

Sec. 562, P. L. and R.
U. S. POSTAGE
PAID
New York, N. Y.
Permit No. 2961

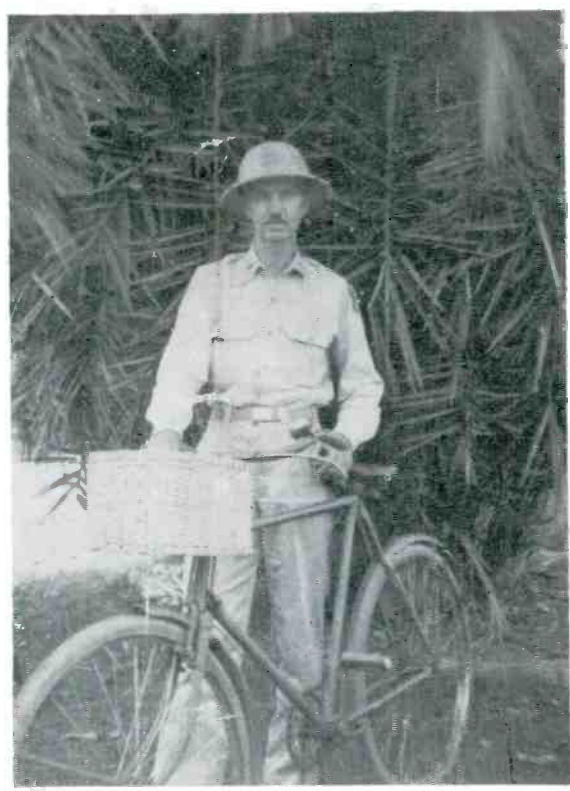
F A GEHRES WGBF-WEQA
2232 E POWELL
EVANSVILLE 14 IND
S145

116-03 91st Ave., Richmond Hill 18, N. Y. If addressee has moved, notify sender on Form 3547, postage for which is guaranteed.

The Broadcast Engineers' Journal

MAY-1944

**VOLUME 11
NUMBER 5**



Cleveland Engineer, Cecil Bidlack, in New Delhi
(Read Captain Bidlack's Letter on Page Thirteen)

***Since 1934 . . .
Of, By, and For The Broadcast Engineer***

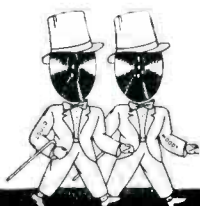
GOULD-MOODY "BLACK SEAL" GLASS BASE INSTANTANEOUS RECORDING BLANKS . . .

RECORDING AMERICA'S POWERFUL VOICE

Transmitter of America's Powerful Voice is Radio . . . awake twenty-four hours a day . . . talking to our friends and our enemies . . . transporting Broadway and Hollywood and the girl next door to the boys over there . . . building morale on the home front.

Recording America's Powerful Voice . . . in leading broadcasting stations from coast-to-coast . . . are Gould-Moody "Black Seal" Glass Base Instantaneous Recording Blanks. Made entirely of glass, "Black Seals" are as thin as aluminum, thereby eliminating the necessity of recorder adjustments. No foreign inserts . . . no metal grommets . . . no ageing, hardening or deterioration. Every disc has four holes . . . center-flow thread action . . . may be played back for months without appreciable loss of fidelity. Enclosure of your preference rating extensions with your order will expedite deliveries.

SHARE YOUR BLOOD WITH A WOUNDED SOLDIER
—donate a pint to the Red Cross today



THE GOULD-MOODY COMPANY

RECORDING BLANK DIVISION

395 BROADWAY, NEW YORK 13, N. Y.

THE BROADCAST ENGINEERS' JOURNAL

Contents Copyright, 1944, by A.T.E. Publications, Inc.

Volume 11, No. 5



May, 1944

TABLE OF CONTENTS

	Page
Elemental Electronics, Part V— Time Bases for Cathode Ray Tubes.....	3
San Francisco News.....	10
War Emergency Radio Service.....	11
Thomas A. Edison.....	12
Cleveland Engineer Reports from New Delhi.....	13
WPTF—Raleigh.....	14
New Television Stations.....	14
Catching a Ghost—Radio Style.....	15
Hollywood News.....	18
Los Angeles News.....	19
Washington News.....	20
New York News.....	22
Chicago Chapter Chatter.....	23
Agriculture and Radio.....	24

THE BROADCAST ENGINEERS' JOURNAL

Trustees: V. J. DUKE, H. E. HILLER, G. B. RILEY, R. A. SCHLEGEL,
D. A. ULLMAN

ED. STOLZENBERGER
Managing Editor

Coordinator..... F. R. ROJAS
Treasurer..... C. W. PHELAN
Assistant Treasurer..... D. J. MOLONEY
Contributing Photographer..... SERGEI DE SOMOV

ASSOCIATE EDITORS

Chicago..... A. W. HJORTH
Cleveland..... BERT PRUITT
Denver..... KENNETH N. RAYMOND
Engineering Chapter..... V. J. DUKE
Hollywood..... BOB JENSEN AND NORMAN DEWES
Hudson Chapter..... HERMAN G. BERGER
KFI-KECA..... H. M. McDONALD
New York..... G. F. ANDERSON, JR.
San Francisco..... BOB SHOVER
Washington..... R. E. SHENTON
WLW-WSAI-WLWO..... BOB BROCKWAY
WOW, Omaha..... ROY "TEX" GLANTON
WPTF, Raleigh..... REX COSTON

The Broadcast Engineers' Journal is a privately printed monthly publication issued by A.T.E. Publications, Inc., a corporation of the State of New Jersey. Address all communications to Editor's office: E. Stolzenberger, 116-03 91st Avenue, Richmond Hill 18, L. I., N. Y. Telephone Virginia 9-5553. **THE BROADCAST ENGINEERS' JOURNAL IS THE OFFICIAL PUBLICATION OF THE N.A.B.E.T.**

Advertising rates and information supplied on request. Subscription, \$1.50 per year; \$3.00 for three years. Single copies, except Christmas Yearbook, 25c; Christmas Yearbook free to subscribers. All remittances in advance. Foreign: Add postage.

Nothing appearing in The Broadcast Engineers' Journal shall be construed to be an expression of The Broadcast Engineers' Journal or the National Association of Broadcast Engineers and Technicians, but must be construed as an individual expression of the author or authors.

NATIONAL N.A.B.E.T. OFFICE
Suite 1009, Investment Bldg., Washington, D. C.
A. T. Powley, President



This War . . .

is daily emphasizing the importance of dependability and permanence in all of our equipment.

**This is especially true of
Radio Recording
Equipment**

The Test of Time has proven

**SCULLY
Master Recorders**

to be unsurpassable as precision,
superb recording machines

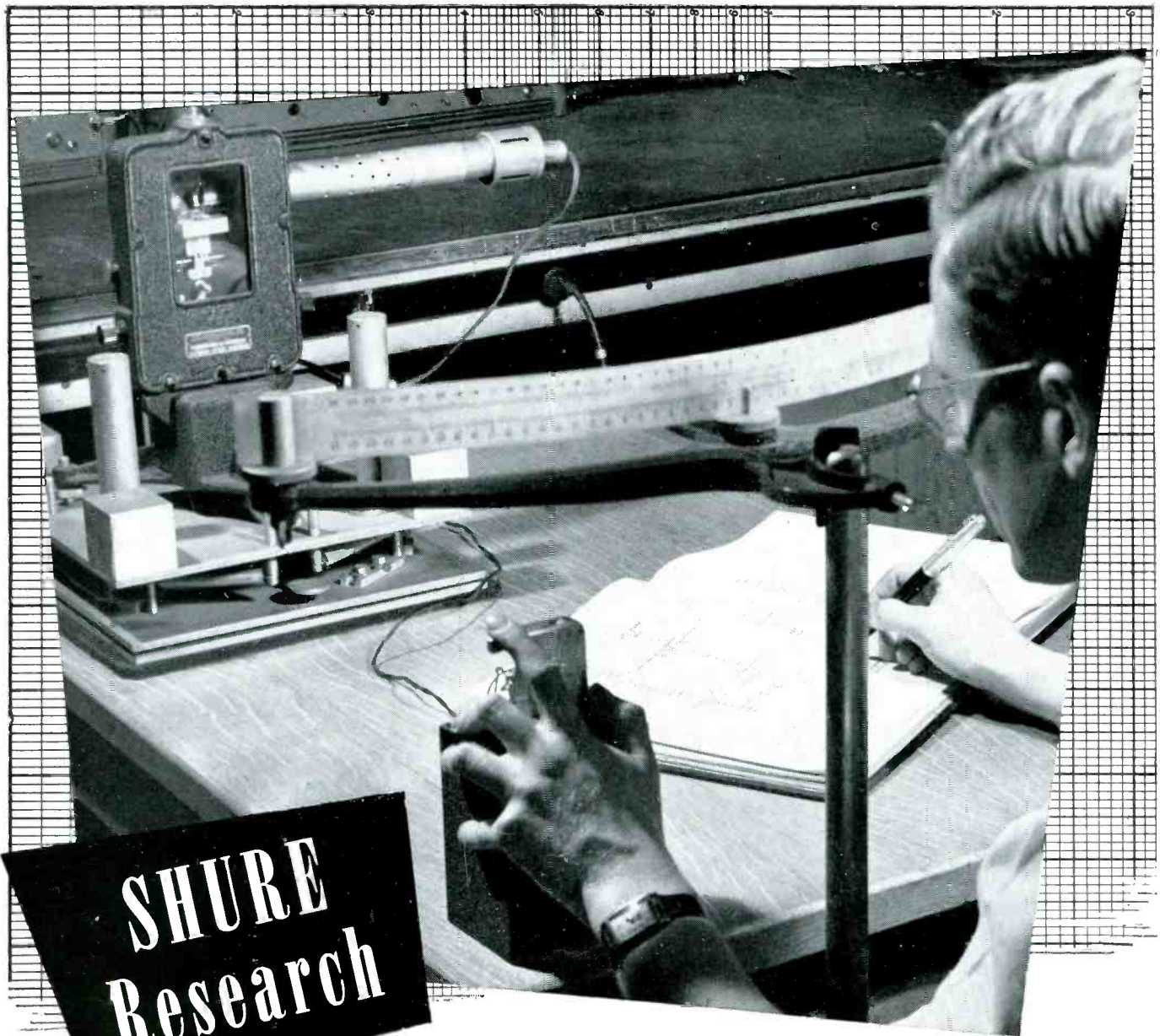
BUY U. S. WAR BONDS NOW
and plan to install
SCULLY MASTER RECORDERS
After the Victory!

**SCULLY
Machine Company**

62 Walter Street

Bridgeport, Conn.

Telephone BRidgeport 4-5300



**SHURE
Research**

... in Headphones

It is logical that engineers, long trained in designing microphones for transmitting the human voice, should be especially familiar with the techniques of voice reception.

Headphone design, therefore, is a natural province of Shure engineers.

The Shure headphone employs a unique moving armature design which combines light weight with sensitivity, simplicity and reliability.

In headphones, as well as microphones, you may continue to look to Shure for leadership.

SHURE BROTHERS, 225 West Huron Street, Chicago
Designers and Manufacturers of Microphones and Acoustic Devices



Elemental Electronics — Part V

Time Bases for Cathode-Ray Tubes : By Jordan McQuay

THE basic principle underlying all applications of the cathode ray tube in electronics work is that the electron beam is caused to move across the screen at a velocity which may be either constant or varying in some predetermined manner *with respect to time*, and thus to produce a trace or path upon the screen. Signals to be measured or observed are then applied to the cathode ray tube so as to *disturb* the spot and thus indicate their arrival. This disturbance of the trace may be carried out in a variety of fashions, as will be shown later, but in general the *time base* produces the primary motion of the electron beam.

One of the most important uses of the cathode ray tube is for the portrayal or *reproduction* of images of wave shapes. The normal representation of an electrical wave is a *graph* of the voltage (or current) plotted with respect to a *time* scale. This time scale is usually *linear*, and in electronics work this so-called scale is known as a *time base*. It was shown in the previous chapter (Part IV. *Cathode Ray Tube*) that the path of the electron beam is effected by and is directly proportional to the influence of two forces: (1) the instantaneous value of the wave under examination, and (2) the instantaneous value of some sort of timing wave, or *time base*. The *resultant* of these two forces will cause the electron beam to trace out the image of the wave shape under consideration.

In the case of the electrostatically deflected principle of cathode ray tube (discussed in the previous chapter) a steady motion or *timing* wave can be obtained by changing the voltage across the second pair of plates at a steady rate, i. e., a *linear* timing wave or time base is required. Further, in order to obtain a stationary image on the screen, it is necessary for the spot to retrace its path over and over again. This means that the timing voltage must *vary linearly* over a certain range, return very suddenly to its *original value*, then retrace the same path, and so on. Such a linear timing wave or time base is more familiarly known as a *saw-tooth* time base, and a graph of such a typical voltage wave is shown in Figure 1. The saw-tooth form of time base is used in all commercial test oscilloscopes, and it is fairly linear for most testing purposes and for a great many electronic circuit purposes.

A study of the wave form of Figure 1 will show that the time taken to return or *fly back* to the original starting point is *not* instantaneous. But this extremely small amount of lost time is not considered of great importance, since the fly-back time is very brief compared with the full linear *up-sweep* voltage. In most circuits, this fly-back portion of the timing wave is "blacked out" by electronic means.

Perfect linearity of the up-sweep portion of the saw-tooth wave (see Figure 1) is extremely desirable, because it is during this period that the spot on the cathode ray tube screen moves at a *uniform rate* from one side to the other. Any great deviation in the linearity of the saw-tooth wave will result in considerable distortion of the image on the screen, and will thus be highly undesirable. Perfect linearity, on the other hand, is difficult to achieve. However, a good approximation may be made with comparatively simple generating circuits.

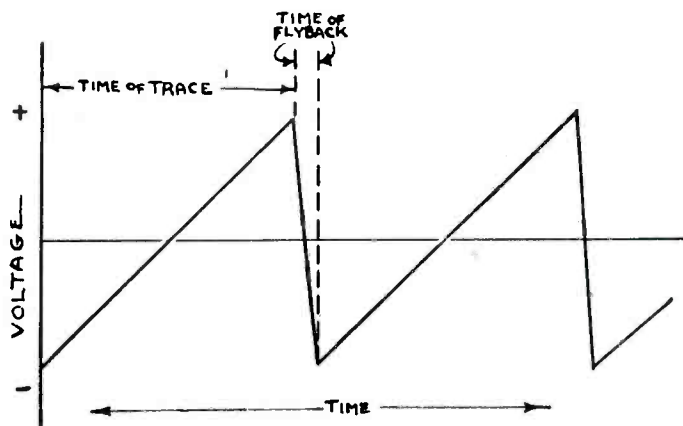


Figure 1. — Saw-tooth wave form. Time of Flyback is sometimes referred to as Return Time.

It was shown in an earlier chapter (Part II. *Time Constant*) that if a condenser is charged through a resistance from a constant source of potential, an exponential voltage curve is obtained across the terminals of the capacitance. If any small increment of the first part of such a curve is examined closely, the actual "curvature" will be found to be rather small, and the line will be *almost* straight, i. e. *linear*.

In order to return the voltage to its initial or "starting" value, some means must be incorporated in the time base generating circuit so that the condenser will suddenly *discharge*. The voltage can then build up again, along the same (original) charging curve, be discharged, then charged, and thus continue to generate a voltage similar to the saw-tooth wave form shown in Figure 1. At low frequencies this discharging of the condenser could be accomplished by some sort of mechanical shorting switch, but at high frequencies this arrangement would be impractical—and purely electronic means have been designed to discharge the condenser after it has reached a certain charge.

The simplest device for generating a saw-tooth wave form is a neon-glow lamp, or gas-filled diode, shown in the circuit of Figure 2. This diode has the property of passing almost zero current until a certain fixed voltage is applied. This certain voltage is known as the *striking voltage* of the gas-filled tube, and is the voltage sufficiently large enough to cause ionization of the gas within the tube. This ionization results in a heavy current flow, allowing the condenser to discharge, until a certain low voltage (near zero) is reached, known as the *recovery voltage*. At this low voltage the gas-filled tube de-ionizes, and the condenser is allowed to charge again—and the process is then repeated over and over again. The graph shown in Figure 2 accurately portrays this charging and discharging action, and thus illustrates the operation of the neon-glow lamp as a saw-tooth time base generator. In a sense, the condenser charge and discharge can be considered to "oscillate" back and forth between the ionizing potential value and the de-ionizing potential value. This back-and-forth movement will result in a saw-tooth wave form having an almost-perfect up-sweep, as shown in

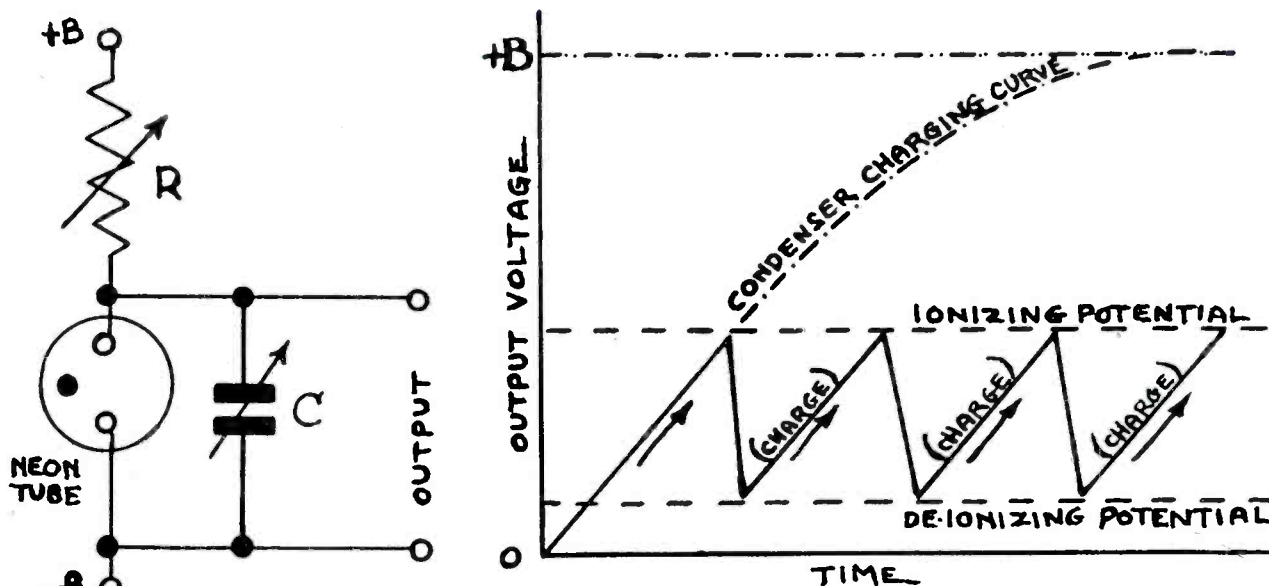


Figure 2 — (Left) Gas-diode saw-tooth generator. (Right) Output wave shape of saw-tooth wave.

Figure 2. The *sweep* portion of the saw-tooth wave form is produced while the condenser is charging; the *fly-back* portion is produced when the condenser suddenly discharges through the ionized gas-filled diode. The actual fly-back time is determined by the resistance of the gas-filled bulb (while conducting current) together with the value of the condenser C.

The frequency of the saw-tooth wave form is the number of times the voltage rises and falls per second. This frequency may be varied by changing the ionizing and/or de-ionizing potentials, but this requires a change in the diode operating characteristics. Simpler means of frequency control are by varying the value of the resistor R, the value of the capacitor C, or the magnitude of the supply (B) voltage, as shown in Figure 2. Since the resistor and condenser together form a *time constant*, an increase in the value of either element will increase the time required for the condenser to charge and discharge; a decrease, likewise, will cause a decrease in the time required for the condenser to charge and discharge.

In a previous chapter (Part III. *Electronic Vacuum Tubes*) it was stated that a thyratron is a gas-filled tube, similar to the diode but with an added grid electrode that can be used to control the voltage at which ionization takes place. Thus the thyratron can also be used as a saw-tooth time base generator, and the basic theory of operation is the same as that for the diode, just described. The thyratron, because of the additional grid control, is preferable to the gas-filled diode in modern electronics circuits. The thyratron is somewhat more stable (as to striking and recovery voltages) and the operating range can be controlled by a direct-current bias on the grid electrode. Another advantage of the thyratron is that the grid element can be employed to obtain proper synchronization between the time-base sweep and the signal under observance, an extremely important factor in the operation of cathode-ray oscilloscopes. A circuit employing a thyratron to generate a saw-tooth wave form is known as a relaxation oscillator.

There is a wide variety of other semi-oscillatory circuits which are used for generating *linear* saw-tooth wave forms. But all of these circuits operate on the basic principle of the fundamental gas-filled diode circuit (shown in Figure 2)

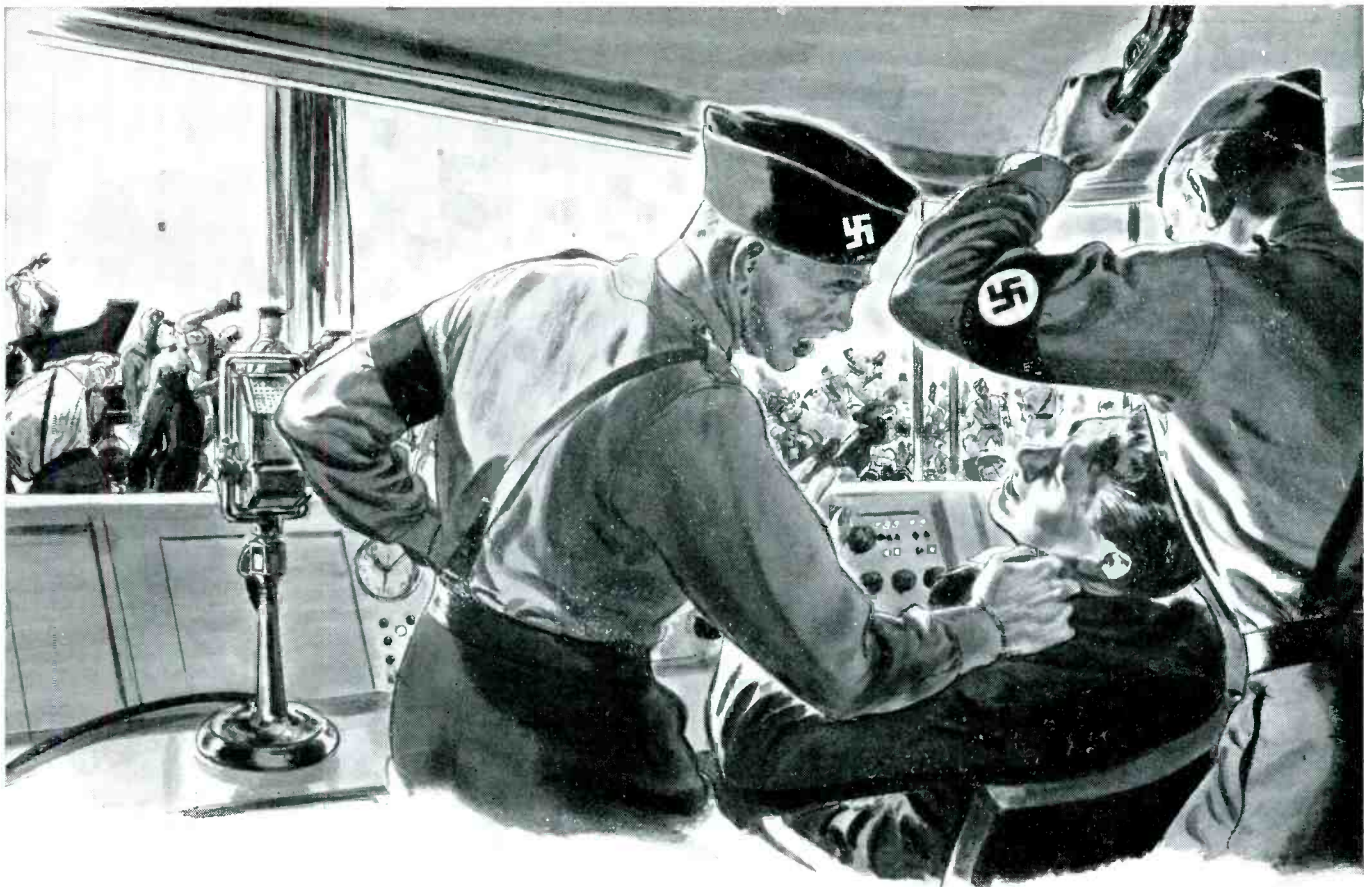
which depends upon the charge and discharge of a condenser for its operation.

Cathode-ray tubes employing magnetic deflection require a saw-tooth wave of magnetic flux for the production of a linear time-scale deflection. This time base is applied to the tube by means of a varying *current* through deflection coils—since electromagnetic-deflection cathode-ray tubes do not have deflection plates. A current wave similar to the voltage wave shown in Figure 1 can be produced by one of two methods: (1) The application of a saw-tooth voltage wave to a circuit containing only resistance, or (2) The application of a *square* voltage wave to a circuit containing only inductance. Since the average deflection coil (on commercial electromagnetic tubes) contains both inductance and resistance, the voltage wave form necessary to produce an exact saw-tooth *current* wave form must be something of a composite wave shape. As in the case of electrostatic-deflection tubes, the shape of the saw-tooth wave during the fly-back period is not of great importance.

When the time base is properly synchronized with the signal under investigation, a two-dimensional image may be obtained which will appear somewhat stationary when the unknown wave form is *periodic*. The use of a repeating image results in greater apparent brilliance of the wave form under investigation, due to the persistence of human vision. However, when the wave form is *not* periodic, only a single trace can be used if visual confusion is to be avoided. This condition gives rise to a number of special time bases which are extremely complex; these will be considered later in this chapter.

Simple audio-frequency wave forms may be observed on a cathode-ray tube by employing a sinusoidal time base, instead of the saw-tooth time base. A sinusoidal time base may be obtained from domestic alternating-current power sources (110 volts, 60 cps). However, the use of a sine wave for the timing axis has several disadvantages: (1) The movement of the beam is such that only the center portion of the time scale can be considered *linear*, and (2) The return stroke or fly-back of the beam is at the same speed and duration as the forward stroke or sweep. These difficul-

(Continued on Page Seven)



Blueprint for Bundists

Suppose that Britain had gone down in those dark days of 1940. How would the Axis have struck at the United States?

It is more than likely that the initial, direct attack would have come from within. And if it had, we can be sure that one of the enemy's first moves would have been the attempt to seize America's broadcasting facilities. For that is an accepted part of the modern pattern of conquest.

Deprive people of their sources of reliable information . . . destroy free radio and substitute the mouthings of Quislings . . . blanket a nation with a barrage of lies . . . confuse, divide . . . make their cause seem hopeless . . . and they'll soon be helpless.

The enemy has his uses of radio—and *we have ours*. Under our system of free radio—*independent, responsible, self-supporting*—people can listen in confidence, hear the truth and unite to fight for it.

* * *

The six stations operated by the National Broadcasting Company—the 135 independently owned stations affiliated with NBC—are business organizations. They draw their revenue solely from advertising. But their services go far beyond entertaining customers of American business and industry. As parts of America's Number One Network they are *important* parts of what makes America a synonym of freedom.



America's No. 1 Network

this is the **National Broadcasting Company**

A SERVICE OF RADIO CORPORATION OF AMERICA

I'M DREAMING OF A PAIR OF BULLFROGS

There I was, as unconscious as you please, and those two bullfrogs were hopping all over me.

So I said to myself, I'll bet Frank put them up to it. (No, I didn't, boss.) Then who did? (Maybe it was an unhappy sponsor, boss.) What was he unhappy about? (The recordings you made for him, boss.) What was wrong with them? (They st . . . I mean, they were somewhat odoriferous, boss.)

That I wouldn't take. So I jumped out of bed and shouted, Frank, you're disemployed. And then it happened. I slipped in the dark, found myself in contact with a chair which, in turn, advanced straight through our mirrored door. My wife screamed, "It's murder!" And my position for the rest of the night was untenable.

So the next morning I looked up "Freud", the "Old Farmer's Almanac", and the "Congressional Record of 1912". But there was no answer . . . no meaning for my dream. So I took it up with Frank, who said, "It's your subconscious, boss. (Science has demonstrated that the application of the conscious to the subconscious

*Your Greatest Contribution to the
War Effort . . . A Pint of Blood*

36-12 34th STREET • Stillwell 4-7837 • LONG ISLAND CITY, N. Y.

multiplied by a given number of decibels produce . . .")
"What are you talking about?" (I asked Frank, "I don't know, boss". "So proceed.")

"All right," said Frank. "I'll give it to you one, two, three. Bullfrogs have nothing to do with the case, but sponsors have. And it's those sponsors who are really going to hop on you. Subconsciously you're upset because you know that you could make better recordings. Why don't you? Don't answer back . . . let me talk. Now, take for instance those Advance Recording Blanks. They're the kind of blanks that really do a job. Why their tone is as smooth as your bald head . . . and reproduction couldn't be better if they used tracing paper. No, sir. Furthermore, boss, they last as long (well almost as long) as my Aunt Minnie, who made her debut on Plymouth Rock. So you can see . . ."

"That settles it, Frank." I said. So I wrote out an order for more Advance Recording Blanks, and mailed it myself. And while at the postoffice I wrote myself out an order for War Bonds, too. In ten years this will buy another mirror. Such were my good deeds for the day.

Advance
Recording Products
Company

Time Bases for Cathode-Ray Tubes

(Continued from Page Four)

ties may be overcome by suitable circuits, by separating the path of the return stroke (or half-cycle) from the forward stroke, by causing the electron beam to describe a long, narrow ellipse, or, by blanking-out the return stroke or fly-back of the sinusoidal time base. This quasi-linear time base is used in certain radiolocation applications.

A circular time base is occasionally employed to display several cycles of a wave form under examination, so that successive cycles may be compared with each other. The circular time base also has extremely important applications in radiolocation work, for the polar-coordinate display of information received from all directions about a specified control center point.

A circular time base is obtained from an alternating-current source of supply, and is achieved by combining two normal, pure sine waves — one sine wave being 90° out of phase with the other. To better illustrate such a combining process, consult Figure 3. Referring to that figure, assume that sine wave A is applied to the horizontal deflection plates of an electrostatic cathode-ray tube, and the sine wave B is applied to the vertical deflection plates; the result of the combination of these two waves at any instant is shown by the series of circular "clock" diagrams in Figure 3. Now, consider the action of these two sine waves. At Point 1, there will be full voltage (positive) on the horizontal plates, and no voltage on the vertical plates; thus the spot on the screen will be deflected to the point shown. At 2, an increasing voltage amplitude on the vertical plates and a decreasing voltage on the horizontal plates will cause the spot to move downwards, describing the small arc of a circle. At 3, when there is no voltage on the horizontal plates, and full voltage on the vertical plates, the spot will be deflected only by the vertical plates, and in the direction of the polarity of the deflecting voltage. At 4, the horizontal deflecting voltage has changed polarity and the combination of this with the diminishing vertical deflection voltage causes the spot to continue to describe a circle. This process is continued, as shown by further points in Figure 3, until the moving spot has transcribed a complete circle on the cathode-ray tube screen. This process is, of course, repeated over and over again, as often as desired.

In the employment of a circular time base in electronics work, it is usual to use a constant angular velocity, time being indicated by the angular position while the radius of the circle (as it rotates about the center point) is controlled by the potential (or current) under examination.

By varying the amplitude of one or the other of the pure sine waves (shown in Figure 3), it is quite simple to produce elliptical traces of various dimensions — since an ellipse is merely a distorted circle. Elliptical time bases are, therefore, very closely related to circular time bases and are produced in the same manner. The effect of applying an unknown signal to an elliptical time base is shown by the two examples in Figure 4. In the upper trace, the complete ellipse is portrayed on the screen; in the lower trace, only the central segment of the ellipse is depicted, since the actual ellipse has been allowed to literally "spread out" in a horizontal direction, to permit closer examination and comparison of wave shapes.

When both vertical and horizontal deflection plates of an electrostatic cathode-ray tube are engaged in producing such complicated time bases as the circle, ellipse, *et al*, the

Figure 3. — The formation of a circular trace, by means of two pure sine waves

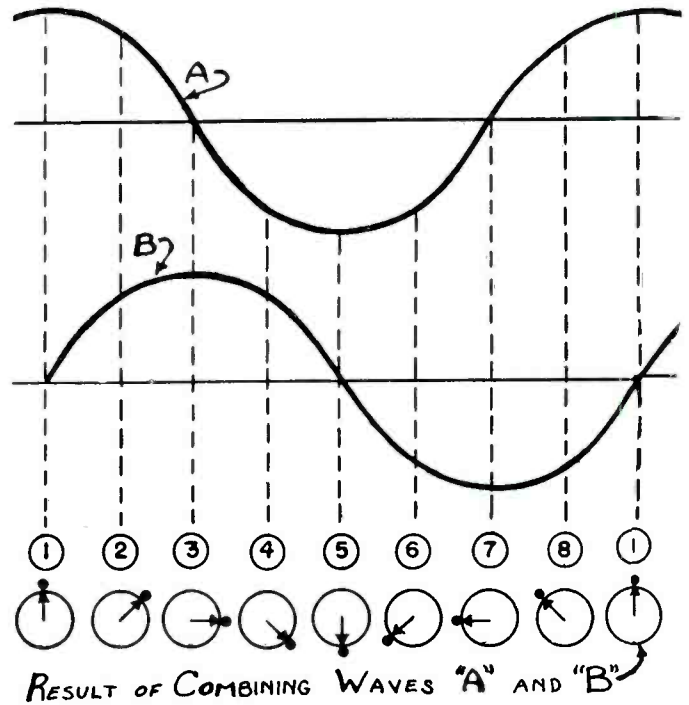


FIG. 3

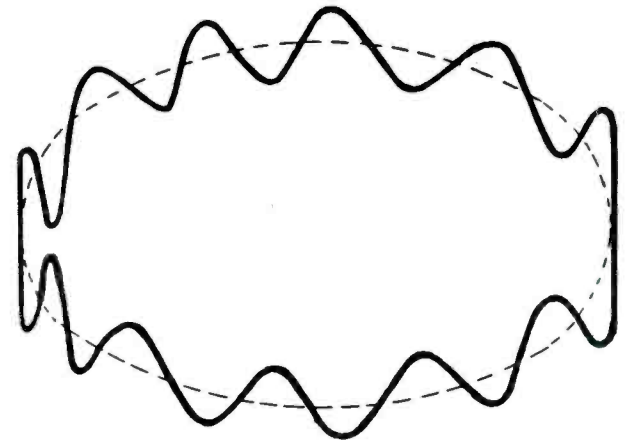


FIG 4

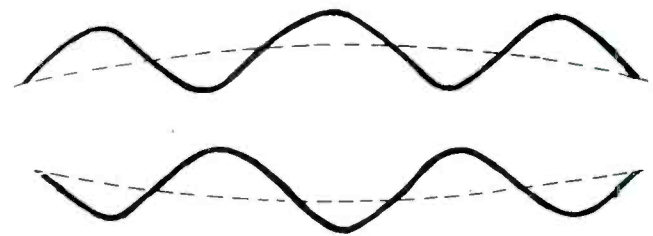


Figure 4. — Elliptical trace time bases, with signal wave forms

unknown signal voltage may be applied to the tube by electromagnetic means. In some cases, on the other hand, the circular or elliptical voltages may be applied to the tube through the electromagnetic coils, and the signal applied to the electrostatic plates. This explains the necessity for certain complicated cathode-ray tubes which employ both electrostatic and electromagnetic means of deflection.

Still a further type of cathode-ray tube having a polar-coordinate display is the electrostatic tube which is revolved mechanically between fixed electromagnetic coils, achieving a similar circular representation.

Another variation of the circular time base principle is the re-entrant loop time base shown in Figure 5, which is achieved by a complicated combination of both electromagnetic and electrostatic deflection. The basic circular trace is obtained in the usual manner. Then the higher of two given frequencies is applied in series with one of the deflector plates and also to a pair of coils wound around the neck of the cathode-ray tube. By rotating the plane of the coils

Figure 5. — Time bases composed of Re-entrant loops

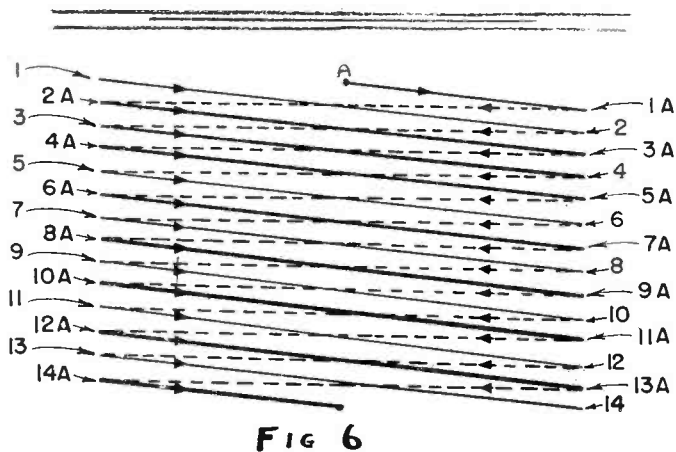
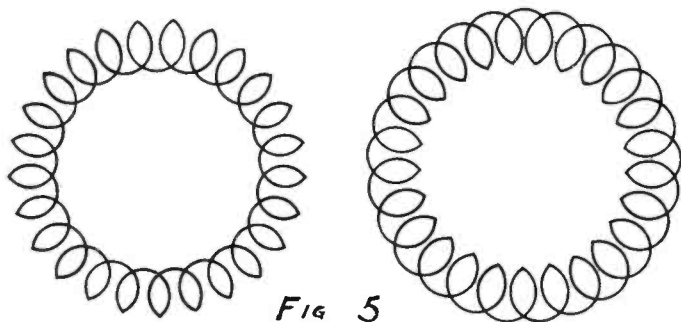


Figure 6 — Diagram showing pattern of interlaced scanning

relative to the deflector plates, the radial movement of the beam is modified by the transverse field of the coils, and the resultant trace becomes re-entrant, as shown in Figure 5.

A spiral time base may be obtained by combining a circular time base and a normal saw-tooth or linear time base. If the diameter of the basic circular time base is controlled by a radial time base, the result will be a spiral image.

All of these special time bases, such as the circular, elliptical, spiral, et al, have been devised to permit a lengthening of the trace on the screen of the cathode-ray tube. Such special time bases, though quite complicated, permit the examination of certain phenomena which would not other-

wise be possible by means of a simple saw-tooth or radial (linear) time base.

For certain electronics circuit requirements it is necessary to produce a time base image which traverses the screen, flies back, and then waits until a given electronic signal permits the trace to proceed across the screen again. Such a trace, actuated in fact by some type of electronic switch, is necessary in order to examine in great detail, electrical phenomena which last for an extremely short time and which recur at relatively long and infrequent time intervals.

For television purposes, two time bases are used to deflect the beam horizontally and vertically in a special cathode-ray tube known as a picture tube. The normal practice is to scan the screen of such a tube a specific number of times horizontally (usually between 400 and 600 times) while traversing the screen twice in a vertical direction. The total number of such horizontal traverses which the scanning beam passes from the start of one complete image (or frame) to the start of the next image is known as the number of lines per frame. Each vertical traverse is displaced by half a line, so that alternate traverses are interlaced. This arrangement permits the full use of the available number of lines, at the same time keeping the repetition frequency high enough to eliminate flicker. Figure 6 illustrates a typical small scanning pattern, depicting just such an odd-line interlaced scanning arrangement. Referring to Figure 6, in actual scanning operation, the electron beam first traces the line marked 1-2-3-4-5-6-7-et al. When the beam has traversed the screen a certain number of times, it returns to "A" and describes the path 1A-2A-3A-4A-5A-6A-7A-et al—at the conclusion of which the beam returns to Point 1, and the entire process is repeated. In commercial television practice the standard number of lines per frame has been established at 525. The line-scanning frequency for a 525-lines-per-frame television system is 15,750 cycles per second.

While an attempt has been made to present a general summary of the more important forms of time bases, the subject has in no way been exhausted. There are almost a hundred different types of time bases, which differ technically in their generation, as well as perhaps a hundred or more variations of these basic types of time bases. Actually, the number of possible types is almost unlimited, since new electronics developments have greatly expanded the technical field and use of time bases.



Capt. Tom Gootee, former Chicago studio and field engineer, in and out of New York these days following a number of writing pursuits in radio broadcasting and motion pictures. He's back in the Network Groove again—writing scripts for such shows as NBC's Author's Playhouse, CBS' Thin Man, Blue's Hot Copy, and a good many others. His pre-war literary and technical experience makes him uniquely qualified for his current

Army assignment: writing scenarios for Signal Corps Training Films on radio and radar subjects. Thorough technical experience and training in the Signal Corps on radio-location devices—during the past two years—makes him a "natural" for post-war television.



History of Communications Number Four of a Series

SMOKE SIGNAL COMMUNICATIONS

While the puffs of our early American smoke Signals were not as complicated as the Morse Code, this type of communication was a speedy and effective means of communication at that time and could be seen for scores of miles on a clear day. Used for transmitting their battle messages, smoke signals in the days of the early American meant a progressive means of communication.

Restricted by climatic conditions this type of communication was limited in its use. Universal microphones in the part they play in modern electronic voice communication must withstand the climates of the Arctic and the Tropics all in a day's work. Built to accomplish a specific job, Universal Microphones are "getting the message through" on every Allied front.

Model T-45, illustrated at left, is the new Lip Microphone being manufactured by Universal for the U. S. Army Signal Corps. Shortly, these microphones will be available to priority users through local Radio Jobbers.

UNIVERSAL MICROPHONE COMPANY
INGLEWOOD, CALIFORNIA



MODEL T-45
LIP MICROPHONE

NOW IN STOCK!

30-watt deluxe and 20-watt

AMPLIFIERS for all war

agency and industrial sound

uses. Ask today for illustrated

AMPLIFIERS folder.

Immediate delivery upon
receipt of order.

•
**TERMINAL
RADIO CORP.**

85 Cortlandt Street

New York 7, N. Y.

WOrrh 2-4415

San Francisco News

By Bob Shover

HI, Fellas—Well, the "Ides of March" have passed and left us flat but at peace with the Treasury Department. Now when **Normal Tax and Victory Tax** and give us another asperin stops running thru our mind to the rhythm of "Mairzy Doats" goes away, we will be nearly normal again, we hope.

Spring here with sunny weather (L. A. take note) most every one thinking of vacations which are underway. **Anne Dunnaway** back to the corn country in the Middle West; maybe she will bring back some of those famous steaks we used to have out here. **Art McDermott** having his vacation early this year too. **Norman Tapper** now taking the midnite watch for the vacation period. **STANDARD SYMPHONY** back in San Francisco for the summer season which will give **Frank Barron** a break from Studio "J" to Studio "A".

Bob Brooke, ex-Hollywood P.A., in to see us the other day. He sure gets lonesome for the swinging V. I. meters, pilot lamps, and watching the clocks for the old G. A. However, he still has that Hollywood tan. "FURLOUGH FUN" in town for a one nite stand with **Hal Ashby** at the controls. Chicago and Hollywood take note—San Francisco Reference Recording now going full swing with all eight tables rolling full force!

Re-Garden Bugs, snails, insects and general pests, including all the experts who tell you how it should be done. It has been proven that you can raise just as many things here in San Francisco as you can in the east bay or down the peninsula with the proper care and a little thought plus a lot of hard work. Congrats to **Tommy Watson**, **George Dewing**, **Russ Buttler** and **Sam Melnicoe** for some swell mixing on **STANDARD SCHOOL HOUR** Pgms.

Jim Summers is thinking about cementing or laying bricks in his back yard so the young Summers won't get so dirty. More Congrats to the **Blue** in San Francisco. They now have **George Wright** (Organist) who really makes the pipes talk from the mighty Wurlitzer in Studio B; and I do mean talk.

NABET meetings here the last few months have been a great success under the careful and thoughtful guidance of **Chairman J. Allan O'Neil** and his councilmen. Also, the idea of an intermission at the half way point helps a great deal (**With Free Beer**). You would be surprised at some of the fellows that crawl out of their shell during the second half of the meeting! **NBC** is building a new transmitting station in the Bay area; so some of the fellows are polishing up on their transmitter texts so they will get a chance to work with some of the new ultra-modern gear. As **Television** moves swiftly ahead, many of the boys are keeping up on their toes on all the latest developments.

SPECIAL BONUS ISSUE

The **Stolzenbergers**, **Millie** and **Ed**, **Secretary(!)** and **Managing Editor**, respectively, of **The Broadcast Engineers' Journal**, report that they have managed to find the time, between regular issues of the **Journal**, to produce a **Special Stolzenberger Edition**, which arrived special delivery at 4:25 p.m., **May 5th, 1944**. Technical data: male of the species; weight, 8 pounds; tentatively named **Bobbie**. All parties doing well. The future production schedule will comply with **WPB** and **WMC** restrictions!

War Emergency Radio Service

By Bert Pruitt

WE WENT pheasant hunting with supervisor Harry Caskey on opening day last November. Birds were numerous and we banged away until our shoulders ached. But the birds kept flying. "Pruitt", said Caskey, "I wonder if these shells are blank?" "We'll soon find out", I answered, drawing head on an ear of corn meekly peeking out from under some husks. I pulled the trigger on my 16-gauge shotgun.

"They aren't blanks", agreed Harry, listening to the rain of shattered corn coming down on the dry cornstalks and leaves. "These pheasants must be wearing armor plates if they can escape a salvo like that!"

"Either that or we're punk shots!"

"Let's go home", said Harry; "it's getting late!"

We walked back to Harry's car, unloaded our guns and were soon making the return trip to Cleveland. Harry fished two stogies from his hunting coat. . . . "Have one", he said with a tone of generosity in his voice, "the matches are there in the glove compartment."

I opened the compartment door, expecting to see nothing but a folder of safety matches. There was more than that in there. A fancy looking box, decorated with doggy knobs and dials looked me in the eyes. Wires ran hither and yon as though trying to escape from their prison there in the glove compartment. A close look disclosed the fact that a midget microphone was lying in back of the box.

"Harry, what the dickens is that thing in there?"

"That", explained Harry, biting off the end of his stogie, "is a transmitter and receiver."

"No!" I exclaimed, thinking of the size of our 50KW transmitter out there at Brecksville. . . . "Do you mean to say you can put studios and a transmitter in a little box like that?"

"Pruitt", said Harry with obvious disgust, "I used to fall for that naive stuff of yours back in 1930 but you're wasting your time trying it now!"

"Well, Harry, it's a cinch you know more about your own rig than anyone else, so why don't you pull over there and park by that corncrib long enough to explain your rig to the BEJ readers?"

"Harry", I asked, "what's this little knob for?"

"That's what you tune the receiver with."

"Oh . . . and what'll we tell our wives when we return home without any pheasants?"

"By George! . . . This is Wednesday, isn't it?" Harry looked worried.

"Yes . . . Why?"

This is the evening our group does it's testing!"

"What group?"

"The WERS!"

"Who are they?" I'd heard of the WAACS, WAVES, WRENS, and WAGS. . . . WERS was a new one on me.

"The War Emergency Radio Service", explained Harry. "It's a part of Civilian Defense. . . . Watch this!" Harry turned on a switch or two, took the microphone, pushed a button, saying: "WJHH-170 calling, WJHH-13 . . . WJHH-170 to WJHH-13 . . . Go ahead, please."

WJHH-13 answered immediately. Harry had officially checked in. They carried on their ether pow-wow, then signed off. "That", said Harry, slipping his mike back into the glove compartment, "was C. E. Noel over at Report

Center 13. He's assistant Radio Aid for the West Side and he's stationed at Police Station No. 17 at 15619 Lorain Avenue.

"Your demonstration was impressive, Harry, but what is the purpose of your organization and what frequency do you use?"

"112 to 116 mc and the purpose of our organization is a pretty long story. The Government put a stop to amateur transmission at the beginning of the war. The hams felt lower than the keel of a submarine when they were forced to shut down their rigs. Then the War Emergency Radio Service was formed. This made it possible for some of the amateurs to go back on the air.

"The first step was to get a license. That was granted to Cuyahoga County in December 1942. The call letters are WJHH. Thirteen complete station units went into operation immediately. This gave Cleveland one of the first setups of its kind in the country. Other amateurs joined up and we now have 200 of them serving in 30 Report Centers. They operate 40 fixed units and 130 portable mobile units. We also have 10 Walkie-Talkies. . . . We . . . say, are you listening or are you sleeping?"

"Listening and making mental notes."

"OK . . . Well, you should be getting all this dope from John Kiener. He's the boss of the local organization but he's down with the flu. He's usually down at the Terminal Tower during tests. That's the main Report Center and all of the other Report Centers report to him. He, in turn, reports to the Head Office of the Cleveland Civilian Defense over at the Central Police Station in Cleveland.

"Maybe Kiener'll give us some pictures of himself. That ought to make everyone happy."

"He's a swell guy", said Harry.

"Harry, you're a genius . . . and you know which side of the bread is buttered!"

"The majority of the fellows, yes and gals, working with WERS are amateurs. Take Report Center 13 as a typical example of the cross-section in the organization. There's C. E. Noel, the fellow we were talking to back down the road when we passed that corncrib. Then there's Larry Hradek, "WJHH-148". He's a Fire Lieutenant with the Cleveland Fire Department. And there's George Winter, "WJHH-57". He's an accountant with the Erie Railroad. You know Frank Whittam down at WTAM. He's with us and so is Earl Hall and Charley Ames. And there's Charley Gunderman, "WJHH-174". He's in the Engineering Department out at International Business Machine . . ."

"Harry", we interrupted, "is your organization ready to take over in case of an emergency?"

"In case of an emergency", began Harry, chewing his cigar a little faster, "we'll be Johnny on the spot in nothing flat. Take the instance of January 12th past. We put on a test, and this test included the entire system, for the benefit of the officials of the state of Ohio. Mr. D. E. Park, Communications Coordinator for the state of Ohio Council of Civilian Defense, says the Cuyahoga County WERS organization is one of the largest in the United States, and I know", continues Harry, switching over to the first person, "from personal observation that it's well organized and prepared to render most effective communication service in the

(Continued on Page Twelve)

Thomas A. Edison

GENIUS, according to Thomas A. Edison, is two per cent inspiration and ninety-eight per cent perspiration. His own story of his struggles with the electric light pretty well proves that statement. Here is Mr. Edison's story in his own simple words:

"In 1878 I went down to see Professor Barker, at Philadelphia, and he showed me an arc lamp—the first I had seen. Then a little later I saw another—I think it was one of Brush's make—and the whole outfit, engine, dynamo, and one or two lamps, was travelling around the country with a circus. At that time Wallace and Moses G. Farmer had succeeded in getting ten or fifteen lamps to burn together in a series, which was considered a very wonderful thing. It happened that at the time I was more or less at leisure, because I had just finished working on the carbon-button telephone, and this electric-light idea took possession of me. It was easy to see what the thing needed; it wanted to be subdivided. The light was too bright and too big. What we wished for was little lights, and a distribution of them to people's houses in a manner similar to gas. Governor P. Lowry thought that perhaps I could succeed in solving the problem, and he raised a little money and formed the Edison Electric Light Company. The way we worked was that I got a certain sum of money and employed a certain number of men, and we went ahead to see what we could do.

"We soon saw that the subdivision never could be accomplished unless each light was independent of every other. Now it was plain enough that they could not burn in series. Hence they must burn in multiple arc. It was with this conviction that I started. I was fired with the idea of the incandescent lamp as opposed to the arc lamp, so I went to work and got some very fine platinum wire drawn. Experiment with this, however, resulted in failure, and then we tried mixing in with the platinum about 10 per cent of iridium, but we could not force that high enough without melting it. After that came a lot of experimenting, covering the wire with oxide of cerium and a number of other things.

"Then I got a great idea. I took a cylinder of zirconia and wound about a hundred feet of fine platinum wire on it coated with magnesia from the syrupy acetate. What I was after was getting a high-resistance lamp, and I made one that way that worked up to 40 ohms. But the oxide developed the phenomena now familiar to electricians, and the lamp short-circuited itself. After that we went fishing around and trying all sorts of shapes and things to make a filament that would stand. We tried silicon and baron, and a lot of things that I have forgotten now. The funny part of it was that I never thought in those days that a carbon filament would answer, because a fine hair of carbon was so sensitive to oxidation. Finally, I thought I would try it because we had got very high vacua and good condition for it.

"Well, we sent out and bought some cotton threads, carbonized it, and made the first filament. We had already managed to get pretty high vacua, and we thought, maybe, the filament would be stable. We built the lamp and turned on the current. It lit up, and in the first few breathless minutes we measured the resistance quickly and found it was 275 ohms—all we wanted. Then we sat down and looked at that lamp. We wanted to see how long it would burn. The problem was solved—if the filament would last. The day was—let me see—October 21, 1879. We sat and

looked, and the lamp continued to burn, and the longer it burned the more fascinated we were. None of us could go to bed, and there was no sleep for any of us for forty-five hours. We sat and just watched it with anxiety growing into elation. It lasted about forty-five hours, and then I said, 'If it will burn that number of hours now, I know I can make it burn a hundred'. We saw that carbon was what we wanted, and the next question was what kind of carbon. I began to try various things, and finally I carbonized a strip of bamboo from a Japanese fan, and saw that I was on the right track. But we had a rare hunt finding the real thing. I sent a school-master to Sumatra and another fellow up the Amazon, while William H. Moore, one of my assistants, went to Japan and got what we wanted there. We made a contract with an old Jap to supply us with the proper fibre, and that man went to work and cultivated and cross-fertilized bamboo until he got exactly the quality we required. One man went down to Havana, and the day he got there he was seized with yellow fever and died in the afternoon. When I read the cable message to the boys, about a dozen of them jumped up and asked for his job. Those fellows were a bright lot of chaps, and sometimes it was hard to select the right ones."

War Emergency Radio Service

(Continued from Page Eleven)

event of any civil emergency or catastrophe in the Cleveland Area."

"Harry", we interrupted, "does your boss, John Kiener, have anything to do with the Kiener Coal Co.? I've been buying coal from the Kiener Co. for years and that name sounds familiar."

"He's Vice President of the Kiener Coal Co."

"Is he? Say, Harry, there's a coal shortage . . . or rather a shortage of drivers. . . . Wonder if he could fix it up so I could get a ton of coal this week?"

"That reminds me", said Harry, "of something that happened the last time we held a test. Sergeant Dennis Lynch, who is in charge of Report Center 13, notified Radio Aid Noel that an urgent call had been sent out from a Cleveland Hospital for a blood transfusion. The blood was needed for the wife of Police Sergeant Neal Lynch, who is a brother of Sergeant Dennis Lynch. The request for a blood donor was broadcast throughout the system and a number of volunteers answered immediately. The hospital soon had the proper type blood. "Pruitt", Harry said, with an abrupt change of subject, "we're nearly home!"

"Yes", I agreed, "and our wives are probably waiting with fire in their eyes instead of in the kitchen stove. We told them not to cook anything for dinner because we'd be home early with pheasants for dinner. What'll we tell 'em?"

Harry hummed and hawed and chewed his cigar. . . . "Pruitt, let's tell them we got our limit of pheasants by noon and headed for home. We had a flat tire out at Dover and got out to fix it. While we were pumping the flat a representative of the Society of Kindness to Human Beings drove down the road and stopped when he saw us dressed in hunting clothes. He lost no time in explaining that he was sponsoring a drive to collect food for the hungry children living in El Ropo" . . . "Pruitt", said Harry with conviction, "we sent those four pheasants over to El Ropo!"

"Harry", I said, with tears of gratitude in my eyes, "you're a genius!"

Cleveland Engineer Reports from New Delhi

(Note: The following letter was written by Capt. Cecil Bidlack, WTAM engineer stationed in New Delhi, India.—B. PRUITT)

I PROMISED I'd write a longer letter and give you all the dope on life in New Delhi, so here goes. I'm hoping you'll pass this on to Bob Dailey if he isn't doing his stuff for Uncle Sugar now and tell him how I appreciate the WTAM News Letter. My December letter reached me on March 20 and today I received the February 25 letter. I was very much flattered to have a lot of my copy in the December letter and assure you I was thinking about all of you even though I didn't write much in the past few months. So many things are on the 'verboten' list especially when you're travelling from one place to another and also when you're living from one day to the next expecting orders to move.

I finally reached my destination over a month after arriving in India. During that time, I saw a great many miles of the country and a great many interesting sights. It's quite a break to be able to say I'm in New Delhi instead of "Somewhere in India." As far as I know this is the only place in India where that privilege is granted.

One of the first customs of the country is the open palm with the plea of 'baksheesh'. Before we reached Delhi I would have sworn that at least 50 per cent of the Indians were beggars. Here we're fortunate that New Delhi doesn't have the beggars to be found in another very large city I visited, to say nothing of the millions at way points in between.

One day we visited a very famous temple where we were shown about by one of the priests. He spoke English, at least he thought he did, but his accent was so peculiar that about only one word out of five was intelligible. Indians cremate their dead at what is called a 'burning ghat'. It was near the temple so we wanted to see it and were taken in tow by another priest after the customary baksheesh had been deposited with the first. I supposed a burning ghat would be a sacred place and have nice appointments, instead it looked like someone's vacant lot with a number of pits where the bodies were burned. They first pile about two feet of wood over the pit, then place the body on this. About an equal amount of wood is placed on top of the body so that it's all covered but the head. One of the close relatives walks around the body carrying a bundle of reeds that have been lighted, while a priest reads the service. When he has completed three rounds, he lights the pile at the head, then all around, and in a few hours nothing but ashes remain.

When we first went into the ghat we saw one pile of charred embers with only a gleaming white skull visible. Then we walked on to a pyre just ready to be lighted. Up to this point everything was fine until we saw the head and feet covered with black spots—"smallpox". I was ready to leave at that point. At any rate we stepped back and then were shown the sacred river where the bodies were cleansed and purified before the ceremony and where the ashes were finally consigned. After our tour the priest thought five rupees, each, was about the right amount of baksheesh, but we compromised and only donated one.

Cattle are sacred in India and in the largest city they wander through the downtown section with traffic moving around them. Bullock carts are a common sight even in New Delhi and it's remarkable what loads the women carry on their heads.

My work is in the Signal Section of Rear Echelon Headquarters of CBI. We prepare projects for new installations, or additions to existing communications facilities, for approval by higher authority. We have plenty of work and the days and weeks pass quickly.

Our quarters are about a mile from the office and, as you'll note in the picture I'm enclosing, I cycle to and from work on a GI bicycle. We live in new barracks for officers recently completed for Uncle Sugar. They're nicely furnished and we share the battle with the room next door. According to the British custom, the two of us have a 'bearer,' He wakes us gently in the morning, shines our shoes, even puts them on for us, holds our trousers as we get into them, makes the beds, gets ice for our beer, or anything you can think of that has to be done. He also takes care of our clothing and shines our brass. A "dhobi" is the laundry man and a "sweeper" keeps the place clean. It's a lovely system if you like being waited upon but sometimes you'd like to kick his fanny up on his shoulders and do a few things for yourself. We pay the bearer twenty-five rupees each per month, while the dhobi gets ten and the sweeper one. A rupee is worth thirty cents.

Boy! Am I fighting a tough war! We have ration cards here too. Nine cans of beer a month, a pack of cigarettes per day, two cakes of soap a month, three packs of gum. Other items are rationed according to the supply. If you'll keep it quiet, a quart of Canadian Club per month is also available. Indian whiskey which smells and tastes like vanilla extract can be had as well as Indian gin. The latter two can be purchased at the local merchants.

This past week marked another anniversary of my entry on active duty. Three years ago, on March 31st, I reported at Fort Knox "for one year". I hope that before my two years overseas are up that MacArthur is back in the Philippines, that Eisenhower is in Berlin and I'll be back in Cleveland wearing civilian clothes cueing in that theme song on *Linda's First Love* . . . or is she married now? (No, but she's selling a lot of Kroger bread trying to snare someone . . . BP).

We have a 50-watt Allied Forces Broadcasting Station here now and it really brings back fond memories to hear the Hour of Charm, Voice of Firestone, Jack Benny and Baby Snooks coming out of a radio speaker instead of this screwy Indian music or BBC news.

As they say in Hindustani "tika" or everything in OK with me and I'm hoping it's the same over there. The hour is getting late and I have to rest up my sturdy (?) right arm to make marks on paper tomorrow, so with a low bow I'll say Salaam! until next time.

My very best to everyone.

(Signed) CEC.

GOOD INVESTMENT

Drop us a 1c post-card with your complete address INCLUDING P. O. ZONE No. and the key symbol, such as NSNYC, SVC, S12+6, etc. This investment will pay immediate dividends through more prompt delivery of your copy of the Journal.

NEW LETTER CONTEST



for SERVICEMEN!

ELEVEN 1ST PRIZE WINNERS IN 5 MONTHS IN CONTEST NO. 1!

Yes sir, guys, the hundreds of letters received were so swell that double first prize winners had to be awarded each of the first four months and there were triple first prize winners the fifth and last month...

SO—HERE WE GO AGAIN!

Get in on this NEW letter contest—write and tell us your first hand experiences with all types of Radio Communications equipment built by Hallicrafters including the famous SCR-299!

RULES FOR THE CONTEST

Hallicrafters will give \$100.00 for the best letter received during each of the five months of April, May, June, July and August. (Deadline: Received by midnight, the last day of each month.) . . . For every serious letter received Hallicrafters will send \$1.00 so even if you do not win a big prize your time will not be in vain. . . Your letter will become the property of Hallicrafters and they will have the right to reproduce it in a Hallicrafters advertisement. Write as many letters as you wish. V-mail letters will do. . . Military regulations prohibit the publication of winners' names and photos at present . . . monthly winners will be notified immediately upon judging.



BUY A WAR BOND TODAY!

THE HALLICRAFTERS CO., MANUFACTURERS OF RADIO AND ELECTRONIC EQUIPMENT, CHICAGO 16, U. S. A.

WPTF — Raleigh

By Rex Coston

On the first day of April there were festivities at the WPTF transmitter. But the occasion was not in celebration of "All Fools' Day," it was a barbecue supper with H. Felton Williams as guest of honor. Felton has just accepted a position with the Westinghouse Manufacturing Co. as a field engineer and expects to be engaged in foreign service.

Felton, a Raleigh native, joined the WPTF staff in 1929 as a control operator. After working as a push-button artist at the studio for a few years, in 1934 he decided to retire to a white collar job at the transmitter. While at the studio, staff pianist Peggy Fussel played her way right into Felton's life and their marriage ceremony was unique in that it took place in front of a WPTF microphone.



H. Felton Williams

During his fifteen years with the company, Felton had been a capable and well liked member of the staff and his absence will be felt by all. We wish him the best of luck in his new venture.

Waldo Rood, local NABET Sec. Treas., has gone to the transmitter to fill the vacancy left by Williams. With Rood's leaving the studios and Nelson Olmsted's leaving NBC, who will keep us entertained with those tall tales?

New Television Stations

From FCC Report No. 1535

Stromberg-Carlson, Rochester, N. Y. Channel No. 1, 50-56 mc.

Capitol Broadcasting, Washington, D. C. Channel No. 6, 96-102 mc.

From FCC Report No. 1537

Philco, Washington, D. C. Channel No. 4, 78-84 mc.

Philco, New York, N. Y. Channel No. 9, 180-186 mc.

From FCC Report No. 1545

Tower Realty Co., Baltimore. Channel 4, 78-84 mc.

Travelers Broadcasting, Hartford, Conn. Channel 7, 102-108 mc.

From FCC Report No. 1546

Bamberger Broadcasting, Washington, D. C. Channel 4, 78-84 mc.

Bamberger Broadcasting, Phila., Pa. Channel 7, 102-108 mc.

From FCC Public Notice No. 74762. Effective June 1, 1944 the FCC approved Salt Lake City as a quarterly instead of semi-annual examination point. Huron, S. D., formerly quarterly examination point, was discontinued, and Sioux Falls substituted therefore.

Catching a Ghost — Radio Style - - -

By Bert Pruitt

SUPERVISOR J. J. FRANCIS came into the control room to relieve me the other day and he looked sadder than a tombstone in a graveyard. "Pal", he said, "do you believe in ghosts?"

That question momentarily floored me. One might logically expect his relief to come in late, bum a cigarette or request the loan of a fin till payday. But to have him demand point blank whether or not you believe in ghosts . . . well, that's a horse of a different color.

"Well, J. J.", I said, "I don't exactly believe there are such things as phantoms, yet . . ."

"Fine! You're just the guy I'm looking for . . . there's a ghost in our house and he's a hum-dinger. . . . I want you to come out and help catch him. . . . I hear you're the bravest guy in town."

I glanced over my shoulder to see who was standing behind me. "I mean you", said J. J., looking directly at me. "They tell me you fear nothing that walks, crawls or flies!"

"Who said that?"

"Well, as I was saying, there's a ghost out there in our house . . . no one has ever seen him but plenty of people

have heard him . . . he starts moving around in our attic just as our living room clock starts striking midnight!"

"What makes you think it's a ghost?"

"By the way he shuffles his feet across the attic floor. . . . Nothing but a disembodied soul with a restless spirit would drag his feet like that and", continued J. J., lowering his voice to a confidential whisper, "you can hear the metallic clink of chains bumping each other as they're being dragged across the attic floor . . . what're you doing this Wednesday evening?"

That question called for a careful answer.

"J. J.", I said, "Wednesday's my day off and I really ought to spend the evening balancing my bank account."

"Tsk! Tak! you can do that in five minutes!"

"Not my bank account . . . it hasn't been balanced since Pearl Harbor."

"Well, another week shouldn't make much difference".

"And I just received my income tax blanks . . . that needs immediate attention."

"Impossible! You'll need a lawyer for that."

"And there's my wife's clerical work . . . she's Sec/Treas of the Ladies' Aid Society. . . . We usually work on that Wednesday evening and it's often 4:00 a.m. before we get it straightened out."

"Pal", said J. J., "you're afraid of ghosts"

That statement was a challenge to my courage . . . an insult to my pioneer-ancestors who braved the Atlantic and wilderness of a new country in order that their their descendants might work the 40-hour week in radio stations.

"Oh", says I, bristling with the courage of a porcupine in a hollow log, "is that so? Well, just bring your ghost in here and see what I'll do!"

J. J.'s wife was visiting relatives in Pittsburgh. His daughter, now a SPAR, is away from home for the duration. Their house was pitch dark when J. J. and I turned into their drive at about 11:30 p.m. on Wednesday evening. There was a light drizzling rain and the dampness seemed to creep right through your clothing. J. J. lives way out in the

(Continued on Page Sixteen)

If you have not been using or have not yet tried Allied's New Glass Base Discs, a trial will convince you of their merits and superior quality — at no premium in the cost to you. We invite you to try this disc — that is how we obtain new customers. We feel certain that you will

reorder — that is how we build sales volume — from satisfied users. Your telephone call, letter, wire or cable will receive our prompt and courteous attention.

PROMPT DELIVERY direct from the manufacturer to any part of the United States, Canada, South America and to some foreign countries. ALSO AVAILABLE re-coating service for your old aluminum discs. Delivery in one week. Details on request.

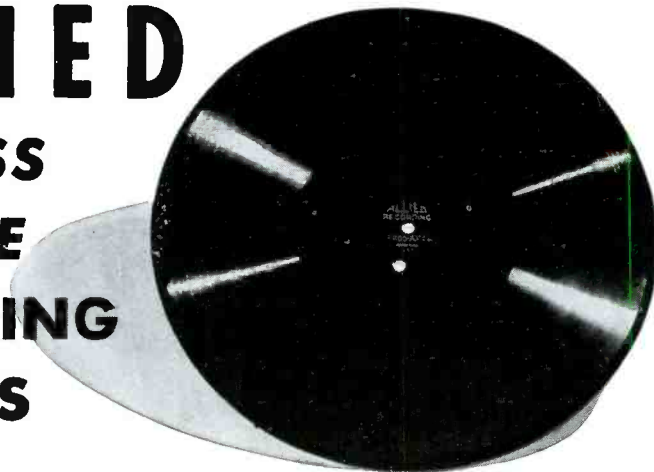
ALLIED RECORDING PRODUCTS CO.

21-09 43rd Avenue

Phone Stillwell 4-2318
Cable: Allrecord New York

Long Island City, N. Y.

ALLIED GLASS BASE RECORDING DISCS



RADIO GHOST

(Continued from Page Fifteen)

country and they have a long drive leading back to the house from the road. Huge pine trees line the drive on both sides. This gives the place a spookiness that is difficult to describe. I didn't like the looks of the place at all. You could feel something super-natural looking you squarely in the eyes.

"What a night for murder!"

"J. J.", you can be very unfunny at time!"

"Well", said J. J., lighting a cigarette, "we're here . . . take this flashlight . . . I put new batteries in it down at the station this afternoon. . . . We'll go in the front door . . . follow me!"

I took the flashlight and stepped from the car. J. J. lost no time heading for the house and I made sure he didn't get too much of a lead.

We hadn't taken more than ten steps when I became aware of a strange squeaking noise immediately to our left. Though on second thought you couldn't exactly define the noise as a squeak . . . one hardly knows how to describe it . . . it was something like the noise a

restless chicken hawk might make at night when he's roosting in a walnut tree. I turned the beam of my flashlight in the direction of the sound. My hair stood on end! "J. J.", I stammered, "just look at the size of those bats up there . . . and there's a white one!"

"They're pigeons . . . come on . . . let's go in the house."

J. J. unlocked the front door and we stepped in. One immediately had a strange feeling when he stepped into that room . . . a feeling as though someone or something was watching every movement we made.

"J. J.", I whispered, "do you smell cigar smoke? And what's that light over there . . . looks like the end of a burning cigarette to me!"

"It's me", answered someone from the darkness of the room. My knees played an unnamed tune. J. J. switched on the light.

Studio engineer George Molner was sitting there in a big comfortable chair. He was leisurely puffing on a black stogie.

"Hi, boys", said George.

"Oh yes" said J. J., looking at me, "I

forgot to tell you George would be here ahead of us . . . he's here to help nab the ghost."

"J. J.", I said, "how about a husky shot of scotch?"

"Sure thing". J. J. left the room and returned in almost no time at all. "Here, help yourself", he said, handing me the bottle and a glass.

I stuck the neck of the bottle in the waterglass and let her gurgle till George warned me the glass was about to overflow. "Here's how", I said, bending my right elbow.

"Jeepers", gasped George, "how's he do it?"

A pleasant glow began spreading through my system. I felt like a lit-up Christmas tree. The glow tingled in my finger tips and it tickled the lobes of my ears. The ends of my toes even felt happy. The problem of catching the ghost had been somewhat simplified. "Bring on your ghost", said I, "and I'll twist his ears till he thinks he's caught in a bear trap. . . . I'll make that midnight phantom cry 'papa' in no time flat!"

The ghost must have been listening for a speech just like that.

"Listen!" whispered J. J., putting a finger to his lips . . . that's him . . . it's exactly midnight and he's on the move again!"

The clock in the living room began to strike.

"Hear those chains?"

"And listen to that scraping sound . . . it sounds like someone dragging two pieces of sand paper across the drain board of a kitchen sink . . . he drags his feet like that every night!"

"J. J.", I interrupted, "hand me that bottle!"

"Not now . . . there isn't much left . . . we'll open another one after we catch him!"

"I merely wanted to hit the ghost on the head with it."

"Here, take this poker instead. . . . George you take this rung from a rocking chair. . . . I'll use this baseball bat . . . come on boys, let's get him."

No one moved.

"Pal", says J. J., looking at me, "you're by far the biggest so you'd better lead the way . . . we'll be right behind you."

"Boys", I whispered, "I've got an idea . . . this ought to make a good story for the Broadcast Engineers' Journal . . . you fellows lead the way and I'll stick close behind and take notes for the story!"

"J. J.", said George, "that ghost 'll die of old age if we wait until Pruitt

PRECISION-BUILT

ARMY NAVY E

Accuracy and dependability are built into every Bliley Crystal Unit. Specify **BLILEY** for assured performance.

BLILEY ELECTRIC COMPANY
IRIE, PENNSYLVANIA

Bliley Crystals

leads us up those stairs . . . come on . . . I'll lead the way!"

We tiptoed up the stairs. I was leading George and J. J., if one sized up the situation from the top of the stairs. "Shhhh . . . shhhhhh . . . don't make any noise . . . that'd scare him before we have a chance to nab 'em!"

The sound of rattling chains and scuffling feet was much louder than it had been there in the living room. I gripped the poker a little tighter. Beads of cold sweat trickled down my nose and chin. My hearing was keyed up to the point where each head of sweat dropping on the bare stairway sounded like someone dropping a watermelon in a tub of water. J. J. and George seemed to be totally unaware of danger.

George must have sensed the mortal agony I was suffering. "Pal", he whispered, "don't worry, I'll take good care of your commercials if anything happens to you."

My teeth chattered some kind of a secret message in answer to George's statement of generosity.

"Shhhhh", said J. J., "sounds like the ghost is shooting craps."

"Ya", answered George.

"Look!" exclaimed J. J.

I took one look. That was enough. Two shoes were slowly shuffling toward us! Chains about two feet in length were dragging behind each shoe. But that wasn't what made my hair reach for the rafters . . . about six feet above the shoes sat a hat in mid-air and the hat was slowly turning from right to left as though invisible eyes were searching for something or someone!

"Duck!" hissed I, flinging the poker at the approaching phantom. The poker sailed through the air and passed through what should have been the phantom's chest . . . the poker met no more resistance than a hot knife going through a slab of butter . . . the poker hit the floor, bounced a couple of times and lay still.

"Let's grab him", whispered George.

"Attack!" agreed J. J.

The attack began. I listened. Something knocked the flashlight from George's hand and it went out when it hit the floor. The room was darker than the inside of a rain barrel. "I've got his feet!" "And I've got his head!" Who had what was a mystery to me. There was too much noise for me to recognize any given voice. Groans, yells for help, moans, curses and thumping bodies all mingled to make me wish I had stayed home to work on my Income Tax Report.

"Ouch! He bit off my ear!"

"And he stabbed me in the back!"

"He's twisting off my right leg!"

"Look out! . . . He's getting loose . . . he's heading for the living room stairway! Where's Pruitt? He'll make mince meat of him if he catches him there on the stairway alone!"

"Turn on the lights!"

The attic was immediately flooded with light. This momentarily blinded me, then all at once human forms began to take shape. . . . Alvin McMahon, John Wilhelm, Harold Brandt, Barney Pruitt, Art Butler and John Hyatt were all standing there grinning like Jack-o-Lantern on Hallowe'en night. J. J. and George were grinning, too.

"Just what", demanded I, regaining my courage, "is coming off here anyway?"

"Pruitt", said Brandt, "we've been reading your stuff in the Journal for the past two years and we decided it was high time someone did something about it."

"Yes", chimed in McMahon, "some of that stuff of yours is drier than a salted herring!"

"We want some zing in the Journal news from Cleveland. We decided to

create a story for you . . . something worthwhile . . . something that'll make Editor Stolzenberger jab his fist through his best felt hat . . . something that . . ."

"Boys", I admitted, "the joke's on me and you did it to perfection, but just how did you manage to make those shoes and that hat perform those trick?"

"Nothing to it . . . see these fine wires. . . . Well, we had one attached to each side of the hat. . . . When we wanted the hat to turn to one side we merely pulled one wire and gave slack to the other and vice versa."

"But, where were you standing? . . . I couldn't see you."

"Against this wall."

"That doesn't explain how the hat stuck up there six feet above the shoes."

"That was done with a small wire attached to the top of the hat . . . that wire had an eye on the other end and a wire was stretched across the attic about six feet above the floor. All we had to do then was to hook another wire in the eye and pull the hat toward us. We merely pulled the shoes across the floor with two small wire."

"J. J.", I said, "where's that bottle of scotch?"

WE HAVE PARTS Galore - TO SPEED VICTORY!

SEND for YOUR COPY of this 800 PAGE FREE CATALOG

SUN RADIO & ELECTRONICS CO.
212 FULTON ST. • NEW YORK 7

FOR PROMPT SERVICE Telephone BARclay 7-1840

OVER 10,000 ITEMS - IN STOCK!

New 1944 Edition Just Out!

Purchasing Agents Engineers!
This massive buying guide is yours simply by writing on station letterhead stating your title. Address Box J.M.

*Sun Radio Company
212 FULTON STREET
New York City*



General meeting Hollywood Chapter NABET, April 15, 3:15 A. M.

Photo by Robert R. Jensen.

Front row (L. to R.) — Carnanchini, McWhinney, Clements, Riekeberg, Wilhelms, O'Kelly, Jensen. 2nd row — Hicks, Platt, Burman, Comegys, LeCroix, Culley, Brown, Wetteland, Ross Miller. 3rd row — Crosby (KFI), Nicolay, Dewes, Hobart, Pickett. 4th row — McDonald (KFI), Benvenuto, Murphy, Thornbury, Ed Miller, Livoti, Oborn, Gilers, Fry, Wick. Back row — Heffernan, Powell, Brearley, Kay, Reid, Doty, Morris, Gage, Winkler, Cook (KFI), Lorenz, Sams (KFI), Sturdy (KFI), Cravens, Evans (KFI).

JAMES HARVEY BROWN, Radio Engineer, Attorney at Law, Tax Expert, Notary Public, Labor Leader, Book Agent, Factory Representative, Politician, and outstanding member of the Democratic Party, is leaving NBC, April 18, to work for Uncle Sam. Jim reports in Washington D. C., with a commission of Lt. (j.g.) in the Navy. Before coming to NBC, he had a long and varied career as ship operator and at Shore Station KFS. Additional broadcast experience was obtained at KFAC, KFOX and KFVD, where he was Chief Engineer prior to joining NBC. Since

joining NBC on October 21, 1937, Brown has become a very important part of the Hollywood Engineering Department. He was assigned to the maintenance group at first and in the period of seven years has worked up to the position of Control Relief Engineer. For two years, he was National President of NABET and has been Chairman of the Hollywood Chapter for three years. Lt. Brown made his last of-

HOLLYWOOD NEWS

By Bob Jensen

ficial appearance as he conducted the general meeting of NABET at the Knickerbocker Hotel on April 15. At that time, the Hollywood Chapter presented him with a \$75 credit on a local clothing store to help in the purchase of his new wearing apparel. We're sorry to see you leave, Jim. Bon Voyage!



—NBC photo

Lt. James Harvey Brown (j.g.) bids adieu to A. H. Saxton, NBC Western Division Engineer



Photo by Robert R. Jensen.

Chairman Jim Brown conducts his last NABET General Meeting in Hollywood prior to joining the Navy as Lt. (j.g.) Ross Miller, secretary-treasurer, is taking it down for future reference.

The Hollywood general meeting was well attended and many important problems were discussed and voted upon. There were no dogfights, and it was really a pleasure to attend. Meeting adjourned about 4:00 A.M. and accompanying photo shows how Hollywood engineers look at 3:00 o'clock in the morning.

Los Angeles News

By H. M. McDonald

WILLIAM A. ERICKSON, at KFI-KECA studios for the past three years, and previously at Honolulu stations, has resigned, and joined the Overseas Division of OWI, as an Assistant Field Representative. He leaves shortly for London, via San Francisco. Richard G. Schroeter, formerly with the Blue in New York, replaces him. Altho a native of Los Angeles, all of Schroeter's ten years in radio have been on the East coast, with RCA, Dumont, Hazeltine, et al.

Vacations at KFI-KECA are now spread over the whole year (for the duration). Charley Cook, of the Studios, drew the latter part of March; spent the first half apartment hunting and moving, and the latter part at the beaches, returning bronzed as a Kanaka.

Tech. Sgt. James G. Wright, ex KFI-KECA, and now with the Signal Corps in Northern Ireland, writes "Climate here is like Oregon-Washington, everything green; twenty bars in the small town near us, liquor scarce but good, Old Bushmill, Jamison Irish Haig & Haig, 3 Star Hennessy."!!!

Lt. Commander Glen Litten, ex KFI-KECA, writes from his base in the Pacific that he had been to Eniwetok in the Marshall Islands and "had the opportunity of seeing how the Army, Navy and Marine Corps go about exterminating Japs."

Ensign Leo Shepard, former CBS-KNX transmitter supervisor, and well-known amateur (W6LS), is back from Tarawa, where he supervised the building of the first fixed transmitter. Following the third wave of Marines ashore he and his men, all especially trained for this task for many months, saw plenty of action. In his five months out that way he built more than a dozen stations from the foundation up and received a letter of commendation from the Admiral for his excellent work. He will "rest up" back in Washington for the next few months.

After almost a year on a French Island in the South Pacific Captain William L. Comyns, of the Signal Corps, has also been transferred to Washington. A veteran of the last war, when he served in the Navy, he is on his third year in this one. Prior to enlisting he was head of the Radio Dept. of Wiggins School here, and was formerly with RCA at Bolinas and Honolulu.

Broadcast Engineers' Journal — May, 1944 **19**



*Unchallenged
Performance!*

... the Heritage of
Permoflux
DYNAMIC HEADPHONES

When the need came for a better performing headphone, Permoflux applied advanced sound reproduction principles it had developed years before.

The same efficient designs which had established Permoflux Acoustical Products as leaders in many fields, provided in Permoflux Dynamic Headphones an increased measure of sensitivity and improved signal audibility under every operating condition.

While Permoflux Dynamic Headphones are today completely in the service of our fighting forces, the coming of Victory will make them available to all.

TRADE MARK
PERMOFLUX
CORPORATION
4916-22 W. Grand Ave., Chicago, Ill.

PIONEER MANUFACTURERS OF PERMANENT MAGNET DYNAMIC TRANSDUCERS

Washington News . . . By R. E. Shenton

HAVING slept through last month's projected Orthodox Orgy from the Nation's Capital, we will endeavor in our own quiet way to regale our reader with two months' worth of songs, dances and snappy sayings.

From the pre-vacation department of suntan comes the delightful story of Field Supervisor K. B. Williams' most rugged of remote assignments. Keith journeyed to Sunny Florida to put on the "Voice of Firestone" program for a three week stretch. This is, of course, only a weekly show, so that he managed to have quite a bit of time to himself. K. B. is quite a golfer anyway, so it didn't exactly hurt his feelings to find some of his old chums from Ina Ray Hutton's hand on hand to stand in the sand with him.

Once out of the trap, Keith came back north, tan and happy, only to work a week and depart on his regular vacation. When asked how he did it, K.B. just laughed, told an unprintable joke and walked off. When last seen, he was clad in cotton slacks, a polo shirt and pair of two-tone shoes, looking very much like an official NBC ad which might say "get into radio and have a healthy look."

* * *

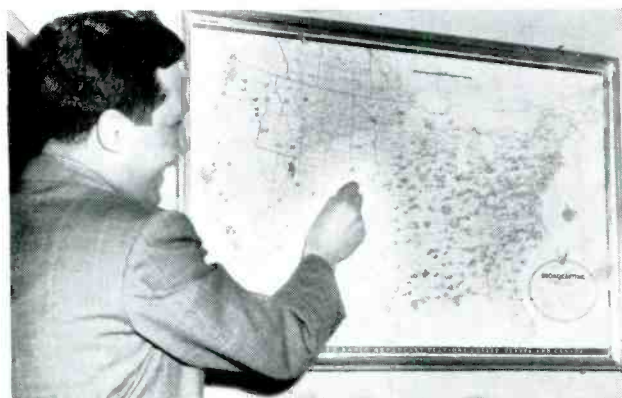
This gentle reader, is probably the last column in which the exploits of "Mac" McGinley as a Studio Engineer will be reported. For by the time this account reaches print, NABET's national secretary will be a paid-up CIO member somewhere in an Atlantic convoy, bound for unknown ports. Meaning that he has forsaken his "hand-me-a-record" cognomen for simply "sparks, merchant seaman." This decision is the result of recent widespread bestowals of the remarkably conclusive 1-A classification. In the same breath, SE Jim Meline, who also received his 1-A notice, will in all probability go with the Overseas Service of the Office of War Information. He will first go to London, and from there proceed to his point of assignment. We're expecting frequent accounts of their wartime activity in return for our most sincere good luck wishes. As yet, no replacements for Messrs. McGinley and Meline have put in an appearance, but it is strongly rumored, or perhaps by now even a certainty, that Miss Metz is soon to have a fellow FSE to keep her company. Regardless of what happens, there's sure to be interesting developments in the very near future.

* * *

From out Bradley Hills way, location of the WMAL transmitter, comes news of a new WMAL hostess, who is without a doubt quite an innovation. She's an attractive brunette, hailing, we are told, from Scotland, and more recently a resident of MacArthur Boulevard here in Washington. The young lady is affectionately known as "Shorty" to her fellow workers at the WMAL shack, but we were unable to learn what her regular name was at deadline time, so this must suffice. Perhaps the most interesting part of the story is that "Shorty" was picked up (we blush with shame) by Chief Engineer Dan Hunter while on the way to work one fine morning, and in spite of Mr. Hunter's efforts to locate friends or relatives of the young lady in distress, she's made herself quite at home amongst the final amplifier. Pausing to wipe a tear from the editorial eye for this poor lassie, we add that Dan claims that Shorty is one of the brightest Scotch Terrier pups he's seen in a long time. Thus the saga of the 5K mascot from out Bradley Hills way.

This same Mr. Hunter has also recently acquired a 28 foot Elco cruiser on which he hopes to be able to view the scenic wonders of the historically muddy Potomac. Having accompanied the Commodore on a pre-season cruise, we saw the craft in its "boughten" condition, not as yet possessant of the Hunter touch. Plans call for the installation of the more conventional accessories, such as radio and the like, plus a few more unusual additions. Most impressive of this latter group is an automatic steering device which will retain the boat on any desired course merely by making a simple adjustment on some equipment associated with the magnetic compass. Dan also plans an automatic addition to the receiver which will trip an alarm relay if he is needed at the transmitter, provided, of course, the radio is tuned to WMAL's frequency. We feel that a better way to do this would be to have an automatic system for bringing the transmitter to the boat, but maybe Mr. Hunter will oblige in the future—who knows?

"Smilin'" Jack Berman, sales manager of Shure Brothers, adds another pin to the many on the broadcast station amp. That means another station has gone "Shure".



All these pins tell quite a story. They reveal that over two-thirds of all broadcast stations in the United States are now using Shure Super-Cardioid Microphones. That's coverage—and all through Shure jobbers, too.

THE UNIVERSAL MICROPHONE CO., Inglewood, Cal., in May published the first of a jobbers' edition of *Micro Topics* with 8 pages of microphone and company news and pictures of its factory reps., company officers and plant supervisors. It will be issued frequently but at no stated times.

Micro Topics is now on its second year as a bi-weekly employees' journal. The jobbers' edition will, however, be separate and distinct from the house organ.

Editorial supervision will be under Dr. Ralph L. Power, Los Angeles radio counsellor. Although primarily for jobbers, the new addition will also interest broadcast engineers. They can get on the mailing list by writing direct to the factory.



NEW VISIONS for Tomorrow's World

● IT DOESN'T MATTER NOW whether clouds hide the sun, or whether evening shadows fall on the baseball diamond. If the fans in the grandstand see the game so can the modern television camera.

That was not always so; the pre-war television "eye" needed as much sunshine as it could get to illuminate the scene. The same was true of football—final quarters were occasionally "washed out" on the television screen.

But thanks to research, conducted at the RCA Laboratories, a new super-sensitive television camera, rivaling the human eye in its ability to see under

conditions of poor light is in prospect for the post-war world. Then, by television you will see every last-minute play of the ball game as clearly as if you were in the stands. Entertainment, sports, news events will pass before your eyes with every detail, every shadow faithfully reproduced.

Today, RCA's research facilities are devoted to providing the fighting forces of the United Nations with the best radio and electronic equipment available. Tomorrow, these same skills will continue to serve America in developing and creating new and finer peacetime products.



RADIO CORPORATION OF AMERICA
RCA LABORATORIES • PRINCETON • NEW JERSEY

RCA
leads the way in
radio—television—
electronics



New York News

By George F. Anderson, Jr.

HOHUM in the spring a young man's fancy turns to thoughts of his victory garden or his vacation and also to vital statistics.

Births—To Arthur and Florence Holub, a daughter, on March 3. Art is in MCD and until the announcement of the birth he kept the information to himself and surprised everyone with the announcement.

Marriages—No new ones to report.

To the Services—went Robert—"Bobbie"—Massel, SE BNC, and Fred Frutchey, NBC Rec. They are civilians in the service of the Navy and also BNCI and NBC. More about what they are doing when it can be told.

Aaron Lippman & Co.

246 Central Avenue Newark, N. J.

Radio and Electronic Equipment

We Expedite — Ask Anyone

Courmettes & Gaul OPTICIANS

55 West 49th Street
R. C. A. Building, New York
Main Floor

EYE EXAMINATIONS

Prescriptions Filled . . . Prompt Repair Work

If you require information on

INSURANCE

of any kind, call

HERBERT LEROY RICE AGENCY

10th Floor, RCA Building
Suite 1017

Telephone
NBC Extension 140

Advancement—On April 1, from Apprentice to engineer: Jack Paine and William Chambers to NBC Studio, and John Norton and John Butler to BNCI Studio as Vacation Relief engineers.

New Titles—We understand from reliable sources that 'Doc' Dougherty, FE BNCI, has been appointed "Station Wagon Driver." It seems that on a recent nemo pickup someone inquired of Doc's assistant, "Who is the chap seated at the table in front of that box with all the knobs and gimmicks?" Thinking very rapidly the said assistant replied to the fair Lady—"Oh, he's only the station wagon driver." Doc says that there will be some dire results very soon.

Commutation and Stuff—Jerry Werst, SE NBC, who left the peace and quiet of our Nation's Capitol to come to the hustle and bustle of the Gay White Way, has decided that although work here is interesting he does not care to live here. So five times a week he hops a local Choo Choo and journeys to Bethlehem, Pa., a trip that takes him some five or six hours per round trip.

News of This and That—On the distaff side much has been published regarding the fact that NBC has a sustaining program every Saturday AM with a cast and production of all women. Miss Muriel Kennedy, NBC Rec., is the engineer assigned to handle this show.

The latest "March of Time" newsreel release shows a scene inside one of the third floor studios. The doors shown are those of the RCA Recording Studios though. The handsome chap seen in the control booth is our latest bridegroom—John Lustgarten. Well, he not only gets himself married, but also has his picture shown Coast to Coast!

Harold Leudeke, who has been salesman for the radio recording department for the past few months, has returned to engineering, and at present is assigned to New York Maintenance.

From the Land of Sunshine—we had a visitor—Howard Cooley of NBC Hollywood who graced our little city with a visit on his vacation. Howard says, "It's so peaceful in California."

News From Abroad—Capt. Charles Peter 'Doc' Dickson, AUS, tells of the pleasure of the pineapples, where he is. We do not refer to the Chicago variety. Doc is stationed at the present in Hawaii and is enjoying the vacation.

Resignation—Ed Strong, BNC SE, has resigned to go back into the recording business. Fred Moore, BNC SE, who sees greener fields ahead. And Ross Griffiths, NBC SE, who is leaving to go to either Arizona or New Mexico.

Serge de Somov and **Bob Johnston**, NBC SE'S, are spending all their spare time fishing. And to date have succeeded in catching a sizeable amount of fish of the salt water varieties.

Astronomy—Gil Markle and George Mathes, NBC SE'S, are very busy these days. They are engaged in constructing equipment for the art of star gazing,—and we mean star gazing.

Well, seeing as how this data on thisa and thatta did not appear last month, I am going to make sure it does this month. — Nite Now.

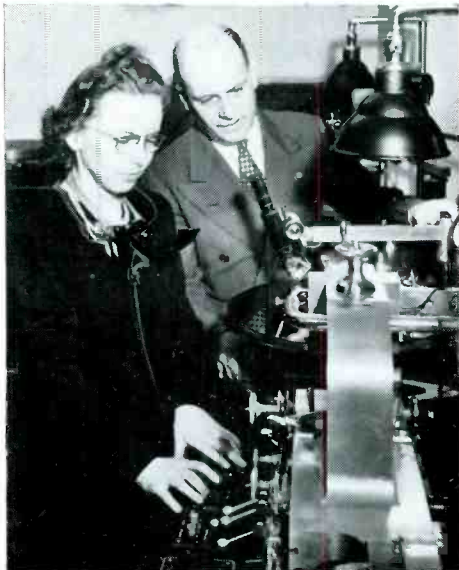
CORRECTION

Our Chicago-Omaha reporter, Arthur Hjorth, advises us of a social error in the WOW-Union Pacific item which appeared on page seven of our April issue. Roy Glanton, titled as Chief Engineer of WOW, should have read Transmitter Chief. Mr. William J. Kotera is the WOW Chief of Engineering.—EdS.

Chicago Chapter Chatter

By A. W. Hjorth

The ice has been broken at NBC Chicago. Not because of the spring thaw but because there ain't no men. Miss



Chicago Recording Supervisor Davis guides new engineer Mary Trottnner in operating NBC's Scully Recorders

Mary E. Trottnner, with a first class phone ticket, a graduate of the University of Minnesota and with nearly two years recording experience at WCCO, has the distinction of being the first woman to cross the barrier to the engineering department of NBC at Chicago.

Our Mary, as she will be known, was born at Wabasha, Minn., and claims to

be one of the few people from Minn. that isn't a Scandinavian. When Mary arrived in this world we were reluctant to ask but will take a chance and say about 1920.

Oh, yes, Mary taught school for about eight years.

Moore Makes Mammoth Monmouth Move

As Director of Training, Enlisted Men's School, Eastern Signal Corps Training Center at Fort Monmouth, N. J.,



Major Paul J. Moore

Major Paul J. Moore has been in the service since June '42. NBC Transmission Engineer on leave, Paul was born July 1907 at Chickasha, Indian Territory (now Oklahoma). Early interest in chemistry resulting in burning half of his home down which necessitated immediate change in hobby, to radio. Attended Oklahoma University and later operated WKY, KOCW and KTOK. Came with NBC

July '30 as S.E. and was Transmission Engineer '36 to '42. Been a ham since '21 as 5AJB, 5KV and finally W9MV.

WANTED—Control room engineers by WCKY Cincinnati—50 kw. CBS affiliate. Must be 4-F or over draft age. Address applications to Arthur D. Gillette, Station WCKY, Cincinnati, Ohio. Applicants must comply with WMC regulations.

WANTED — Transmitter engineers by WCKY Cincinnati—50 kw. CBS affiliate. Must be 4-F or over draft age. Address applications to Harvey B. Glatstein, Station WCKY, Cincinnati, Ohio. Applicants must comply with WMC regulations.

CAPPS*

SAPPHIRE is, and has always been, the only material for making cutting styli for high class recordings.

CAPPS* Patented Sapphire Styli (2187512) are the original and accepted standard for high class professional acetate recordings.

Imitated but not equalled

FRANK L. CAPPS & CO.

244 W. 49th STREET NEW YORK CITY

Telephone Circle 6-5285

* Reg. U. S. Pat. Off.

Agriculture and Radio

By Bert Pruitt

WTAM is extremely fortunate in having Edward H. Faulkner at the head of the Agricultural Department. Mr. Faulkner is an agricultural expert who has carried on his own experiments during recent years. With these experiments he mixed in a generous portion of imagination. This gave results. He obtained almost unbelievable yields on his farm near Elyria, Ohio.

Why was his farm producing more per acre than his neighbor's farms? Well, Mr. Faulkner wrote a book and



Edward H. Faulkner

explained it all. The book is titled "Plowman's Folly" which is currently one of the most discussed books in the history of agriculture. If you were to talk to Mr. Faulkner you would never dream that he has written a book that has made his name famous. Mr. Faulkner is a very unassuming individual. Time Magazine says of Plowman's Folly: "One of the most revolutionary ideas in agricultural history!"

The Associated Press sums it up thusly: "His crops are the wonder of his neighbors and the despair of the conventional farmer."

And how does Mr. Faulkner differ from the conventional farmer? The University of Oklahoma Press explains it in a comment on Mr. Faulkner's book:

"Plowman's Folly is perhaps the most important challenge to agricultural theory yet advanced in this century. Its new philosophy of the soil, based on proven principles, is completely opposed to established concepts and may revolutionize the entire practice of cultivation in the United States. "This Book," says Mr. Faulkner, "sets out to show that the moldboard plow is the least satisfactory implement for the production of crops . . . The fact is that no one has ever advanced a scientific reason for plowing."

"For generations, our reasoning about the management of the soil has rested upon the use of the plow. Yet, Mr. Faulkner shows rather conclusively that soil impoverishment, erosion, decreasing crop yields, and many of the adverse effects follow droughts or periods of excessive rainfall may be traced directly to the accepted practice of plowing natural fertilizers deep into the soil. His examples of perfect soil economy are drawn from nature—the forest floor and the natural meadow—where the earth is constantly being improved through the accumulation of natural plant foods at the surface. Through his own test-plot and field-scale experiments, in which he prepares the soil by incorporating green manures into its surface with a disk harrow,

he has transformed ordinary, and even inferior, soils into extremely productive, high-yield crop lands.

"Conversely, Mr. Faulkner shows, the act of plowing such materials under places them below the reach of the crop roots, creates a subsurface "blotter" which interferes with the capillary movement of moisture upwards, and leaves the surface area a ready prey to all of the adverse forces of nature. With his "surface tillage," the author finds that he greatly increases his crop yield the first year, and that progressively his land is improved. Furthermore, he can bring about this greatly increased fertility without the use of any of the commercial fertilizers, and he has been able to detect a reduction in the susceptibility of his crops to insect pests.

"It becomes apparent from the orderly manner in which the author has built up his evidence in this book that the acceptance of his principles on a nation-wide scale would, to a large extent, solve America's pressing problem of worn-out lands, soil erosion, and periodic shortages of certain staple farm products. The importance of his findings at a time when food production for the United Nations is at a premium is readily apparent."

That is what the University of Oklahoma Press has to say about Mr. Faulkner's book.

Louis Bromfield, internationally famous novelist, writes about Mr. Faulkner and "Plowman's Folly" in the December issue of Reader's Digest. Louis Bromfield writes this in his first paragraph: "This is a success story of a man who found a sound idea and stuck to it until fame came to him, accompanied by a modest fortune. Possibly he has contributed something which will change the course of economic history in America. Perhaps 50 years hence, in rich agricultural areas, there will be monuments in his honor, just as Pasteur has monuments to his memory as the savior of the French wine industry."

Mr. Faulkner was trained in agriculture at Williamsburgh Baptist Institute (now Cumberland College) and at the University of Kentucky, he has been a county agent in Kentucky and Ohio, a Smith-Hughes teacher of agriculture, and a soil and crop investigator in private employment.

Mr. Faulkner conducts a farm program over WTAM and is on the air 6-645 each weekday morning. Listeners send in letters by the hundreds. Again we say, WTAM is fortunate in having Ed. Faulkner.

THE UNIVERSAL MICROPHONE CO., Inglewood, Cal., has issued a special bulletin to radio sub-contractors discontinuing three of its wartime catalogue items, viz., plugs, jacks and switches.

Small quantities, however, will continue to be available to jobbers on priorities until the present stock is depleted.

The discontinuance of these items was necessary because current prime contracts for microphones have absorbed the manufacturing facilities of plugs, jacks and switches into 1945.

1934

1935

1936



1943

1944

Year after year Presto has supplied more discs to broadcasting stations than any other single manufacturer.

There's a Reason! Broadcast Engineers are the most critical of all listeners. It is their business to spot the slightest trace of noise or distortion in musical reproduction. The clean, crisp, "surface free" wide range response of Presto Recordings is music to their ears . . . and yours, too. It's no wonder that year after year they choose—

Presto Recording Corporation, New York 19, N. Y., U. S. A.

World's Largest Manufacturers of Instantaneous Sound Recording Equipment and Discs



DAVEN PRESENTS AN IMPROVED

LINE OF FAMOUS ATTENUATORS • • •



Illustrated:
TYPE 330-G WITH DETENT

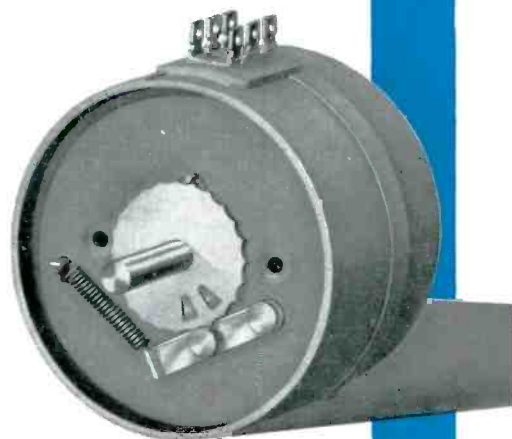
NEW DETENT GEAR (*Indexing Device*) Preferred by leading laboratories and accepted by United States Signal Corps, Navy and other governmental agencies. The new DAVEN Detent Gear provides more positive action, greater degree of accuracy, more uniformity in operation, longer life and a stronger stop mechanism.

NEW MATERIALS The contacts and switches of these attenuators are made of tarnish-proof silver alloy, giving uniform and definite electrical contact. Cleaning and lubricating of the contact points are now completely eliminated.

NEW TYPE STEEL COVER More rugged than heretofore, this DAVEN designed cover affords improved magnetic shielding. The body of the cover forms an integral part of the attenuator assembly, protecting the resistors. A snap-on cap gives ready access to switch blades and contacts.

This improved line of attenuators is the result of DAVEN'S persistent search for better methods. These attenuators are noise-free in operation... supply positive values for each setting of the dial... and will meet the most rigid specifications. In broadcasting, television, sound studios, commercial communications and electrical laboratories, where quality of performance knows no compromise — depend on DAVEN attenuators.

BACK THE ATTACK...KEEP BUYING MORE WAR BONDS



Front View of Detent Mechanism. Attenuators without detents available in standard and special DAVEN models.

THE **DAVEN** COMPANY

191 CENTRAL AVENUE
NEWARK 4, NEW JERSEY