

The "radio news" paper for busy radio men. An illustrated digest of the important happenings of the month in every branch of the radio field.



BOMBCASTING—THUMBS UP FOR THE BRITISH!
(Cover Feature)

Robin Duff, B.B.C. War Observer, is shown broadcasting an eye-witness account of the result of a fire "blitz" on London while fires are still burning. Radio broadcasting is a valuable communications link between the government and the people. It is a powerful instrument of both propaganda and counter-propaganda, and as such, plays a tremendous role in the defense of the British Isles.



KOVAR

Westinghouse's "tube maker," B. Condret, inspects the vacuum-tight Kovar-and-glass joint of a high-voltage vacuum tube. An alloy of nickel, iron, cobalt and manganese, Kovar expands and contracts at the same rate as glass as the temperature changes.



VIDEO NEWS

Frazier Hunt, noted radio commentator and foreign correspondent, is shown telecasting a news program over Philco station W3XE, Phila., Pa. Hunt's new technique for enlivening his news broadcasts consists of effective use of both audio and video channels, augmenting his voice with motion pictures, maps and charts.

DEFENSE

HOW long does it take to train a person to handle radio duties in Uncle Sam's armed services? Only 4 months, these days, according to *Assoc. Press* reports last month, which tell how the U. S. Navy has clipped a 9-months' course down to 4, and of sending out of the Naval Radio School at Norton Heights, Conn., 500 youths all set to take over radio duties anywhere in the U. S. or its possessions.

According to an issue of *Radio Daily*, the 1st Radio Intelligence Co., U. S. A. Signal Corps, at Ft. Monmouth, N. J., is "seeking amateur radio engineers and others interested in shortwave radio operation." Enlistment period: 3 years. Opportunities for officer ratings and advancement are exceptional.

IN PRINT

FORTUNE magazine last month ran a characteristically informative article entitled "Radio Turns South," in which author William S. Paley (C.B.S.'s young prexy) told how he had spent 7 weeks signing-up broadcast stations in key cities serving the 15,000,000 radio listeners south of the Panama Canal. The new network is designed to solve the problem of supplying good North American programs to South American listeners, and vice-versa.

In "RCA Laboratories—A New Center for Research," a compendium of addresses by David Sarnoff and Otto S. Schairer (company President and vice-President, respectively), the objectives and directing personnel of this new "world's largest" laboratory, at Princeton, N. J., are outlined. "By the application of electronic devices to industrial processes, the Radio Age promises to electrify modern industry, just as the application of electrical devices to industry at the beginning of this century created the Electrical Age," said Mr. Sarnoff, and it is with the idea of fostering this development, and of meeting the expanding demands of national defense, that this huge Radio

Laboratory, with an initial staff of 435 persons and a floor space of 200,000 sq. ft., was created.

Did you see "The Klystron Boys—Radio's Miracle Makers," by Frank J. Taylor, in an issue of the *Saturday Evening Post*? Worth looking up, if you didn't.

Tide magazine last month, in "Latin America—a Progress Report on U. S. International Radio," analyzed the pros and cons of the "beam" and "network" systems of N.B.C. and C.B.S., respectively, which are competing for the South American broadcast listener market.

The *Export-Market* (Possneck, Germany) describes the general design and applications of the latest-type Siemens & Halske electron microscope in an article entitled "Supermicroscopy—a Source of Technical Progress." The article is useful as showing the potentialities of this new tool.

F.M.

REPORTED *Radio Daily*, station WIP (Phila., Pa.) plans to give 24-hour service on its Frequency Modulation wavelength. It is due to go on the air before this issue of *Radio-Craft* is in distribution.

FM Broadcasters, Inc., considers it an "interesting sidelight on F.M. reception," that many persons suffering from poor hearing, and therefore unable to enjoy the full benefits of ordinary radio reception, find that the wider frequency range encompassed by F.M. programs affords greater listening ease and pleasure. This is particularly true where the hearing deficiency is in loss of sensitivity to high frequencies.

At the 4th Annual Broadcast Engineering Conference at Ohio State U., Columbus, O., more than 250 radio engineers absorbed oodles of information on F.M. Harvey Fletcher of Bell Telephone Labs. thrilled far-sighted technicians with his discourse on experimental tests of both binaural and diotic transmissions over F.M. channels. Here's virgin territory for experimenters.

Add new title: Major Armstrong, "Father of F.M." (according to FM Broadcasters, Inc.).

A news item of last month states that experts are of the opinion that when Nazi Panzer divisions moved into France last Summer they used F.M. as a radio link between tanks. "Later reports from Britain indicate conclusively that German aircraft recently shot down near London were equipped with F.M. transmitters," the report concluded.

The Federal Communications Commission last month gave us a new term: STL, meaning "studio - transmitter link." A total of 23 frequencies above 330 mc. are allocated for these link stations, for the use of F.M. broadcasters, only 1 link station per single broadcaster being permitted.

How far can Frequency Modulation signals be heard? Well, "it all depends." For example, the range of the giant 50-kw. F.M.

station which is going up atop 6,600-ft.-high Clingman's Peak, No. Carolina, will be 500 miles in all directions! Yep, we said 500 miles. Some 4 1/3 million people will be serviced by this ultra-H.F. station. It is one of the characteristics of Frequency Modulation that the range of this 44.1-mc.-channel station will be the same during the day as at night. It wouldn't take many such stations to make a transcontinental F.M. relay network, would it?

Station W2XAH is the new station which the F.C.C. last month authorized Finch Telecommunications, Inc., to operate at Bendix, N. J., for transmitting facsimile programs on F.M. channels between 30 and 40 mc., with 1 kw. Finch also has an Armstrong license to manufacture F.M. equipment.

Major Edwin H. Armstrong is rolling right along with his self-made tide. The F.C.C. last month gave him the high-sign to utilize his present station W2XMN at Alpine, N. J., for a 35-kw. station on 43.1 mc. to serve more than 12,200,000 people in portions of N. J., N. Y., Conn. and Pa. (an area of about 15,000 sq. miles).

Gotham's pioneer school station WNYE has been given an OK to install a 1-kw. Frequency Modulation transmitter on 42.1 mc. New York City's Board of Education is missing no bets.

"Never before in a broadcast have I been able to pick out each instrument individually," Dr. Serge Koussevitsky speaking, after this eminent conductor heard his own Boston Symphony Orchestra as broadcast over Westinghouse F.M. station W1XX, at Hull, Mass.

The current issue of *FM* magazine contains an article analyzing 2-way F.M. police-radio operation in Douglas County, Nebraska. A 25-watt car-radio transmitter installed atop an 18-story building several blocks from Headquarters served excellently to boost the field strength of the 250-watt Headquarters transmitter. This simultaneous operation perfectly solved problems presented by several low-intensity areas. Both the Headquarters transmitters and the car transmitters are "voice actuated"; that is, speaking into the microphone automatically turns on the transmitter, in this new G.E. F.M. installation!

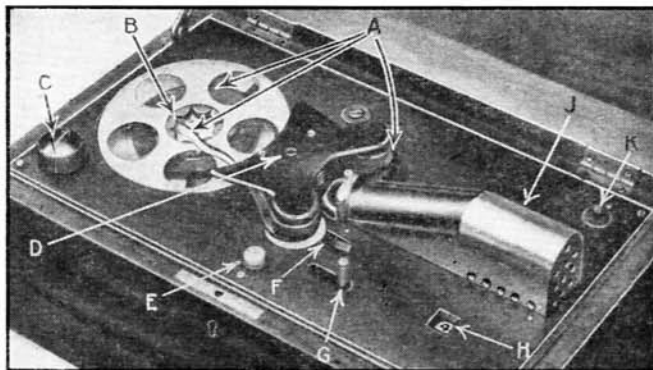
SOUND

ENGINEERS pricked-up their ears, and so would you, if you had been there, last month, when H. F. Olson of RCA told the attendees at the 4th Annual Broadcast Engineering Conference, at Columbus, O., that 60% of the radio receivers sold in America retail for less than \$20, that they are table-model sets incapable of high-fidelity reproduction, and that less than 1% of the total number of radio sets sold are high-fidelity consoles, according to *Radio Daily*. Judging by these figures, "the surface hasn't been scratched," so far as the sale of high-fidelity radio sets is concerned. Radio's No. 1 problem: how to make Mr. Radio Listener high-fidelity conscious?

In connection with its plans to operate a staff of 350 technicians, translators, etc., in a 24-hour watch on overseas broadcasts,

FILMGRAMAPHONE

This film phonograph plays 90 mins., non-stop. Recordings are 4 parallel sound-tracks on a single endless film. Photo legend: A—Film; B—Locating pins; C—Light intensity control; D—Track aligning screw; E, F—Automatic track changer and pushbutton control; G—Film-threading gate lever; H—Automatic track number indicator; J—Lamp housing; K—line switch. Four barrier-layer photocells are used, 1 per track.



the F.C.C. last month commented that 7 hours of translation and transcription are required to fully process an hour of recorded material.

Steel-alloy sound recording blank discs with a "super glossy finish in silver blue" and which can be processed and pressed like aluminum recordings, are now available, according to Record Sales Co., Los Angeles, Calif.

WOR-Mutual's 2 recent "Defense in Action" broadcasts, dramatically portraying the construction and test of a bomber and a tank, have been recorded for distribution among 300-odd schools. Classified as transcriptions, the discs are being released by official sanction of the National Defense Advisory Commission and the Federal Radio Education Committee.

A business-getter released last month by Presto Recording Corp. was designed to help Servicemen cash-in on the reallocation business by leaving one of the items with each customer. It was an order card, listing prices of home-recording needles and blank discs and imprinted with the Service organization's name, address and phone number, which also could be mailed to the service company (postage prepaid).

Plans are to market 18,000 Panorams (Mills Novelty Co.'s slot-machine sound motion picture apparatus for restaurants, railroad stations, etc.) in 1941, thus giving employment to an estimated 5,000 people. The RCA Indianapolis plant is building these 16 mm. picture-sound machines (or did you read "Introducing 'Soundies,'" in Feb. *Radio-Craft*?).



CH-CH-CH-COUGH!—PARDON ME!

If cough drops can't do it, perhaps this "cough button" will. Nimble-minded WOR technical wizards devised this microphone cut-off button to momentarily cut the announcer off the air for the duration of his cough. Saves frantic waving to control room.



TELEVISION "COOLIGHT"—750 FOOT-CANDLES! G.E. engineers have announced a floodlight, which produces daylight-intensity illumination without extreme heat, for indoor television work. The young lady is comparing with an "ordinary" 1,000-W. lamp, one of the three 1,000-watt cigarette-size mercury lamps which are used in a single reflector. The tubes, cooled with a gal. of water a minute, develop 195,000 lumens of light over approx. 100 sq. ft.



AIRCRAFT MICROPHONE

This newly-developed, press-to-talk microphone was designed especially for use in private airplanes and on yachts. It is a Universal microphone, Model CU-1, of molded bakelite. The mike is a single-button carbon type, designed to be unaffected by motor noise.