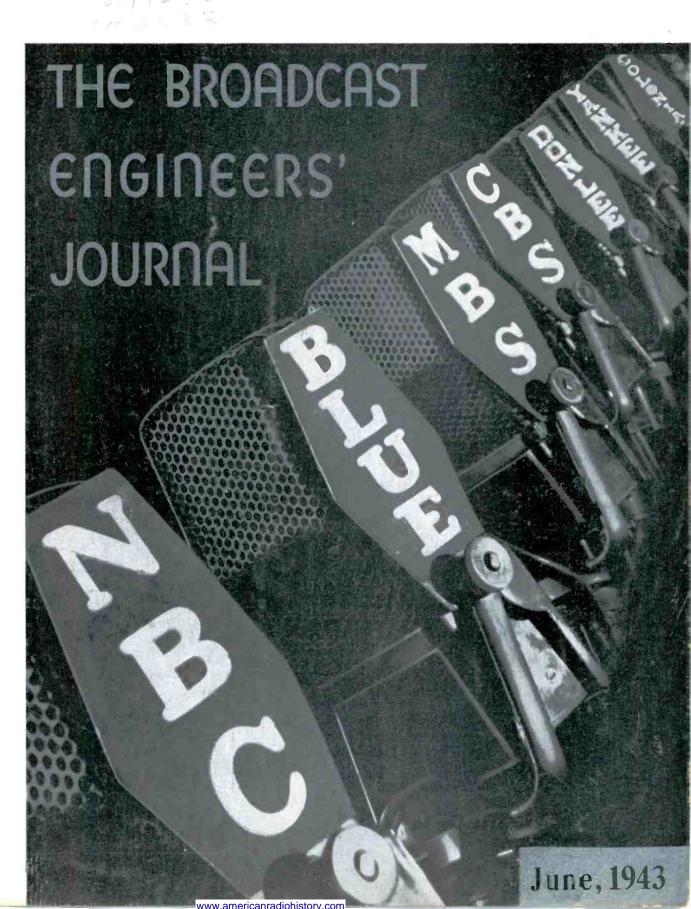
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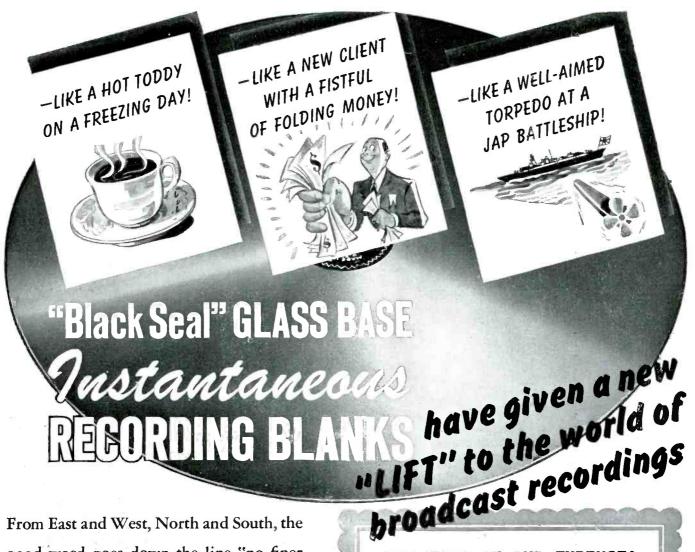
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THE BROADCAST ENGINEERS' JOURNAL

Volume 10, No. 6



June, 1943

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THE BROADCAST ENGINEERS' JOURNAL

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Shift in Q-Point in Power Amplifiers

By Robert K. Stern

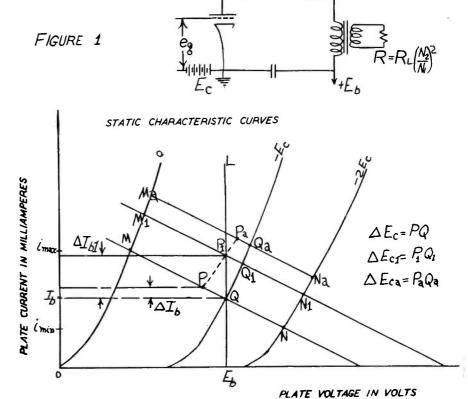
*N THE vacuum-tube amplifier nonlinear transfer characteristics give rise to plate-current components not present in the grid excitation. The magnitudes of these distortion components are easily computed by means of readily available formulae developed upon the assumption that the plate load is resistive in character and equal in magnitude for all distortion components†. This assumption is generally acceptable in the consideration of audio voltage-amplifier and power-amplifier stages. On this basis, the graphical loadline method of audio-amplifier analysis was set forth.

The ac distortion components are a consequence of non-linearity and manifest their undesirability by reducing fidelity. The dc distortion component, termed the dc plate-current increment, must be considered singularly since it is a controlling factor as well as a consequence of non-linearity.

In changing the amplitude of dc plate current, the dc increment is capable of shifting the entire locus of operation of a vacuum-tube amplifier. The shift in operating or Q-point may increase or decrease overall distortion dependent upon whether the new Q-point is located in a more or less linear operating region. The dc increment may be positive or negative, subject to the type of tube involved and other circuit conditions which will be indicated later. While the effect of shift in Q-point is more than academic, as shown in Table I, the conditions which cause and control it are not familiar to the majority of engineers.

In power amplifiers, or in any circuits possessing inductive plate loads, the dc load is independent of the ac

load and may be radically different from it. The general method for graphical analysis of audio amplifiers is no longer useful unless modifications are made. Early papers on the design of will be presented. Practical conclusions will be drawn. This, of course, does not mean that the Class-A audio power amplifier is the only case where shift in Q-point is of importance.



power amplifiers neglected this point with resultant inaccuracy. Later, C. E. Kilgour* presented a method for graphical analysis of fixed-biased power amplifiers which corrected for shift in Q-point. An analysis for self-biased power amplifiers has not been previously presented and the effects of self-bias upon the locus of operation of an amplifier are not widely known.

In an effort to bring out the significance of shift in Q-point, the corrected methods of graphical analysis for both fixed and self-biased power amplifiers

CASE I: Fixed Bias, Reflected Load (See Figure 1)

MQN is the static or no signal load line. Q is the static operating point. Calculate △Ib for maximum grid signal, e=Ecsin wt, from load line MQN by the formula† (1)

△Ib=[(I max—I min)—(Ir+Is)]/3
where: △Ib=dc increment calculated
for equal load presented to all distortion
components

- :1 max=max instantaneous plate
 current for grid signal
 e=Ec sin \(\pi/2\)
- :I min min instantaneous plate current for grid signal e=Ec sin 3 \pi/2
- :Ir =instantaneous plate current for grid signal e=Ec sin \(\pi/6\)
- :Is = instantaneous plate current for grid signal e=Ec sin 11 \(\pi/6\)

† Eastman, A. V.; "Fundamentals of Vacuum Tubes": McGraw-Hill Book Company; p. 310, * Kilgour, C. E.; "Output Tube Performance"; Proc. IRE; January, 1931; p. 42.

			Table I*				
AC	DC	DC	Power	Ha	Harmonic Distortion		
Load (ohms)	Load (ohms)	Increment (ma)	Output (watts)	% 2nd	% 3rd	% 4th	% 5 t
15000	15000	-4.2	5.85	12.8	10	1.9	1.
15000	200	-6.4	4.43	20.6	7.2	4.2	0.

This value for the dc increment is correct only under conditions where the dc locus of operation is represented by load-line MQN. That is, when the dc and ac loads are the same. For the conditions postulated, the actual dc increment, \triangle Ib1, will be larger since the dc load is negligible.

The magnitude of \(\triangle Ib1 \) is determined by two factors. One, Kirchhoff's law as represented by the dc load line EbL, and two, the apparent dc grid signal \(\triangle \text{Ec} \). \(\triangle \text{Ec} \) is the distortion signal causing the dc increment in plate current. Its value depends upon the ac locus of operation and is independent of the dc load. If it were not for the fact that the ac locus of operation changes with the dc increment, the intersection of the static curve whose parameter is ec=(-Ec+ \triangle Ec), and the dc load line EbL would establish the correct value of dc increment △Ib1. Actually, △Ec will change in amplitude as the ac load line shifts. To properly account for this, load-line MaQaNa is drawn. Qa is the operating point and Pa is obtained from the dc plate current increment calculated from Qa by means of formula (1). PaQa is the dc distortion signal for the ac load when operating at Qa. A straight line is drawn between points P and Pa. Its intersection with the dc load line establishes, to a close approximation, \(\triangle Ibl, \) the correct dc increment for the fixed bias case. Load-line M1Q1N1 is drawn through P1 parallel to MQN.

M1Q1N1 is the dynamic ac load line for maximum grid signal e—Ecsin wt. When the amplifier is energized by a series of complex audio signals, the dynamic load line will continually shift between MQN and M1Q1N1. The ac distortion components during periods of maximum excitation may be obtained from load line M1Q1N1 where Q1 is the effective operating point.

The dc load line EbL was plotted for zero load to simplify the procedures involved. Actually, the dc load is the summation of the resistance of the transformer primary winding, and any decoupling resistor in the power supply.

CASE II: Self Bias, Reflected Load (See Figure 2)

Where self bias is employed, the shift in Q-point is reduced by constant-current feedback of the dc increment through the cathode resistor. To calculate the corrected dc increment for the self-bias case, the formula for distortion in an amplifier with inverse feedback is used.

 $\begin{array}{c} (2) \\ D = d/1 + AB \end{array}$

where, D=distortion voltage across plate load with feedback.
d=distortion voltage before feedback is applied.

A=stage amplification.

B=ratio of feedback resistor to load resistor.

The cathode resistor, Rc, is considered as the plate load. Equation (2) becomes,

(3)
$$A \triangle Ecf = A \triangle Ec/[1 + \mu Rc/Rp + Rdc + Rc]$$

since, \(\triangle \text{Ecf} = \text{dc distortion signal with} \)
feedback.

 \triangle Ec=dc distortion signal without feedback (Case I). μ =tube amplification factor. Rc—cathode resistor, considered as dc plate load in formula.

Rdc=dc load resistance exclusive of Rc.

Rp=tube plate resistance.

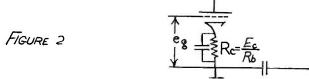
$$A = \mu Rc/Rp + Rdc + Rc$$

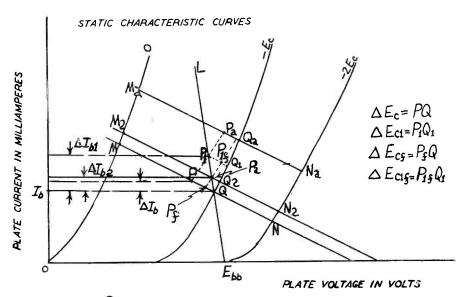
 $B = Rc/Rc = 1$

From equation (3), \triangle Ecf, the dc distortion signal with feedback is obtained as a function of \triangle Ec.

$\triangle E_{cf} = \triangle E_{c}/[1+\mu R_{c}/R_{p}+Rd_{c}+R_{c}]$

△Ib, MaPaNa, PaP, P1Q1, and △Ec are determined by methods already outlined for Case I. by substituting for tube constants and circuit parameters in equation (4), △Ecf becomes a fractional part of △Ec. This may be represented graphically by setting off length QPf on QP and Q1P1f on Q1P1 so that, QPf: QP=Q1P1f: Q1P1=△Ecf: △Ec. The straight line P1fPf, when constructed, intersects the dc load line EbbL. The point of intersection (P2) marks the correct value of dc increment (△Ib2) for the self-bias case when driven by the maximum signal





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e=Ecsin wt. Load line M2Q2N2 passes through P2 in a direction parallel to MQN, and corresponds in all ways to load line M1Q1N1 in its function.

Evidently, where a dc increment is desirable, fixed bias should be employed. Where this shift is undesirable, self bias will tend to eliminate it. In a triode, since the dc increment is always positive, the locus of operation tends to shift to a more linear region. Therefore, for any given load, the distortion in triodes is greater with self bias than with fixed. The fixed-bias amplifier is capable of delivering greater amounts of power with the same amount of distortion by use of a smaller load. This effect is even more pronounced in pushpull triode power amplifiers. A fixedbiased power amplifier operating Class AB1 with two 2A3's in push-pull can deliver 15 watts with a total harmonic distortion of 2.5%. Yet this same circuit, when employing self bias, can deliver only 10 watts with a total harmonic distortion of 5%. Other power triodes give similar results when operated in push-pull. With certain tubes,

the use of self bias is totally imprac-

Other effects of shift in Q-point should be noted. Unequal dc increments in push-pull operation may serve to produce a different locus of operation in each tube. Under such conditions there would be little cancellation of even-order harmonics. Consideration should also be given to the effect of shift in Q-point upon power-supply regulation.

The pentode and beam-power amplifiers pose further problems all of which may be analyzed by the principles already set forth. Power amplifiers employing a screen grid dropping resistor are subject to interesting effects which must be taken into account. Methods outlined here may be extended to consider these effects by utilizing the static screen current vs screen voltage characteristics. Engineers concerned with this problem should consult the Radiotron Designer's Handbook (Chapter 34) for many useful points on pentode analysis.

In pentodes and beam-power tubes,

the dc increment is positive for lowimpedance loads and negative for highimpedance loads. As in the case of triodes, a positive shift in Q-point in pentodes and beam-power tubes reduces distortion by providing a more linear locus of operation. In addition, a reduction in screen voltage will occur where a screen dropping resistor is used. In general, this will mean a reduction in distortion and in power output. A change in screen voltage should not be overlooked since a complete change in tube characteristics may result.

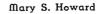
The negative dc increment, typically occasioned by a high impedance load, tends to increase distortion. The effect of a negative shift on amplifiers with series screen resistors is to increase screen voltage and introduce an increase in power output and in distortion.

In the conventional power stage, wherein the load impedance changes with frequency, the use of a pentode or beam-power tube, paricularly with a series screen resistor, entails erratic results difficult to predict.

Flash!

Feminine Inspiration Added to the **NBC-NY** Engineering Staff



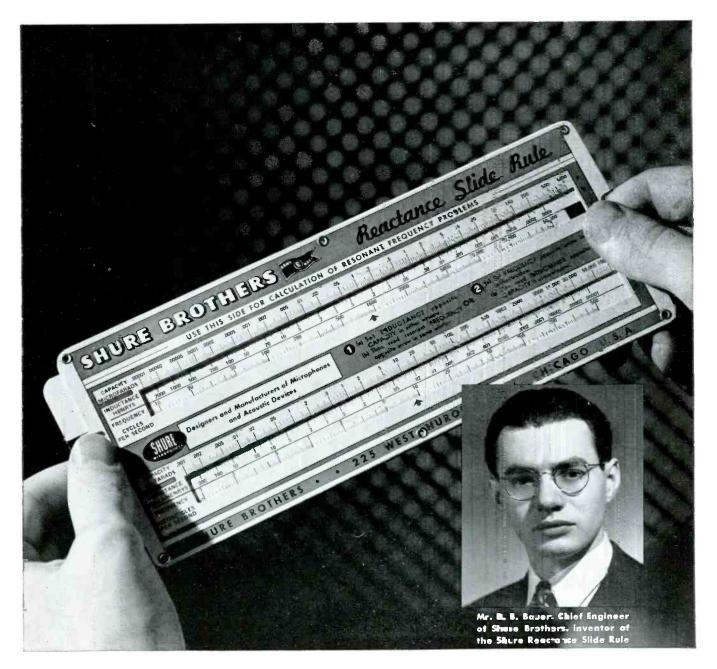




Louise M. Fogarty

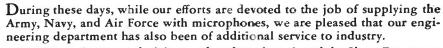
Miss Mary S. Howard, who was the first girl employed by the Recording Group as Recording order clerk, and who has been more recently employed by the British Broadcasting Co. as a Recording Engineer, has re-entered the NBC staff as a Recording Engineer.

Miss Louise M. Fogarty, formerly the Recording order clerk, has been appointed an Engineering Recording Apprentice, effective June 14, 1943.



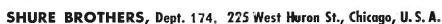
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WTAM'S Ten-Year Employees Celebrate

By Bert Pruitt

DOES time fly? Ask WTAM's tenyear employees and they'll likely say, "It does!" Ten years ago we were experiencing a world-wide depression. Farmers were using their corn for firewood . . . pork was at rock bottom . . . banks were closing and we, as employees of WTAM and NBC, were wondering when the axe would fall . . . and still are. Hootch could be had if you knew the proper way to rap your knuckles on the speakeasy door. Steak was plentiful and there was no indication that the lowly spud would exchange places with bootlegged hootch within the passing of a decade.

"What," you may be thinking, "does this have to do with WTAM's Ten-Year Celebration?" Nothing except to prove that even a Ten Year Mossback isn't above slipping the clutch of Life into reverse and reminiscing back yonder on the one-way road that you never travel twice.

The above paragraphs streamline the passing of a decade to a considerable extent. Some of WTAM's tenyear employees may have had toothaches, hangovers and other disagreeable experiences that have a tendency of stretching an hour into eternity. But, generally speaking, it is agreed that the past ten years have slipped by like a ten dollar bill disappearing when you visit your nearby butcher shop.

Twenty-one of WTAM's ten-year employees were "Wined and Dined" by Vice-President Frank Mullen and WTAM's Manager Vernon H. Pribble. Herman Pirchner reserved his exclusive

Eldorado Club for the WTAM fun lovers who set a new high in exuberant frivolity. Herman admits that he has never seen a jollier, nor more noisy gang in all his years of entertaining in a city where anything can happen and quite often does.

It's rather surprising to suddenly realize you've been working with 21 WTAM'ers for ten years or more. It doesn't seem possible. They look somewhat older but you haven't aged a day. They don't appear to be as frisky as they once were but you feel as chipper

as ever. When you sit down to a dinner financed by NBC you find you still have one thing in common . . . Money doesn't mean a thing!

You listen to after dinner speeches and you suddenly realize you are just as sleepy as you were ten years ago under like circumstances.

Manager Vernon H. Pribble takes the microphone and you become as wide awake as a moth gazing at a wool suit. "Joe Doakes," sings out our likeable Manager and you walk forward, wity you, chest stuck out as though you





Above, Mikeman Tom Manning experiments with a secret weapon. Station Manager Vernon H. Pribble and NBC's Vice-President Frank Mullen. Miss Funnell and S. E. Leonard seem to be well pleased with the progress of the experiment.

Left, front row, left to right — Vernon H. Pribble and Hal Metzger.

Second row — C. D. Pay, Al Stewart, Mrs. Vernon H. Pribble, Vice-President Frank Mullen, Mildred Funnell, C. C. Russell and S. E. Leonard.

Around the Wall—Bert Pruitt, Bob Oatley, Harold Brandt, Chester Zohn, Art Butler, John Disbrow, Russell Carter, Tom Manning, Harry Caskey and Don Stratton.

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Journal for June, 1943

thought you were one of NBC's Vice-Presidents. He presents you with a Badge of Honor and a Certificate admitting you to the Ten-Year Club. You go back to your chair with the consoling feeling that a mighty industry would fall with a terrible clatter if it werent' for your broad supporting shoulders. You shake hands with Vice-President Frank Mullen and he smiles when your expanding chest proves superior in strength to the thread that is supposed to keep the

buttons attached to your vest.

Three A. M. arrives and the laws of the State of Ohio must be enforced. You leave and are somewhat surprised to see the lights along the boulevards much closer to your fenders than they were when you came downtown.

"Ah!" you sigh, "what a wonderful world to live in!

The world goes through a decided change during the night and doesn't look nearly so rosy when you awake. You need a three yard broomstick to touch your right ear and you are decidedly puzzled . . . You recall having seen a floor show and you distinctly remember having seen a pony do some amazing things. You do not, however, recall having seen a mule in Pirchner's exclusive club. Your throbbing head is proof that you missed something.

In closing may we say thanks to Vice-President Frank Mullen and Manager Vernon H. Pribble for throwing a party that will live long in our memories as a tremendous success!

P. S.: Two of WTAM's ten-year employees were unable to be present. Captain Tom Cox (Studio Engineer) and 1st Lt. John Cheeks (Transmitter). Both are in the U. S. A. Signal Corps.

Frank L. Capps

We regret to announce the recent passing of Frank L. Capps at the age of seventyfive.

He was widely known and respected as an outstanding recording engineer and one of the last of the collaborators of Thomas A. Edison.

The business will be carried on by his partner, Isabel Capps Rainey.

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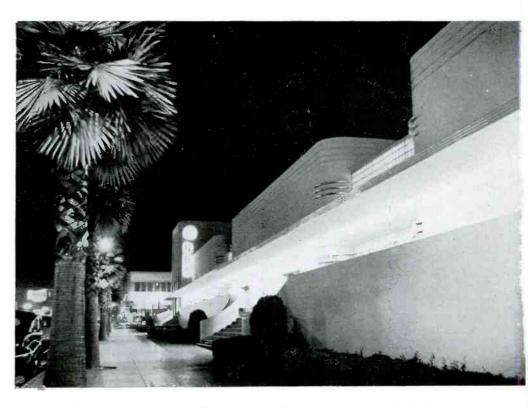
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By Bob Brooke



Alice Tyler Leaves Department After Sixteen Years . . . Jim Brown Reports on NABET Sessions With NBC . . . 48 Hour Week Scheduled for Los Angeles and San Francisco . . . SUN and Fog . . . Vacations Start . . . Hollywood Still a Busy Place . . .

LICE TYLER . . . Secretary of the Western Division Engineering Department since 1927, has left the "Front Office" and her boys to accept a more important position as Secretary to Lew Frost of the Vice-President's office Affectionately known to every member of the Western Division as "Alice," or "AT," or "TYLER," all staff members will miss her cheery self up front, her guiding light at Engineering parties, her notes about vouchers, her phone calls to master control, and all the other million and one things she has done for the boys since the day she first typed out their NBC employment applications . . . From our office heading one department she now goes to the office heading all departments and her infinite understanding of NBC auditing and NBC office lore will be of tremendous value in the office of Hollywood's resident VP . . . We all wish her lots of luck and happiness and thank her for having helped Sax to found an Engineering Department in the West that has no equal anywhere . . . After all we can still invite ourselves up to Room 202 and the Good Humor man still sells Caramel Sundaes at four o'clock . . . Incidentally, Alice and Sax were singled out for special awards at the Ten Year Party by VP Strotz and a picture of the event appears here-

Vice-President Sidney Strotz congratulates Alice Tyler and Division Engineer Saxton on their being oldest Pacific Coast NBC employees during recent Ten-Year Club banquet.

with . . . They are the oldest Pacific Coast Employees of NBC . . . Again Good Luck, Alice . . . We're with you . . . NABET . . . As we go to press Jim Brown is on his way back from the New York conferences with NBC over various agreement changes . . . We have no definite dope on just how things turned out but we do know Jimmy worked his head off and being a lawyer he probably enjoyed himself . . . All NABET members will probably have the latest information by letter long before we will be in print anyway . . . Hope NY covered the occasion with a few pictures . . .

BLUE . . . Senior Blue men were not in the Ten Year NBC pictures as they are now with a competitive network . . . Carl Lorenz out a week with an ankle sprained when he lit on his "Patio" . . . National NABET Secretary, Thor LaCroix, tripped to El Paso for a Coca-Cola shot recently . . Thor has been plenty busy with National office business between Blue Army and Navy remotes . . . Jake O'Kelly back in the swing of things and doing breakfast at Sardi's at the crack of dawn . . . Understand he's going to bed now at eight P. M. . . Anybody want to trade shifts sez he? . . . Jake's sister, Gert, still working in the Valley . . . A new Blue Engineer reported for work early this month, J. Thomas

"Half of them are Engineers"—The Hollywood Ten-Year Banquet boasted a high percentage of Engineers—How many do you fellows in other offices remember?





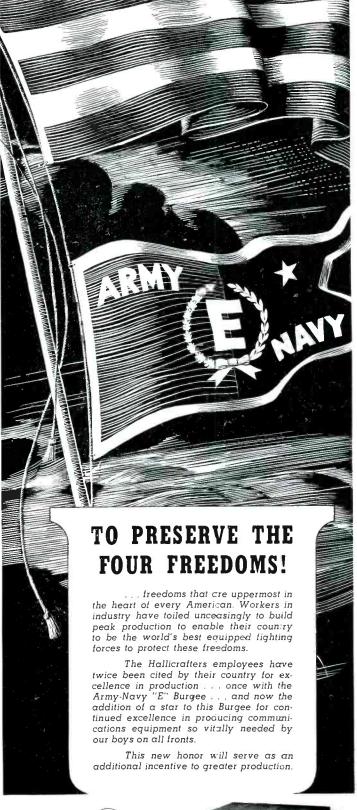
Baxter, ex-announcer and engineer of various local stations . . . a very nice guy and not very old . . . Welcome, Baxter . . . Heffernan sez hello to NY boys . . . Likes it out here now . . . Ben Doty victory gardening on his vacation Norman Dewes tied up with Gracie Fields and a couple of huge new Blue auditions . . . Blue Playhouse is getting a thorough acoustic job by grace of WPB OKAY . . . Recent Blue arrival, Rags Ragsdale, knocking the boys for a loop with some of his camera studies and photo brochures . . . Latest one of two little ducks is hitting all the top camera magazines . . . Another reason San Francisco OWI was sorry to lose him . . . Blue Chief Denechaud with a few new teeth that make him even prettier than he was . . . Just found out that Denny's secretary, Helen Wendt, has a son who is famous in pictures . . . Only seven years old and already a veteran of three years . . . Goes by the name Jerry Baker and has hit many a credit line at MGM, Columbia, and Universal . . . Johnny Eilers finds that gas rationing out here is a myth so traded his baby Fiat on a new Studebaker . . . Sez he's much happier . . . The Blue is growing . . . look out NBC .

NBC NEWS . . . We want to welcome a new man to recording, Bill Wilhelms . . . Hope you like screwy gang and greetings . . . Joe Kay, field supervisor, issuing many a memo on the use of field equipment and especially batteries in these days of practically no replacement parts and absolutely no batteries . . . Joe reports progress on wet cell units and "B" packs for ND-10s . . . And the Army Camp commercials keep rolling in . . . Hollywood NBCAA reports a new ping pong table on the roof sun deck . . . Johnny Morris spent vacation planting vegetables on his acre and a half in the valley . . . Reported back to work on a holiday, Memorial Day, cuss it . . . Clock system finished and working fine . . . Captain "Doc" Dickson now stationed at Hal Roach studios in Culver City and has been in to check up on some of the old NY gang, Ried, Capstaff, Miller, Norman, Lorenz, etc. Lt. James Coleman also in to see the gang . . . Ex-Hollywood picture sound man, Carl Zint, now recruiting Radar men for Western Electric . . . Capstaff slightly annoyed to learn that his wife Genevieve was made a producer at WGN a week before he transferred from Engineering to Production . . . Don DeWolf sez daughter Dorothy getting a kick out of close up sequences at Fox where camera shoots them mouthing words of a famous girls trio sang for the sound track . . . Harry Bryant in the hospital with stomach troubles . . . We suggest that Harry was working a little too hard . . . Bob Jensen, recent Cgo arrival, transfers from recording to studio . . . Pickett reports that he has had such an offer on the ranch that he can't pass it up . . . So is selling out and his folks are going back to Kansas where his father has some property . . . No more eggs each week for the boys or as Steve Hobart sez, "No more Pickett's King Size poultry pellets" . . . Lt. Roger Love writes an interesting letter on Monmouth school setup . . . Shot highest rifle mark in his class and is now headed for bigger and better things ... Ken Hicks reports a new baby in the family about a year old . . . Seems they are taking care of a friend's child from Chicago, making the Hick's total four ... Johnny Morris

looking funny with his Gable mustache shaved off . . . New recording signal system to studios being installed similar to NY's . . . Another re-recording jeep being built using 700's

Mostly for Army dubbings . . . Vacations will include Bill Comegys at Lake Arrowhead . . . Leon Fry at Lido Isle in Balboa Bay . .

That's about all from Hollywood for June . . . Keep em . . . Sounding Pretty . . . 73.



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Photos by Joe Conn

New York News By C. A. Younger

USPICIOUS OCCASION: On Wednesday evening, May 5, a distinguished group of NBC personnel gathered at a hanquet in the Grand Ballroom of the Hotel Waldorf-Astoria to inaugurate the Ten Year Club. As the name implies, this club is an organization of employees who have been with NBC ten years or more. Among the two hundred and ninety-six men and women who received Scrolls and Badges of Membership were forty-eight members of NABET.

Divisional branches of the Club are now being established and regular meetings of these groups will be planned.

NABET President James Brown and Vice-President Frank Schnepper arrived in town about the middle of May to attend the series of meetings with the Company-results of which are generally known by this time. NY Chapter Chairman Harry Hiller served with Brown and Schnepper on the Negotiating Committee.

We saw very little of our representatives during this time because they were very busy. Their only social activity seems to have been a dinner at the Seventh Regiment Armory sponsored by Engineering Chapter members Duke, Goodale, Clark, and Seifert.

STUDIO SPOTLIGHT: SE Gil Markle thumping his chest and uttering Tarzanesque cries as he announces the birth of his second son on May 19. Amazement on the part of all. Not at the Blessed Event, but because Gil managed to keep its anticipation a secret . . . Bob Johnston, recently transferred from the Blue to NBC, offers to serve as stand-in for Westover on the famous Markle-Westover wager should Westy decide to accept proffered Navy Commission . . . Lounge Quiz-What's wrong with that picture on the cover of the May "NBC Transmitter". Vacation returnees wishing it had been longer. Bert O'Leary and Ray Jean-Claude promoted to 1-A by their Draft Boards, thereby raising potential inductees in Studio Section to six . . . New Names on the SE Schedules, Schroeder and Kenney.

PASSED BY THE CENSOR: Here are some high spots from a letter Technical Sergeant "Jack" Arber (Ex-ME)



Arab and Arber in Africa

sent to SE Harry Grelk and the Gang . . . "We have had wonderful spring weather . . . and are operating a Broadcast Station which provides entertainment for the Armed Forces over here . . . Powerful transmitter and modern studio equipment with a glass partition between Studio and Control Room we often do field jobs . . . have a large selection of records and an NBC Thesaurus Library plus transcriptions of all the popular shows . . . live talent such as quartets, newscasters, sportscasters. Chaplains and any visiting Artists who happen to be

... The only thing we miss are legitimate in the vicinity Commercials which to us seem to be a part of broadcasting, so—to fill this void we make up our own phony commercials which we put in about once a week. For instance "Joe Quartermasters Bargain Basement" or "Special Rates on Loans From the Finance Department." You would be surprised at the terrific response we get in letters from our listeners, the Boys in the Service . . . This whole organization is under the direct supervision of Captain Andre Baruch, who is really making a swell job of it . . . Living conditions over here OK . . . everything is tops.'

Believe it or not the above was datelined Someplace in

From First Lieutenant Jack Stoody, (Ex-Bluese), Signal Corps, at Asbury Park, N. J., the following: "You'll like the Army better than any job you've ever had."

From Captain Charlie Dickson (Ex-SE), 1st Motion Picture Unit, USAAF, Culver City, California: "Bill Spargrove just blew in, is a First Lieutenant. . . I have a diploma and blisters to prove I graduated from Officers Training School . . . I miss the boys in 589, Harry Hiller and the fishing.

Warrant Officer Herb Florance, (Ex-SE), USNR, now at Washington, D. C., writes: "Hello, you lucky guys-and I do mean lucky.'

Frank Connolly, (Ex-ME), now Second Lieutenant, Signal Corps, says: "One thing about Basic Training—you will wear your bars feeling you earned them.'

Captain Walter Brown (Ex-Se), Somewhere in Africa, in letter to Mrs. Brown: "Thank all the fellows for the fine letters they have sent, and especially "Tony" Hutson for his long account of what has become of the others who entered the Services. I will try to reply to all those who wrote me as the time allows."

BETWEEN SWITCHES: MC Supervisor Ted Hahn recalling nostalgic memories of the good old IWT days when Radio was Wireless . . . The Maintenance Department's concern over the SOS Loudspeaker in the Lounge which apparently cannot survive the stentorian tones of MC Supervisor Herrold . . . NBC Vice-President O. B. Hanson's pride at hearing that his contribution of Engineering Personnel are a joy to the Navy and they want more like them . Charley Bennis going dotty as he spells out SCHNEPPER on the Morse Line . . . Transmission's Hank Kenny recounting his recent affliction with measles. Confined to a darkened room he could pass the time only by listening to the Radio . . . ME Andy Waddell and SE Johnny Pawlek receiving instruction on Switchbanks . . . The gleam in Ogden Bowman's eye when the Buckeye whistle screams on a passing fire engine . . . Fritz Rojas planning a vacation without gasoline propelled transportation . . . Andy Thompson's Victory Garden—a victory for those big Long Island rabbits Operation Supervisor Paul Gallant back at his post but still showing evidence of a long and tough struggle with the Strep bacillus.

On Thursday, May 26, Emil Dell' Era, Maintenance Engineer, died after several months illness. "Dell," as he was fondly known, joined NBC in October, 1931, as a member of the Construction Department, later being transferred to Maintenance.

Born in New York City in 1902 Dell' Era was taken to Switzerland at the age of fourteen months and remained there until he was 8 years old, when he was returned to the United States for the continuance of his education. An interest in Radio acquired in 1916 was climaxed by his association with NBC. Technical schooling included NYU, CREI and the RCA Institute. He was a member of the Masonic Order and is survived by a wife and one child.

We WIND UP our brief but immensely enjoyable career as your New York Correspondent with this issue. The Commission for which we applied finally came through and on June 12 shall have reported to the Signal Corps, AUS, as First Lieutenant. Banging out this column has been fun and your response to it more than a reward for the effort. So-for now, CUL 73.

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Broadcast Engineers' 11 Journal for June, 1943



From this world headquarters for radioelectronic research flow new weapons, new discoveries and inventions vital to the winning of an Allied victory!

TODAY, over RCA Laboratories, flies a new distinguished battleflag—the coveted Army-Navy "E" Award.

One of the few laboratories in America to receive this award, RCA is at once proud of this distinction, and humbly aware of the responsibilities that it imposes. For much of the progress of the entire radio-electronic industry stems from the work done in these laboratories.

It was perhaps with this thought in mind that —at the dedication of the RCA Laboratories in Princeton—the Chief Signal Officer of the Army called them "The Hidden Battlefront of Research."

HIDDEN—because, for the duration of the war, this magnificent building of 150 separate laboratories must be closed to all but the scientists and research technicians who are working on radio-electronic instruments important to our military effort.

warfare, radio-electronics is of first importance. It follows the flag and the fleet—locates the enemy—flashes urgent orders—safeguards the convoy—guides the bombers—directs the artillery—maneuvers the tank. This science fights on every front.

And when that certain day of Victory comes, RCA Laboratories will be devoted to the happier task of making our peacetime world richer, safer, more enjoyable and more productive—through new and finer products of radio, television and electronic research.

OTHER SERVICES OF RCA WHICH HAVE EARNED OUR COUNTRY'S HIGHEST WARTIME AWARDS



The Army-Navy "E" flag, with two stars, flies over the RCA Victor Division plant at Camden, New Jersey.



The Army-Navy "E" flag, with one star, has been presented to the RCA Victor Division at Harrison, New Jersey.

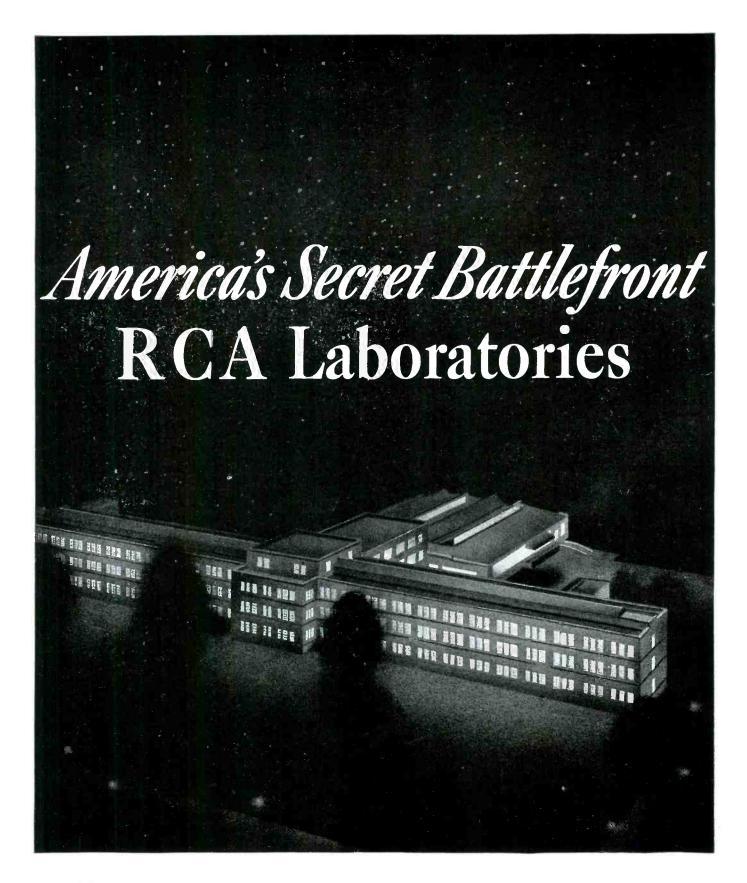


The Army-Navy "E" flag, with one star; also the U.S. Maritime Commission "M" Pennant and Victory Fleet Flag have been awarded to the Radiomarine Corporation of America in New York City.

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WORLD HEADQUARTERS



Laboratories

FOR RADIO-ELECTRONIC RESEARCH

TECHNICAL PRESS REVIEW



A digest of leading technical articles in the current contemporary press.

[In these busy times few engineers can spare the time required to read all the current technical literature. It will be the purpose of this regular feature to provide an index of current technical articles on radio broadcasting and related subjects.—Ed.]

Proceedings of the IRE - - (May, 1943)

Cathode-Ray Control of Television Light Values

By I. S. Donal, Ir.

When a light valve is employed for the reproduction of television pictures, it is desirable to make use of a cathoderay beam to control the light valve in order to preserve the all-electronic character of the television system. A number of procedures of cathode-ray control are described, the majority of which are applicable particularly to the control of the suspension light valve. The general method employed is shown to be the production of an electric field through the light valve by bombarding one side of the valve with electrons of very high velocity, causing the valve areas to be charged in a negative direction toward the limiting potential toward the bombarded surface. Removal of the electric field is then accomplished by charging these areas back toward their original potential by the use of electrons of substantially reduced velocity. A photograph is shown of a picture reproduced by the light valve when controlled by this method.

A Type of Light Valve for Television Reproduction

By J. S. Donal, Jr., and D. B. Langmuir

The desirability of a light valve for the reproduction of television pictures is discussed, and the use of a suspension of opaque plate-like particles for this purpose is shown to offer the particular advantages that the electron beam would be only a control mechanism and the picture brightness would be limited only by the light source and the lens system. The contrast ratio obtained may be made very high, although the optical efficiency will decline as the contrast ratio rises. It is found that suspension resistivity must be considered in practical application of the light valve, for if the field is applied through an insulating wall the valve will respond only to changes in potential of the outside of this wall, since leakage will prevent a constant wall potential from maintaining a field across the suspension. From the results of tests, the conclusions are drawn that the fundamental optical behavior of the suspensions considered is in accordance with the predictions of a theory based on simple assumptions, and that the suspensions fulfill the basic requirements of a television light valve.

Optimum Current Distributions on Vertical Antennas By L. La Paz and G. A. Miller

The theoretical optimum current distribution on a vertical antenna of given length is defined as that current distribution giving the maximum possible field strength on the horizon for a given power output. The problem of determining such distributions is set up as a problem in the calculus of variations, and solution functions are derived for antennas varying in length from one-eighth of a wavelength up to a full wavelength. It is shown that the apparent antenna performance obtained with the theoretical optimum distribution is as good as, or better than that obtained with any practical distribution, and thus serves to bound the improvement in antenna performance which may be expected as a result of changes in current distribution. A curve of possible field strength on the horizon for fixed power output versus antenna height is given. Finally, these theoretical optimum current distributions are used to indicate the general class of distributions most likely to yield worth-while results in a search for practical optimum distributions. Several such practical distributions are considered in detail.

Network Theory, Filters, and Equalizers (Part II) By F. E. Terman

Resistance attenuators of the T, L, ladder, and bridged-T types are considered, and design formulas are given. Decimal attenuators are described. The relation existing between attenuation and phase shift in a four-terminal network is stated in several forms. The application of these principles to the design of practical feedback amplifier circuits is considered in detail. It is shown that non-oscillating feedback amplifiers can be designed by considering only the transmission characteristics of the feedback loop, since the transmission characteristics control the phase shift. Feedback amplifier circuits which give trouble from oscillation do so because there is some frequency, usually far outside of the useful range of frequencies, at which the transmission around the feedback loop falls off with excessive rapidity, corresponding to excessive phase shift. Methods for determining the optimum transmission characteristic of the feedback loop are given which enable any desired amount of feedback to be obtained with any number of amplifier stages, without any trouble from oscillations. The principles involved in such design are illustrated by two examples: one, a three-stage audio-frequency amplifier, the other, a broadcast transmitter having a measured frequency characteristic to which it is desired to add feedback.

(May, 1943) Communications

A Limiting Amplifier J. K. Hilliard

The author agrees that his is not an amplifier to end amplifiers. However, the treatment of the subject is fairly complete including oscillograms of the attack and recovery rates of the amplifier described.

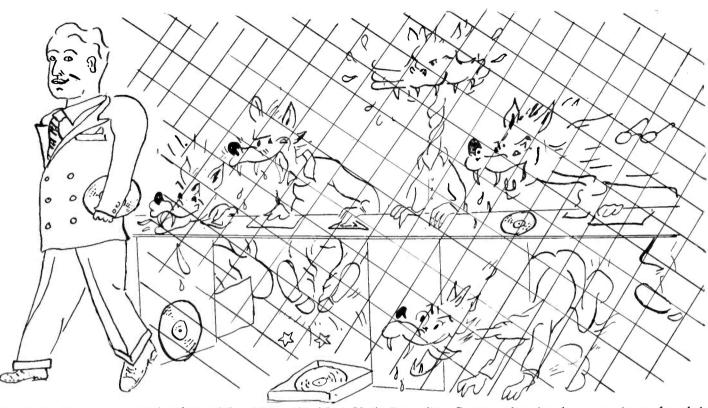
A Report on the NAB War Conference By L. Winner

A resume of what went on at the conference, with emphasis on the materiel and manpower shortages.

(Continued on Page Fifteen)

Broadcast Engineers' 14 Journal for June, 1943

Stewart's Harem, or Life in N.Y. Recording Room The Defense Testifies!



To insure his own personal safety while visiting the New York Recording Room, what handsome engineer found it necessary to errect a cage around the glamorous lady-wolves of George Stewart's department? Because some of Stewart's fair assistants were vacationing or at luncheon when the artist made this sketch, only five are depicted.

Technical Press Review

(Continued from Page Fourteen)

High Fidelity Systems (Part II)

By A. I. Ebel

The acoustics of the Living Room, and placement of the loud speaker, are considered in this part of the paper.

Electronic Industries - - (May, 1943)

Eighteen Months' Experience With WABC's Island Transmitter

By O. W. Read and D. D. Jones

The discussion centers around the radiating system, and that the field strength is all that was hoped for; adjustment of the openwire line is also discussed.

Materials and Construction of Speech Broadcast Studios By L. Green, Jr.

A discussion of the acoustic specifications of WOR'S new studios, and the acoustic treatment given them to achieve the desired result.

Relay Links in Broadcasting

By W. L. Widlar

The author tells of WGAR's experiences with 30 mc and 157.5 mc AM, and 161.1 mc FM, as pickup carriers. Included are circuit diagrmas of the 161.1 mc FM transmitter and receiver.

(May, 1943) Electronics

(We regret that the May issue of Electronics did not arrive in time to be included in this month's review.—Ed.)

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

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Broadcast Engineers' 15 Journal for June, 1943

WOR

By Herman G. Berger

N FRIDAY, May 28, there was an open meeting of the ATE held at the Hotel Piccadilly, New York City. The negotiations, discussed between James Brown, President of NABET; Harry Hiller, Chairman of NBC

NABET!

BNC Chapter, New York City, and WOR Goes Gifford Campbell, President of ATE, and the Executive Committee, were presented to the membership at this

general meeting. The final outcome to date: Fifty-one voted for joining NABET, two against joining NABET. Watch for next month's issue for complete details.

In-as-much as your new editor thought he had at least two weeks before this column went to press, he thought he would have enough of the goings on from WOR for this issue, but after getting in touch with the editor-in-chief he found that he had only three days before press time. This is the main reason why the column for this month's issue is

Now that vacation has started, a number of our boys have had their three weeks of sunshine and are back to the good old studios. By the way, Bill (electrical transcribed) Taylor, our all-night hawk, has just ended a swell vacation, we hope; and is now back to work with his nose to the grindstone.

Jim (Red Cross, and Air Raid Warden) Carter, has had one week of his sunshine and will take two weeks later on. We hear tell that Carter is all bawled up now that he is on the night shift. When he gets home he doesn't know whether it is breakfast, dinner, or supper that he is supposed to eat. You see Jim has been on the day shift for a number of years and now he is beginning to learn how the other half lives.

Jim O'Connor, our capable engineer, and former secretary of ATE of WOR, will try his hand at the all night watch in place of Learned who will be off for a little sunshine on that three weeks' vacation that he has been looking for all year. We hope that you have a swell time, Les old boy.

Speaking of vacation and sunshine, all is not so rosey for Bill Ulrick who is spending his time off at hard labor painting his house.

Our good friend J. R. Poppele, our chief engineer, is spending his vacation, believe it or not, at home. He is resting and enjoying the good old ultria violet rays of the sun. You see, in as much as J. R. P. lives on the wooded mountainside with large beautiful trees shading his entire property, there is of course no victory garden other than a few radishes peeking out between the flowers on one side of the front lawn. And speaking of lawns, if the WOR property owners would like to have a few lessons on how to grow grass for that good old lawn mower they should take a few lessons from J. R. P. as he has without a doubt the finest lawn we have ever seen.

In so far as Kasna of the maintenance department is concerned, we don't think he needs a vacation as it has been said that for a long time he has been missing on the job only

to be found on the roof of the new Guild Theater getting

Now that the hot days are here, poor old Shirley Davis has got his troubles trying to find the bug, not in the rug, but in the air conditioning system. Studio 7 at 82 degrees and Studio 4 at 68 degrees, in other words you either roast or freeze to death. Please, Shirley, tell us why? Oh, why!!!

Gene Clark thought he would spend the summer with Uncle Sam. Well Gene does not have to worry about putting his clothes in moth balls for the duration, as Uncle Sam put him in 4F.

Mack Benoit, our S. E., may be a little man but he has big ideas. He is the chief cook and bottle washer of the two big Superman shows and in the slang, "brother that ain't hay." It takes a good man to do that job and Mack is the boy that can do it.

Messrs. Harold Hadden, M.C., and Erick Herud, S.E., are both assistant scout masters in charge of Troop 8 of Orange, New Jersey. Haxs is in charge of radio training of the troop and we understand the boys are buying war bonds so as to have enough money after the war to purchase transmitting equipment for further radio training. Eric is the victory garden councilor of the troop with about onequarter of an acre of land with vegetables such as was good for Popeye the Sailor (some spinach, eh what!). So you see between master control for Haxs and studio work for Eric and their outside activities, they sure are kept busy.

Here's a little dope about our big PA man, Jerry Barton, who is now somewhat of a specialist in the art of Army and Navy "E" Awards. Here are just a few of the many spots he has covered: Western Electric Company with ten points of pick-up, Western Electric Memorial Day broadcast with eight points of pick-up, Worthington Pump Works, Harrison, New Jersey; Wellisville Works this side of Buffalo, New York; Weston Electric and Instrument Company, Newark, New Jersey; Link Company, Wright Aeronatical Corporation, Lodi, New Jersey; also Jerry has had the honor of putting on the largest air circus, at Newark Airport, in the history of the U. S. This was before we entered the war and it was said that over five hundred thousand people attended this occasion. Jerry, old boy, you sure do get around. Keep up the good work!

In the line of new comers added to our sound department we have George Cooney, who decided to take a hand at sound effects and believe me when he puts on sound for Murder Clinic he sure needs a few hands besides his own; James Chapman and Ed. Leach are new-comers and so far we have no dope about their past. Edwin Boquist, one of our newcomers, made the strange shift of occupations by leaving his former position as dental technician for one as an Engineer at WOR. However, it fulfills an old ambition as he has been interested in radio since 1923. At that time he was with the New York Telephone Company. Later with Long Island Lighting Company. Serviced and repaired radio receiving sets as a hobby. Glad to be on the broadcasting end of it now. He is married and has two daughters. Lives at Wantagh, Long Island.

Notes From the Nation's Station WLW -- WSAI -- WLWO

By Bob Brockway

MALL MIND AT WORK. M'gosh, almost missed a deadline this time . . . how those days do pile up . here I am chained to a mill on a beautiful day like . . . all Spring days are beautiful in Cincinnati . wonder if the Chamber of Commerce will sue me for that last statement . . . I ought to be out on the golf course with Bill Codding right now . . . where do you reckon Bill gets that awful slice . . . wonder where I get that awful hook . . . wish that kid next door would quit yelling . . . hope my wife don't catch me writing today . . . promised her I'd oil that DEE-AY-EM fan in the attic . . . want to work in something nice about Jo Heiser this month . . . after all Jo makes out the schedules . . . maybe it'd make him so happy he'll give me some more day shift . . . I'm getting owl-eyed working at night so much . . . might say something about Jo's sterling character and charming personality . . . nice fellow, Jo . . . I must remember to take him a couple of cigars soon . . . maybe I'd better wait until his potatoes are ripe . . . wonder what I could say about Supervisor Charley Butler . . . might say something about Charley's sterling character and charming personality . . . I must get in touch with the transmitters and write about those boys . . . I've been neglecting them . . . next month will be transmitter month . . . well, better get an idea and get started on the column . . . how do they expect a man to work on a nice day like this . . . well, here goes . . .

This month, we introduce two new members of the Crosley Square staff, Ed Conture and Bill Mahoney. Conture, who hails from Springfield, Mass., comes to our hallowed walls by way of WDLP, Panama City, Fla., and WHYN, Holyoke, Mass. From the opposite direction comes Mahoney who is a Hoosier lad (ye Gods, another one!) and most recently was at WIBC, Indianapolis. Bill told ye scribe that there are no soapoprys on WIBC . . . men, there must be Heaven.

Speaking of new-arivals, it is with great pleasure that we announce that our esteemed cohort and fellow railroader, William K. Aughenbaugh, is the proud pappy of a brand new daughter, Miss Rose Anne Aughenbaugh, who arrved the same day as the gas and electric bill. In true railroad fashion, the white pieces of cloth fluttering on a certain Amity Village clothesline indicate that an "extra section" has arrived. We want to warn Bill not to stick the little gal in the running gear when he's changing flue-

In our last column we talked about some of our hobbies here at the Nation's Station, with all good intentions of making it clean up the hobby situation once and for all, but since last writing - up pops the proverbial devil in the shape of such an unusual hobby, that we just can't give it the brush off - Dave Elman, please note. It all begins (Continued on Page Eighteen)

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Broadcast Engineers' 17 Journal for June, 1943

WLW (Continued from Page Seventeen)

down in Richmond, Virginia, where our hobbiest, Gil Earp, lived at the time. Constant readers of these words know that Gil now works with us. One day, Gilbert brought home an orchid plant and proceeded to raise it in the Earp's living room. So successful was this venture in botany, that he decided to go into it "whole hog," so Gil purchased the makin's (this was before priorities) and built himself a greenhouse. We might entitle this little piece "From Doghouse to Greenhouse" because we imagine that Earp's good wife wasn't too pleased to have the family parlor converted into a conservatory. Gil stocked his new greenhouse with a whole crate of orchid plants from a dealer in South America and then began the rather prolonged agony of raising them from pups. In due time, he had his greenhouse full of the blooming (no pun intended) things. To use the terminology of economics, there was a supply but no demand, because with the market price of orchids at five bucks a toss, you're practically limited to the carriage trade. Gil's daughter asked her daddy if she could wear one to high school; Gil said, "Sure, help yourself," as if they were so many dandelions. So, about every day, young Miss Earp went to her classes sporting an orchid corsage. Her friends inquired about the posies and then there was a veritable stream of people, nay - customers, coming to the source of the blooms. Gilbert had a principle of retailing that I wish more stores would adopt; he charged what he figured the customer could afford: two-bits here, five bucks there. In the meantime the green-house and plants were paid off and the "orchid-fund" was swelling. When Gil left Richmond to come to Cincinnati, he sold

out his enterprise, lock, stock, and barrel to a local florist and we might add, at a handsome profit. Gil brought to our town a few of his choicest specimens which will be the nucleus of another venture in orchid-raising. While discussing the hobbies of the Earp family, we might mention that Miss Earp, too, has a worthy hobby. She strikes off a few bars of "Marching Through Georgia" on the piano, just to hear the old boy howl! Ye scribe lives a half-mile from Earp's but when the wind's in the right direction, you can hear him cuss clear over here.

Handling the remote at Crosley Field ball-park is really a pleasure this year. Of course, there are many disciples of the horsehide who contend that handling a ball game is a pleasure anytime; but we had reference to the comfort and convenience of our layout. It is due to the combined efforts of Dave Conlon, Walt Rogers, and Bill Symons. We have three booths in the press-box, the two outside ones for the announcers and the middle one for the engineer. Heretofore we were all cooped up in one booth, but now that the engineer has his own booth, he can insure his enjoyment to the fullest by being able to hurl invectives at the umpires without the danger of the listening audience becoming offended. Flanking the door behind the engineer are two cabinets, one containing the amplifiers and storage space for mikes, headphone, etc.; the other housing the WLWA transmitter which we use for cueing the pack transmitters for the "Fans in the Stands" show. The man on duty can regulate his own air conditioning by opening or closing the door. What with the free lunch counter in the press coop, there's little more we can ask for - unless it would be a mint-julep fountain installed in our control booth!

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



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Cleveland News By Bert Pruitt

"Take It Away, Manning!"

The recent strike of coal miners brought mining to the international limelight. Axis propaganda stooges had a field day telling the world we were on the verge of revolt. We know absolutely nothing about mining, anthracite or



Tom Manning

bituminous. We do, however, have a picture taken in a coal mine during a broadcast from Straightsville, Ohio. Tom Manning, WTAM's dean announcer, is doing the verbal part of the broadcast. Two coal miners, to Manning's left, provide the proper sound effects

Headlines of the Past

Twenty-four years ago, 1919, the Radio Corporation of America was organized to take over Marconi facilities in the United States. 1926 . . . The National Broadcasting Company, first of the networks, was organized. The Columbia Broadcasting System followed one year later. United States Radio Commission came into being. This commission was created and given the authority to grant station licenses, assign wave lengths and determine hours of operation. 1929 . . . A radio communication from Richard E. Byrd announced that he had flown over the South Pole. 1931 . . . "Hansel and Gretel" was the first complete opera to be broadcast from the stage of the Metropolitan Opera House. 1936 ... Former King Edward VIII, following his abdication, addressed a farewell to a world-wide audience believed to be the largest ever to listen to a single broadcast. 1937 . . . The National Broadcasting Company became the first network to organize and maintain a symphony orchestra expressly for radio service. 1938 . . . Television sidewalk interviews were conducted on the streets of New York.

Muskmelon Carts

Fred Everett (TE) tells this one . . . The boys at the WTAM Transmitter hired a farmer to plow some ground for a WTAM Victory Garden. Everything progressed as victory gardening should. Clods disappeared and choice seed went into the finely worked ground. The WTAM clod-hoppers congratulate each other and anxiously awaited the day when their labors would show results in their weekly budgets. Earl Hall (TE) dashed into the station

the other day and excitedly told the gardeners: "There's a muskmelon cart for sale two miles east of Brecksville . . dirt cheap . . . only \$25.00!"

"What's a muskmelon cart?" questioned the gardeners. "Well," said Earl, "the ground near our transmitter is so rich the vines grow so fast they drag the melons across the ground and wear them out if you don't use a melon

That tops, or at least equals, the one that came from out there last month. This one goes something like this: You need a bicycle to be a WTAM Victory Gardener. You hop aboard the bike after you plant the seed. It seems the seed sprouts so fast the gardener becomes hopelessly lost in the foliage unless he has a bike to wheel him to safety after he socks the seed into the ground . . . These yarns should qualify someone to a life's membership in the famous "Liar's Club of Wisconsin." Or does some other state lay claim to this dubious honor?

Quoting Norman Siegel of the Cleveland Press:

Over 25 per cent of the men employed in the nation's radio stations have entered the service since Pearl Harbor. Many have been replaced by women . . . 12 per cent more women are employed in radio than before the war. Nineteen per cent, or 4 out of 21 employees, have been classified as essential by the radio industry. One of the biggest problems in radio manpower is the migration from station to station. Seventy-five per cent of radio's employees have changed jobs during the past two years. And ... There is an acute shortage of radio tubes for replacement in Cleveland. Radio servicemen have 2,000 sets on the shelves awaiting repairs, which may not be made due to the tube shortage and lack of material.

Tip to Farmers

You may be inclined to order your daughters to stay



and here's the plug.

indoors when you see this picture. Your fears are groundless. Rance Valentine, WTAM announcer, is married and is a home loving man. And says Rance, "They have nothing to fear . . . I have an 'A' card and that wouldn't take me to the city limits and back!" Seriously speaking, I told Rance I'd give him a plug in the Journal if he'd dig up a picture a bit unusual. He dug

(Continued on Page Twenty-one)

Behind the Mike

By Con Conrad

VILBUR BLAIR, formerly of Harrisburg, Penna., has just joined the staff of the Engineering Department of NBC in Chicago as an apprentice.

L. N. Balsley, formerly of WJJD, Chicago, has joined the NBC Engineering Department as an apprentice.

George Maher, NBC Engineering Staff of Chicago, has been elected chairman of the Chicago Chapter of NABET.

Major P. H. Clark, now located in the South Pacific area and formerly of the NBC Engineering Staff, Chicago, through reliable reports we hear is about to be upped to a lieutenant colonel.

Captain L. L. Washburn, formerly of the NBC Engineering Department in Chicago, has just transferred his activities to the West Coast, and likewise reliable reports have it that he will soon be a major.

Frank Schnepper of the Blue Network, in Chicago, has just returned from New York after conducting some NABET business for the Chicago Chapter.

Betty Royer, formerly of WCCO, Minneapolis, has joined the staff of KXRO, Aberdeen, Washington, as a

newscaster and technician.

Gordon Bishop of WSGN has been appointed chief engineer, succeeding Paul Crane, who has taken leave to do important work for the government.

Carl Cabasin of the NBC Engineering Staff in Chicago has been transferred from the Recording Department to

the Field Engineering Group.

Tom Pickering of the Transmitter Staff of WHIO,

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Dayton, Ohio, has taken military leave and has joined the

Jack Suggs, formerly of KRFU, Columbia, Mo., has joined the Engineering Staff of KXOK in St. Louis.

Karl Haberman, former chief engineer of WHDL, Olean, N. Y., has resigned and is now supervisor of WGRC, Louisville, Ky.

C. M. Butler of the NBC Engineering Department has been ill for several weeks. The following was received from his wife recently. We believe it should close off our column this week as a tribute to the wives.

ABOUT CHARLIE

Oh Road of Life, Oh Guiding Light, He's just received the card you sent; Directors, engineers, announcers, Come listen to a wife's lament.

A glass of milk—twelve times a day, "Adjust the curtain, will you dear? Isn't it time for my medicine?" What wouldn't I give for a glass of beer!

Prepare some custard, cook some cereal, Fix the jello and soft boiled eggs; The dog barks too much—the telephone is ringing, Answer the door: (Ye Gods! My Legs!)

Hand him a book, a magazine, newspapers, Punch up the pillows, and smooth out the sheets. "Ask the doctor when I can smoke, It's cold up here—please turn on the heat."

"Make the kids turn down that radio, It's on so loud that I can't sleep. "You better call Schreyer-did the postman come?" I smile and work and do not peep.

Keep a schedule—phone the doctor, Take his temperature—never miss; A gal must love a man a lot, To carry him thru a time like this.

He's awfully pleased to receive your greetings! "I say why don't you mention me too. If I don't go nuts before this is over, With my best regards, I'll return him to you.

-The Wife.

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EYE EXAMINATIONS

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Who's Who at WPTF—Raleigh I. Willard Dean

WILLARD DEAN was born April 2, 1915, in Raleigh, N. C. Rather uneventful childhood life, but after moving into the broadcast field I must say, it has been a most eventful one. I have been associated with WPTF for the past twelve years, having joined the staff in March, 1931. Since my tenure of service with the engineering department, alternating between studio and field operations, I have traveled some one hundred thousand miles and without exaggeration, I think that I can safely say, I have handled just about every feasible type broadcast, frankly

J. Willard Dean

admitting that the most interesting part of my radio career was experienced while covering the Carolina Army Maneuvers in the fall of '41. During this time I handled a total of seventy eight program originations, ranging from dug-out interviews to recording an actual bombing mission from the air . . . Then, tco, a guy always enjoys a certain amount of satisfaction in covering jobs like the Transplanted Rose - Bowl proceedings, especially when COM-

MENTS read . . . ALL OK — Hamil.

Being quite reckless with my nickels, I thought perhaps a little professional advice might prove a definite asset, so I says, Will you? She says, Yes, and on July 18, 1939, WPTF was minus the cutest little brunette bookkeeper . . nee Mary Ellen Lawrence. Results - Old Jess broker than ever, but definitely happier. Son Willard Lawrence born March 28, 1942.

Aside from radio, I can always enjoy a little "Scat" game, particularly when the ole two iron is clicking. As for the woods, you can give them back to the Indians. When the weather doesn't permit the swinging of the blades, it's easy to utilize my time with a game of cards, pool, shooting pictures of the youngster, or trying to get off a little GOS-SIP about the WPTF Section.

Among other things, eating is a great favorite of mine, preferably that of a good big juicy steak, with all the trimmings. However, it look as though my steak-eating days are over for the duration . . . But I ain't BEEFING!

Cleveland

(Continued from Page Nineteen)

Speaking of Ideal Weather ONOLULU, on the island of Oahu, doesn't need a high-pressure Chamber of Commerce to advertise its weather. The weather out there advertises itself. It has never been hotter than 86, nor colder than 56 de-

grees on the island of Oahu! Records of the United States Weather Bureau are proof of Oahu's ideal weather. Speaking

We had a twelve-inch snow during the latter part of April of this year. Cleveland is somewhat like Oahu in one respect . . . The weather here advertises itself!

ALTON PARKER TRIPP was born at Blount's Creek, North Carolina, on the banks overlooking the banks tiful Pamlico River, September 18, 1907. Historic surroundings these be, for Bluebeard, when he was at the peak of his career, used to frequent that neighborhood. After private tutorship for five years, he attended the Beaufort County Public Schools, preparatory to entering the Collegiate Institute at Washington, N. C., for one year, moving then to Aurora, N. C., for completion of his high school curriculum.

Moving to Raleigh in 1928, Alton entered the Communications Field, accepting a position with the Southern Bell Telephone & Telegraph Company. Two years later he became associated with the Western Electric Company and continued in their employ until April of '31, when he first joined the WPTF engineering staff as transcription operator, but soon took up the duties of a control operator. Leaving WPTF in 1932, he joined the Aerovox Wireless Corp.



Alton Tripp

NY, returning to the WPTF control room in the fall of '33. During 1936, Ole' Tripp went the way of all good men when a little girl known as WPTF's Musical Director, namely, Louise Correll, caught his eye . . . Yep, that's what happened! ... November 14th, the engineering department had taken its TOLL again . . . WPTF was once more in search of new talent. Alton is now the father of two children, Joan Louise having arrived December 10, 1937, and on the 31st of August, 1940, we found him dishing out the "seegars" and BOASTING . . . "Junior is here."

When not engaged in the supervision of studio operations and the handling of nemo's, Alton says hunting, fishing, baseball and golf hold a fascination... Tripp maintains that above all his "prime ambition" is to return to the rich lowlands of the Pamlico and be a "gentleman farmer."

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Radio and Electronic Equipment

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From San Francisco...

By Bob Shover

ORT BREWER (T.E.) out early in the morning on opening day of trout season and back with the limit.

Ed Callahan now a Lt. Commander, U. S. Navy.

Guy Cassidy (S.E.) still busy chasing gophers on his ranch home.

Hal Ashby (S.E.) back from vacation up Seattle way.

Carl Schaknecht (S.E.) left for vacation the first part of May to go back to Denver to get his family and has not come back as yet. We hear that he is quite ill; come on Carl, let's hear from

Alan O'Neil (Rec. Supr.) now new N.A.B.E.T. chairman for S. F. and Clif Rothery (S.E.) new Sect. Tres. Congratulations, fellows, and keep that old ball rolling.

FLASH! Jim (Pappy) Summers is

now the proud father of a 7-pound, 10 oz. baby girl named Barbara Jane, and Jim seems to be in very good humor these days, however we will wait till he gets up on those early morning bottle warming days in the not far distant future.

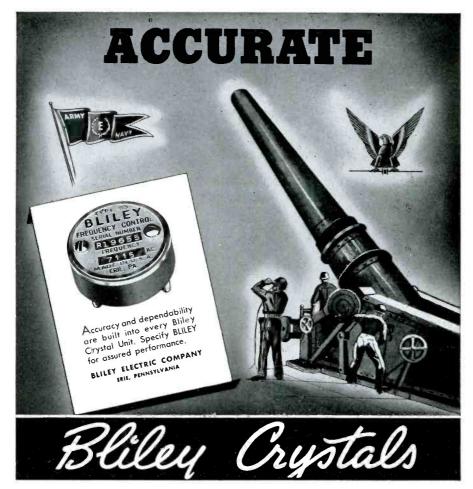
Sid Blank (S.E.) back from a well earned vacation in the Santa Cruz

Geo. McElwain (Field Supr.) back from a three weeks trip in the Northwest on the "Dr. I. Q. Show."

Mark Dunnigan (S.E.) is very busy raising his victory garden, in fact his yard was not big enough so he bought a lot next door. If we get hungry we know where to look.

Clark Sanders (S.E.) off to a pick up in Wyoming for the Blue.

Dan Williams reports he is still expanding his shop in San Jose and that business is excellent.



San Francisco Leads the Way for Expeditious Handling of Broadcast 'Work Clearance' Cases

ITH the approval of the San Francisco office of the War Manpower Commission and with one of its members in attendance in an advisory capacity, a luncheon and meeting was held at the Palace Hotel, San Francisco, May 10, 1943. Its purpose was to establish a workable plan for expeditious handling of "work clearance" cases in the San Francisco Bay Area radio stations, since they are part of an essential industry, with the employees "frozen" in their positions. The management of each of the twelve stations was represented, as were the organized employees through A.F.M., A.F.R.A., I.B.E.W., N.A.B.E.T. As in all such cases, it was desired to set up a "Local War Manpower Commission Board" with equal representation and voting power for management and labor and with authority to pass on employees' applications for release, transfer, etc.

Ordinarily the board is made up of an equal number from employees and employers, but due to the number of employee organizations (plus members to represent the unorganized employees) it was decided to have labor considered on the "craft" basis. All management will be represented by two members, who will sit on all cases, but the two members from each "craft" will act only when its members are concerned. Each member has an alternate, who may assume the duties in his absence. The engineers of the twelve stations will be represented jointly by Mr. Larson, business agent of I.B.E.W., and Mr. O'Neil, N.B.C., N.A.B.E.T. Their alternates are Mr. Lewis, KYA, and Mr. Rothery, Blue, N.A.B.E.T. The management members are Mr. Elwood, N.B.C., and Mr. Fedderson, KYA, with alternates Mr. Mc-Carthy, KQW, and Mr. Bamford,

The aforementioned procedure need not be used if the employer is willing that the employee leave. The board merely signs a clearance form without a hearing. Should a formal board vote result in a rejection or a tie, the employee has the right to appeal. The appeal will be forwarded to the proper War Manpower Commission agency for consideration.

Washington News WRC—WMAL

By R. E. Shenton

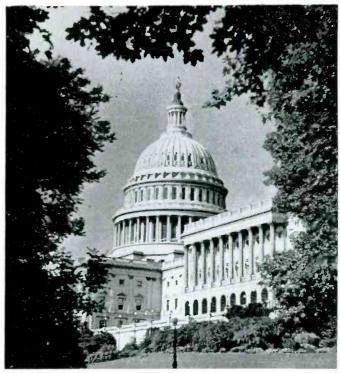
PRING, which in Washington is a three-day pause between winter and summer, came as a harbinger of great rejoicing to the ranks of NBC-Washington engineers. Although a sizeable share of this rejoicing was of a personal nature, no little amount brought good spirits to the group as a whole. Perhaps the most welcome of these general blessings was the formal adoption of a 48-hour week, made doubly delightful because of its proximity to the blackest of all days of the year, March 15. Each Washington engineer, on his sixth day of weekly duty, shades his portion of the Daily Work Sheet a delicate red. This indicates to the supervisor, when he makes out his reports at the end of the day, that that fortunate fellow is to receive time-and-a-half for his day's work. All of which, we believe, makes our business one of the few in which being "in the red" is a symbol of abnormal prosperity rather than impending financial collapse.

FLASH!

Just under the deadline, we learned that SE Sam Newman leaves to become a first lieutenant in the U. S. Army Signal Corps on June 12. His first stop will be Fort Monmouth, New Jersey. Sam, a ten-year man, is the retiring chairman of the Washington chapter of NABET.

Washington's swank new Statler Hotel was the scene of the annual NBC dinner, held on Thursday evening, May 27, at which special recognition was given to those employees who had been numbered among the ranks of the NBC-Washington family for ten years or more. We are proud to report that a large percentage of the total engineering force here fell into that category. Herewith is presented a list of the honored gentlemen: D. H. Cooper, whose title was recently changed from Engineer in Charge to Chief Engineer; R. L. Terrell, former Senior Control Supervisor, now Operations Supervisor; K. B. Williams, erstwhile Operations Supervisor, now Field Supervisor; D. A. Ullman, Senior Control Supervisor, formerly Field Supervisor, W. H. Chew, Junior Control Supervisor, and F. J. Fugazzi, Relief Control Supervisor. Studio Engineer S. E. Newman and Transmitter Engineers B. E. Stahl and H. W. Yates were also in the ten year group. Three NBC men, now in the armed forces, were also similarly recognized. They are: A. E. Johnson, Lt., U.S.N.R., former Engineer-in-Charge, as well as C. M. Cark, Chief Radioman, U.S.N., and W. L. Simons, Lt., U.S.N.R. Other Washington men now in the service who were present are: W. L. Godwin, Lt., U.S.N.R.; J. H. Hogan, Lt., U.S.N.R.; and L. McClelland, Capt., U.S.A.A.F.

In addition to speeches by Carleton Smith, WRC General Manager, Frank Russell, Vice-President in charge of Washington Offices, and Frank Mullen, NBC Vice-President, entertainment was furnished by the NBC String Ensemble, under the direction of Fred Baldwin, NBC Musi-



tor. We are sorry to report that many of the diners failed to receive the customary additional informal entertainment from Nick Close, now Recording Supervisor, who, probably out of respect for his new position, stayed disgustingly sober. Unofficial reports are prevalent, however, indicating that there was plenty of alcoholic activity, and that no one failed to enjoy himself thoroughly.

Another recent reason for celebration was the rather extraordinary activity of the stork, who seemed to catch the atmosphere of longer working hours, and to act accordingly. On April 21, at 2:42 A. M., John Herbert Riedel, Jr., weight, a boisterous 8 lbs. 6 oz., opened his eyes for the first time, only to learn from his parents, Studio Engineer and Mrs. Herb Riedel, that Patricia Louise Rogers, daughter of SE and Mrs. John Rogers, had scooped his initial appearance by a scant forty-four hours and twelve minutes! Not to be outdone by a mere woman, however, young John had the last laugh; he outweighed Miss Patricia by two whole ounces.

Our hearty congratulations to the quartet of fond parents, as well as to Carleton Smith, WRC General Manager, and Bryson Rash, WMAL Night Supervisor, both of whom became proud fathers in recent months.

While in the department of cigar-passing acknowledgment, we would like to give especial congratu'ations to Clarence Allen and his wife. Al, it seems, passed the 25 years milestone of married happiness last month. A few days before the anniversary date, Al voiced it around that he was interested in suggestions for a suitable present to give his wife. Probably the most practical idea that turned up was to give her a shiny new dime - appropriate for the silver anniversary, and quite in keeping with these times of threatening inflation. We're sure, however, that something far more convincing was the final selection. Al, by the way, recently abandoned his long-time duties as Maintenance Man to resume the position of Studio Engineer, being succeeded in his old position by J. N. Small, Our thanks to Al, as well as to Herb and Johnny for the

Other recent additions, departures and alterations include Melvin Ward's migration from the studios to the WRC Transmitter, following his unsuccessful attempt to "enlist in the draft". In return for Mel's leaving, WRC TE Paul Meyers began the duties of a Studio Engineer the first week in June. Another WRC TE, Fred Snyder, left his post to work for the Office of War Information. Fred asserts that he expects to be sent either to New Delhi or to Cairo in connection with his work. Bon Voyage, Fred, and let us hear from you. A few weeks ago, Vasco "Junior" Rhoden, SE for only a few months, got the wanderlust and left for Brazil as radio operator for a rubber exploitation company, all of which proves that you don't necessarily have to join the Navy to see the world.

Word from A/C Harold Thomasson, former SE, now at Boca Raton Field, Florida, preparing to become an A.A.F. Communications Officer, indicates that everything is under control, but that he expects to be transferred from the tropical vacationland soon to a more northern post, at which he will continue his studies. Harold left the studios at the beginning of February to go in the Air Corps, and has luckily been in Florida ever since. (Our apologies to

NBC Hollywood for the plug.)

The May meeting of the Washington chapter of the N.A.B.E.T., held at the U. S. Recording Company's studios, was the setting of the election of next year's officers (among other things). A. T. "Al" Powley received the presidential gavel from the capable hands of the retiring chairman, Sam Newman. Having held the chairman's position twice before, Al is an old hand, and will undoubtedly do a fine job. Johnny Rogers succeeded C. A. Allen as secretary-treasurer, and yours truly, Bob Shenton, took over the mill from Gordon Henry as Washington Editor of the Journal.

Come flood or fire, air raid or earthquake, WRC will now stay on the air. At least, it will take more than a simple power failure to cause a shut down. By all this we

mean that under the direction of N. Y. Engineer Looney, the emergency motor-generator has been installed, and proved quite satisfactory. Of course, what with the present gasoline shortage here in town, the boys haven't any fuel to run it, but (knocking reverently on wood ere we continue), we trust that if the unit must ever be used, the kind fates will postpone the time until after liquid gold becomes once more plentiful. Together with the Diesel MG unit at the studios, completely independent operation is now possible.

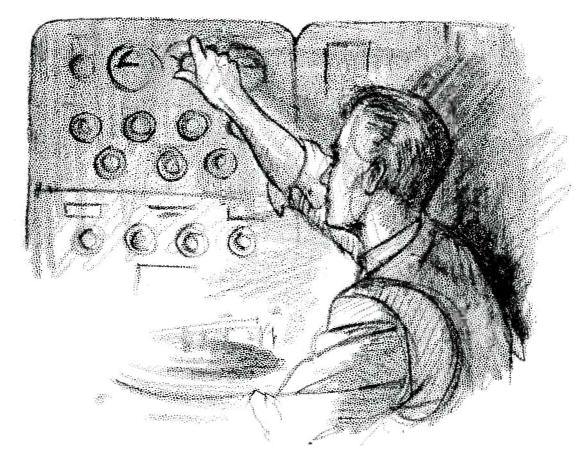
We at Washington, though confirmed believers in Gremlins, feel that all too frequently the little men are blamed for occurrances that in reality are caused by what brother G. I. Henry terms "occupational neurosis". To illustrate the point, let us bring to your attention the recent nocturnal experience of "Mac" McGinley, SE. Arriving home after a hard day's work one recent evening, Mac retired, falling into a sound sleep. His session with Morpheus was soon disturbed, however, by a dream, remarkably vivid in nature. Mac, it seems, appeared to himself in the Field Shop; he was not alone, though, for Sam Newman was also present, tinkering with a faulty ND-10. The amplifier was connected to its battery box on the floor with a rather long cable. Leaning over for some reason, the nature of which is dreamlike in its vagueness, Sam became entangled in the cable, pulling the heavy amplifier off of the bench immediately over his head. In an heroic effort to save Sam's endangered cranium, Mac lunged violently at the crouching figure, Hairbreath Harry fashion, pushing him out of danger. At this point the dream was abruptly interrupted by feminine cries of distress; in his eagerness to aid a fellow engineer, Mac had pushed his wife clean out of bed and onto the floor with a vigor that Mrs. Mac was loathe to consider as merely an exhibition of affection. We understand that Sam received a half hour overtime for his maintenance work, but that Mac was denied same because he was merely looking on in the dream. We'll mull this over for a while, and see you in the next issue.



Frank Russell, Harold W. Yates, Frank Mullen, Robert L. Terrell, and Carleton Smith. Special commendation was given Terrell and Yates by Mr. Mullen in his speech at the Statler Hotel
NBC Dinner



Bess Prince, NBC Traffic; Frank Mullen, NBC Vice-President, and Patty Birgfeld, Secretary to the Chief Engineer, show just how friendly the gang here at Washington really is.



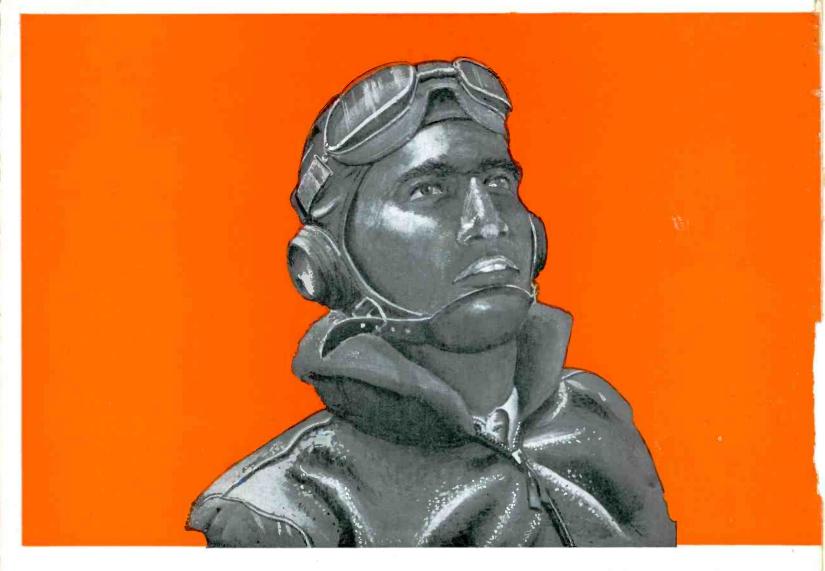
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Though we are indebted to clients who have favored us with their patronage in previous years, our personal preferences are subordinated. We rightfully are proud of the fact that these clients, who advised and assisted with many of our pre-war engineering developments, are sharing today's inconveniences with the same friendly cooperation.



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