

# THE BROADCAST ENGINEERS' JOURNAL

*Johns*



1948  
YEARBOOK

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OFFICIAL PUBLICATION OF N. A. B. E. T.

NAT'L ASS'N of BROADCAST ENGINEERS and TECHNICIANS

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**Season's Greetings**



## FAREWELL MESSAGE

from

# N A B E T ' S

RETIRING

# P R E S I D E N T

# A. T. POWLEY



*I WISH to take this opportunity to express to the members of NABET my sincere wishes for the future, with the hope that the Association will grow and continue to be a help to the radio technician. In leaving, I ask that you support the new president and national officers with all the good will and cooperation you have shown me in the past.*

*To the National Councilmen who have worked with me during the past four years, I express my appreciation of your cooperation and assistance.*

*To the entire membership and their friends, I extend the Season's Greetings, and wish you all a prosperous New Year.*

A handwritten signature in dark ink, reading "A. T. Powley". The signature is written in a cursive style with a long, sweeping underline.





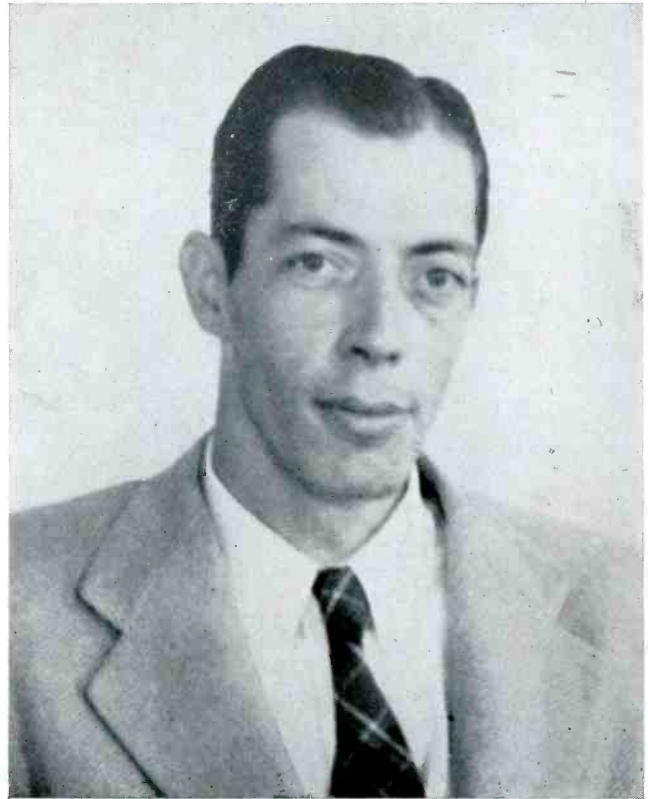
## A Message

— from —

**John R. McDonnell**

**Vice - President**

**N. A. B. E. T.**



JOHN R. McDONNELL  
Vice-President, NABET

IT IS a pleasure to be able to extend by way of the Journal Year Book my personal best wishes for a very merry Christmas and a prosperous New Year to all of my fellow members of NABET and their friends in the Radio and Television Industry.

*Sincerely,*

JOHN R. McDONNELL



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- NABET is controlled by its members; they have the right to vote on all matters of union policy. As a NABET member, you would have the right to Okay any actions which your President might take.

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# A Comparison of Lateral and Vertical Disc Recording Systems

By R. A. Lynn

Staff Engineer, Development Group, NBC Engineering Dept

THE two methods presently used for disc recording are the lateral and vertical systems. Upon occasions, discussions arise as to the relative merits of these two systems. It is hoped that this article may help to clarify some of the controversial issues.

The distinction between the two systems depends upon the direction of vibration of the recording head armatures and, consequently, on the plane of vibration of the ensuing groove which is cut into the disc. Therefore, by way of definition it might be said that Lateral consists of having the variation of cut lie in the plane of the surface of the disc, or "back and forth." This is contrasted to Vertical which has the variation of cut perpendicular to the surface of the record or "up and down."

In order to compare the two systems, let us consider all the individual parts which go to make up the whole. Those items which are common to the two systems can be quickly dismissed as affording no differences which would make one system superior to the other. Our attention may then be concentrated on those few items which do contribute to differences.

Possibly the most logical procedure is to start this comparison at the very beginning of the recording channel and carry it through to the reproduced signal from the playback turntable.

Considering the studio set-up, there is found to be no reason why the acoustical characteristics, or the production technique of the type microphone employed should be different for either of the systems. Likewise, the program material should play no part. The amplifiers also are common to both systems.

The first dissimilarity to be encountered is in the recording heads. One system must employ a cutting stylus which vibrates laterally while the other vibrates vertically. Let us, therefore, give some attention to these items.

## Recording Heads

A recording head is an electro-mechanical transducer—i.e., it converts electrical energy into mechanical energy. Present-day requirements demand a frequency range from approximately 50 cycles per second to around 10,000 cycles per second. (More recently attempts have been made to still further extend this range into the higher frequencies.) It is found to be equally difficult to achieve the full frequency range with low distortion for either lateral or vertical heads. Consequently, well-designed professional recording heads are surprisingly similar in characteristics. In fact, there is a certain type head which is electrically the same for either lateral or vertical recording. The change is made by simply rotating the position of the head with respect to the surface of the recording disc, thus changing the plane of vibration of the armature. An adapter maintains the stylus in correct relationship to the record. In this latter case, one would expect to find essentially identical characteristics between discs recorded by the two methods.

Since the two types of recording heads are designed and

manufactured with essentially equal ease (or difficulty, if you wish), one might believe that their appearance on the open market would be about equally extensive. However, this is not true at the present time.

To explain this anomaly, it is necessary to glance at a certain phase of the past history of the art. It seems that one of the larger manufacturers of vertical equipment concentrated on an extensive design program and eventually released a product which was, from the start, a well-engineered product. And this applied not only to the recording head, but also to the associated reproducing head. This vertical system was, furthermore, kept within control and applied only to the professional transcription field.

Contrasted to the above, the lateral system was a long-time development. Its application has been widespread and includes uses associated with home phonographs, amateur recording, dictaphone embossing machines, semi-professional recorders and broadcast transcriptions. The standards for some of the services, in many cases, have been sufficiently low to permit the use of inexpensive equipment. Consequently, characteristics varying in degree from inferior to high quality have been manifest in the lateral field. In those cases where high acceptance standards have been established, high quality characteristics are to be found.

In order to compare intelligently the two recording systems, it is obvious that the equipment should be chosen so that it is of a comparable category. By restricting our comparisons, therefore, to the purely professional field, there is to be found very little or no difference in the calibre of the recording heads used for either the lateral or vertical recording systems.

## Disc Material

The next item which comes to our attention in the recording channel is the material used to serve as the recording disc. This material is either a lacquer or a wax film flowed on a base plate which can be either metal or glass. Both lacquer and wax cut with equal ease for either a lateral or vertical motion of stylus. No differences, therefore, can be established for the disc material.

## Processing

After the original recording is made on either wax or lacquer, this disc is subjected to an electroplating process in order to produce the metal stampers from which many discs may be moulded. These "finished pressings" are generally composed of either a filled shellac compound or of a vinyl plastic compound. The shellac pressings are found in the field of "home phonograph records" and the vinyl pressings in the field of "broadcast transcriptions."

The mere fact that the groove varies either laterally or vertically makes no difference to the electroplating system, nor does the pressing of the compound by the stamper show a difference for the two systems.

Distortions and scratch are incurred for either system if a poor job of electroplating is accomplished, or if stampers are used after having been worn out by making too many

pressings, or by the use of the cheaper compounds containing dirt or abrasives.

Examples of inferior home phonograph discs are to be found on the present-day market. Presumably this is due to the fact that the acceptance standards for these discs are lower, possibly for cost reasons, than those standards which have been adopted for the transcription field. Since these phonograph discs are "Lateral" this system consequently is criticized unfairly by some as being of lower quality. If the vertical system of recording were used in making home phonograph discs this system similarly would be degraded. Actually the higher acceptance standards which have been established for the transcription field precludes the manifestation of unacceptable discs from the standpoint of such as scratch, wow, distortion due to overmodulation and distortion due to processing and pressing.

Since, by employing professional processing and pressing practices, discs of a similar degree of excellence are obtained, we must continue into the field of reproduction of the discs to see if differences between the two systems can be found.

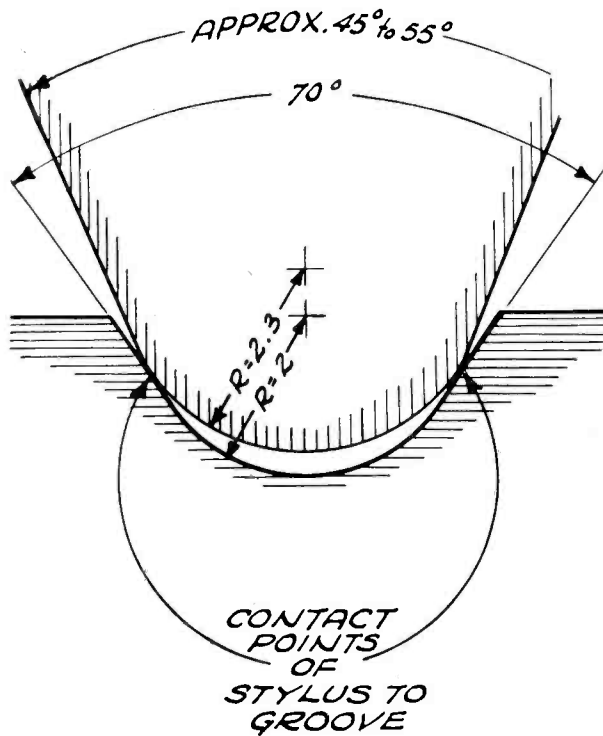


Figure 1—A stylus and groove of proper ratio for good reproduction of lateral transcriptions.

#### Groove Fit

To appreciate fully some of the problems having to do with the reproduction of discs, it is in order to discuss the matter of groove fit. This term—groove fit—is used to describe the way in which a reproducer stylus rests, or fits, in the groove which was cut in the disc by the recording stylus. The proper fit differs for the two systems.

In the lateral system, wherein the stylus is to be forced back and forth, the stylus should be in firm contact with both side walls, even to the extent of there being a space between the bottom of the stylus and the bottom of the groove. The condition is shown in Figure 1.

This drawing is somewhat ideal since in actual practice

the groove material is somewhat resilient and consequently the sidewalls indent slightly because of the pressure exerted by the stylus. However, even though the indentation be sufficient to permit the stylus to touch the bottom of the groove, there is still sufficient force available from the sidewalls to force the stylus tip back and forth under firm control. Should the stylus and groove dimensions be such

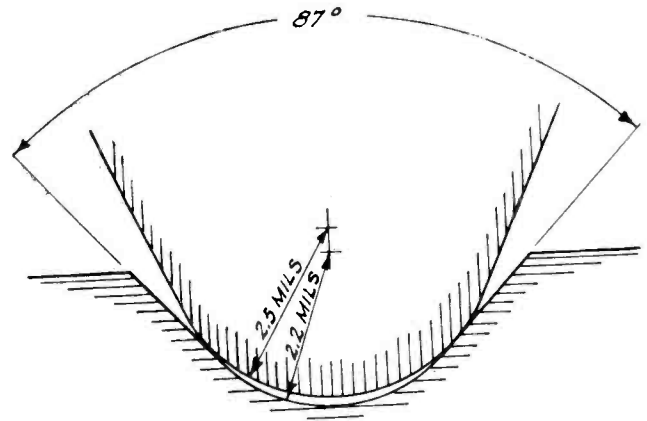


Figure 2A—A 2.5 mil stylus normally favoring lateral, misfits a typical vertical groove in this manner.

that this firm grip by the sidewalls is missing, the stylus then lacks a positive drive with the result that it is free to "rattle" around hap-hazardly over the bottom of the groove. This condition gives rise to high distortion in reproduction. It is essential that the groove and stylus dimensions be carefully chosen to avoid high distortion.

In the case of the vertical reproducer, it is necessary that the stylus rest on the bottom of the groove at all times and never be lifted by the sidewalls. This is relatively easy of accomplishment, the only precaution being to select a stylus that is small in relation to the groove.

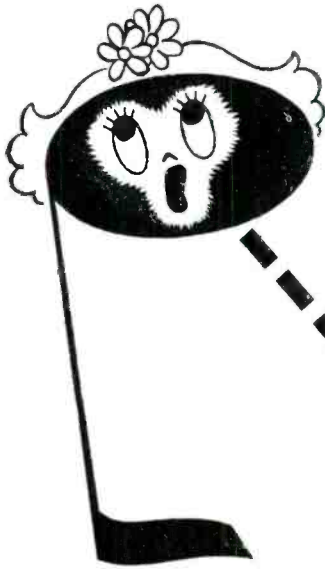
There is no great problem in achieving a proper-dimensioned stylus for either system, provided the selected stylus is restricted for use only with one of the systems and no attempt is made to use it interchangeably. A major problem is brought about in making a single reproducer intended for service with both Lateral and Vertical. More will be said about this subject in the material which follows.

#### Reproducer Heads

The design problems in making a professional reproducer for either system are fairly severe normally, but become much more complicated when it is attempted to achieve a single head which will serve the dual duty of reproducing either lateral or vertical recordings.

Certain resonance effects exist within reproducers. For dual service, the stylus must be free to vibrate in two planes. Unfortunately, the resonance effects manifest as peaks in the response characteristic, do not always appear at identical frequencies for both modes of vibration. Therefore, although one may be attenuated by suitable damping, the other peak occasionally remains. Anything done to dampen the remaining peak reacts on the first condition. The result often is that a compromise is adopted that is not necessarily equally favorable to both systems. To date, it would seem that manufacturers tend to compromise in favor of that system with which they are most closely associated.

Resonances within the reproducer heads are not the only factors to be considered in the design of a dual lateral-



Whether she sings  
way up here...

Or he sings  
way down here...



*High notes . . . middle notes . . . low notes  
You can reproduce them magnificently with*

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vertical unit. We have also the matter of "groove fit" previously discussed.

A typical lateral groove of a high quality transcription consists of an included angle between the sidewalls of 70 degrees. The radius of the bottom of the groove is 2 mils. A reproducer tip favoring this groove is one whose bottom radius is somewhere in the range from 2.3 to 2.5 mils. A dual lateral-vertical reproducer is produced by one manufacturer which utilizes a 2.5 mil stylus and operates very satisfactorily in the lateral position. However, when this same reproducer is placed in the usual vertical position which has an included angle of 87 degrees and a bottom radius of 2.2 mils, it is seen that it does not properly "track" the bottom of the groove. This condition is shown in Figure 2A.

Similarly, there is available a dual lateral-vertical reproducer from another manufacturer containing a stylus with a 1.8 mil bottom radius. It operates very satisfactorily in the vertical condition as it tracks the bottom of the groove. However, the quality of lateral transcriptions is degraded on account of its unfavorable electrical compromise and also due to the fact that it slews around in the bottom of a lateral groove because of improper groove fit. This set of conditions is prone to cause an unfavorable reaction toward lateral recordings when they are played back with a repro-

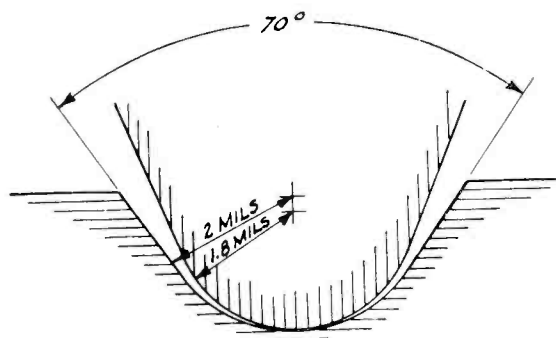


Figure 2B — A 1.8 mil stylus normally favoring vertical, misfits a typical lateral groove in this manner.

ducer of this particular stylus size. This condition is shown in Figure 2B.

Cognizance has been taken of this matter of lateral-vertical interchangeability in the consideration given by the NAB Committee formed several years ago to propose recording standards. A proposed standard consisted of 70 degrees, 1.8 mils for the laterally recorded groove and 87 degrees, 2.2 mils for the vertically recorded groove. The dual reproducer was to have a 55 degree, 2.0 mil radius stylus. In this manner, it is seen that complete interchangeability exists as far as groove fit is concerned. The advent of the war prevented final consideration and adoption of these proposed standards. If combination reproducers are to be the future trend, it is to be expected that standardized dimensions can be agreed upon so that there is no discrimination from this source. However, in the meantime, there is no reason why the proper reproducer cannot be selected for the desired system. Unless this is done, those installations equipped with reproducers favoring Vertical will give inferior results on Lateral reproduction. The converse is also true.

So far this article has covered items for which no basic difference between lateral and vertical quality is found pro-

viding suitable care is exercised to select the proper equipment and material components. A final item to be considered, wherein a difference is apparent, is the matter of tracing distortion.

### Tracing Distortion

Tracing distortion is the result of the inability of the

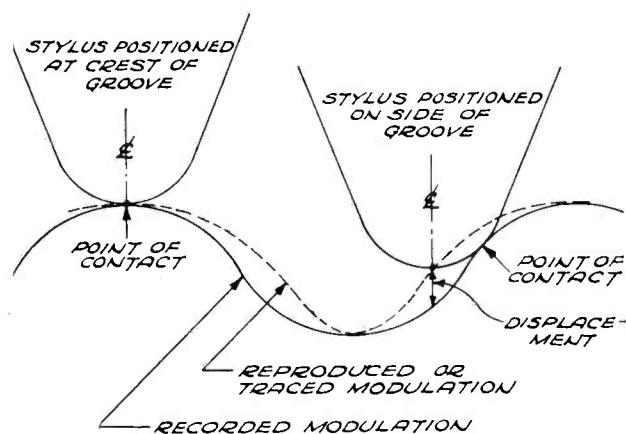


Figure 3 — This sketch shows generation of tracing-distortion in the reproduction of a vertically recorded groove by a stylus of finite dimensions.

reproducer stylus to follow accurately the groove which was cut on the record. Let us see how this affects both the lateral and vertical systems.

Figure 3 shows a sectional view of a reproducer stylus tracing a vertically modulated groove. This section is taken along the axis of the groove and in a plane perpendicular to the surface of the record. Two positions of the playback stylus with respect to the record are shown. It will be noted that in the position shown on the left, the stylus is centrally in contact with the crest of the groove modulation. A like condition holds for the valley of the groove modulation. However, for the intermediate points along the "incline" the midpoint of the stylus is elevated from the groove surface. This deviation is indicated by the displacement shown in the figure. The path traced by the bottom point of the stylus is shown by the dotted line. This traced path is seen to differ from the original recorded groove and therefore represents distortion. The bottom point of the stylus is used in this example for convenience. Since it is part of a rigid stylus, it is also indicative of the motion of the armature, and consequently, determines the electrical output of the reproducer.

A laterally recorded groove is analyzed in much the same way (see Fig. 4). For this condition, the stylus and grooves are viewed by looking down on the surface of the record. In this case two sidewalls of the modulated groove are seen, one on either side of the circle representing a section through the stylus tip and parallel to the surface of the record. Should only one sidewall exist, the traced pattern would be identical to that for the vertical system with consequent distortion. However, the presence of the second sidewall confines the movement in such manner that a restraining force is set up. This is known as pinch effect. The resulting motion is in a vertical direction and incidentally at twice the frequency of the recorded pattern. If the stylus were not free to move in a vertical direction and thus absorb the pinch effect, it is obvious that excessive deformation of the groove or improper contact of some complex

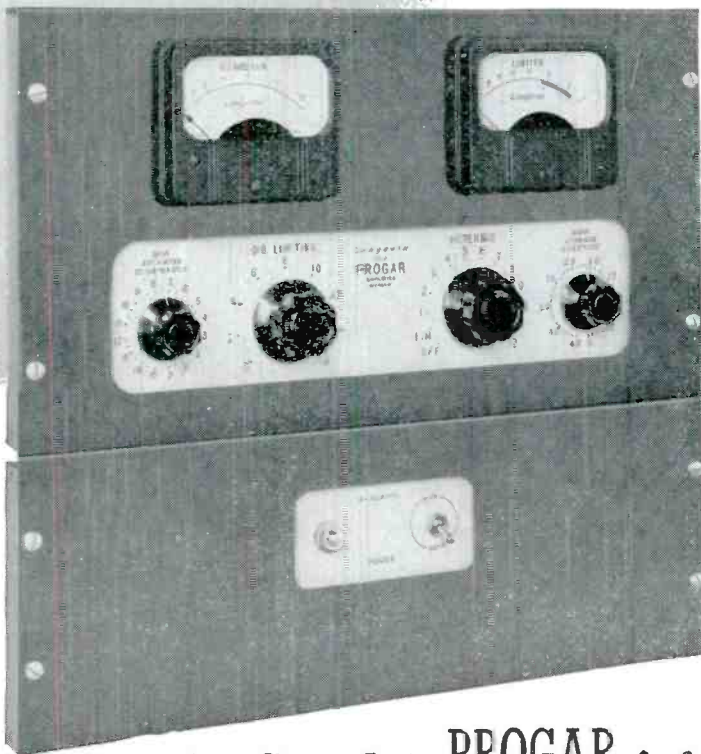


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nature would ensue with consequent distortion. Therefore, with proper accommodation for the pinch effect, the center portion of the reproducer stylus always lies over the center line of the groove and is thus free of the distortion which

The severity of this tracing distortion is discussed in several articles on the subject.

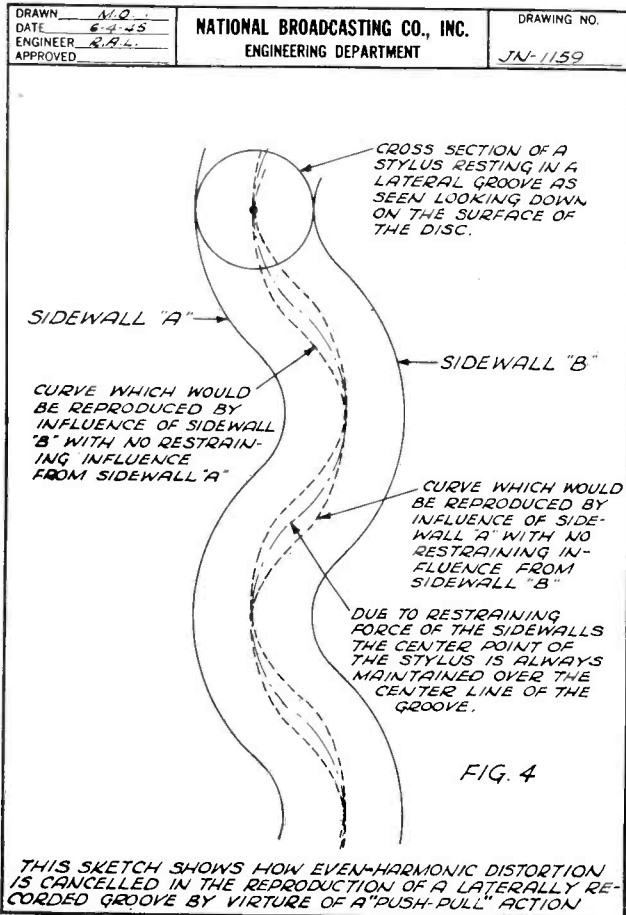
### References to Tracing Distortion

To obtain some idea of the magnitude of the tracing distortion, the reader may refer to several articles on the subject. An article by Pierce and Hunt, "Distortion in Sound Reproduction from Phonograph Records," July, 1938, Journal of the Acoustical Society of America, develops curves of distortion which show much higher values for vertical than for lateral reproduction. Another article, "Theory of Tracing Distortion" by Lewis and Hunt, appears in the January, 1942 issue of the Journal of the Acoustical Society of America, which derives formulae predicting a large inherent advantage in the lateral recording system. In the April, 1945 issue of this same periodical, B. B. Bauer writes on "Distortion Caused by Phonograph Needle Wear." This author points out that a substantially larger amount of distortion can be expected in reproduction, with a worn stylus, from a vertically recorded disc as compared to that from a laterally recorded disc under identical conditions of stylus wear.

### Summary

There is not much doubt that in some cases aspersions have been cast toward lateral recordings on account of the malpractices sometimes employed in the commercial field in order to meet a popular price schedule of technique, processing, records or equipment. In this respect, vertical has been somewhat sheltered since it has been confined to professional transcription services and thus has been able to impose the necessary standards to assure an acceptable product. The lateral transcription companies enforce high acceptance standards and thereby any comparisons of the two systems should be made on their own merits, no comparisons being made to those poor examples of home phonograph discs which sometimes appear.

It has been pointed out that a very real problem of tracing distortion exists for the vertical system which is absent for the lateral system. This superiority for the lateral system will remain manifest despite the control which might be exercised to otherwise keep both systems functioning at their best.



inhibits the vertical system. Recently designed lateral reproducers have a sufficient compliance in the vertical direction to absorb this pinch effect. We, therefore, find that Lateral has an advantage over Vertical in this respect.



## Review of Current Technical Literature

By Lawrence W. Lockwood

Journal of Applied Physics, September, 1947

Electron Beam Deflection—R. Hutter

Part II. Some applications of the small-angle deflection theory developed in part I.

### Preliminary Analysis of Microwave Transmission Data Obtained on the San Diego Coast Under Conditions of a Surface Duct—C. Pekeris and M. Davis

Transmission data for 63 and 170 mc. under above conditions are analyzed by wave theory.

Communications, September, 1947

### Television Receiver Production Test Equipment—J. Bauer

System, involving 22 racks of equipment, and providing 13 channel video and sound transmission set up at Camden, N. J. plant to test up to 500 TV receivers a day.

### Selecting AM Broadcasting Equipment—H. Stephenson, Jr.

Features considered in choosing a 1 KW transmitter, antenna, ground system, studio console, turntables and microphones.

### Short Telephone Lines In Broadcast Operation—A. Sobel

Discussion of methods for improving frequency re-



sponse of telephone lines as short as 3000 feet, by lowering terminating impedance at expense of higher attenuation.

**Broadcast Station Engineering Bookkeeping System—  
F. Sheehan**

Series of forms covering transmitter operation, tube inventory, network schedules, recordings, antenna air pumps, and remotes used to follow through on operation of station engineering department.

**An Audition-Amplifier Volume Indicator—F. Bartlett**

Modification of commercial unit provides audition volume indicator to check balance, gain riding on auditions, pre-airing levels, etc.

**Society of Motion Picture Engineers, Oct., 1947**

**Television Studio Lighting—W. Eddy**

A discussion of the basic requirements of television lighting and the development, from the experimental stage, of a system unique to television.

**Space Acoustics—J. Dunbar**

The relationship between the area, shape and fittings of a sound studio or auditorium and their effect on sound quality is discussed.

**Proceedings of the IRE, October, 1947**

**The Influence of Amplitude Limiting and Frequency Selectivity Upon the Performance of Radio Receivers In Noise—W. Cunningham, S. Goffard and C. Licklider**

This paper describes an experimental study of the relations which exist between the effectiveness of voice communication, measured in terms of the intelligibility of received speech, and the amplitude—and frequency—selective characteristics of amplitude modulation receivers.

**Performance of Short Antennas—C. Smith, and E. Johnson**

This paper presents experimental data on the performance of vertical antennas having a physical height of less than one-eighth wavelength.

**Investigation of Frequency-Modulation Signal Interference—  
I. Plusc**

The cause and mechanism of interference between two frequency-modulation signals are analyzed.

**Broad-Band Wave-Guide Admittance Matching by Use of Irises—R. Rellers, R. Weidner**

A procedure is described for broad-band admittance matching of wave-guide devices by the use of simple irises.

**Microwave Antenna Analysis—S. Seely**

The diffraction theory of Stratton and Chu is applied to a calculation of the vertical polar diagram and the gain of a parabolic cylindrical antenna.

**Radio Propagation at Frequencies Above 30 Megacycles—  
K. Bullington**

The influence of the factors affecting radio propagation at frequencies above about 30 megacycles is discussed with

(Continued on Page One Hundred Twelve)

# 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*

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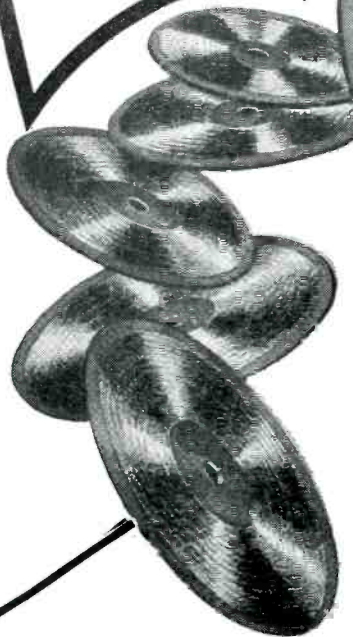
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Uniformly  
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# ALLIED

PROFESSIONAL  
RECORDING  
DISCS

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UTMOST IN  
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REPRODUCTION

Allied Professional Recording Discs are manufactured to exacting standards by one of the pioneers in the field of instantaneous recording equipment. The accumulated knowledge of years of experience have been engineered into Allied Discs. TRY them.

### Also ALLIED RECORDING EQUIPMENT

The Allied Recording Machine (illustrated) combines the Allied Transcription Turntable and Allied Overhead Cutting Assembly, which are also sold separately. Like Allied Discs, this equipment is of highest precision quality, good for long, trouble-free service.



# ALLIED

## RECORDING PRODUCTS CO.

21-09 43rd AVENUE  
LONG ISLAND CITY 1, NEW YORK  
WRITE FOR NEW DESCRIPTIVE BULLETIN

### New Products . . .

\* Aerovox announces oil-filled tubular condensers are now available in 2500, 3500, 5000, 7500, and 10,000 v. DC working ratings, and in capacities from .001 to .05 mfd.

\* Star Expansion Products of New York announces availability of miniature socket wiring plugs, and miniature tube pin straighteners.

\* The 1948 edition of the RCA Tube Reference Book of vestpocket size, is now available from tube distributors. In addition to data on receiving tubes, and 260 non-receiving tubes, the book includes the RMA color code for condensers and resistors, and a battery interchangeability chart.

\* RCA announces its type 228 folded dipole FM receiving antenna, with response flat over the entire FM range from 88 to 108 Mc, at \$13.50.

\* DuMont announces a new dual-beam cathode-ray type 279 oscillograph. Features the two-gun CR tube type 5SP-A. Permits simultaneous comparison of related phenomena on the same time-base.

\* School Sound Recording and Playback Equipment, an 8 1/2" by 11" brochure, has been published by the U. S. Office of Education and the RMA joint committee on Standards for school audio equipment. The text is informative, and covers utilization, a coordinated program for the use of recording and playback equipment, general principles and methods of recording and playback, and considerations for purchase.

\* The Hallicrafter Company announces its first television receiver at



\$169.50, to be available about January 1st. Table model, and 13-Channel push-button selectivity. The set has been engineered for shipment with the image tube in position, instead of in a separate carton. Provision is made for a detachable enlarging lens assembly, where desired. The picture tube is a

Broadcast Engineers' Journal  
Yearbook • December, 1947 **14**



7" electrostatic type 7JP4, picture size approximately 4" x 5 $\frac{3}{4}$ ". The set is of the transformerless AC-DC type, but can be used on AC only, because of the use of a voltage-quadrupler power supply. Stabilized multi-vibrators (does not use the synchrolock circuit). The receiver is to be merchandised free of the current installation-fee practice. Weight, approximately 35 pounds, 20" wide, 16" deep. RF stage balanced for 300 ohm antenna input. The customary controls on the front panel, less-frequently used controls appear at rear of cabinet. RF oscillator high voltage power supply provides 5000 volts for the second anode. Total number, all tubes: 20.

\* Television equipment supplied by the General Electric Company was used for the first time Nov. 5 in the testing of high thrust rocket motors in a demonstration for Army, Navy and other government officials at the proving grounds of the Aero Jet Engineering Corporation at Azusa, Calif., it was announced by Electronics Park officials.

A television camera "watched" the rocket motor tests and sent its "eye-witness" report to observers comfortably seated in a conference room where they saw the operations on a viewing screen far removed from the test pits.

It is one of those industrial applications where television should be of tremendous value because it will allow "close-up" study difficult and often impossible to obtain with other methods.

Limitations of present methods of test viewing are manifold, according to Aero Jet engineers. They point out that observation block houses restrict viewing to either the direct method through laminated safety glass which becomes clouded from close-range effects of propellant fumes, or the indirect method using mirrors which in addition to becoming clouded limit the range of vision and often include distortion. Both of these observation systems require apertures through heavy safety walls of the block house thereby weakening the structure. They also limit two or three persons per aperture and obviously require the observers to be present within the hazard area of the test pits, the engineers point out.

The television method has many advantages. Safety is assured by the remoteness of the viewing operation, picture light intensity and definition are far superior to direct viewing through glass, and shock-proofed cameras can be mounted adjacent to the rocket unit for viewing intimate details.

Broadcast Engineers' Journal **15**  
Yearbook • December, 1947

**NEW**  
TECH-LAB  
DEVELOPMENT

*Get* **RAPID**  
**MEASUREMENT**  
**OF**  
**AUDIO FREQUENCY**  
**GAIN or LOSS**

**TYPE 1A**  
**TRANSMISSION**  
**MEASURING SET**



*Completely Self-Contained*

PORTABLE • AC OPERATED

With this instrument it is possible to quickly and accurately analyze and service equipment in different locations without fuss in time consuming demounting and transportation of apparatus. It will thus pay for itself in a short time and no modern radio station can afford to be without it. It can also be used to good advantage in factory checking and inspection of audio equipment.

The set combines in a modern efficient manner an accurate vacuum tube voltmeter, an audio oscillator with four fixed frequencies and a precision attenuator all mounted in a handy cabinet easily carried by the operator.

### SPECIFICATIONS

- GAIN: Up to 80 db.
- LOSS: 60 db. maximum.
- VACUUM TUBE VOLTMETER:  
Range—40 to +40 db.  
(1 mv. ref. level)
- AUDIO OSCILLATOR:  
Freq. Range; 100 to  
10,000.
- PRECISION ATTENUATOR:  
Flat to 20 KC; 93 db.  
in .1 db. steps.
- DIMENSIONS:  
10 $\frac{1}{4}$ " x 16 $\frac{1}{4}$ " x 8 $\frac{3}{4}$ "
- WEIGHT: 30 lbs.
- INPUT: 115 Volts.  
60 cycles, 70 watts.

**TECH**  
LABORATORIES, INC.

Manufacturers of Precision Electrical Resistance Instruments  
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# Coast-to-Coast Ham Calls

Alphabetically by Call Areas, as supplied to us by these Chapters to Date

## *New York*

W1ACQ John O'Neill  
W1KZ/2 Al Bradley  
W1QBO Geo. Anderson  
W2ADF Joe Silva  
W2AEB Irving Grabo  
W2ALB Jerry Sellar  
W2AMG Paul Gallant  
W2AMS Hank Treger  
W2AUR Ed Stolzenberger  
W2BUY Bill Simpson  
W2BXY Ed Gundrum  
W2CCC Ted Cain  
W2CHK Gil McDonald  
W2CRA Andy Waddell  
W2DD Dud Connolly  
W2DIT Jack Flynn  
W2DZR Harry Greleck  
W2EP Art Holub  
W2ESP Maurice Kamke  
W2EYQ Vic Tervola  
W2FHR Millard Martin  
W2FZQ Ed Geiger  
W2GVP T. Danielson  
W2GYJ A. Duffy  
W2HEJ Mel Lewis  
W2HHK Bert O'Leary  
W2HIO Phil Falcone  
W2HTW Merle Worster  
W2IP Harold Campbell  
W2IGB Bob Massell  
W2IOX Bob Johnston  
W2IPG Bill Poller  
W2KB Ed Schabbegar  
W2JKO Sal Salanitro  
W2JRS Art Griffin  
W2KK G. O. Milne  
W2KP Nick Hagmann  
W2KCY A. J. Perry  
W2KJG Pat Simpson  
W2LYC Bill Teitz  
W2MME Tiny Sturhann  
W2MMS Willy Storrs  
W2MOJ Bill Tague  
W2ND Chas. Younger  
W2NT Jim Hackett  
W2OMT Jim Cooke  
W2PRD Pete Narkon  
W2RK Chas. Francis

W2SNN Vince Casselli  
W2TGW Ralph Bennett  
W2TXH Bill Haerer  
W2UUL Jack Ramsey  
W2ZA Geo. Milne

## *Engineering*

W2ABD Carlos Clark  
W2AKQ Stan Peck  
W2BNL Ed Wilbur  
W2BQI Tony Rokosz  
W2CEF Walt Mullaney  
W2CHZ Howard Eitelbach  
W2CQL Gene Hand  
W2EGD C. A. Snell  
W2HFZ Hank Folkerts  
W2JEA Cliff Paul  
W2KO Bill States  
W2LJQ Robert Potter  
W2NX Ed Costello  
W2PMV Lou West  
W2SPK C. E. Read  
W2TFH Andy Hammerschmidt  
W2TTC Larry Schwab  
W2UIE N. Sprecher  
W2WQ Bill Hotine

## *Hudson*

W1ZL Carl Weidenhammer  
W2ADD Paul Reveal  
W2ADQ Don Hale  
W2BQJ George Ruckstahl  
W2CTQ Dick Davis  
W9DAI/2 Bill Flynn  
W2EOA Chas. Kibling  
W2HJY Jim Carter  
W2HTA Gene Clark  
W2HXQ Kay Kibling  
W2JW Al King  
W2JIC Cy Getter  
W2KGO Jim O'Connor  
W2KJF Bill Sakal  
W2KJJ George Riley  
W2KPG Howard Donniez  
W2KSC Alex Stamford  
W2LSS Bob Bergen  
W2LUK Danny Conover  
W2LZD Ed Scatterday  
W2MHP Bob Albrecht

W2OHE Press Yoemans  
W2RJC Gordon Shaw  
W2SH Herman Berger  
W2VFM Hax Hadden

## *Rochester*

W2AHK Gerard Hall  
W2BEN Ray Lucia  
W2BGN Ken Gardner  
W2BHM Wilfred O'Brien  
W2BJW Ed Stiles  
W2CNT Ed Schum  
W2DOD Elmer Grabb  
W2EB Yoe Seiler  
W2FBD Bert Allis  
W2PPQ Benny Kilpatrick  
W2PWY Charlie Snyder  
W2PYE Ed Pettingill  
W2PZH Walt Malone  
W2QCF Fran Sherwood  
W2QXH George Mousteller  
W2QZY Bob Tracy  
W2REA Craig Williams  
W2REC Ormond Bullis  
W2RHZ Alex Gressens  
W2RLE Tony De Lucia  
W2ROB Arthur Kelly  
W2RVS Hank Boyce  
W2TXB Al Keltz  
W2UBU Leroy Hartman  
W2UMC Ray Gondek  
W2VVO Howie Mouatt  
W2WMD Dick Sanderl  
W8ZPC Charlie Leniak

## *Pittsburgh*

W3AZG Fred Leonard  
W3BCV William Sabo  
W3EDK Fred Claus  
W3HJ Clarence Fabian  
W3KJY Howard McClelland  
W3KPS Earl Sneathen  
W3KYO Kenny Walburn  
W3LFO Elvin Solley  
W3LJZ Clinton Prewitt  
W3LUK Gus Saldon  
W3MCB Jack Kear  
W3MUV Babe Stuebgon  
W3TVD Frank Henry

## Washington

W3ANJ W. L. Godwin  
 W3BST Barton Stahl  
 W2CP/3 Clyde Mengle  
 W3CEJ Frank Fugazzi  
 W3CJM Zoltan Bogar  
 W3CKH W. L. Simmons  
 W3CNZ John McCollom  
 W3HN Sam Newman  
 W3HLH Al Sears  
 W3IQU Wally Ward  
 W3JJ John Knight  
 W3JLV Victor Leisner  
 W3JUL Arthur Hallam  
 W3LFN Bob Shenton  
 W4GK L. A. McClelland  
 W4GKW E. McGinley  
 W4IGF James Weaver  
 W4KNF Nick Close

## San Francisco

W6BGU J. J. Blanchet  
 W7BSK/6 Bernard  
 W6CRO H. C. Dunton  
 W6DZP Sorenson  
 W6ECW H. V. Kramer  
 W6EVG M. D. Case  
 W6GIS O'Neil  
 W6IY Parkhurst  
 W6MY Jefferson  
 W6NXC Maxwell  
 W6RRR Andresen  
 W6UO Parks  
 W6WOK Woods  
 W6WPL Nichols  
 W6YDC Martin

## Hollywood

W6BH K. V. Dilts  
 W6DOB L. M. Jones  
 W6ERC C. C. Caves  
 W6FHO J. L. Smith  
 W6GP C. W. Seamans  
 W6GRU R. G. Schroeter  
 W6GSZ Ed Wood  
 W6HDF R. P. McGaughy  
 W6IX F. W. Everett  
 W6ITD R. A. Binkey  
 W6KL H. M. McDonald  
 W6KIP W. H. Alexander  
 W6KKZ R. W. Grammes  
 W6KYV D. W. Kennedy  
 W6LN T. E. LaCroix  
 W6LJM H. B. Bekkar  
 W6LXS W. G. Tokar

W6OJ S. K. Heffernan  
 W6OMN R. B. Walling  
 W6OTB L. Benvenuto  
 W6PC L. W. Packard  
 W6PBU L. E. Fritzingher  
 W6PKA C. H. Lorenz  
 W6RXI R. W. Bull  
 W6TC P. T. Crosby  
 W6TE W. J. Breuer  
 W6TW N. H. Dewes  
 W6VHD V. L. Clark  
 W6VFX A. L. Hockin  
 W6VUJ R. H. Baird  
 W6WGC W. H. Wileman  
 W6WJC K. W. Grinde  
 W6YMD W. B. Guimont  
 W6YRN W. H. Williams  
 W6YVN J. A. Pierce

## Chicago

W9AAM F. E. Golder  
 W9AFA R. E. Brooks  
 W9AL T. G. Bombaugh  
 W9BGI V. D. Mills  
 W9BRX E. G. Squires  
 W9BU W. K. Cole  
 W9CIU F. C. Shidel  
 W9CP J. R. Miller  
 W9CTN C. V. Corliss  
 W9DBT R. B. Whitnah  
 W9DVW W. T. Anderson  
 W9EN M. J. Wilson  
 W9FKX H. C. Eckland  
 W9KFT H. L. Cavanah  
 W9FQ W. H. Cummings  
 W9FVV J. V. Lato  
 W9GG R. D. Wehrheim  
 W9GN R. S. Davis  
 W9GY J. H. Platz  
 W9HIY I. Wrablik  
 W9HZD R. E. Hunt  
 W9IT E. A. Holm  
 W9IVD Gale Swift  
 W9IWW M. W. Rife  
 W9KDI R. H. Parker  
 W9LEC W. W. Schooley  
 W9LEP H. T. White  
 W9MV P. J. Moore  
 W9NKY G. F. Kemp  
 W9OOT D. R. Fitch  
 W9QHX H. D. Royston  
 W9REZ A. P. Johnson  
 W9RUK M. H. Eichorst  
 W9SBC T. E. Schreyer  
 W9SGM Jules Herbuveaux

W9SKX H. C. Eckland  
 W9SOK Lorne Balsley  
 W9VGA E. A. Golec  
 W9VNW Rex Maupin  
 W9VWU H. F. Kohnitz  
 W9WRB R. A. Limberg  
 W9WS R. B. Sturgis  
 W9WXZ Howard Newbouer  
 W9YMZ K. A. Slobb

## Omaha

WØAXY Louie De Boer  
 WØDCQ Al Maller  
 WØEUT Bob Rudd  
 WØGTC Roy Glanton  
 WØMHV Gee Flynn  
 WØNZ Mac McGowan

Another development of The Daven Company to add to the efficiency of their controls, was recently announced. This feature is a one-piece low-loss molded terminal board, insulation conforming to JAN specification, incorporating insert type heavy-duty tinned brass lugs. The possibility of the terminals rotating is eliminated by this new design. The terminal board is molded to fit the contour of the attenuator, combining function and design advantages.

Daven also announces the publica-



tion of a new bulletin of technical data widely used in the design of sound equipment in a brief, simple form, showing **Impedance vs. Decibel Loss**, with values calculated for impedance mismatch, minimum "T" loss, and bridging pad loss. Also included are data on mixer circuits showing circuit diagrams and applications. These bulletins are available on request at no cost. Please use company stationery when writing for your copy.



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# ANNUAL NABET NATIONAL

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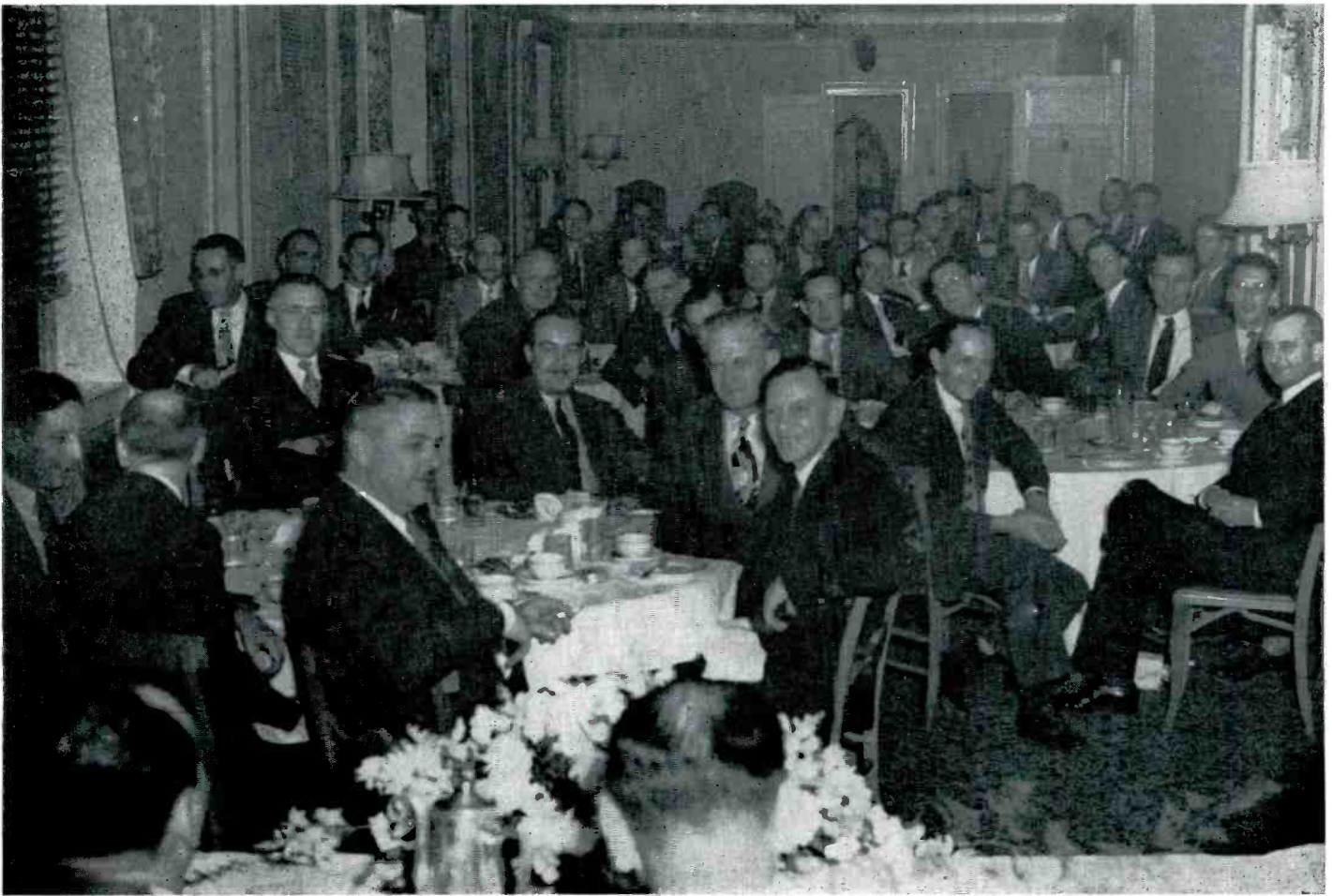
THE PLACE: WASHINGTON, D. C.

**HIGHLIGHTS:** The meeting took place at the Wardman-Park Hotel, Washington, D. C., October 20 through October 24.

The NABET National Council reelected A. T. Powley, President of NABET, and elected John R. McDonnell, San Francisco Chapter Chairman, as Vice President.

A proposed new constitution was drafted, combining the legal opinion of NABET's attorneys, and the experience of NABET's National Councilmen and National Officers, in the light of NABET's fourteen years of successful operation.

*Photos by Walter L. Godwin, Washington Chapter NABET*



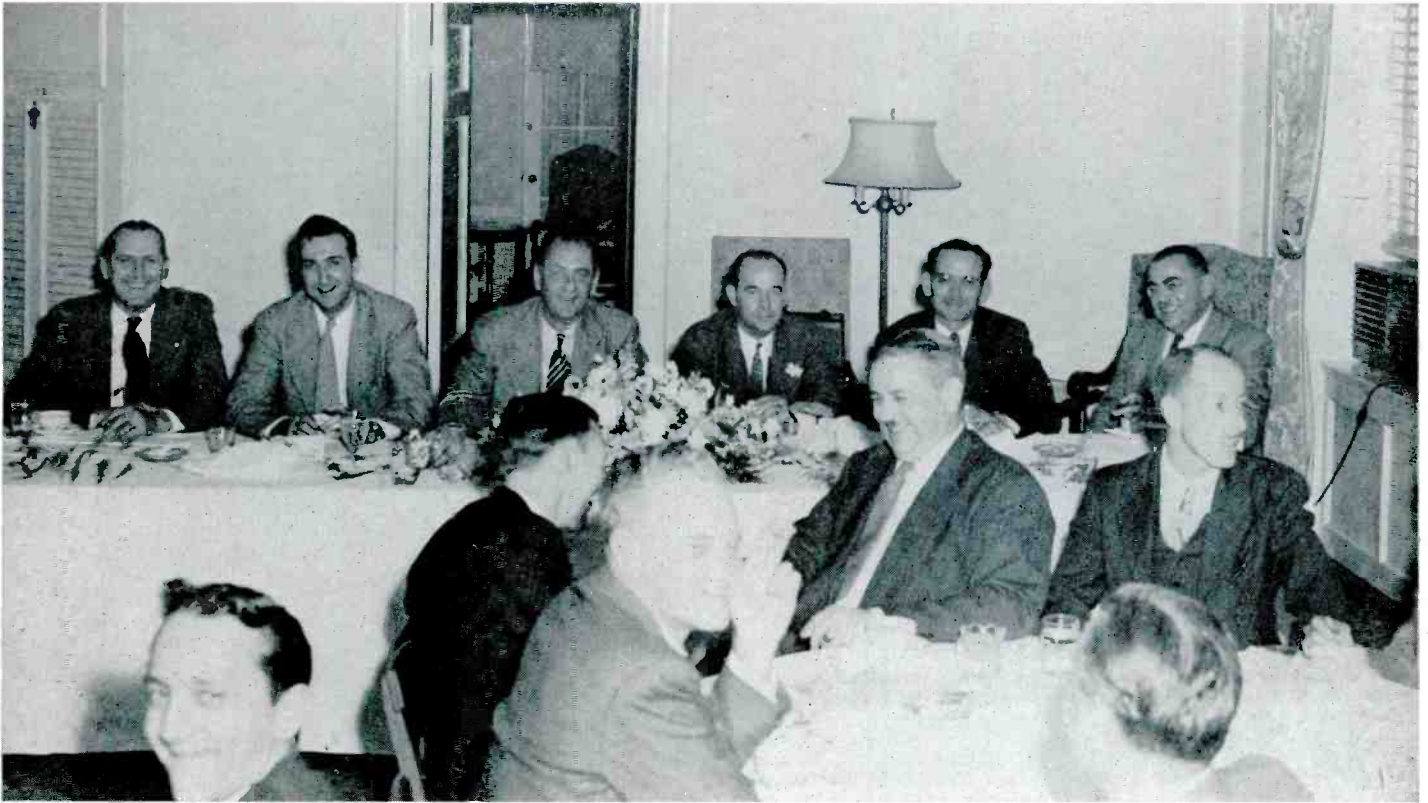
Washington Chapter is dinner host to the National Council and National Officers.



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# COUNCIL MEETING - OCTOBER, 1947

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Left to right: Walter L. Godwin, Sec'y-Treas., Washington Chapter; Clifford L. Gorsuch, National Representative; A. T. Powley, President; John H. Hogan, Chairman, Washington Chapter; James H. Brown, Vice President; and Harry E. Hiller, National Secretary-Treasurer, NABET.



An informal shot of the National Council and National Officers in Action.



---

## *Merry Christmas*

WITH my holiday greetings to the members of

the broadcast engineering profession I would like to add —

Congratulations on the completion of another year of skillful work well

done. Congratulations also on the prospect of new

opportunities and responsibilities that lie ahead in our growing industry.

To you and all those near and dear to you — good health, good cheer

and *Happy New Year....*

*Giles Lamell*

PRESIDENT, National Broadcasting Company





**D. J. MOLONEY**  
Chairman, Board of Trustees

**Holiday  
Greetings**  
*From the Staff of*  
**THE  
BROADCAST  
ENGINEERS'  
JOURNAL**



**ED. STOLZENBERGER**  
Editor and Business Manager



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Chairman, Hudson Chapter  
Member of the Board



**WILLIAM L. STATES**  
Chairman, Engineering Chapter  
Member of the Board



**CLARENCE WESTOVER**  
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Member of the Board



**ARTHUR G. POPPELE**  
Member of the Board



**HARRY E. HILLER**  
Treasurer



**JOHN R. McDONNELL**  
Vice-President, NABET  
Member of the Board





**Season's Greetings**

**From the Engineers**

**HOLLYWOOD CHAPTER**

**N. A. B. E. T.**

**NBC**  
*Hollywood*

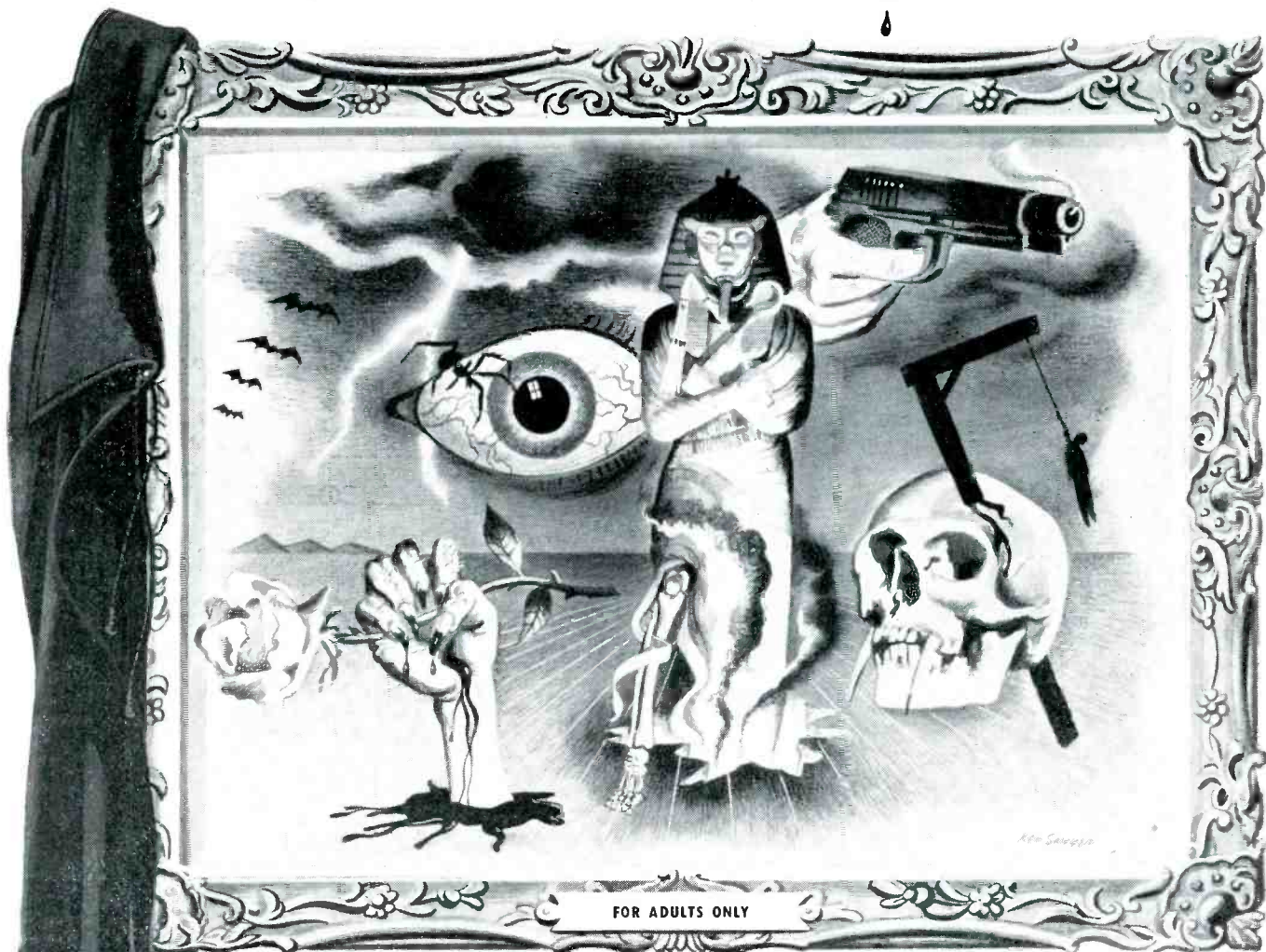
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*Hollywood*

**KFI**  
*Los Angeles*

**KFSD**  
*San Diego*

**KECA**  
*Los Angeles*

# Murder IS NOT FOR KIDS



FOR ADULTS ONLY

*Murder and mystery shows* provide thrilling entertainment for adults, but are not the type of program best suited for the youngsters. That's why we have gone to quite some trouble to rearrange our programming so that all our

"who-done-it" shows\* are re-leased after nine o'clock at night. That way the adults can enjoy well-written, exciting mystery dramas, and the kids don't have to hear them. It's another example of our idea of public service.

\*"MYSTERY THEATRE"  
 "MYSTERY IS MY HOBBY"  
 "MR. DISTRICT ATTORNEY"

# KFI

NBC FOR LOS ANGELES

50,000 WATTS • CLEAR CHANNEL • 640 ON YOUR DIAL

Barle C. Anthony, Inc.

EDWARD PETRY & COMPANY, Inc.  
 NATIONAL REPRESENTATIVES



*Best Wishes from the Cast of*  
**A DATE WITH JUDY**

LOUISE ERICKSON

DIX DAVIS

MYRA MARSH

JOHN BROWN

DICK CRENNNA, "Oogie"

HELEN MACK, Director

Music by  
 HAL BORNE

Sound Effects  
 BOB CONLAN

Engineer  
 BOB BROOKE



6,619 individual calls to actors, musicians, sound men and announcers during the year ended October 31, 1947. We are happy to have provided this amount of employment. During the year ahead we hope to increase it.



**C & F RADIO PRODUCTIONS, Inc.**

6365 Selma Avenue

Hollywood





# Season's Greetings

Bob Hope

Season's Greetings



E. Broox Randall & Sons, Inc.

INSURANCE

For Every Purpose

5901 Sunset Boulevard

Hollywood 28, Calif.

Holiday Greetings to the Engineers of  
Southern California and Arizona

W. BERT KNIGHT CO.

908 Venice Boulevard

Los Angeles 15

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Shure Brothers — Microphones

Cornell-Dubilier Electric Corp. — Capacitors

Ward-Leonard Electric Company — Resistors

Standard Transformer Corp. — Transformers

Hytron Radio & Electronics — Tubes

James Millen Mfg. Co. — Parts

## HURRAY FOR THE ENGINEERS!

*Keep That Needle Runnin' High*

Like these guys have done so well for us . . .

George Foster, Leon Fry, Art Brearley, Harold Lindquist,

Joe Kay, Ray Ferguson and Hal Platt



“People Are Funny”

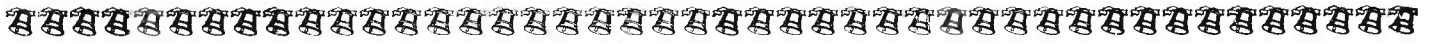
“G. E. House Party”

Starring

ART LINKLETTER

John Guedel Radio Productions

Hollywood



Best Wishes

DINAH SHORE







# Season's Greetings



*From the Proprietors of the Jot Em Down Store*



## Season's Greetings *and THANKS!*

The Hollywood  
NBC Announcers

Frank Barton

Archie Presby

Hal Gibney

John Storm

Bruce Anson

Douglas Gourlay

Don Stanley

## Season's Greetings

*Norman B. Neely*  
*Enterprises*



SAN FRANCISCO — HOLLYWOOD — PORTLAND



# B I N G



Season's Greetings

JOHN SCOTT TROTTER



Season's Greetings

*from*

GEORGE BURNS and GRACIE ALLEN









*Greetings Through  
the Glass*



**FLEETWOOD LAWTON**

*News Analyst*

**KFI**

**KERN**

**KMPC**

**KMJ**

*Where would we be if it weren't for the Engineers?  
So Happy New Year to you "Mixer-Masters"*



**"THE LIFE OF RILEY"**  
*with WILLIAM BENDIX as "RILEY"*

SATURDAY NITE ON NBC

Sincerely,

**IRVING BRECHER**



*With Many Thanks*

*from*

**GARRY MOORE**





*It was either take this ad or get cut off the air*

**GROUCHO MARX**

**“You Bet Your Life”**

A JOHN GUEDEL PRODUCTION

*Best Personal Wishes to the*

**National Association of Broadcast Engineers and Technicians**

*from*

**KAY KYSER**

# Greetings



*From*

**JACK CARSON**

Season's  
Greetings

and my gracious thanks  
for your help in making  
my first year in Hollywood a most successful one



**ROMELLE FAY, Organist**

Musical Director of Nation's Leading Daytime Shows  
"Today's Children"  
"Woman in White"  
"The Story of Holly Sloan"

**OVER A DECADE OF SERVICE**

to the

**BROADCASTING INDUSTRY**

As another year rolls around we take this opportunity to extend to our many friends in the Broadcasting Industry our deep appreciation and our sincere wishes for a successful year to come.

**Radio Specialties Company**

Los Angeles 7, California

**Carlton E. Morse Productions**

**"ONE MAN'S FAMILY"**

**"I LOVE A MYSTERY"**

*and now*

**\* "ADVENTURES BY MORSE"**

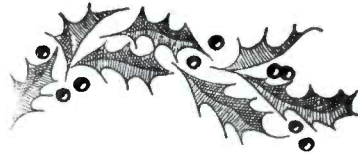
*. . . . and more to come*

**1500 Vine Street**

**Hollywood 28, Calif.**

\* Transcribed . . . Write or Wire for Information





A Merry Christmas

*f r o m*

Red Skelton

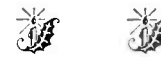


Thanks for Everything



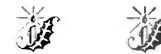
**HENRY RUSSELL**

Director of Music • Western Division • N. B. C.



**GREETINGS LADS**

**ALAN REED**



With all good  
wishes for the  
coming year —

**LOUISE ARTHUR**

*Best Wishes to Ray Ferguson, who gets our "Dynamite"  
on the air, and all of the great N.A.B.E.T. gang*

*from*

**HAL "GILDERSLEEVE" PEARY**  
and all the "Great Gildersleeve" gang



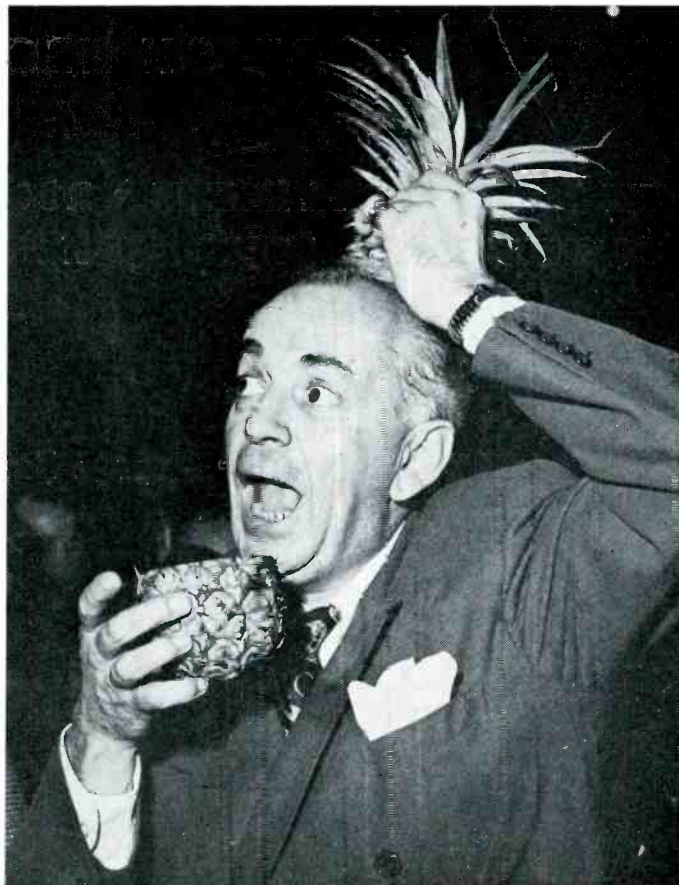
Walter Tetley - Louise Erickson - Lillian Randolph - Earle Ross - Richard Le Grand  
Arthur Q. Bryan - Andy White - John Elliotte - Jack Robinson - Gene Stone  
Jack Meakin - Monte Frazer - Frank Pittman - Fran Van Hartesveldt - Max Hutto

on N. B. C. Every Wednesday Night

For the

**KRAFT FOODS CO.**

Tom Breneman of "Breakfast in Hollywood" Sez:



. . . Say, fellows — If you're suffering from low frequency . . . if you're off the level these days and feelin' kinda remote . . . drop in to the new Tom Breneman Restaurant at 1539 North Vine Street in Hollywood. . . . When you do, your spirits'll jump from infinity to full volume in jig time. The decibels on your V.U. meter'll dance a merry tune. Why say, you'll get extended range, top-quality food and real, high-fidelity entertainment. . . . My new "beanery" is ultra-modern — the only restaurant built expressly for broadcasting and serving food. The all-vision broadcasting booth is a radio engineer's dream. . . . Drop in real soon and look it over. . . . You're welcome anytime!





EVERY SUNDAY ON NBC

*With*

MARY LIVINGSTONE • PHIL HARRIS • ROCHESTER  
DENNIS DAY • DON WILSON

*Writers*

Sam Perrin • Milt Josefsberg • George Balzer  
John Tackaberry

*Producer*

Hilliard Marks

*Agency*

Foote, Cone and Belding

*Sponsor*

Lucky Strike Cigarettes

**JACK BENNY**

Merry Xmas  
and  
a Happy New Year  
to the  
Broadcast Engineers



for your Electronic Supplies

**DOW RADIO, Inc.**

1759 E. Colorado, Pasadena 4, Calif.

Dial — RYan 1-6683



**BEST WISHES**

**AIR CONDITIONING**

**REFRIGERATION**

**AUTHORIZED WESTINGHOUSE  
DISTRIBUTORS**

**WESTERN AIR  
&  
REFRIGERATION, Inc.**

1819 GLENDALE BOULEVARD  
LOS ANGELES 26, CALIFORNIA  
PHONE OL. 1117

**Engineers • Contractors**

**SERVING THE AIR CONDITIONING NEEDS  
OF THE  
BROADCASTING INDUSTRY  
ALONG THE PACIFIC COAST**



**DON WILSON**

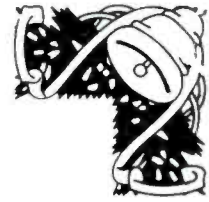
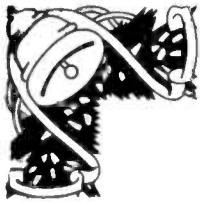


*William Morris Agency, Inc.*

EST.  1898

NEW YORK • BEVERLY HILLS • CHICAGO • LONDON

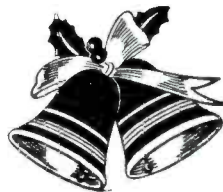




## BEST OF LUCK

To the Boys Who Work So Hard  
To Make Me Sound Like a Basso - - -

JIMMIE FIDLER



**WITH BEST WISHES  
TO ALL THE BOYS**



**Smilin' Ed McConnell**



**HERE'S TO YOU ENGINEERS —**

*We couldn't do without you!*

**HAPPY  
CONSEQUENCES**

**RALPH EDWARDS**







# CHICAGO

By Minor J. Wilson

**A**RT HJORTH, Chicago Chapter Chairman, returned from the national convention so hoarse he was unable to speak above a whisper. I have known Art for 18 years and this is the first time I ever heard of any one talking Art out of his voice.

The Don Wilsons have announced the birth of daughter Kathleen Ann. We are still waiting on the Lou Heidens.

Clark Lonie has been seen reading "12 acres and independence"; looks like he is starting to take farming seriously.

P. T. Barnum Is Alleged to Have Made This Wise Observation:

## *If You Don't Advertise Your Business, the Sheriff Will*

We Are Confident in the Future, Are You?

FOR ADVERTISING RATES AND DATA

Write: THE BROADCAST ENGINEERS' JOURNAL

116-03 91st Avenue

Richmond Hill 18, N. Y.

Al Schroeder is in the midst of painting his house. Otherwise events at the WMAQ transmitter seem to be calm and placid.

Vern Mills is looking for donations of old pipe to complete installation of his beam. Maybe he has finally talked wife Ardith into his way of thinking; we knew he would, tho.

Frank Golder is now credited with 59 countries and a slow fade. He denies the slow fade but it is in the log!

### SUBSCRIPTION BLANK

THE BROADCAST ENGINEERS' JOURNAL  
116-03 91st Avenue, Richmond Hill 18, N. Y.

Gentlemen: Please enter my subscription to The Broadcast Engineers' Journal to start with the next issue.

Name..... (Station.....)

Address .....

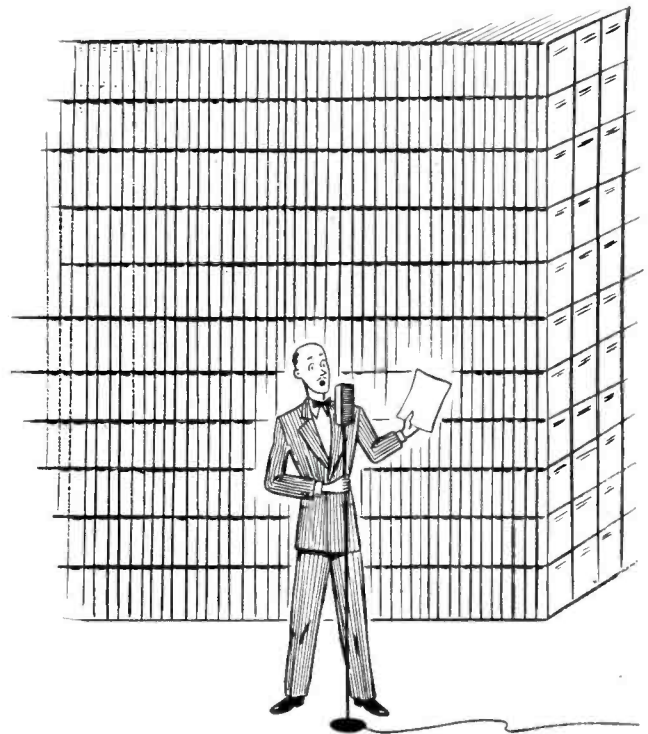
City, P. O. Zone, State.....

Check attached for  \$2.50, 1 year;  \$4.00, 2 years.

WLS was 7 minutes late signing on t'other morning and announced that they had just washed the transmitter and couldn't do anything with it. WENR-WLS transmitter men refuse to concede this point, but it is in the log too.

And speaking of logs, Sturgis always was one to take his log entries seriously. The other day he wrote a long report in the ABC log concerning program interruptions, then discovered he had entered it in the wrong network log, so he just added a note telling ABC engineering to ignore the entry as the trouble really was on another network.

ABC program dept, on the trail of a studio for one of the net's multi-mike show, called engineering and got Byron Spiers and asked for a list of studios and the number of mike outlets in each studio. BY obligingly gave the information and was about to hang up when on a whispered suggestion from Bill Cunningham added there are 9 outlets in Studio X. There was silence and a click, evidently X wasn't considered suitable, and besides BY had made a mistake; a more complete check shows there are 10 outlets in studio X, not 9.



"—And better hurry, folks — we only have a limited supply of these books left!"

Don Fitch says his wife used to complain that he did use a corner of the kitchen for a ham shack but that she now uses a corner of the ham shack for a kitchen. If Don doesn't stop buying surplus the entire family is going to be on the street. Wear and tear on recording and studio engineers is getting serious since Petrillo's last blast. If business continues to pick up the rest of this year there are going to be some worn out engineers.

# FIBBER McGEE *and* MOLLY

*(Marian and Jim Jordan)*



**Many Thanks**

**FRANK LOVEJOY**



**'The Sports Recap'  
and  
JACK LIGHTCAP  
send  
Season's  
Greetings**

**Congratulations**

from

**ROD O'CONNER**



**JACK PAAR**





***Microphonically***

***Yours***

***Rudy Vallee***

GOOD  
LUCK  
GUYS

ALICE FAYE

PHIL HARRIS



FITCH BANDWAGON

**BEST WISHES**  
*To the Boys*



**BARBARA CILER**

*"Life of Riley"*  
*"Dennis Day"*  
*"Ozzie and Harriet"*

**Season's Greetings**

*from*

**RADIO TELEVISION SUPPLY CO.**  
1509 S. Figueroa Street  
Los Angeles 15, Calif.



**Thanks, Fellas**  
**ZEKE MANNERS**

ABC - Hollywood



*All of us, and we do mean all of us . . . extend to all of you . . . our most sincere wishes for a very, very,*

**Merry Christmas**



**Radio Products Sales, Inc.**

1501 South Hill Street  
Los Angeles 15, Calif.

PR - 7471

*The Finest Most Complete  
and the Most Talked About  
Radio Supply House in  
Southern California . .*



Howdy!  
ART BAKER and His  
NOTEBOOK



With best wishes to all our friends of

N. A. B. E. T.

**CASTLE'S, Inc.**

Photographic Supplies

HOLLYWOOD, CALIF.

Compliments of

**ALVIN WILDER**

Alvin Wilder Advertising • 215 W. 5th Street

Los Angeles

**LEO J. MEYBERG COMPANY, Inc.**

- . . . Complete stock of all major lines of electronic equipment
- . . . RCA Distributors
- . . . For your convenience, branches in San Francisco and Los Angeles

*For prompt, courteous and specialized service*

**“CALL MEYBERG FIRST”**

**Leo J. Meyberg Company, Inc.**

2027 So. Figueroa St.  
Los Angeles 7, PR 6011

70 Tenth Street  
San Francisco 1, Market 1-3400

*Greetings and Gratitude  
To the engineers, from  
the Five Girls ★  
and myself*

IDA CANTOR

★ IN COLLABORATION

## MODEL 4031-B PROGRAM EQUALIZER



### INSERTION LOSS ONLY 14 D. B. !

Capable of providing variable regulation over a range of 16 D. B. attenuation and 12 D. B. equalization in calibrated and detented 2 D. B. steps at both ends of the audio spectrum, the 4031-B Program equalizer is one of the most advanced units on the market today.

Designed to fit the needs of motion picture, recording and broadcast industries, this distortion-free equalizer can be cut in or out without changing the signal level at the center of the range. Variable high-frequency positions are selected at 3, 5 and 10 K. C. by a panel key. A separate control permits independent equalization and attenuation over the low-frequency spectrum. Designed with a constant "K" circuit, the impedance remains constant over the entire range of control.

Toroidally wound coils are used to eliminate hum pickup. Controls may be operated while the program is in progress without causing clicks or apparent change of average level.

*Send for literature and complete set of curves*

## CINEMA ENGINEERING COMPANY

1510 W. VERDUGO AVENUE

ESTABLISHED 1935

BURBANK, CALIFORNIA

Season's Greetings

*from*

America's Largest  
Independent Recording Co.

COMPLETE FACILITIES

*for*

Recording                      Plating  
Pressing                        Shipping

RADIO RECORDERS

7000 Santa Monica Boulevard  
Hollywood 38, California  
HOLLYWOOD 3917

Season's Greetings

To Our Many Friends  
The Broadcast Engineers

FROM

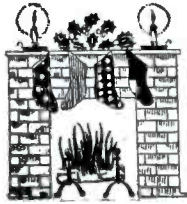
"The Boys Around the Corner"

HOLLYWOOD  
Radio Supply, Inc.

5521 Hollywood Blvd.

Hollywood, Calif.



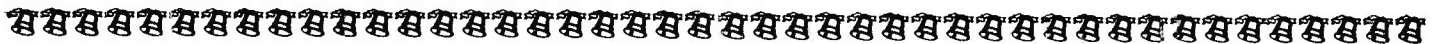


Season's Greetings

Amos 'n' Andy

*Freeman F. Gosden*

*Charles J. Correll*



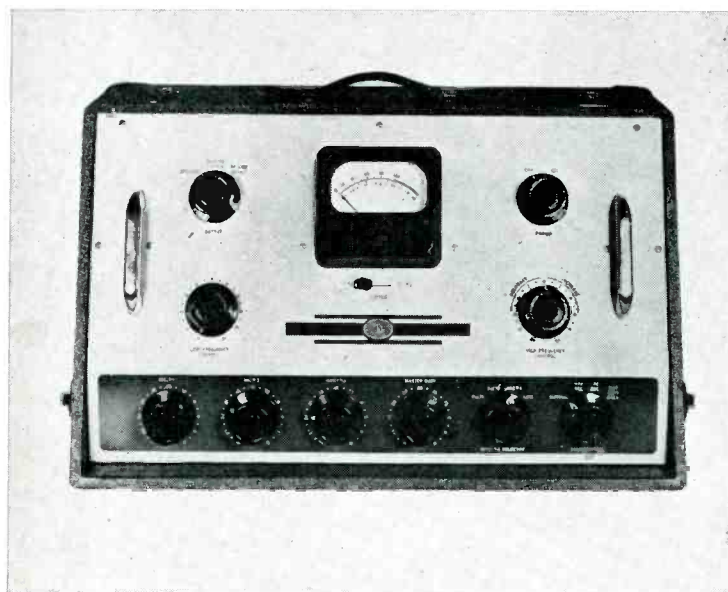
Thanks to you all and

Season's Greetings

*from*

FREDDY MARTIN

**PRESTO AMPLIFIERS**



Presto Model 90-A

**KIERULFF & COMPANY**

820—30 W. Olympic Blvd., Los Angeles 15, California, RI-1101

ON DISPLAY . . . in our  
SOUND DEMONSTRATION  
ROOM . . . . .

The Presto 90-A recording amplifier is a portable console containing all the facilities necessary for operation on remote assignments, but with an overall performance found only in high fidelity studio equipment.



**Merry Christmas  
and  
A Happy New Year**



**BUD ABBOTT**

**LOU COSTELLO**

Exclusive Management  
**EDWARD SHERMAN**



**Greetings**

**DAVE KLEIN**

*“And a Sperry Sperry Happy  
New Year”*



**Sam Hayes & Terry O’Sullivan**

Merry Christmas  
and  
Happier Pot Turning  
from  
**PEGGY WEBBER**



*Best Wishes Now  
And  
Throughout the Year*

**VIC PERRIN**



*All right, guys, open up that pot  
Give us all the decibels you’ve got*

**“Merry Xmas and A Happy New Year”**

*... and thanks a lot!*

Walter Arnold  
Reed Browning  
Jim Butters  
Lou Cook  
Bill Crago  
Bob Commings  
Dresser Dahlstead  
George Fenneman

Irving Howard  
Mel Hunt  
Owen James  
Ralph Langley  
Paul Masterson  
Doug McKellar  
Bob Swan  
Harry Walstrum

**ABC-KECA HOLLYWOOD  
STAFF ANNOUNCERS**  
and Our Girl Friday, Margot Duba



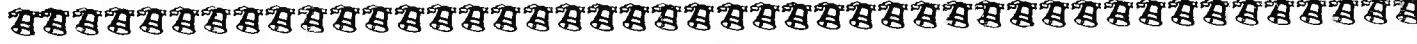


*Greetings from*  
**San Francisco Chapter**



**KGO      KNBC      KGO-FM**  
**KNBA      KNBI      KNBX**  
**KSMO**

**National  
Association of  
Broadcast  
Engineers and  
Technicians**





*Good Wishes and Season's Greetings*

*To All The Engineers*

*f r o m*

**KNBC**

The NBC Station for San Francisco and Northern California



*To Our Engineers and Technicians*

# GREETINGS



Radio's pioneer weekly one-hour broadcast of fine music, now in its twenty-second year on the air. Shown above is the San Francisco Symphony Orchestra on a recent Standard Hour in San Francisco's famous War Memorial Opera House, broadcast by NBC.

## THE STANDARD HOUR

*(Affiliated with the Standard School Broadcast Course in Music-Enjoyment)*

**STANDARD OIL COMPANY OF CALIFORNIA**

Broadcast Engineers' Journal **61** Yearbook • December, 1947

*Best Wishes to the Engineers*

*from*

**Tom Gerun  
Frank Martinelli**

**"Bal Tabarin"**

**San Francisco's  
Finest Theatre Restaurant**

**KNBC**



**Season's Greetings**

to the **KNBC Engineering Staff**

with my

**Sincere Appreciation  
for their invaluable help  
for making my show a success**

**BILL GAVIN**

**Season's Greetings**

To the Engineers

**EDDIE FITZPATRICK**

and his  
**Orchestra**

NBC Network



**Season's Greetings**

**TONY FREEMAN**

*Greetings from*

**SAN FRANCISCO  
RADIO & SUPPLY CO.**

WHOLESALE DISTRIBUTORS

All the Leading Lines in  
The Radio Industry  
In Stock

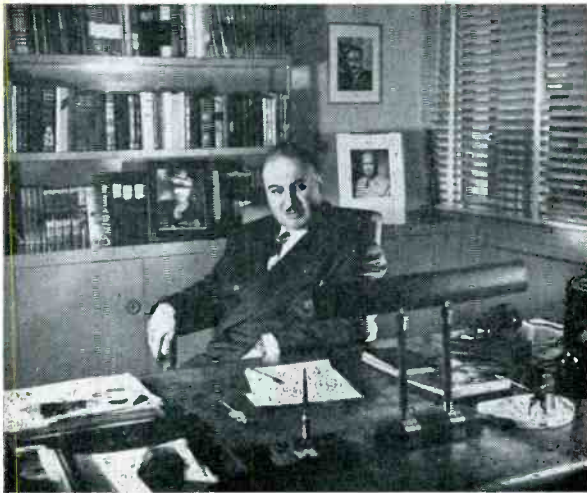
**Reeves Soundcraft Records**

WIRE - WRITE - PHONE YOUR RUSH ORDERS

1284 MARKET STREET  
San Francisco 2, Calif.

MA 1-4568





The Staff of Radio Station KEEN, San Jose  
Joins Me and My Associates in Wishing  
ALL THE ENGINEERS

**A Merry Christmas**  
and  
**Happy New Year**

GEO. M. MARDIKIAN  
President, United Broadcasting Co.

## GREETINGS

to the  
Boys we can't do without



### THE NBC PRODUCERS

DAVE DRUMMOND  
MONTY MASTERS

SAM DICKSON  
FRED HEGELUND

DICK BERTFANDIAS  
San Francisco

## S'NOSAES SGNITEERG



*from*

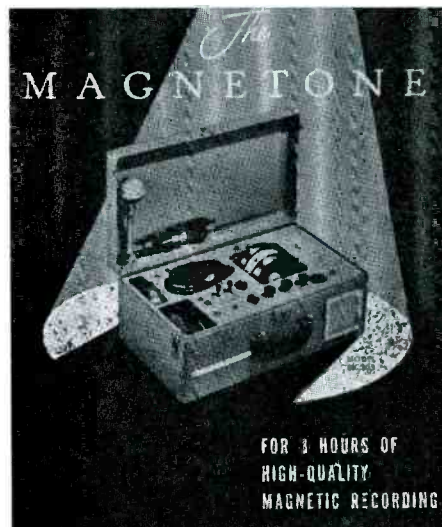


NBC Announcers in San Francisco

(Whose names spelled forward are:)

Ed Brady  
Joe Gillespie  
John Grover  
Bud Heyde  
Eddy King

Clarence Leisure  
Dud Malone  
Bill Roddy  
Russ Snow  
Hal Wolf



G. E. Tubes

Soundcraft Blanks

Audax Products

Rek-O-Kut

Brush Recorders

## DEALERS SUPPLY CO.

Your Electronic Distributor  
on both sides of the Bay to serve You

BERKELEY  
2101 Grove Street  
Cor. Grove & Addison Sts.  
Thornwall 3-8900

SAN FRANCISCO  
24 Steveloe Place  
Off Jones below O'Farrell  
Prospect 5-48900

**Yuletide Greetings**

to

**N A B E T**

from

**San Francisco Chapter**



AMERICAN  
FEDERATION OF  
RADIO  
ARTISTS



**Season's  
Greetings**

**RALPH HOWARD**

NBC — San Francisco

Hi NABET

**HARRY BUBECK**

*Program Manager*

KNBC-NBC



**BEST WISHES  
TO THE  
ENGINEERS**

**Elmer W. Peterson**



**Season's  
Best Wishes**

to all the  
**ENGINEERS**

**Ann Holden**

San Francisco



**THANKS for**

**WONDERFUL COOPERATION**



**Features Agency, Inc.**

8931 SUNSET BOULEVARD

HOLLYWOOD 46, CALIFORNIA



Noël Francis

A. Dwight Newton



## Thanks Again

to the powers  
behind the controls

**Henry Schacht**

KNBC — San Francisco



## Greetings

### To the NABET Gang

**CLANCY HAYES**

SAN FRANCISCO

## HOLIDAY GREETINGS

to

**NABET**

from

**Phil Bovero**



*To the Engineers  
who make bad  
voices like mine  
sound good*

**IRA BLUE**

ABC



## Season's Greetings

from

**Francesco Mazzi**

ABC



## Season's Greetings

to

**NABET**

from

**CHARLIE MILLER**

*"The Host to the Coast"*

### The Hunt Room

Where Good Programs Are Born

**BELLEVUE HOTEL**

Opposite NBC

SAN FRANCISCO

## MUSICALLY YOURS

Carl Wieninger	KNBC	Rec. Lib'n
Clare Patrick	KNBC	Music Rights
Kathleen Moore	KNBC	Music Lib'n
Lura Zuribin	KGO	Music Rights
Bob Adair	KGO	Rec. Lib'n
Amy Lawrence	KFRC	Music Lib'n
Dominic Bobbio	KQW	Music Lib'n



OMAHA

The

ENGINEERS

N.A.B.E.T.

of

WOW

N.B.C.

25

YEARS OF  
PUBLIC SERVICE

Extend the Season's Greetings  
To Radio Engineers Everywhere!

RADIO STATION WOW, Inc.

590 KC OMAHA 5000 WATTS

JOHN J. GILLIN, JR., President

... For Dependable  
Commercial Service



Designed for the rigors of commercial service in all types of radio communication . . . broadcast, mobile, aircraft, police. Precision made for utmost in stability, dependability, trouble-free operation. Calibrated within .005 per cent of specified frequency . . . range 1.5 to 10.5 MC. Temp. coefficient less than 2 cycles per megacycle per degree centigrade. Weighs less than 3/4 ounce. Gasket sealed against contamination and moisture. Meets FCC requirements for all above services. See your jobber—Petersen Radio Company, Inc., 2800 W. Broadway, Council Bluffs, Iowa. (Telephone 2760.)

PR Precision  
CRYSTALS

J. B. Distributing Co.

2855-57 FARNAM STREET

OMAHA 2, NEBRASKA

Electronic Equipment Distributor

Broadcast Supplies a Specialty

Phone Atlantic 5522







## Omaha News By Cy Hagrman

From time to time, the Journal published the calls of the various hams throughout Nabet-land, but to date nothing has been submitted by the Omaha Chapter to indicate that there are any hams there. 'Taint so! Here they are:

WØAXY (Louie)—10 meter phone  
 WØDCQ (Al)—10 meter phone  
 WØEUT (Bob)—10, 20, 80 ph; 20 & 40 cw  
 WØGTC (Roy)—10, 20 ph; 20 & 40 cw  
 WØMHV (G)—10 phone; 20 cw  
 WØNZ (Mac)—80 phone

There are several new faces around 'ole WOW. At least they have been added to the staff since the last news was sent in to the Journal some time back. Gosh, aren't we lazy! **Bill Dunbar** returned from the Navy in '46. Four years in took him to practically all theaters of operation. When discharged he was **Lt. Dunbar**. His return to WOW in about April or May of '46 saw him back on his old job in the control room. In Nov. of '46 he left and went to Chicago as a partner in a consulting Engineering firm. Six months later Bill returned again to WOW. 'Nope the firm didn't go broke. In fact it's still going strong, but after four years in the Navy and being away from home and on the move all the time, he felt it was time to settle down—here near his own people and friends. And also, and this might be the biggest reason, he wanted to get married. His marriage to Miss Gloria Reese took place August 15th at the 1st Congregational Church in Omaha.

### NABET Employment Service

Due to the day-to-day changes in status and availability of unemployed NABET members, it has not been deemed practical to publish such a list of names in each issue of the Journal. Instead, each available member should immediately notify the National Office, with copies to his Chapter Chairman, of availability together with brief resume of experience, etc., and notify them immediately of any change in status or availability. The Chapter Chairman for the area, and the National Office, each of whom are called upon to fill vacancies, will thus be kept up-to-date to the mutual advantage of all concerned.



The Peek-A-Boo Lingerie Fitters School is having this television camera installed . . .

**Dick Peck** returned to his old job in the Control room in Feb. of 1946. He was in Italy just before hostilities ceased. He was shipped from Italy to the Phillipines and from there to Okinawa. He couldn't even escape radio at those distant points. In Manila he was put to work as an operator at one of the AFRS stations. When shipped to Okinawa his job was installing an AFRS radio station. Well Dick it made it that much easier when you got back didnt it? Huh Didnt it? Two new names have been added to the WOW roster in the last year. First to come was **Johnny Brunken**. Johnny an ex-GI came from KFNF at Shenandoah, Iowa. Johnny's married. His wife's name is Ruby. Johnny and Ruby have two fine kiddies. Johnny's at the Transmitter. A CREI course keeps him plenty busy in his spare time. A short while later (May I think) came **Larry Sibilia**. Larry spent a hitch in the Navy before coming to WOW. He too is taking the CREI course. Larry is a fine cheerful young fellow who applies himself to any task. Dad Rat it, he applies himself too well. He is driving a new Plymouth while I am driving an old Dodge. In fact the Dodge is so old it says "excuse me" every time it hits a rough spot in the road.

A new sub-control room has been installed and was laid out, wired and planned by **G. Flynn** (Studio Supervisor) and **B. Dunbar**. The entire gang has been very busy, under the direction of Technical Supervisor **Joe Herold** and Chief Engineer **Bill Kotera**, with Television. We have nothing on the air here but have been Televising plays, sporting events, parades and anything else of public interest. The equipment here consists of two RCA TK30 Cameras and associated equipment. Five RCA Television receivers are being used for viewing. The public response to our demonstrations has been terrific.

I almost forgot. Do you guys remember that I used to mention one of the gang here taking flying lessons Well his name was **Al Maller**. Well this summer he flew up to the altar and got himself married! Congrats Al to you and the Missus. Thats all from Omaha for now.

## Season's Greetings



### Radio Electric Service Co.

RADIO AND ELECTRONICS DISTRIBUTORS  
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ELECTRONIC EQUIPMENT and COMPONENTS

*Write for Our Monthly Bulletin*

### GREETINGS

#### FROM THE OMAHA CHAPTER WOW

"Johnny" Brunken (TE) "Louie" De Boer (SE) "Bill" Dunbar (SE)  
"G" Flynn (Supvsr.) "Tex" Glanton (Supvsr.) "Cy" Hagerman  
(SE) "Al" Maller (SE) "Mac" McGowan (TE) "Dick" Peck (SE)

"Bob" Rudd (TE) "Larry" Sabilia (SE)

KODY: North Platte, Nebraska

"Bob" Johnson

Orlo Bonnor  
(INAC)

"Bill" Cowdery

"Joe" Ridgway  
(INAC)

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"A Hearty Welcome . . . '73's"

"For Everything Best"

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## Season's Greetings

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*National Advertised Radio Products*

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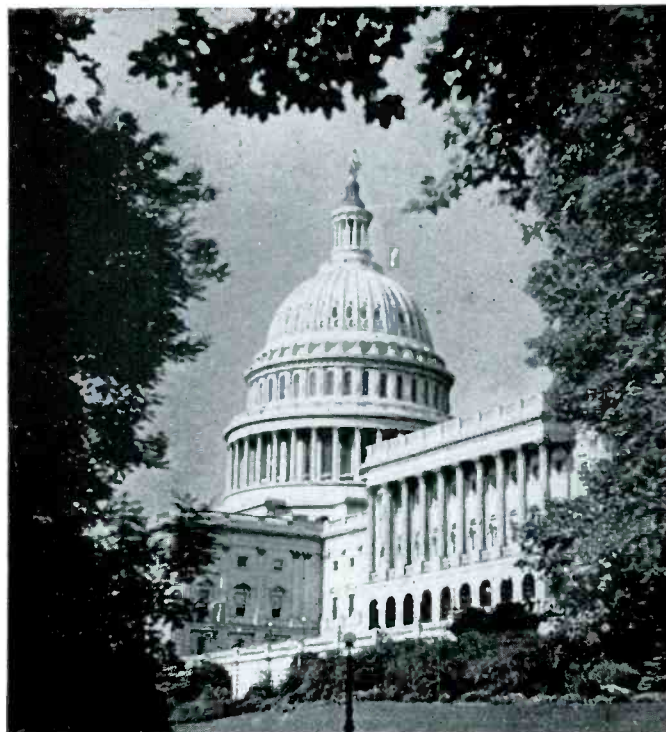
*Compliments of*

COMMERCIAL RADIO INSTITUTE

38 West Biddle Street

Baltimore, Maryland

Greetings from the  
 Nation's Capital  
**WASHINGTON**  
**CHAPTER**  
**N A B E T**



**NBC STUDIOS:**

BUTTS, James H.  
 CHEW, William H.  
 CLARK, Clyde M.  
 FUGAZZI, Frank J.  
 GODWIN, Walter L.  
 HAMILL, Ralph L.  
 HILDRETH, Sherman C.  
 HOGAN, John H.  
 KRISS, Joseph G.  
 McCOLLOM, John A.  
 MELINE, James F.  
 MORGAN, Fonso M.  
 TERRELL, Robert L.  
 THOMASSON, Harold B.  
 ULLMAN, Dorson A.  
 WILLIAMS, Keith B.  
 BOLSTAD, Carroll D.

**NBC RECORDING:**

CLOSE, Nicholas J.  
 McGINLEY, Edward W.  
 SHENTON, Robert E.

**NBC MAINTENANCE:**

SMALL, James N.  
 SEARS, Allen P.

**WRC TRANSMITTER:**

STAHL, Barton E.  
 LEISNER, Victor A.  
 MEYERS, Paul F.  
 YATES, Harold W.

**WNBW**

**TV TRANSMITTER:**

BARNES, Robert G.  
 ANDERSON, Paul E.  
 NEWMAN, Samuel E.  
 SIMMONS, William L.

**WNBW**

**TV FIELD GROUP:**

COLLEDGE, Charles H.  
 BOYD, Clarence D.  
 McCLELLAND, Lefferts A.  
 ROGERS, John G.  
 WARD, Walter C.  
 WEAVER, James M.  
 BOSTWICK, Walton H.  
 DEEM, Warren D.  
 VOSSLER, William M.  
 WELLS, William E.  
 GASKINS, F. J.

**NBC RIGGER:**

DeVEAU, Archie

**WOL STUDIOS:**

ANDRICK, Carson A.  
 BALLINGER, J. E.  
 BELL, Warren S.  
 BELOTE, Theodore G.  
 CORNNELL, William A.  
 HALLAM, Arthur H.  
 HERMAN, W. D.  
 KAPLAN, Raymond

NEFF, John L.

WARD, Melven E.

BOOK, W. H.

**WOL TRANSMITTER:**

MILLER, Bellum  
 MENGLE, Kline L.  
 BOGAR, Zoltan T.  
 STARK, Herschel L.

**WMAL TRANSMITTER:**

BURG, Edwin W.  
 FISHER, Charles S.  
 NAGY, John J.  
 WILLIAMS, James C.

**WMAL TV:**

EGBERT, Laurel L.  
 HARTER, James Robert Ross  
 SILBERT, Donald T.  
 FULLER, Robert L.  
 DURKEE, Kenneth M.  
 DeLUCA, John J.  
 FOWLER, William P.  
 MARCHETTI, Frank A.  
 MORARRE, Donald T.  
 WILDEBOOR, Frank W.

**WMAL**

**FIELD SUPERVISOR:**

POWLEY, Allan T.

ALLEN, Clarence A.

COOPER, Marvin S.



# The Gang from WRC



Ludlam



Finley



Archer



Dunlavy



Roney



Osgood



DeWitt



Wright



McIntyre



Batters



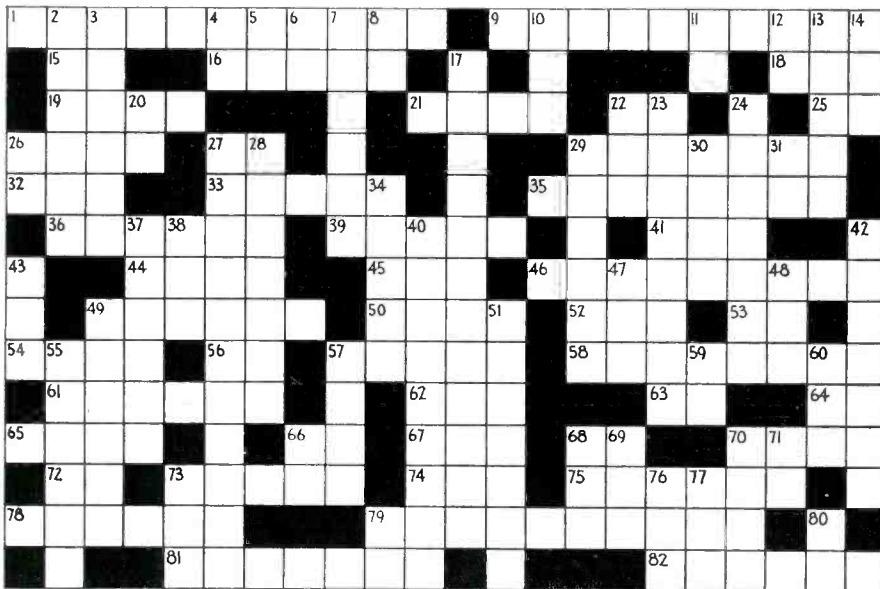
Batchelder



Slinglana

## ACROSS

1. Love those —
9. Hate those —
15. Station identification
16. Soap seller
18. Pedal digit
19. Develop
21. No name plug
22. An abbreviated mother
25. Inside of anxious
26. Has bristles
27. Ad lib (up cut)
29. Army equivalent
41. A byssinian
- Neuropathical University
44. What money is of all evil
45. A type of commissioned officer
46. FRANK
49. STU
50. One time only
52. They try to get into Mr. Durante's —
53. Printer's measure



## DOWN

2. NANCY
3. Optical phenomenon
4. Or in reverse
5. Construction permit
6. That is
7. GENE
8. City in lower-left hand corner of USA
10. Vase
11. Clara Bow once had and may still have this
12. Transcribed
13. JACK
14. Interesting
17. What never quite fits between the last chime and the next program
20. Alternative
22. Male animal
23. Traditional sunken island
24. River, J. G.
26. Early days of radio; before commercials
27. Incapacity to endure
28. CHARLIE
29. KEN
30. Sounded
31. North-east
34. High man in quartet
37. HOLLY
38. Electrified particle
40. Kindred in spirit, tastes
42. Contrary
43. Senior engineer sits here
47. Interstate Commerce Commission
48. Some
49. Woven cloth
51. Stinks good
55. What salaries should be
57. Applications
59. Do we like Washington weather?
60. Content of average soap opera
66. Pronoun, masc.
68. What the iceman bringeth
69. What the doctor cureth
70. A leafy plant
71. Preposition
73. Ancient
76. All radio people are a bit —
77. Perceive
79. Exist
80. Objective case of I

- lent to Navy "Head" or civilian "Toidy"
32. Gear
33. Organization you join after you become too old for the cub scouts
35. RON
36. KAY
39. What you get if you miss the cue

54. Haul
56. What one says when he has finished with page 3 and can't find page 4
57. Pleads, advocates
58. ED
61. Abominates, loathes
62. Printer's measure

63. Thus
64. Alternative
65. Foul substance
66. Pronoun, masc.
67. Love that furniture store
68. Ninth letter of alphabet twice
70. Save those waste —
72. Will we take outside jobs?
73. Reed instruments

74. A place of shelter
75. Studio "O," NBC-Washington
78. Remember
79. JOHNNY
81. A measure of how much too loud an announcer is
82. Where everything happens west of

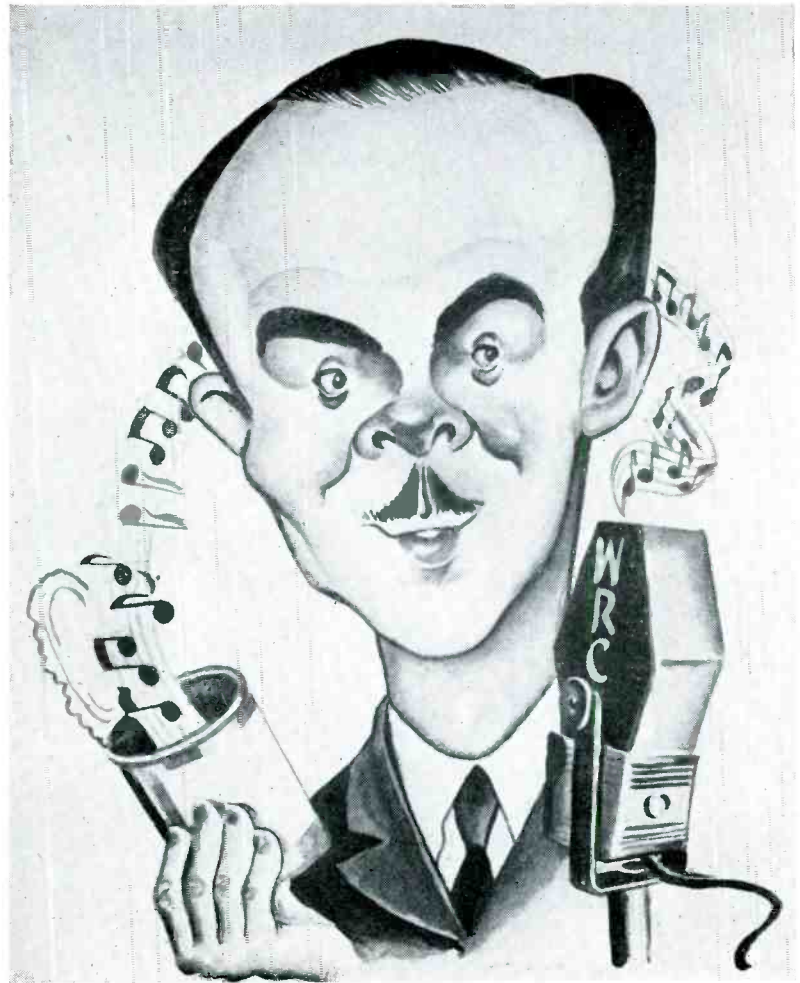




Holiday  
Greetings

*from*

**BILL  
HERSON**



To the Washington NABET Gang



and special THANKS to Nabeteers —



Mac McCollom — WRC “Timekeeper Time”



Keith Williams — NBC “Coffee with Congress” and  
WRC “Herson Goes to School”



Joe Colledge — WNBW (Television) “Capital Citizen”,  
“The Local Crowd”, and the Arrow Beer and  
Amoco “Sports Shows”





*Best Wishes to a Fine Bunch of Fellows!*

The Editors of

# SUNOCO 3-STAR EXTRA

RAY HENLE • FELIX MORLEY • NED BROOKS • FRED MORRISON  
FRANK C. HANIGHEN • HELEN J. KELLER

*Here's Looking at You!*



## RAY MICHAEL

WNBW — NBC Television

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**JIM GIBBONS**

SPECIAL THANKS

to

Jim Meline and Walter Godwin

on WMAL "Town Clock" Program



## WASHINGTON NEWS

By Warren D. Deem

**T**ELEVISION in Washington is making rapid progress. With WMAL-TV increasing our local stations, few gaps in the weekly television schedule are noticed by the receiving public. The Bamberger Broadcasting System, station WOIC will be the fourth and last presently scheduled station to hit the local air. They hope to be in operation by early next spring.

The WNBW field crew has been congratulated for their first and successful job of televising a presidential speech from the White House on the evening of October 5th. The preparations that went on before this historic event are quite worthy of note. Sunday, the day of the telecast, the Washington field crew had a football game scheduled from Baltimore. This gave rise to the problem of "time" in setting up for the President's speech after the trip back to Washington. Without the excellent cooperation of Mr. Harold See it would have been all but impossible to make both telecasts. Mr. See of Station WBAL-Baltimore loaned us their equipment for the football game thus allowing Mr. Colledge to setup our equipment at the White House the night before. Messers Mullaney, Galvin, and Switser of the New York Field Group very ably "knocked down" and loaded up the WBAL equipment after the game allowing the Washington crew to head for the Capitol. The Mayor of Baltimore very kindly arranged for a police escort for the Washington crew through the

*Merry Christmas*

*to the Boys Behind the Dials*

**TRIS COFFIN**

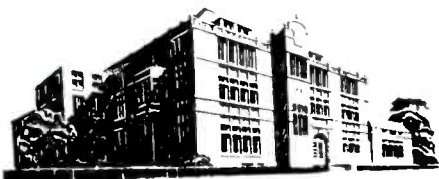
post-game traffic as far as the Baltimore city limits. Upon arrival at the White House cameras were warmed up and the audio levels were set in preparation for the program. Wally Ward was the audio engineer. "Joe" Colledge and Jim Weaver were at the video and switching controls. Bill Simmons and "Mac" McClelland had the honor of being the cameramen. Warren Deem and Johnny Rogers aligned the micro-wave equipment while Mike Vossler, Frank Spain, and Bernard Steel adjusted lighting and set up the microphones and other equipment. Mr. A. E. Johnson, Washington Engineer in Charge and Howard Gronberg, TV Operations Supervisor were on hand to see that all operations were carried out smoothly. The crew put in a long hard day, but all felt pleased to be members of the first field crew to penetrate the sanctuary of the executive mansion.

(Continued on Page Seventy-Nine)



To the  
Friends  
of CREI

Holiday  
Greetings  
from  
E. H. RIETZKE  
and the  
CREI STAFF



CAPITOL RADIO  
ENGINEERING  
INSTITUTE

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San Francisco (2) 760 Market Street

Greetings  
and  
Best Wishes  
to  
The Engineers



Arthur J. "DUTCH" BERGMAN  
WRC, Washington, D. C.

Greetings

From

Bjorn Bjornson

NBC — Washington, D. C.



Best Wishes

to

The Engineers

Arthur Barriault

Washington, D. C.  
NBC News



Season's  
Greetings

To

A Bunch of Good Sports

Steve Douglas

NBC Sports  
AM - FM - TV





Thanks, Again . . .



**RICHARD HARKNESS**

NBC, Washington

Greetings from



**MORGAN BEATTY**

"And that's THE NEWS OF THE WORLD"

Greetings from . . .



"Eid in Washington"



**Robert McCormick**

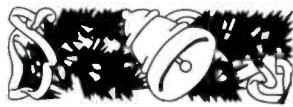
"With the News of the Day" from Washington



In behalf of students and graduates of the National Radio Institute, and the N. R. I. Staff, I extend most cordial Season's Greetings to the N. A. B. E. T.

*J. E. Smith*  
President

NATIONAL RADIO INSTITUTE, WASHINGTON, D. C.



WITH APPRECIATION

**JACK BEALL**

ABC — WMAL



**H. R. BAUKHAGE**

ABC

Many Thanks Men  
and  
Season's Greetings

**KEN EVANS**

WMAL



# NINE OLD MEN IN WASHINGTON, D. C.

LEE DAYTON  
JACKSON WEAVER  
HAROLD STEPLER

GORDON SHAW  
TED DUNLAP  
CHARLES EDWARDS

BAXTER WARD  
DEAN LUCE  
GIL HODGES

## We Announcers Pay Supreme Court to NABET



WMAL - AM - FM - TV

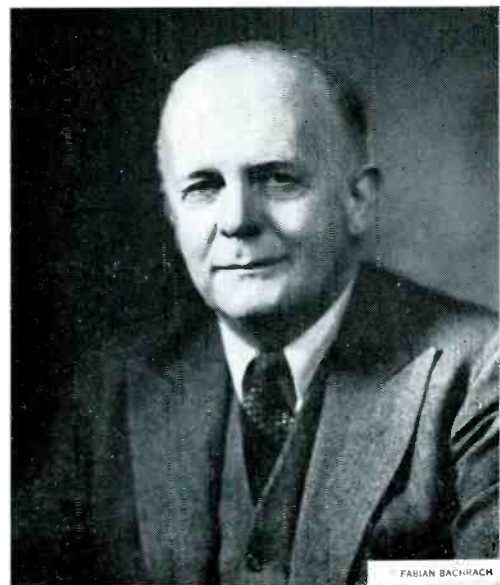
ABC in Washington, D. C.



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Washington, D. C.



EARL GODWIN

*"That's All from Washington at this Time"*

WASHINGTON

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To the American Home

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*In Radio Center*

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---

# Season's Greetings

from

## ROCKY MOUNTAIN CHAPTER NABET

KOA

KFKA

---

### DOINGS IN DENVER

By Charlie Eining

**G**EORGE POGUE, Rocky Mountain Chapter Chairman, attended the national NABET convention.

Ham Doings. **Vern Andrews** got his ART-13 going into a three element rotary beam on 20 meter phone. **Kenny Raymond** is putting up a forty-five foot tower to be topped by a three element rotary beam for 20 meters. He likewise is working on an ART-13 conversion.

A television project is holding the interest of a group of studio engineers. **Stan Neal**, **Al McClellan**, **Kenny Raymond**, and **Charlie Eining** are the present interested parties, with evidence that more of the gang will climb on the video bandwagon. Present plans call for a camera with attached electronic viewfinder and a five-inch monitor. The RF end of the project comes later. All parties expect to end up with a complete setup sometime in the future.

It happened, and in front of witnesses, too! **Carl Drebing**, studio vacation relief engineer, was playing a phonograph record at 78 rpm in studio "D" recently, when a mouse jumped from behind the console onto the spinning table. Carl, in open-mouthed fascination watched as the mouse ran against the direction of rotation of the table for several seconds and then managed to hop off the spinning table without so much as brushing the pickup arm. The mouse has not been seen again; probably he decided that studio "D" is not the place to lead a long and happy life!

### Washington News

(Continued from  
Page Seventy-Three)

Newcomers to WNBW's field group include some old hands at the radio game and some new ones. "**Dodd**" **Boyd** is one of the experienced men and comes to the field group from WRC studios downtown. **Johnny Rogers** has transferred from the WNBW transmitter group to the field and will take **Jim Weaver's** place as Video Field Control Engineer. **Jim Weaver**, recently appointed to Group 15, will take charge of the newly completed film studios at the Wardman Park Hotel. He will have working with him **Frank Gaskins** and **Bill Wells** who are both fresh from three months training at 5F in New York City. **Frank Spain** (Sen. Claghorn to the field crew) is our newest group 12 engineer and hails from Mississippi. He is a graduate of Mississippi State Univ., and got his sheepskin from there. He got a lot of worthwhile experience at radio station WELO in Tupelo, Mississippi. **Mr. Bernard Steel** is the newly appointed group 11 man and is waiting for the golden day that he can climb in the cab of one of the Mobile Unit Vans that have been on the way for some time now.

**Sam Newman** of the transmitter group, whose amateur call letters are W3HN, contacted a "ham" in Australia and arranged for a "swap." He sent the Australian a crystal and in return was sent a boomerang.

**Bill Simmons** recently transferred from the field group to the transmitter group, WNBW.

**Johnny Knight**, WNBW Station Manager, can be quoted as recently saying "What I would really like to have around here is a man with about four arms to handle some of this switching at the master control."



CLARENCE WESTOVER  
Chairman, New York Chapter

## Season's Greetings

from the

# NEW YORK CHAPTER

# N. A. B. E. T.

## COUNCILMEN

WNBC Transmitter  
W. Haerer

RCA-V Recording  
F. Lynch

ABC Day-Studio  
P. Simpson

ABC Night-Studio  
G. McDonald

ABC Traffic  
D. Sturges

ABC Communications  
F. Valdez

WJZ Transmitter  
W. Mullaney

Muzak  
H. Conway

NBC Recording  
N. McCarroll

Sound Effects  
A. McGee

Master Control  
E. Stolzenberger

NBC Maintenance  
G. Windham

Field  
D. Shultis

Short-Wave Transmitters  
M. Moon

RCA-Victor Matrix  
G. Kinney

NBC Day-Studio  
P. Dickson

NBC Night-Studio  
D. Connolly

NBC Traffic  
C. Kelly

NBC Communications  
M. Ford

Secretary-Treasurer, J. J. Rooney

to all of you  
who have done so much  
to make WOR  
one of America's  
great stations

NOTE: And a salute from the WOR Recording Studios, where your technical skill produces one of the best products in American radio today.

— — — — —  
— — — — —  
— — — — —  
— — — — —  
AND  
A  
TERRIFIC NEW YEAR!  
from



**HENRY SYLVERN**

*and to the*  
Announcers . . . Engineers  
and  
Sound Men  
of  
**W. O. R.**

*Thanks a Million, Guys*

HANK

To the  
"INDISPENSABLE MEN"



**DR. FRANK KINGDON**

**BOB EMERY**

Executive Producer of  
Youth Programs

DUMONT TELEVISION  
NETWORK

"Small Fry Club"



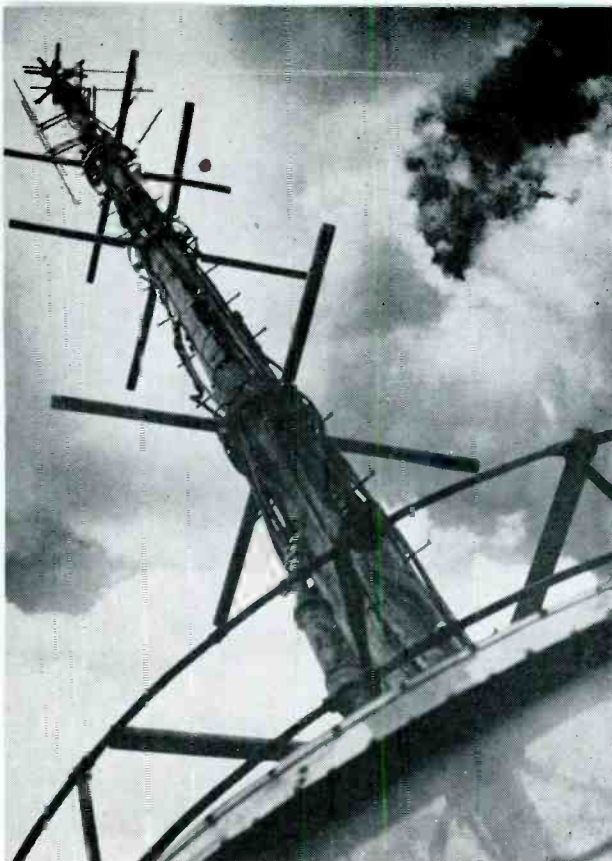
All the Best



**Ray Forrest**

W 2 X B S





# Season's Greetings

from the

## ENGINEERING CHAPTER

### N A B E T

L. West  
 R. Hanna  
 L. Shaw  
 J. Blake  
 R. Barnaby  
 P. Boucheron, Jr.  
 J. McCullough  
 J. McGinty  
 H. Mofsenson

O. Tamburri  
 S. Varley  
 W. Waterbury  
 E. Wilbur  
 M. Kitchen

E. Proctor  
 A. Stock

#### Radio Facilities

W. Brown  
 E. Chubbuck  
 J. Costello  
 F. Everett  
 R. Kopcienski  
 G. Lenfest  
 A. Paradis  
 W. Patterson  
 P. Todd  
 J. Siebert  
 F. Wright

#### Empire State

W. Kelly  
 J. Lombardi  
 H. Miller  
 C. Sweeney  
 D. Stix  
 E. Watkins  
 E. Morrell

#### Audio-Video Facilities

E. Berglund  
 R. Byloff  
 E. Dustin  
 G. Hastings  
 R. Keowen  
 D. Moloney  
 E. Nolen  
 W. Resides  
 F. Rojas  
 A. Walsh

#### Technical Services

J. Arnone  
 A. Bacon  
 F. Hanna  
 P. House  
 F. Opsal  
 E. Prince

#### Development

E. Bertero  
 R. Fraser  
 R. Gebhart  
 H. Gurin  
 A. Hammerschmidt  
 W. Hotine  
 W. Howard  
 W. Jackson  
 R. Kennedy  
 R. Lovell  
 L. Moffett  
 H. Musselman  
 J. Petit  
 J. Schaller  
 H. Schumacher  
 S. Ulfik  
 J. Valli  
 E. Wade

#### Television Field

O. Bowman  
 J. Burrell  
 W. Carson  
 C. Clark  
 E. Costello  
 R. Daniels  
 J. Davis  
 O. Fulton  
 R. Galvin  
 A. Henderson  
 J. Irving  
 A. Jackson  
 E. Kahn  
 R. Long  
 F. McArdle  
 W. Mullaney  
 W. Phillips  
 M. Pirozek  
 R. Potter  
 H. Samuels  
 C. Snell  
 F. Squires  
 A. Switzer

#### Model Shop

W. Bork  
 G. Bosler  
 C. Bundick  
 F. Guber  
 G. Peers  
 W. Yost

H. Eitelbach  
 H. Folkerts  
 H. Getting, Jr.  
 E. Hand  
 E. Hoffmeister  
 R. Jordan  
 T. Lyman  
 L. Lockwood  
 G. Neumann  
 J. Miller  
 R. Nies  
 C. Paul  
 S. Peck  
 R. Pickard  
 D. Pike  
 A. Poppele  
 A. Protzman  
 C. Read  
 H. Ripp  
 M. Rhodes  
 A. Rokosz  
 T. Smiley  
 N. Sprecher  
 W. States  
 A. Stephenson  
 C. Townsend

#### Radio City Television

D. Albert  
 A. Anderson  
 H. Bomberger  
 F. Burns  
 G. Butler  
 C. Cabasin  
 J. Canaveri  
 L. Climent  
 J. Carpenter  
 S. Davidson  
 R. Davis  
 J. De Baun  
 H. De Groot  
 S. Dentz

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*Our Thanks to the Engineering Staffs*

**FORD BOND**

**Greetings**



**Paul Lavallo**





**BILL MEEDER**  
**AT THE ORGAN**



FRED WARING

*and the*

PENNSYLVANIANS



JACK LESCOULIÉ

MUTUAL

WOR



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by Broadcasting from Bed!





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Engineering: Giff Campbell

Sound: Jack Keane

# Superman

Engineering: Harry Bryan

Sound: Jack Keane

# Adventure Parade

Engineering: Giff Campbell

Sound: Walt Shaver

# House of Mystery

Engineering: Jim Shannon

Sound: Walt Shaver

ROBERT MAXWELL ASSOCIATES

480 Lexington Avenue

New York City 17



# RADIO DIRECTORS GUILD

New York Local



*BEST WISHES to  
KEN ARBER and the  
ENGINEERS . . . .*



KARL SWENSON

*from LORENZO JONES and  
his wife BELLE*



LUCILLE WALL



*Our Sincere Best Wishes  
To All of You*



MARION SHOCKLEY

BUD COLLYER



# “CAN YOU TOP THIS?”



SENATOR FORD • PETER DONALD • JOE LAURIE, JR. • WARD WILSON • HARRY HERSHFELD

**“COLGATE-  
PALMOLIVE”**  
NBC

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Gen'l Mgr.

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**“KIRKMAN”**  
WOR



## Season's Greetings

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SCREEN and  
RADIO STARS  
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NEW YORK CITY

Featuring GOOD FOOD and DRINKS  
Served in a Friendly Atmosphere

Under Management of:  
CONN HURLEY



**Greetings**

**BEN GRAUER**

**Merry Christmas**

*To You Guys*

**EDDY DUCHIN**



*Greetings from the*  
**NBC — NEW YORK**  
**INTERNATIONAL DEPT'**



**SPANISH SECTION**

EMILIO DE TORRE  
 ERNESTO FOREGGER  
 ALBERTO GANDERO  
 ALBERTO MORE  
 JUAN SAN MARTIN  
 VINCENTE TOVAR



**PORTUGUESE SECTION**

RICHARD AVELLAR  
 MOACYR CALHELHA  
 MARIO CARDOSO  
 PINTO DE SOUSA  
 TITO LEITE  
 HELIO PEREIRA



**PRODUCTION**

LUIS DE LLANO  
 RAYMOND GREEN  
 BETTY STEIN  
 JUAN J. VASQUEZ  
 FRANK WEBER



**OLD CHINA**

137 WEST 52 STREET  
 N. Y. C.

Famous eating place — Exotic Chinese cooking  
 Well known to New Yorkers  
 Air-Conditioned Muzak

Hong Sook, Manager — owned the famous Palais D'Or  
 for a decade, where the Latin Quarter now stands.

Open All Night — Phone Circle 7 - 8963



**HENRY  
 GLADSTONE**

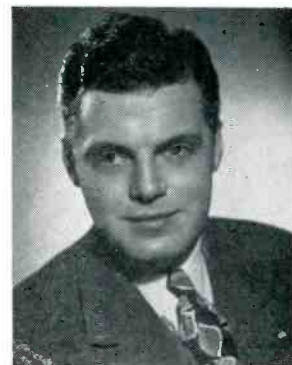


**Merry Christmas**

**Happy New Year**

**Harvey Harding**

Baritone  
 WOR  
 Mutual





Season's Greetings

from

**THE "BETTER HALF" GANG**

TINY RUFFNER

JACK BYRNE

CARL WARREN

ED LEACH

BILL WIRGES



**ROBERT GLENN, Inc.**

**101 PARK AVENUE**

**NEW YORK**

Season's Greetings



**MARTHA DEANE**





**John W. Vandercook**



**AIR AGE NEWS**

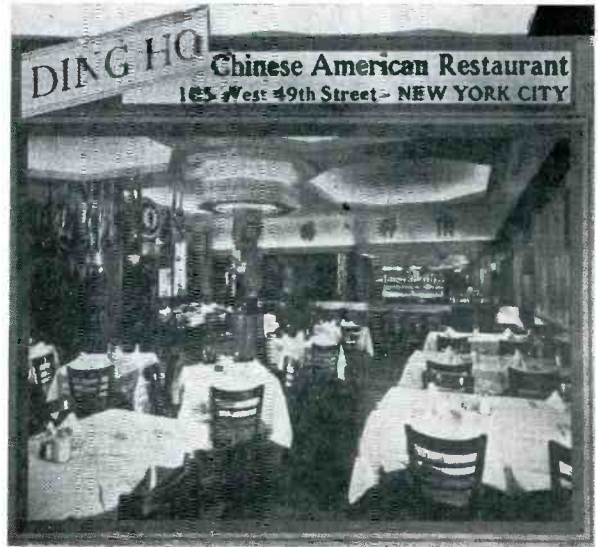
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**WOODS and RIBLET**  
Incorporated

68 W. 58 — New York

**THANKS**  
**you B.E.T.!**

*With Compliments . . .*



**Bar — Cocktail Lounge**

**Best Wishes**



**TOM HUDSON**



---

*Best Wishes from*



*“The McCanns at Home”*

---

Season's Greetings to All . . .

Chet Kingsbury

Season's Greetings  
and  
THANKS FELLOWS



**Kaufman - Bedrick Pharmacy**  
IN THE R.C.A. BUILDING

DRUGS                      LUNCHEONETTE  
FOUNTAIN SERVICE      COSMETICS

When at NBC, Dial 780 for Service  
"For Your Health's Sake"



**The Season's Best  
To Everyone**

from  
Jack (John Patrick)  
Costello

Circle 7-0051

Founded 1888

**TREPEL  
ROCKEFELLER CENTER**

*Flowers*

Personal Management  
JACK TREPEL

RCA Building  
52 West 50th Street  
New York 20, N. Y.

**Greetings to Our Friends**

*from*

**U O R K B A R**

YOUR FAVORITE RENDEZVOUS

1247 6th Avenue

New York

**To Johnnie O'Neill**

Who Has Luncheon With

**MAGGI McNELLIS and  
HERB SHELDON**

AT THE LATIN QUARTER

WJZ 770 MONDAY THRU FRIDAY 2 - 2:30 P.M.



**This one is on me...**

**Nat Abramson,**  
*manager*  
WOR Entertainment  
Department

**Masters Mart, Inc.**

*66 West 48th St.*

*New York*

BRyant 9-7725

S T N E M I L P M O C

F O

**N A T U R E S**

**VICTOR LINDLAHR**

**DALE KENNEDY**



## HUDSON NEWS

By Al King

**O**UR amateur radio problem this month seems to be line voltage with Clark (W2HTA), King (W2JW), and Sakal (W2KJF). . . . They're all busy running circuits up from the meter. Clark takes the prize with a low of 80 volts on load. King runner up with 100 volts.

After visiting all the USO centers in the country (all

(Dutch Netherlands)—40 minute contact with indoor antenna.

Thought we'd list some of the call letters of our "HAM network" in this month's issue:

Gene Clark .....	W2HTA
Al King .....	W2JW
Bob Albrecht .....	W2MHP
Hax Hadden .....	W2VFM
Bill Sakal .....	W2KJF
Bob Bergen .....	W2LSS
Don Hale .....	W2ADQ
Paul Reveal .....	W2ADD
Gordon Shaw .....	W2RJC
Herman Berger .....	W2SH
Jim Carter .....	W2HJY
Jim O'Connor .....	W2KGO

Notes on Washington: Gene Clark represented the WOR Chapter and was on the Constitutional Committee which completely rewrote the constitution. Gene had very little time for sight-seeing but managed to get to see the Lincoln Memorial since he is a direct descendant of Abraham Lincoln. Gene also visited the WOR television tower in Washington—even took a picture to prove it.

---

If it concerns the broadcast engineer—he will  
read it in the Broadcast Engineers' Journal.

---



kidding aside, he spent nineteen months in the Air Corp), Bob Stankus is finally back with WOR. He recently bought an old-model car which might get him around if he doesn't gain any more weight.

Congratulations to Mr. and Mrs. Gene Clark who added a baby boy, Jay Davis, to make it a family of three. Incidentally, Jay was born on September first (Labor day). . . . Jim O'Connor and wife are also proud parents of a brand new baby girl.

WOR had a consensus taken of "ye ole feeling" towards the organization. No results yet—ehem!

W2JW has 500 watts on the air—first contact PAOXN

*In Appreciation*

**W. W. CHAPLIN**



**AIR**  
**FEATURES**  
**Inc.**



**247 PARK AVENUE**  
**NEW YORK, N. Y.**



A Merry Christmas  
A Happy New Year

and

Thanks To You All

KEN BANGHART

Holiday Greetings

to

NABET

JOHN WINTERS

*Best Wishes*

Barry Thomson

*wassail, wassail,\* gentlemen  
and many kudos<sup>o</sup> to you*

---

**WNBC** NEW YORK at 660 k. c. ★ 

THE NATIONAL BROADCASTING COMPANY IN NEW YORK

---

\* singing of carols, etc. from house to house  
especially at Christmas time

<sup>o</sup> praises, extolations, glorifications

★ and thanks for keeping it on frequency!

THANKS TO ALL THE BOYS



Dorothy Kilgallen and Dick Kollmar

"Breakfast With Dorothy & Dick"

WOR Every Morning

"Startime"

ABC Thursday Morning

"Boston Blackie"

WOR Wednesday Night



"'88's"

CECIL ROY

THANKS, Gentlemen



BILLY ROSE



**DICK  
WILLARD**



With profound admiration and gratitude to the most gifted men in radio, the Sound Engineers—WHO — play plenty parts on each show . . . and don't think it remarkable!

Sincerely

**JOHN GRIGGS**

*"House of Mystery"*

*"Adventure Parade"*

**CHAS. KING  
RADIO PRODUCTIONS, Inc.**

Congratulates the  
RADIO ENGINEERS  
on their  
CONSISTENTLY GOOD SERVICE

*Greetings*

**Stan Lomax**

WOR SPORT NEWS



*Greetings*



**Keyes Perrin**



Best Wishes  
Season's Greetings  
to  
The Engineers

**VAN DEVENTER  
WOR**

**ED BEGLEY**  
STEPHEN GRAHAM  
*Family Doctor*  
CHARLIE CHAN  
*Official Detective*



**MORT  
LAWRENCE**

"Second Honeymoon"  
"Newsweek Periscope"  
"June Dairy Show"

WOR — MUTUAL



---

## Season's Greetings

### From Your Favorite Radio and Electronic Parts Distributor

Tremendous stocks and complete facilities now enable us to fill your orders better than ever. For phone orders and information call Circle 6-4060 in New York; in Chicago, State 2950

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**CHICAGO**  
323 W. Madison St.  
Chicago 6, Ill.

New York City Stores: 115-17 W. 45th Street and 212 Fulton Street

---

*Best Wishes*

**HELEN CARROLL**

and

**THE SATISFIERS**

**BOB LANGE**

**TED HANSEN**

**ART LAMBERT**





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# SUGGESTED FOR STANDBYS



## CLYDE KITTELL

18 Years Before the Mike — (and the Engineers)

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In the Spirit of the Yuletide — Greetings to the Engineering Staff  
**FRANK BLACK**

Merry Christmas  
Happy New Year



**HUGH JAMES**

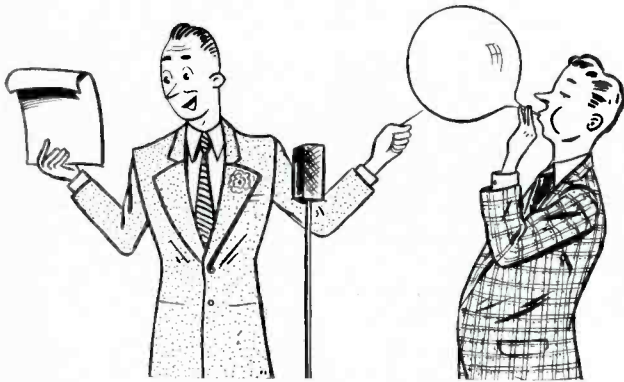
Season's Greetings

from

**HENRY RADIO**

11240 W. OLYMPIC  
LOS ANGELES, CALIF.

Open Evenings for Your Convenience



If I ever sounded good —  
you fellows done it.

**THANKS  
HANS CONRIED**



**DENNIS DAY**





# ST. LAWRENCE NEWS

By Aleen Corbin

**A**FTER those two articles on St. Lawrence, the first of which ended abruptly, and the second which began without introduction, you probably think the chapter is composed of those tight-lipped, silent characters, who, in the best tradition of the cinema, typify the average rural community citizen. If you did wonder about it, you probably guessed that it was meant to be just one article, but I rambled on too long and spilled over into the next issue. I knew that it was going to be split up, but I just couldn't get a remake done before that deadline came 'round.

Explanations done, time now to introduce the chapter's other station, WMSA, Massena, New York. It's about 95 miles northeast of Watertown, and I've never been there myself, but **Stan Hickenbottom**, the councilor up there, came through with the info for me. Thirteen or fourteen thousand people make their home there, about five thousand of whom are employed in the huge Aluminum Corporation of America plant. Everybody up there, as well as for miles around, is rootin' for the St. Lawrence Seaway to go through. Massena is only five miles from the river and a short distance from the proposed site of the hydro-electric plant. It's bound to be a "boom" town when the bill finally passes Congress this winter.

Massena weather is much like that of Watertown, with nice scenery and hot weather in the summertime, but cold as blue blazes with lots of snow in the winter. Since the Massena highways are important in this section, though, the town has an efficient highway service to clear the roads of drifting banks. Last year at this time they had a heavy snowfall, but right now they are experiencing extremely warm, dry weather which all the men folk are cursing. Being only 65 miles from the Adirondacks, they are eager to try their marksmanship, but due to several forest fires raging in this area, the state has a strict ban on all hunting in the mountains.

WMSA is a 250 watt ABC affiliate, strictly AM right now, but it will be on the air with an FM xmitter shortly after the new year. Construction has already begun on the site for the new AM-FM tower and on an addition to the original transmitter house. The new addition will contain the FM control room and the FM studios. Good results are expected, and the coverage should be much better with a new tower 385 feet high, with a frequency of about 103 megacycles.

**Stan** has been at the station seventeen months, coming there from WLOG, Logan, West Virginia. His home, though, is in Rochester. During the war **Stan** was a radio op in the maritime service. So far he has managed to remain among the ranks of the unmarried.

Coming from Worcester, Massachusettes, and up to the station one year, is **Adrian** (but don't let him catch you calling him that). "**Sammy**" **Frazier**. An ex-Marine, it looks as though **Sammy** is going to settle in Massena. On November 10th he married a Massena girl, **Miss Jean Rielly**.

**Elmer Cervany** from Cleveland, Ohio, has been at the station since last June. A married man, **Elmer** is a veteran of the USAAF.

From WWNY I'm sorry to say the news isn't all good. **George Gebhard** is very ill in Rochester, his home, with

# ABOUT ROCHESTER

By Geo. Wilson and Don Anderson

**T**HERE seems to be a large and virile crop of radio towers blossoming here in Rochester. Adding to the four stations already in operation there are two more going in, WVET and WARC. This does not take into account the various FM outlets that presumably will sprout in the comparatively near future. To New York or Chicago six AM's will seem like small change, but to us, who have been used to three only during these many years, the place seems overburdened with 'em. Four transmitters are all within about a mile of each other and that particular area reminds one of a forest, with lights.

Dropped in WRNY the other day where **Charlie Leniak** was busily grinding 'em out; we got to talking about the silly bulls that we all make at one time or another and while hawing about the last example, recounted it was discovered that he had set up and played the disk that he had just taken off the table to put away. Needless to say, this did not agree with the list used and announced by the announcer on duty. Says Charlie, "There. See what I mean?". While there I found that **Earl Zimmer** was then in the Adirondacks on a vacation and hunting trip. That is notable because of the fact that Governor Dewey had just closed the woods to hunters because of the fire hazard from continued dry weather. Well, "What else was there to do?". Earl, incidentally, was elected Councilman for WRNY recently, too late to make the last issue. There new FM transmitter is on the air testing these days and is expected to be officially ready for business in three or four weeks. Their location is near enough to a railroad that passing trains shake the building; wonder what such vibration will do to a tank circuit at 100 mc.???

One of those radio things: WRNY's Clock Watcher program is credited with saving the life of a chemist in Toronto. Seems the guy was cooking stuff over a hunsen burner and the fumes knocked him groggy. Lying on the floor, he was aroused by the Clock Watcher beeping back at the cars going by the studio and beeping their horns at him. The gassed (chemically) chemist managed to stagger to the window and revive himself, thereafter writing a letter of thanks to the station. We'll bet the thanks were really sincere, too.

pneumonia. He was returning from the National Convention when he was stricken. We're all hoping that by the time this is in print, George will be long recovered.

12-47

## SUBSCRIPTION BLANK

THE BROADCAST ENGINEERS' JOURNAL  
116-03 91st Avenue, Richmond Hill 18, N. Y.

Gentlemen: Please enter my subscription to The Broadcast Engineers' Journal to start with the next issue.

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Check attached for  \$2.50, 1 year;  \$4.00, 2 years.



## Season's Greetings

*and*

Sincere Appreciation to NABET

*from*

GEORGE ANSBRO

DOUG BROWNING

J. GORDON FRASER

LES GRIFFITH

GEORGE GUNN

GENE HAMILTON

GEORGE HAYES

WALTER HERLIHY

GENE KIRBY

DON LOWE

JACK McCARTHY

STAN SHAW

DORIAN St. GEORGE

Staff Announcers, ABC, New York



## A Merry Christmas

To You



ROBERT DENTON

## Holiday Greetings

*and*

Best Wishes

*for the*

New Year

*to the*

BROADCAST ENGINEERS

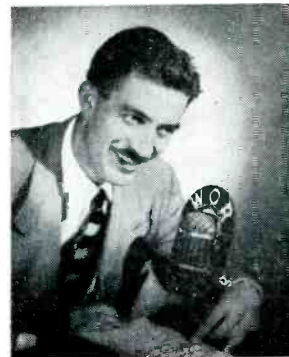
(Who can make or break us)

Walter Preston

M. C. and WRITER

"THE SHOW SHOP"

"MUSIC HALL OF FAME"

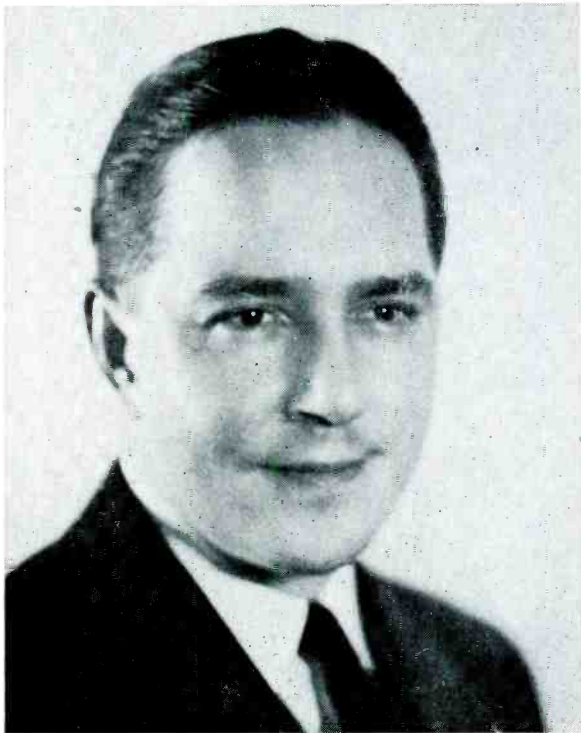


Greetings, Fellows

Prescott Robinson

WOR

News Caster



THANKS and BEST WISHES

for the Coming Year



CHARLES PAUL



*Best Wishes*

*from*

**Don**

**Mac Laughlin**



Another year, another opportunity to thank you fellows, and wish you the very best again.

—FRANCISCO FORCADE



*Sincerely*

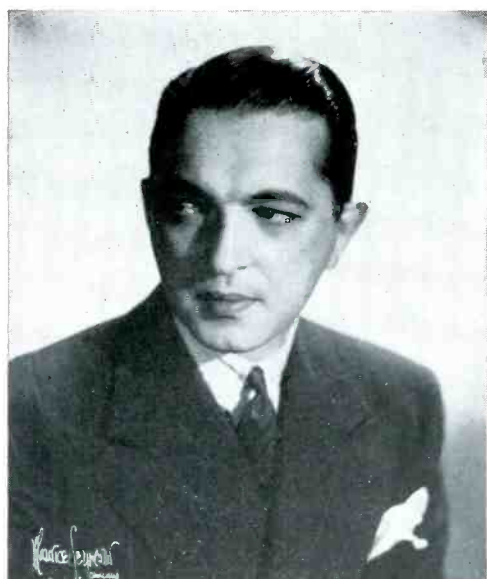
*John Gart*



"We love yez  
all dearly"

Ed and Pegeen Fitzgerald

W J Z



PERCY FAITH

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BUDDY CLARK

## Technical Literature

(Continued from  
Page Thirteen)

most of the quantitative data being presented in a series of nomograms.

### Center-Frequency-Stabilized Frequency-Modulation System—E. Ostlund, A. Vallarion and M. Silver

A system comparing the phase between two frequencies in a balanced phase detector utilizes the output to maintain synchronization between two oscillators.

### Intermodulation Distortion Analysis as Applied to Disk Recording and Reproducing Equipment—H. Roys

Measuring the sidebands generated due to non-linearity when using a test signal consisting of two different frequencies has been found to be a useful way of analyzing distortion in disk recording systems.

### Electrode Dissipation at Ultra-High Frequencies—Z. Wilchinsky

A simple method is presented for measuring the electrode dissipation in a tube operating normally in its circuit at ultra-high frequencies.

### An Electron-Ray Tuning Indicator for Frequency Modulation—F. Bailey

The design features of an electron-ray tuning indicator for frequency modulation which can be operated directly from a discriminator.

QST, October, 1947

### Exit Heterodyne QRM—J. McLaughlin

Selectable single-sideband reception up-to-date.

### RCA Review, September, 1947

### Colorimetry In Television—W. Cherry

The basic concepts and relations of trichromatic colorimetry are here developed.

### Magnetic-Deflection Circuits for Cathode-Ray Tubes—O. Schade

An analysis of the operating cycle in fundamental saw-



If it concerns the Broadcast Engineer—  
he will read it in the  
**Broadcast Engineers' Journal**

tooth current generating circuits establishes the general requirements for obtaining linear magnetic deflection of cathode-ray beams.

TELE-TECH, October, 1947

### TV Intercarrier Sound System—L. Parker

A simple explanation of the method of deriving sound programs in a receiver by noting difference frequency between video and sound channels.

### The Theory of Antenna Design for FM Broadcasting—G. Glinski

A systematic review of the main features and characteristics of the principal types with a mathematical analysis of their properties.

### Loudspeaker Design by Electro-Mechanical Analogy—A. Sanial

The practical application of theoretical derivation in the design of dynamic vibrating systems of the reproduction of voice and music.

### Making Reverberation Time Tests In Broadcast Studios—I. Reitz

The use of high-speed level recorders in determining studio characteristics and as an aid in proper acoustic designing.

### Here's the All Plug-In Receiver

AC-DC set for AM eliminates all chassis wiring except filaments by separately "canning" each circuit unit for quick replacements.

### Modern Broadcast Station Design

Complete plans for layout, arrangement, construction and equipment of buildings.

Electronics, October, 1947

### KSBR's 50 kw High-Band FM Transmitter—R. Norton

Operating experimentally on 100.5 mc since April 23 at the maximum power permitted by the FCC. Details of the RF section employing unique tank circuits and a new multi-unit tube, are given.

### Magnetic Tape Recorder for Movies and Radio—R. Ranger

New equipment using improved tape driven by three motors at a speed of thirty inches a second has an overall response flat within 4 db from 32 to 9,600 cycles.

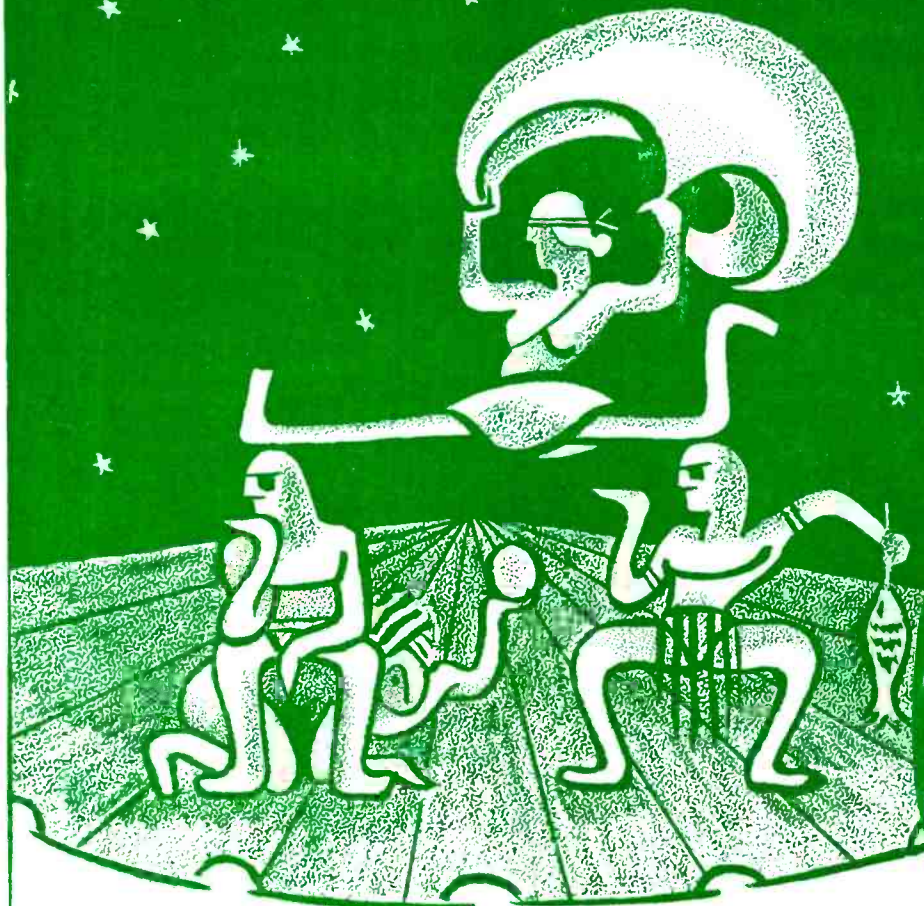
### Color Facsimile

Experimental system reproduces a colored picture by means of cyan, magenta, yellow, and black pencil leads on ordinary untreated paper.

### DC Amplifier for Low Level Signals—C. Aiken and W. Welz

Bandwidths of only a few cycles, input impedance not over 20 ohms, and averaging rectifiers are used to minimize noise when amplifying signals below a microvolt. Speed of amplifier response is analyzed.





*A Masterpiece of "THE DANCE?"...*  
**WE DON'T KNOW... BUT WE DO KNOW**  
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To manufacture a few good discs is easy. To manufacture a million good discs takes skill. Soundcraft recording lacquer embodies extra quality to do just that job. Soundcraft protects this extra quality with safeguards and controls so that *you* get standardized discs.

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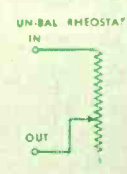
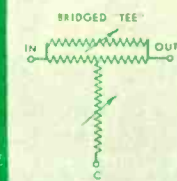
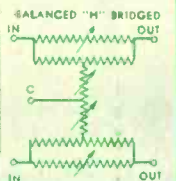
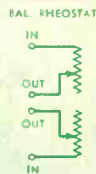
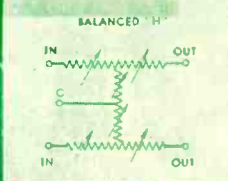
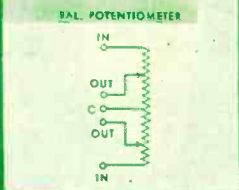
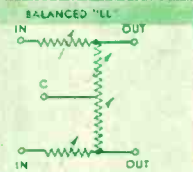
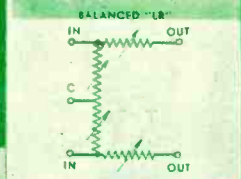
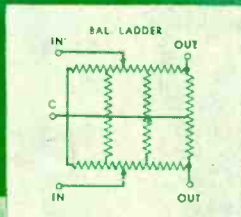


# DAVEN

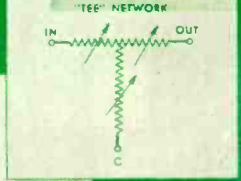
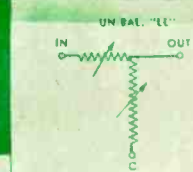
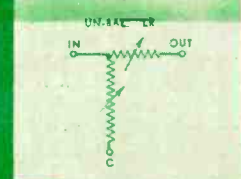
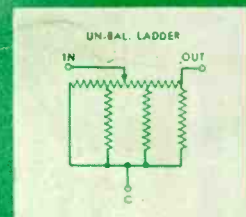
## ATTENUATORS

The many different networks (illustrated) and the wide selection of characteristics variations comprising the standard lines of DAVEN attenuators, are features of great convenience to the engineer — in Radio Broadcasting, in Sound Recording, Sound Projection, in Television and in the Laboratory Equipment field. Likewise, advanced designing, plus a long standing reputation for making a good product, are facts that merit consideration in your present plans.

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