





## Call NBC

### FOR LOCAL STATION PROGRAMS

To radio stations, NBC offers two outstanding services for building local commercial and sustaining programs:

First is NBC THESAURUS... "A Treasure House of Recorded Programs"—supplying a wide variety of fine musical material recorded by established "name" artists and ensembles, with weekly continuity for eighteen sparkling program series (total, 65 programs per week).

Second is NBC Syndicated Program Service—skillfully produced dramatic and musical shows that are tops in entertainment, among them "The Lone Ranger," "Secret Agent K-7 Returns," "Carson Robison and His Buckaroos," "Heart Throbs of the Hills," "Five Minute Mysteries" and others.

## Call NBC

### FOR "SPOT" PROGRAMS

NBC plans and produces complete "custom" recorded programs. This service covers writing, casting and production of the show, plus recording, processing, manufacturing and distribution of duplicate pressings.

For agencies having their own production facilities, recording—NBC ORTHACOUSTIC—together with processing and manufacturing of pressings is available.

"Spot" and local advertisers have discovered a gold mine in NBC THESAURUS programs available for sponsorship at economical cost on over 200 stations. The Syndicated Programs described above are also available to "spot" advertisers in one or more markets.

## Call NBC

### FOR PLANNING AID

NBC is eager to assist advertising agencies in the planning of recorded programs. It offers studios and the finest technical service with or with-

out casting help and other production aids.

The outstanding facilities of the "Program Center of Radio" are yours to command when your show is recorded by NBC. What's more, the recorded program is the nearest thing to a live studio broadcast when reproduced—it's NBC ORTHACOUSTIC. With the same care, NBC handles the processing and the manufacture and distribution of duplicate pressings.

## Call NBC

### FOR AIR-CHECKS

If you are a radio artist, call NBC for your "off-the-line" or "off-the-air" recording requirements.



# NBC Radio-Recording Division

**NATIONAL BROADCASTING COMPANY**

*A Radio Corporation of America Service*

RCA Bldg., Radio City, New York • Merchandise Mart, Chicago  
Sunset and Vine, Hollywood



*Jay Gehres  
RR 103  
Evansville Ind  
W8TBF - W9AIN - WAUT - WEOP*

# JOURNAL



VOLUME 7 ISSUE 1

JANUARY 1940

## W 2 X B S

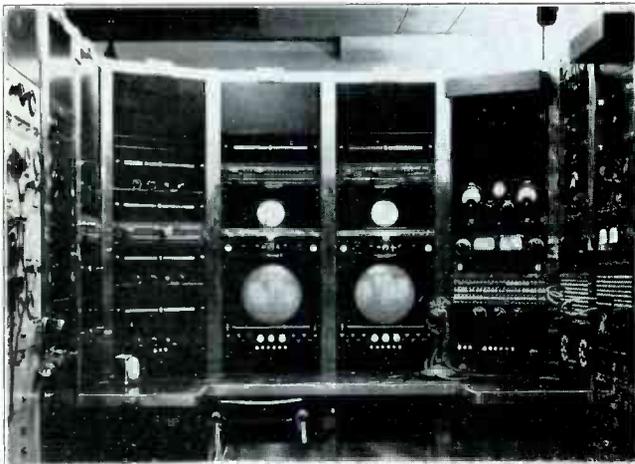
To the average layman on the street, W2XBS, NBC's television transmitter, means little more than a queer structure resembling four indian clubs clustered about a flag pole on top of a 1250 foot skyscraper. To the directors of RCA it represents a considerable investment occupying a lot of expensive floor space. To the boys in 3H and 5A it is the voice on the other end of the PL commenting that "Whites are over," "Bring up the pedestal," or "You're saturating the blacks." To an adventuresome visitor, a tour of W2XBS is as exciting as a first airplane ride or a first QSO with a new ham rig.

The first surprising thing about "Yempiah" is the magnitude of the plant. One might expect two or three racks of equipment along the back wall of a small office but actually it occupies approximately 4000 square feet of floor space, utilized by an office, shop, control room, transmitters, power supplies, storage space, etc. The two transmitters with their complex power supplies, intricate control circuits, and special problems of maintenance and adjustment present a much more difficult operating problem than is usually encountered in high power sound broadcasting.

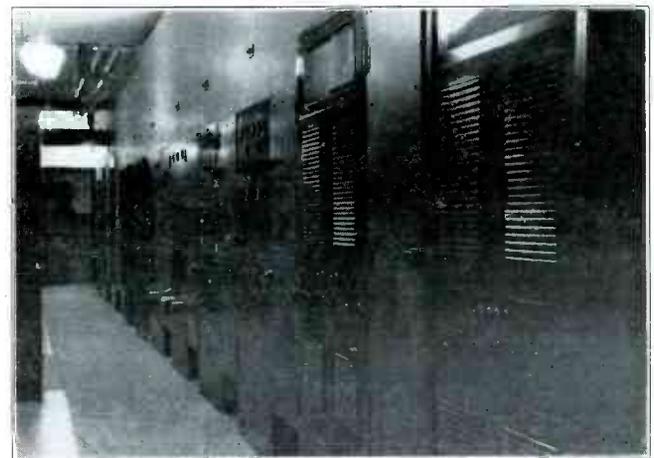
The development of television transmission required that frontiers had to be pushed back so that vacuum tubes and circuits which had never passed frequencies above 10 kc would pass bands several megacycles wide. Conventions had to be disregarded and the entire concept of modulation was altered in order to evolve a method for applying dc modulation with a flat frequency response ranging from dc to 4 mc. There were no standards of measurement nor did anyone know what levels were necessary in the various stages of the transmitter. Gradually as the new art was mastered operation became more routine, but even now much more critical observation and adjustment is necessary than is required for conventional audio transmitters. In spite of the fact that W2XBS was intended to be an experimental field transmitter built to test the RCA television system, it has operated on regular program schedules with very few failures and these have been of short duration.

The R. F. portions of the transmitters are identical in tube complement and differ mostly in the way the final stages are operated. The audio transmitter radiates about five kw on 49.75 mc while the video carrier on 45.25 mc is rated at approximately 4 kw RMA rating. This is an arbitrary rating chosen to be one-fourth of peak transmitter power. It is difficult for one familiar

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W2XBS Control Room and Monitoring Positions at Empire State. The Receiver and Field strength measuring equipment for 159 MC. Mobile Unit transmissions are in the left bay. This control room has been recently completed and embodies the latest in apparatus and arrangement.



View of W2XBS Transmitters. Portion of side Band Filter can be seen near ceiling.

Another year is history, (and how) and in presenting this summary of the "NBC Year End Survey" it is hoped that we have selected the portions of greatest interest to our Journal readers.

*"1939—a year of terror and destruction to Europe and Asia—has seen in America the birth of a new industry: television. After more than a decade's gestation in the laboratory, the precocious infant struck out on a path of destiny that will some day carry it into every American home."*

Once back in 1929-32 television became the spoiled child victim of speculators and suffered a severe set back during the depression. In its present rebirth its growth is being so carefully guarded that its development is apt to be retarded.

*"Television," in the words of David Sarnoff "an art which shines like a torch of hope in a troubled world," made its official bow in the western world when the National Broadcasting Company telecast President Roosevelt's opening day address at the New York World's Fair on April 30, 1939."*

A lot depended on this initial program and all things considered it was a welcome success.

*"Change so swift that much of historical value will inevitably go unrecorded marks television broadcasting. 'Each week in television,' Dr. Alfred H. Morton, NBC, vice-president in charge of television says, 'is the equivalent of a year or more in other media of entertainment and education.' In eight short months television has created its first audience among the public, made gigantic strides in program production, rebuilt and improved its physical framework and begun the solution of the unavoidable problem of making a living for itself."*

*The record for the eight months included more than 600 hours of telecast programs."*

After April 30 everyone slept well until May 3 when the initial night program of the "service" of two hours per week was telecast.

*"Television's very first First Night on May 3, had Fred Waring and His Pennsylvanians, Mary Wescott and Richard Rodgers; 'The Unexpected,' a playlet with Marjorie Clarke, Earle Larimore and David More; 'NBC Tele-Topics,' a tele-film short produced for NBC, and Disney's 'Donald's Cousin Gus.' Notable, too, were the telecast visit of King George VI and Queen Elizabeth to the World's Fair, and the Pan-American Day appearance there of Secretary of State Cordell Hull."*

Starting with two hours per week the schedule rapidly grew to fifteen hours per week and has since been clipped to approximately twelve hours per week.

While rapid strides have been made in equipment and operating procedure it is felt that in the past eight months greater strides have been made in programming in all three branches, live talent, motion pictures and outside pickups.

It is generally agreed that the studio productions have reached a state where they compare most favorably with stage and screen

productions. To this writer's way of thinking studio productions of outstanding merit include "Jane Eyre," "The Milky Way," "Three Men On a Horse," and "Treasure Island." It is of interest to note that "The Milky Way" and "Treasure Island" both included film insertions which added materially to the latitude of the productions.

Technical improvements in film transmission plus better film subjects definitely improved the film entertainment fare during the latter part of 1939. "Mayerling," "Mutiny of the Elsinore," "Adventures of Chico" and "March of Time" were probably the best received. Many commercial films and various mystery and wild west as well as light musicals were enjoyed by many. In all approximately 100 commercial films were broadcast in 1939.

Sixteen millimeter silent and sound was used on the air late in 1939.

Outstanding in 1939 was the success of the television mobile units in producing fascinating television entertainment. Baseball, tennis, swimming, trackmeets, football, parades, boxing, wrestling, and outdoor gatherings of all descriptions were handled in a very commendable fashion.

Brooklyn Dodger football games were probably the most consistent features with boxing and wrestling taking up where football left off in early December.

The development in the summer of 1939 of the Orthicon pickup tube was an essential addition to the mobile unit equipment and the latitude of operation of the mobile unit has been increased many fold by its use.

*"Moving toward a solution of television's most difficult problem—the business of becoming self-supporting—NBC cooperated with advertisers and their agencies in presenting more than twenty-five semi-commercial telecasts of various types."*

*In these the "sponsor" paid all or part of the talent costs, NBC meeting the expenses of production and overhead."*

*Several interesting types of commercials were evolved during the year. Worthy of mention was the documentary production presented in cooperation with Mr. Louis and the American Hair Design Institute, the musical comedy telecast in the interests of Ronson Lighter, the Andrew Geller series featuring George Ross, newspaper columnist, Betty Crocker's cooking lesson in the interests of Bisquick and Red Barber's 'commercials' at the first major league baseball telecast."*

At the present moment the FCC is considering the issuance of limited commercial television licenses. The terms of these licenses have not been made known.

Proceeding on the "amber light" policy both the FCC and the RMA are carefully guiding the growth of television.

In special events the year end survey says:

*"The most dramatic single day in the history of broadcasting, Sunday, September 3, was recorded by the National Broadcast-*

ing Company when a tired-sounding, soft-spoken gentleman addressed a microphone and announced 'with regret' to a grieving world that the government of Great Britain was at war with the German nation . . ."

Perhaps this was the most dramatic single day, but to our way of thinking the description of the scuttling of the Graf Spee should be given the top spot.

"NBC was the first American broadcasting company on the scene. Facilities were ordered, arrangements sped for a commentator to take the air, and the following day, December 14, James Bowen told American listeners in a broadcast from the Uruguayan port that the Graf Spee was being prepared to sail almost immediately.

As repairs were sped on the pocket-battleship, NBC broadcast numerous bulletins covering developments on Dec. 15. On the night of Dec. 16, Bowen again came on the air to report that rumors were current in Montevideo that the Graf Spee intended to make a dash out of the harbor before midnight.

On Sunday morning, Dec. 17, at eight o'clock, Bowen once more stepped to the microphone and reported that the Graf Spee was still in the harbor.

This began one of the most exciting days in broadcasting history. Bowen returned to the air at 3:45 p. m. and predicted that the German battleship would soon get under way. Three minutes later the Graf Spee's port anchor was being raised.

Maintaining constant communication with NBC in New York, Bowen flashed the news in a broadcast beginning at 4:26 p. m., that the Graf Spee was actually under way and heading for an unknown destination. Silence ensued until 4:53 p. m., when Bowen again came on the air to report that the Graf Spee had turned in a southerly direction on a course usually followed by shipping to Buenos Aires.

Following his 4:53 broadcast which ended at five o'clock, Bowen again maintained communication with NBC officials in New York. Suddenly, at 5:55 p. m., in a voice throbbing with excitement, he shouted:

*'Give me the air. Give me the air. The ship has exploded!'*

In less than 30 seconds, both networks were cleared and Bowen's voice was heard throughout the United States stating that the Graf Spee had been scuttled.

After his brief, dramatic announcement, Bowen went off the air for four minutes, returning at six o'clock to give practically a 'blow-by-blow' account of the sinking of the German warship. Again he took to the air at 10:15 p. m., EST, to conclude a day unique in American broadcasting. Bowen's was the only eye-witness account broadcast to American listeners."

We should not overlook,—

"Inauguration of an international commercial short wave broadcasting service, installation of a steerable antenna which can be focused on either Buenos Aires or Rio de Janeiro by

throwing a switch, and increase of program service below the Equator by three and a half hours daily were outstanding accomplishments of the National Broadcasting Company's international division during 1939.

The commercial service was authorized by the Federal Communications Commission on May 23, and shortly afterward NBC's powerful international stations became known as WRCA and WNBI. The service was inaugurated on December 1 when the United Fruit Company assumed sponsorship of a daily fifteen-minute news program in Spanish over a beam directed toward Latin America."

"The eagerness with which listeners abroad follow American newscasts is shown," Hickok believes, "by the rebroadcasts and by the fact that in about a dozen towns in Brazil, in cities in other Latin American countries, in Angola, Portuguese West Africa, and in Portugal itself, individuals and in some cases city governments, have erected amplifiers in public parks and gardens over which programs of the international division are transmitted. Thousands of letters from all over the world show this same hunger for and deep appreciation of uncensored information on world affairs such as only American news services and broadcasting stations can provide."

The influence of NBC international programs on the Central and South American people is difficult of evaluation, however, as stated in the year end survey, "we estimate that the 1939 mail bag will contain approximately 40,000 pieces."

Back to engineering for a moment:

"New discoveries in television sound transmission and their application to transcription broadcasting were two of the most important radio engineering developments of 1939, according to O. B. Hanson, NBC vice-president and chief engineer.

The introduction of this system, known as the NBC Orthacoustic System, and the opening of a branch office in Hollywood under Robert Schuetz, were outstanding advances made by the NBC Electrical Transcription division during the year.

Hanson also cited remarkable improvements in international short-wave transmitters and continued exploration of ultra-short waves for use in broadcasting as other NBC contributions in 1939 to the radio of tomorrow. The new 'steer-able' antenna array for the twin NBC-RCA international stations at Bound Brook, N. J., was only one betterment of many made in short-wave transmission during the twelve months by NBC's engineers.

Most of NBC's laboratory technicians, according to Hanson, were occupied during the year on television. It was in this connection that the new high fidelity method of sound transmission was developed.

The problem, roughly stated, is one of preserving high sound frequencies, as represented by musical notes in the upper registers and harmonics, until they issue from the home loud-speaker. These tend normally either to become very weak or

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# Unity Within

## An Organization

"It ain't the guns nor armament  
Nor funds that they can pay,  
But the close cooperation that  
Makes them win the day.  
It ain't the individual nor the  
Army as a whole,  
But the everlastin' team-work  
Of every bloomin' soul."

And so, in these few stirring lines by Rudyard Kipling we have the fundamental principle upon which an organization is built. For by creatively integrating ideas, materials, and persons into an organic harmonious working unit we can achieve our desired goals.

In order for an organization to function effectively it must have a unity of thought among its members, a common purpose, a coordination of effort and a pervading spirit that infuses the whole. Sharing, participating, cooperating are its watchwords. The administration of such an organization is not a selected group working apart from, out of touch with, and often out of sympathy with, the so-called subordinate members but rather it is the entire membership working together as a creative force, for all are consulted in the making of decisions for the achievement of the mutually desired functions and goals. In this way such an organization becomes a living, growing, creative organism that is more than the sum of its parts. This working-togetherness, this oneness in spirit is the essential ingredient for the successful function of an organization for it depends in a large measure upon the feelings and attitudes of the individual men toward each other.

Now we come to the case where the occasion may arise where a man wishes to break away from such an organization. We should not immediately look upon the organization as being at fault, but rather we should study the individual's motives back of his actions, in short study the individual himself and then proceed to pass judgment accordingly.

You may be wondering by this time the object back of this discussion. We have merely attempted to point out the elements essential for a successful organization and we mention at this point that we are proud of ATE's record, past and present. We have but to compare it with the many organizations in operation many years before the ATE, in order to realize how well the ATE has functioned in so short a time.

It is our hope that the ATE will continue to function as a well-integrated organization, that its members will continue to cooperate willingly, in order that we may achieve our desired objectives.

# DENVER

By JOE ROHRER

Into another year with ATE. I am sure we all feel that the organization is accomplishing proper representation. More than ever we realize what a great privilege it is, being numbered among a group which engineers the foremost broadcasting system in the world. The ATE Journal helps to unify the organization and stimulates fraternity. To the editing staff, compliments for an excellent job in 1939 and best wishes for 1940.

Until Christmas day Denver enjoyed unseasonal weather, warm and with no snow. Using the word "enjoyed" however applies only to those not interested in winter sports. KOA engineering has several ski fans, the most rabid being Peregrine. For weeks he pored over the weather maps. We all heard about low pressure areas forming over Montana. Perry watched the barometer more closely than the clock. His first glance every morning was to the continental divide fifty miles west to see if there was a cloud cap on the peaks promising a bit of weather. Things are much different now with snow nearly every day in the high places. Perry has all the fine points well learned from the books and with experience added should be a top notcher at the end of his second ski season.

Stan Neal also finds recreational satisfaction on the snowy slopes. When he gets over taking too much care of the new skis acquired Christmas, he will have his share of thrills, chills, and spills. Last year Perry, Stan and myself timed a dozen ski races using portable transmitters built specially for the snowy trails. The little rigs have two stages, crystal controlled, and about a watt of power. 160 and 80 meter bands were used permitting duplex and breakin operation, with speakers at both ends. The low frequencies were used as the hilly terrain made 5 meter operation erratic. Very short antennas were used however, and usually just laid in the snow. If the occasion arises for a ski broadcast we should be all set. This year we are not cooperating as too much good time is taken from the skiing.

Glasscock is finding it difficult to adjust his sleeping schedule to fit our new opening hour of five A. M. His solution is to sleep four hours twice each twenty four, eight P. M. being "too doggone early" to hit the hay. He is in fine shape for the routine which will soon result from a small addition to his family. We must hand it to Glenn as his early trick covers the transcription period, toughest period in the day, and he rarely misses.

Very little news emanating from the transmitter staff at KOA. No news being good news it must have been a jolly holiday season.

McClellam has a frequency modulated transmitter nearly ready for the air. He is the first to try it in these parts but he may start something. Wish we had some inside dope on the stuff.

Nelson, W9CZR, is now fired up on ten meters. Watch for him and ask for the story about all the boys and girls and a stone wall in England somewhere. He told it to me five years ago—I still remember it.

For this column's monthly feature "announcer's bories" we take you back a year or so for the all time best job of muddling heard here. For "Shaeffer's Lifetime Feather Touch Pens, Etc." It came out "Laeffer's Shifttime Teather Fouch, Etc."

# F. C. C. TELEVISION HEARING

Many opposite and varied views on proposed rules for television have been given recently to the FCC at a hearing being held in Washington. Lewis Allen Weiss, of the Don Lee Broadcasting System, told the FCC that the industry has been nurturing television for the past 10 years without any substantial return and it was now time to take visual broadcasting out of the hothouse. Weiss stated that television as it now stands represents a good investment for pioneering advertisers who are willing to invest in the new medium in order to receive the benefits of outside publicity which naturally accrues to a novelty.

At the same time the advertiser would be able to develop program technique for presentation of this product and would receive the benefits of such experimentation, said Weiss. He also pointed out that persons operating a television receiver entertained a great many friends in their homes who are attracted by the novelty of television.

In outlining the advantages of full commercialization in television Weiss brought about the questioning of Commissioner Frederick I. Thompson as to the relative merits of television as compared to newspapers, magazines and aural broadcasting as advertising media.

Previous to Weiss' testimony, Don Lee, Chief engineer for television, Harry R. Lubcke, testified that the Don Lee System generally was in sympathy with the television standards advocated by the Radio Manufacturers Association. Another suggestion made by Don Lee was a provision for use of present broadcast relay facilities for television pick-ups. Lubcke declared that use of the relay frequencies now used for aural broadcasting could accommodate visual relay also.

Leonard B. Brown, of the Philco Radio and Television Company, opposed FCC adoption of RMA standards for television despite the fact that Philco had aided in formulation of the standards. The position of Philco was explained to the effect that the standards were acceptable for experimental purposes but not if they were to be adopted as commercial standards.

Unqualified opposition to limited sponsorship by Philco was expressed by the Philco official who told the Commissioners that any kind of commercialization, whether limited or complete, would tend to crystallize the standards as drawn. General Electric witnesses supported RMA standards because they represented "The best compromise for the industry" and company officials were against any restriction on public use of television for no substantial reason. General Electric, through its engineers, told the Commission that it would have to accept inflexibility in television or leave it in an experimental stage for at least several years.

Another G. E. witness expressed the company's concern over

allocation of channel 7 to the City of Albany when General Electric had already spent approximately \$300,000 preparing to go on channel three.

The position of International Business Machines was expressed by Counsel Alfons B. Landa, who told the Commission IBM was opposing allocations of seven channels for use by television. General Television Corp. of Boston and Metropolitan Television, Inc. of New York City, made brief appearances before the Commission only sufficient to oppose the individual allocations in their respective cities. John V. L. Hogan recommended a five point plan for the growth of television. He enumerated the points in this order. 1. The FCC should adopt no transmitting standards now because it would constitute endorsement for the RMA standards. 2. Television transmitting licenses should not be classified and that any license should be able to experiment or broadcast programs or both. 3. If charges are to be permitted for program production there was no reason for prohibiting charges for time. 4. The Commission should not set up channel limitations for the television stations but that the licensee should be able to work in the various channels subject only to limitations on interference. 5. The Commission should encourage licensees in the use of higher frequencies and bigger amounts of power. He also suggested that the FCC could very well assume the task of informing the public that if it was investing in television receivers it was running the risk of losing the investment through rapid changes in the art.

John Holland, assistant to the president of Zenith Radio, flatly told the FCC that television is not now ready for the public; that no standards should be adopted by the commission, and that the standards had been put together by the RMA in a great hurry due to expectation that television would perfect itself this last summer. He suggested that the patent provisions of the RMA committee members might have had considerable influence upon the wording of the RMA standards and sighted an illustration of the rule of synchronizations. He added, however, that in his opinion the RMA standards were not the result of bad faith but that it was inescapable that conclusions on standards would be influenced by patent. He admitted that RCA licenses, so far, have been made available to the industry on a fair basis.

Robert Robins, representing Cath-Ray Electronic Laboratories, New York City, testified to the Commission that he was neither engineer nor lawyer but was representing the "market place" of television receivers. He told the FCC that his firm had developed home receivers having 7-inch screens to sell in the \$100 price range. He said that the image was moderately good explaining that his firm was entering the "Ford" class of sales

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# SAN FRANCISCO

By TAD FULLAWAY

Presaging a new era in newspaper-radio broadcast relations KPO-KGO joined with the San Francisco Chronicle on Election Day and presented the longest single radio show ever presented in San Francisco. From nine P. M. until two A. M. the following morning KPO-KGO originated from the news room of the Chronicle a five hour variety show interspersed with election returns and talks by the various candidates.



The picture above shows the engineers concerned with the field pickup and plans for the show and includes from left to right Curtis D. Peck, Engineer-in-Charge KPO-KGO; E. E. Jefferson; Clark Sanders, field engineers; and George Greaves, Field Supervisor. Incidentally the above picture also appeared in the daily Chronicle and in the Chronicle's Sunday rotogravure section. One time when the engineers shared in the publicity.

Five microphone channels were in use from the following points: press room for the press rolling sound effect, over the teletypewriters for more sound effects, news room; and stage for the band, announcer, and speakers. Outgoing channels fed the San Francisco control room and a public address system on the street in front of the building. The complete system also included an NBC announcer riding around town in a mobile sound truck calling attention to the "Party" and giving election returns.

At midnight the party featured a big "feed" with turkey and so forth catered by a local Armenian chef. Greaves liked the food so well that he visited the restaurant run by this chef where he partook of various dishes including some rose petal jelly. In describing it to the gang in the control room later he insisted it tasted just like roses smell and to clinch the description pursed his lips and "kissed" his finger tips. How touching. Really looked funnier than it sounds . . .

After reading the description of Chicago Control Room and pre-set equipment and Washington's later comment that it might be a good idea to give the gang an idea of what other chapters had in the way of control room equipment we decided to let the gang know just how San Francisco was operated. Not having the time to write a long story and to have a picture taken we obtained the services of one of our announcers who drew the picture below. It will give—I hope—some idea of some of the operations that have to be gone through to switch

the various programs. San Francisco is the Pacific Coast terminus and switching point for the RED net and normally feeds the following circuits: KPO transmitter, KGO transmitter, KGEI transmitter, KGU Honolulu via RCAC, (circuit to Orient), North RED, South RED, Sacramento Valley loop feeding the McClatchey chain of stations, North BLUE, and South BLUE, RED programs from the east or from Hollywood feed through San Francisco. The BLUE loop feeds from the east through Hollywood, north to San Francisco, and thence on north. Anyway here is our layout. (See cover cartoon by John Grover.)

ODDS AND ENDS . . . My error in saying vacations were all over. Andy Mitchell finally a member of staff and due for ATE vacation off for three weeks until Christmas . . . Clarke, of Mackay in Honolulu, Van Wye and Hatch of Mackay Radio San Francisco up for a visit . . . Imagine Kolm's embarrassment to find that he made the work schedule out on the day before operation schedule and had to do the whole thing over—after spending such a long time fitting the available men into a series of tough program spots . . . Dunnigan, Barron, Palmer, and Kolm—irveterate gardeners now joined by Sugg who comes to work with information on hot house heaters . . . yeah, we use 'em now and then . . . Sugg with a new car—Buick—and also moved from San Francisco to Hillsboro . . . Rumor has it that Greaves is not alone in his about to be fatherhood—understand that Dunnigan will soon be passing out the cigars—soon being some time in the spring—understand the ATE net almost a thing of the past—why not revitalize it—and use it for purpose originally designed for . . . San Francisco completing installation of new recording equipment in preparation for entrance into recording business as are other NBC offices . . . new recording lab looks like and sounds like destroyer boiler room with air pipes and so forth . . . O'Neil, recording chief, says beer from one tap, wine, from another, and whiskies from others instead of air suction . . . Kilgore in the land business, having purchased property at Belvedere, across the bay from San Francisco. Plans to build in future . . . Dewing out on jury duty . . . How about a story Bill, on your recent mud bath? Seems that McAuley, of KPO transmitter, was bound to work or home from work one very foggy night recently. Bill thought the road turned where it didn't so turned his car landing in a deep mud hole. Understand he had to wade out and get help to have car towed out of the mud. Give us the low down, won't you . . . Summers with a new camera that he picked up in New York . . . Andresen now has movie camera, Speed Graphic, Leica, and Bantam Special . . . see that Larson's prize winning picture in JOURNAL also placed in Radio City exhibit and was reproduced in one of the magazines . . . In the last issue we mentioned that Morrison had "City Engineer" trouble with his new tower holding his signal squirter. He was asked to submit stress diagrams and so forth and after all that he was turned down by the engineer. Today the tower is on the ground and Morrison reports that part of his squirter has been sold to a ham working for the phone company. We weep crocodile tears of sympathy—but there is a moral to this story. While Morrison was chief engineer at KRE he had a bit of trouble from this same City Engineer over the specifications of the new tower he was installing at KRE—now do you see the moral . . . And so it goes . . . another year passed . . . a very Happy New Year to all of you.

# SCHENECTADY

By H. C. MOSHER

Bernard Cruger has been in the limelight ever since he took the prize for the most original costume at the WGY Christmas party. His costume was an RCA velocity microphone enlarged eight times and equipped with a public address system. It was the first time we had seen a walking and talking microphone. Ray Strong says he will never clean the snow from his car again. He walked out of the studios one night during a snowstorm, cleaned the snow off the windshield and windows of his car, got in only to learn it was Phil Brook's car. It's too bad, Ray, they don't make cars like women's hats—no two alike. . . Ray, Pete, and Howard went ice-fishing the other day. It must have been pretty cold as Pete can't figure out yet whether it was two or three fish he caught. Perhaps it was the firewater they used to keep them warm rather than the cold that put Pete in such a state. By the way, Peter is keeping bachelor's hall while Mrs. Narkon and Peter, Jr. are spending the winter in California. Al Knapp spent one week of January in bed while recuperating from the gripe. We must not forget to tell you that Al won a door prize at the party. Something he needed very badly but couldn't use—a permanent wave! When Santa Claus presented the prize he made Al take off his hat so everybody could get the joke. It was no joke as Mrs. Knapp gets the wave. Our chief, Bill Purcell, wore a most appropriate uniform at the party. He came as a railroad engineer, carrying an oil can the contents of which seemed more stimulating than lubricating!



The WGY Staff held its second annual Christmas party December 20. Members of the staff with their wives, husbands, or sweethearts came in costume. This is how some of the ATE men looked. Standing, left to right: Horton Mosher, Raymond Strong, Bernard Cruger, Albert Knapp. Kneeling: Peter Narkon and Howard Wheeler.

## NBC ENGINEERS

. . . . You'll want to see the new  
1940 Models - ALL MAKES  
PHONOGRAPH - COMBINATIONS  
CONSOLES  
TABLE MODELS  
RECORD PLAYERS  
at our 68 West 45th St., store

As usual, everything in radio  
for your engineering require-  
ments, at both stores.

## TERMINAL RADIO CORP.

68 WEST 45TH STREET (near Radio City)  
80 CORTLANDT STREET, NEW YORK CITY  
Call VAnDerbilt 6-5050 for prompt deliveries

COMPLIMENTS  
OF

**HERB RICE**

NBC's SALARY ALLOTMENT REPRESENTATIVE

INSURANCE OF ALL KINDS

*New Jersey's Leading Ham Parts  
Distributor*

**ARRON LIPPMAN & CO.**

246 CENTRAL AVE.  
NEWARK, N. J.

PATERSON:  
79 Bridge St.

NEW BRUNSWICK:  
54 Albany St.

# CLEVELAND

by F. C. EVERETT

Even if this is written at the first of December, autumn-spring weather is still prevailing, but it has not failed to kick the WTAM social season into full swing. The studio was the scene of a pre-Thanksgiving luncheon for WTAM employees, wives, husbands, girl-friends and boy-friends. A fine turnout enjoyed an excellent meal and listened to some very encouraging talks. One engineer discovered that he would be on watch during the party and had his lunch delivered to the control room. That's real engineering farsightedness.

The December climax will be reached with a hilarious party on December 20th, when, as is the custom, the annual Christmas party will be given for the employees only. The gang all know what to expect and get into the swing of the holiday season with a bang up party in which good-fellowship is mixed with good food and a good razzing.

Brecksville was quite excited with the passage through the town of Admiral Byrd's snow cruiser "Penguin I". By means of rapidly changing shifts practically the entire transmitter crew were able to observe its passage and then the cruiser remained in town while the drivers ate lunch. School was automatically dismissed until the machine left town.

The season has been kind to the hunters, although there has been little snow. A few reports have trickled in. One of the boys recently discovered an even eight pheasant hens working over his garden for ripened sweetcorn. There oughtn't be a law. T. C. Cox, SE, was remarking a few days ago that he was arising at 4 A. M. the following day to go hunting but have not had later comment as to results. 'Sfunny how much

easier it is to get up to go hunting than to go to work. A. H. Butler's (ASE) pheasant score for the season is six. Also a few ducks.

Hank Gowing, SE, has ordered himself a new Buick, but will not get delivery until around the first of the year. All dealers are loaded with unfilled orders . . . A. B. Stewart, TE, has been carrying around a sheaf of books which make it obvious that he either is, or is about to become a proud Scoutmaster. All hands to attention and give the salute . . . McMahon, FS, and Dishrow, OS, are being kept busy covering football nemos through this area for a local commercial. That's the kind of hard work we'd enjoy . . . W. C. Pruitt, CS, slid back into town from the convention and immediately called a meeting with a synopsis of National Convention activities, aims and accomplishments . . . J. A. Cheeks, TE, has purchased a new oscillator which will deliver all kinds of frequencies, calibrated, with or without modulation. He's considering renting it out at so much per kilocycle. His order to Santa Claus this year is a ten inch slide rule but can't decide whether to get a log-log or sump'n else . . . H. V. Brandt, TE, was elected associate patron at Eastern Star lodge the other night . . . H. L. Clark, TE, has been making a few movies but says he isn't bitten by the bug very hard, just wanted to get a few records before it was too late.

F. E. Whittam, SE, is a proud father again. It's a boy and mother and baby are both doing fine and are at home now. The score now stands at two boys vs. one girl.

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## NEW YORK

By TED KRUSE

A. T. Williams spent the entire summer studying army subjects and was rewarded on December 21st by receiving his commission as a Second Lieutenant in the Army Air Corps Reserve and rated as an "Airplane Pilot." He is now privileged to fly the new military airplanes of the Air Corps. Congratulations "A. T.", how about a picture to let the boys know how you look in uniform.

It's a girl at the Courtney Snells, W2EGD, Claire Frances is the name and the weight is 8 pounds, 3 ounces, which barely beats the R. D. Compton recent addition by one ounce.

It was really swell to receive Christmas cards from our many friends all over the country. Here's hoping you all had a grand Christmas.

We are willing to bet our next raise that Dave Moloney, the Engineering Department's Ambassador of Good Will, acted as MC at some get together on New Year's eve.

After the poor attendance we had at our last general meeting, we should copy the Chicago system. For instance have it in two sections, one at 7 P. M. and one at 2 A. M. with a fine for anyone failing to show up. The fine should also apply to council meetings.

It was swell seeing the pictures of so many of the New York gang in the Christmas issue but how come Allen Walsh rated two pictures—is he twins?

## TELEMOBILE STUFF

Camera-men Peck and Jackson resplendent in tuxedos made hit at recent Waldorf Astoria show . . . Pickard to take spin test for NY State Chauffeur license . . . Stan Peck, long time booster for Long Island recently moved to New Jersey joining telemobileers Wilbur, Burrell, Fricker, and Pickard . . . "Bus" Moffett reminded by daughter Patty that Santa should deliver bicycle with dog "Count" settling for nifty collar and blanket . . . Hettich, Taub and Crotty at ringside of Ridgewood Grove Arena being kept busy dodging wrestlers scaled over ropes by ferocious opponents consider high spot for exuberance to date moment wrestler who after heaving opponent at audience leaped high in air to bring microphone down by roots—world being spared colorful comments by lightning fade executed by Pickard . . . John Fricker, builder of swell ham rig W2IHI recently sold same and has joined ranks of NBC camera enthusiasts . . . Alfie Jackson skids to and from Mt. Kisco station on wintry days with rumor about that he is pricing mukluks and parka . . . Most versatile telemobileer is "Shorty" Carson who wears forty-four inch sleeves and can pinch hit for antenna mast . . . W. E. States building super deluxe ham rig—Jim Platz note . . . "Montana" Jack Burrell, former amateur wrestler gives crew lowdown on tricks of game while televising Ridgewood matches . . . W. C. Resides pricing photo-murals for new apartment, recently took hunting trip weekend in Pennsylvania.



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## W2XBS

continued from page 1

with conventional audio transmitters to visualize the way a video transmitter is modulated. It is complicated because modulation effectively reduces the carrier power, hence, with no video signal and no synchronizing pulses into the modulator, peak R.F. output is realized. Transmission of the synchronizing pulses alone requires from 20 to 25 percent of the carrier voltage and corresponds to transmission of "blackest black" or minimum percentage of picture modulation. Transmission of a pure white scene results in maximum percentage of linear modulation and minimum carrier output. The power requirement of the final video transmitter stage is about 60 kw.

The crystal oscillators operate on 1/16 of the carrier frequency and utilize one section of a 6A6. The other section is operated as a doubler driving three more doublers using 802, 802, and 812 tubes respectively. Then P. P. 809s at carrier frequency into P. P. 834s into P. P. 833s into P. P. 846s drive the final consisting of P. P. 899s.

The audio frequency modulator consists of P. P. 843s into P. P. 845s driving P. P. 863s as a high level modulator for the 899s.

The video modulator is quite complicated by the requirements for transmitting the wide band necessary for 441 line 30 frame interlaced scanning plus the synchronizing pulses. The tube line up consists of two stages of 6V6s into parallel 807s which drive five parallel 807s followed by three parallel 831s into a single 848 which drives push pull 848s as a dc coupled grid bias modulator for the 899 final.

Load circuits designed to obtain broad band widths have to be so low in impedance that the average efficiency expert would have hysterics. This is one of the reasons why a multiplicity of tubes is necessary in the video amplifier. The final stage of the video amplifier must develop over 1500 volts peak to peak across an impedance of 350 ohms. This load impedance is not a simple resistance or inductance but consists of a very complicated network of many sections.

The grid bias supply for the final grid modulated R.F. amplifier is quite an interesting device and presented quite a number of problems too complicated to mention here.

The output of the video transmitter is coupled by means of a 72 ohm line to the side band filter which is designed to absorb most of the lower side band. Its response curve allows full output at the carrier frequency, but at three-fourths mc below carrier frequency it begins to absorb energy, and 1¼ mc below the carrier frequency the attenuation is about 100 to 1. This method of a single side band transmission is designated as "Vestigial Side Band Transmission" by RMA standard T115.

Fifty-five ohm concentric lines about 300 feet long transfer the power to the antennas. (The station is located on the 85th floor). The video antenna is the one whose elements resemble indian clubs. They were shaped in this manner in order to realize an antenna whose characteristic impedance would be constant and resistive over a broad band of frequencies. An interesting feature of the antenna is that a single element fed at the end of a transmission line appears to be a resistive load over a range of frequencies equivalent to 20% of the fundamental. The combination of the four elements in proper phase relationship is resistive over 50% of the band width, or at 50 mc the combined

side bands could be 25 mc wide without producing appreciable reflections in the transmission line.

The audio transmitting antenna consists of four folded dipoles in a circular shape. In this manner both ideal physical and electrical requirements are met and the current in the audio elements is at right angles to the current in the video elements, so that coupling between the antennas is minimum.

Calrod heating elements are installed inside both the video and audio antenna elements in order to melt the sleet and ice which forms in thick layers. The de-icing equipment is automatically controlled through the range of 28° to 32° Fahrenheit and is capable of supplying as much as 27 kw of power to the heaters when required.

The pole on top of the antenna structure is used by General Electric in their lightning studies. No doubt you have noticed photographs of lightning hitting Empire State Building. I am told that some of these photographs were timed by an engineer on the 85th floor holding his finger out of the window and judging the amount of charge on the building by the corona hiss from his finger tips. I am also informed that the contours of the building can be described in space during an electrical storm if one holds a test lead from a microammeter a few feet from the window sill, the other terminal being connected to the steel frame and by keeping the reading constant, the equipotential lines around the window ledge can be found. The only trouble with having all that juice running loose outside is that we don't know how to use it.

Another activity at Empire is the new frequency modulation transmitter W2XWG. The system of modulation is known as the Crosby system and was designed by Mr. Crosby of RCA Communications. The Crosby system fundamentally is similar in action to automatic frequency controls in receiving sets and signal generators and is relatively simple. Some of the other New England frequency modulated transmitters utilize Major Armstrong's system essentially amplifying a phase shift at a low frequency with a number of stages. It will be interesting to observe the progress in frequency modulation and how it affects the industry.

And now for a few words about the staff. First in order is T. J. Buzalski, Engineer in Charge, Buzz came to NBC in 1929 and was summer relief on the WJZ 600 meter watch. There followed a short relief at WEAJ and then a few tricks in the control rooms at 711 Fifth Avenue. In 1931 he was transferred to the development group to put Mickey Mouse through his antics with 60 line sequential scanning from W2XBS at Times Square. Then Mickey Mouse graduated to 120 line sequential from W2XBS at Empire State where frequency modulation tests with Major Armstrong's system were also conducted. He watched 343 line interlaced scanning come and go in favor of 441 line interlaced scanning which we use today. Buzz is married, has a two year old son, is an active ham, pitches horseshoes or bowls whenever he has an opportunity.

V. S. Barker, joined the studio group in 1933 and came to Empire in time to help with the early 343 and 441 line interlaced scanning. He is a "bloody fisherman and photographer," has an accent flavored with lime juice, two boys, and a ham rig that at present is gathering dust.

J. B. Knight, Jr., came to NBC in 1933 from DeForest and was in the maintenance group until he joined the television

continued on page 12

# WOR

R. A. SCHLEGEL

Mid December in New York and flowers are still in bloom, even the forsythia are starting to bloom which should give Mayor LaGuardia more sales talk to use in his efforts to lure the movie industry away from the land of "Ham and Eggs" . . . Some of the lads here at WOR had some tall explaining to do when their wives read of the bonus being paid to all WOR employees. Hopes of that high power final for the ham rig or some more equipment for the dark room died a sudden death when the fraus reminded them that they were wearing last year's coat.

Pat Miller is coming up fast in the photography world. Pat sold several pictures to "CORONET." I don't know of a better place to sell pictures but perhaps Shirley Davis would know of some.

Cy Samuelson, the lucky so-and-so, wandered into a photo shop and picked up a Kodak Bantam special at too low a price. I still don't believe it.

Anyone needing a script writer for party programs or would care to have a party arranged, please contact Ray Lyon who has just been made Vice President in Charge of Arranging Parties. Ray has just invented a 'Hoople-izer', (patents pending.) It's a gadget for shaving cream and is supposed to prevent the use of shaving cream for tooth paste.

Dick Borner is now a full fledged real estate operator. Dick rented the house that he bought and is now involved in leases.

Giff Campbell spent half a day looking through the library of recorded music looking for a piece of music called, "THEME: up, down and fade under." Latest reports have it that he's still looking for it.

Ted Kasna has been having the shop loudspeaker going on a certain local radio station during the afternoons. The bang-tails seem to be treating him all right.

Caught Bill Ulrich buying an amateur radio handbook which makes it look like ham radio will have another addict.

Paul Reveal is at it again, giving up ham radio for the umteenth time and is putting all his equipment on the auction block for what it will bring. "Pop" is taking up butterfly collecting instead.

Lewis Tower is adding more rolling stock to his "O" gauge railroad system. Seems to have forsaken radio and photography for the mini RR.

Dick Dorrance of the press department has his transmitter in mothballs since the big blow carried away his rotary beam.

Dick Davis, W2CTQ, back on ten meter fone now with his beams to the west coast, frequency is 28,800 kcs.

Jim Shannon still trying to get a co-ax antenna to work properly. It seems that the co-ax cable heats more than the final tank coil. Why not go back to the old reliable single wire feed system?

Joe Craig taking flying lessons at the local airport here. Intends to get a pilot's license soon.

Jim O'Connor spent a week in bed due to a cold. While at home, fire broke out in an apartment several floors above the O'Connor jernt. Firemen arrived in due course and put their ladders up against the co-ax feeders which perturbed Jim no end so he had his wife hook the ohmeter across the line and place the meter where he could watch it from the bedside.

Giff Campbell and Howard Donniez bought their wives sewing machines for Christmas presents. Either they got them wholesale or else . . . I suppose they will soon be coming in displaying handkerchiefs which they made on the machines.

It seems that we get our summer vacation schedule cleaned up and the winter vacation list makes its appearance. Several years ago there was only one name down for a week's vacation but this year there are six names. Next year will carry about six more. Here at WOR, we get a three day winter vacation after having been with the company for five years and a week's vacation after one has been here for ten years. Guess I'll fly to the coast this winter. (oh yeah?)

Visited the New York NBC recording studio recently and found Stewart trying to figure out the quickest way around that big table in the middle of the room. It would be interesting to see him try to hurdle the table. I think you ought to clean that Bon-Ami off the windows so that the "tours" can see what goes on in a recording studio. I understand that the recording room is included in the special combination tour ticket.

I wonder if the ATE net is still in operation, don't read much about it. I'm hoping that a 1/4 wave vertical will work out on 40 meters so hope to meet some of the gang on the air soon.

See that the latest reports have it that AC4JS wasn't in zone 23 after all. 2ARB and 2ZA please note.

I suppose we'll be seeing many bright neckties for the next couple of weeks which brings me to the point of springing my annual joke. "DO YOUR XMAS SWAPPING EARLY!" 73s.



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group in 1936. Like most of the boys, photography and ham radio are his hobbies.

C. P. Sweeny has been in on more dramatic and adventure-some experiences than Gulliver. He sailed on the Seth Parker Cruise, had a part in the Rapid City Stratosphere Balloon broadcasts, has done considerable microwave research. He joined NBC in 1933 and has been in Television since 1936.

W. L. McMillan is the boy who can play the "beer barrel polka," so they say. Came to WJZ in 1928 and then to Radio Facilities in 1937 until 1939 when the television schedules were expanded. He plays with model airplanes and trains whenever he can find time.

Justis Allen, formerly of WENR, is relief man and alternates between Empire, Radio City and the Mobile Unit. His hobby is photography.

Just one more item of interest at W2XBS was the ground sticks near the high voltage power supplies. The wires from the ground-hook on the long fibre rod is bare stranded wire covered by loose fitting rubber tubing. Thus if the wire ever broke, the engineer would know it for sure because it would pull out of the hose. I understand this is now standard NBC practice but others outside of NBC might welcome the suggestion.

and not in the "Cadillac" field. R. L. Campbell, television engineer for DuMont, was called to the stand and emphasized his firm's position that standards for television should make provision for flexibility. Allen B. DuMont, head of the company bearing his name, followed Campbell to the stand and told the Commission that standards for the industry were not objectionable but that the FCC should leave open the question on number of lines and frames.

He supported regular programs from television transmitters, declaring that New York programs already broadcast have done more to bring television closer to realization than any other development.

Paul W. Kesten, CBS vice-president, advanced three alternate plans which might protest the public investment in television receivers. Kesten said that any one of the three plans would tend toward precluding experiment at public expense. First of Kesten's proposals was a modification of British television policy whereby transmission and receiving set standards would be "frozen" for a definite period of years to protect the public against obsolescence. The second plan would delay television for general public use until such time as the FCC would be satisfied that home receiving sets could be modified by minor and inexpensive changes to meet future improvements in visual broadcasting while the third plan in effect would open up commercialization of television programs but protect the public with opening and closing announcements. Each program would give the public notice that present standards are so impermanent that technical changes might at any moment preclude further use of existing home receivers. Kesten said that for his personal choice he would prefer the first of the plans, declaring, however, that CBS as a company had no preference among the three.

He also suggested that another means of starting television into practical use might be full commercialization with home receivers supplied the public by interested companies on a loan (or rental) basis. He advanced this idea because he felt that the reaction of the well-to-do, now accountable for the largest percentage of television receivers sold, would be very misleading. He illustrated this point by declaring that "a survey of the political likes and dislikes of the wealthy few would not be representative of the electorate."

Although Columbia representatives were not favoring any particular stand on standardization it was evident that they did not despair of progress within the limit of standards suggested by the Radio Manufacturers Association.

At the time of this writing the hearing is still in progress and several more important opinions including NBC and RCA are expected to be presented.

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# THE SUNNY SIDE OF FIFTY



Not more than a year or so ago it was generally recognized that any communications receiver selling under a hundred dollars was likely to involve an appreciable sacrifice of some of the fundamental requirements for ham operations. Yet today a receiver has been introduced which sells for fifty dollars (or a little under, just to keep on the sunny side, hi!) and which not only boasts excellent fundamental characteristics but a very appreciable number of refinements, some of which were not available in even the high priced models last year.

There are certain niceties, such for instance as a crystal filter, adjustable i. f. band-width, high-fidelity output, and a built-in "S" meter, which cannot logically be expected at such a price. But on the other hand this new Hallicrafters Model S2OR improved "Sky Champion" receiver demonstrates that it is now logical to expect a surprising array of the basic features essential to first-class reception on the ham, short-wave and standard broadcast bands.

In the matter of sensitivity, for instance, this circuit includes a tuned r. f. stage on all bands and in addition employs a 6K8 as combination oscillator and mixer with full advantage taken of the peculiar characteristics of this tube which permit approximately twice the usual conversion gain to be obtained at frequencies above 14 mc. Thus the gain ahead of the mixer action is such as to provide an unusually favorable signal-to-noise ratio which permits fuller utilization of the gain provided by the two 6SK7 i. f. stages. To further insure a high degree of stable gain separate coils are employed for each band and for each circuit making a total of 12 r. f. coils in all with the four for each circuit isolated in separate shielded compartments. In other words the coil layout and switching are precisely the same as in many high priced receivers.

Selectivity is fixed and due to the use of a 6 tuned i. f. circuits (plus the contribution made by the r. f. tuned circuits at the lower frequencies) somewhat exceeds the accepted standards for amateur phone operation. Image selectivity, a direct function of the r. f. amplifier, is likewise above average for ham receivers. A three position tone control aids materially in effective heterodyne interference reduction.

Highly effective electrical band-spreading is provided in the form of a separate gang of single condenser plates with its own tuning knob and illuminated dial. This arrangement pro-

vides bandspread in any portion of any of the receiver's continuous 540 kc. to 44.0 mc. range.

The fundamentally excellent signal-to-noise ratio of the receiver is further improved through incorporation of a really effective and automatic noise limiter. This utilizes a separate 6H6 diode tube to trigger a by-pass network which chops out instantaneous noise peaks such as those that constitute ignition and similar types of interference.

The a. v. c. system controls the r. f. and both I. f. tubes, all of which are super-control 6SK7's. A front-panel switch cuts this system in or out as desired and a manual r. f. gain control provides full gain regulation when the a. v. c. is switched off.

The main tuning dial is, of course, fully frequency calibrated for all ranges.

Other front-panel controls, and there are twelve of them in all, provide full operating flexibility and convenience even to the extent of controlling the beat-frequency oscillator pitch. Another illustration of some of the little refinements that make for simple operation is the stand-by switch arrangement whereby switching the receiver plates off and on can be accomplished at the receiver panel or from a remote point such as the main station switch.

A socket on the rear of the chassis provides for optional battery operation. Removing the normal jumper plug automatically disconnects the built-in line supply from the receiver circuits but leaves the filter in. Insertion of another plug in this socket—a plug to which the battery or other external supply source has been connected, completes the changeover. The receiver is therefore fully adaptable to fixed or to mobile, marine or other types of portable service.

While an "S" meter is not included in the receiver, socket connections at the rear provide for the use of an external meter which is available as separate equipment.

Thus this 9-tube receiver provides the features essential to the average ham, short-wave listener and experimental operator, and does so at a minimum price consistent with sturdy quality and dependability—a price on the sunny side of fifty!

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1939

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to disappear altogether during transmission. NBC's technicians found a way to raise the strength of these frequencies and so preserve the entire richness of voice or music until it reaches the listener."

In other departments we find:

"A Rachmaninoff Cycle at Carnegie Hall, in which the distinguished artist appeared in the triple role of pianist, composer and conductor for the first time in thirty years; the benefit concert of Arturo Toscanini and the NBC Symphony Orchestra at Carnegie Hall, an unprecedented tour by Marian Anderson, in which she made eighty-two concert appearances, and a series of Town Hall recitals by John Charles Thomas were outstanding achievements of NBC Artists Service in 1939."

"The debut of the NBC Symphony Orchestra as a year-round, full-time symphony orchestra, the world premiere of a radio opera written for NBC by the gifted young composer Gian-Carlo Menotti, and three broadcasts short-waved to America from the International Music Festival at Lucerne, Switzerland, were outstanding events of the extensive music schedule presented over networks of the National Broadcasting Company during 1939."

Opera, education, drama, religion, and sports were all given considerable space in the year end report which ended with "Network expansion."

"Millions of radio listeners throughout the United States, Canada, and in Cuba were the recipients of improved and extended service in 1939 through the addition of 20 stations to the Blue and Red Networks of the National Broadcasting Company.

The additions brought to a new all-time high of 181 the number of NBC affiliates, and maintained the company's position as the world's largest and most far-flung broadcasting organization. When the company was founded in 1926, there were only 18 stations in its network.

The new NBC affiliates are located in areas where heretofore broadcasting service of maximum reliability was precluded by natural obstacles and in regions where such service was not available from both the Blue and Red Networks of the Company.

Notable during the year was the extension of NBC service to four more stations of the Canadian Broadcasting Corporation, CJIC at Sault Ste. Marie, Ont., CJLS at Yarmouth, N. S., CBA at Sackville, Ont., and CBK at Watrous, Sask.

Of the domestic stations which became NBC affiliates during 1939, eight are in the Middle West; one in the Southwest; four are in the South and five are in the East and Central-Atlantic regions. They are: WBCM, Bay City, Mich.; KVOA, Tucson, Ariz.; WKBO, Harrisburg, Pa.; KROC, Rochester, Minn.; KYSM, Mankato, Minn.; KFAM, St. Cloud, Minn.; WCOA, Pensacola, Fla.; WING, Dayton, O.; WBLK, Clarksburg, W. Va.; WGKV, Charleston, W. Va.; KSCJ, Sioux City, Ia.; WJAC, Johnstown, Pa.; WFBG, Altoona, Pa.; WISE, Asheville, N. C.; KOWH, Omaha, Neb.; WHIZ, Zanesville, O.; WOLS, Florence, S. C.; WTMA, Charleston, S. C.; and KOH, Reno, Nev.

The Cuban station added to NBC was CMX, in Havana."

There, it is hoped we have covered the high spots without being too brief or boring you too much.

R. D. C.

## ON THE STUDIO BEAT

Professor Kay Kyser, prexy of NBC's "College of Musical Knowledge" has been taking advantage of New York's recent cool weather because it is probably the last he will see this winter. The band is going to Miami for six weeks beginning February 7.

Donald Dickson the traveling troubadour will soon be back on his regular spot on NBC's Edgar Bergen Charlie McCarthy program. Since November 17 when he began his tour in Dubuque, Ia., the NBC baritone has been commuting to Hollywood each week for his appearance on the Chase & Sanborn program. During this time he has missed only two broadcasts. Sunday, January 28, will be his third and last away from the program. His place will be taken by Lansing Hatfield, baritone, who substituted for him on December 10.

After bucking "Buck" Benny and the European war for several months Dianah Shore, NBC and Bluebird songstress, has moved to an earlier spot. She will be heard at 5:15 p. m., EST on Sunday. Reason, she says, is that she is worried about Jack Benny's Crossley rating . . . . .

Jerry Colonna, NBC comedian, was chosen Hollywood's "oomph" man by a jury of movie starlets at a Bob Hope party recently. The jury—including cinema darlings—Madeleine Carroll, Judy Garland and Dorothy Lamour—picked Colonna over such eligible candidates as Clark Gable and Errol Flynn because "he makes love in two languages—English and double talk—but when he meets a nice girl he talks turkey; he looks well in a sarong and he dresses as he feels and always feels foolish."

Jack Benny and his NBC Jello program retained their first-place positions as the nation's favorite entertainer and radio show, respectively, in Radio Daily's third annual poll of radio editors and critics. Voting on favorite entertainers gave Benny a slight margin over Edgar Bergen & Charlie McCarthy, while Fred Allen, Bing Crosby, Bob Hope, Kay Kyser and Fibber McGee & Molly followed in that order. Alec Templeton placed ninth.

"This Amazing America," quiz show designed to acquaint John Q. Public with the country in which he lives and travels, will be introduced to the NBC-Blue Network audience in the first of a weekly broadcast series, Friday, Feb. 16, from 8:00 to 8:30 p. m. EST. The Greyhound Lines, operators of the Trans-Continental Motor Coach System, will sponsor the program.

Virginia Payne keeps a diary, not a history of her personal life . . . but a record of every day's happenings in the "Ma Perkins" series since the sketch first started seven years ago.

NBC listeners are sending Dr. I. Q., Lew Valentine, valuable historical documents to substantiate statements in the biographical portraits they submit for use on his program.

Henry Hunter, Les Damon and Alex Gruenberg, director of the Girl Alone program have organized radio's first chess club.

Tommy Riggs recently received a stack of birthday greetings . . . for Betty Lou.

Donna Dae, starlet of the Fred Waring series, puts nail polish on the toenails of her dog, Bootsie.

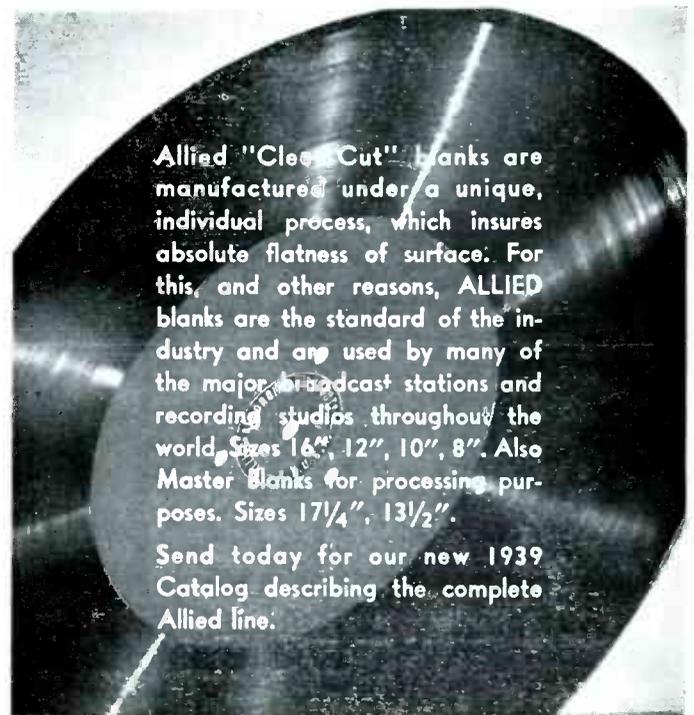
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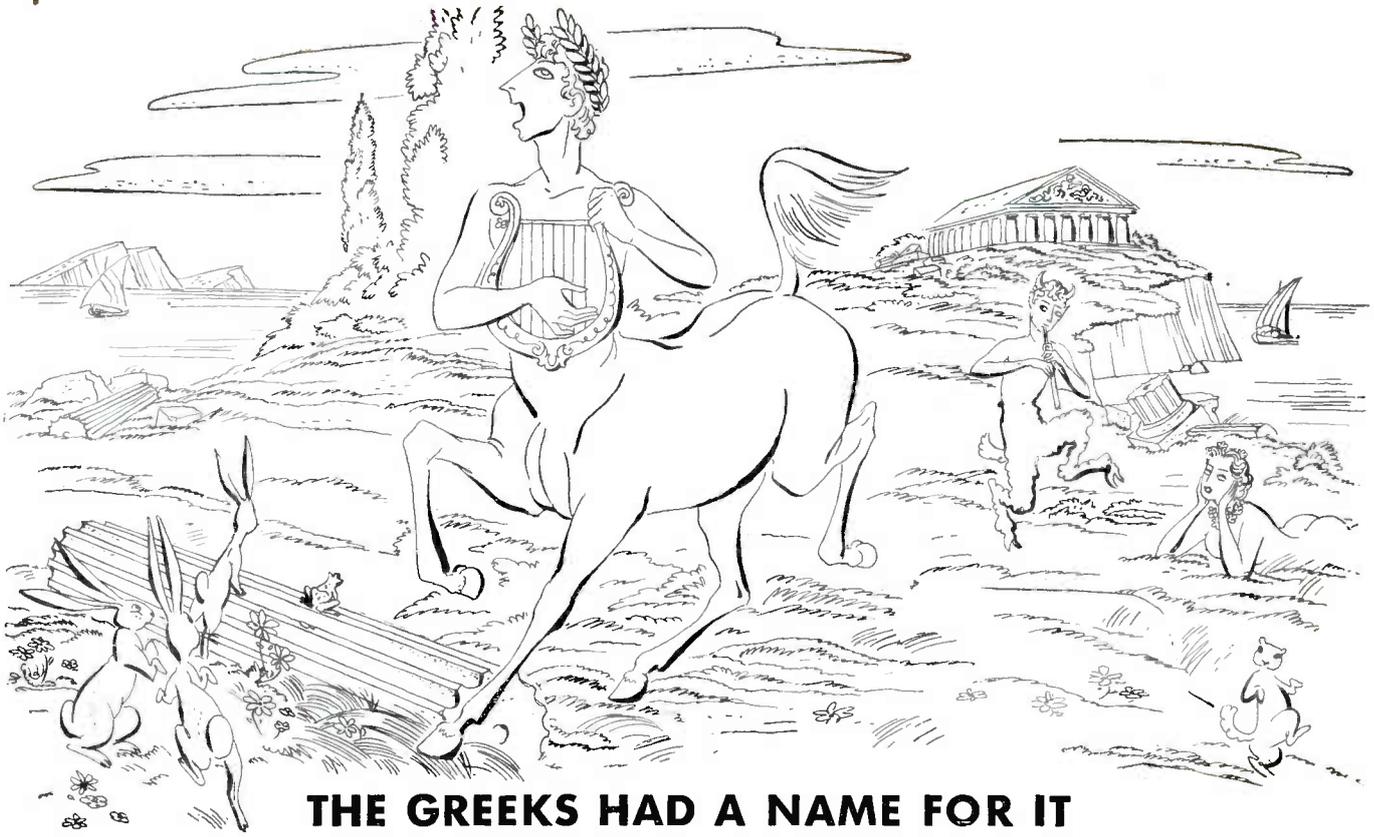
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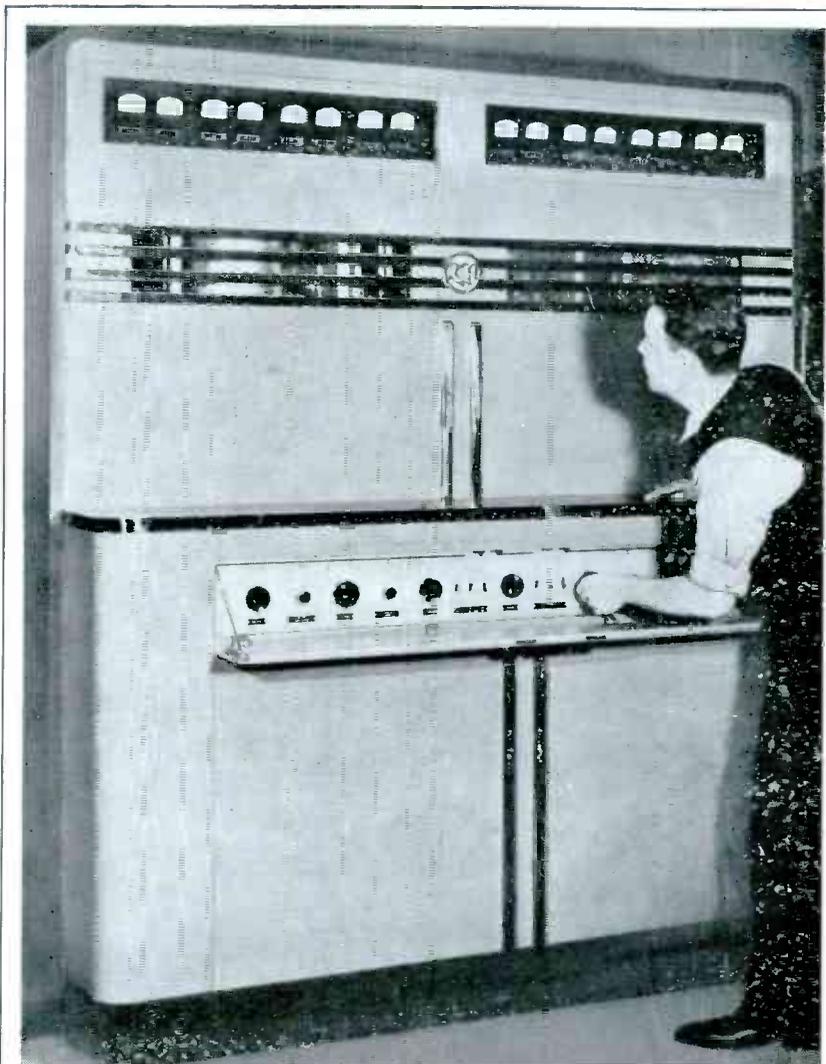
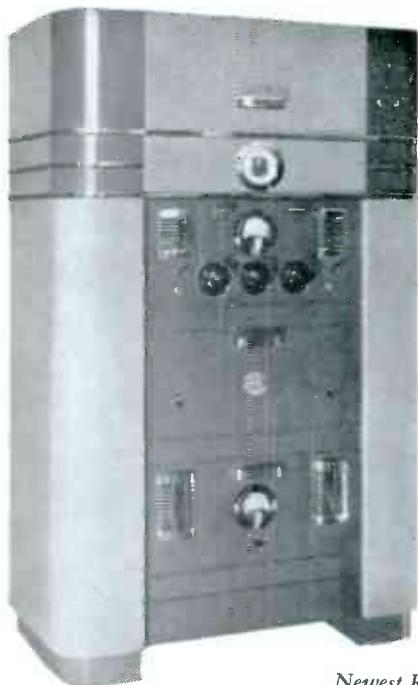
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