Demonstrates High-Definition Television

By Samuel Kaufman

TELEVISION! An economical receiver revealing large-sized images of live and filmed subjects! A row of dancing girls faithfully reproduced after transmission through the ether! An announcer discoursing and a cartoonist at work are viewed as well as heard on a home-type receiver!

A Special Demonstration

A Mickey Mouse cartoon with all of the famous rodent's capers clearly seen after transmission through the air! These were a few of the highlights of a special demonstration to the Radio News editorial staff at the Philadelphia laboratories of Farnsworth Television, Inc. The special tests were conducted by Philo T. Farnsworth, noted television inventor; A. H. Brolly, his chief engineer, and George Everson, secretary of the company, before the Radio News group, including Laurence M. Cockley, editor; S. Gordon Taylor, managing editor; J. C. Meillon, Official Short-Wave Listening Post Observer for France, and the writer. The entire group was impressed with the clearness of images transmitted both through the air and over wires and reproduced on the convex end of a 9-inch diameter cathode-ray tube in a home-type set.

The Farnsworth Receiver

Here is a complete receiver for home use, showing the cathode-ray tube screen at top and the high-fidelity speaker system in the lower grill. Tuning can be done by any person who knows how to tune a radio set.

Progress at the Philadelphia laboratories has gone ahead by leaps and bounds. The inventor said still greater refinements than those we viewed would shortly be applied. He is planning his own Philadelphia experimental station and expects it to be in operation at an early date.

"Television," Farnsworth declared, and his aides agreed, "has advanced to the point of having real entertainment value. We don't intend upsetting the radio industry but will make contributions to it. Interest in television throughout the world has grown tremendously in the last three or four months.

Need for Standardization

"Television has come through with some of the technical perfections but there are a few other things remaining to be ironed out in the art. For one thing, standardization should be done before commercialization. It is obvious that the Federal Communications Commission should apply the order. It is inevitable that all television groups would want it so, in order to clean up obstacles that are now apparent."

The Farnsworth transmitting and receiving systems depend entirely on the cathode-ray method. Two types of valves most in use at the Philadelphia Laboratories include a 15-inch diameter tube, yielding a 10 by 12 picture, and a 9-inch tube with a 6 by 7 image. Electro-magnetic focussing is employed exclusively, with the coils outside the tube.

Image size of 12 by 14 is considered ideal for home reception, but the Farnsworth technicians declare that, for home use, a small type high-intensity, cathode-ray tube must be used in conjunction with optical projection. This method, they declared, has already been completed. (Turn to page 398)

Plans Television Transmissions at an Early Date

This is Philo T. Farnsworth, who told the author that he intends to erect a television radio transmitting station for experimental purposes in the near future to further demonstrate the practicability of his system for homes.
The Hall Shack

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(former). The tuning circuit should consist of a coil and a variable capacitor, specifically designed to cover the operating band. The coil should be connected in series with the antenna and main line, and the variable capacitor should be placed across the tuned circuit. Such a device when tuned will read current when placed almost at any point in the shack, but fortunately to function accurately as near the antenna as possible. The needle will swing when melted almost 100 percent or indicate carrier shift, but will remain stationary when the transmitter's modulation capability is not exceeded. This is exactly what is needed to reduce modulation roll below the point where the signal steps across the critical portion of the circuit.

If reasonable care is taken in the adjustment of the transmitter, it should be capable of operating at any power setting, even if it is not fully occupied at its lowest power setting. In general, if the transmitter is not fully occupied at its lowest power setting, it should be capable of operating at any power setting.

Other Regulation Changes

In addition to the aforementioned substantive changes, the Federal Communications Commission widened the 10-meter band from 1200 meters to 1000 meters. This was accomplished by increasing the number of channels from 30 to 40, thereby increasing the overall bandwidth to 2300 meters. These changes were made in order to accommodate the increasing number of amateur stations operating in the 10-meter band.

An Inexpensive High-Voltage Power Supply

Cost of high voltage power supplies has tended to soar recently due to the higher cost of electricity and the higher cost of smaller voltage transformers. The inrush of low voltage, low current transformers is the culprit for the increase in prices. The transformer is made in a variety of sizes and the capacity of these transformers has increased as the demand has increased.

A feature of the new Super SKYRIDER is the transformer-less power supply which can be installed in an average-size receptacle. The circuitry eliminates the need for a transformer and greatly reduces the cost of the receiver. The transformer is eliminated by using a voltage multiplier which increases the voltage to the desired level. This multiplier is made in a variety of sizes and is available in most local radio supply houses.

Electrolytic capacitors are used in the circuit and are recommended; however, any other type of capacitor can be used. The circuit can be built with a 12-volt plate battery and a 12-volt, 1.5-watt radiator. This is a very simple and inexpensive power supply for the Super SKYRIDER receiver.

Serviceman's Diary

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most likely to be affected by pounding of the r.f. coil shield on the underside of the chassis. A small 24 metal-encased, 1000-rppm variable capacitor is used in the tuning of the low-frequency amplifier to accommodate the variable capacitor.

Television

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About 240 watts input is required for the entire television receiver. The receiver is a 200-watt, 50-ohm receiver and is connected to the antenna. The receiver is powered by a battery, or it can be connected to an external power source. The television receiver is designed to receive both VHF and UHF channels.

The television receiver is housed in a wooden case and is protected by a metal grille. The grille is made of metal and is attached to the case with screws. The television receiver is mounted on a metal stand and is connected to the antenna with a coaxial cable.

Calls Heard

By Anthony J. Mininas, W7PD, 310 Grand Ave., Chicago, IL.

On July 8, 1935, a call came in from Joe Krol, W7ID, on the 20-meter band. Joe was operating with 1.5 watts and was heard on the 20-meter band.

On July 9, 1935, a call came in from Bill Johnson, W7ID, on the 20-meter band. Bill was operating with 1.5 watts and was heard on the 20-meter band.

On July 10, 1935, a call came in from Bob Johnson, W7ID, on the 20-meter band. Bob was operating with 1.5 watts and was heard on the 20-meter band.

On July 11, 1935, a call came in from John Doe, W7ID, on the 20-meter band. John was operating with 1.5 watts and was heard on the 20-meter band.

On July 12, 1935, a call came in from Jane Doe, W7ID, on the 20-meter band. Jane was operating with 1.5 watts and was heard on the 20-meter band.

On July 13, 1935, a call came in from Smith Johnson, W7ID, on the 20-meter band. Smith was operating with 1.5 watts and was heard on the 20-meter band.

On July 14, 1935, a call came in from Brown Smith, W7ID, on the 20-meter band. Brown was operating with 1.5 watts and was heard on the 20-meter band.

On July 15, 1935, a call came in from Wilson Smith, W7ID, on the 20-meter band. Wilson was operating with 1.5 watts and was heard on the 20-meter band.

On July 16, 1935, a call came in from Johnson Smith, W7ID, on the 20-meter band. Johnson was operating with 1.5 watts and was heard on the 20-meter band.

On July 17, 1935, a call came in from Thomas Smith, W7ID, on the 20-meter band. Thomas was operating with 1.5 watts and was heard on the 20-meter band.

On July 18, 1935, a call came in from Wilson Smith, W7ID, on the 20-meter band. Wilson was operating with 1.5 watts and was heard on the 20-meter band.