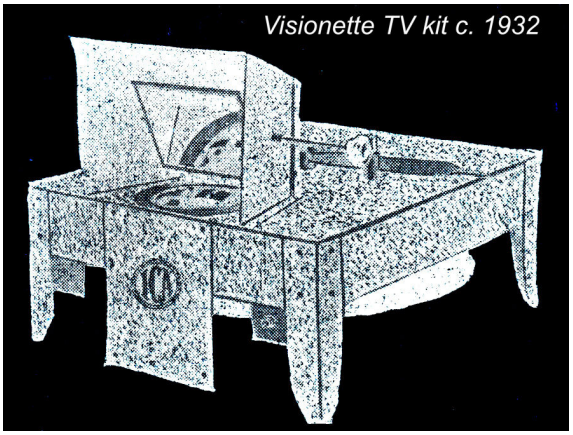
A Glimpse Into Television, 1932

By Bart Lee, K6VK, CHRS Archivist and Fellow, AWA Fellow

A.A. Campbell-Swinton envisioned all-electronic television in 1908. The means to effect his vision had not yet evolved. They did with Phil Farnsworth, and others in the late 1930s. In the meantime, many inventors could transmit images with systems of mechanical dissection of a scene into a stream of electrons. These devices used the Paul Nipkow scanning disk process. Some radio stations broadcast such mechanical television in the 1920s.

This nascent technology required a radio receiver (antenna, *etc*.) and a "televisor" — a device to permit one to see the broadcast steam as an image. CHRS displays one of the best, a 1929 "Visionette," restored by John Staples, with help from John Stuart and Carlos Perez. There is, however, little in the literature by way of a catalog or even list of the early mechanical televisors.

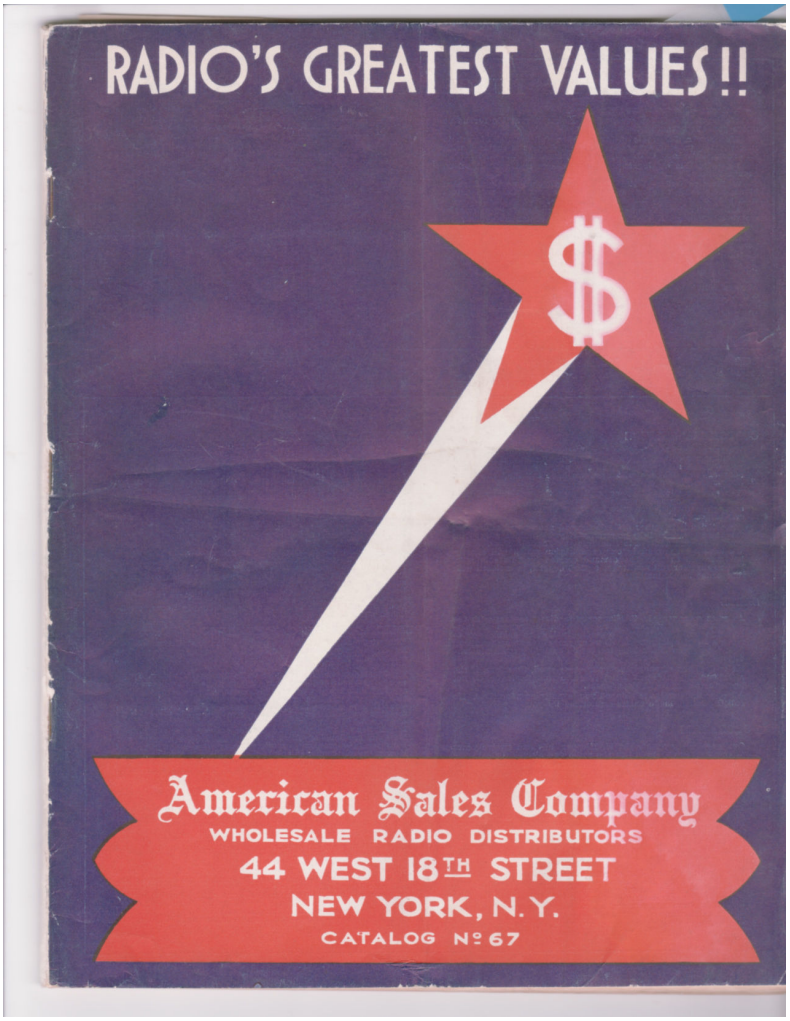
As it happens, the CHRS Radioana Archive holds just such a catalog, as an actual 1932 wholesaler (to the radio trade) catalog. It tells the story of radio and related matters at the beginning of the Great Depression, after the 1929 Crash, by means of the devices for sale at the time. This is television nearly a century ago…



Visionette TV kit c. 1932

One such televisor in the catalog (above) also bore the trade-name “Visionette,” although it came from a different company: “ICA.” This mirror tabletop set from Insuline Corporation of America (ICA) is pretty nearly unique in that it uses a horizontal, rather than vertical, perforated wheel to create the raster lines of the image.

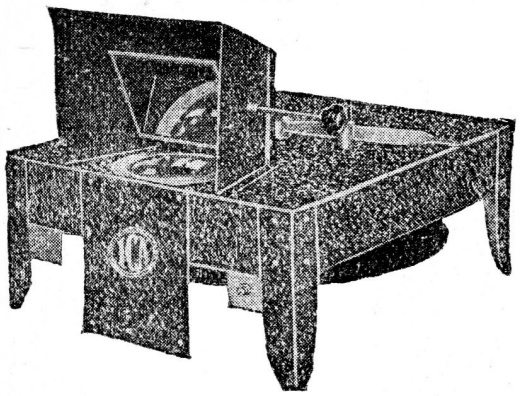
The catalog is that of the American Sales Company in Chicago, “Wholesale Radio Distributors” for 1932. In the prior decade, many a radio shop had opened everywhere in America. They had to get their merchandise somewhere, and the American Sales Company obliged.



The catalog's ad for the ICA Visionette follows; in today's money, that $33 set, assembled, would cost about $700. ICA made at least 40 radios in its day.

I. C. A. VISIONETTE TELEVISION KIT

A scientifically engineered Televisor with the I. C. A. "Twin-Rotor" synchronous motor and adjustable viewing mirror.



Shipping Weight: 20 lbs.

This kit contains all necessary parts to easily assemble and construct a practical and efficient television receiver.

It incorporates several novel features which materially add to the comfort of viewing television pictures. Unlike the system most commonly employed, the image is not seen through a lens, but in a mirror. This accomplishes a threefold purpose. The angle of vision is considerably widened, permitting more people to look in, and the adjustability of the mirror permits the picture to be focused to suit the level of the observer's eyes, whether he is standing or sitting. A lens interposed between the disc and the mirror easily magnifies the picture to twice its normal size without distortion or loss of detail.

The disc is driven horizontally by a small but efficient synchronous motor, insuring constant synchronization with the transmitting station. Vertical and horizontal framing is accomplished by a lever attached to motor.

When attached to the output of a good short wave radio receiver this television outfit will give faithful picture reproduction. Close adherence to the complete set of blueprints and instructions furnished with the Kit will insure the rapid and easy contruction of the televisor.

The kit includes a special mirror, visor with focusing adjustments, a rugged frame, the essential motor parts, a synchronizing control, 60 line scanning disc and Neon tube.

$28.50

Cat. No. 1400

Completely Assembled and Wired
with Neon tube

$33.00

Cat. No. 3923

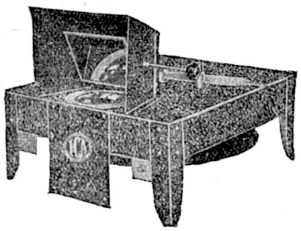
American Sales Co. Chicago, c. 1932 p. 11

Lee de Forest also got into the television business in the early 1930s, as a partnership with C. Francis Jenkins, one of the pioneers. The catalog shows such a set, for something like $1.000 in today's money.

The two pages of the catalog devoted to television follow; they tell a wonderful story of optimism about to meet Depression:

I. C. A. VISIONETTE TELEVISION KIT

A scientifically engineered Televisor with the I. C. A. "Twin-Rotor" synchronous motor and adjustable viewing mirror.



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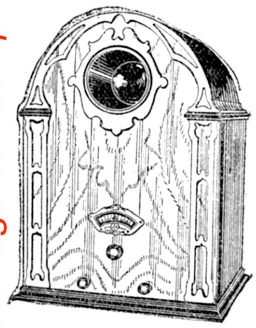
$28.50
Cat. No. 1400

Completely Assembled and Wired
with Neon tube

$33.00
Cat. No. 3923

I. C. A. COMBINATION 5 TUBE SHORT WAVE RADIO AND TELEVISOR



For 110 v., 60 cycle A. C.

Wave Length: 75-200 Meters
Uses Two 235's, One 224, One 247, One 280 Tubes

Complete with Synchronous Motor; 110 V., 60 Cycle, 1200 r. p. m. Aluminum scanning disc, 60 holes. Magnifying lens. Neon lamp and adjustable stand, dynamic speaker.

Here is the ideal complete radio and television outfit for the home. Everything self-contained in a beautiful walnut cabinet. Just snap on the switch and tune in the television station you prefer, or switch over to receive regular short-wave broadcasting.

Single Full Vision Dial Tuning Control, Volume Control and on Off Switch on same knob. Phonograph Jack connections and switch for changing grid bias of detector to more suitable value for phonograph amplification, Special Impedance matching Transformer between Pentode Output tube and Neon Lamp for maximum transfer of energy at all frequencies encountered in television reception. Resistance coupling between Power Detector and Pentode Power Amplifier.

The receiver can also be used for the reception of other than television stations which operate between 75 to 200 meters, such as Amateur Phone Stations, Police Call Signals, Coast Guard, Weather Bureau Aviation Stations, and Ship to Shore Telephone Stations. Weight: 50 lbs. less tubes

$117.60
Cat. No. 1406

DeForest-Jenkins 8 Tube Television and Broadcast Receiver

MODEL J. D. 30

Wavelength 80 to 600 Meters
Uses Two 435's, Two 424's, One 427, Two 445's, and One 480

The last word in an All-Purpose Receiver that brings you a world of radio thrills. Tune in any broadcast program—police radio alarms, airplane calls, amateur conversations, radio experiments. And then for the thrill of thrills, tune in television.

Not only is this receiver primarily an ideal Television Tuner and Amplifier, but in addition it serves as a broadcast receiver by simply turning a switch.

Tuning Range: 80 to 600 meters, divided into two bands.

Audio Amplifier: 20 to 40000 cycles for full-tone reproduction of sound or picture. Two —45's in parallel deliver 4000 milliwatts of undistorted output. Non-motor-boating. Humless. Self-healing electrolytic condensers. Full vision illuminated dial. Combination tone control and speaker-radiovisor switch. Attractive cabinet. **"Rola" dynamic speaker.**

Weight: 32 lbs. **Dimensions:** 21 x 12".

JD-30 Receiver Complete for broadcast or television bands and set of matched DeForest tubes. For 110 volt, 60 cycle A. C.

$47.70
Cat. No. 1611

Pioneer 7 Tube Television Receiver Chassis

100-200 Meters
Uses two 235, three 227, one 247, one 280 tubes

A fine Television Receiver using 3 stages of resistance coupled amplification (two 227's and one 247). Uses two 235 as R. F. tubes and one 227 as detector.

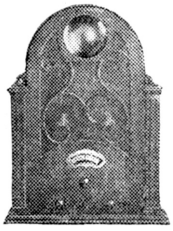
Has a fine audio frequency response from 15-40000 cycles, and incorporates a double filter.

Does not use any plug-in coils.

Furnishes field current of 2500 ohms for a dynamic speaker. Completely assembled and wired. **Less tubes**

$19.75
Cat. No. 3993

"See-All" Combination Short Wave Radio and Televisor



Wave Length 85-220 Meters
Uses two 235, two 224, one 245, one 280 tubes

This combination is a complete radio and Television outfit for the home

Combines all the features of the "See-All" Televisor and receiver, in a beautiful walnut cabinet, size 26 x 18 x 10 inches.

Full vision dial, tone and volume control, with 6" lens. Factory wired.

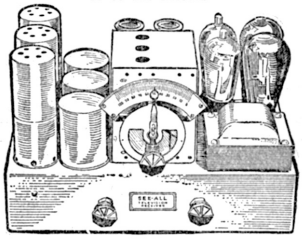
Less tubes and Neon Bulb.

$40.87
Cat. No. 1617

"See-All" Television Receiver Chassis

Especially designed for use with "See-All" Television or any Televisor Equipment.

Uses two 235's, two 224's, one 245, one 280 tubes
85 to 220 Meters



This receiver enables you to receive Television pictures with all their detail. Has flat curve from 20 to 50,000 cycles for true reception. Resistance-coupled amplification in first audio stage, using a 224 tube which feeds into a stage of 245, also resistance-coupled. Output is connected to a Televisor, or to a speaker where Short Wave signals are desired.

For 110 volt, 60 cycle A. C. (Assembled on chassis base, unwired.) (less tubes)

$23.70
Cat. No. 1618

Same as above factory wired. (less tubes) ... .

$26.95
Cat. No. 1619

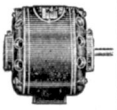
What Are Your Needs for Television Equipment

This page provides access to more or less complete televisors, assembled and as kits to b put together by the adept.

Baldor Synchronous Television Motors

Vertical Mounting

Horizontal Mounting



These Ball Bearing, high quality precision Motors have the Rotors and Shafts ground to a .0001 tolerance. All types are single phase. Can be had in speed of either 900 or 1200 R. P. M. in vertical or horizontal position with coupler.
Models "D" and "Y-2C" will operate scanning discs up to 16 inches.
Models "X-2C" and "W-1C" will operate scanning discs up to 24 inches.

Type D—1/20 H. P. 110 volt 60 cycle A. C. **$21.50**
Cat. No. 1604

Requires a 3 mfd., 550 volts, D. C. condenser, which is not included in price.

Type Y-2C. ⅛ H. P. 110 or 220 volt, 60 cycle A. C. **$33.50**
Cat. No. 1605

Requires a 3 mfd., 550 volts, D. C. condenser, which is not included in price.

Type X-2C. ¼ H. P. 110 or 220 volt, 60 cycle A. C. **$39.50**
Cat. No. 1606

Requires a 4 mfd., 550 volts D. C. condenser, which is not included in price.

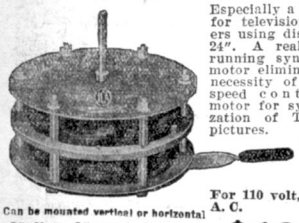
Type WIC. 1/3 H. P. 110 or 220 volt, 60 cycle A. C. **$49.75**
Cat. No. 1607

Requires a 6 mfd., 550 volts D. C. condenser, which is not included in price.

Can also be supplied at small additional cost for 110 volt, 25 cycle A. C.
All models are furnished with couplers.

I. C. A. Television Motor

Newest type. Synchronous. 1200 R. P. M.



Can be mounted vertical or horizontal

Especially adapted for television receivers using discs up to 24". A real smooth running synchronous motor eliminating the necessity of using a speed control on motor for synchronization of Television pictures.

"Twin-Rotor"

For 110 volt, 60 cycle A. C.

8" diam. 3" top to bottom. ⅝" shaft on motor. **$19.90**
Cat. No. 1620

I. C. A. Television Motor Chucks

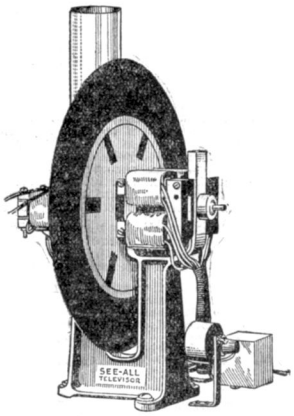
The diameter of the chuck is 6 inches which insures positive alignment of discs to motor. Supplied to fit ¼, ⅜, or ⅜" motor shaft. Specify size of shaft. **$2.95**
Cat. No. 1655

Television Lens

Especially adapted for the "See-All" Televisor or can be used with any Televisor. 6" diameter, 1½" thick.

$1.95
Cat. No. 1613

"See-All" Television Kit



The lowest priced successful quality Televisor being sold.

Easily assembled in less than 30 minutes by anyone.

Get in on the ground floor of this amazing new industry. Be among the first to see as well as hear your radio entertainment. You get all this in this kit: Complete eddy current motor; 60 line square hole double spiral scanning disc made of special alloy aluminum; Rheostat; Condenser; adjustable lamp housing and bracket; Synchronizing wheel; all necessary wiring; complete blue prints of televisor; complete blue prints of short wave receiver; detailed assembling instructions.

Unconditionally guaranteed against mechanical or electrical defects.

For 110 volt, 60 cycle, A. C. **$11.61**
Cat. No. 1414

Aluminum Scanning Disc

Size of Disc 12" Dia.

60 line, square hole, double spiral, made of special alloy aluminum. One of the finest scanning disks made.

$1.75
Cat. No. 1354

Can also quote on 45 or 48 line aluminum scanning disks.

I. C. A. Television Amplifier

Model 115

Weight: 4½ lbs.

The I. C. A. Television, three-stage amplifier is most advanced in features and construction. It is complete with all resistors and coupling condensers thereby taking the place of all apparatus after the detector. Inasmuch as the brilliancy of the Neon lamp is contingent upon the current output of the last amplifier tube or tubes, the amplifier is so wired that it is possible to use two power tubes in parallel.

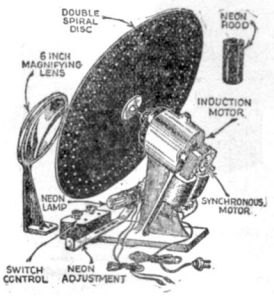
$10.50
less tubes. Cat. No. 1405

Television Lens Assembly

Includes mounting frame, etc. 4" diameter, ½" thick.

$3.25
Cat. No. 1614

Pioneer Complete Television Scanner



Due to unique design, several persons can view the picture at the same time. An 8-inch focal length lens, 6 inches in diameter, gives a 4-inch picture.

PERFECT VISION

The scanning disc and the magnifying lens are both placed at an angle from the vertical, and the neon lamp is viewed from the lower part of the disc instead of the top. This makes possible a perfect view of the picture without necessitating stooping and stretching as is the case with other makes of Televisors. It also allows a smaller and more compact structure. This is an original development of Pioneer engineers.

By the use of round holes in the disc, an enormous amount of light is lost in scanning. A study of this condition led to the adoption of square holes, which, while much more expensive to punch, reduces the loss of light to a minimum. The Pioneer disc also employs 120 holes rather than the 60 generally used. This has the effect of greatly simplifying perfect framing of the picture. These square holes are punched by a specially constructed machine which assures accuracy to the thousandth part of an inch.

Motor—An induction motor is used to drive the disc up to 1200 R.P.M. when it is cut out of the circuit and the Pioneer Synchronizer then drives the disc at exactly the correct speed. The motor operates for less than a minute in starting. There is only one switch to operate. One turn starts the induction motor and the next turn cuts it out of the circuit and allows the Pioneer Synchronizer to function continuously. An exclusive feature of the Pioneer Televisor is the absence of rheostats and speed controls. It is impossible for the Pioneer Synchronous drive to operate at anything but the correct speed. It is absolutely positive in action. This feature is of utmost importance to Television and without it a successful outfit could not be built.

Complete as shown..... **$25.85**
Cat. No. 2178

I. C. A. Television, Telescope and Vision Magnifier

Made up of a special imported magnifying glass and is enclosed in special telescopes. Magnifies the pictures considerably and is made to permit a number of people to view television pictures at one time.

Cat. No.	Diameter	
1403	2½"	$2.94
1404	5"	5.88

American Sales Company, 44 W. 18th Street, New York, N. Y.

This page presents the parts and bare-bones kits that an enthusiast could use to make himself a televisor.

ICA also offered its own suite of parts for making a television set.

Television . . .

. . . with I. C. A. Equipment!

• I C A Television Receiver can be operated as is or installed in a console. Satisfactory to both novice and experimenter. Will work with any Short Wave set capable of tuning in television signals. Supplied in kit form and can be set up in a few minutes.

List Price $75.00—Catalogue No. 51

NOW is the time to prepare for television. Stations are already broadcasting television programs and before long every radio will bring programs into your home that you can See as well as Hear!

I C A has supplied the needs of exacting commercial television experts since 1927. Avail yourself of the benefit of their skill and research. Look for I C A's trademark, your guarantee of satisfaction.

Write today for the I C A catalogue of Television and Radio equipment. We will be happy to assist you in your problems.

INSULINE

CORPORATION OF AMERICA

80 Cortlandt Street New York, N. Y.

ICA UNIVERSAL MOTOR

• Universal motor—Synchronization of the receiving scanning disc is the essential factor for satisfactory pictures. This unit has proved most popular.

Catalogue No. 113
List Price $29.50

ICA TELEVISION KIT

• An ideal kit for experimental work. Developed to use with any standard radio set or short wave radio receivers. Complete lists of parts supplied on application. Some as low as $45.00

ICA PHOTO ELECTRIC CELL

• Photo electric cell—for the advanced experimenter in television transmission. Adaptable also for the talkies, circuit control devices, relays, etc. Bakelite U X 4 prong type base.

Catalogue No. 114-A
List Price $20.00
(1¼" bulb diameter)
Catalogue No. 114-B
List Price $37.50
(3" bulb diameter)

ICA TELEVISION LAMP

• Television Lamp—for operation with an output tube in series. A really rugged job. Striking voltage 100—Min. current to cover plate 5 mils—Max. current 80 mils. Internal resistance 1000 Ohms.

Catalogue No. 114
List Price $10.00

ICA VISION MAGNIFIER

• Vision Magnifier—special magnifying glass enclosed in telescope. 2½" diameter lens for one person. 5" diameter lens permits four persons to view the picture. Indispensable for Television work.

Catalogue No. 111
List Price—2½" Lens, $5.00
Catalogue No. 53
List Price—5" Lens, $10.00

TELEVISION NEWS—Bi-monthly. Application for second class entry at the post office at Mount Morris, Ill., under the act of March 3, 1879, pending.

This ICA ad refers to Hugo Gernsback's "Television News" as a bi-monthly magazine. Interest in TV built with such publications, compromised no doubt by the national distress of the Depression.

As noted in the ICA ad, the TV broadcasts came over the short wave bands, above the broadcast band. The frequencies were often in the two to three megahertz range. For the simpler systems of fewer scanning lines, a bandwidth of about ten kilohertz sufficed. Hence a shortwave radio of the era could capture the standard amplitude modulated TV signals.

I C A Television Receiver can be operated as is or installed in a console. Satisfactory to both novice and experimenter. Will work with any Short Wave set capable of tuning in television signals. Supplied in kit form and can be set up in a few minutes.

List Price $75.00—Catalogue No. 51

Mechanical TV provided lots of fun, and great learning experiences, to radio amateurs, electronic tinkerers and similar enthusiasts. Many stations around the western world, from about 1929 to 1939, catered to this watching "audience," with audio if any on a separate frequency. But big companies such as RCA, and governments with massive resources, saw the virtue of electron television. For better or worse, millions of people, not just hundreds of people would watch. For better or worse…

[17 XI 21, v1, de K6VK] ##