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THE BROADCAST ENGINEERS' JOURNAL

JUNE 1946

Series
•
Lateral Disc Recording

By Beverly F. Fredendall

•
VOL. 13

No. 6

SINCE 1934 . . . OF, BY, AND FOR
THE BROADCAST ENGINEER

Lateral Disc Recording

By Beverly F. Fredendall

Formerly Transmission Engineer, NBC—Chicago

(By popular request, this article has been brought up-to-date and reprinted from our September, 1941, issue.—Ed.)

(Continued from last month.)

ELECTRO-MECHANICAL

When the mechanical limitations are realized and the standard recording characteristic has been decided upon, it is possible to correlate the electrical amplifiers and the design of the cutterhead to produce the desired modulation pattern.

The most commonly used cutters are of the electro-magnetic type although crystal cutters have been used to some extent. A crystal cutter following a "flat" amplifier, results in a constant amplitude recording due to the fact that the crystal displacement, or distance of motion, is proportional to voltage and not to frequency, excluding resonance conditions. In this case, if an assumed recording characteristic is desired, as follows; constant amplitude below a cross-over frequency of 500 cycles and a constant velocity above this frequency, the crystal cutter requires a filter to decrease gradually the amplitude of all frequencies above 500 cycles per second. Similarly if an "efficient" electro-magnetic cutter were used following a "flat" amplifier, a constant velocity recording will result as described previously. To produce a standard characteristic the perfectly efficient electro-magnetic cutter would require a filter to decrease gradually the amplitude below 500 cycles.

The term "perfectly efficient" electro-magnetic cutter has been used to simplify the explanation of how electro-magnetic cutters work. Such a cutter cannot actually be realized. In practice it is easier to obtain the constant amplitude characteristic at the low end by taking advantage of the natural change in impedance of an electro-magnetic cutter toward the low end. It is therefore possible to design a cutterhead having the required characteristic of constant ampli-

tude on the low end with the proper cross-over point.

The proper taper on the low end is obtained partly by electrical mismatch. For example, the nominal 15 ohm cutterhead is designed to operate from a 15 ohm output amplifier. At all frequencies where the source and load are equal, a maximum power transfer is thus obtained (not necessarily maximum undistorted power), but at wide impedance variations the transferred power to the load is greatly decreased. In practice the impedance of the electro-magnetic cutterhead is 15 ohms at one frequency only, rising above the nominal value at

two frequencies is $0.0625/0.5 = 0.125$ or 18 LVU ("Voltage db" to the land-lubber—see note below) less voltage is delivered at the lower frequency. A 10 ohm resistor may be used in series with the cutterhead to increase this loss by about 2 db and to keep a more nearly constant optimum load impedance on the amplifier at all frequencies.

SPECIAL EQUALIZATION

In addition to the two basic considerations of maximum amplitude and maximum slope of the recorded groove, there are other factors which enter into

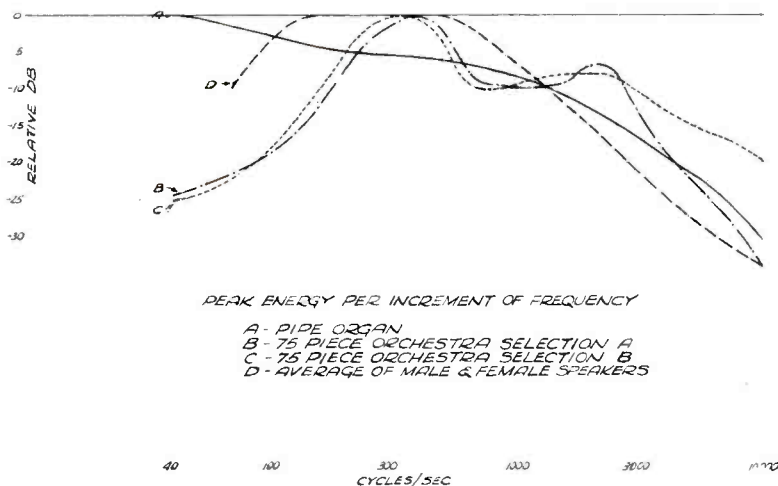


Fig. 4

high frequencies, and dropping to as low as one ohm at low frequencies.

A simple explanation of how this produces a decrease in armature amplitude at the low frequency end follows: If we assume a 15 ohm amplifier output impedance and a frequency at which the cutterhead is 15 ohms, the total EMF in a constant impedance output electrical circuit is divided, for example, into $(15 + 15)$ 30 parts, 15 of which appear across the cutterhead, or $15/30 = 0.5$ of the EMF. At a low frequency where the cutterhead is only one ohm we may assume the same EMF as being divided into $(15 + 1)$ 16 parts, 1 of which appears across the cutterhead terminals, or $1/16 = 0.0625$ of the EMF. The ratio between these two load voltages at the

choice of a standard recording characteristic. One of these factors is the signal to noise ratio of the recording. The distribution of noise is mainly at the extreme high frequency end of the spectrum known as scratch or surface noise, and at the extreme low frequency end, known as rumble or mechanical noise, caused by the recording machine driving system. Special equalization may be used to increase the signal to noise ratio and thus obtain better overall performance of the recording system.

Accordingly, a system of pre-emphasis and de-compensation called "ORTHOACOUSTIC" has been evolved, which increases the recorded level of a portion of the low frequency spectrum, and of all the frequencies above the cross-over

NOTE

db means decibel. It is the ratio of two powers . . . any impedance . . . any reference power.

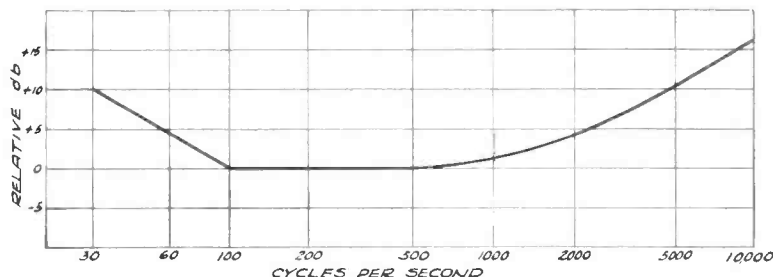
VU is the ratio of one power, in a 600 Ohm circuit, as read on a VU meter (having specific dynamic characteristics) to the sine wave power of 1 milliwatt in a 600 Ohm circuit.

LVU means Logarithmic Voltage Unit. It is the potential difference which a VU meter reads, regardless of the impedance of the circuit. Zero LVU equals 0.775 Volts. Plus 4 LVU equals 1.228 Volts.

point. Since this original article was written the radio companies, within the National Association of Broadcasters, has standardized on what is known as the NAB Standard Recording Characteristic. Orthacoustic and Columbia characteristics fall within the tolerance specified in the NAB Standards*. These systems are all based upon a frequency-energy analysis of speech and music

PART II — PRACTICE

To set up and adjust a recording system according to a preconceived standard characteristic, it is important to know of and distinguish between two methods of measurement, both of which are used in obtaining the final recording characteristic. The first method is the electrical response, or amplitude vs. frequency



IDEAL ELECTRICAL CHARACTERISTIC OF ORTHACOUSTIC AS APPLIED IN RECORDING

Fig. 5

which indicates that the low and high frequency parts of the audio spectrum normally contain a lower energy level than the broad middle portion lying between 150 to 500 cycles per second. See Fig. (4).

The importance of this discovery is the evidence that both the low end and the high end of the frequency spectrum can be increased in amplitude on a recording without danger, at the low frequency end, of over-cutting and without danger of too steep a wave front for cutting and playback tracking at the high end. This possibility of increase of low and high frequency energies derives from the aforementioned fact that the energy content of sounds in nature at both the high and low ends was normally substantially less than in the significant middle portion. In other words, it is not, as heretofore was considered necessary, to provide for a flat system at the high and low ends since it would rarely ever be required under normal conditions—organ music being the most important single exception. To preclude possibility of over-cutting at low frequencies due to organ music, or as a general precaution, the maximum level allowed to pass through the recording system is limited by an automatic audio control device, such as is done to prevent overmodulation at broadcast stations. For the electrical characteristic of Orthacoustic as applied to the recording channel see Fig. (5).

*See March 1942 Broadcast Engineers' Journal.

a flat ± 1 db response from 30 to 10,000 cps for an assumed recording standard of constant velocity above 500 cps and constant amplitude below 500 cps.

OPTICAL TESTS

The optical measurement of actual cutter operation is accomplished by making a test record at 78 rpm. Tone should be supplied to the input of the channel at constant program level for each selected frequency between 10,000 and 30 cps recorded; for example 10 seconds of tone and 5 seconds spacing with no modulation. The 1,000 cycle reference frequency should be recorded at three levels in one continuous band; (a) 2 db below normal input level, (b) normal level, and (c) 2 db above normal level. This will help in identifying the reference frequency and in being able to interpret the variations in amplitude of the optical pattern in terms of db. The high frequency end of the spectrum should be recorded on the outside of the disc. In addition to the regular tones, 1,000 cycles at normal level should be recorded as the first and last frequencies of the tone run. The placement of 1,000 cycle per second tone at different spots throughout the record will act as a reference level and will help to show that only small variations in recorded energy occur due to variations in groove speed. This variation, amounting to only about 1 or 2 db, may be corrected for in the calibration of the recorder system if thought desirable. Further, it is common

characteristic of the amplifier system which is used ahead of the cutterhead. The second method is that of optical measurement of the record itself by means of the light pattern reflected from its grooves. This latter measurement is important in checking the performance of the entire recording system and serves to indicate that it has been adjusted correctly and that the proper characteristic is actually being cut on the record.

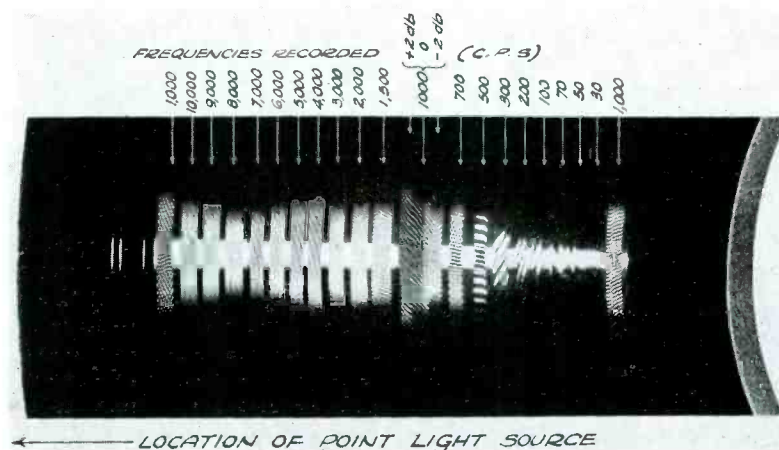


Fig. 6

Optical pattern of typical tone record. Note broad dip at 8,000 cycles, approximately 2 db peak at 4,000 cycles and 1,000 cycles, and the normal taper from 400 to 30 cycles.

ELECTRICAL TESTS

By substituting a pure resistance termination for the cutterhead the frequency characteristic of the cutter driver amplifier at normal operating levels can be measured. This test should indicate

knowledge that the overall process of recording and playback at present shows a large variation in response due to a variation in groove speed. Most of this variation is caused in the playback process, and accordingly any correction should be done in the playback system

rather than in the recording system. If one attempted to correct this error in the recording system rather than in the playback system, no adequate standard could be determined since there are numerous playback heads which differ

near and far patterns and although an average of the two would be more accurate the "near" pattern contains less errors of eye placement and seems to check other measurements closely. A small area light source of high brightness

are at normal input level have approximately equal widths and all those frequencies from 500 cycles to 10,000 cycles are within 2 db of this measured width. Without resorting to physical measurement, visual observation will show whether this is true by comparing the widths of each frequency band with the 1,000 cycle centrally located bands, or for greater accuracy, with the imaginary line drawn through the tips of the 1,000 cycle bands.

The frequencies below 500 cycles should taper off materially. The 250 cycle band should be half the 500 to 10,000 cycle band widths. Similarly a 125 cycle value or one-quarter of the 500 cycle value. Since these low frequency band widths are difficult to measure accurately by an optical method, they may be verified by playing them back electrically through a completely flat pickup head and amplifying system. Such a system may be obtained by using the MI-4856 playback head connected to 700 ohms or more load and using the results up to approximately 2,000 cps. Make certain all equalizers are disconnected and playback only the low frequency end. The resulting electrical energy of this constant amplitude portion should be reproduced with a taper of 6 db per octave. The higher frequencies cannot be measured successfully with this head due to the mechanical resonance composed of playback head plus record material, which, with lacquer coated records, appears to be around 6,000 cycles per second, thus giving a false interpretation of the record. The high frequency end

(Continued on Page Nine)

METHOD OF LIGHT PATTERN OBSERVATION FOR LATERAL CUT DISC RECORDING.

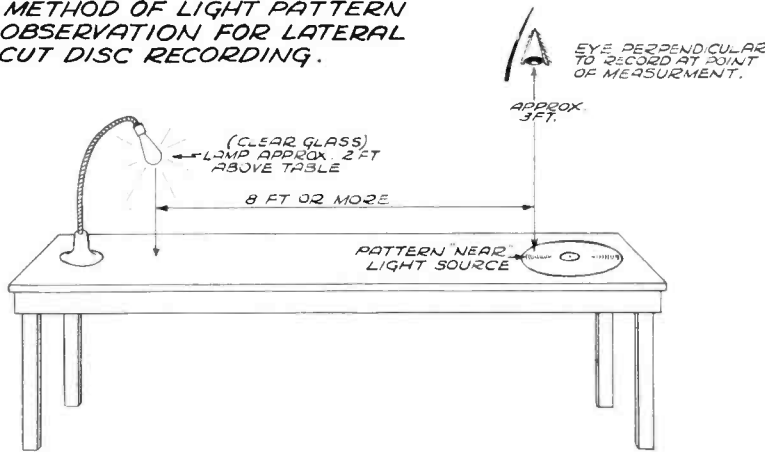


Fig. 7

among themselves as to response when tracking at variable groove speeds. If one designed a pre-equalized recording system for one particular playback head such a recording system would be incorrect for any and every other playback combination. It is recommended that a better approach would be to make sure that the recorded energy follows a standard, as for example, the standard given here, subsequently correcting each type of playback system to reproduce this standard. See Fig. (6).

The interpretation of the optical pattern may be arrived at as follows: Direct illumination per method in Fig. (7) is quite important; diffused light is particularly troublesome. The line of sight should be perpendicular to the record, directly over the observed spot as determined by an image of the eye found by reflection from the uncut portion of the surface. The light source should be somewhat removed from the record, at least 8 ft, and as close to the plane of the record (approx. 2 ft) as will give a brilliant pattern. With this set-up there will be two patterns, one on each side of the center of the record, one toward the light and one away from the light source. See Fig. (8). Use the pattern lying toward the light source.

There are other ways of illuminating and observing the optical pattern. For example, the pattern lying on the side of the record away from the light source could be used but movement of the observer's eye seems to cause a greater pattern change. There seems to be less than 1 db observation error between the

is best, as the small area produces a sharply defined image. In practice the record may be placed on a low table with the light source to the left, slightly above the level of the record. With the eye at as great a distance from the record as practical and perpendicular to the spot of measurement, use a pair of dividers or a millimeter scale to measure the width of the reflected light pattern for each frequency. The desirable condition is a characteristic based on a cross-over frequency of 500 cycles per second, which is determined when each of the three 1,000 cycle per second bands which

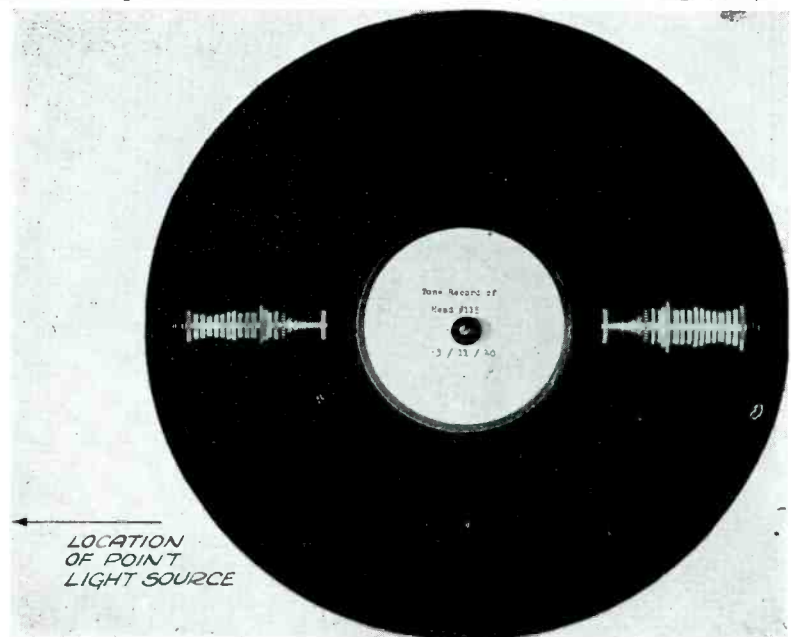


Fig. 8. Variation of optical patterns of typical tone record.

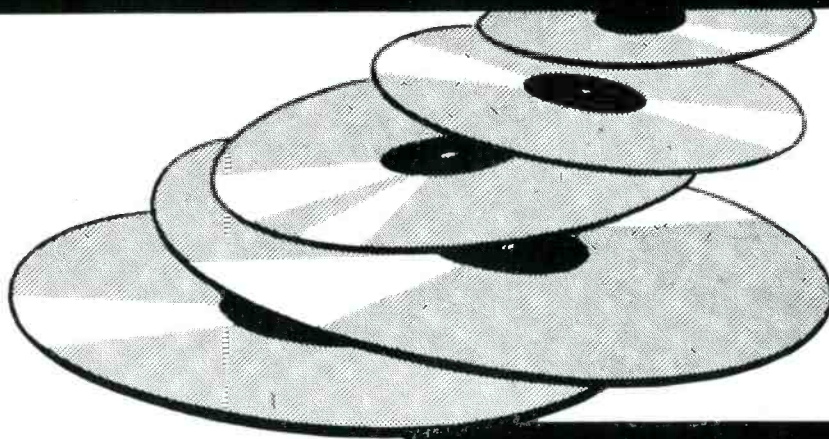
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RAYMOND A. MONFORT

"Ray" Monfort was born in Kansas, July 7, 1908. He became interested in amateur radio during his high school days, and operated 9BEC in Kansas. The transition to commercial broadcasting was therefore natural, and in 1927 he went to WREN, Lawrence, Kansas, as broadcast engineer. This was followed in 1928 by a similar assignment with WDAF at Kansas City, Mo. In the Spring of 1929, Monfort joined the engineering staff of the Western Electric Co., at Kearny, N. J., as Equipment Engineer. His progress was steady and well planned. In December, 1932, he joined the Engineering Department of the National Broadcasting Co., as Maintenance Engineer, where he earned the admiration and professional respect of his fellow engineers. In June, 1936, he was transferred to the NBC Development Laboratory, to engage in television development. His technical competence and leadership were recognized and rewarded when, on April 1, 1940, he was appointed Television Maintenance Supervisor of NBC's entire New York



RAYMOND A. MONFORT
Chief Engineer, "Los Angeles Times"

plant. Monfort became a nationally recognized television authority through his work in connection with locking remotely located synchronizing generators,

improved video switching, and electronic dissolve and super-imposition equipment; this work was climaxed with his paper titled, "Measurement of the Slope and Duration of Television Synchronizing Pulses" which was presented before the Seattle IRE Convention in 1941, and recognized throughout the industry.

With the advent of the war, and greatly reduced television program schedules, Monfort assumed overall operating supervision of the television plant and personnel, with the majority of his time devoted to military television applications under NDRC. Among these were the "Project Ring"—airborne military television, and a television observation application in connection with the atom bomb project at Knoxville, Tenn. During this period, he devoted his evening hours to the training of industrial electronic engineers as Instructor, under the ESMWT program.

Monfort has attended Kansas U., and N.Y.U., majoring in communications engineering. He has been certified by the National Roster of Scientific Person-



Monfort's associates gather in NBC Television Studio 3H, April 23, 1946, to regrettably wish him farewell. Following brief speeches, the gathering adjourned to the Radio City "Down Under Restaurant" where Ray was tendered a parting dinner.

—Photos by Joe Conn

nel, and is an Active Member S.M.P.E., and Senior Member I.R.E. His ingenuity has been rewarded with several patents issued and others pending. His vast television experience encompasses every conceivable item of electronic and optical equipment from motion picture film projectors and television cameras, to synchronizing and shading generators. In his spare moments, Ray enjoys wood-working, and he is an adept pianist.

On Sept. 1, 1944, Monfort took over full time overall supervision of NBC's television plant and personnel. On April 24, 1946, he accepted the important position of Chief Engineer of the *Los Angeles Times* television and broadcasting activities. The ambitious plans of this Company include immediate commercial black and white television, while simultaneously experimenting with UHF color in conjunction with the Calif. Institute of Technology. FM is also included in the present plans. A common transmitter site for FM and Television has been chosen on top of 5,995 ft. Mt. Disappointment, near Mt. Wilson. A three-million dollar, ten story studio and office building in Hollywood is under way.



Ray Monfort receives a token of esteem from Reid Davis, representing fellow television engineers. Ray leaves NBC after 13½ years to become Chief Engineer of the "Los Angeles Times" television and broadcasting activities. F. A. Wankel, NBC Eastern Division Engineer, R. E. Shelby, NBC Director of Technical Development, and R. W. Clark, Television Operations Supervisor, join in wishing him good luck.

Under Mr. Monfort's personal direction, much can be expected from the *Los Angeles Times'* television and broadcasting efforts.

Monfort's fellow workers sincerely wish him the success which is his just reward. Good Luck!

—Ed. Stolzenberger.

HORSTMAN RECEIVES ARMY AWARD

A Certificate of Appreciation, signed by Robert P. Patterson, Secretary of War; Louis A. Craig, Major General, Commanding General of the Sixth Service Command, and Brehon Sommervell, General, Commanding



(Left to right): Brig. Gen. John A. Rogers, Sixth Service Command, U. S. Army, presents certificate of appreciation to Edward C. Horstman, engineering manager of ABC's Central Division.

General of the Army Service Forces, was presented by the United States War Department to Edward C. Horstman, engineering manager of ABC's Central Division, during a ceremony conducted by the Sixth Service Command, U. S. Army, in Chicago.

The Certificate reads: "The War Department expresses its appreciation for patriotic service in a position of trust and responsibility to Edward C. Horstman for outstanding service during the period June, 1942, to November, 1945, as civilian radio liaison engineer in maintaining successful operations of the Sixth Service Command Air Raid Warning System. His services were in direct connection with the maintenance of the National Defense, and were without compensation to him."

In 1942, in conjunction with the Sixth Service Command, Horstman supervised and set up operating personnel of the Air Raid Warning System, using Station WENR (Chicago) as the key monitor station for alerting and silencing all other stations.

Lateral Disc Recording

(Continued from Page Six)

of the spectrum should be only interpreted by physical measurement of the light pattern widths. After each frequency is measured with the dividers or scale to the nearest practical value the characteristic may be translated into an electrical relationship expressed in db by using the relation that the width of each frequency band is proportional to the voltage which that band would produce in a perfect electro-magnetic playback head. For example, with two fre-

quencies on the record, one of which was twice as wide as the other, the wider band would be 6 db higher in level than the second band, etc. Use the middle level 1,000 cycle tone as a reference value and compare all others to this by expressing each measured width in relation to the 1,000 cycle width as a fraction. The resulting figure then represents the voltage which would be generated at the frequency being considered as compared to the 1,000 cycle voltage. This voltage ratio may be expressed in db by using the *voltage* column of a db table.

The resulting figures should be plotted and compared with the theoretical characteristic showing a downward slope of 6 db per octave below 500 cycles and a flat characteristic above 500 cycles. At present, a tolerance of 2 db from theoretical is permissible. If the cutter power amplifier and head do not fall within these limits under actual operating conditions equalization is necessary. The proper equalizer for each head must then be designed and installed, preferably ahead of or following the cutter driving amplifier. It is possible to locate equalization within this power amplifier, but in such case means should be provided to remove this equalization when electrical tests are made to determine if this amplifier itself has a normally "flat" electrical characteristic.

San Francisco

By
Jack Van Wart

I WOULD like to apologize for this article being A.W.O.L. for the past two issues. However, this was absence WITH official leave.

One time since yours truly has had the editorship of this column, a newsworthy note was published before the predicted occurrence of same. This was the marriage of "Duke Fuhrman." Now we regret to report that due to illness of those concerned, the affair has been canceled.

Phil J. Rider has returned from service with the Armed Forces. When he left he was a studio-field engineer having served in that capacity approximately 1 month after finishing a term of apprenticeship.

It is with regret that we have to report that Mark W. Dunnigan has resigned the chairmanship of the San Francisco Chapter of NABET. His resignation became effective April 25, 1946. At that time the Secretary-Treasurer, Russ Butler, took over the duties of Chairman until a new chairman can be elected in May. Will report the results of the election next issue. [Send photo of new council.—Ed. S].

I reported that the recording room was in a shambles due to arrival of the new equipment. This is true, however, it was a little previous due to the fact that only now are parts of the Scully machines dribbling in. We still have hopes.

In a previous issue I listed some possible members of a NABET Network. Here are a few more, all from KPO transmitter. W. B. Seward, W6LBC; McAulay, W6KM; Mort Brewer, W6JU. Also in the other listing I mentioned that Russ Butler had acquired a new rig and had not as yet received his call number. He was successful in getting his old call back which is W6ENX.

Lee Kolm had quite a siege in the hospital with the occupational disease. Glad to report that all is OK now. Syd Blank has been out with the Flu. Hope to see him back soon.

Vacations are in full swing. Those that have been away are Dale Gordon, Elma Oddstad, Francis Oliver, Dwight Maxwell, Bryan Fuhrman, Verne Harvey, and Lee Kolm. Dale, Elma, and Francis spent their time in the Bay Area. The rest made short trips. Those that are leaving are G. Warren Andressen, Russ Butler, Norman Tapper and Bob Salle.

Russ Butler has been chosen vacation relief supervisor.

George McElwain and the field staff, including Sam Melnicoe of NBC and Dick Parks of ABC, had quite a session with the pickup during the recent Alcatraz Riots. They were stationed in a water taxi and cruised around the "Rock" for many long hours. Russ Butler was posted atop the 111 Sutter St. Building manning the receivers.

Dwight Maxwell took a junket into the Northwest last month with the Richfield Reporter. He covered Spokane, Seattle and Portland. In order to reach Seattle in time for the broadcast they had to have the train leaving Spokane held 20 min. and provide

a police escort to get him to the station in time. He reports it was really surprising that he got all the gear on the train what with all the help.

Rumor has it that Dick Parks is about to transfer to the studio and Verne Harvey is going to the Transmitter. We will have a welcoming committee waiting for Dick.

Introducing... By Ken Martin

MEET Richard T. Parks who returned to KGO from military service in December of last year, and furnishes us with beaucoup color from a checkered and interesting past history in radio. Characteristically, he insists he is first and foremost a Texan, having storked there along about 1910 and professes a weakness for calling Corpus Christi his home. Obviously the man does not realize and probably does not care, how dangerous such a confession can be in California.

Weathered the customary schooling, attending Schreiner Institute, a Junior College. Dick held some promise of being a fairly normal citizen until sometime in 1925, when he succumbed to the lure of radio and hammed with the call NU5BBY and in 1928 helped construct the first radio station in the old home town and participated in one of the first geophysical prospecting (Siesmeographing) parties—headed by select German professors from Heidelberg who jealously guarded their equipment from their American co-workers.

In 1930, went to sea as marine radio operator for RCA on tanker SS Swiftlight and MS Santa Barbara. In 1932, in company with 6 radiomen, left RCA for South America to help PAA-Grace set up their communications system. The Airline gave them flight training and transport licenses and Dick flew for them as pilot, co-pilot and radio operator for three years. During that period he "met and married the world's loveliest girl," a Denver girl he met at a Fourth of July reception at



the American Embassy in Buenos Aires. Some fireworks! Proving that the world is indeed a small place when a Texan goes to Baires to "find" a Colorado bride.

The Parks returned to the United States in 1936 and Dick put in a short time at private flying until he got "fed up" in 1937 and came to work for NBC San Francisco and was assigned to "GO" Transmitter.

In 1942, Dick was called to active duty as 1st Lieutenant with the Air Transport Command (then Ferry Command) unit at Long Beach, Calif. Recognizing the need for specialized training for flight operators in the service, Dick set up a training school and wrote the necessary training books which were adopted by the ATC for world-wide use. Made survey trips to Europe and Africa in 1943 but particular interest was in the Pacific theater; with frequent trips to Australia and New Guinea in 1943-44 and in 1944 when action impended in that area was transferred to Headquarters of ATC in Washington where he was made responsible to entire ATC Communications in Pacific Area, had an active part in advance planning of Philippine and Japanese campaigns, one highlight of which was a troubleshooting jump to Okinawa, 4 days after the airport was secured.

Following VJ period, when work fell off, application to return to inactive status was made, and approved by War Department. Despite offers from several foreign and domestic airlines and from agencies of Government with whom he had worked, Dick returned to ABC. The reason? It's easy, the way Dick says it. He's seen every city in the world and San Francisco is the best ever. Now the truth—the real reason—Mrs. Parks wanted to come back!

Welcome home, Dick. The Army's loss is our gain. Dick is a fine watchmate and a staunch NABET man. We could do no better.

Crystal Ball Dep't

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The Model S-38 meets the demand for a truly competent communications receiver in the low price field. Styled in the post-war Hallicrafters pattern and incorporating many of the features found in more expensive models, the S-38 offers performance and appearance far above anything heretofore available in its class. Four tuning bands, CW pitch control adjustable from the front panel, automatic noise limiter, self-contained PM dynamic speaker and "Airodized" steel grille, all mark the S-38 as the new leader among inexpensive communications receivers.

FEATURES

1. Overall frequency range—540 kilocycles to 32 megacycles in 4 bands.
 Band 1—540 to 1650 kc.
 Band 2—1.65 to 5 Mc.
 Band 3—5 to 14.5 Mc.
 Band 4—13.5 to 32 Mc.
 Adequate overlap is provided at the ends of all bands.
2. Main tuning dial accurately calibrated.
3. Separate electrical band spread dial.
4. Beat frequency oscillator, pitch adjustable from front panel.
5. AM/CW switch. Also turns on automatic volume control in AM position.
6. Standby/receive switch.
7. Automatic noise limiter.
8. Maximum audio output—1.6 watts.
9. Internal PM dynamic speaker mounted in top.
10. Controls arranged for maximum ease of operation.
11. 105-125 volt AC/DC operation. Resistor line cord for 210-250 volt operation available.
12. Speaker/phones switch.

CONTROLS: SPEAKER/PHONES, AM/CW, NOISE LIMITER, TUNING, CW PITCH, BAND SELECTOR, VOLUME, BAND SPREAD, RECEIVE/STANDBY.

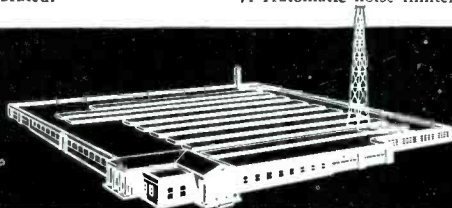
EXTERNAL CONNECTIONS: Antenna terminals for doublet or single wire antenna. Ground terminal. Tip jacks for headphones.

PHYSICAL CHARACTERISTICS: Housed in a sturdy steel cabinet. Speaker grille in top is of airodized steel. Chassis cadmium plated.

SIX TUBES: 1—12SA7 converter; 1—12SK7 IF amplifier; 1—12SQ7 second detector, AVC, first audio amplifier; 1—12SQ7 beat frequency oscillator, automatic noise limiter; 1—35L6GT second audio amplifier; 1—35Z5GT rectifier.

OPERATING DATA: The Model S-38 is designed to operate on 105-125 volts AC or DC. A special external resistance line cord can be supplied for operation on 210 to 250 volts AC or DC. Power consumption on 117 volts is 29 watts.

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hallicrafters RADIO

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

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VITALS . . . Plaudits . . . Brown . . . Ugh Studios . . . Elections . . . Sports . . . Et's . . . Pix Playhouse . . . HAMS

★ **N. B. C.** ★

NBC . . . item one for this month is a bit of a VITAL STATISTIC re: our *Hal Lea*, Re-Recording artist and recent groom and papa . . . it is ALSO re: *MRS. Hal Lea, NACHERLY*, whom we know as "Evie" and whom used to work in *Les Culley's* office . . . item is a 5 lb. 7 oz. girl, *Susan Evelyn*, 7:03 pm Tuesday, the ninth of April at Cedars of Lebanon Hosp. . . *Hal* says she has Pop's dark hair and wasn't due to arrive until May Day but couldn't wait any LONGER to see what things were like on the OUTSIDE . . . we say CONGRATS, and leave us not forget that it will take ONE MORE to balance up the saddlebags on the family motorcycle, huh . . . hear tell that *Al Gage*, recently from Maintenance into Recording, is ALSO listening for the wings and VERY LIKELY by the time you are reading this. *Al* will be a papa tambien . . . for further details, see forthcoming issues, or even vice-versa. . . . Noticed nice plaudits in *Bob Hope's* column "It Says Here" recently, (King Features Syndicate, Inc. . . . see yer local gazette . . .) in which *Bob* lauded our *Charlie Norman, SE*, who has been his engineer for quite a few years . . . it has a lot of nice quotes 'n quips. . . . *Hope* also mentions his Sound Effects men, and the whole thing is a VERY NICE bit of publicity for the guys who get too little of it, too seldom. . . . *Jimmy Brown* is back from the Navee and punching 'em up in Master Control again . . . it is indeed very REFRESHING to hear his laconic labials on the PAX when you call in offering yer program to be aired . . . he ALWAYS says in reply, "How nauseating . . ." And when you ask for a time check, he is the guy who gives it to you with an "Ugh!" . . . strictly a kerickter . . . Remind us to do an expose on *Brooke, Brown* and *Adams* next issue, OR, Fighting the War with Three Heads. . . .

New studios are progressing nicely and work is being expedited considerably by use of one of the new building techniques, in which walls and other concrete portions are rapidly formed by a HUGE truck and trailer combo which sits outside and pre-mixes the cement, pipes it INSIDE and sort of sprays it on the forms, all in one operation . . . when completed, new auditoriums will be designated "E" and "F" to conform to the present audience studios A, B, C and D . . . present E and F studios will become L and M and present L and M will then become O and P . . . we won't tell you any more at present, for it would just confuse you. . . . Studio Councilman elections just over and held under the new Hollywood Chapter By-Laws which provide for a councilman for each ten members in any particular group or classification . . . after numerous run-offs and re-casting of ballots, necessitated by the fact that in the first balloting for some unknown reason EVERYONE always received one vote, at present reading it is *Leon Fry* who is elected to serve with *Eddie Miller*, if *Leon* doesn't bow out, pleading too many outside interests . . . in THAT case, runner-up *Jack O'Kelly* will win by default or something, being just one vote BEHIND *Leon* in the finals . . . for results in ABC polling, see ABC news . . . vat else???

★ **A. B. C.** ★

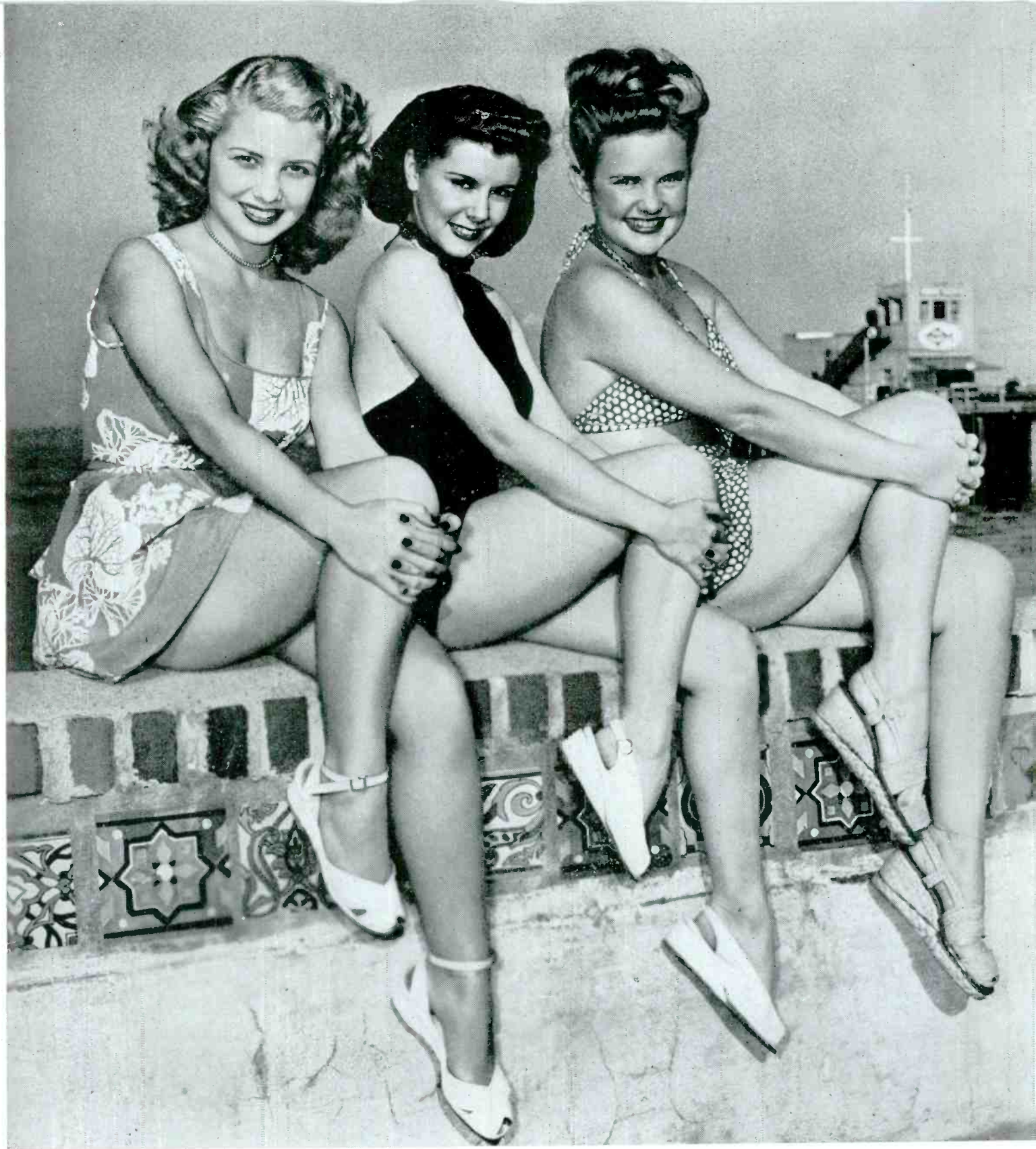
ABC . . . people from all Departments are going all out for sports, it seems, with the AEA Bowling League going great guns, a soft ball team known as the "American Bob Cats" tossing them



with other Hollywood organizations and now even a Hunting and Fishing Club is being whipped up . . . the bowling league has ten teams at present, with the Engineers represented by Team No. 6, the "Mix-Masters," captained by *Hockin*. ABC SE and doing alright in the competish . . . *Binkey* and *Besser* of KECA assist and it is even rumored that *Dewes* may be seen occasionally tossing one of those round things down that groove . . . OUR favorite way of playing is sort of a "null" game like in bridge, where we endeavor NOT to hit any of the little pins, thus simplifying scoring and making it much easier for the pin setters . . . will give some results in various competitions next issue . . . speaking of results, here are those of the ABC Council elections . . . new councilman to share the Studio men is *Ben Doty, SE* who is quite interested in politics and altercations in general, and should make a good one . . . ABC Section Councilman turned out to be *Johnny Eilers, KECA Maint. Super*, who now rules over the ABC Studio, KECA and KECA Transmitter Groups . . . and now that NABET Secretary *Ross Miller* has THESE elections nicely run off, the yearly regular ones are due to be held, which starts the thing all over again . . . and if you want a good example of a tough job, just try to get a bunch of engineers to fill out ballots and turn 'em in, the same year yet. . . . Starting pretty soon now, as we are pecking this out, is the new and sensational ABC Plan to beat the Daylight Saving Time racket . . . it has SOMETHING to do with trying to keep on presenting the various programs at their usual time and not an hour earlier or later, whichever it is, and as far as we can gather the WHOLE THING is a plot to GET BACK at us engineers by having us play transcriptions ALL day long and far into the night . . . as it looks now, EVERYTHING will be transcribed earlier, and played back at this "more convenient time," (which is a SILLY STATEMENT, if we ever heard one . . .) and they are even planning to transcribe some of the shows out here BEFORE their earlier eastern release, to save time . . . the whole thing rather FRIGHTENS us, and we'd rather not say any more about it until we see what HAPPENS. . . . Looking at us is a three-shot of a trio of titillating (we DARE you to look THAT one up . . .) tidbits who were conveniently found perching on the Sea Wall over at Catalina Island on the day of the recent reopening of the island to civilian pleasure seekers, after its use as a Maritime Training Center by the Navy and Coast Guard since 1941 . . . suffice it to say that they are strictly ABC girls, and the two on the right are to be found on one of OUR shows, gleep, gleep, gleep. . . .

★ **KECA** ★

KECA . . . big nooze from Sunset 'n Highland this month is that of the completion of the re-modeling of ABC's Playhouse audience studios . . . joint has been completely renovated, physically, acoustically and electronically . . . all of which it could USE, and NOW it is indeed a different place, with lots of those latest polycylindrical wall sections, sawtooth ceilings, new paint job and many additional facilities backstage . . . gear in booth has also been worked over in true NBC Field Shop fashion, and now functions

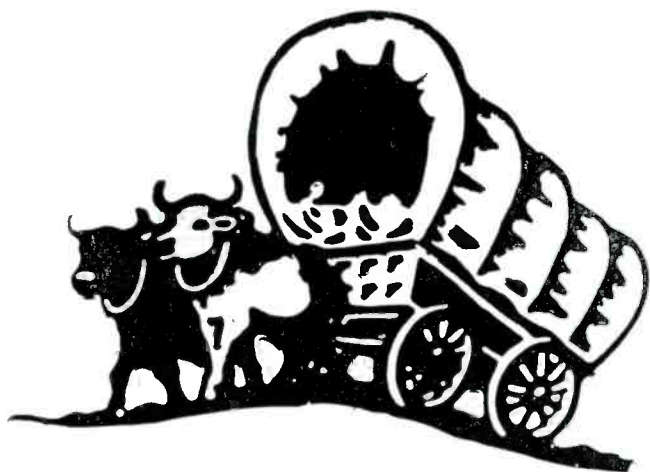


Catalina Cuties Charm California Mixer (Cement, that is!)

Sunning at Santa Catalina—Joan Barton (left), Jean Gillespie, and Gini McCurdy were just three of the ABC glamour lovelies present at the recent re-opening of Santa Catalina Island, famous resort which was "blacked out" for civilian use by the Navy in 1941 for use as a maritime training center. Joan has been heard with Al Pearce while Jean and Gini are regulars on the "Alan Young Show." —ABC Network Photo.

like something out of this world . . . (Mars, maybe??) With completion of ABC's Studio 1, many programs are now moving back from 6000 Sunset, where many happy hours have been spent

among these fascinating arrays of knobs, dials and switches . . . Johnny Eilers, Maint. Super. reports that he has acquired some peachy test gear, has fixed up his shop, and if that Foo-Fum-ed
(Continued on Page Fourteen)



Omaha News By Bob Rudd

The Omaha Chapter NABET opened its contract with Radio Station WOW for negotiation April 1st. Actual negotiations began Apr. 11 and the renewed contract was signed by Chairman D. Roy Glanton and President John J. Gillin, Jr., on Apr. 18.

The Omaha Chapter asked for an increase in salary and minor concessions and considerations for those engineers assigned to programs originating at remote points from the main studios. Those participating in the negotiations were: D. Roy Glanton, Chairman, Glenn Flynn, Studio Councilman, and Bob Rudd, Transmitter Councilman. The negotiating committee were very happy to see the sessions ended and the arguments closed. In most contract negotiations the arguments that are bound to arise are between people or peoples that mean little or nothing to each other but in the case of the Omaha Chapter the Committee was arguing with their old friend and fellow worker, John J. Gillin, Jr. When you have seen a man rise from the ranks of a staff announcer to President and in addition have had a close personal friendship with that man, it's not hard to understand how all concerned disliked their job. Things got hot at times but everything ironed out OK in the end and all concerned were very happy when it was done. President Gillin is the same fine friend as always and the relationships between worker and management is still as fine or perhaps even finer, than before.



Left to right: Messrs G. Flynn, D. Roy Glanton, Bob Rudd, looking on while President John J. Gillin, Jr., seated, signs contract.
—WOW photo by Harold Storm.

The negotiating Committee wish to thank those that worked their shifts so that they could be relieved for the task at hand. At the Transmitter, Mark McGowan and Cy Hagrman took the load while Bill Dunbar carried Glenn's work while he was absent. Thanks to all you boys for your patience and your cooperation. Thanks too, to Joe Herold for his understanding of the situation.

THINGS AND STUFF

In the May issue I announced my resignation as Editor of the Omaha Chapter news. I have been asked to carry on temporarily until the elections in May are over. At that time a new Editor will be appointed (I think).

D. Roy Glanton attended the Engineering Conference at Columbus, Ohio, the latter part of March.

Joe Herold finally got his new Mercury the second week in April. How about a ride, Joe?

Chief Engr. Bill Kotera is spending all of his time with Television and still conducts his Tuesday night classes.

Dick Peck is trying to buy a car, any kind, but isn't having much luck.

Louis DeBoer's new home is a dream. All of the engineers met there at 1:30 am during the contract negotiations. To Mrs. DeBoer for our intrusion: Orchids to you!

Bill Dunbar's cabin is now complete with boat. Bill had it built especially to his own specifications.

Al Maller is back on ten meters and worked a W4. FB. Al what kind of a report did you get?

VITAL STATIC

Three anniversary dates this month. Without a doubt, June is the month of brides. We see by the records that G. and Millie Flynn celebrate their 8th wedding anniversary, June 27th. Roy and Marguerite Glanton celebrate their 16th wedding anniversary, June 6th. Cy and Vera Hagrman celebrate their 13th anniversary June 4th. Other events in June: Bill Dunbar finishes six years of service with WOW, June 17. Bill served in the Navy from Nov., 1941 to Feb., 1946. Beuf Eaves completes 16 years of service with KODY, North Platte, Nebr. He built the original KGNF back in June of 1930. It became KODY in 1943 when WOW purchased the station.

Hollywood

(Continued from Page Thirteen)

recording gear would ever arrive from Noo Joisy, KECA would have a Recording Department going in short order . . . all WE got to say is, brother, yuh don't know when yer WELL OFF, and just keep praying that that gear NEVER arrives . . . *Thorus P. LaCroix*, MCD Super reports some fair-to-middlin' DX on 10 and that maybe he'll try 80 soon . . . is sweating out the figgerin' for a beam at present, not doing so well with his pre-war Zepp . . . *Dick Schroeter*, KECA SE and now vacationing at Boulder City, near Las Vegas, Nevada, in town to pick up a new 1946 Studebaker and all decked out in Western attire wit' cow boots, cow pants, and a brilliant green-checked cow shirt . . . and filling the place with OTHER products of the cow, all about the lush life he is leading over there . . . if it's only HALF true, that's for US. . . .

Next month, Ham news—BCNU and remember to "CQ NABET."

The alert and faithful dog of Victor Guidice of WITH prevented the rifling of Guidice's home while he was working the dog-watch and his wife was asleep. The culprit, aware of the dog, had previously telephoned the sheriff to remove the dog as "vicious"—representing himself as Guidice. Of course, the dog was not turned over to the sheriff when he called, and during the night, the still present dog scared off the intruder!—Alex Beauchamp.

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Television Engineering News

By Jack Irving



Photo by Joe Conn

This Is NBC New York

By G. F. Anderson, Jr.

THE first item we would like to write into the record is an explanation of the so-called labor dispute between television cameramen and the newsreel cameramen at the U. N. Security Council conference. A cameraman, taking movies for another system, who did not belong to the I.A.T.S.E., the newsreel men's union, was the cause of the trouble. Life and Newsweek did not take the trouble to get the facts in this story. NBC had no labor trouble whatsoever.

The technical broadcast operations of NBC television in New York are now under the supervision of F. A. Wankel, eastern division engineer. The transferred responsibilities for carrying on the broadcasting operations of television have been made in view of the increased schedules for commercial operation.



After several years of secrecy surrounding the NBC-US Navy "Project Ring," (Airborne Military Television) the Navy has permitted publicity of a general nature which has appeared in the newspapers. Following a recent publicity demonstration of the equipment, the above photo was taken. Left to right: LeRoy Moffett, Harold P. See, NBC VP and Chief Engineer O. B. Hanson, Frank Somers, Wm. States, George Nixon, Andy Hammerschmidt, and Al Jackson. Also actively engaged in the development and flight-testing of Project Ring, were Messrs. Bob Fraser, Dr. George Mayoral, Ray Monfort, Al Protzman, Ed Stolzenberger, Charlie Townsend, and Ed Wade. The Project was under the supervision of NBC's Director of Research and Development, Doc Shelby.

April, with television off the air, the studio crew renovating everything is sight and the field unit doing tests, was not exactly a newsworthy month. But in our usual manner we will contrive to write about 9000 words.

Two tests were made from the Bronx Botanical Gardens during March. The second test was reported much better than the first due, to the fact that Carlos Clark didn't put his foot through the greenhouse roof that time.

Maggie Snyder gave a birthday party for Heino Ripp. Among those attending were the socially prominent Mr. Protzman and Mr. Smiley.

Robert E. Shelby, George Nixon, T. J. Buzalski, Edwin C. Wilbur and Roland A. Lynn were among the speakers at the Sixth Annual Broadcast Engineering Conference at Ohio State University. Ed Wilbur used lantern slides showing the entire

(Continued on Page Seventeen)

AS HINTED at in last month's column, Felix "Chi-Chi" Ghirlando and Claude Clayton went for a plane trip over New York and Riverhead, Long Island, in the "Constellation" with the 'Chesterfield Supper Club.' Chi-Chi reports that on the take off, he happened to glance out a porthole and saw the ground leaving him and he promptly lost all interest in anything further for a period of ten seconds. Incidentally in line with Operations Augusta the boys almost did not arrive there and NABET was close to Furnishing Flowers when a rear tire blew out while going around a curve. (Still think the South is better than California).

Back in New York after several weeks on the road with GE's All Girl Orchestra, is Ed 'Budda' Whittaker—Eddie recently purchased two of Franklin D. Roosevelt's stamp albums and the purchase price is reported to be rather high.

On April 1st, Milton Kitchen became a Group 12 engineer. Milton transferred from Master Control to Television and then on April 15th, he was seen handing cigars to a selected group, said group being those who saw him. The occasion being the birth of his daughter, Andrea Robin. Mrs. Helen Kitchen reports that Andrea's hair is dark like daddy's but that she has more of it!

For the past week, Max Jacobson, Field Supervisor, has been away on a week's leave of absence and Walter Mullaney has been the acting poppa of the Field Group.

Don Ewert, SE, claims that after having been milked of all the dope as to what he did while in the Navy, all that was said was that he had rejoined NBC after several years in the Navy—then to add insult to injury his name was misspelled. To correct any misinformation Don's last name is not spelled EWART, but 'E W E R T' . . .

Down Raleigh, Noath Caoholinah way the Operations Agusta Trio, Shultis, Mullaney and Anderson, had a miniature NABET Meeting from early evening till early AYEM with Willard Dean, Mike McCreary and several other WPTF laddies.

From way out there in the wilds of New Jersey, Boundbrook to be exact, we have received the following bits via Uncle Sam's Postal Department—Frank Wagner started the vacation period this year here at Boundbrook, when he and his family left for Florida on the 14th of April. They expect to be back the first week in May. Frank is in the enviable position of owning homes in both Boundbrook and Lakeland, Florida.

Mr. and Mrs. John Dunn increased the family on April 23rd from three to four. Not Three to Four PM or AM but from one son to two sons, the youngest Don Michael arrived on Tuesday, April 23rd, and weighed 7 lbs. and 12 ozs. Johnnie had hoped for a little girl this time as they already have a son, however, better luck next time and anyway we always say T is one more \$500.00 deduction on the income tax— Now, wait a minute Dear, don't hit me with that—Kathee and Skip mean more to me than a \$1,000.00 Income Tax deduction—

Thomas Somma joined the staff on March 11th, as a technical porter. Tom recently was discharged from the Navy after serving for three years. Prior to his entering the service he had been employed as a Lab. Ass't at the Calco Chemical Co.

Choo Choo Choo and here comes the Boundbrook Express on the 'O' Gauge or is it the 'HO' Gauge, anyhow it's a hobby and it's Model Railroading—Pioneered at Boundbrook by Eddie Morrell as engineer and with the following train crew—Don Hickman,

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Hudson Chapter News

By Jim Carter

THIS month, Raye McEntee of WOR Recording comes thru with his copy for the column right smart and plenty early. Paul Baldwin may know his records but about paintings—well, I don't know. It seems Mrs. B. had a painting hanging around that Paul didn't care too much for, in fact told her to toss it out eight years ago, but Mrs. B. didn't get around to it. Last week a dealer saw the picture and called it a genuine "Smith" (Whatever that is) right now it is the object of a careful scrutiny by the Masters, and at the same time Paul is taking a good look at a Mathews Cruiser and he knows what that is.

Advice to young Brides: Mrs. Getter, we know it is too late to tell you you shouldn't invite Danny Conover and Doug Hawkins to a steak dinner, as you know by now what a mistake it was. They arrived, top hats, white ties, and test equipment, ready to do (justice) to the meal. Pappy put his micrometers to the steak to make sure he got his share. Danny comes back at him by setting up his VTNV as a capacity micrometer to take more accurate readings of his steak; about this time Seymour got out his "Bug" and started pounding out a blow by blow description of this Radioman's Fracas. Mrs. Getter stood by, not shedding a tear, but gamely smiling throughout.

At long last we have something to say about the little known, but "Mighty Mite" of the Basement Engineers Crew, Massah Lee and his Frau expect a new deduction on the family income, in June. Good luck to you both.

Sunshine (Personality) Urlass is still granting Recording the benefit of his genial, beaming countenance. Better not try to take him away from us, as we have adopted him into our own private circle of privileged characters. He is now being taught the intricacies of changing sapphires in the cutting heads by the one and only Ralph Schlegel who should know.

Ah! Vacation time has rolled around again and all we have to do is persuade the Better Half in what We want to do, then discourage all attempts to change our mind.

Briefs: Jim McInerney expects to fly to the Coast to see a friend. Bob Lee will do the house keeping for a while and let his wife go to the hospital. Paul Baldwin will go to Fire Island for a change and Raye McEntee surprises us all announcing a plan to fly to Maine for the 20th summer in a row. George Corey has a lot of work to do around the house, says Mrs. Corey. Doug Hawkins will go to South Hampton and Bob Doherty is taking his vacation late for a good reason. Bart Simpson will lounge around on the seashore and Ralph Schlegel will "Get away from it all," becoming a Hermit. "Anywhere where there isn't any Recording Engineers." Max Urlass wants to go to the North Woods. Jack "The Coat" Carney is undecided and Pres. Yeoman's wife wants to go to North Carolina so that's that.

Many thanks Mc for all the good news from Recording—J. C. Apologies to Bill Schlegel for not deleting as per.—Jim.

We all had the feeling that it was too good to last, and here is proof. Our little "Sound Effects Engineer" Miss Dottie Langley is to be the bride of Mr. John F. Sweeney, ex-Tech Sgt. Saturday, June 29th, 11:00 A.M., at St. Mary's Church in Amsterdam, N. Y. White gown, veil, train and all the trimmings. The groom is a native of Tamaqua, Pennsylvania. Dottie says, I'm leaving here about the 1st of June on vacation and a short leave of absence, but please mention, anyhow, that everybody who wants to make the trip to Amsterdam, is invited to the wedding. That is real sweet of you, Dottie, but where in heck is Amsterdam. We all wish you and yours the very best of luck.

Ham news next month; so long for now.—Jim.

This Is ABC New York

By Gil McDonald

TONY HUTSON of the field department is nursing a big bump on the back of his noggin sustained the other night at the Meadowbrook when he went over there to pick up Vaughn Monroe's band. He started to set up the usual compliment of mikes only to be asked by Monroe not to put up a rhythm or sax mike. Said he, "Only one mike from now on, son." Tony is said to have collapsed and banged his head on the OP-5 so hard that it took the whole band to revive him.

Bert O'Leary says quote I expect a strong fluctuation in the pound sterling unquote. Something to do with getting a pay check cashed at about \$1.75 per.

Ask Pat Simpson how's DX kid and with a sour face he will tell you he was heard in Alaska with his Meissner's Signal Shifter that was supposed to be giving out on 80 meters but which wasn't.

Gil McDonald and Mece H. Kamke often QSO on ten meters when there is no DX.

Bob Dougherty of field now a studio engineer and John Bourcier of studio now on the travelling gang.

FLASH ABC Engineering Department Lays An Egg.

One day in the middle of April during the Ladies Be Seated show originating at our new 58th St. Studio, Norma Olsen, George Milne's secretary, appeared as a guest. For one of the stunts she was supposed to paint a face on a big Easter egg that was protruding through a big hole in a board placed in the center of the stage. The large shiny article was expertly decorated with rouge, shaving cream and lipstick by Norma. Johnny Olsen (no relation), the MC, asked her if she would like to take the egg home with her, and she said, "Sure, my Mom won't mind." So the egg got up and walked out from behind the board much to Norma's surprise and accompanied by convulsive laughter from the studio audience. She won first prize for her work of art which in real life turned out to be "the bald spot" on the top of the head of our one man maintenance department, Jim Cooke. The quotes are Jim's but on close examination all I could find was all spot and no hair. Anyhow all of which goes to prove that a bald spot can really pay off.

After prizes were given out the other night at the ABC Bowling League Dinner, it developed that the Engineering Dept. copped the lion's share of the awards. Rudy Bauer had high individual score of 236 and high series score of 600. George Milne's team won first prize and Bill Trevarthen's came away with second. George also won two individual awards and Bill won one. Shirley Haunfelder, secretary in the engineering office had high individual score for women. Congrats.

Beginning next month we will attempt to describe with fotos and words one amateur radio station built by members of the NY engineers each month.

NBC—New York

(Continued from Page Sixteen)

Trygve Danielsen and Paul Turner. Don is working on "O" Gauge stock and the others on "HO." Several others have indicated interest in Model Railroad and probably will start construction soon. Lester Whitehead and Max Moon have also taken up a new hobby but as yet they have been unable to convince anyone else that cutting out paper dolls is interesting. Art Lindstrom's hobby for years has been photography but lately he has taken to raising guppies and platys. He says that they are tropical fish but with names like that we will have to take his word for it.

Trygve Danielsen says that he is grateful to Mr. Trygve Lie for being elected Secretary General of UNO. Because of the publicity given Mr. Lie, co-workers are able to pronounce Dan's given name for the first time.

Here is a little bit of gossip that strictly speaking should be in the television news but we IS printing it here. Seems that one of the Video wolves was given the telephone number of a Babe. A date was made and when the door was opened the Gal had a Paper Bag Over Her Head. Oh my Gawd another Washington

(Continued on Page Eighteen)

Television

(Continued from Page Sixteen)

setup on different telecasts made in the field. After many talks by previous speakers about what we "are going to do," Wilbur commanded respect by prefacing his remarks with the simple fact that NBC has already done 900 field telecasts.

Rochester News By Arthur Kelly

BY THE time this copy reaches the mail chute, the annual elections will have been held in the Rochester Chapter and we will be off on our second full year with NABET. [Send photo of new council—EdS.]

Charlie Snyder has done such a fine job as Chairman of the local group that his election seems certain. His interest, perseverance and likeable manner have made him a good man to front the group. As for the rest of us, I rather believe the normal rotation of personnel in appointed offices will find new faces taking our places . . . and that's the way I believe it should be. Give everyone, eventually, a chance to actively participate in the operation of the Chapter. In any event, here's good luck to the new NABET officers in Rochester.

According to Howie Mouatt of WHEC, work has recently started on the new WHEC transmitter. The F.C.C. upped their power to 5KW day and nite so the new installation will make this change possible. Located just outside of the city of Rochester, the layout will be complete, modern and strictly up-to-snuff in all departments. One of the little difficulties encountered in the primary stages of construction was the moving of a stream. It seems the meandering creek ran right through that portion of the land required for the building. That little problem didn't stop the construction boys. They built a bridge on dry land, well out of the way. Then, they dug a new bed for the stream and diverted it under the bridge. Now they have a nice spot for the transmitter with a pretty approach over a nice new bridge. Just think boys. You can cultivate water lillies, goldfish and go swimming between meter readings!

Another story from WHEC . . . several of the operators are going to be decorated with something or other for devotion to duty beyond the call of duty. It all started with a series of remotes from the Rochester Arena where weekly wrestling bouts were held. As the season progressed the "grunt and groan" artists became more serious about their occupation and finally got so rough that they were throwing each other right out of the ring . . . right at the operating position. Lowell MacMillan, the announcer on duty, was given a long mike cord so he could retreat whenever a wrestler came his way. The ops, however, couldn't leave the operating position very well so they stayed to pick up the equipment. Craig Williams got himself splattered with blood. Howie Mouatt got in the way when one wrestler spit at his opponent and missed . . . ough!! And finally, Walt Lynch ended a broadcast sitting on the floor with the amplifier in his lap. It seems a wrestler was tossed out of the ring and smashed his operating table.

At WHAM, we have two new operators . . . R. Carleton "Curley" Green, who will cover vacation tricks in the Control Room. "Curley" has worked at several stations (WSAY, WBTA, WBEN) and is recently discharged from the Navy after 52 months of active duty. He specialized in electronics and taught Radar. At the transmitter, Earl Zimmer is covering vacation tricks. Earl has worked at WKBW and WGR.

Also at the Transmitter . . . Yo Seiler passed out the cigars on April 26th. It's a boy and Helen Seiler came through with flying colors. Yo, to you and Helen, we'uns of the Rochester gang wish the best of luck for the little fellow. I personally hope he will either be President or a radio operator.

In the WHAM Control Room, Bum Holly is planning a big summer season as Skipper at the Rochester Club . . . Elmer Grabb has moved with wife Lois to a residence at Lake Ontario . . . Fred Ambrose is planning on teaming up with Walt Harrison (transmitter) in a radio repair shop . . . Art Kelly (me) is building up flying time for a private pilot license . . . Ray Gondeck divides his time between a collection of classic recordings and "ham" radio . . . Al Barrons is still putting the finishing touches on a "study" he is building in the attic of his home . . . Chas. Snyder is busy firing up on 80 meter fone.

That about winds up the gossip I've got on the hook for this month. Since this is probably my last column, I'll wind up by saying I've enjoyed editing for the Rochester gang as well as working with Ed Stolzenberger and Millie. Until later, 73.

New York

(Continued from Page Seventeen)

Witch—but it wasn't, she didn't need any bag. He has to type this blindfolded! Guess why. G. H. A. (me wife) Oh Yeah?

Now as I was saying when I was so rudely interrupted—doggone what was I going to put here in the space.

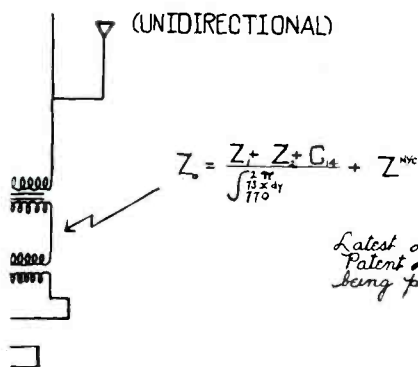
Oh yes—Bob Johnston has purchased a 13 foot boat with an outboard engine and along with it he had to buy two waterfront lots in order to have a place to moor his craft. The lots cost ten times as much as the boat.

A Mrs. Ross Griffiths was recently heard on the ABC's Breakfast Club and when she was asked what her husband did for a living she replied, "Oh, he is an Engineer for the National Broadcasting Company."

Recently, George Peters and Jack Petrie were advanced from apprentices to Group Two so Jack was caught passing out cigars the next day he came to work three hours late—(Did He Pass Out)! well now the lads in the lounge are waiting for the 15th of the month for him to pass out more cigars as he leaves.

Now while I wait for someone to hand me a cigar so that I may pass out, I will pass out of the picture till next month.

THREEM



Third In a Series of Humor-Sketches From the NBC-NY Recording Group:

Comes a lull in the seasonal twelve-month
Known colloquially as three weeks' vacation.
I'm off to a lake—junk in trunk
To metamorphose to a wastrel's celebrations.

So why be bothered with radio's fixin's
For novelty—I'll sit back and listen!

— R. P. M.

Mrs. Charles A. Younger advises that Lt. Younger (W2ND) is now on the air from Bad Orb, Germany, with the call D4AKL. He is using an Army SCR 399 with 500 watts input, and has worked England several times. Charlie hopes to be able to work the States shortly. Good luck!

The Panoramic Radio Corp. of New York is supplying dealers with a 40 page handbook at 50c, describing installation, operation, maintenance, and instructions relative to their model PCA-2 Panadaptor.

RCA is testing 2-way FM in the Philadelphia Yellow Cabs, looking forward to installation in the fleet's 1,172 cabs and 15 Cabulances.

The third issue of Western Electric's *Oscillator* publication is off the press. Articles cover WE's clover-leaf antenna, the ARC-1 VHF aviation radio, the new WE 640-AA broadcast microphone, and the metal-lens antenna. Included are 20 pages of catalogue, listing latest WE audio equipment for broadcasters.

Engineering Chapter News

Audio-Video Facilities, Radio Facilities, Technical Services and Development Group

By E. B. Berglund

THE Engineering Chapter was well represented at the dinner meeting held on May first, at the Hotel Bristol. Some 86 members enjoyed the turkey [dinner, that is, son] after which Chairman Reid Davis introduced President Powley, National Secretary-Treasurer Harry Hiller, and Dennis Connors of the Hudson Chapter. Most of us have known these gentlemen for years but it was the first meeting for many of the newcomers present. We regret that due to the illness of Joe Conn, Staff Photographer, we are unable to include any pictures of the event. However, we did get to meet some of the boys, old as well as new.

Congratulations to Elmer F. Mead who was recently promoted to Supervisor of the Model Shop. From now on Elmer will coordinate the activities of the shop, reporting directly to Jim Wood, Manager of Technical



ELMER F. MEAD

Services. Coming to NBC in 1929, from the New York Telephone Company, Elmer has worked in the Maintenance and Construction departments of NBC from the days of 711 Fifth Ave., including construction supervision of the Old Times Square Theatre Studios, Radio City New York relay system, Washington studios, remodeling of the Chicago and San Francisco studios in 1941 and 1942 respectively, studio 6D and new Recording plant in New York and many other construction jobs.

Elmer and Mrs. Mead are now making their home in Teaneck, New Jersey, and when the swift pace of work permits of leisure time, his hobbies of boating and bowling afford him relaxation. Good luck, Elmer, in your new job!

Welcome to Bill Hotine, a newcomer to the Development Group and a product of Colgate University. Bill's previous experience before joining us includes RCA Publicity,

233 Broadway, RMCA, 326 Broadway, Brunswick Balke Collender, United Research Corp., Films Inc., Federal Tel. and Tel., and Raytheon Mfg. Co. Sorry girls! Bill's married and the father of two children, the happy family residing in Great Neck, New York.

Another new Bill (sounds like the beginning of the month!) in Development is Bill Howard. Behind him, Bill has plenty of what it takes, both in education and experience. He holds a B. S. degree from Howard Payne College, Brownwood, Texas, and is a graduate of Baylor University, Waco, Texas. His experience includes three years as instructor in math. and physics at Dallas, one year as Civil Service instructor in the Air Corps at Boca Raton Field, Florida, and two and one half years as Television engineer with Philco. There is a Mrs. Bill Howard, as well as two small fry, a girl aged five and a half years and a potential male engineer, aged one and a half. Happy landing Bill—may you like your new surroundings!

Technical Services extends greetings to Murray Compert, a new addition to that group. Murray's wanderings before landing at NBC, include activity with RCAC, 66 Broad Street, the Bureau of Ships (Radio Division) Washington, D. C., and 28 months' service in the Radio and Radar Laboratory at Wright Field. The men will be interested to know that Murray is a product of Brooklyn Technical H. S. and Brooklyn Polytechnical Night School—but the ladies will be happy to know that Murray is single—line forms to the right! Watch your step Murray!

CLEVELAND

Drummer George Sholle is back with the WTAM Staff Orchestra. That's good. The place didn't seem the same while he was gone. The late Walter Logan first brought George to WTAM in 1922. George had been here 17 consecutive years when our Government made urgent calls for men to fill the ranks of the Sea-Bees. George enlisted and was one of the first men to leave WTAM. He spent three hectic months in training from October till December of 1942. After that he went to Hawaii where the Sea-Bees spent 18 months working at the



GEORGE SHOLLE

Pearl Harbor Navy Yards. George could tell us plenty about the extent of damage done in Pearl Harbor on December 7, 1941. He won't, however. George isn't one to do much talking at any time.

After 18 months of construction and repair work in our back-door-Islands, George went to Iwo Jima. This trip took them 63 days and they arrived just as the fireworks began. George says they were supposed to have landed on D-Plus-1. Their job was to clear strips for our planes to use. Things were a little more rugged than had been anticipated. They first got ashore on D-Plus-6. They landed on George's birthday. The reception that followed was different from previous birthday celebrations. George remained on Iwo Jima 9 weeks—six of which were spent living in fox holes. But he is back now. He says: "To say that I'm glad to be back would be understating a truth!"

George and his wife, Ella, live out in Boston Heights. They have one son, Roger, who attends the Case School of Applied Science. Roger is 18 years old, so you see, his dad didn't have to leave WTAM in the first place.—B. P.

Dixie Chapter News

By D. Gordon McCrary

FISHING season's on! These pretty sunny days really get a fellow a'hankering to get out the old tin box and clean up the tackle. While cruising around the two North Carolina beaches near Wilmington (Wrightsville and Carolina beaches) this past week end, brought on the urge to fish. There were a few early sun-bathers sporting a glowing tan, as well as, quite a showing of sail boats and outboard motors. . . . getting underway for the season. A new wrinkle in water craft . . . 1946 models . . . excellent for outboards . . . was noted in using discarded plane tanks and in some instances pontoons were connected in twos, these make smooth, light, water-going craft, odd though they may look. Visiting the beaches has me wanting to have my vacation moved up a few months so I can take a trek back.

Hunter Wall (S.E.) and Robert (Bob) Royal (S.E.) spent a week in New York City a few weeks back. They report their visit to the NBC studios was a very enjoyable one.

In talking with Sam Lyles (T.S.) the other day, it seems he has been approached by several listeners as to 'when we changed frequency.' The boys at the Transmitter went to work trying to get a second harmonic down to a radius of the surrounding neighborhood. Sam's report is that they have it down to where they haven't been asked any more about the change in frequency.

While making the pickup of a baseball game between Carolina and Duke last Sat-

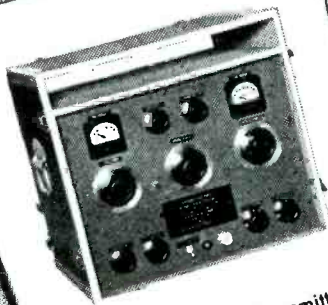
(Continued on Page Twenty-two)

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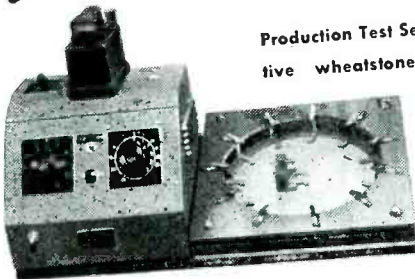
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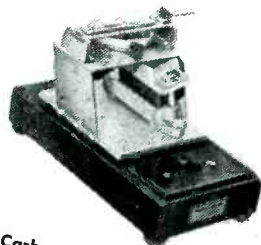


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Chicago

By Kermit Slobb

GREETINGS, gates! Here we go again, and mighty glad to have a few items of interest to pass along your way. Missed a column two months ago because of a general lack of news, and brother, I heard about it! My only excuse was to say that no news is good news. Reminds me of a good name for a penitentiary paper . . . the Alcatraz Daily Noose. Which is a bum joke and lots worse than the stuff you can read in another section of this Journal by that backwards Hollywood reporter . . . Namron Sewed. Other columnists please note: If you want to find out how many readers you have in your Chapter, just forget to send in a colyum some month.

Now to get down to the happenings around Chicago. Election time is here, and that busy little bee, Vern Mills, is getting out the ballots. We don't stuff ballot boxes or anything as uncouth as that around here, but you can take my word for it that FCS will be Chairman when this digest is regurgitated (you can turn that around, too!)

Tolleson, sometimes known as "Skinny Ennis," and last reported missing, has been found. He is now doing vacation relief work for NBC, and is losing weight since he doesn't get that free Bowman milk every morning.

Art Cunningham is doing vacash relief recording work for NBC. And here is some gossip about him . . . he still gets love letters from American Airlines!

Very pleased to announce that ABC in Chicago "Finally" (the quotes are mine) got authorization for two Group 6 men, and that the two chosen from Group 2 were our good friends, Byron "I'd rather work nights" Speirs, and Bill Cummings.

We have a SNAFU arrangement this summer here in Chi whereby all NBC net shows are recorded and played back an hour later so that Cy Hicks out in Corntassel, Iowa, where they don't have Daylight Saving Time, will get his favorite radio program at the same time if he isn't out milking because the cows can't tell time. This little clambake involves several new NABET men, much work at Universal Recording Studios (NBC Recording couldn't handle the load), new platter-turners, etc.

Anyway, as a result of this, a couple of former Chicago NBC men, Russ Hunt and H. Abfalter, have come back to work for ABC. I have no dope whatsoever on Abfalter, but do know that Hunt was in the Army out on Guam and tells many interesting tales about KB6 ham operations. His call is W9HZD. Harry Hale, another Chicagoan, is also working for ABC now. He just got out of Army, used to work for a couple of smaller stations here in Chi, and his ham call is W9MCM. He must have had a hot

Broadcast Engineers' **20**
Journal for June, 1946

CORN FROM A COB REPORTER

dog concession in the Service, for he was mustard out of the Army.

Glad to welcome back into the fold ex-Army Captains Curt Pierce and R. A. Linberg. Curt is back doing studio work after one month short of four years in the Army, and Lindy (ham call, W9WRB) is back with NBC Field after much time over in Italy.

I understand that these radar guys have discovered the presence on the moon of some crazy kind of bugs. After much consultation with entomologists and Latin dictionaries, they have decided to call them lunar-tics.

Here is a couple of notes I picked up on ex-Chicago men. Wallace Downs, who is said to have originated that gag which goes, "Who was that flute I saw you out with last night? . . . That was no flute, that was my life!" was back in town a couple of weeks ago. He is short-circuiting the draft board by joining the Alaska Communications Service as a transmitter maintenance man. And I understand that Howard Crissey, ex-stock clerk for NBC and recently out of the Navy, has taken a job with the newly created Broadcast division of the Raytheon Co.

Over at RCA Recording, business is brisk. Jack Penninger is now councilman, and I still haven't had the pleasure of meeting him or Jack Bayne. Hope to get over there before they read this.

In regard to ham type radio, not a whole lot to say. The following dope was gleaned by eavesdropping either on the air or to conversations. Bill Cole, W9BU, has worked a ZL and a ZS on ten phone and is also putting out a healthy wallop on eighty. . . . Ed Holm, W9IT, is working a lot of stuff down Souse American way. . . . Ed Golec, W9VGA, has a new Hammarlund HQ-129 which he likes vy much. . . . Roger Parker, W9KDI, is working out on eighty with a bedspring antenna. . . . Don Fitch, W5GDW/W9, finally got on ten meters. . . . Harry Ecklund, W6ULQ/W9, is on eighty C.W. as is Vern Mills, W9BGI (Bugs Gnats Insects) . . . and I finally worked Howard Newbauer, W9WXZ, the other night. That's all the dope about hams I have.

Leo Mulatz, ABC studio, has been out for almost a week now because of severe lacerations around the head sustained in a fall, but is OK and will be back to work by the time I mail this to Stolzy.

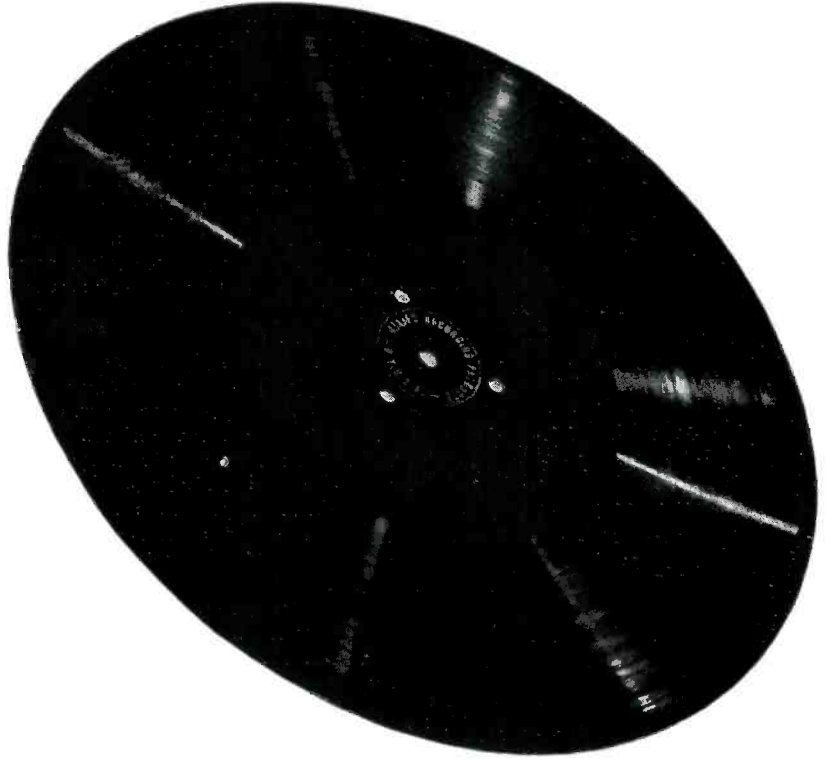
Well, kiddies, that is all I can find in my little black book for this month. CUL.

Inactive Members

Mr. R. Beardsley Graham, Inactive Nabet Member, formerly NBC-New York television and now with the Bendix Corp., has volunteered to act as clearing house for brief items for publication herein relative to the whereabouts and activities of our many Inactive Nabet members. Items should be brief. Send directly to Mr. Graham, 8 West 9th St., New York 11, N. Y.

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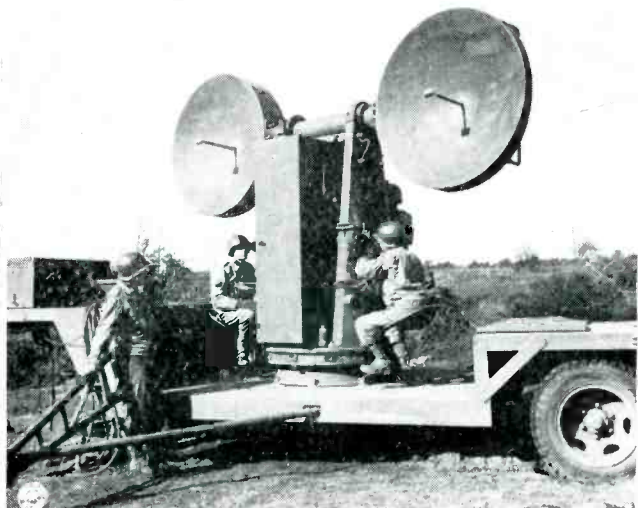
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Now It Can Be Told

By Jordan McQuay



The SCR-547, a radar for accurate measurement of enemy aircraft height, shown here in action in Italy. One of the first height-finding equipments developed by the United States, it was nicknamed the "Mickey Mouse" because of the physical likeness of the paraboloids to the famous cartoon character. The SCR-547 was the first radar set to use a magnetron generator.

* * *

A General in Burma sent a radio message to a team of GI's: "Heavy underbrush around Bridge 482-T. Good hiding place for Japs. Burn immediately."

Several hours later came the radio reply: "Per your instructions, bridge 482-T burned. What now?"

* * *

Last days of the war in Germany saw the capture of the luxurious automobile once owned by Goering. Armored plated and weighing two-and-a-quarter tons, the Mercedes-Benz was built especially for him in 1940 during the vain days of Goering's all-out aerial warfare. Eighteen feet long and with bullet-proof glass, the car has five forward speeds, 160 horsepower, and a top speed of more than 125 miles per hour. When found, the gas tank was empty and the speedometer had clocked only 9000 miles. The car

is now on exhibition in the United States, returned on an ancient freighter that the Germans had failed to sink.

* * *

The fantastic part played by Coca Cola in the defense of tiny Canton Island, late in 1941, is steeped in historic irony. At the time of the attack on Pearl Harbor, six Army officers and a handful of civilian engineers and workmen were engaged in building a landing strip on that Pacific island—destined to become eventually an important air base.

On December 7th, the total artillery at the military garrison consisted of about 50 rifles, several pistols, a meager supply of ammunition, and an abundance of "coke" bottles. A vacated hotel on the island provided a source of food—and the bottles of soft-drink. There were several radio receivers on the island, but direct communication with the outside world was impossible. But since no change in the original orders were forthcoming, work on the government's landing strip was continued—at a feverish speed.

Christmas Day, 1941, was celebrated in true American style—with some frozen turkeys and another huge store of Coca Cola discovered in the cellar of the hotel. But a festive spirit was absent. Supply ships bringing reinforcements to the island were long overdue, and everyone believed that Uncle Sam had forgotten them in the excitement of preparing for war.

One night the lonely group heard a Japanese propaganda broadcast proclaiming the attack and seizure of Canton Island, adding more fuel to their fires of worry. Should an invasion come, they were determined to fire every rifle and pistol, until the ammunition was gone—then throw empty (or full) "coke" bottles at the Nips. For, despite an alarming shortage of food and ammunition, they had an immense store of "coke" at the garrison. Enough to last a year or more.

But the Japanese never appeared.

On New Year's Day a sea-going tug arrived at the tiny Pacific Island towing two massive barges. Eagerly the inhabitants awaited the landing—with understandable anticipation. The first barge contained machine guns, cannon, ammunition, and radio equipment—with enough soldiers to operate the field pieces and radio gear.

But the second barge—instead of containing needed ammunition or food—was laden full to the water line with hundreds of cases of Coca Cola!

Two months later, additional and more appropriate military supplies arrived. But during those early days of anxiety on Canton Island, it seemed as though the guiding hand of destiny was influenced by the export department of a certain soft-drink manufacturer.

* * *

Near Rocky Point, Long Island, and almost engulfed by RCA's maze of antenna systems is a tiny tourist camp named Tune Inn.

DIXIE

(Continued from
Page Nineteen)

urday, Rex Coston, former editor and S.E., came up to say hello! Rex says he is doing fine with his school work and music. It was nice to see Rex and we hope he continues to make progress.

Backtracking and recalling a few 'characters on the 'PTF staff . . . we can't go longer without mentioning our transcription clerk, Billy Singleton, better known as "Sinky." Billy has an all-round pleasant personality . . . takes a lot of kidding and does an excellent job. Recently, Sinky purchased an open-air Chevy. This seatless, motorless contraption originally cost the full sum of fifty bucks, and with the aid of a few seats, a thing-a-ma-bob here and there, all obtained from a few of our big junk yards . . . Sinky, together with two of his friends, "Cadillaced" to Wilmington, N. C., in class "A" style, no major trouble reported to date.



This week's picture introduces our studio engineer of long standing, J. Willard Dean, dubbed "Curley" by most of his friends and associates. Dean has been with WPTF for a period of fifteen years or more and is one of the few who can now boast of this number of years' service. Curley is chairman of the Dixie Chapter of NABET (now serving his second consecutive term in this capacity) and is well qualified to handle the affairs of the Chapter in the proper manner. At this writing we have not contacted Dean for other details as to hobbies and other such interests, but know him to be an all-round guy.

The picture submitted for this issue was made by a member of the WPTF program department, Gus Youngsteadt. Gus has made photography a hobby for some few years and produces some really fine pictures.

—73 till next month.

Baltimore Chapter

By William Hoos

IT'S too bad that Stolzie's deadline for copy has to be just two days before the annual elections which Baltimore Chapter will hold on Tuesday, May 7. So we'll have to hold back the news of whether the incumbents stay or whether we have new officers till the next issue. [Send pix of new council—Ed. S.]

We've had no copy from WCBM so we hope that no news is still good news.

WFBR

This seems to have been automobile wrecking month at WFBR. At the present writing four of the twelve cars owned by the engineers at this station have been smashed to a more or less degree. The first was a dual affair. Transmitter Supervisor Bill Kelly and TE Julian Smith had their cars parked in front of the transmitter building on Waterview Ave. One night, when a driver coming around the curve at well above the speed limit lost control and after skidding about 20 feet, bounced off the rear of Kelly's car and spun around to a stop against the front fender of Smith's Lincoln Zephyr. Bill Kelly came out the worst to the tune of about a hundred dollars' damage with the rear fender smashed pretty badly and the wheel on the inside being bent when it was driven against the curb. Smitty's car was only slightly damaged. Next we heard that TE Ed Jung didn't stop quite fast enough and smashed the grille and radiator of his Chevrolet against the rear of a truck. So far only TE's, but last week while coming to work, SE Eddie Stover's Plymouth was struck in the side by another car coming from the left. Eddie was lucky after a fashion, in that he wasn't hurt, and his car was struck in such a way that although estimates call for over a \$300 repair bill, he was able to drive it away. If he had been hit either a foot further fore or aft, the motor or wheels would have been wrecked and it would have been a job for the tow truck. This is the second bit of hard luck Ed has suffered with this car. About a year ago it was stolen from in back of the studio building and when found was stripped of the tires and batteries.

The magazine section of the Baltimore Sunday Sun gave a spread to Charlie Hayward, the fellow who climbs our 300 foot towers to replace warning lamps, in one of their series of interesting occupations of Baltimoreans. Besides a nice interview with Hayward there were half a dozen shots of him on the towers, several of which were taken with telephoto lens while he was at the top. According to the story, Charlie considered the most dangerous part of climbing the masts, the job of getting up above the base insulator from the base, due to the high RF potential. After that, he said it was just like a big ladder.

So far in mentioning the hobbies of our various members, we've neglected TS Bill Kelly our representative philatelist. Bill has quite a collection of stamps and specializes in U. S. He also conducts a sideline business in stamps and (we may as well give him a commercial) can offer some good deals to those of our fraternity who are interested in this hobby.

Yours truly is still the only active ham at WFBR. Since things opened up we've done a little 75 fone and 80 CW work with W3FDJ. So far no known NABET contacts. We're waiting for a list of station calls to be published in the Journal so we can spot the NABET signals. [Only Chapter to send in to date is Chicago—Ed.S]. In the line of off-duty radio, both SEs Boone and Himes are starting to build high fidelity 2A3 amplifiers to use with their record players at home. The control room gang is helping along Phil Crist, transcription librarian, who is studying for his ham ticket which may be in Phil's hands by the time this hits print. One of the more well known 10 meter signals heard here in Baltimore, that of Henry Blanc, W6TNZ, KFWB announcer, was helped along several years back when the boys on the night watch gave code practice between station breaks to Hank when he was announcing here, and got his first ticket as W3HXO. By the way, if anyone in Hollywood reads this and knows W6TNZ, pass along our 73.

Next month, news from WITH. 73—Bill.

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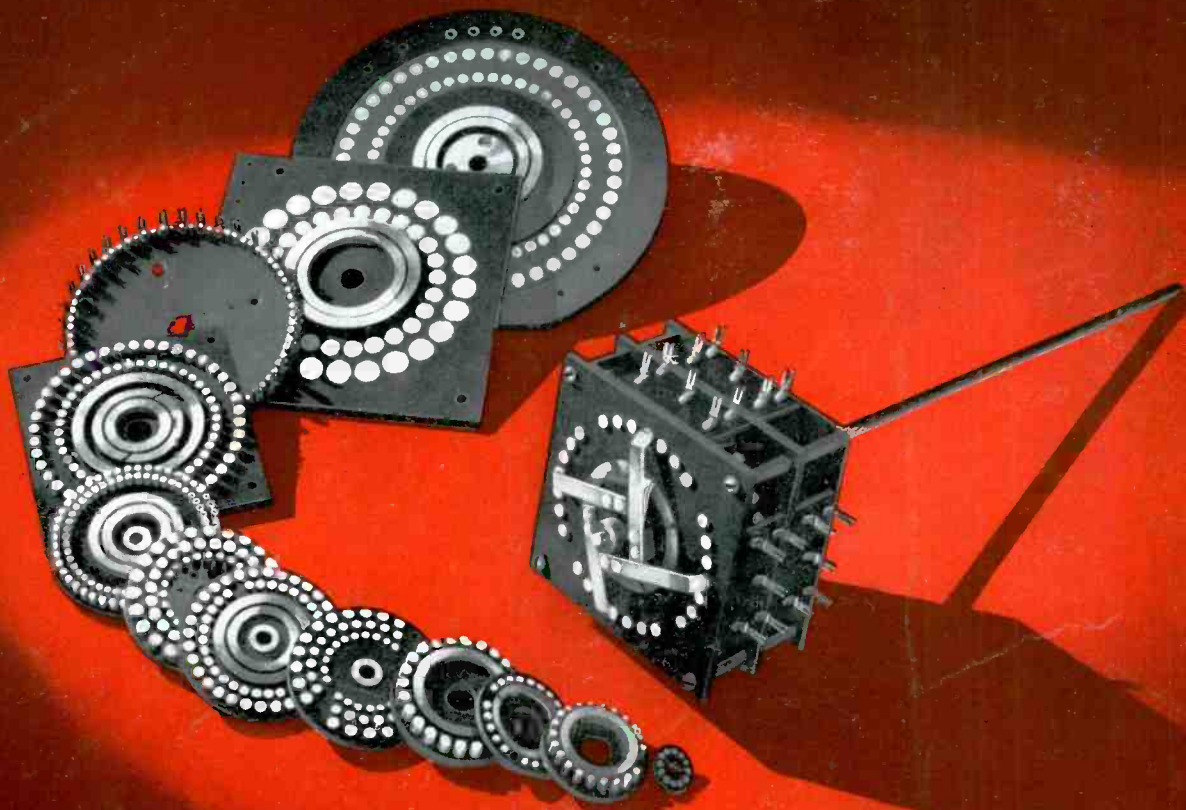
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