

THE VIDEO REPORTER

by Samuel Kaufman

WITH W2XBS back on the air in the New York area, the station is saving live talent expenditures by using outdoor and indoor sports pickups—professional football and hockey, for example—and moving pictures.

Once again, we must report that the sports pickups make excellent program fare, but the feature-length movies are worse than the average second pictures at double-feature theatres on Bingo night.

IN line with the efforts of the *National Television Systems Committee*, NBC recently announced that frequency modulation will be alternated with amplitude modulation to carry the sound portions of the present experimental series of television transmissions.

The *NTSC*, incidentally, is showing signs of progress. The course it is following seems to call for slow traveling. But the lads seem sure-footed and it really seems as if the committee's work will wind up with "everybody happy." There still are some very tough hurdles ahead and it is known that some representatives on the panels will be tough babies to handle when it comes to yielding on any pet theory. But



Cleaning out video tube blanks.

there's a general spirit of harmony in the desire to get things started and there's a chance that "things will start" shortly after this reaches print.

HOLLYWOOD, land of make-believe, has somewhat startled New York television men with the spontaneity and forcefulness of its entrance into the video field. And there's nothing that's make-believe about the Los Angeles television endeavors. There's so much money involved in the numerous West Coast sight-and-sound transmitting units, that the Celluloid City shows signs of immediately recruiting engineers and talent on a large scale.

Los Angeles television participants figuring in the news recently include *CBS*, *Television Productions*, *May Department Stores*, *Leroy's Jewelers* and the *Hughes Tool Company*. The latter firm, it is said, has \$2,000,000 available for video stations in Los Angeles and San Francisco.

IT is interesting to note that prominent department stores and various types of specialty shops are among applicants for television stations in various parts of the country. This action implies that alert retailers are quick to recognize the potential importance of television advertising to local audiences.

At the start of commercial telecasting, most sponsored programs will be local in nature, both in entertainment content as well as advertising blurb. It will take a
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AVIATION RADIO

by CHARLES J. SCHAUERS

A LETTER from E. J. Allen, of New York, requests information relative to the proper procedure in obtaining the necessary licenses for an aircraft radio transmitter installation.

Every radio transmitter must be licensed by the Federal Communications Commission, and each person operating a transmitter must have a radio operator's license.

The class of license necessary to operate any transmitter is dependent upon the type of service for which the transmitter is used; size of the transmitter (governed by application), and duties performed while transmitter is in operation.

We are only concerned here with an aircraft radio transmitter installation and its operation. Therefore, we will not go into detail involving other classes of service.

In the Continental United States, a radio operator operating aboard an aircraft must have at least a "restricted radio-telephone" license (old "third class license") and having such a license cannot operate a *radiotelegraph* station unless a code test has been passed and code endorsement received.

A speed of 15 words per minute is necessary in order to obtain the code endorsement.

After a few hours study, one may pass the "restricted phone" examination, and a license will be issued authorizing the operation of the usual low power transmitter found in most private planes, using type A-3 transmission.

After obtaining the radio operator's license, it will be necessary to obtain the station license.

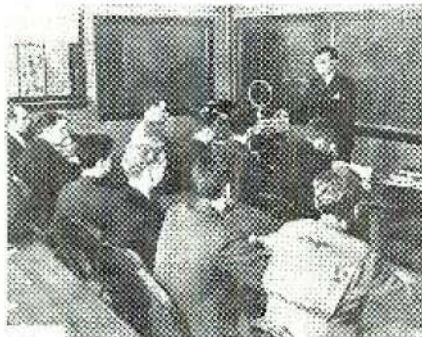
Form 404, obtained from the Federal Communications Commission, must be filled out and executed. This form in its entirety covers a technical description of the transmitter which will be used.

If a transmitter is purchased from any one of the leading aircraft radio manufacturers, a duplicate of the form is usually filled out for the purchaser.

Upon completing the form it is mailed to the Commission who will take immediate action and provide the applicant either with a license for the installation, or request further information which concerns the proper licensing of his equipment.

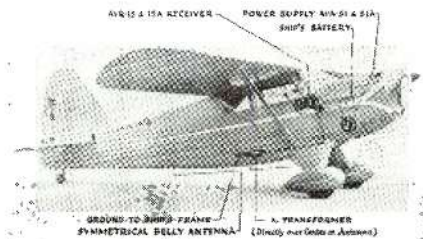
No license is required for a receiver installation alone, but with the addition of a transmitter, safety is greatly increased; especially when flying in the vicinity of airports where traffic is heavy.

A TYPICAL receiver installation is shown in next column. This installation requires that the installation technician exercise care and technical tact; because, even if the down-lead to the "under belly" an-



Many plane accessory factories are conducting classes for employees. Here P. H. Nelson of Lear Avia is instructing the boys of the shop in whyfor's & wherefor's of radio . . .

tenna were off center to an appreciable degree, directivity would predominate. This is but one of the minor considerations, but a



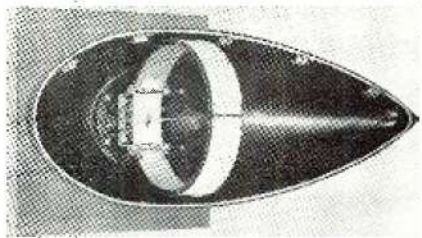
large one when maximum efficiency is desired.

Antennae installation on modern aircraft has always been a major problem, but due to progressive advancement, installations are being simplified more and more every day.

If one were to notice the new, large aircraft, they would see, instead of a "mass" of wires, maybe two or three vertical whip antennae.

These antennae, if properly matched by suitable coupling transformers and tuning elements, seem to be very efficient. However, for transmitting purposes, they are used only at extreme high frequencies.

IN figure below is an internal view of RCA's loop antenna. Due to outer shell construction, wind resistance is held at a



minimum, and the simplicity of installation is apparent when looked at from a bottom view.

The holding plate may be drilled and
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A new directional loop developed by RCA for the private flyer is here shown installed on a Stinson plane.

an overhaul. Some small tuning condensers have worn out; a couple of tubes should be replaced; and the speaker cone has—uh—warped sorta.”

“Do such things occur by themselves?” the woman asked, looking at the boy suspiciously.

“Surely,” I lied. “All old sets should be overhauled. It stands to reason, like.” I felt the job slipping further away.

“Mother!” the boy interrupted, “If you and Dad each pay five dollars, I’ll chip in three from the money I’m saving for my bike. I think we should have the set repaired—we’d miss it a lot if we didn’t!”

“Well, I’ll be damned!” the man said, admiringly, and glanced at his wife.

The boy held the front door open while I carried the set out to the truck.

“Thank you, my boy,” I said, with the warmth that comes only from a completed contract.

“Thank you, sir,” he replied happily. “When you come back, I’ll take you over to my uncle’s house—something’s wrong with his set, too. I know, because I was visiting there yesterday.”

He winked, and began a beautiful friendship. I’m giving him a set of tools for his birthday.

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Video Reporter

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considerable time to stir up participation by a sizable number of national advertisers.

The very propaganda of pioneer television firms to the effect that the signals were limited to localized service areas caused many national advertisers to shelve the idea of participation for a long time to come.

But locality advertisers—particularly department stores—view television as an ideal medium to announce sales and display their wares. But, incidentally, they will have to provide entertainment, too. And, regarding obtaining national advertisers on the stations they own, just watch them attempt wielding a big stick on manufacturers of lines they themselves carry!

IT is understood that both *NBC* and *CBS* have their eyes on the establishment of television networks. *NBC* has a bit of edge towards this goal insofar as its own contemplated stations are concerned. But the guess is that *CBS* will concentrate on the linking of affiliated rather than owned video stations. And while we’re in a guessing mood, we’ll wager an old Indian penny that the *FCC* will be inclined to approve the latter course sooner than the former.

Servicemen’s Legal Advice

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term, and so prove four distinct causes of action, the plaintiff did prove a breach of covenant referable to some one or more or all of the leases. The Court further held that each new lease involved the surrender to the landlord of the lessee’s possession under the prior lease, though they all ran to their termination, and there was no surrender, at the expiration of each term, instead of being actual was implied from the presumed intention of the parties and devised to give consistency to the new lease. The Court further held that the surrender of the lease during the term, and the acceptance of a new lease by the landlord does not extinguish rights of action already accrued, and while, at the close of a term, there is surrender of possession by the tenant in such condition as to violate a covenant in the lease, and an acceptance of possession by the landlord, the two things occurring at the same time, there is one unbroken and continuous term.

Audio Cycle Counter

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circuit of figure 4, it is interesting to note that the same values of C1, C2, and C3 will afford frequency ranges of 0-500 and 0-1000 cycles per second. Hence, only R5 need be switched for these two ranges. Consequently, it will be noted that the range switches, S1, S2, and S3 (figure 5) are so wired that the same capacitances are used for both ranges, 0-500 and 0-1000 cycles. The switch S4 selects different calibration rheostats for these two ranges, however.

To render the range-changing operation simple, the switches S1, S2, S3, and S4 are components of a 4-pole, 3-position rotary selector switch. It is this switch that is controlled by the finger-grip knob visible just below the meter in figure 1.

The 90-volt power supply is comprised by the plate-rectifier-filament transformer, T2; the 6.3-volt transformer, T3, which supplies heater voltage to the amplifier, gas triode, and double diode tubes; the filament-type rectifier, 5W4; voltage regulator, 874; 874 current-limiting resistor, R14; amplifier filter resistor, R15; and filter condensers, C12 and C13.

Electrical and Mechanical Features

The instrument might have been made as large as a communications receiver; but excessive spreading of the components is not required in this device, so its physical proportions were kept as small as practicable. However, the good practice was observed in keeping the power supply components on one side of the chassis and the input circuits on the opposite side.

The mounting of parts on the chassis is shown. Reading from left to right along the rear of the chassis, we have the 6H6 tube, and the knobs of the three calibration resistors, R11, R12, and R13. It will be noted that the shafts of these volume-control-type rheostats were not cut down. This places the three knobs high above chassis and within easy reach when the cabinet lid is lifted. In the second row from the rear of the chassis, appear the two type 884 gas triodes. Directly below the left-hand 884 is the input transformer, T1. For space saving, a midget transformer which plugs into an octal-sized tube socket was chosen. This transformer, *Kenyon* type A-31, is only a bit under an inch and a half in diameter and stands about 2 3/8 inches above chassis. Directly below this transformer will be seen the 6C5 input amplifier tube and to the right of this tube, the three small *Burgess* 5360 4 1/2-volt C-batteries which make up the 9-volt gas triode grid battery and the 4 1/2-volt 6H6 battery. To the right of the batteries is the *Triplet* Model 327-A three-inch square 0-500 d.c. microammeter, and almost directly behind the meter is the *ROA* 874 gaseous voltage regulator tube. Since this tube is rather long, being housed in one of the now antiquated envelopes, its socket had to be mounted below chassis and a large circular hole cut to pass the tube base, in order to close the lid of the cabinet. The power transformer, *Kenyon* T-220, fills the left hand rear corner of the chassis; and the filament transformer, *Kenyon* T-388, is mounted to

Will Send My FIRST LESSON FREE



It Shows How I Train You at Home for GOOD RADIO JOBS

J. E. SMITH, Pres. National Radio Institute

Salary Increased \$1,800 Year in Radio

“I have been employed in radio since my graduation. I have been Chief Engineer of three broadcast stations, and at present time am Chief Engineer of WOOD. My salary has increased \$1,800 per year since entering radio and credit is given you for your excellent training.” JULIUS C. VESSELS, Station WQOD, Chattanooga, Tenn.

\$15 a Week Extra in Spare Time

“I am doing spare time radio work, and I am averaging from \$70 to \$80 a week. Those extra dollars mean so much—the difference between just barely getting by and living comfortably.” JOHN N. WASHKO, 97 New Cranberry, Hazleton, Penna.

\$3,500 a Year in Own Business

“After completing the N. R. I. Course I became Radio Editor of the Buffalo Courier. Later I started a radio service business of my own, and have averaged over \$3,500 a year.” T. J. F. E. A. K. 957 Broadway, New York City.

Get my sample lesson free. Examine it, read it—see how clear it is, how easy to understand. Find out how I train you at home in spare time to be a Radio Technician. Do it now. Mail the coupon.

Many Radio Technicians Make \$30, \$40, \$50 a Week

Radio Broadcasting stations employ operators, technicians. Radio manufacturers employ testers, inspectors, servicemen in good pay jobs. Radio jobbers and dealers employ installers and servicemen. Many Radio Technicians open their own Radio sales and repair businesses and make \$30, \$40, \$50 a week. Others hold their regular jobs and make \$5 to \$10 a week fixing Radios in spare time. Automobile, Police, Aviation, Commercial Radio, Loudspeaker systems, Electronic Devices are other fields offering opportunities for which N. R. I. gives the required knowledge of Radio. Television promises to open good jobs soon.

Beginners Make \$5 to \$10 a Week Extra in Spare Time While Learning

The day you enroll I start sending Extra Money Job Sheets; start showing you how to do Radio repair jobs. Throughout your Course, I send plans and directions that have helped many make \$5 to \$10 a week in spare time while learning. I send you special Radio equipment to conduct experiments and build circuits. This 50-50 method of training makes learning at home interesting, fascinating and practical. YOU ALSO GET A MODERN PROFESSIONAL ALL-WAVE SET SERVING INSTRUMENT to help you make money fixing Radios while learning, and equip you for full time work after you become a Radio Technician.

Find Out What Radio and Television Offer You

Act Today. Mail the coupon now for sample lesson and 64-page book. They point out Radio’s spare time and full time opportunities and those coming in Television; tell about my training in Radio and Television; show more than 100 letters from men I trained, telling what they are doing and earning. Find out what Radio and Television offer YOU! MAIL COUPON in an envelope, or paste on a postcard—NOW!

J. E. SMITH, President Dept. 1DR, National Radio Institute Washington, D. C.

Good for Both 64 PAGE BOOK SAMPLE LESSON FREE

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