Transmission and Reception by

TELEVISION

cathode-ray type of tube can be used in television it. This article explains the mode of operation number of important and novel features

Kaufman

parts of pictures and it is the efficient reconstruction of the entire series that registers itself on the viewer's mind in determining the merits of the transmissions.

The Radio News group was impressed with the Farnsworth demonstration. And the daily press, too, accorded favorable comment to demonstrations at the Philadelphia laboratory. Figure 2 gives the basic schematic outline of the Farnsworth television transmitter and receiver circuits, virtually identical to the apparatus employed at the Philadelphia press demonstrations. Mr. A. H. Brolly, chief engineer of Farnsworth Television Laboratories, Inc., who jointly with Mr. Farnsworth explained the system to this magazine's staff, prepared the diagram. The pickup of the transmitter, designated on the diagram as A, has been dubbed the "image dissector." The light intensities of an image focused upon its photosensitive surface is converted by the dissector into fluctuations of an electric current. The scanning system also embraces its enveloping coil assembly (B) and the scanning oscillators (C) and (D). Mr. Brolly pointed out that their joint duty is to analyze the area of an image into (Turn to page 375)

Cathode Ray

MAGIC

"EYE"

By Merle Cummings

A NOVEL application of a cathode-ray tube has been made in the "Magic Eye" feature of the new season's RCA-Victor line. The "eye" consists of a special type tube installed horizontally in the radio receiver so that only the dome, with a fluorescent surface resembling the human eye, is visible through a panel opening. When the set is functioning, the "eye" blinks forth with a green light broken only by a tiny fan of shadow. The spread and contraction of the shadow fan denotes just how accurately the set is tuned.

OUT OF TUNE

IN TUNE

THE NEW TUBE AND HOW IT SHOWS TUNING

At the center is shown the new 6ES tube, with the cathode-ray "eye" at the top of the bulb. The two outside views show the end of the tube and the indications of out-of-tune and in-tune positions of the tuning dial.

When the shadow is narrowed to a thin line, the listener knows definitely that his set is tuned to the most resonant point. This feature greatly enhances "silent tuning" inasmuch as the (Turn to page 381)
Farnsworth Television
(Continued from page 331)

a regular succession of surge elements and con-
vert them into corresponding signal currents
adequate for running over but one signal channel.

Current impulses are amplified by an electron
multiplier (M) which is in contact with the
valve, and by vacuum tube amplifiers (P and Q) to
produce signal voltages great enough to modu-
late a radio carrier. Mr. Folley explained that the
tube connections (L and K) between the con-
suming elements and the multiplier, provide sig-
nal impulses when automatically actuated by
devices tuned to the transmission.

The cathode-ray tube (H) is the heart of the
reproducer. It converts the electric signals
impulses into corresponding light signals and
arranges them in such a manner that a trace is
produced upon a fluorescent screen to
represent the image at the transmitter. Thus
with the use of the transmitting system com-
prised of the tube (H), the displaced oscillo-
scope (O) and the tube (H) itself. There
more the scanning oscillations are joined to the
signal channel as shown by P to make possible
cancellation of the cathode-ray tube.

Mr. Folley points out that this procedure is
essential for the production of true pictures
in these cases where the signal is not the series
of impulses constrained to the signal channel.

It was also explained that the focused elec-
tron image in the detector is produced by dis-
placing the cathode-ray tube to a point where it
is spatially correct by means of con-
secutive magnetic fields which move the image
across a fixed aperture. This system small area
of the picture element to produce a current in
an electrical circuit, but it may be ampli-
fied and transmitted over lines by radio. A
resistor field which is included in the ears of
the tube is obtained by adding a trans-
parent magnetic field to the field. Elec-
trons starting from points on the cathode
travel in spiral paths directed along the magnetic
field and are focused to a point at a distance
on the screen.

It was also pointed out that the resistance at
the receiving end could be obtained from
black and white, a red.

A.C.-Operated Pre-Amplifier

This compact pre-amplifier is designed to
be used with crystal microphones and the
Audio Development Company, manu-
facturers of this unit, supplies the fol-
lowing specifications: gain 35 db; re-
cency response, within 1/2 db, from 20 to
10,000 cycles; input impedance, 50
ohms; output impedance, 200 ohms; tubes
required—one type 74 and one type 84.

A New Instrument for the Serviceman

The new Solar capacitor analyzer utilizing
the Wien Bridge method of capacity measure-
ments should be a great aid to the
serviceman for detecting leaking, shunted,
open and intermittently defective
condensers. The capacity range extends from
10000 to 700 microfarads.

A new emission type Tube Tester that tests
all metal and glass metal tubes. Features:

1. A.C. potential readings for metal and glass-
metal tubes. Sensitive A.C. meter for
adjusting line voltage. Leakage and
short test. Tubes tested under load. But
not, Single or double. Available in a
handsome portable unit or in a case with
a metal panel having the most tubes on
black background. Especially constructed
against obsolescence.

Model 430 complete with Triflex instru-
tment having direct reading GOOD-
BAD scale, protected against damage.

Net Dealer's Price $18.00

Model 410—same as Model 430, except
has Readrite direct reading GOOD-
BAD meter. Dealer's Net $14.40

Readrite also manufacture all types of
testers used for servicing radio sets.

See your Jobber. Write for Catalogue.

MAIL COUPON NOW

READRITE METER WORKS
Dept. RH-2, Buffalo, Ohio

Please send me information:
Model 430

Catalogue

Name

Address

City

State