiation ranges. Another early instruments was developed by R.S. Landauer, Sr. of the Standard X-Ray Company of Chicago and called the Roentgenometer, which was connected by a shielded metal cable to the meter readout. Landauer was a medical physicist at Chicago’s Cook County Hospital. It was designed for measuring x-ray tube output.



Victoreen Condenser-R 1928



Victoreen Condenser R-Meter 1930's



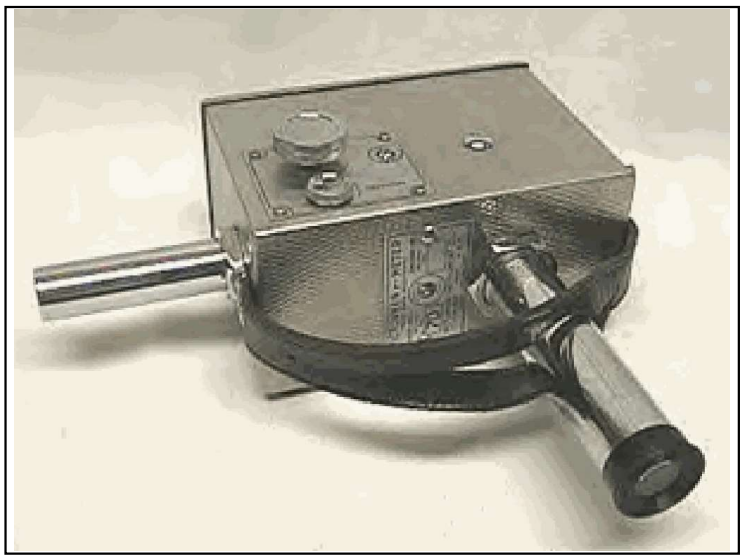

Victoreen Condenser r-Meter 1943 Manual

These early precursors were later known as the Victoreen R-meter. Victoreen has been quoted as stating that “no one wanted what I made”. They initially manufactured ion chambers which led to the production of other special components like Geiger tubes. Victoreen’s early contract to build instruments was a secret government contract not fully revealing the contributions to the development of the first atomic bomb. After the end of WWII, other contracts were let which opened commercial competition. Victoreen was the major supplier of instruments for the first atomic tests in the Marshall Islands in 1946 for the Able, Baker and Charlie tests. The Charlie test required instrumentation underwater with recording at the surface.

Victoreen Instruments was located at 3800 Perkins Avenue in Cleveland, Ohio in 1949. They later moved to 5806 Hough Avenue and produced a wide range of Geiger counters and ionization chambers beginning in the mid 1930’s for use in laboratory, military and prospecting applications. Another 1930’s instrument was the Integron, an electronic integrating ionization chamber. It was improved and modified to evolve as the Radocon in 1935. In 1940, a pocket ionization chamber, a modified R-meter chamber, was developed called the Minometer. Victoreen introduced the Iometer in 1937 for measuring x-ray beams. In 1949 they offered four models with several modifications. It advertised that it was the “World’s First Nuclear Company”.

Victoreen Condenser R-Meter 1937

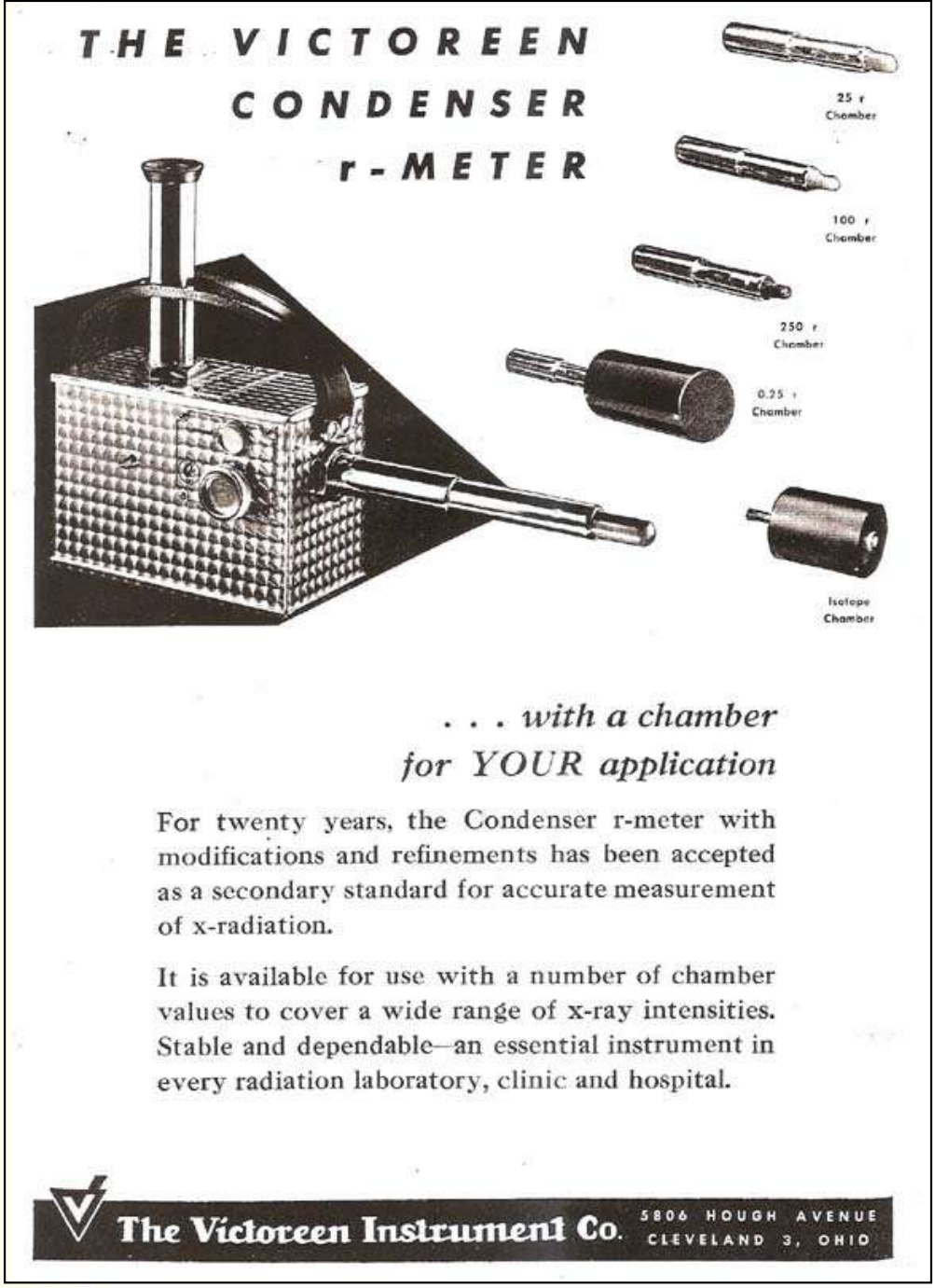
The Model 70 was a portable xray-gamma integrated air ionization meter introduced in 1948. It was called the “Condenser R Meter”. Chambers were available with size from 0.25, 10, 25, 100, 250, 1000, and 2500 R. The chambers were also detachable for remote detection. The chambers were made of bakelite or nylon. It used two 1.5 volt penlite cell batteries. The 250 R nylon chamber was used for soft radiation.



Victoreen Model 70 1948

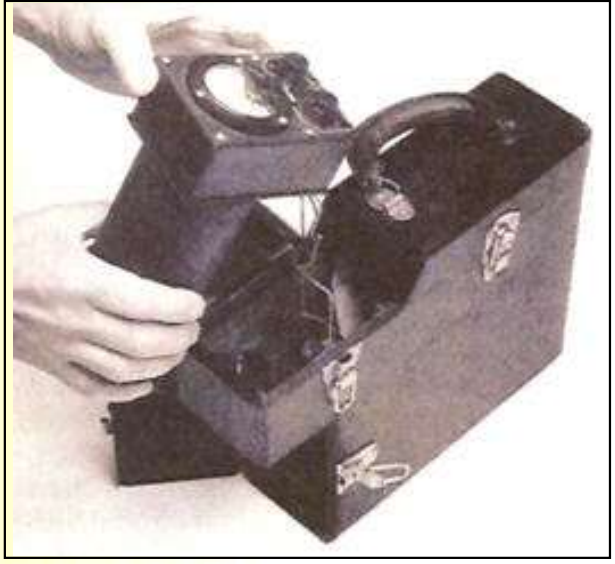
Victoreen Model 70 Kit 1948

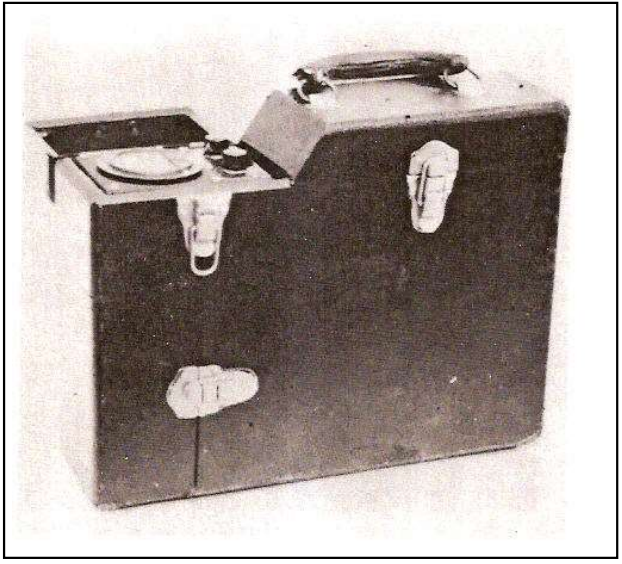
Victoreen Model 70 1950




Victoreen Condenser r-Meter Ad 1952

The portable Model 263 “Doc” was introduced in 1939 or 1940. It is believed to have dated back the early 1940’s and may be the second survey instrument developed by Victoreen. It appears to be the earliest commercial instrument of its type. It was developed by Donald Collins, a staff officer in the Manhattan Project and later worked as technical director for Victoreen and then the Landsverk Electrometer Company, and Bob Smith. It was originally code named “Doc” as part of the Manhattan Project prior to WWII. It was developed into a “little black suitcase”. The unit had a self-contained GM tube for beta and gamma detection. The Geiger tube was mounted externally and attached via a clip. It had 3 ranges and calibrated with radium. It was described as "*an instrument with a distinctive background of service*". The Model 241 was introduced in the late 1930’s. It was a portable beta gamma air ionization rate meter. It weighs 12 lbs. It measured 15” x 11” x 3.5” and is housed in a black leather case. It was sensitive to 20 mR/h. The chamber is bakelite impregnated cardboard and has a volume of 0.6 liters. It was battery powered. The Model 241 is thought to be the one of the earliest commercial survey meters dating back to the last 1930’s. This was the first instrument to use a multi-vibrator that eliminated amplifier zero drift.





Victoreen Ionization Chamber Survey Meter 1942

The Condenser-R Meter was developed in 195x. The unit had a charger reader and an exchangeable condenser ion chamber. The chambers are available for 6-35 keV, 30-400 keV, and 400-1300 keV. The unit is 8” long x 3” wide x 8.5” high and weighs 10 lbs. It was very useful for rapid determination of x-ray dose in roentgens.

Accounts by E. Trout indicate that together with John Victoreen and George Bell, the first commercial survey meter was developed in 1942. It contained one 45 volt battery and an ionization chamber underneath the front cover. The chamber was made of a mailing tube that was “dagged”, i.e. covered with a conducting material. The meter read in milliroentgens per minute. Victoreen required electrometers and high meg resistors which were provided by Art Stokes and Fred Reuter, later of the Reuter-Stokes company.

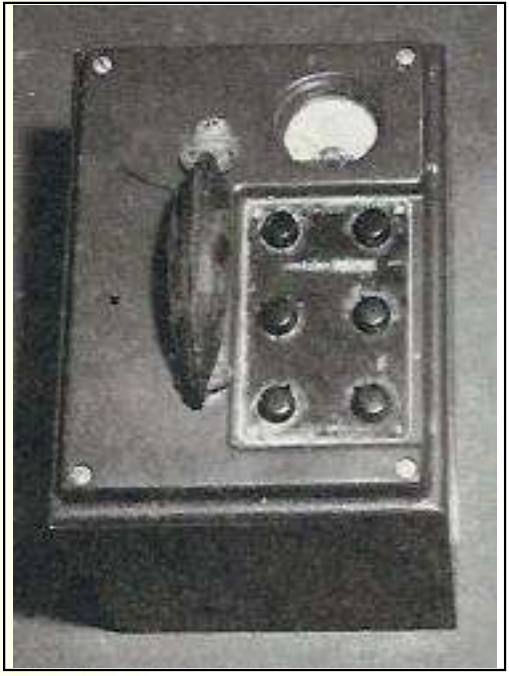
The Model 196 was offered in 1944. It was a single range instrument which could be changed.

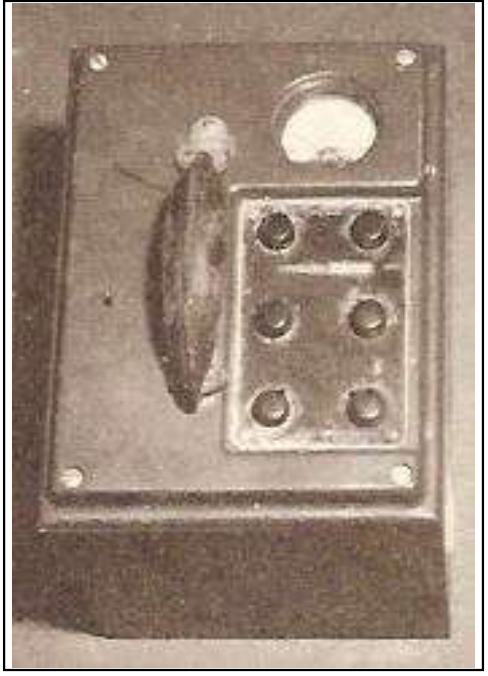
Need photo

Victoreen Model 196 1944

The Victoreen portable Model 247 was an ionization chamber model that superceded the Model 263 and was designed to be more rugged for military use. It was a survey meter with a 56 cubic inches air ionization chamber and was introduced commercially in 1945 and dates back to mid-1943. During World War II, Operation Peppermint was the US military response to radioactive materials being used against US forces invading Europe at Normandy beaches. Fortunately radioactive materials were not used during the invasion.

The unit provided stable operation and rugged construction, but was only sensitive to gammas. It has four ranges of sensitivity from 2.5-2500 mR/h. The Model X-247 can measure up to 50 R per day. The case is watertight and hermetically sealed. The wall of the chamber is typically made of a material that has the same absorption characteristics as air, namely carbon. A unique eccentric range switch is color coded to give visual indications of the range that the meter is set. The original Model 247 was rectangular box shape 12” long x 9” wide x 10” high and weighed 14 lbs. (1) Pictures used with permission of the Stafford Warren Collection at UCLA Charles E. Young Research Library, Department of Special Collections).



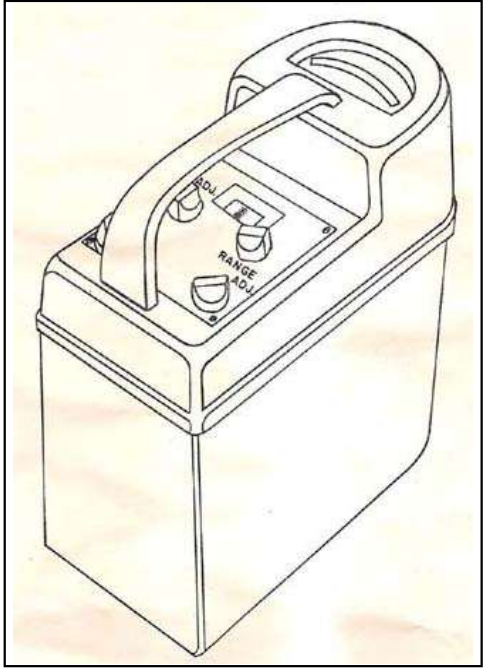


Victoreen Model X-247 1945

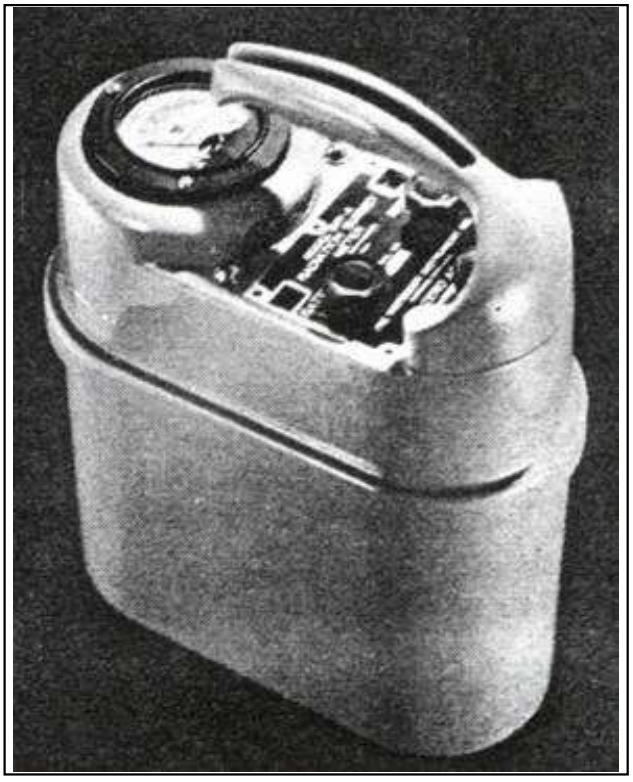
Stafford Warren Collection[1] Victoreen Model 247 1945

The Model 247, 247A (IM-3/PD) and the 247A Special were evaluated in 1948 as part of Operation Sandstone. The Model 247A and 247A Special each had four decade ranges from 2.5-2,500 mR/h and 25-25,000 mR/h, respectively, for x-ray and gamma radiation. It was noted in 1948, that the Model 247 was obsolete and sent to the tests as an emergency measure, and were not used in the tests. The units were hermetically sealed and the case is watertight. The unit came in a baked grey enamel finish. Twenty-eight Model 247A units and ten of the Model 247A Special were evaluated in 1948. It was determined that the instruments were too heavy for field use, the knobs difficult to operate with gloves and the case was too narrow and unstable for field operations. The Model 247A and 247A Special sold for $250 in 1948.

In 1948, it was reported in the Chemical Corps School Radiological Defense Officers Course, that because alpha detection required a thin window, it was almost impossible to produce a field instrument to detect alphas.



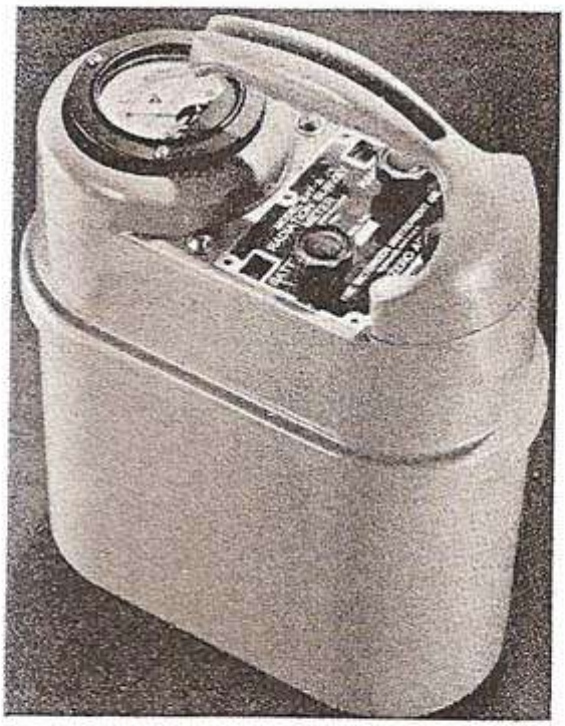

Victoreen Model X-247 1948



Victoreen Model 247A 1948

## Gamma-Radiation Meter

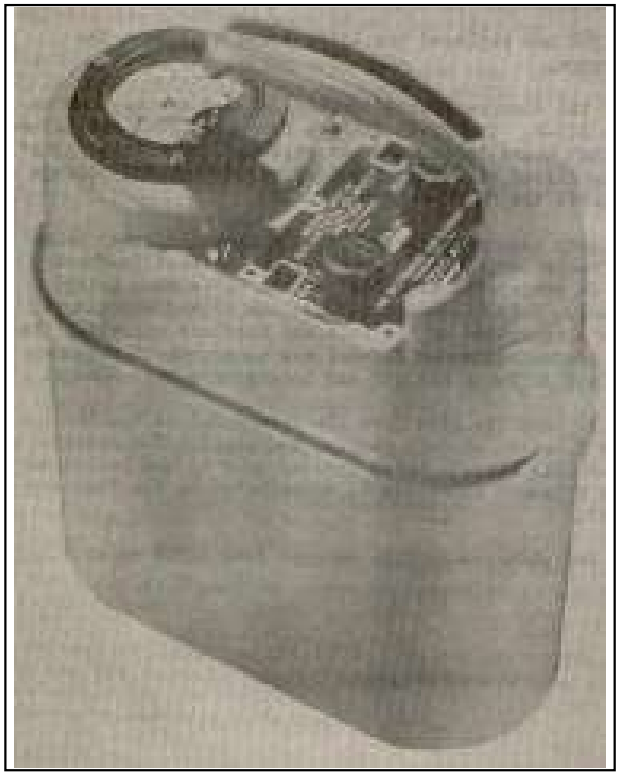
Modern developments and new applications in the field of nuclear physics require a new approach to many of the measuring controls of industry, especially where the problem requires a field survey rather than laboratory research.



The portable 247A gamma-ray survey meter is of the ionization chamber type and combines stable operation with extremely rugged construction. Four ranges of sensitivity are provided, and the instrument is calibrated to read in Roentgens over full-scale readings of 2.5–25–250, and 2500 milliroentgens per hour. The case is watertight, and both the meter and the ionization chamber are hermetically sealed. A unique eccentric range switch is provided with a color code to give visual indication of the range at which the survey meter is set. Die castings have been used throughout wherever possible to assure the ruggedness required in arduous field service. The handle permits easy balance, and the total weight of the instrument is 11¾ pounds.—THE VICTOREEN INSTRUMENT COMPANY, *5806 Hough Avenue, Cleveland 3, Ohio.*

Victoreen Model 247A Ad 1947

Victoreen Model 247A 1947



Victoreen Model 247A 1950

Victoreen Model 247A 1951

# A high initial demand assured a most thoro job of detailed engineering and production tooling

**The four range 247A portable radiation survey meter as a result is a super-fine instrument offering unusual stability and accuracy for the measurement of a wide range of gamma radiation intensities.**

## Model 247-A

**Gamma radiation survey meter**

### Features:

1. Portable and compact . . .
2. Unusual rugged construction . . .
3. Four ranges of gamma ray intensities: 2.5—25—250—2500 milliroentgens per hour . . .
4. Ionization chamber hermetically sealed . . .
5. Meter and case water tight . . .
6. Zero check for meter pointer . . .
7. Battery and sensitivity check . . .
8. Intensity ranges color coded for easy identification . . .
9. Furnished in baked gray enamel . . .
10. Built to take any normal abuse required of a field survey instrument.

Victoreen radiation measuring instruments also serve the entire field of nuclear physics and associated sciences—for tracer determinations, portable Geiger counters for alpha, beta, and gamma measurements, instruments and chambers for personnel protection, and high grade components including subminiature electrometer and voltage regulator tubes, Geiger counter tubes and hi-megohm resistors to add stability and dependability to the increasing problem of radiation measurement.

*Department D*

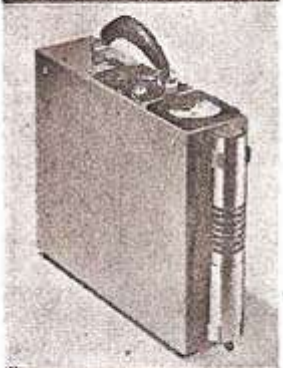
THE VICTOREEN INSTRUMENT CO.
5806 HOUGH AVENUE
CLEVELAND 3, OHIO

Victoreen Model 247-A Ads 1947

# *Radiation*
## *instrumentation at its finest*

### Gamma Radiation Survey Meter Model 247A

A compact portable instrument designed to cover four ranges of gamma radiation intensities, 2.5—25—2500 milliroentgens (1/1000 r) per hour. The most sensitive range approximates that of a Geiger instrument and is inherently more stable. The ionization chamber and meter are hermetically sealed, and the case is watertight. Die castings have been used wherever possible for unusual rugged construction.



### Beta and Gamma Survey Meter Model 263A

A portable Geiger-Mueller Counter for extreme sensitivity, capable of detecting individual ionizing particles. The instrument has three full scale ranges of 20.0—2.0—0.2 milliroentgens per hour measured with gamma radiation from radium.

### Victoreen Minometer Model 287

The Minometer provides a prescription for computing daily, the amount of radiation exposure. It consists of a small compact string electrometer and an ionization chamber designed in the shape of a fountain pen to be carried conveniently in a coat pocket. The chamber value is 0.2 r full scale when checked against the calibrated scale in the electrometer.

For twenty years our exclusive business has been the development and design of instruments and components used in the measurement of gamma and x-radiation. We welcome your inquiries on any phase of radiation measurement.

Dept. D

THE VICTOREEN INSTRUMENT CO.
5806 HOUGH AVENUE
CLEVELAND 3, OHIO

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## Portable Four Range Gamma Radiation Survey Meter

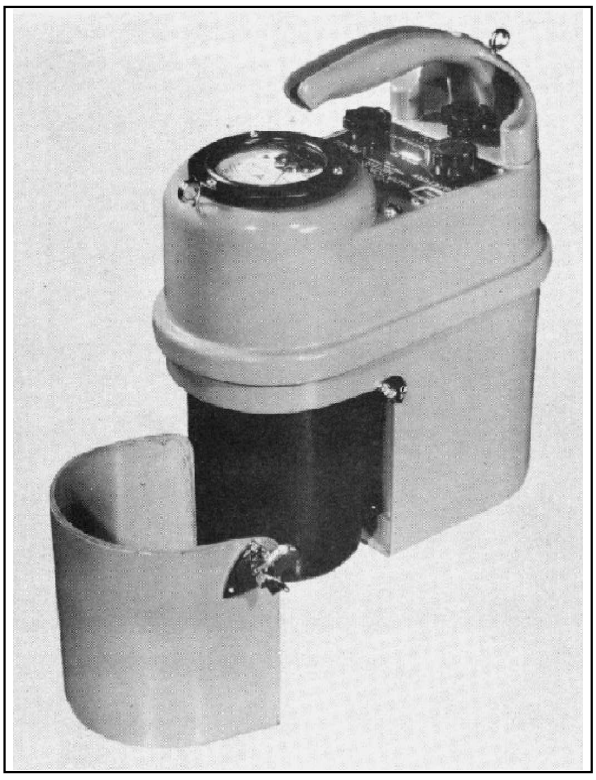
### Model 247A

*An instrument of unusual stability and accuracy to measure a wide range of gamma radiation*


Victoreen Ads for Model 247A 1948

The Model 247A was an upgraded portable air ionization gamma rate meter. The Model 247A was introduced in 1947 as a portable ionization chamber and is claimed to combine stable operation with rugged construction. It was calibrated with two x-ray beams and gamma rays from radium. It had four-decade ranges from 2.5 to 2500 mR/h which are color coded for easy identification. The unit was approximately 6” x 10.5” x 13” and weighed 12.8 lbs. The most sensitive range approximates that of a Geiger instrument and is inherently more stable. The counter contained dry air at atmospheric pressure. The case is watertight. The ionization chamber are hermetically sealed in polyethylene and is 4” diameter x 4.5”. It used 22.5 and 45V batteries. The unit was 13” high x 10-3/8” long x 5-3/8” wide and weighed 12.6 lbs. The finish was baked enamel, navy gray. The Model 247B, also offered in 1948, had a gamma range from 25 mR, 250 mR, 2500 mR/h and 25,000 mR/h. The unit had a military designation of IM-3/PD.

The low Intensity Model 247C had a range from 2.5, 25, 250, and 2500 mR/h and the High Intensity Model 247D had ranges from 50, 500, 5000, and 50,000 mR/h. Both units had a removable front cover to expose the ion chamber to permit the measurement of x-rays. The Model 247-H had a range a four decade range from 25 to 25,000 mR/h.



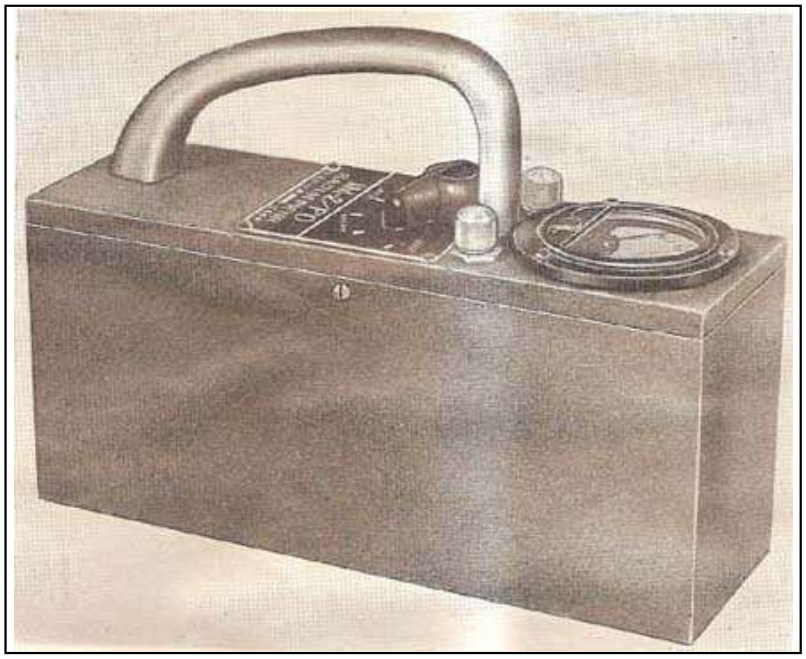
Victoreen Model 247B and 247D 1950

The Victoreen Model X-263 (AN/PDR-6) dates back to about 1944. It was originally the Make 1, Model 31A survey meter. It had three ranges from 0.2, 2 and 20 mR/h. Above this range and the unit will swing off scale and audible sound will change from clicks to a steady buzz. At this point, the unit will be “paralysed” and no sound heard. Later in Jun 1945 became the Model 263. The unit was a compact, self-contained instrument with a fixed internal, rubber-mounted GM tube for beta gamma detection. It operates on 300

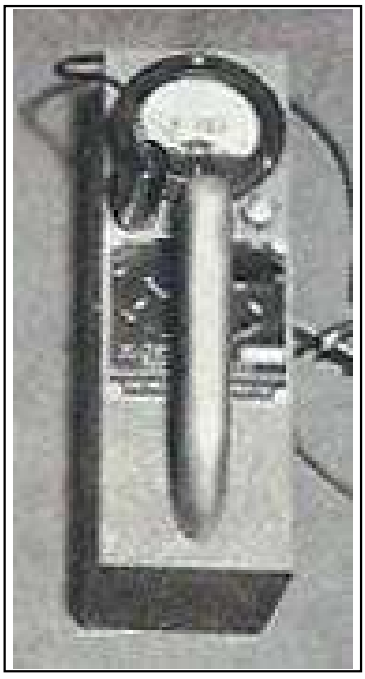
volt battery. It was 9” long x 2.75” wide x 6.25” high. It was calibrated to measure directly in mR/h. The X-263 was a beta gamma radiation meter. The meter is divided into tenths and the selector switch has three range settings of x1, x5 and x20 and a “heat” setting. It had a jack for headphones. The unit weighs between 2 and 4 pounds.

The unit was used by Col. Stafford Warren who was the medical direction for the Manhattan Project. He was also in charge of radiation safety at the Trinity Test in 1945. Performance tests in March 1946 show that the unit was tested in aircraft to 30,000 feet at Wright Field, Ohio by flight surgeons of the US Navy. The old GM Model X-263 was not reliable at the Crossroads Tests. The unit had been designed in a hurry to meet new requirements not available with the larger Model 263 series. It was described as “adequate on the desk of a meticulous old lady in an air conditioned laboratory, but not useful in boats.”

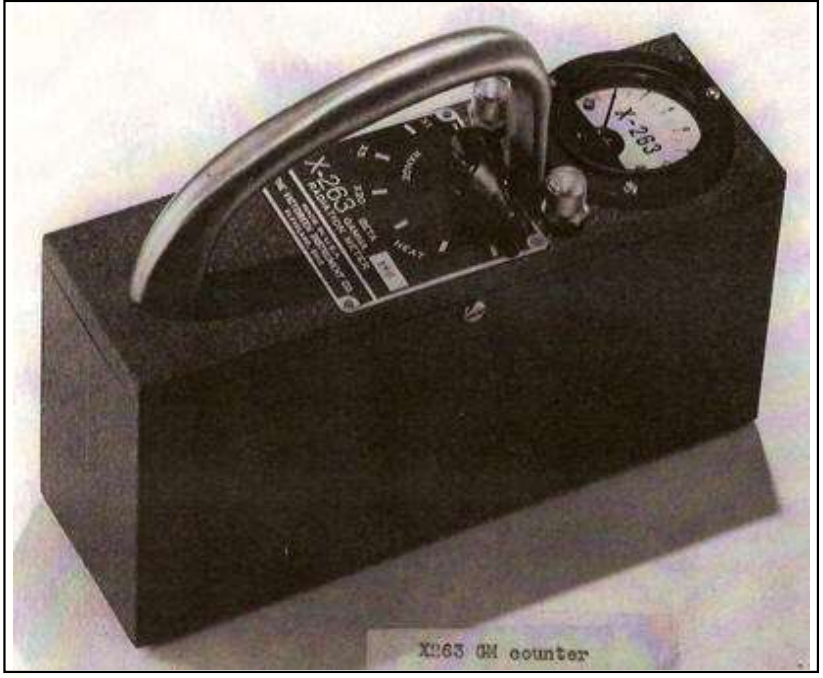
The Operations Crossroads series of nuclear tests in the Pacific required new instrumentation. The Pacific test, conducted in 1946-1947, benefited the Victoreen company which provided most of the survey meter instrumentation. The tests were conducted under the auspices of Col. Stafford L. Warren, Chief Radiological Safety Officer. At this time, the Navy encountered contaminated ships. Due to the lack of radiation instruments in the Army inventory, the Bureau of Ships began a program to develop radiation monitoring instruments. During this time, the Dept of the Navy turned to big business to address its needs. The AEC, with its growing radioisotope program turned to smaller companies for assistance. In 1949, the US military began to place significant orders for radiation measuring instruments. In 1946, yearly sales of instruments was $800,000. In 1949, it was estimated to be $4,500,000. (1) Picture used with permission of the Stafford Warren Collection.



Victoreen Model X-263 1946



Victoreen Model X-263 1946




Stafford Warren Collection[1] Victoreen Model X-263 1946

The Model 262 was available in 1947. It was a a Roentgen calibrated instrument used to measure scattered radiation in the vicinity of x-ray or gamma ray equipment. It has a top reading of 2 mR per minute. It was developed to spot check installations for scattered radiation to determine additional protection requirements.

Victoreen Model 262 1947

**Model 263**

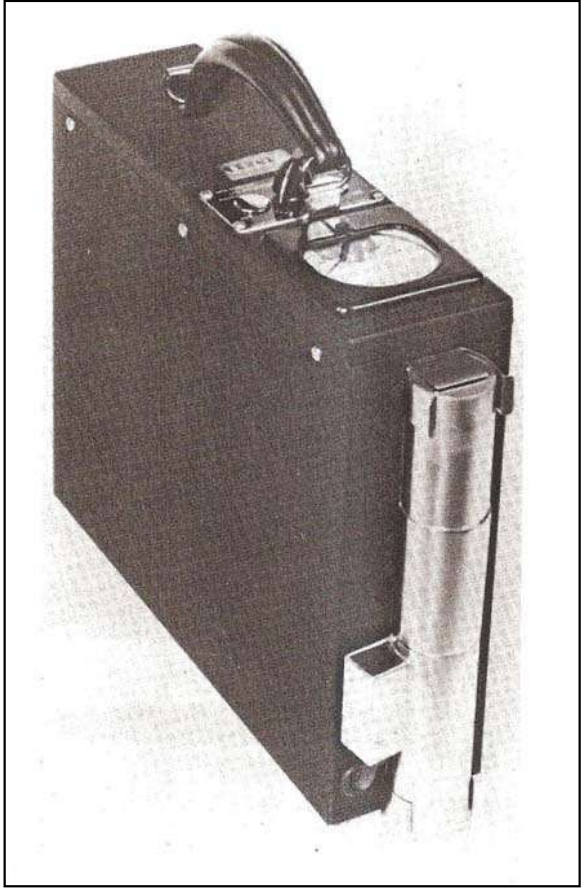
A portable self-contained Geiger-Mueller counter for beta and gamma radiation. Geiger tube externally mounted and detachable from clip. Meter scale calibrated in 3 ranges with gamma radiation from radium. Equipped with head phones for aural counting. An instrument with a distinctive background of service.

**Model 262**

The Radiation Meter is a roentgen calibrated instrument used to measure scattered radiation in the vicinity of x-ray or gamma ray equipment. The instrument is calibrated to indicate a top scale reading of two milli-roentgens per minute. It is ideal to spot check installations for scattered radiation to determine any need for additional protection.

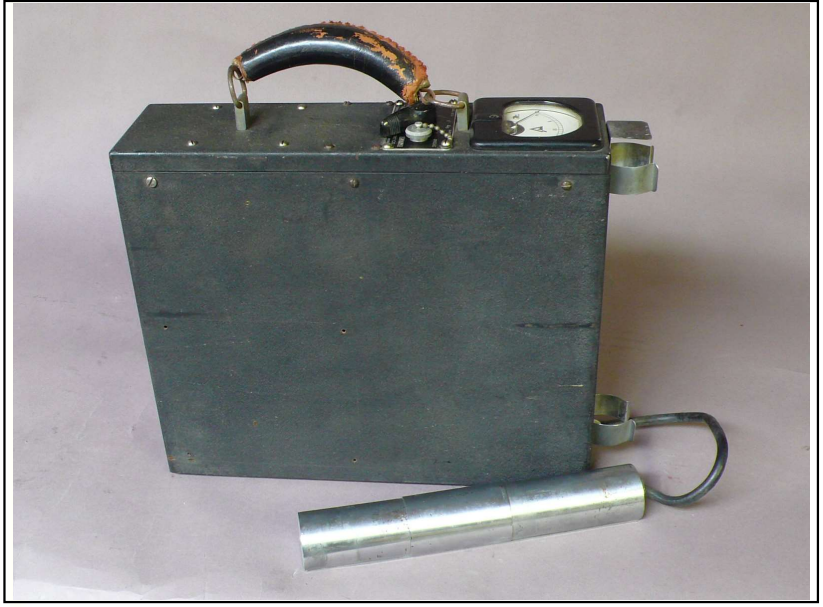
THE VICTOREEN INSTRUMENT CO.
5806 HOUGH AVENUE
CLEVELAND 3, OHIO

Victoreen Ad for Model 262 and Model 263 1947



Victoreen Model 263 1947

Victoreen Model 263 1947



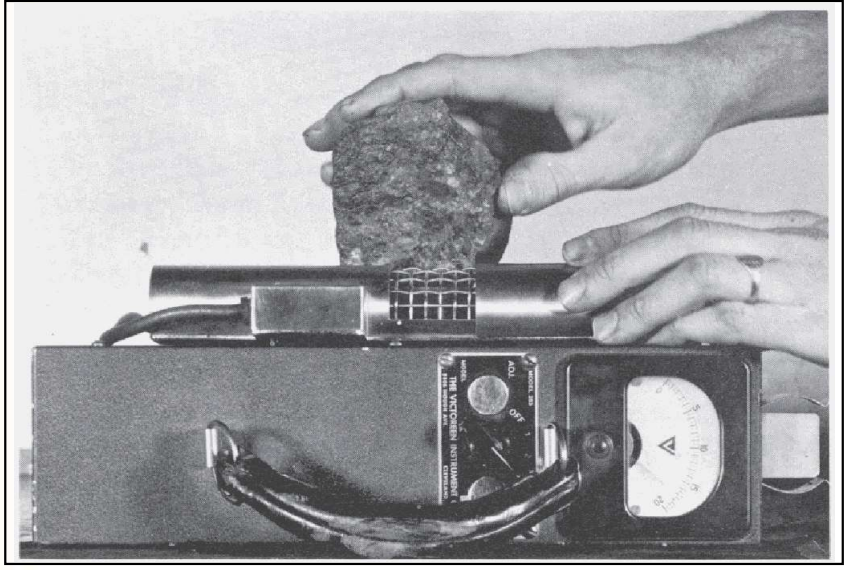
Victoreen Model 263 1940's

H.R. Hanson of Victoreen Instrument Co. checking portable survey meter, a Model 263 Doc 1945, from Health Physics: A Backward Glance by R. Kathren and P. Ziemer, 1980.

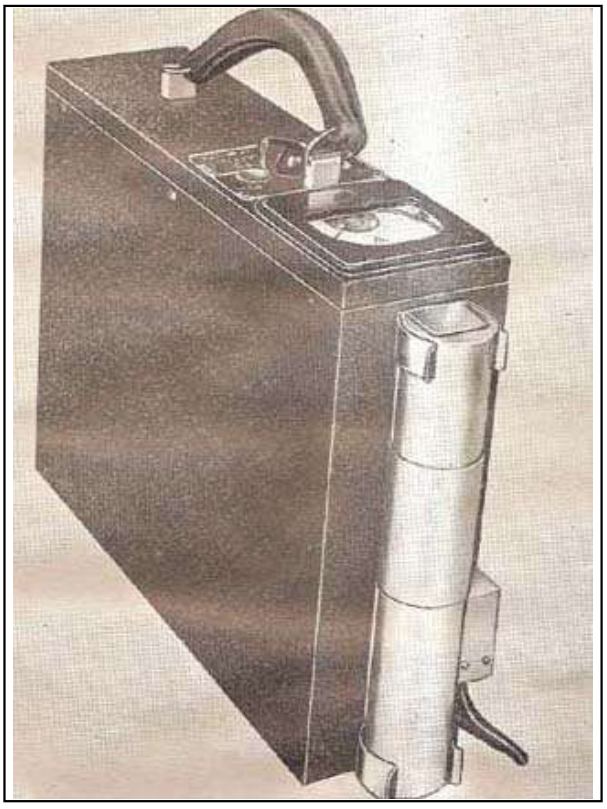
During the Manhattan Project survey meters were given code names as part of the overall secrecy. Several of the code names were believed to be named after the seven dwarves in Snow White. It was used at Oak Ridge in 1949. It has a thin walled glass GM tube which is filled with an 90% argon-10% alcohol mixture. It is designed to detect individual ionizing particles. The unit has three decade ranges from 0.2 to 20 mR/h as measured with radium. It used one 1.5V flashlight cell for the filament, a miniature 67.5V cell for the plate supply, and one special 960V battery for the field voltage of the Geiger tube. The tube is mounted externally in a holder and can be removed and pointed in any direction. The unit comes with headphones.

There were several special applications for these units. A deep water probe could be attached to a waterproof cable and lowered to various depths. A meter will determine the length of the cable extended. The Geiger tube could also be attached to a Sonobuoy, which when pulses are detected, it keys a radio transmitter. And lastly, the Telemeter, which is a remote meter connected to a radio receiver and measures readings sent to it by a radio.

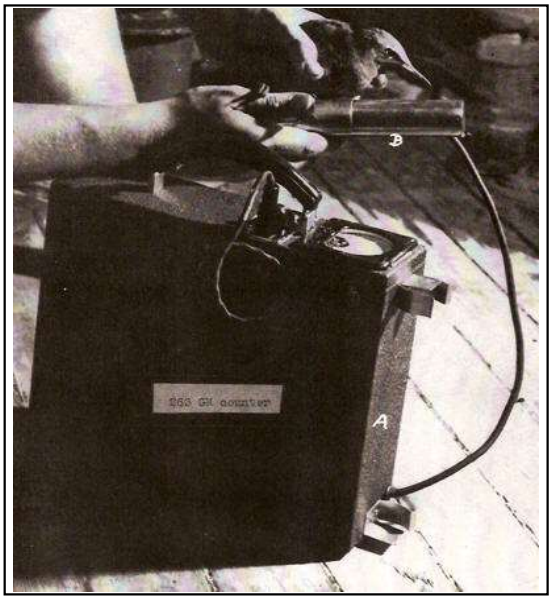
The Model 263 was offered in 1948 as a production model of the X-263. The GM tube is located inside a probe which has a beta window. It had a meter and headphone for indications. (1) Picture used with permission of the Stafford Warren Collection.




Victoreen Model 263 1948



Victoreen Model 263 1948




Stafford Warren Collection[1] Victoreen Model 263 1948

Victoreen Model 263 1940's

# Twenty years devoted exclusively to the problems of radiation measurement

## Instruments to measure every phase of radiation

Subminiature electrometer tubes especially designed for circuits used in radiation measurement. Available as diodes, tetrodes, triodes, pentodes.

Hi-megohm resistors values from 100 to 10,000,000 megohms. For finer instrumentation requiring stability and accuracy.

Model 337 Geiger-Mueller Counter. A scaling circuit of top ranking quality with built-in 2000 volt power supply and ingeniously new voltage regulation.

A complete sequence of measuring instruments ..for industrial research, control and protection covering x-rays, gamma, beta and alpha radiation.

Model 311 — VG series Geiger-Mueller Tubes. Production controlled to close tolerances available in mica window thicknesses from 3.0 to 4.5 mg. per cm².

Model 348 voltage regulator unit as used in scaler. Adaptable where voltage regulation requires flat top, accuracy and space conservation.

Model 263 Gamma and Beta Counter, portable, compact, unique. Geiger-Mueller tube conveniently mounted in external probe. Roentgen calibrated for gamma radiation. Equipped with ear phones.

Write for complete information on any of these instruments or any other problem on radiation measurement. We have instruments designed for every application.

THE VICTOREEN INSTRUMENT CO.
5806 HOUGH AVENUE
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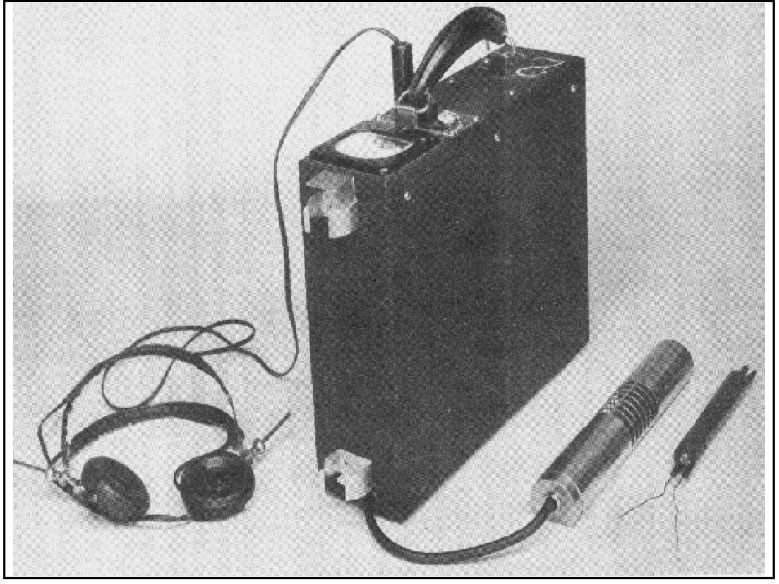
Victoreen Ad Model 263 1947

Soldier in Jeep with Victoreen Model 263 1950

Soldier with Model 263 and long probe 1950

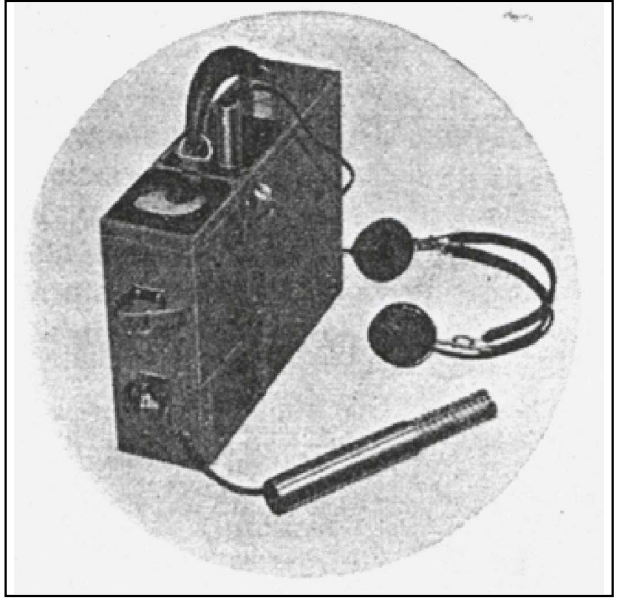


Victoreen Model 263 1948

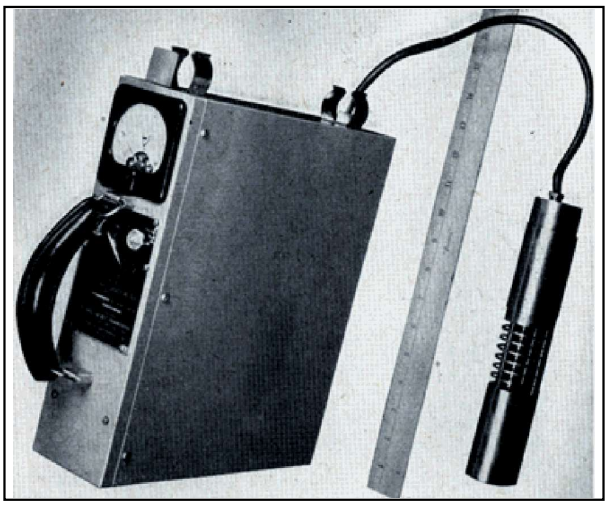
The Model 263A (IM-1A/PD or AN/PDR-5) issued in 1948 and was an upgraded modification of the Model 263 after gaining four years or performance testing with military and civilian applications. The probe was streamlined by bringing the 24” cable out the end, knob length extended, three 300 volt batteries replace the special 960 volt battery and the weight is decreased by several pounds. The Model 263A is a portable beta gamma count rate meter with a thin wall glass 900 volt GM tube in an external probe introduced in 1947. The GM tube was filled with argon and ethyl ether. One hundred units were evaluated for possible use during Operation Sandstone in 1948 in the Pacific Island nuclear tests.

The unit was 12” x 10” x 3.25”. It weighs 13.4 lbs. The probe was 9” x 1.5” with a four foot cable. The probe was 9”x1.5”. It measures beta at 1000, 10,000 and 100,000 cpm. The gamma scale was 0.2, 2 and 20 mR/h. It can measure up to 0.5 R per day. The minimum beta energy detected was 0.3 MeV. The beta screen was 1/32” brass and the probe opening was 2”x2.5”. It used a 1.5, 67.5 and 900 volt batteries. It had a smooth paint surface with a hinged shiny leather handle. It came in black crackle or grey enamel. The unit sold for $200 in 1947. The operation Sandstone reports indicates that the 300 unit were to be delivered to the AEC by November 1947. It was also given a military designation denoted by AN/PDR-5. Some examples of its uses outlined in the 1947 manual include health hazards, decontamination, prospecting for radioactive ores, locating misplaced radium needles, and for postal inspectors to determine if shipping regulations are being observed.

Victoreen Model 263-A 1951



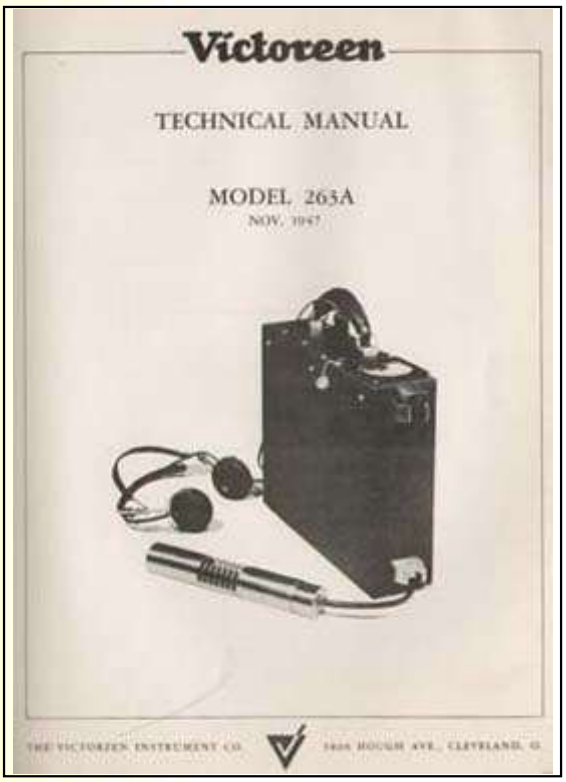
Victoreen Model 263A 1948



Victoreen Model 263A 1950

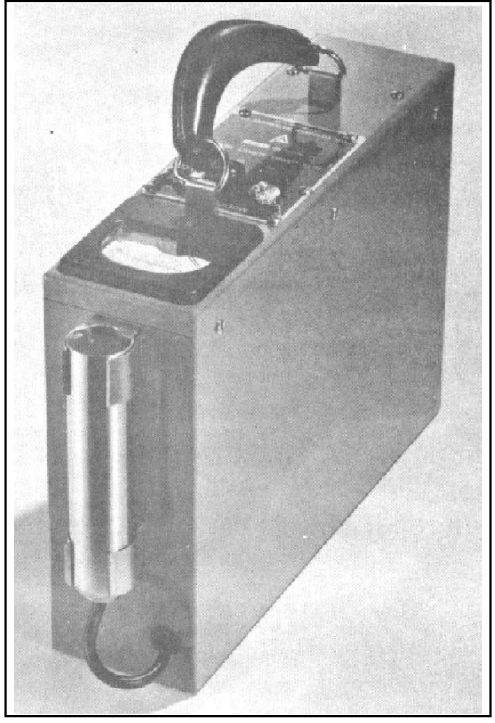
Victoreen Model 263-A 1950

Victoreen Model 263-A 1951




Victoreen Model 263-A Technical Manual 1947

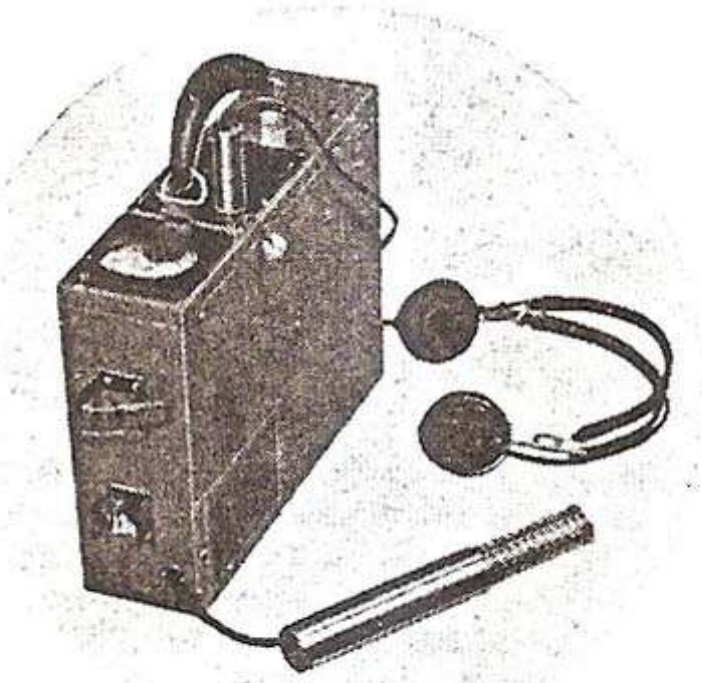
The Model 263B is a modification of the Model 263A and was introduced in 1948. It has more rugged construction, decreased height, and decreased weight. The meter has three ranges 130, 1300, and 13,000 cps or 0-20 mR/h. Average intensity of beta gamma can be read from the micro-ammeter which is calibrated to gamma rays of radium. The Geiger counter is housed in a probe that is mounted outside the end of the case. The GM tube was filled with argon and ethyl ether. It used three 300V, one 1.5V and one 67.5V batteries. The unit weighed 11.5 lbs. The unit was used at the Los Alamos Scientific Laboratory in 1954. The military designation is AN/PDR-5A.



Victoreen Model 263B 1948

# Radiation Survey Meter

New "Model 263B" beta-gamma survey meter, modification of maker's "263A," was designed for semi-quantitative work, is highly sensitive to beta and gamma ray radiation. Full-scale sensitivity on three ranges is 130, 1300, and 13,000 counts per second. A



microammeter calibrated (with gamma rays from radium) in milliroentgens per hour, measures average radiation intensity. Counter tube is housed in a probe which mounts on outside of case and is capable of detecting individual ionizing particles. A movable shield on probe facilitates measurement of either beta and gamma rays, or gamma rays alone.—*Victoreen Instrument Co., 5806 Hough Ave., Cleveland, Ohio.*

Victoreen Model 263B Ad 1949

Victoreen Model 263B 1951

Model 356
Alpha survey meter

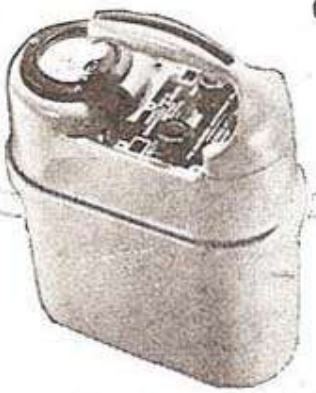
Model 263B
Beta and gamma
survey meter

# *The A B and G of fine radiation instruments*

Sturdy, reliable, portable survey instruments to measure alpha, beta and gamma radiation. Catalog material and detailed information available on request.

Model 247A

Gamma survey
meter



*Quality components including hi-megohm resistors—sub-miniature tubes—and complete line of G-M counter tubes available without delay. Write for information and data sheets.*

THE VICTOREEN INSTRUMENT CO.
5806 HOUGH AVENUE
CLEVELAND 3, OHIO

# *A-B and G radiation survey meters*

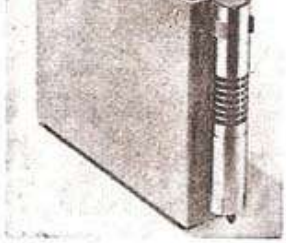
Model 356

## Alpha survey meter

This self-contained portable instrument measures alpha radiation by means of an air ionization chamber and vacuum tube amplifier circuit which operates an indicating meter. The ionization chamber is located at the bottom and covered by a delicate nylon film approximately .0002 inches thick. A wire screen serves to protect the film.

## Beta and gamma survey meter

A portable Geiger-Mueller Counter for extreme sensi-

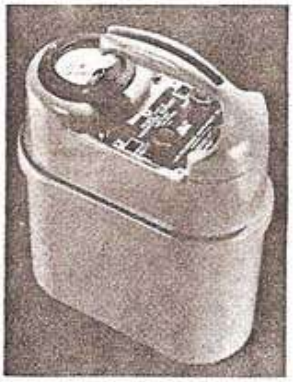


Model 263B

tivity, capable of detecting individual ionizing particles. The instrument has three full scale ranges of 20.0—2.0—0.2 milliroentgens per hour measured with gamma radiation from radium.

## Gamma survey meter

A compact portable instrument designed to cover four ranges of gamma radiation intensities, 2.5—25—2500 milliroentgens (1/1000 r) per hour. The most sensitive range approximates that of a Geiger instrument and is inherently more stable. The ionization chamber and meter are hermetically sealed, and the case is watertight. Die castings have been used wherever possible for unusual rugged construction.



Model 247A

*Quality components including bi-megohm resistors—sub-miniature tubes—and complete line of G-M counter tubes available without delay. Write for information and data sheets.*

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THE VICTOREEN INSTRUMENT CO.
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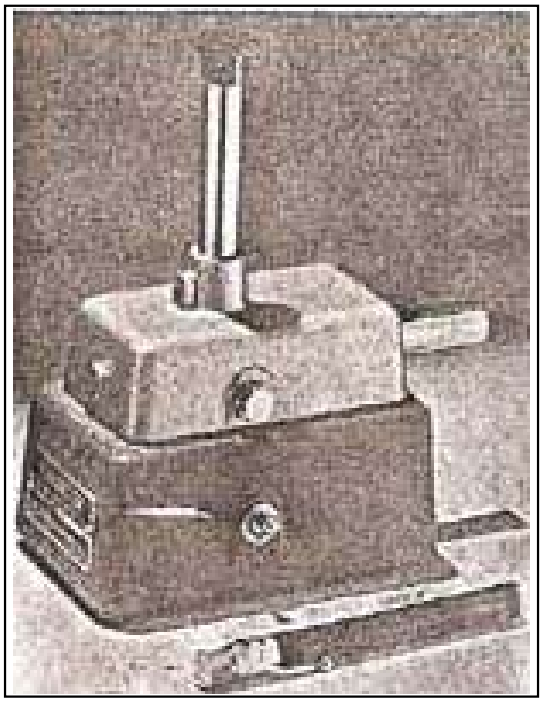
CLEVELAND 3, OHIO

Victoreen Ads for Model 356, Model 263B and Model 247A 1949

The Minometer provides a prescription for computing in roentgens the daily exposure to radiation. The unit contains a small string electrometer and an ionization chamber designed in the shape of a fountain pen to be carried in your pocket. The chamber is 0.2 R full scale. The unit was available in 1948 for personnel protection.

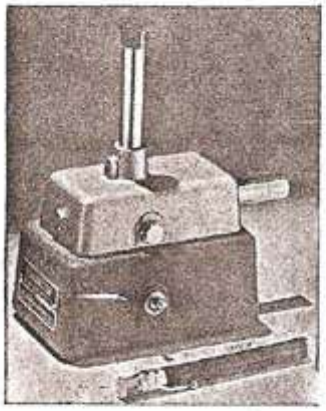
Victoreen Model 287 Minometer 1948

The Proteximeter Model 300 (AN/PDR-2) was a semi-portable direct reading integrating meter for measuring scattered radiation for the protection of roentgenologist, x-ray personnel, and those working around cyclotrons and Van de Graff generators in 1947. It measured total accumulated dosage of beta and gamma radiation. It used a condenser ionization chamber with a gravity discharging switch. Simply inverting it could discharge the chamber. It was a desktop unit with a meter on the top face. The midscale is 100 mR which is the accepted standard for a daily tolerance dose. The unit can measure up to 200 mR. The operating instructions are located on the bottom of the unit. It used five D-cell batteries which would last 1 month operating 8 hours a day. It is sensitive down to 30 keV with metal cap removed. The range was 0-200 mR/h. The unit measured 4” x 9” x 5” high (7” with chamber) and weighed 5 lbs. The chamber was 3” high x 3” diameter. The case was made of cast aluminum with a gray crackle finish. It used 5 D-cell flashlight batteries. The unit had a military designation of AN/PDR-2. The Model 300 was evaluated in Operation Sandstone was deemed “satisfactory but of little practical use”. The unit sold for $175 in 1948.


Victoreen Proteximeter Model 300 1947

# Research in Nuclear Physics Always Involves the Problem of Personnel Protection

*As thousands of others have done*
*Use a* **Minometer** *or a* **Proteximeter**



## MINOMETER

The Minometer provides a prescription for computing in roentgens the daily exposure to radiation. It consists of a small compact string electrometer and an ionization chamber designed in the shape of a fountain pen to be carried conveniently in a pocket.

The chamber value is 0.2 r full scale when checked against the calibrated scale in the electrometer. For special purposes a 0.01 r and a 0.001 r chamber are supplied.

Available Victoreen radiation measuring instruments cover the entire scope of nuclear science and include a complete line of dosage measuring instruments for the medical field, the 247A gamma radiation survey meter, the 263A beta and gamma survey meter, scaling circuits and rate meters and such notable components as the VX series of subminiature electrometer and voltage regulator tubes, hi-meg resistors in a range of 100 to 10,000,000 megohms, and mica window Geiger counter tubes, all specifically designed to make radiation instrumentation better.

## PROTEXIMETER

The Proteximeter is advantageous in monitoring scattered x radiation or gamma rays at any location adjacent to the radiation source. It measures such scattering accumulatively the quantity indicated visually on a calibrated meter scale.

The scale is calibrated in milliroentgens with full scale deflection 200 milliroentgens or 0.2 r, which is double the accepted value for a daily tolerance dose. The externally mounted ionization chamber is hermetically sealed.

*Dep't* D

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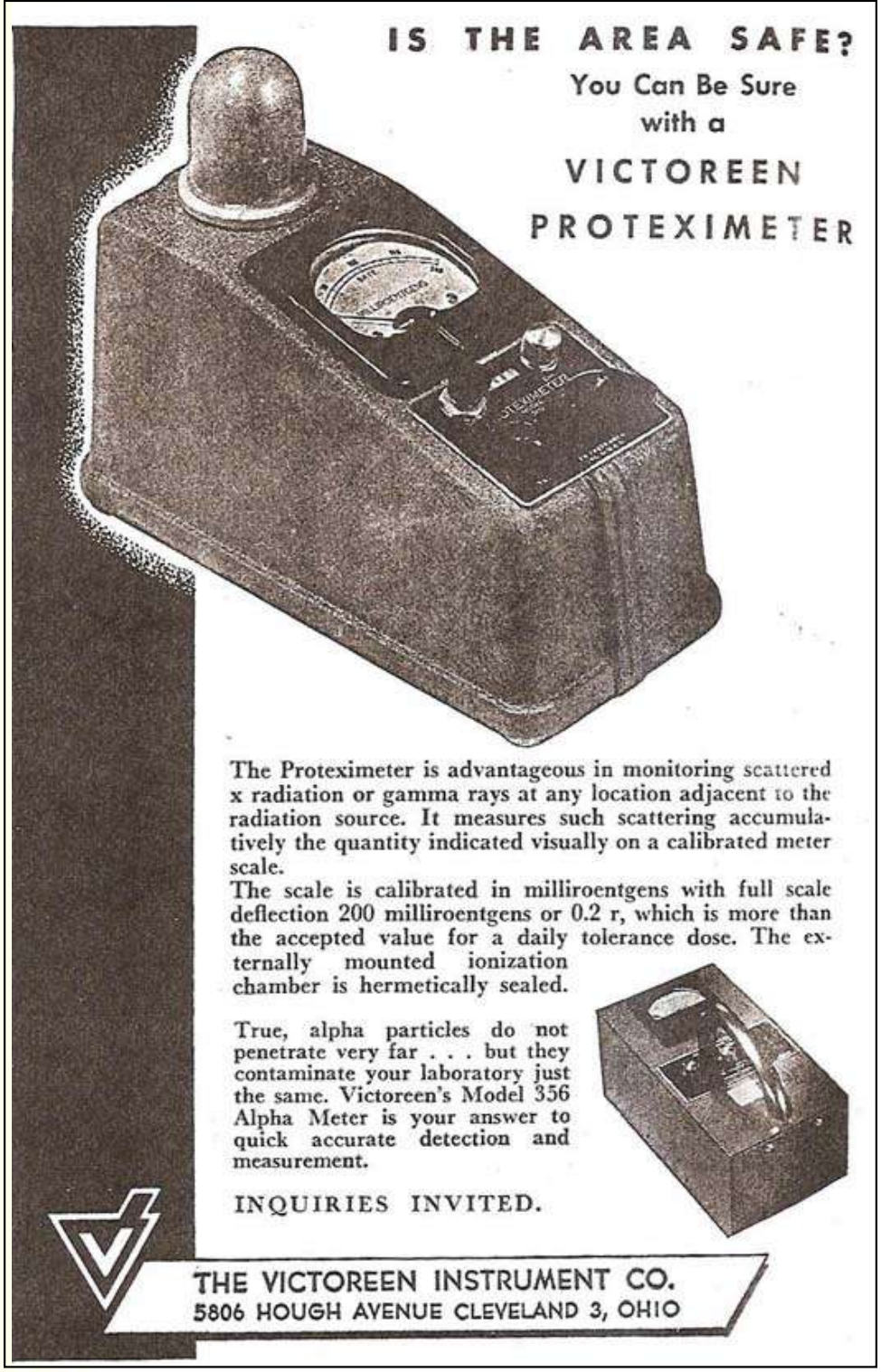
CLEVELAND 3, OHIO

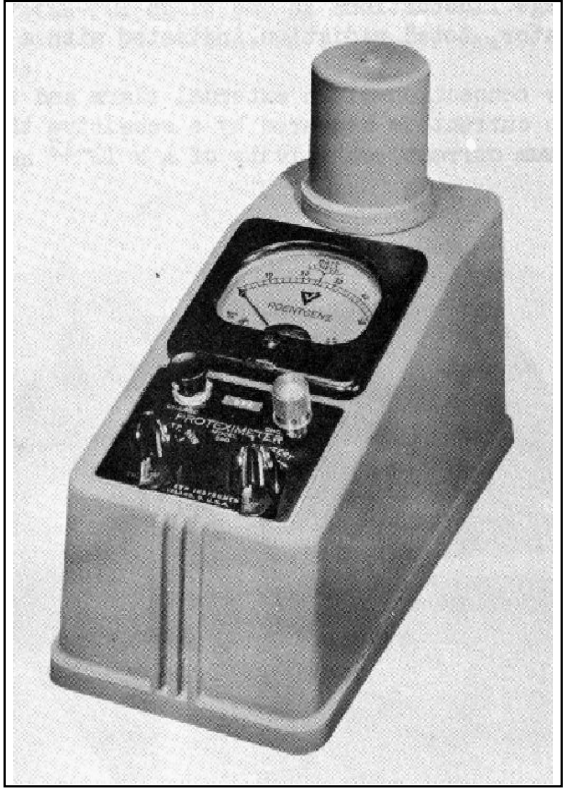
Victoreen Proteximeter Ad 1948

Victoreen Model 300 1949



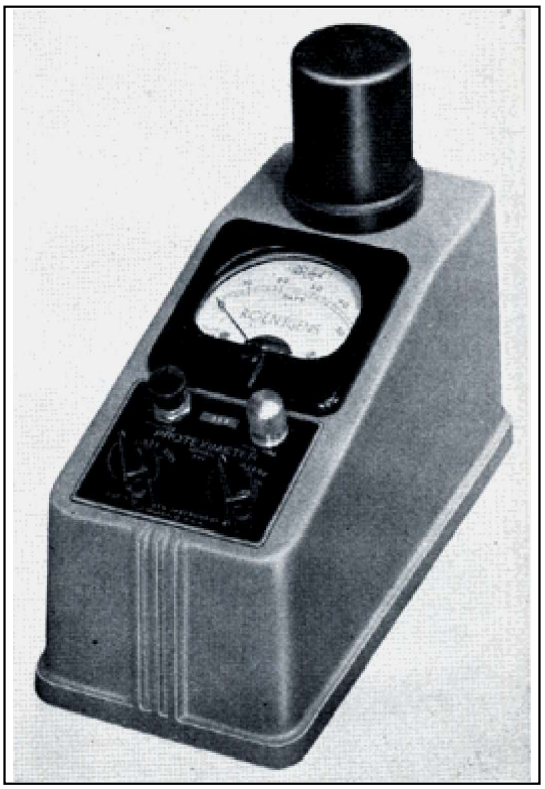

Victoreen Model Proteximeter Ad 1950

The Proteximeter Model 390 was a gamma area monitor offered in 1949. It was 9" x 4" x 4.5" high (7" with chamber) and weighed 5 lbs. It had a range from 0-50 R/h. The condenser ionization chamber was hermetically sealed. The unit is comprised of a charger base unit and a removable chamber. The chamber is charged by the internal circuitry and then either placed in an area to measure radiation, removed from the unit and carried by personnel, or removed from the unit and placed in the vicinity of personnel exposed to radiation. The chamber is 4-3/8" x 2" diameter and consist of a polyethylene envelope sealed in a hollow polyethylene case. It uses five 1.5 and two 30 volt battery. The meter scale and detector chamber are color coded magenta in accordance with radiac equipment coding.




Victoreen Proteximeter Model 390 1949

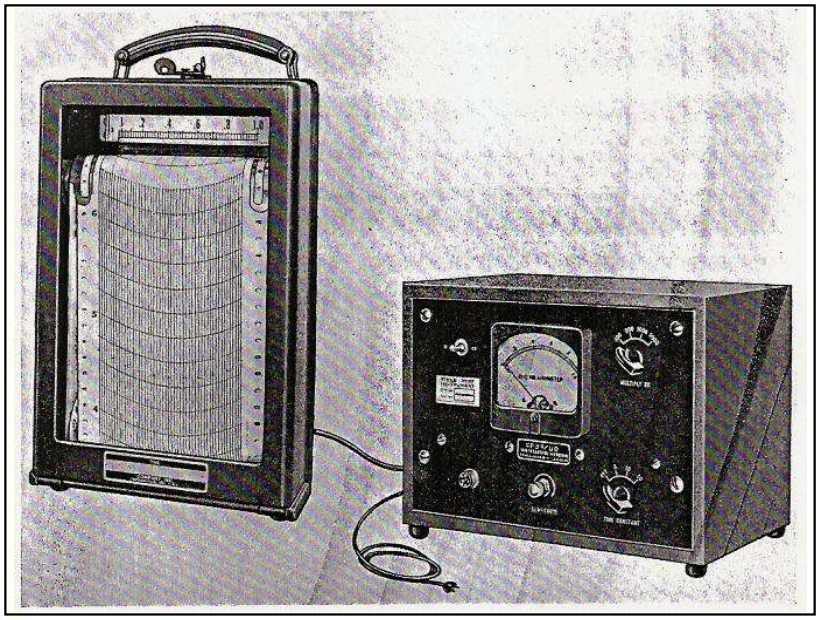
The Model 392 was introduced in 1948 as variation of the Proteximeter. It had a range of 50R. The chamber was magenta colored with a magenta scale color. It measures 9” x 4” x 4.5” and weighs 5.25 lbs. The gravity discharge switch used in the Model 300 was replaced by a manual switch in the Model 392 to prevent accidental discharge. The chamber may also be detached for use away from the control unit.



Victoreen Proteximeter Model 392 1950

Victoreen Proteximeter Model 392 1951

The Model X-325 was a counting rate meter used at the Crossroads Tests in 1946. It was modified similar to the Barnaby drill hole probe to be used as a deep-sea probe.



Model X-325 GM 1946

The Victoreen Model X-323 is the commercial version of the Zeuto.

need photo

Victoreen Model X-323 Zeuto 1940's

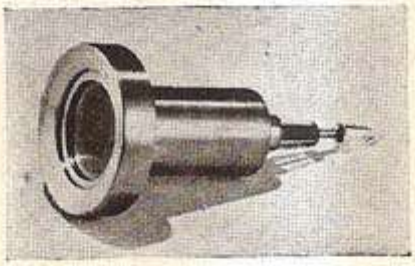
The Model 337 Geiger-Mueller Counter was available in 1946. It was designed for industrial research. It had an external Geiger-Mueller tube. It operated on AC power and could supply up to 2000 volts. The front panel had controls for switching power, reset, start and stop counting, panel light indicators and aural monitoring with volume control.

Victoreen Model 337 1946

Designed in this complete counting system is the knowledge of the research problems involved.

Model 337

A complete Geiger - Mueller counting system and a top ranking laboratory instrument. It utilizes a scale of 64 with provisions for switching to a scale of 8. A built-in a.c. power supply provides voltages continuously variable from 0 to 2000 volts. Two new Victoreen gaseous voltage regulator units and a reliable impulse register are included. Complete and convenient front panel switching and control.



The VG series mica window Geiger-Mueller Counters are of precision workmanship and superior design. Exacting production controls assure a counter held within close tolerance limits. Designed to meet the ever increasing demand for reproducibility of tracer measurements.

**Window thicknesses:**

| | |
|---|---|
| **VG-15** | **4.5 mgm per cm²** |
| **VG-10** | **3.2 mgm per cm²** |

**Thinner windows on request.**

THE VICTOREEN INSTRUMENT CO.
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CLEVELAND 3, OHIO

Victoreen Model 337 Ad 1947

Summarizing a few recent developments culminating our twenty-year background in the factual "know how" of instrumentation used in radiation physics.

Have you a radiation measuring problem? Our staff of radiation physicists offers you competent technical information.

Model 337 Geiger-Mueller Counter Scale of 64. Offers a high degree of stability and permanence with a preamplifier and special voltage regulation added features.

Model 311—Geiger-Mueller Tube. Our background in fine tube production offers close reproducibility of tube characteristics.

Model 348 Voltage regulator unit. A bank of seven subminiature voltage regulator tubes arranged in one unit for precision voltage regulation.

Model 338 Electronometer. An electronic instrument which replaces electrostatic electrometers. Input resistance $10^{13}$ Ohms.

This advertisement merely serves to introduce these new instruments and tubes to you. For complete information, prices and deliveries write us and you will receive a prompt reply.

Hi-megohm resistors of stability and accuracy for the difficult applications. Vacuum sealed in glass with special surface treatment. Values 100 to 10,000,000 megohms.

Subminiature electrometer vacuum tubes (actual size) offer an expanding conception of circuit development. Available as:
Diodes
Triodes
Tetrodes
Pentodes

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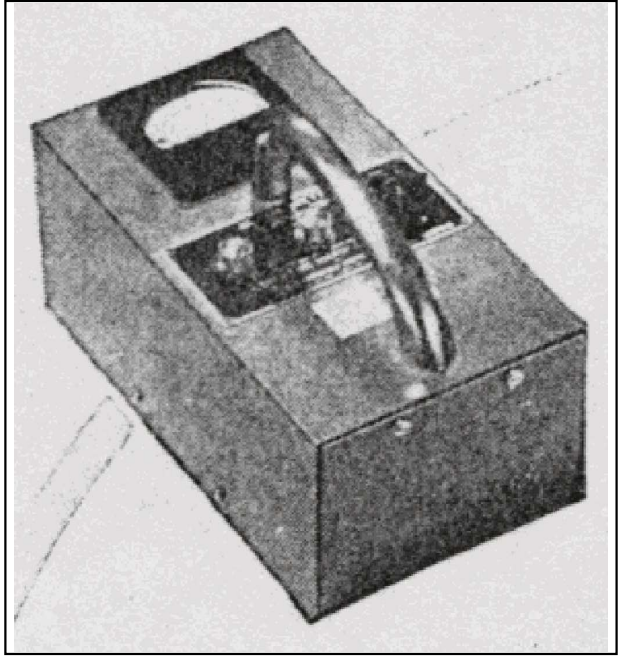
***Twenty years devoted exclusively to the problems of radiation measurement***

## Instruments to measure every phase of radiation


Victoreen Ads 1947

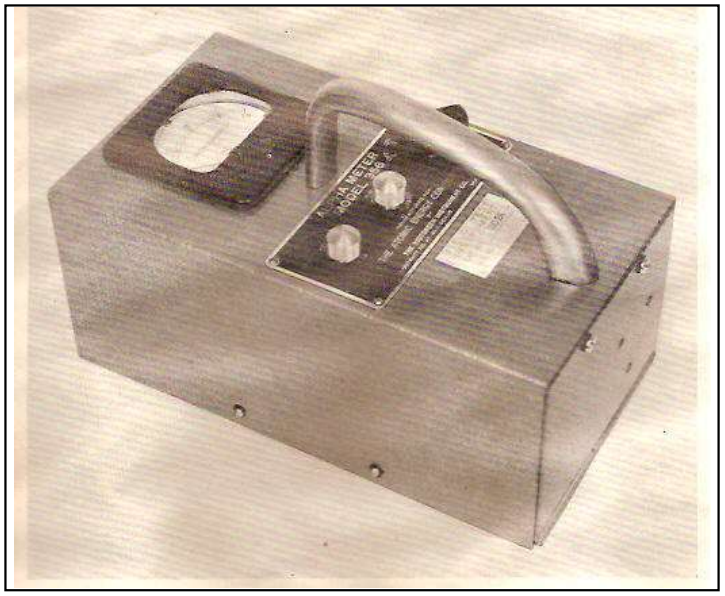
Victoreen Model 338 1947

The Victoreen Model 345 Alpha Survey Meter was introduced in 1949 for measuring moderate levels of alpha and beta radiation. It had a thin, flat air ionization chamber on the bottom and a thin nylon film window on the bottom. The window is protected by a wire screen. It had two ranges for alpha and beta. The X-1 range (5000 dpm alpha and 20 mR/h beta) and the X-10 range (50,000 dpm alpha and 200 mR/h beta).

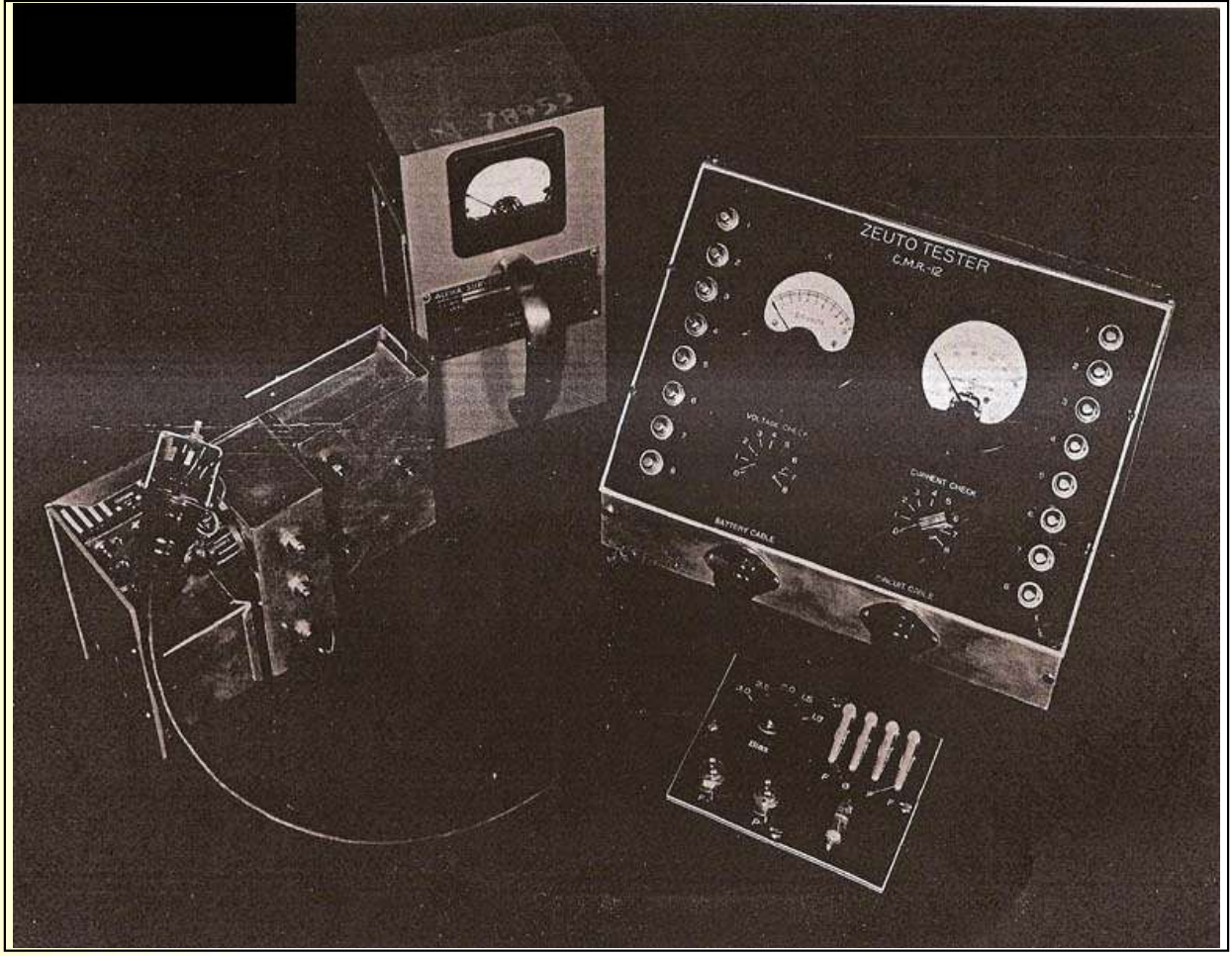


Victoreen Model 345 Alpha Meter 1949

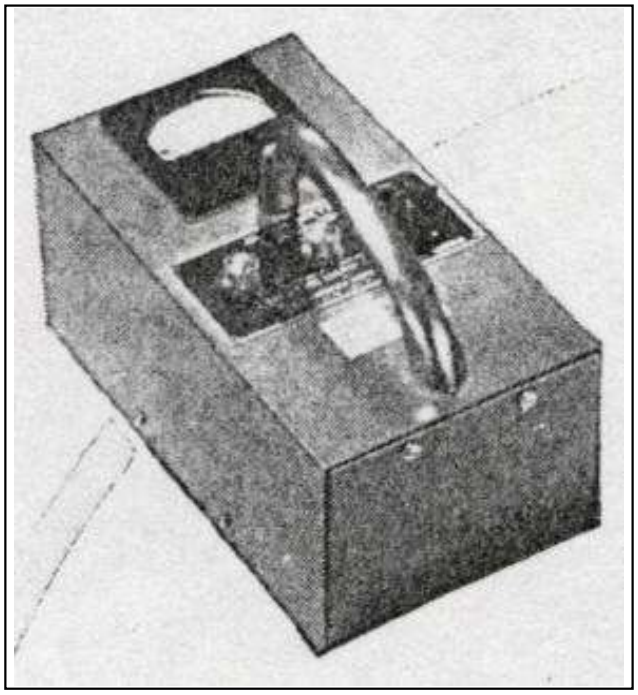
In 1947, Victoreen produced the Model 356 Alpha Survey Meter for alpha detection for use during Operation Sandstone. Not sure if this is the same as the Pluto Alpha Meter from the same period. This was also designated by the military as the IM-4/PD.



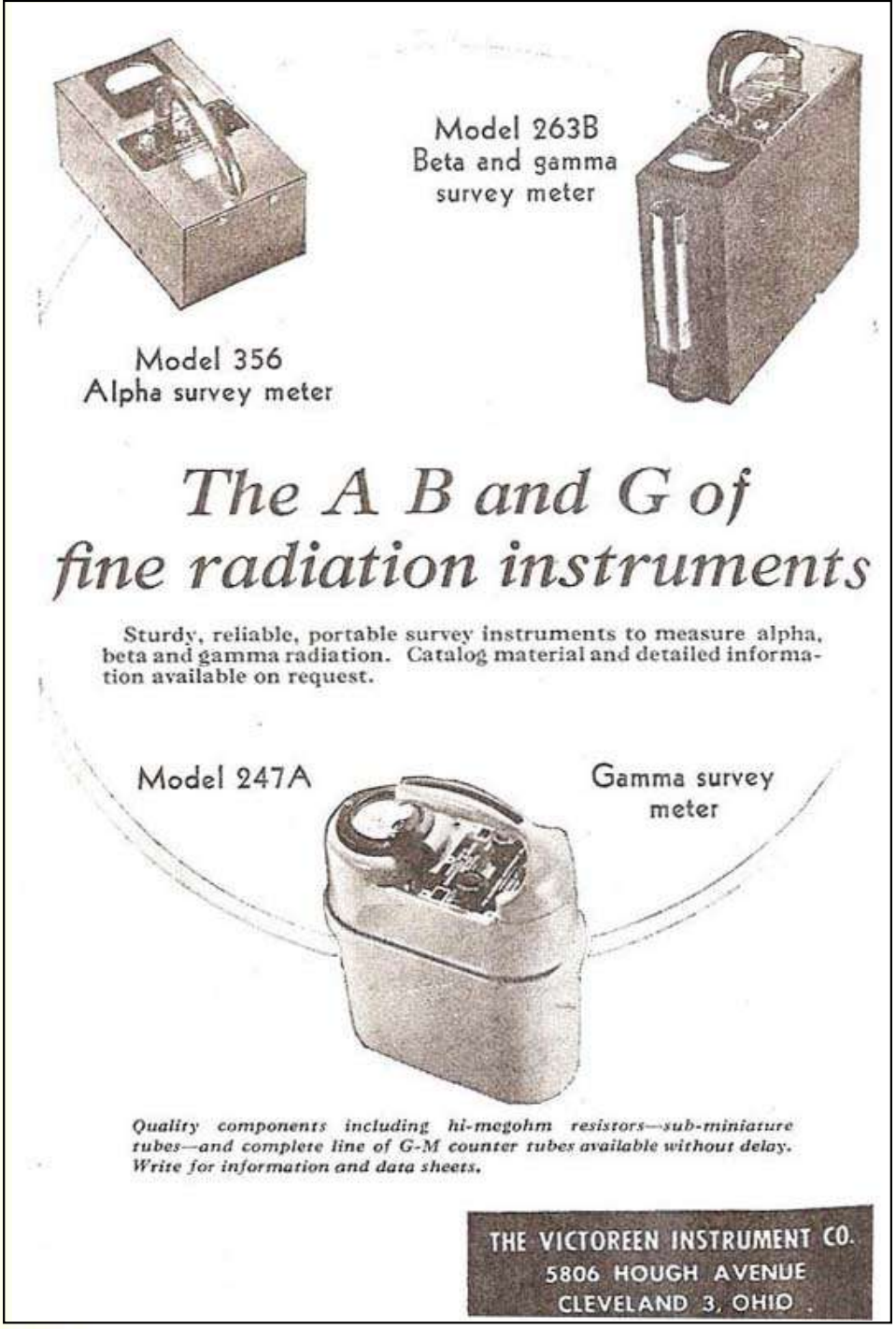
Victoreen Alpha Survey Meter Model 356 1948




Victoreen Zeuto Alpha Meter with Zeuto Tester from Los Alamos National Laboratory 1948

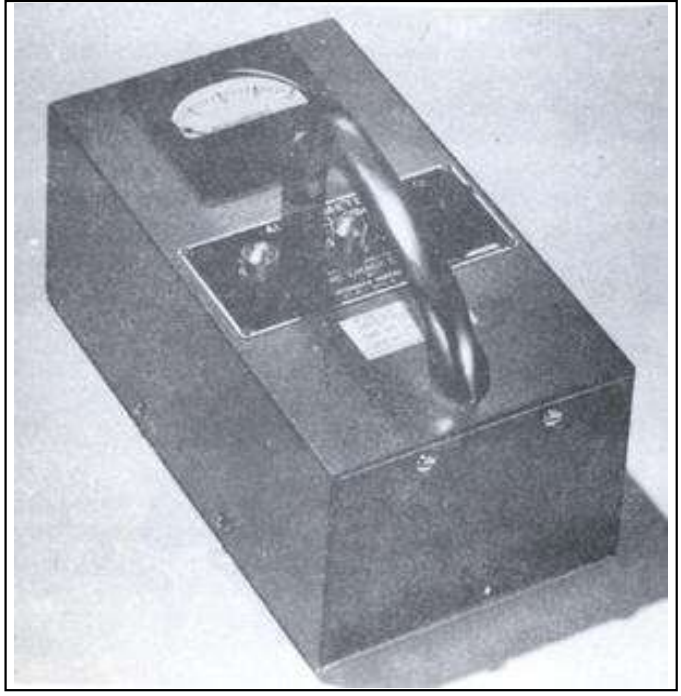


Victoreen Alpha Survey Meter Model 356 1949

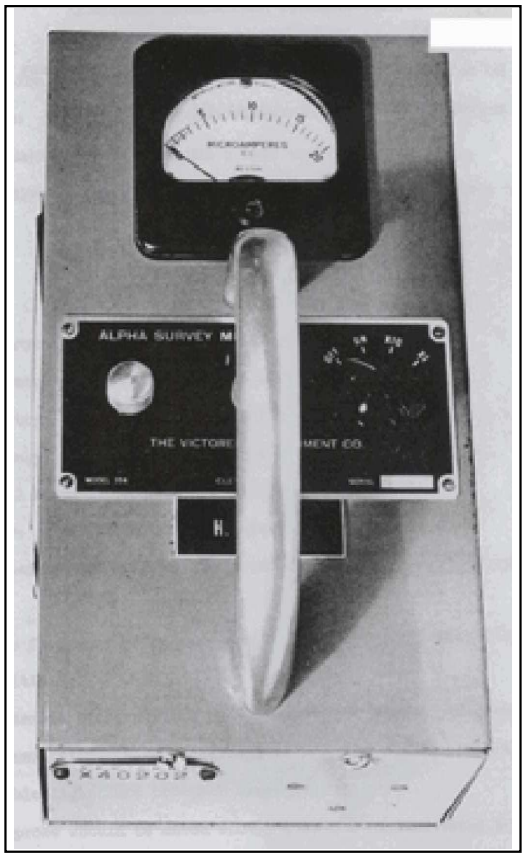



Victoreen Ad with Model 356 1949

The Zeuto (Zuto) Alpha Survey Meter Model 356 is a portable alpha contamination meter designed after the Zeuto (MDDC-117) developed by the Metallurgical Laboratory at the University of Chicago. It was manufactured commercially by Victoreen in Jul 1947 and also designated as IM-4/PD for the military. It has an air ionization chamber. It weighs 8 lbs. It could detect alpha from 400 dpm and 40000 dpm, beta and gamma from 4 mR/h and 40 mR/h. There were no screens to discriminate type of radiation. It has an air ionization chamber operating at atmospheric pressure. The walls of the chamber form the cathode and the anode consists of a wire framework referred to as the “tree”. The ion chamber had a very thin nylon screen and was 475 cc. It was coated in aquadag. The minimum energy detected was 25 keV beta and 2 MeV alpha. It used one 1.5V battery for the filament, two 7.5V for the coupling and bias, and two 22.5 V for the plate and chamber. It was also designated AN/1 M-4PD. It was 9.5” x 5.25” x 4.25” and weighed 6-8 lbs. (1) Picture used with permission of the Stafford Warren Collection.



Victoreen Alpha Survey Meter Model 356 1950




Victoreen Alpha Survey Meter "Zeuto" Model 356 1954


Zeuto[1] instrument 1940's from Met Lab in Chicago was the predecessor to the VIctoreen Model 356

The Model 356 was evaluated as part of Operations Sandstone in 1948 as a backup in the event other units were not available. Twenty units were acquired with an air ionization chamber with two ranges of 8000 and 80,000 dpm, but received no formal testing. It was determined to be unsatisfactory for alpha measurements of fission products because of substantial beta-gamma response.

The Model 381 Integron IV was an integrating type area monitor for gamma and x-radiation instrument which can be designed to measure in roentgens various ranges of radiation intensity. There are indications that the first Integron models were available from Victoreen as early as 1944. It could measure from 0-500 R/h. It is designed for the radiologist for dosage control. It came with a sensitive thimble ionization chambers. The ionization chambers are hermetically sealed to overcome leakage due to humidity, dirt or lint particles. There is only one control knob on the panel. The unit has an adjustable floor pedestal for positioning counter to correct height. The unit weighed 20 lbs.


Victoreen Model 381 Integron IV 1948


*The*

# INTEGRON IV

**An integrating type gamma and x-radiation instrument which can be designed to measure, in roentgens, various ranges of radiation intensity.**

The Integron IV primarily designed for the radiologist for dosage control has infinitely more possibilities in the laboratory and in research to measure radiation over a wide range of intensities. This may be accomplished by supplying a selection of ionization chambers.

The ionization chamber which contains the calibrated circuit is hermetically sealed providing a new standard of stability in roentgen calibrated instruments. It overcomes inherent leakage due to humidity, dirt, or lint particles.

***Write us your measuring problem and we will advise whether an Integron IV is your answer.***

**Victoreen**

**5806 HOUGH AVE., CLEVELAND, OHIO**

Victoreen Model Integron IV Ad 1948

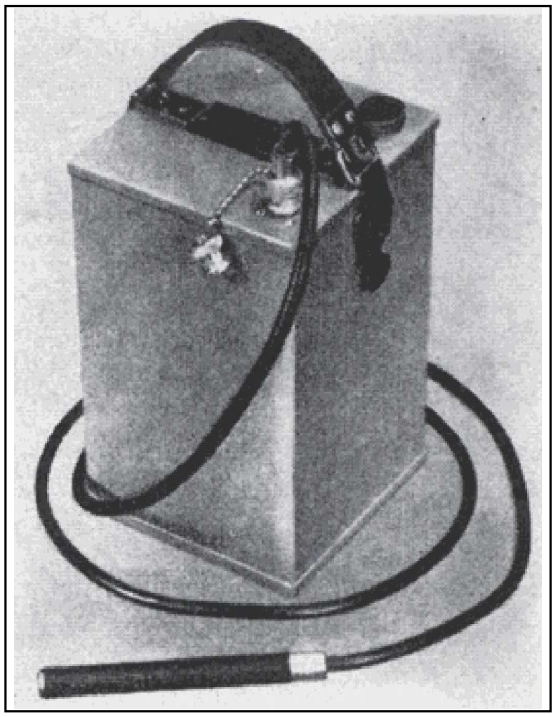
The safe level at the time was 0.1 R per 24-hour period and many knew that there was a necessity to expose themselves to high dosages. A survey revealed that even the most daring would not expose themselves to over 10 R/h. It was recognized that this would happen at the criticality measurements at Omega, Ra-La measurements and the upcoming Trinity Shot. The Model 427 was designed as a Roentgenometer in 1947 for measuring to 10 R/h. Victoreen Model 427 was designed as a Roentgenometer in 1945 for measuring to 10 R/h. The model, however, was difficult to service in the field.

Need photo

Victoreen Model 427 1947

The Model SP-100 was introduced in 1949. It was a counter with an extension GM tube in an external probe. The unit measured clicks in the headphones for indications of radioactivity. The 900 volts is provided by three 300-volt batteries contained in the box

with handle. The GM tube is 3/8” x 1-3/8” long.



Victoreen Model SP-100 1949

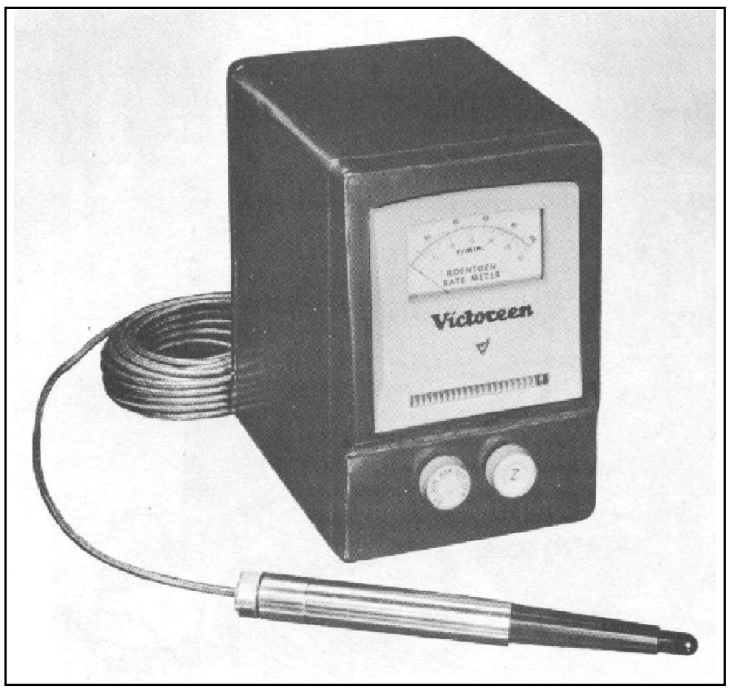
The Victoreen Model 488 neutron survey meter was developed in the 1950's.

Victoreen Neutron Survey Meter Model 488A 1950's



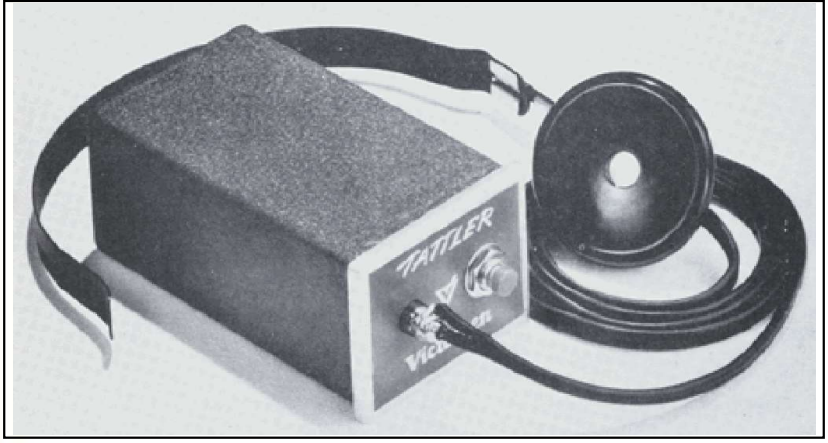
Victoreen Neutron Survey Meter Model 488 1950's (images provided by D. Fechner 2013)

The Roentgen Ratemeter Model 510 was sold in 1950. It consist of a thimble ionization chamber and preamplifier connected by a cable to a control unit. It was designed to indicate rate of beam intensity in roentgens per minute. Two probes are offered - the Model 510 which covers the range from 3, 10, 30 and 100 R/min and the Model 510A which covers the range from 30, 100, 300, 1000 R/min. It was 7” x 10” x 8” and weighs 20 lbs. It operates on 110V AC. Victoreen advertised in 1959 that “Victoreen….first to measure the Roengten accurately”.



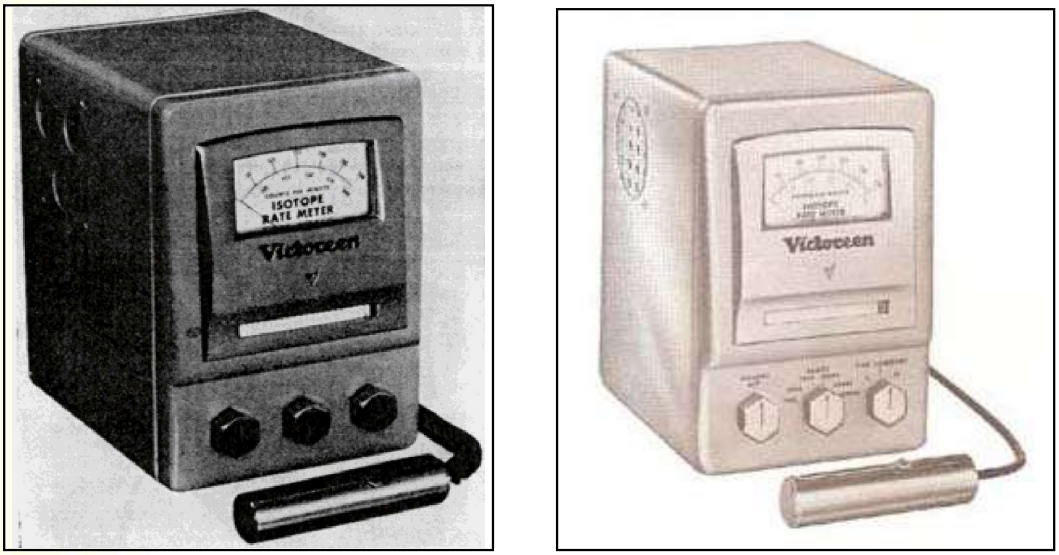

Victoreen Model 510 Roentgen Ratemeter 1950

The Model 518 “Tattler” was a gamma survey meter offered in 1950. The unit is a pocket geiger counter with audio indication with headphones. It was 2” x 2.5” x 4.5” and weighed 1 lb. It used one 1.5V flashlight battery. The tube was charged using a push button switch. It was advertised for three uses - detection of radioactive ore, warning for civilian defense and an educational toy. It had a green anodized aluminum or red crackle case.




Victoreen Model 518 Tattler 1950

The Victoreen Isotope Rate Meter Model 524 was introduced in 1951. It was a laboratory-quality counting Geiger counter rate meter for detecting alpha, beta and gamma radiation. It was designed for medical or laboratory use in isotope research laboratories. Count rate ranges were from 0-300, 0-1000, 0-3000, 0-10,000, 0-30,000, and 0-100,000 cpm. A scintillation counter may be use with the meter. Aural and visual presentation is provided. A three position switch allow the operator to select the most desirable response speed. The probe was 1-1/4" x 5-1/2", weighed 3/4 lbs. and is connected via a 4' cable. It operated on AC and had a grey baked enamel finish. The case was 7" x 10" x 8" and weighed 21.5 lbs. In 1955, it was designated Model 1524 and sold for $375.

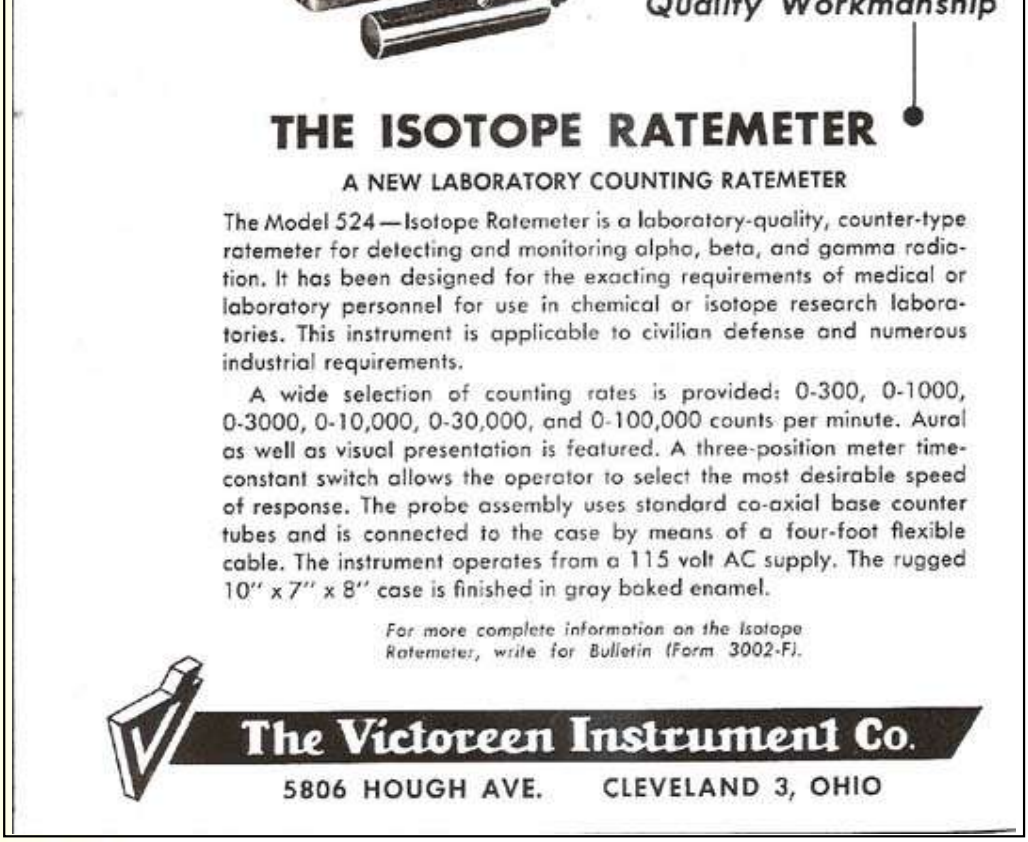



Victoreen Model 524 1951 (left) and Model 524A 1954 (right)

## Isotope Ratemeter

The Model 524, Isotope Ratemeter, is a laboratory-quality, counting ratemeter for detecting and measuring alpha-, beta-, and gamma-radiation. Six ranges of counting rates are provided: 0–300, 0–3000, 0–10,000, 0–30,000, and 0–100,000 counts per minute. Readings are indicated on a large, illuminated meter.

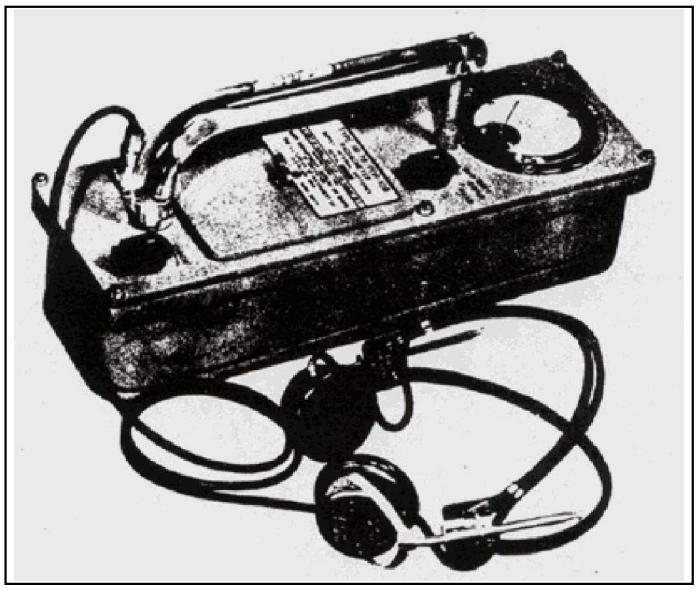

A three-position time-constant switch and an enclosed loudspeaker for aural monitoring are also featured. A scintillation counter may be used with the instrument, and the probe that is provided may be easily adapted for using various specialized counter tubes. The instrument is enclosed in a sturdy metal case and uses a 110-volt ac supply. Designed for medical and laboratory as well as industrial applications. Additional information is given in bulletin 3002-I.—THE VICTOREEN INSTRUMENT COMPANY, *5806 Hough Avenue, Cleveland 3, Ohio.*



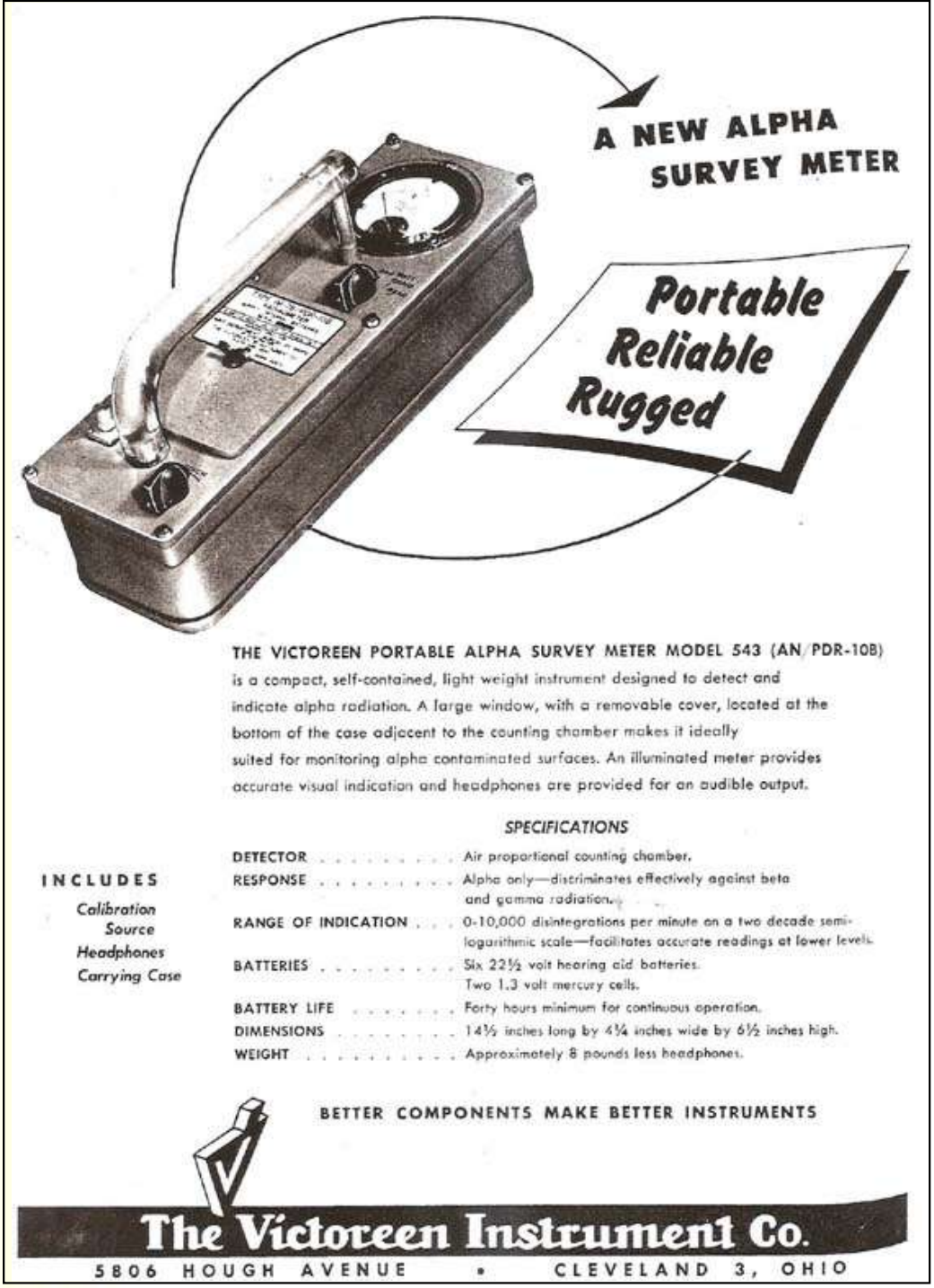

Victoreen Model 524 Ads 1951(left) and 1952 (right)

The Model 524A Laboratory Ratemeter was introduced in 1954 and uses the same case as the Model 524. It employed a Model 587 probe, a 1" x 1" NaI scintillation crystal with dimensions 2" dia x 8-1/8" long and weighed 1.5 lbs. It was AC powered with a meter and built in loudspeaker. It is calibrated in cpm. It has 6 sensitivity ranges and only three controls. It also has 3 time constants. In 1955, it sold for $545.

The Radiacmeter Model 543 (IM-78 AN/PDR-10B) was introduced in 1952. It was a portable alpha survey meter. It had a large window with a removable cover located on the case bottom next to the counting chamber. It had an illuminated meter and headphones. The detector was an air proportional chamber. The range was 0-10000 dpm on a two decade semi-logarithmic scale. It used six 22.5 and two 1.3 volt mercury batteries. Battery life was 40 hours. The unit was 14.5” x 4.5” x 6.5” and weighs 8 lbs.



Victoreen Radiacmeter Model 543 1952




Victoreen Model 543 Ad 1952

The AN/PDR-10 Model A and D were the standard Air Force alpha instrument in 1957. The sensitive probe area is about 2” x 8”.

The Model 573 “Isotope Comparator” was offered in 1953. It had 10 bismuth cathode type Geiger tubes. It has six ranges with a scale reading in percent. It had a removable shield to permit beta measurements. The unit measured 14” x 6.5” x 9-3/8” and weighed 18 lbs.


Victoreen Isotope Comparator Model 573 1953

The Model 575 Radocon was introduced in 1953. It was a roentgen calibrated integrating ratemeter with thimble ionization chambers. There were eleven models from Model 601-611. It had three ranges 10, 30, and 100 R/min. Probes can be connected at ranges up to 200'. The unit was primarily designed for x-ray measurements in the medical field.


Victoreen Radocon Model 575 1954


Victoreen Radocon Model 575 1954

# The "RADOCON"

**A new *roentgen calibrated* integrating ratemeter with thimble ionization chambers for many purposes.**

A compact control unit for pre-setting and monitoring both rate and total roentgen delivery through a thimble ionization chamber selected for the sensitivity, energy and intensity to be measured.

## PROBE SPECIFICATIONS

| MODEL | RADIATION SPECTRUM (Kev. effective) | SENSITIVITY RANGES | TOTAL DOSE (roentgens) | USE |
|---|---|---|---|---|
| 601 | 30 to 400 | 10-30-100 r/min. | 1 to 999 | X-ray therapy |
| 602 | 30 to 400 | 100-300-1000 r/min. | 10-9990 | X-ray therapy |
| 603 | 400 to 2000 | 5000-15000-50000 r/min. | 500-499, 500 | On telecurie Gamma sources |
| 604 | 20 to 50 | 100-300-1000 r/min. | 10-9990 | Low energy therapy |
| 605 | 400 to 2000 | 1-3-10 r/min. | 0.1-99.9 | Gamma ray sources |
| 606 | 400 to 2000 | 10-30-100 r/min | 1-999 | Gamma ray sources |
| 607 | 400 to 2000 | 100-300-1000 r/min. | 10-9990 | Gamma ray sources |
| 608 | 30 to 400 | 10-30-100 r/hr. | 1-999 | Survey in vicinity of X-ray machines |
| 609 | **Not Applicable** | 10-30-100 r/min. | 10-9990 | Beta-Gamma skin dose |
| 610 | $I^{131}$ and $Au^{198}$ | 1-3-10 mc. $I^{131}$ | **Not Applicable** | Isotope assay |
| 611 | 400-2000 | 0.5-1.5-5 r/min. | 0.05-49.95 | Gamma ray sources |

Write for the new instrument catalog. Specify form 3017A.

A variety of ion chambers, not limited to those tabulated above, provides a wide selection for radiation measurement in research, diagnosis and therapy, health protection, isotope assay, production control and allied fields.

### FEATURES

Rapid measurement . . . continuous indication of rate and dose . . . reliability with high accuracy . . . flexibility in use and placement of chambers . . . wide selection of energy, intensity and sensitivity.

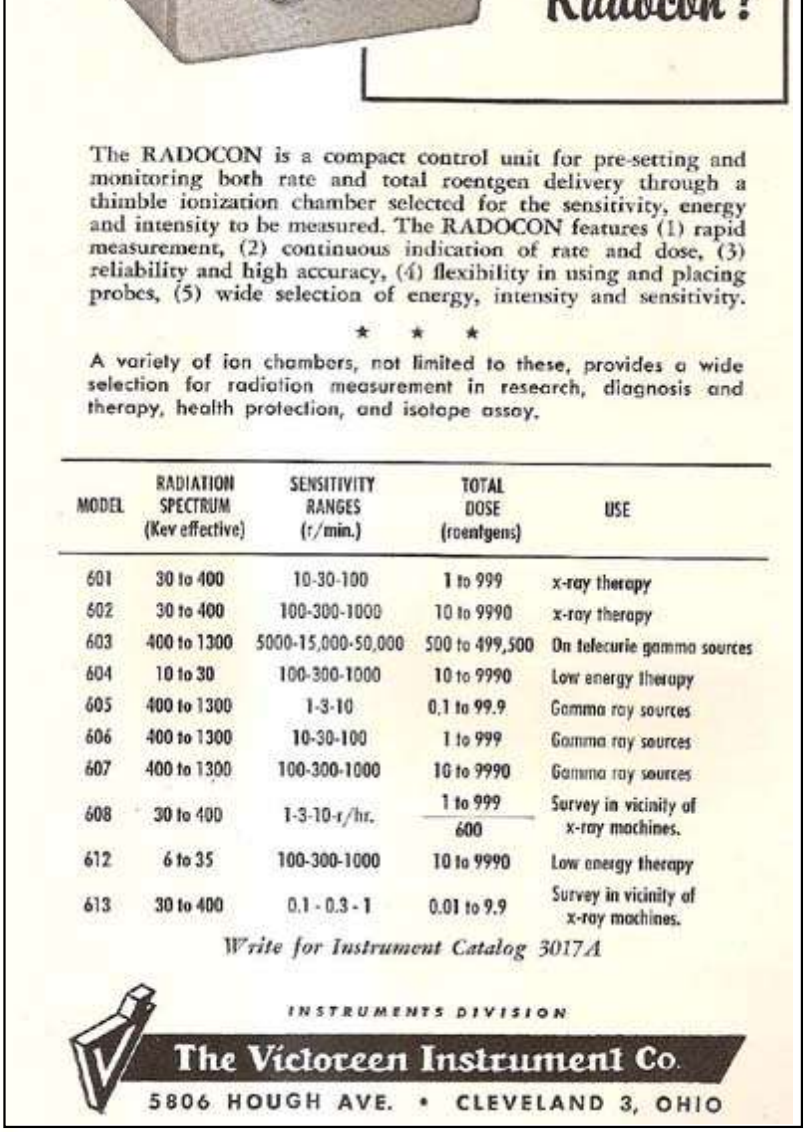
**Write for the specifications of this chamber tube best suited to your measurement problem.**

MEDICAL INSTRUMENTS DIVISION

**The Victoreen Instrument Co.**

5806 HOUGH AVENUE • CLEVELAND 3, OHIO


***Have You Investigated the Advantages of The VICTOREEN Radocon?***



Radocon?

The RADOCON is a compact control unit for pre-setting and monitoring both rate and total roentgen delivery through a thimble ionization chamber selected for the sensitivity, energy and intensity to be measured. The RADOCON features (1) rapid measurement, (2) continuous indication of rate and dose, (3) reliability and high accuracy, (4) flexibility in using and placing probes, (5) wide selection of energy, intensity and sensitivity.

★ ★ ★

A variety of ion chambers, not limited to these, provides a wide selection for radiation measurement in research, diagnosis and therapy, health protection, and isotope assay.

| MODEL | RADIATION SPECTRUM (Kev effective) | SENSITIVITY RANGES (r/min.) | TOTAL DOSE (roentgens) | USE |
|---|---|---|---|---|
| 601 | 30 to 400 | 10-30-100 | 1 to 999 | x-ray therapy |
| 602 | 30 to 400 | 100-300-1000 | 10 to 9990 | x-ray therapy |
| 603 | 400 to 1300 | 5000-15,000-50,000 | 500 to 499,500 | On telecurie gamma sources |
| 604 | 10 to 30 | 100-300-1000 | 10 to 9990 | Low energy therapy |
| 605 | 400 to 1300 | 1-3-10 | 0.1 to 99.9 | Gamma ray sources |
| 606 | 400 to 1300 | 10-30-100 | 1 to 999 | Gamma ray sources |
| 607 | 400 to 1300 | 100-300-1000 | 10 to 9990 | Gamma ray sources |
| 608 | 30 to 400 | 1-3-10-r/hr. | 1 to 999 / 600 | Survey in vicinity of x-ray machines. |
| 612 | 6 to 35 | 100-300-1000 | 10 to 9990 | Low energy therapy |
| 613 | 30 to 400 | 0.1 - 0.3 - 1 | 0.01 to 9.9 | Survey in vicinity of x-ray machines. |

*Write for Instrument Catalog 3017A*

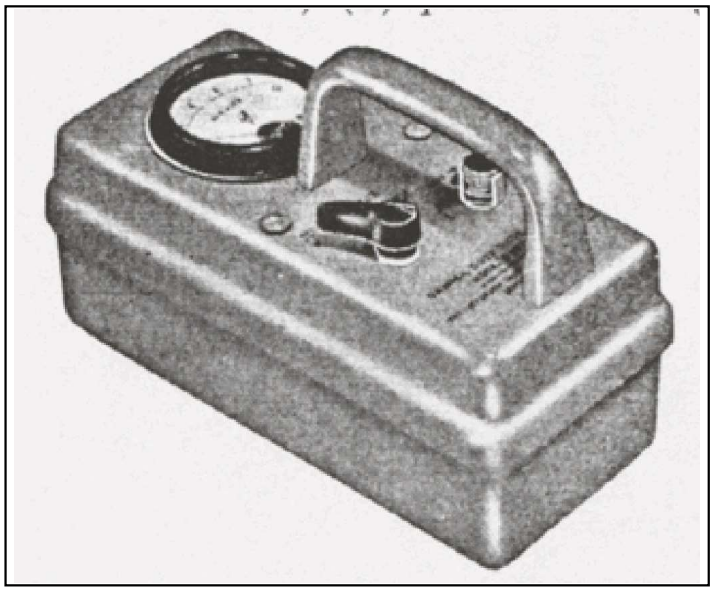
INSTRUMENTS DIVISION

The Victoreen Instrument Co.

5806 HOUGH AVE. • CLEVELAND 3, OHIO

Victoreen Radocon Ads 1953 (left) and 1955 (right)

The Model 592 was introduced in 1954 by the Medical Instruments Division of Victoreen. It was designed as a gamma dose rate survey meter. It was factory calibrated on x-ray, radium or cobalt-60. It gives of dose rate from 50 keV to 1.3 MeV with 10% accuracy. It comes with an internal ion chamber that is hermetically sealed and thus unaffected by humidity, temperature or pressure. It has two controls – an on/off range switch and zero set. It has a rugged, fiber glass reinforced case which meets military requirements and is easily decontaminated. It weighs 4.75 lbs. The Model 592 has sensitivity range from 10, 100 and 1000 mR/h. The Model 592A has ranges from 5, 50 and 500 R/h. The unit was still offered in 1958. The Model 592B was designed for the US Navy. It could read from 0-10 mR.



Victoreen Model 592 1954

# You Specified...

Wave Length Independency

A Stable, Drift-Free Circuit

Ruggedness—Yet Light Weight

Convenience in Use


YOU GET ALL OF THESE SPECIFIED FEATURES AND MORE—IN A

## New GAMMA DOSE RATE SURVEY METER,

BUILT BY THE PIONEER MANUFACTURER OF RADIATION INSTRUMENTS

- THREE RANGES OF SENSITIVITY:
  MODEL 592—0-10, 0-100, 0-1000 mr/hour.
  MODEL 592A—0-5, 0-50, 0-500 r/hour.
- Two-stage D.C. amplifier circuit with 100% negative feedback.
- Factory calibrated on x-ray and radium or Cobalt 60.
- Accuracy conservatively rated at 10% of true dose over an energy range of 50 Kev to 1.3 Mev.
- Plug-in ion chamber for interchangeability.
- Ion chamber for model 592A may be used in 592.
- Hermetically sealed ion chamber in model 592 is unaffected by environmental conditions of temperature, humidity or pressure.
- Single hi-meg and electrometer tube sealed in the ion chamber.
- Two controls . . . An on-off-range switch and zero set.
- Well balanced with handle on top.
- Rugged, fiber-glass reinforced case easily decontaminated . . . meets military requirements.
- Weighs only 4¾ pounds.

*For Further Details . . . Write for Form 3021*

MEDICAL INSTRUMENTS DIVISION

**The Victoreen Instrument Co.**

5806 HOUGH AVENUE · CLEVELAND 3, OHIO

## The BIG QUESTION, always...

### What's the True Gamma Intensity???

Get the answer anytime — get it accurately — get it easily. Get it with the Victoreen Model 592 or 592A ion chamber GAMMA DOSE RATE SURVEY METER — the survey meter that's light weight, yet rugged, with a stable, drift-free circuit and wave length independence.

The many desirable features of this fine instrument are the *features* engineers and physicists *demand* in a survey meter. Check them off.

- THREE RANGES OF SENSITIVITY:
  MODEL 592 — 0-10, 0-100, 0-1000mr/hour.
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- Well balanced with handle on top.
- Rugged, fiber-glass reinforced case easily decontaminated . . . meets military requirements.
- Weighs only 4¾ pounds.

*For Further Details . . . Write for Form 3021*

INSTRUMENTS DIVISION

**The Victoreen Instrument Co.**

5806 HOUGH AVENUE · CLEVELAND 3, OHIO

Victoreen Model 592 Ads 1954 (left) and 1955 (right)

for accurate, positive radiation measurement

# SURVEY METERS

*from Victoreen*

### *Gamma Dose Rate Meter, Model 592*

Features extremely high sensitivity that gives significant linear readings below tolerance dosage. Superior wave length independence over entire energy range makes the Model 592 ideal for determination of leakage and true dose rate of gamma and X-rays. Ranges 0-10, 0-100, 0-1000 mr/hr. Accuracy ± 10% of true dose.

### *Thyac, Model 389C*

In wide use by government agencies and industry for measurement of beta and gamma radiation. Also available with thin end window in Geiger tube for alpha or weak beta detection. Single control selects ranges of 800, 8000, 80,000 counts /min (0.2, 2.0, 20.0 mr/hr).

### *Cutie Pie, Model 740*

Stable and reliable alpha, beta and gamma dose rate measuring survey meter engineered to requirements of Health Physics group of ORNL. Also for field and laboratory survey work, and for monitoring radiation sources and isotopes. Has no switching transients. Each range calibrated separately. Accuracy ± 10% of full scale. Energy dependence ± 15% for gamma or X-rays from approximately 40 kev to 2 mev. Minimum energy detected 2-3 mev for alpha, 35 kev for beta, 40 kev to 2 mev for gamma or X-rays. Ranges: 0-100, 1000, 10,000 mr/hr for Model 740; 0-50, 500, 5000 mr/hr for Model 740A; 0-25, 250, 2500 mr/hr for Model 740B.

AA-7340

VICTOREEN ALSO MAKES scintillation type survey meters and Civil Defense approved portable monitors.

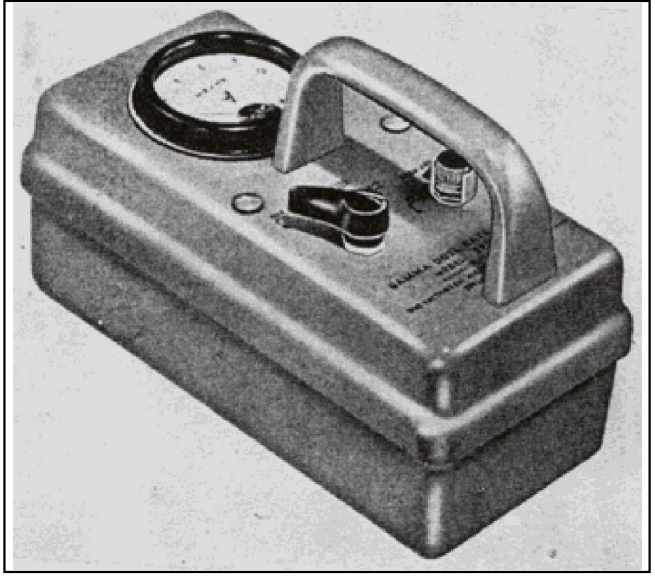
For full details on Victoreen survey meters write for your copy of Form 3044B.

*The Victoreen Instrument Company*

*5806 Hough Avenue • Cleveland 3, Ohio*

WORLD'S FIRST NUCLEAR COMPANY

Victoreen Ad 1958



Victoreen 592B 1955

Victoreen Model 592B

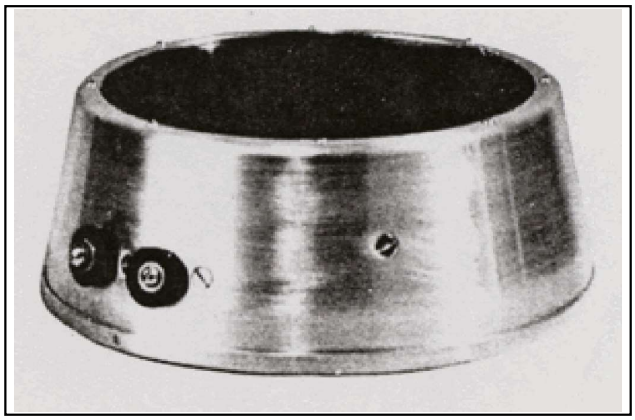
The Victoreen Monitron was an area monitoring instrument offered in 1945. It was an instrument for the measurement and recording of radiation with an alarm. It had two scales 25 and 125 mR/h. It operated on AC.

Need photo

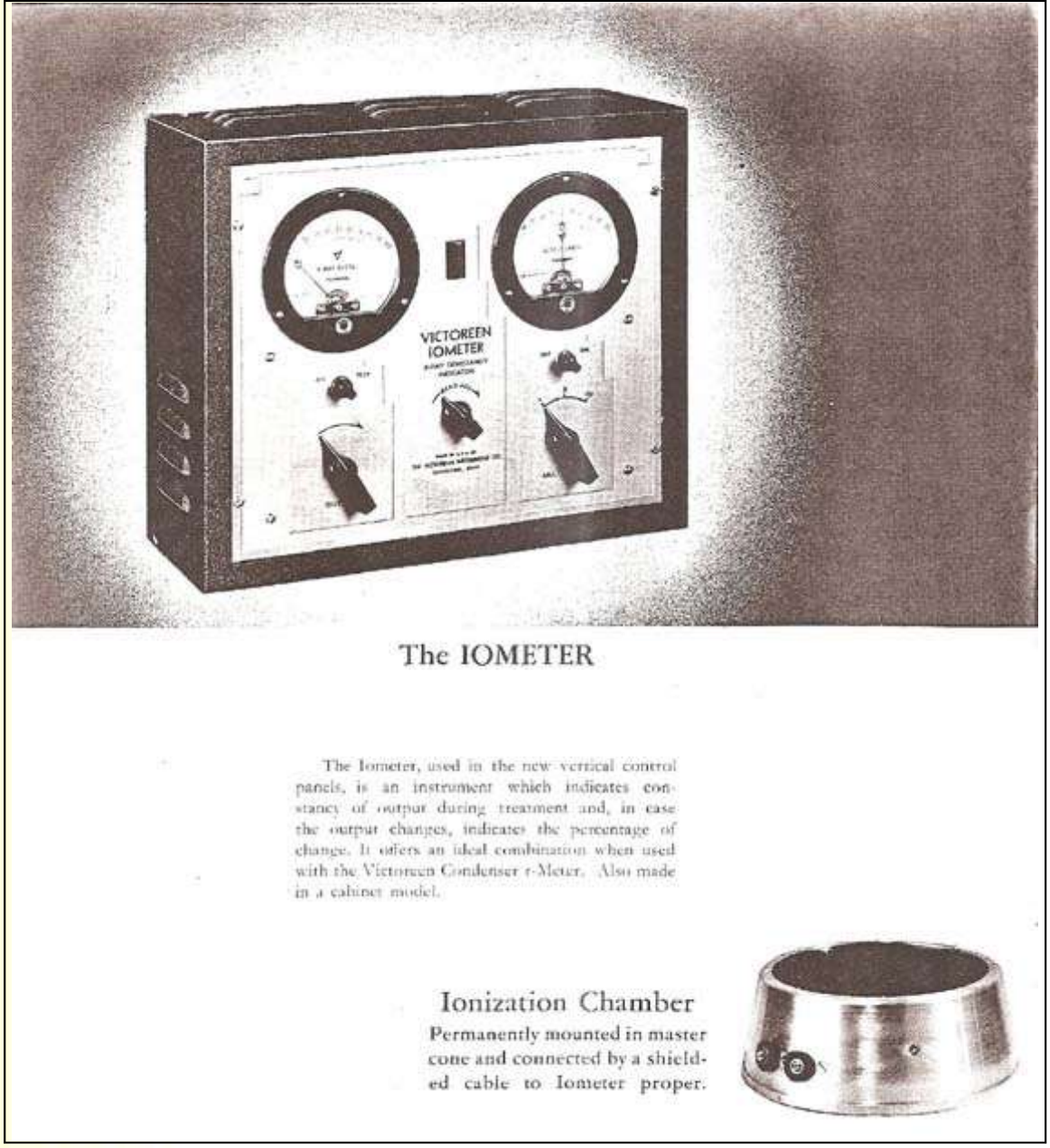
Victoreen Monitron 1945

The Victoreen Iometer was used to measure x-ray intensity. It could be used with the Condenser r-Meter. It also has an ionization chamber permanently mounted in a master cone and connected with a shielded cable.


Victoreen Iometer 1950's



Victoreen Iometer Ionization Chamber 1950's




Victoreen Iometer Ad 1950's

The Vic Tic Model 631 was a full sized professional Geiger counter with a transistorized amplifier, loud speaker adjustable in tone pitch so that it could be heard up to 100' away. It was described for use on *"for vacation and part time prospecting and school science class"*. The speaker was advertised "so that it may be distinctly heard, even in a boiler factor". It was introduced in 1955. It came in a distinct gold color or bright red. Earphones were not required. It used one 1.5 volt and one 67.5 volt batteries. It was 6.5” x 4.5” x 3.5” and weighs 3 lbs. It has four sensitivity ranges from 200, 1000, 10,000, and 100,000 cpm. It contained an internal aluminum walled Geiger tube, batteries, and radioactive sample. It was a complete package for $125 in 1955. The unit also has a radioactive source built in it. Also available was a hand probe ($19.95) and a deep hole probe. It was designed by the same engineers that developed the first instrumentation for Atomic Science.


Victoreen Vic Tic Model 631 (Gold) 1954



Victoreen Vic Tic Model 631 (Gold) 1954


Victoreen Vic Tic Model 631 (Red) 1950's



Victoreen Vic Tic Model 631 (Red) 1950's

# The BIG QUESTION, always...

## What's the True Gamma Intensity???

Get the answer anytime — get it accurately — get it easily. Get it with the Victoreen Model 592 or 592A ion chamber GAMMA DOSE RATE SURVEY METER — the survey meter that's light weight, yet rugged, with a stable, drift-free circuit and wave length independence.

The many desirable features of this fine instrument are the *features* engineers and physicists *demand* in a survey meter. Check them off.

- ✔ THREE RANGES OF SENSITIVITY:
  MODEL 592 — 0-10, 0-100, 0-1000mr/hour.
  MODEL 592A — 0-5, 0-50, 0-500r/hour.
- ✔ Two-stage D.C. amplifier circuit with 100% negative feedback.
- ✔ Factory calibrated on x-ray and radium or Cobalt 60.
- ✔ Accuracy conservatively rated at 10% of true dose over an energy range of 50 Kev to 1.3 Mev.
- ✔ Plug-in ion chamber for interchangeability.
- ✔ Ion chamber for model 592A may be used in 592.
- ✔ Hermetically sealed ion chamber in model 592 is unaffected by environmental conditions of temperature, humidity or pressure.
- ✔ Single hi-meg and electrometer tube sealed in the ion chamber.
- ✔ Two controls . . . An on-off-range switch and zero set.
- ✔ Well balanced with handle on top.
- ✔ Rugged, fiber-glass reinforced case easily decontaminated . . . meets military requirements.
- ✔ Weighs only 4¾ pounds.

***For Further Details . . . Write for Form 3021***

**INSTRUMENTS DIVISION**

**The Victoreen Instrument Co.**

5806 HOUGH AVENUE · CLEVELAND 3, OHIO

Victoreen Vic-Tic Ad 1955

# CHOOSE VICTOREEN INSTRUMENTS

## PROSPECTORS—

The Lightweight, Reliable

**Victoreen**

*Vic-tic*

**$125**

## ENGINEERS and MINERS—

The Sensitive, Multi-Purpose

**Victoreen**

"thyac"

**$225**

## MINERS and ASSAYERS—

The High Capacity, High Sensitivity

**Victoreen**

Model 1524—Isotope Ratemeter

**$425**

Victoreen Ad 1955


Victoreen Vic-Tic Model Ad 1955

In 1955, optional accessories included a “Bismuth Six Pack” which was a six pack of high sensitivity bismuth screen tubes. The Six Pack is 12-20 times more sensitive than a single geiger tubes. The six pack attached to the bottom of the unit using a plug in jack. It weighed 1 lb. and sold for $115. Another accessory was the deep hole probe, up to 200' for exploring well holes, drill holes, canyon or valley outcrops of rock to search for uranium. The probe is 3/4" dia x 12" long and sold for $95. And lastly, a detachable probe could be used for checking outcrops, rocks, etc. The hand probe is in a molded tenite gripper and tube socket with a plastic protective cover connected by a 4' cable. It sold for $19.50.


Victoreen Vic Tic Accessories

Need photo

Victoreen Vic Tic with Bismuth Six Pack

Between 1955 and 1956, Victoreen cut the price of the Vic-Tic instrument in half from $125 to $62.50.


Victoreen Vic-Tic Ad 1955


Victoreen Vic-Tic Ad 1956

In 1955, Victoreen introduced the “Victor Series” comprises radiation counters for uranium prospecting and gamma radiation detection. The units used either Geiger tube or scintillators. Some combination counters with two detectors were also available. All models offer 14 overlapping sensitivity ranges from 15 to 30,000 cps with time constants between 0.5 and 10 seconds. They can measure up to 1,800,000 counts per minute. The meter was 3.5" raised with counts per second. Uranium-thorium ore differentiation is included on some units. Most models are under 6 lbs.


Victoreen Model 640 Ad 1956

# NEW VICTOR RADIATION COUNTERS COMBINE SCINTILLATION AND GM DETECTORS IN ONE INSTRUMENT. FEATURE UNITIZED CONSTRUCTION AND URANIUM-THORIUM DISCRIMINATION.

All models have 14 overlapping sensitivity ranges (to 1,800,000 CPM) — 7 calibrated ranges plus high intensity position; big 3½ inch raised meter reads counts per second; positive, straightforward uranium-thorium discrimination; unitized construction; commonly used batteries and tubes; watertight case; tropicalized parts; continuously variable time constant.

## *Stake Your Claim With a Proven Name ! ! !*

Two models use internal detectors. Select the 18 tube GM unit or the large, sensitive 1½ inch scintillation crystal detector for maximum sensitivity. Either model responds to the weakest radiation. Discriminate with the scintillation detector between uranium and thorium. Constructed to readily accept hand probes or deep hole probe.

**INTERNAL 18 GM TUBE or INTERNAL SCINTILLATION**

This is news! A scintillation and geiger detector are combined in a **single** counter. Big 1½" scintillation crystal detector is built in the case. An external geiger hand probe detects beta and gamma in those hard to reach places. Differentiates between uranium and thorium, too. If you are a geiger man, then the 641 GIGE is the counter for you. It has the built in 18 GM tube detector **plus** the single tube hand probe. Sensitive to beta and gamma.

**MODEL 641 SIGE or MODEL 641 GIGE**

For a modest prospecting start choose either the 641 GE or the 641 SE. Both counters use the same superbly engineered guts as the other **VICTOR** series counters. The detectors, either geiger tube or scintillation crystal, are mounted in external hand probes. The 641 GE is a beta and gamma detector. The 641 SE, with the 1½" crystal, differentiates between uranium and thorium.

**EXTERNAL GM or SCINTILLATION PROBE**

We can't possibly detail all of the new and fascinating features in an ad like this. So write today for your copy of the four page, illustrated folder on **VICTOR** counters.

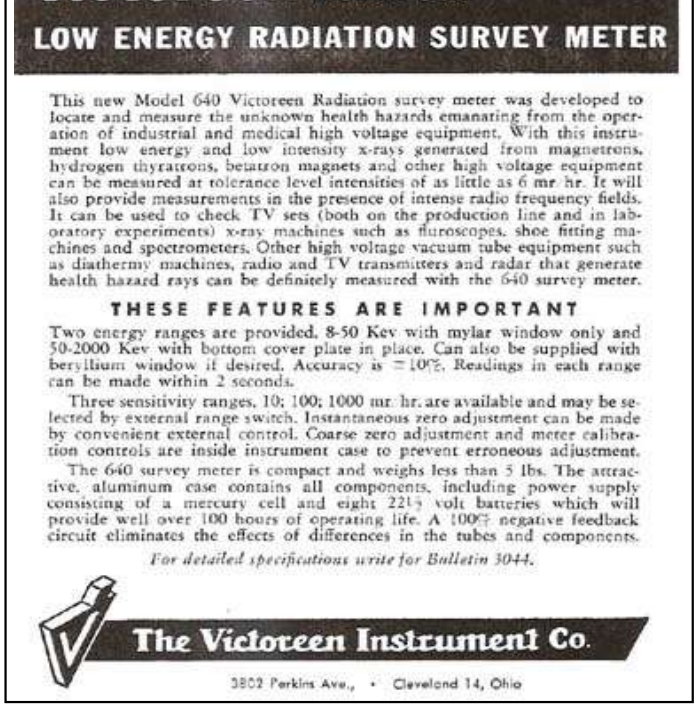
***DEALERS:***
**Get ready now. Write for details.**

**INSTRUMENTS DIVISION**

## The Victoreen Instrument Co.

# IS THIS THE INSTRUMENT YOU'RE LOOKING FOR?

**Victoreen** MODEL 640



LOW ENERGY RADIATION SURVEY METER

This new Model 640 Victoreen Radiation survey meter was developed to locate and measure the unknown health hazards emanating from the operation of industrial and medical high voltage equipment. With this instrument low energy and low intensity x-rays generated from magnetrons, hydrogen thyratrons, betatron magnets and other high voltage equipment can be measured at tolerance level intensities of as little as 6 mr/hr. It will also provide measurements in the presence of intense radio frequency fields. It can be used to check TV sets (both on the production line and in laboratory experiments) x-ray machines such as fluroscopes, shoe fitting machines and spectrometers. Other high voltage vacuum tube equipment such as diathermy machines, radio and TV transmitters and radar that generate health hazard rays can be definitely measured with the 640 survey meter.

THESE FEATURES ARE IMPORTANT

Two energy ranges are provided. 8-50 Kev with mylar window only and 50-2000 Kev with bottom cover plate in place. Can also be supplied with beryllium window if desired. Accuracy is ±10%. Readings in each range can be made within 2 seconds.

Three sensitivity ranges, 10; 100; 1000 mr/hr. are available and may be selected by external range switch. Instantaneous zero adjustment can be made by convenient external control. Coarse zero adjustment and meter calibration controls are inside instrument case to prevent erroneous adjustment.

The 640 survey meter is compact and weighs less than 5 lbs. The attractive, aluminum case contains all components, including power supply consisting of a mercury cell and eight 22½ volt batteries which will provide well over 100 hours of operating life. A 100% negative feedback circuit eliminates the effects of differences in the tubes and components.

*For detailed specifications write for Bulletin 3044.*

The Victoreen Instrument Co.

3802 Perkins Ave., • Cleveland 14, Ohio

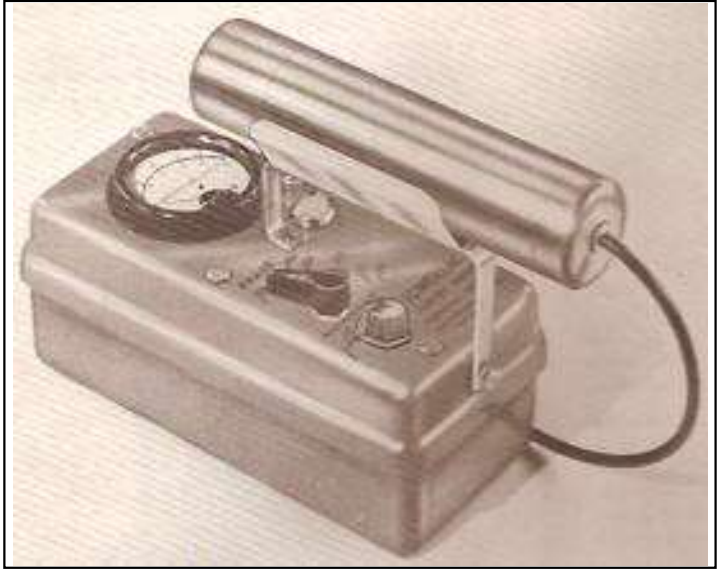
Victoreen Model 640 Ads 1955 (left) and 1956 (right)

The Model 640 was introduced in 1956 as a low energy radiation survey meter. It was designed to measure low intensity radiation from x-rays generated by magnetrons, thyratrons, and high voltage equipment. It can measure down to 6 mR/h. It can be used to check TV sets, x-ray machines such as fluoroscopes, and shoe fitting machines. Two energy ranges – 8-50 keV with a mylar window only and 50-2000 keV with bottom cover plate in place. Beryllium window is an option. It weighs 5 lbs. It has an aluminum case. It uses a mercury cell and eight 22.5V batteries.

The Model 641 SIGE is a combination detector with a Geiger Counter and Scintillator introduced in 1955. An external GM probe detects beta and gamma for hard to reach places. It also differentiates between uranium and thorium. The Model 641 GIGE has 18 GM tube detector plus a single tube hand probe. It is sensitive to beta and gamma.

The Model 641 GE is a beta gamma detector. The Model 641 SE is a scintillator with a 1.5” crystal and can differentiate between thorium and uranium.

Victoreen Model 641 1955



Victoreen Model 645 Scintillac 1955

The Model 645 Scintillac is an ultra-sensitive scintillometer with NaI crystal sizes from 1" x 1", 1-1/2" x 1-1/4", or 2" x 2". Phosphors were also available for alpha and beta detection. The detector is encased in a mu metal shield with a anodized aluminum cover to eliminate magnetic effects. The probe was 2" dia x 8.5" long. The unit was offered in 1955 and sold for $495 (1" x 1" NaI), $545 (1-1/2" x 1-1/4" NaI) and $970 (2" x 2" NaI). It has six ranges of 0-500, 0-1000, 0-5000, 0-10,000, 0-50,000, and 0-100,000 cpm, and four time constants - 1/2, 1, 3, and 10 seconds. The case was 10" x 4-3/4" x 8" and weighed 12 lbs. It is housed in a tough, watertight, reinforced, two section case.

This item is a real sleeper. It is an upgraded commercial version of the venerable CDV 700. It has improved circuitry inside, and includes a speaker to hear the clicks. An MHV connector is provided for probe attachment. Any standard 900 V probe will work with these, and I especially recommend the "pancake" style for super sensitivity to Alpha, Beta and Gamma radiations ( no probe is included).

Not a Geiger Counter exactly, but described as a "survey meter". This complete setup has two probes, one is 1" and the other is 4". Also a stand for the probes. The main unit operates from flashlight batteries. Sold on-line for $3200 new, $975 used.

Victoreen produced a variety of geiger tubes in 1956. They were the 1B85 (aluminum tube at 900V), the 6306 (bismuth tube at 900V), the 1B87 (sub-miniature at 900V), and the VG-18 (halogen).

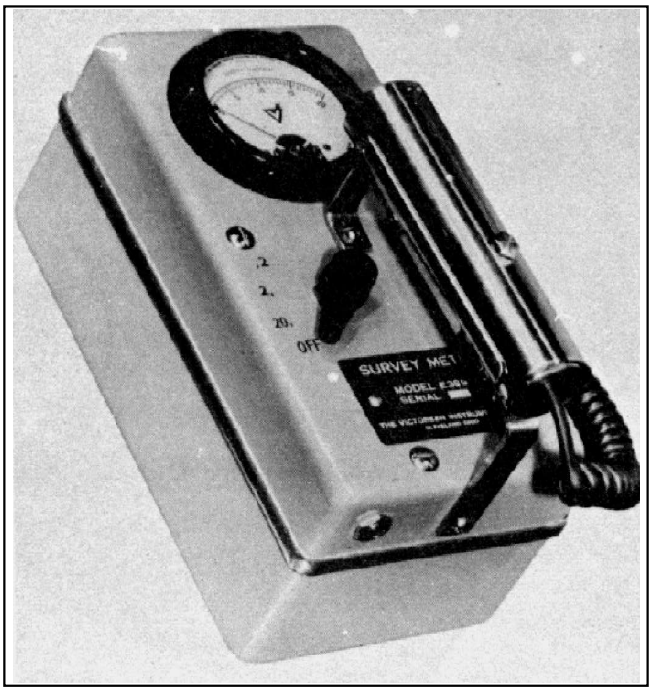
In 1956, Victoreen offered the Scintigeiger. It could count to 1,800,000 cpm. It was a combination scintillation counter and Geiger counter. The internal scintillation crystal was 1.5”. It had an external Geiger counter probe. It has fourteen overlapping ranges. Sensitivity up to 12 mR/h . A two minute measurement test tells whether you have uranium or thorium. It sold for $575.


Victoreen Scintigeiger 1956

Victoreen Model 710

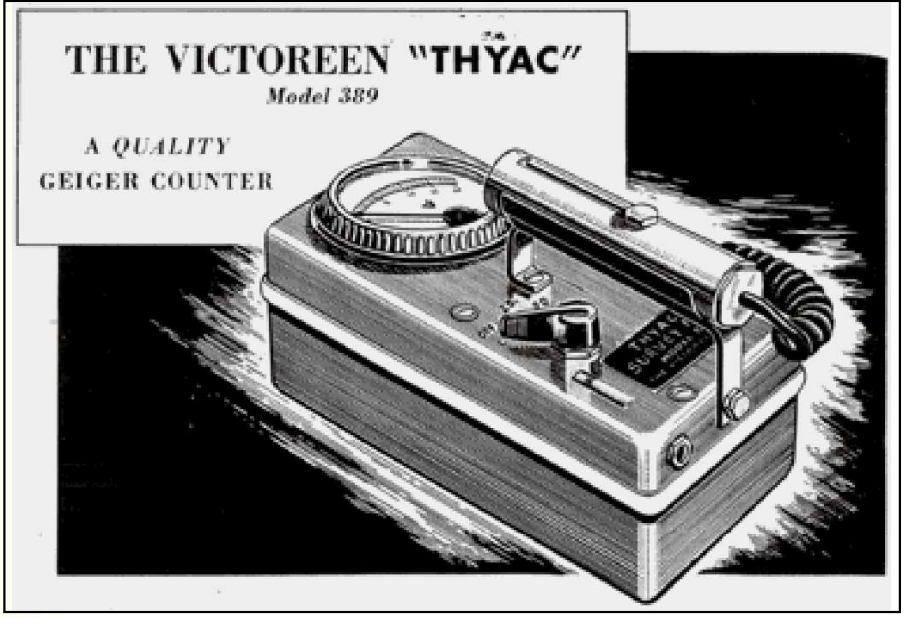
Here is an old radiation meter in unknown condition that is being sold AS-IS. It was made by Victoreen and is model Thyac III. It scales 0 to 0.2 mR/h and 0 to 800 c/m with ranges of 1, 10, 100 and 1000. There are also switch settings for “SCINT”, “GM” and battery test with another switch for slow, medium or fast response.

The Model 389 “Thyac” was introduced in 1950. The unit was designed to detect both low intensity betas and gammas with an external probe. It has a compact, laminated plastic case that was rugged and waterproof. The sensitivity was 800, 8,000 and 80,000 cpm and 0.2, 2 and 20 mR/h. It used one 1.3 volt and one 4.5 volt battery to power a vibrator power supply. It had a standard coaxial base and can be used with a mica tube counter tube, gamma ray counter tube or a cosmic ray tube for added versatility. The unit was 9-7/16” x 4-9/16” x 6.5” and weighed 5.5 lbs. The unit sold for $225 in 1951.




Victoreen Model 389 Thyac 1950

Victoreen Model 389 Thyac




Victoreen Thyac Model 389 Ad 1952

The Thyac Model 389A was a GM counter for beta and gamma offered in 1950. According to the Thyac 389/389A manual, it was similar to the Model 389 except that it had a neon glow tube pilot light on the control panel to indicate that the batteries are delivering the correct voltage and the unit is tropicalized to prevent fungus growth in tropical climates. This unit was used at the Los Alamos Scientific Laboratory in 1954.

Victoreen Thyac III Scintillation Counter

The Victoreen Thyac was introduced in 1950 as a survey meter for low intensity beta and gamma radiation. The case was make of fiberglass. This was the beginning of a series of Thyac instruments. It had a thin walled aluminum GM tube known as the Thyrode. It had three ranges from 800, 8000 and 80,000 cpm and 0.2, 2 and 20 mR/h. It weighed 5.5 lbs. It used one 1.5V and one 4.5V batteries.


Victoreen Model 389 1953

The Thyac 389C was introduced in 1953. It was a geiger tube for monitoring low intensity beta and gamma radiation. The case was made of fiberglass-reinforced plastic making it tough and ready for rugged climates. The unit was 10" x 4-3/4" x 6-3/4" and weighed 5-7/8 lbs. including the probe. It had an on-off pilot light. It has one control knob for fingertip operation. It could standard beta window Geiger probes or bismuth lined counter tubes. Sensitivity was 800, 8000 and 80,000 cpm or 0.2, 2, and 20 mR/h. The weight was 5 lbs. and could operate for 110 hours per battery charge. The unit was similar in size and shape to the original Model 389. The unit sold for $225 in 1953. The unit was still for sale in 1955 for $225. In 1957, the Los Alamos Laboratory modified the Thyac to use their own alpha scintillation probe consisting of a zinc sulfide phosphor.

Victoreen Thyac 389C 1953


Victoreen Model 389C 1955

# THE VICTOREEN "THYAC"

*Model 389*

A *QUALITY*
GEIGER COUNTER

A GEIGER-TUBE TYPE BATTERY-OPERATED SURVEY RATEMETER
FOR MONITORING LOW-INTENSITY BETA OR GAMMA RADIATION

## *THE "THYAC" FEATURES...*

SPECIFICATIONS

**Radiation:** Beta, gamma, and cosmic

**Indication:** 3" meter and detachable headset

**Sensitivity:** 800, 8000, 80,000 counts per minute or 0.2, 2.0, 20.0 mr/hour on radium gamma rays using the 1B85 Thyrode

**Accuracy:** 10%

**Battery Life:** 110 hours at 4 hours per day

**Dimensions:** 9½" long by 4½" wide by 6½" high

**Weight:** 2½ pounds

**VIBRATOR POWER SUPPLY** . . . The Victoreen low-drain, regulated high voltage vibrator power supply gives accurate and reliable operation using standard batteries.

**LAMINATED PLASTIC CASE** . . . The latest techniques in case design provide a waterproof, tough, lightweight laminated plastic case for the ruggedest service.

**VERSATILITY** . . . A wide selection of interchangeable counter tubes makes the instrument adaptable for many applications.

**"FINGERTIP" CONTROL** . . . "Fingertip" operation of the instrument is facilitated by proper placement of the one control knob.

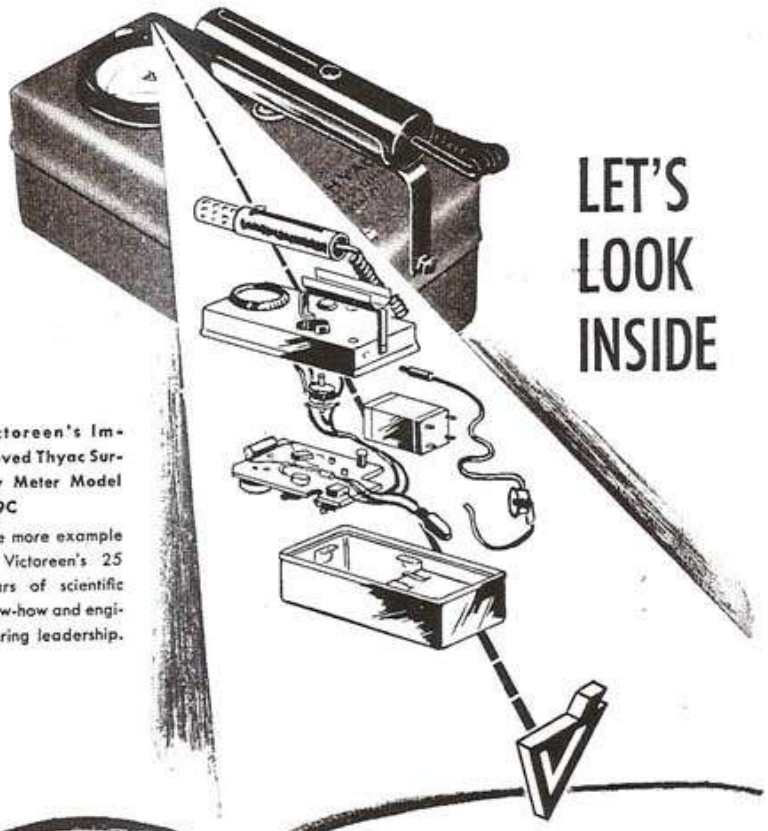
**BETA DISCRIMINATION** . . . A sliding shield on the probe enables the operator to discriminate against beta radiation.

*CATALOG SHEET AVAILABLE UPON REQUEST*

**The Victoreen Instrument Co.**

5806 HOUGH AVE. CLEVELAND 3, OHIO

Victoreen Model 389C Thyac Ad 1952



# LET'S LOOK INSIDE

**Victoreen's Improved Thyac Survey Meter Model 389C**

One more example of Victoreen's 25 years of scientific know-how and engineering leadership.

## SPECIFICATIONS

Radiation: Beta, gamma and cosmic

Indication: 3" meter; detachable headset

Sensitivity: 800, 8,000, 80,000 counts per minute or 0.2, 2.0. 20.0 mr/hour, from Radium in 0.5 millimeter of Platinum using the 1885 Thyrode

Accuracy: ± 10%

Battery Life: 110 hours at 8 hours per day

Dimensions: 9¾" long by 4 11/16" wide by 7¼" high

Weight: 5½ pounds

Significant new features have been engineered into this precision-built Geiger tube type of survey ratemeter for monitoring low intensity beta or gamma radiation.

Improved case design simplifies the replacement of batteries and components. Laminated plastic, tough, lightweight, ready for rugged service under the worst climatic conditions.

An "On-Off" pilot light gives visual indication that the unit is operating.

Greater reliability in the regulated power supply since the Thyac is not affected adversely by battery aging within battery life ratings.

Scintillation probes may now be adapted to the new, improved Thyac.

**PLUS:** Fingertip operation by proper placement of the one control knob . . . a sliding shield on the probe for discrimination against beta radiation . . . broadened versatility, using standard type 1885 or bismuth lined counter tube type 6306 for extra gamma sensitivity, makes the instrument adaptable for many applications.

*. . . Write today for your copy of Victoreen's Model 389C Thyac catalogue sheet to obtain full particulars.*

BETTER COMPONENTS MAKE BETTER INSTRUMENTS

**The Victoreen Instrument Co.**

5806 HOUGH AVENUE • CLEVELAND, OHIO

# VICTOREEN LABORATORY AND FIELD RATEMETERS

## SENSITIVE SCINTILLATION...

SCINTILLATION PROBE

Victoreen scintillation

FIELD RATEMETER

The portable, compact and light-weight Victoreen Model 389F weighs less than 7 lbs. Single control. Three ranges of sensitivity — 0.05, 0.5 and 5.0 mr/hr. full scale. Sensitivity may be increased by readjustment. Fiberglas reinforced.

probes are efficient — have greater sensitivity for the lower intensity ranges. Top quality 1" by 1" NaI(Tl) crystals used. Shock-mounted phototube optically coupled to crystal. Probe head removable for easy substitution of alpha or beta sensitive crystals — or larger 2" by 1" NaI(Tl) crystal. Water-tight case. Cable length varies.

rugged case. Two low-cost batteries used. Regulated vibrator power supply prevents calibration shift during battery aging.

**LABORATORY RATEMETER**

Victoreen Model 524A is AC powered. Calibrated in counts per minute. Six sensitivity ranges. Only three controls. Meter and loudspeaker rate reporting. Built-in recorder jack. Three time constants.

## GM COUNTERS...

**VICTOREEN MODEL 389C THYAC**

The GM field-type ratemeter has a case identical with that shown at top of page. Time proven, reliable circuit. Single control. Meter and headphone rate reporting. Regulated vibrator power supply prevents calibration shift as batteries age. Selected by civil and military authorities.

**ISOTOPE RATEMETER**

Laboratory type. AC powered. The Victoreen Model 524 has six sensitivity ranges. Three controls. Three time constants. Calibrated in counts per minute. Meter and speaker rate indication. Built-in recorder jack.

This GM type probe has a thumb operated sliding shield for beta discrimination. Stainless steel shell; water-tight. Uses either the 1B85 or 6306 bismuth enriched counter tube. The 6306 is nearly six times as sensitive on $I^{131}$.

**GM TYPE PROBE**

Variations of the portable models are available for high sensitivity aerial and drill hole surveys.

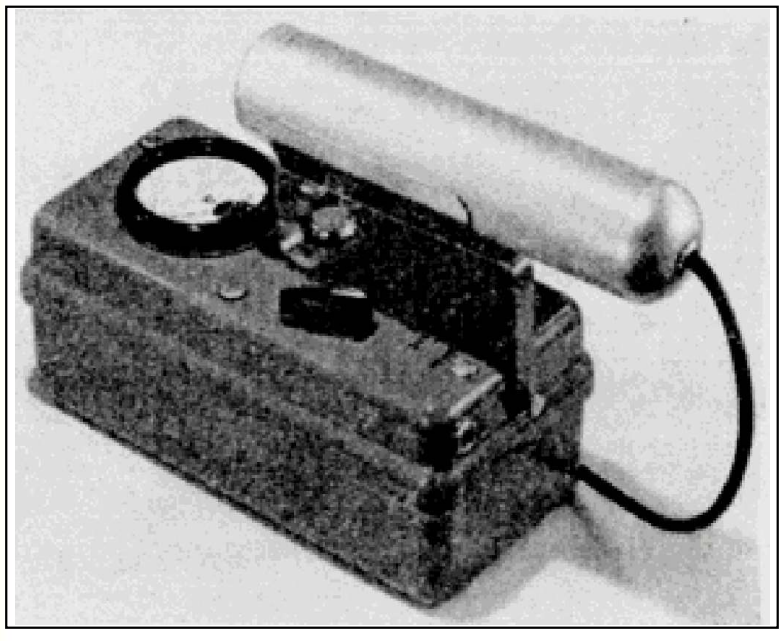
*Medical Instruments Division*

**The Victoreen Instrument Co.**

5806 HOUGH AVENUE • CLEVELAND 3, OHIO

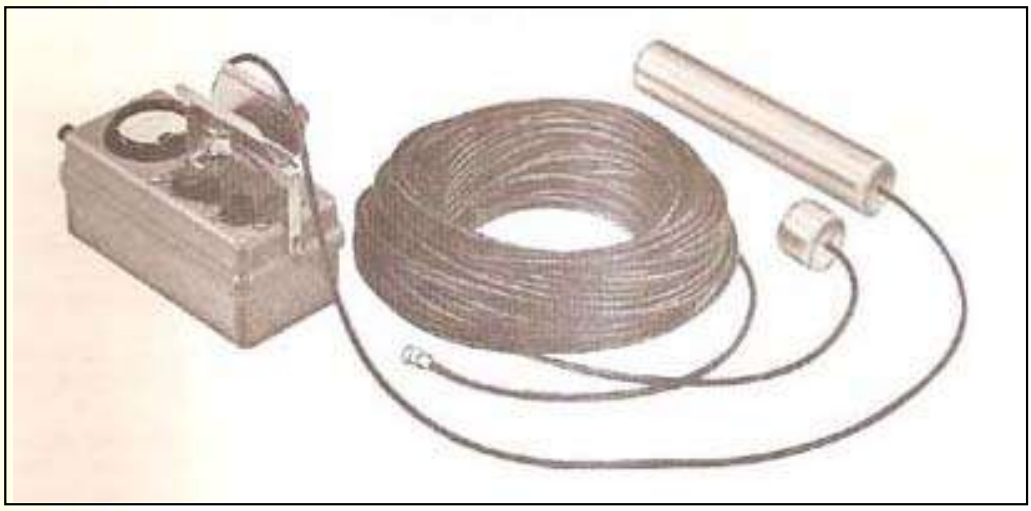
Victoreen Model 389C Thyac 1953 (left) and 1954 (right)

The Model 389-F is a compact, portable and lightweight field scintillator introduced in 1953. It has a single control and three ranges of 0.5, 5 and 50 mR/h. It can also be obtained with a scale of 800, 8,000 and 80,000 cpm. It has a fiberglass reinforced, rugged case. The probe is 2" diameter by 8.5" long and contains a phototube and 1" x 3/4" NaI crystal and metal shield. The probe has a 4' cable. It uses one 4.5 and one 1.5 volt batteries. An alpha detector head is also available. The unit was 8.5" x 10" x 4.75" and weighed 7.5 lbs.



Victoreen Thyac Model 389-F 1953

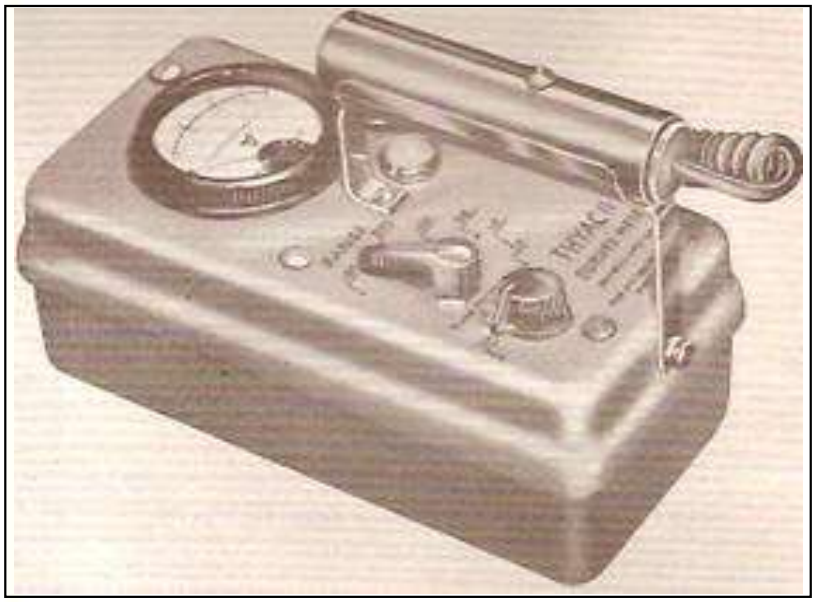
The Victoreen Model 389H Super Scintillac Counter was offered in 1955. It was designed for the professional prospector with high sensitivity for ground, air and drill hole exploration. It has a long cable so the probe can be suspended from an airplane or in drill holes. It has 6 sensitivity ranges 0.025, 0.05, 0.25, 0.5, 2.5 and 5 mR/h. The case was 10: x 4-3/4" x 8-1/4" and weighed 8.5 lbs. The probe was 2" dia x 12" long. IN 1955, the unit sold for $715 with the standard NaI detector or for $1140 with a 2" x 2" NaI. A 50' cable could be purchased for $35.



Victoreen Model 389H Super Scintillac 1955

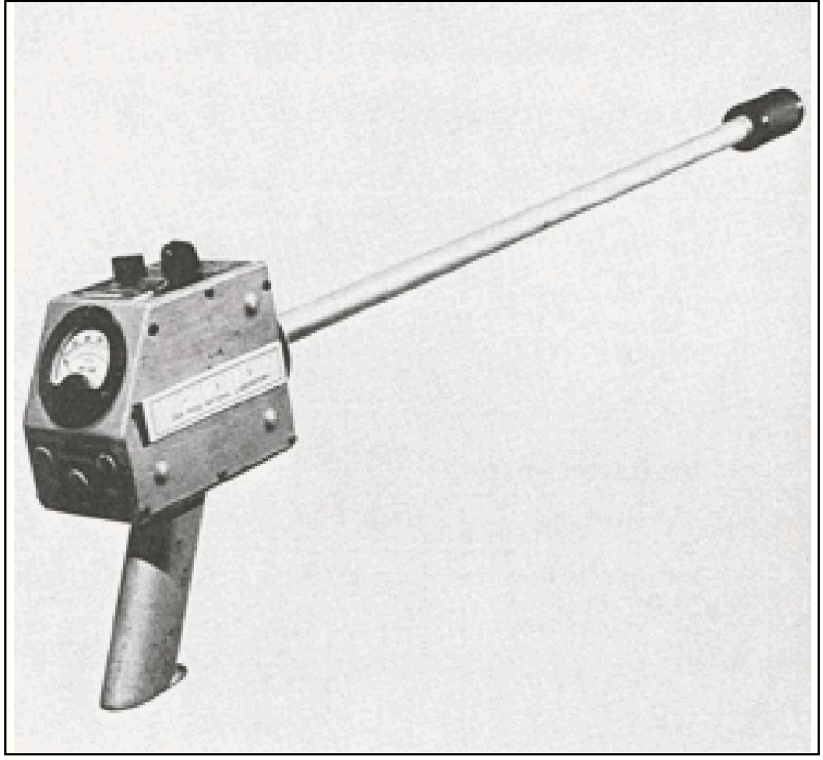
The Victoreen Thyac III 389C was originally designed for the US military. It sold for $225 in 1955. It comes in a rugged case, and weighs 5.5 lbs including probe. The case is fiberglass reinforced plastic and measures 10” x 4.75” x 6.75”. The GM is located in the probe with a four foot cable. It also has a beta shield. The meter ranges from 0.2, 2.0 and 20 mR/h. It operated from one 1.3 volt mercury cell and one 4.5 volt battery. It is voltage regulated maintains calibration as the battery ages. It comes with a carrying strap, batteries, and earphone.

The Victoreen Thyac II Model 646 was an improved version of the Model 389C Thyac and sold for $255 in 1955. The probe housed the geiger counter with a slide to expose the window for beta counting. The case was 10" x 4-3/4" 6-3/4" and weighs 5-7/8 lbs. It featured a six-range sensitivity from 500, 1000, 5000, 10,000, 50,000 and 100,000 counts per minute. The unit would read 0.2 mR/h at 800 counts. It also comes with four time constants from ½ to 10 seconds. It was designed for laboratory use or for uranium prospecting. It also had a deep well probe with a 100' cable (expandable up to 500') for $95.



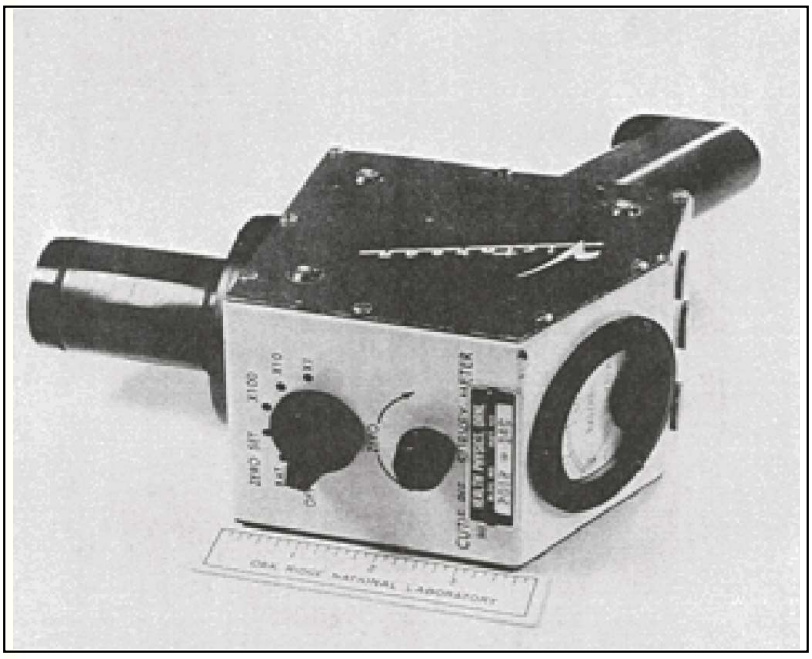
Victoreen Thyac II Model 646 1955

The Cutie Pie is a portable, battery operated, air ionization chamber for the detection of beta and gamma radiation. Measurement ranges are 50 mR/h to 5000 mR/h. The ionization chamber is 7.6 cm diameter by 14.4 cm long. The end window of the chamber is 6 $mg/cm^2$ cellophane and the walls are 440 $mg/cm^2$ phenolic. The end window has a removable beta shield.

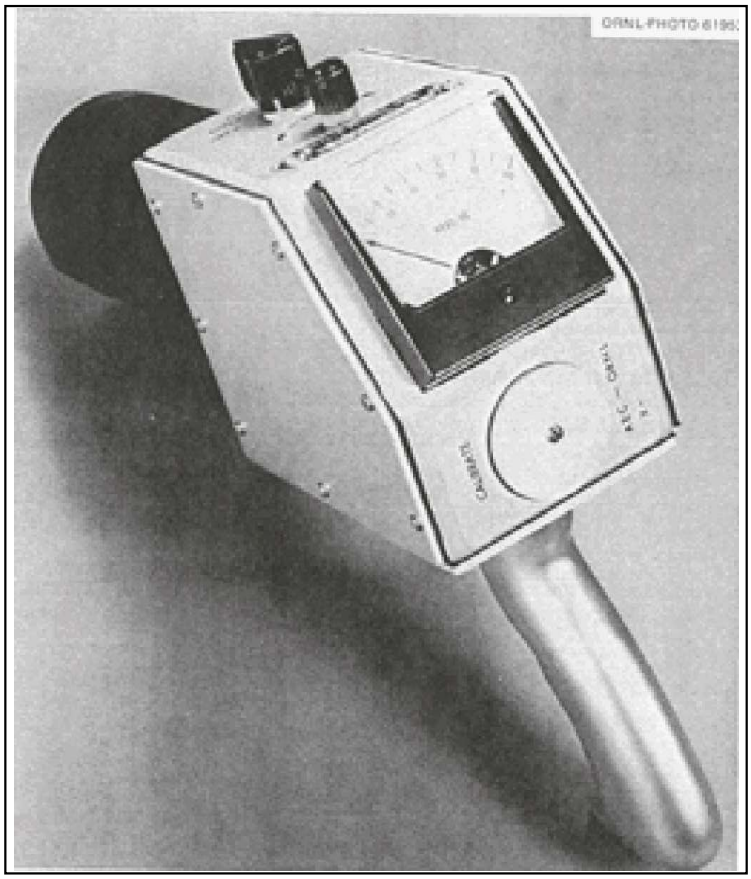


Victoreen Cutie Pie with Expansion


Victoreen Cutie Pie

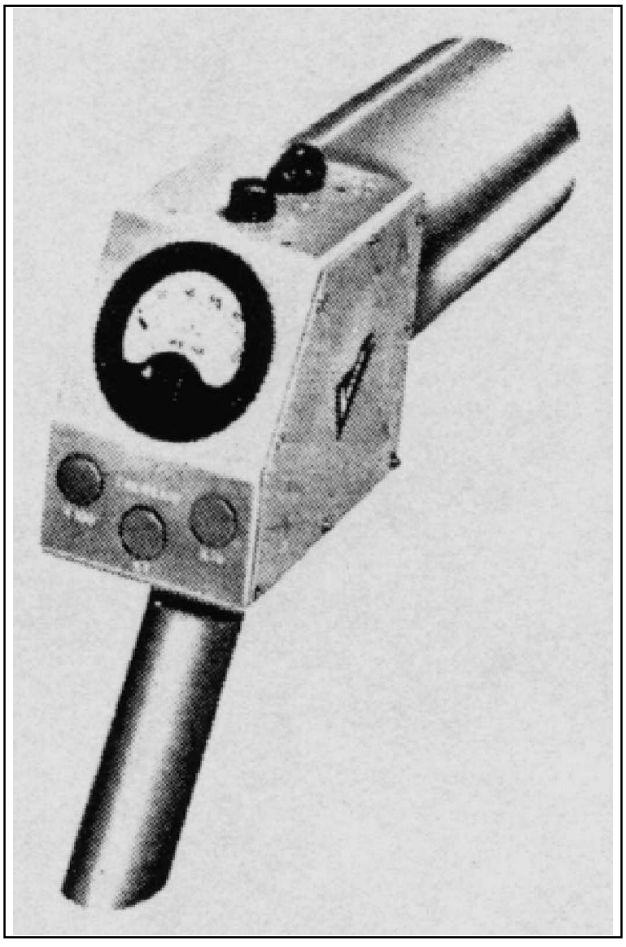


Victoreen Cutie Pie High Range



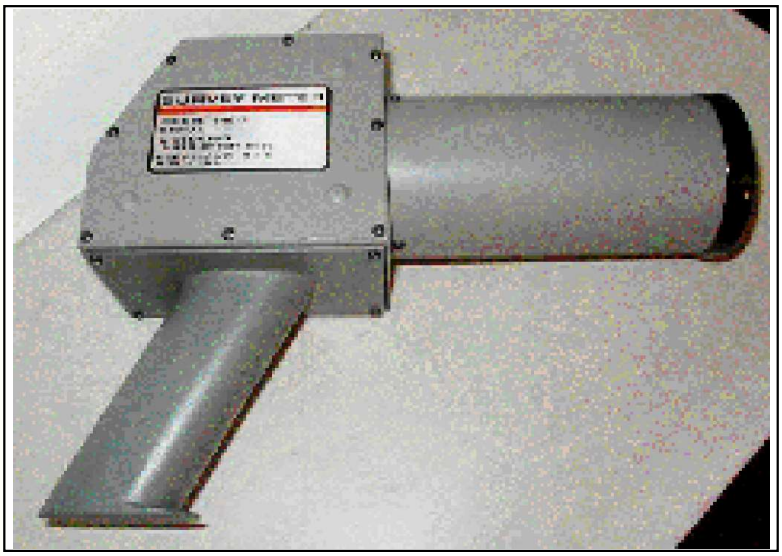
Victoreen Cutie Pie Oak Ridge

The Cutie Pie Model 740 was introduced in 1955. It was designed to detect alpha, beta and gamma radiation. It is battery operated and has three ranges from 100, 1000 and 10,000 mR/h. It was engineered to requirements of the Health Physics group at Oak Ridge National Laboratory. Measures x-ray and gammas from 40 keV to 2 MeV. It will measure alphas down to 2-3 MeV and 35 keV betas. The Model 740A has ranges from 50, 500, and 5000 mR/h and the Model 740B ranges from 25, 250, and 2500 mR/h.



Victoreen Cutie Pie Model 740 1958

Victoreen Cutie Pie Model 740B



Victoreen Cutie Pie Model 740-F

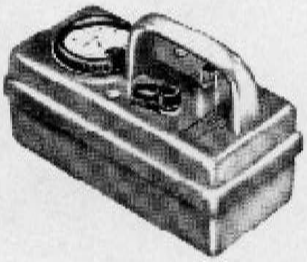
for accurate, positive radiation measurement

# SURVEY METERS

*from Victoreen*

***Gamma Dose Rate Meter, Model 592***

Features extremely high sensitivity that gives significant linear readings below tolerance dosage. Superior wave length independence over entire energy range makes the Model 592 ideal for determination of leakage and true dose rate of gamma and X-rays. Ranges 0-10, 0-100, 0-1000 mr/hr. Accuracy ± 10% of true dose.



***Thyac, Model 389C***

In wide use by government agencies and industry for measurement of beta and gamma radiation. Also available with thin end window in Geiger tube for alpha or weak beta detection. Single control selects ranges of 800, 8000, 80,000 counts/min (0.2, 2.0, 20.0 mr/hr).

***Cutie Pie, Model 740***

Stable and reliable alpha, beta and gamma dose rate measuring survey meter engineered to requirements of Health Physics group of ORNL. Also for field and laboratory survey work, and for monitoring radiation sources and isotopes. Has no switching transients. Each range calibrated separately. Accuracy ± 10% of full scale. Energy dependence ± 15% for gamma or X-rays from approximately 40 kev to 2 mev. Minimum energy detected 2-3 mev for alpha, 35 kev for beta, 40 kev to 2 mev for gamma or X-rays. Ranges: 0-100, 1000, 10,000 mr/hr for Model 740; 0-50, 500, 5000 mr/hr for Model 740A, 0-25, 250, 2500 mr/hr for Model 740B.

VICTOREEN ALSO MAKES scintillation type survey meters and Civil Defense approved portable monitors.

For full details on Victoreen survey meters write for your copy of Form 3044B.

*The Victoreen Instrument Company*

5806 Hough Avenue • Cleveland 3, Ohio

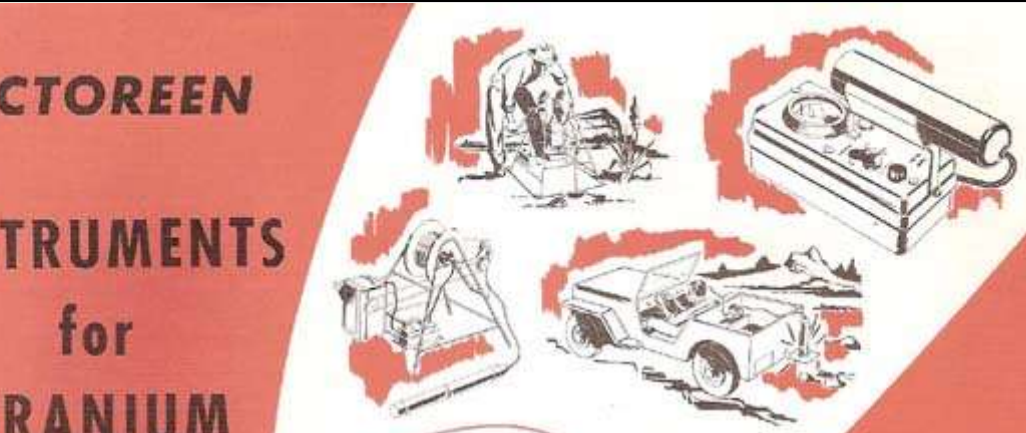
WORLD'S FIRST NUCLEAR COMPANY

Victoreen Ad 1958

**Victoreen Instruments for Uranium Prospecting Catalog 1955**

VICTOREEN

# INSTRUMENTS for URANIUM Prospecting and MINING



# LABORATORY COUNT RATEMETER

The Isotope Ratemeter operates from a 110 volt, 50-60 cycle, a.c. power source, hence, it is essentially a process control or industrial laboratory instrument for the detection and measurement of alpha, beta, and gamma radiation from any source. It is well suited for radiometric assaying of rock or ore sample, radioisotopes, or the selection of radioactive ore on conveyor belts. It may be used in prospecting where power is obtainable from motor-generator sets.

Model 524 is the geiger counter type. Both beta and gamma radiation are measured with this instrument. It is equipped with a 900 volt vibrator power supply. Model 524A utilizes a scintillation detector which, when equipped with the appropriate phosphor or crystal (supplied in inter-changeable heads to be attached to the probe) will detect either alpha, beta, or gamma radiation.

The ratemeter provides a choice of any six ranges of sensitivity and three time constants. Count rate is indicated by meter or through a loud speaker. A built-in jack is used to connect any standard 1 ma, graphic recorder. This signal may be used to actuate a select-reject switch for radioactive material passing on a conveyor belt.

The counter tube of the 524 is mounted in a cylindrical steel probe in a manner that allows the operator to extend or withdraw the tube into the probe by action of the thumb. If the tube is extended both beta and gamma radiation are detected. When the tube is pulled back into the probe only gamma radiation is detected, as beta radiation will not penetrate the steel wall.

Model 524A is supplied with a scintillation detector which has much higher efficiency than a geiger tube for gamma radiation measurement. The standard probe is equipped with a 1" by 1" sodium iodide (thallium activated) scintillation crystal. Probes with larger crystals may be supplied and adaptors with phosphors for alpha or beta detection are also available. Refer to the probe table on the back cover for data specifying types used with the Isotope Ratemeter.


*Model 524 Isotope Ratemeter with probe, 1B85 tube, and Instruction Manual* . . . . . $375.00

*Model 524A Isotope Ratemeter with scintillation probe Model 587 (1" by 1" crystal), Instruction Manual.* . . . . . $545.00

## FEATURES

Simple Three Knob Operation — Six Sensitivity Ranges — Operates on 110 volts, a.c.

Recorder or Selector Switch Jack Connection

Regulated Power Supply — No Batteries — Three Time Constants

## TECHNICAL DATA

**Radiation Detected:**
Model 524: Beta, Gamma
Model 525A: Alpha, Beta, Gamma (depending on crystal or phosphor used).

**Sensitivity Ranges:** 0-300, 0-1000, 0-3000, 0-10000, 0-30000, 0-100000 c/m

**Time Constants:** ½, 5, 25 seconds

**Power Input:** 110 Volts, 50-60 cycle, a.c., 30 Watts

**Cabinet:** 7" by 10" by 8" (approx.)

**Probe:**
With Model 524: 1¼ diam. by 5½"
With Model 524A: 2" diam. by 8-1/8"

**Weight:**
Cabinet: 21½ pounds
Probe, with 524A: 1½ pounds
Probe, with 524: ¾ pounds

**Shipping Weight:** 35 pounds (approx.)

## RADIOMETRIC ASSAY SHIELD

The Radiometric Assay Lead Shield is used with geiger counters 631, 389C, 646, or 524, which use similar probes with a 1B85 tube. The probe is inserted in the horizontal opening; a cup containing ½ inch of the pulverized ore, or material to be assayed, is placed in the top opening. Extraneous radiation is absorbed by the lead shielding, giving a very low background count rate in absence of the sample. *Model 648* . . . $35.00

# SCINTILLAC COUNTER

## MODEL 645

## FEATURES

High Efficiency Scintillation Detector

Reliable, Proven Circuit

Six Sensitivity Ranges

Four Time Constants

Tough, Sturdy Case

Regulated Power Supply

Long Battery Life. 110 Hours Operation at Four Hours Per Day

Economical Battery Replacement — Under $1.50

Frequently the prospector, geologist or mining engineer requires a radiation detector that has much greater sensitivity than a geiger counter, particularly for rapid coverage of large areas of land by automobile or airplane. The greater sensitivity of the Scintillac – *a scintillation counter with the latest design features* – is important to the prospector on foot, also. Using a Scintillac, he will detect uranium minerals which would ordinarily be overlooked.

The six sensitivity ranges and four time constants provided by the Scintillac will satisfy nearly all field conditions which the prospector will meet. Ranges and time constants are selected by switches on the top of the case at the operators finger tips. Radiation is registered on a large meter and through earphones.

All components, circuitry and batteries are housed in a tough, water tight, reinforced, two- section case. One look inside shows the solid engineering design by top notch men with years of experience in development of radiation instruments. Included is a vibrator power supply which furnishes regulated plate voltage to the tubes in the ratemeter. Regulated voltage ensures accuracy of meter readings despite battery aging.

For detection of gamma radiation a probe containing a sodium iodide (thallium activated) scintillation crystal, photomultiplier tube, and circuitry, is supplied. A mu metal shield eliminates undesirable magnetic effects.

Probes may be selected with different size crystals (1" by 1", 1½" by 1¼", or 2" by 2") for gamma detection; phosphors also are available for alpha or beta detection. Phosphors are mounted in adaptors which are interchangeably threaded to the body of the probe. All parts are shock-mounted inside the smooth, anodized aluminum probe. A BNC type connector permits the probe to be instantly connected to the Scintillac.

For mobile and aerial prospecting, a special scintillation probe (Model 623A), heavily shielded by lead and equipped with a shock mounted flange, which supports the probe on car or airplane floor, may be ordered. This model has a 1" x 1" NaI (Tl) crystal. Lead shielding is not less than ¼" minimum thickness, yet the weight of the probe is only 11 pounds.

An adjustable, plastic carrying strap is supplied for shoulder use when prospecting is done on foot.

*Model 645, with Probe Assembly 587B, Carrying Strap, Earphones, and Instruction Manual . $495.00*

*Same as above except 1¼" x 1½" Crystal – Specify 587J Probe. . . . . $545.00*

*Same as above except 2" x 2" Crystal – Specify 647 Probe. . . . . $970.00*

*Model 623A Scintillation Probe in Lead Shield with Shock Mounted Flange. . . . . $370.00*

## TECHNICAL DATA

**Radiation Detected:** Alpha, Beta, Gamma (depending on crystal or phosphor used)

**Sensitivity Ranges:** 0-500, 0-1000, 0-5000, 0-10,000, 0-50,000, 0-100,000 c/m

**Time Constants:** ½, 1, 3, 10 seconds

**Batteries:** One 1.3 v, RM-4 cell; One 4.5 v, Eveready No. 736 cell

**Case Size:** 10" by 4¾" by 8"

**Probe Size:** 2" diam. by 8½"

**Weight:** 7 pounds (including probe)

**Shipping Weight:** 12 pounds (approx.)

# SUPER SCINTILLAC COUNTER

## MODEL 389H

This scintillation counter is designed to satisfy the exacting demands of the professional prospecter who requires a survey meter of great sensitivity and range, which can be used on the ground, in the air, and in drill-hole exploration. This meter is quickly adapted to detect alpha, beta or gamma radiation through the use of interchangeable phosphors in the head of the probe. It is a highly versatile scintillation counter that will handle most prospecting requirements.

The design of the 389H permits the use of a long connecting cable between the probe and control unit such as to log radiation in drill-holes or used to suspend the probe from an airplane. Impedance matching transformers have been built into both probe and control unit.

The Multi-purpose survey meter has a built-in jack and amplifying circuit for attaching and operating a standard 0-1 ma graphic recorder such as the Esterline-Angus. Thus a graphic record is obtained of radiation intensity along the path of the probe.

The compact unit is built in two sections with meter, range and time-constant selectors, flasher light, and handle on the top section. The flasher indicates that regulated high voltage is being supplied to the photo-multiplier tube in the probe. A vibrator power supply furnishes regulated high and plate voltage, thereby maintaining calibration despite battery aging.

The six sensitivity ranges enable the prospector to select a range which will produce a reading on the upper half of the scale where accuracy is greatest. Four time constants are provided. Selection of an appropriate time constant reduces random meter fluctuation under any specific set of operating conditions.

*Model 389H Super Scintillac, 587E Probe, Carrying Strap, Instruction Manual . . . . . $715.00*

*Same as above except 2" x 2" Crystal Gamma Probe 647A. . . . . .$1140.00*

*Model 634 Cable Assembly, 50 feet of Cable and Connectors . . . . . $ 35.00*

*Additional Cable, Per 50' Length. . . . . $ 7.00*

## FEATURES

Interchangeable Probe Heads
With Different Phosphors for Alpha, Beta or Gamma Radiation Detection

Built-in Impedance Matching Transformers
For Short or Long Cable Between Probe and Meter

Six Sensitivity Ranges for Very Wide Sensitivity and Good Accuracy

Four Time Constants to Satisfy All Operating Conditions

Regulated High Voltage to Maintain Calibration as Batteries Age

Built-in Amplifier and Zeroing Control for Graphic Recorder

## TECHNICAL DATA

**Radiation Detected:** Alpha, Beta, Gamma (depending on phosphor)

**Sensitivity Ranges:** 0.025, 0.05, 0.25, 0.5, 2.5 and 5 mr/hour

**Time Constants:** 0.5, 1, 3, 10 seconds

**Case Size:** 10" by 4¾" by 8¼"

**Probe Size:** 2" diam. by 12"

**Batteries:** Two 1.3 v KM-4 cells; Two 22½ v Eveready No. 412 cells; One 4.5 v Eveready No. 736 cell

**Weight:** 8½ pounds (including probe)

**Shipping Weight:** 14 pounds (approx.)

# THYAC, *GEIGER COUNTER*

## MODEL 389C


## FEATURES

Proven, Reliable Circuit

Rugged, Heavy Duty, Watertight Case

Regulated High Voltage

Calibration Maintained While Batteries Age

Long Battery Life

Operates 110 Hours at Four Hours Per Day

Accuracy Within 10%

One Control at Finger Tips

**Replacement Cost of Standard Radio Batteries Less Than $1.50**

This model has set a new standard of reliability and ruggedness in portable geiger counters. Originally designed to rugged military specifications, its continous use by many government agencies attests to its wide acceptance as the best quality instrument in this class. For the prospector covering rugged terrain on foot, the Thyac will always furnish accurate, semi-quantitative measurement of beta and gamma radiation despite hard physical abuse. Geological survey teams, mining companies, ore assay stations – all report the Thyac tops for dependable, reproducible measurements day in and day out.

The case is reinforced by fiberglass and contains all components, circuitry and batteries. One look inside shows the solid engineering design by top notch men with years of experience in development of radiation instruments. The geiger tube is contained in a stainless steel cylinder which may be held in the hand when exploring. The water proof probe is connected to the counter instrument by a four foot, self-coiling cable. The counter tube is protected against damage by a metal, grid-like jacket. Tube and jacket slide in or out of the cylinder by pressure of the thumb. When extended, the counter tube detects beta and gamma radiation. When withdrawn into the cylinder, beta radiation is excluded and only gamma rays are detected.

Low intensity, beta and gamma radiation is indicated on the large meter dial and by earphones. Inexpensive batteries supply power to a vibrator power supply which in turn, furnishes regulated high voltage to the counter tube and regulated low voltage to the ratemeter circuit. The use of regulated voltage maintains instrument calibration with reproducibility of readings despite battery run down, a feature found in only a few of the best geiger counters.

Meter, range switch and pilot light are on the top of the case. A carrying handle, which also acts as a probe clamp, is conveniently placed. A shoulder strap is provided. Normal calibration is in counts per minute. Upon request it will be calibrated on radium over the ranges of 0.2, 2.0 and 20 mr/hr.

*Model 389C Thyac, Probe with 1B85 counter tube, Batteries, Shoulder Strap, Earphone and Instruction Manual . . . . . $225.00*

## TECHNICAL DATA

**Radiation Detected:** Beta, Gamma

**Sensitivity Ranges:** 800, 8000, 80000 c/m; 0.2, 2.0, 20 mr/hr (with 1B85 tube on gamma rays from radium)

**Batteries:** One 1.3v RM-4 cell; One 4.5v Eveready No. 736 cell

**Shoulder Strap:** Heavy Plastic; Adjustable Length

**Case:** Fiberglass-reinforced Plastic 10" by 4¾" by 6¾"

**Probe:** Stainless steel; 1¼" diam. by 5-1/8"

**Weight:** 5-7/8 pounds (including probe)

**Shipping Weight:** 10 pounds (approx.)

# THYAC II, *GEIGER COUNTER*

## MODEL 646

This model relies on the proven Thyac circuit but incorporates improvements which make it a more versatile counter. Additional sensitivity ranges and time constants have increased its popularity and effectiveness as a prospecting instrument, since a more accurate radiation intensity pattern over an area can be established. Here-to-fore confined to surface exploration and surveying, the Thyac II, by attaching a deep-hole probe, can now furnish accurate measurement of radiation in drill-holes.

Six sensitivity ranges of 500, 1000, 5000, 10000, 50000 and 100,000 counts per minute are provided. A wide selection of time constants (½, 1, 3, and 10 seconds) is offered to give the speed of meter response required for a given operating condition. For example, the person walking rapidly over the ground must have a rapid response from the meter while the laboratory assayor will use a longer time constant to get accuracy.

An external BNC type connector on the case top permits probes to be quickly connected or disconnected. In addition to the standard hand probe, a deep-hole probe (No. 646-10) may be used for sub-surface exploration. Beta and gamma radiation detected by the probe, is indicated on the easily read meter or through earphones. Selector switches for ranges and time constants are located near the carrying handle.

Components, circuitry, and batteries are enclosed in a rugged, fiberglass-reinforced, water tight case. The two sections of the case are secured by four Dzus fasteners. Look at the works of a fine watch and admire its precision design and workmanship. Similarly, expose the circuitry of the Thyac II to admire its compact design, precision arrangement, and fine workmanship.

The hand probe contains a counter tube mounted so that it can slide in or out of a stainless steel cylinder. When withdrawn into the cylinder, beta radiation is excluded from the counter tube.

The accessory deep-hole probe (No. 646-10) is a plated steel cylinder ¼ inch in diameter and 12 inches long, especially constructed for drill-hole exploration. This water tight probe contains a 6530 counter tube. The probe comes with 100 feet of cable, but more may be ordered to reach depths of 500 feet or more. Impedance matching transformers are built into probe and cable.

See the table on the back for accessories used with the Thyac II.

*Model 646 Thyac II with Hand Probe, 1B85 Counter Tube, Carrying Strap, Earphones and Instruction Manual* . . . . . $255.00

*No. 646-10 Deep-Hole Probe, 6530 Counter Tube, 100 ft. Cable* . . . . . $ 95.00

*No. 648 Radiometric Assay Lead Shield* $ 35.00

### TECHNICAL DATA

**Radiation Detected:** Beta, Gamma

**Sensitivity Ranges:** 500, 1000, 5000, 10000, 50000, 100000 c/m

**Time Constants:** ½, 1, 3, 10 seconds

**Radiation Indication:** Meter, Earphones

**Batteries:** One 1.3 v, RM-4 cell; One 4.5 v Eveready No. 736 cell

**Shoulder Strap:** Heavy Plastic

**Case Size:** 10" by 4¾" by 6¾"

**Case Finish:** Green, Hammertone

**Hand Probe Size:** 1¼" diam. by 12"

**Weight:** 5-7/8 pounds

**Shipping Weight:** 10 pounds (approx.)

### FEATURES

Proven, Reliable Circuit

Six Sensitivity Ranges

Four Time Constants

External Connection For Quick Fastening of Probe

Regulated high and Plate Voltage From Vibrator Power Supply

Calibration Maintained as Batteries Age

Long Battery Life – 110 Hours of Operation at Four Hours Per Day.

Battery Replacement Cost Under – $1.50 Per Set

# VIC-TIC, *GEIGER COUNTER*

## MODEL 631

### FEATURES

Light Weight Aluminum Case For Effortless Carrying

Loud Speaker With Transistor-Amplifier For Good Listening

Four Sensitivity Ranges Including Extra-Sensitive Background Range

Quick, Simple Access To Batteries And Counter Tube

Uses Standard Portable Radio Batteries Obtain Anywhere

Accessories Increase Usefulness

Built-In Jack For Accessory Connection

Long Battery Life

**Over 100 Hours At 4 Hours Per Day**

**Battery Replacement Cost – About $2.75**

The versatile Vic-Tic is the ideal detector for the economy minded part-time prospector, and readily handles the requirements of many professionals. Alone, it is a complete, self-contained detecting unit, but its versatility is increased by the use of accessories. Accessory probes and the Bismuth Six Pack may be connected to the Vic-Tic in an instant. Accessories may be added, item by item, after the initial purchase of the Vic-Tic to round out the complete prospecting gear.

Advanced circuit design, use of top-quality electronic parts including a transistor-amplifier to drive the loud speaker, expert engineering, and thorough factory testing of every Vic-Tic are combined to produce this unsurpassed, low-cost counter.

The Vic-Tic is so very light in weight (only 3 pounds) that it may be carried all day by the prospector without effort. Radiation is indicated on an easily read meter, and by a transistor-amplified loud speaker. There are no bothersome earphones needed as the clear, distinct sound from the speaker can be heard as far as 100 feet away. A switch located to the right of the handle turns on the loud speaker and adjusts the pitch or tone so that it may be distinctly heard, even in a boiler factory. Each of the four sensitivity ranges, including the extra-sensitive background range, is selected by a switch within easy reach.

Access to batteries and counter tube, for inspection or replacement, is had by removing the bottom of the case. It is only necessary to remove a single bolt. Accessories such as the hand probe, the deep-hole probe, and the Bismuth Six Pack plug into a recessed jack on the front of the case. When an accessory is plugged in, the counter tube in the Vic-Tic is automatically disconnected.

The anodized aluminum case is finished in an attractive color, and a canvas carrying or shoulder strap is supplied. Either a heavy, water-repellant, canvas case or a fitted leatherette case may be obtained, as an accessory. The canvas case is so designed that the Vic-Tic may be used with the meter exposed, or protected from rain and snow.

## TECHNICAL DATA

**Radiation Detected:** Beta, Gamma

**Sensitivity Ranges:** 200, 1000, 10000, 100000 c/m

**Rate Indication:** Meter and Loudspeaker

**Case:** Anodized aluminum

**Batteries:** One 1½ v Eveready No. 720 cell, One 67½ v Eveready No. 477 cell

**Case Size:** 6½" x 4½" x 3½"

**Weight:** 3 pounds

**Shipping Weight:** 10 pounds (approx.)

ENDICOTT 1-6200

The Victoreen Instrument Company

DESIGNERS AND MANUFACTURERS OF SCIENTIFIC INSTRUMENTS

EXECUTIVE OFFICES • 3800 PERKINS AVENUE • CLEVELAND 14, OHIO

GENERAL OFFICES AND FACTORY • 5806 HOUGH AVENUE • CLEVELAND 3, OHIO

Dear Sir:

Thank you for your request for information about our instruments for uranium prospecting and mining. The enclosed catalog describes the widely known Victoreen counters.

Thousands of radiation instruments made by Victoreen since 1928 are still in use. The current models are well known to government groups including USAEC, Geological Survey Teams, and Civil Defense Units, as well as to Industry, Hospitals, and to Prospectors and Miners.

In selecting your instruments, consider the importance of the following factors:

1. The product of a well established manufacturer is of first importance. Victoreen is the oldest manufacturer of radiation measuring instruments and Components.

2. If you are investing considerable money and time to travel to remote locations, you will find it to your advantage to invest a little more in a better quality, more reliable instrument. Victoreen instruments range in price from $125.00 and up.

3. Such features as light weight, rugged construction, reliable circuit design, versatility, accurate calibration, wide sensitivity selection, and compactness spell out the difference between an average counter and a very good counter. All Victoreen counters have these features and more.

4. Low maintenance costs mean more dollars in your pocket in the long run. The only two items you must expect to replace periodically are inexpensive: the standard 1B85 Geiger tube - - - $7.50, and Batteries - - - less than $1.50 per set per instrument for most models.

Prompt delivery is available from our stock or from the prospecting instrument dealer in your area.

Get the best to get results!

Very truly yours,

THE VICTOREEN INSTRUMENT COMPANY

Frank Manning Jr.

Frank Manning, Jr.
Instruments Division

F. M.:dd

Victoreen Sales Letter 1955

THE VICTOREEN INSTRUMENT CO.

Manufacturers and designers of

Special Physical Instruments

Cleveland, Ohio

Telephone:
ENdicott 4369

Office and Factory
5806 Hough Ave.

June 29, 1938

Dr. Robert M. Taft
105 Rutledge Avenue
Charleston, S. C.

Dear Doctor:

Referring to yours of June 23, regarding your radium meter. We would be interested in having any information which you might have in order that we could decide whether it would fit in with our line.

We wish to thank you for letting us know in advance. With best personal regards, I am

Very truly yours,

THE VICTOREEN INSTRUMENT COMPANY

J. A. Victoreen

JaV:J

J. A. Victoreen

THE VICTOREEN INSTRUMENT CO.

Manufacturers and designers of

Special Physical Instruments

Cleveland, Ohio

Telephone:
ENdicott 4369

Office and Factory
5806 Hough Ave.

February 3, 1939

Dr. Robert B. Taft
105 Rutledge Avenue
Charleston, South Carolina

Dear Doctor Taft:

I am replying to your letter of January 27, as Jack Victoreen is at Cleveland Clinic recuperating from an appendectomy. However, he is coming along nicely.

The radium detector you illustrated appears to be a very serviceable and compact unit which could be sold at a reasonable price.

Our merchandising setup is such that we sell entirely thru manufacturers and dealers which prohibits direct selling. If you have facilities for building these units it would possibly be to your advantage to merchandise direct and we would be more than willing to cooperate with you on any inquiries we may receive.

I will discuss the matter further with Mr. Victoreen on his return.

Sincerely yours,

THE VICTOREEN INSTRUMENT COMPANY

Earl Benson

EAB:J

E. A. Benson

Letters from John Victoreen to Dr. Robert Taft "Radium Hound" 1938 (left) and 1939 (right)