

WATE JOURNAL

NOVEMBER - 1939

In This Issue - -

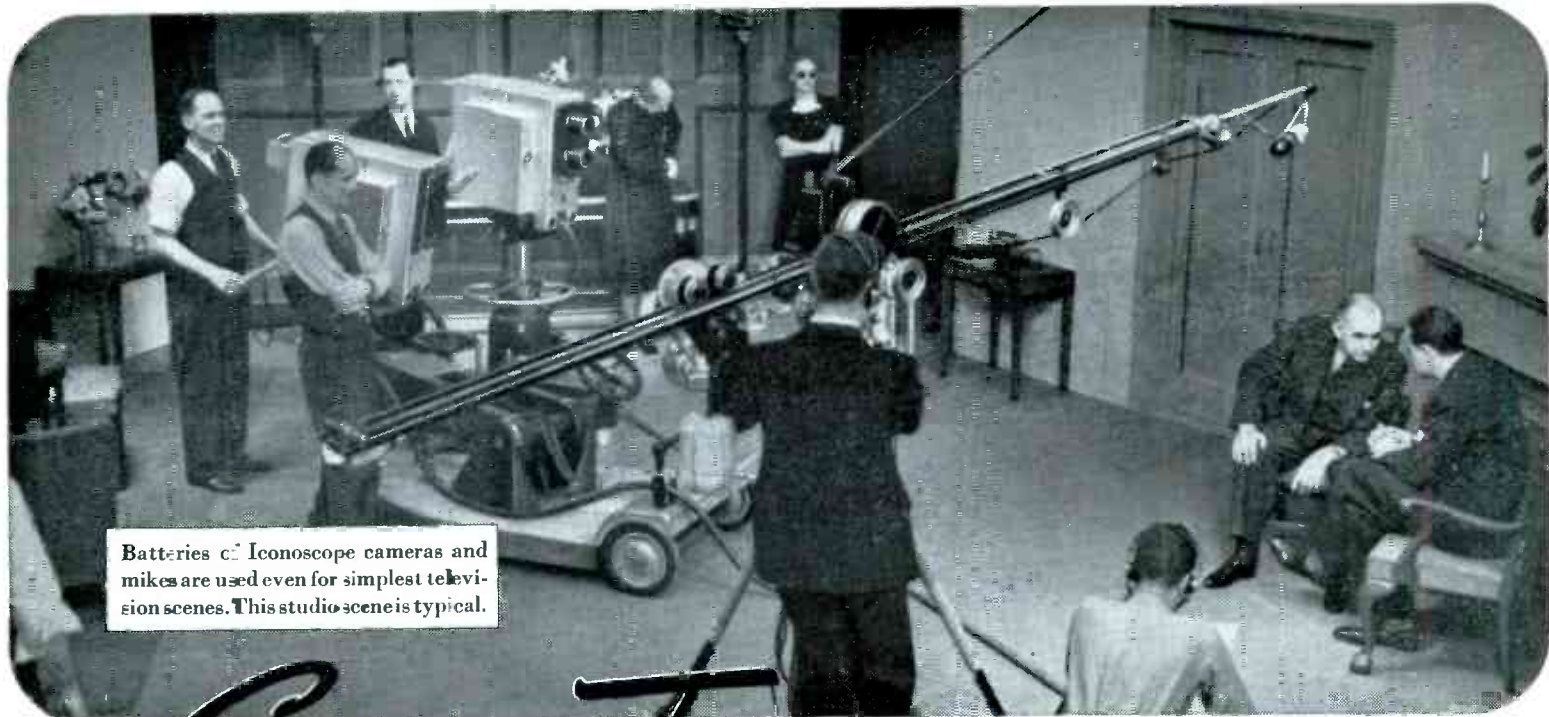
Sixth National Convention

If and When

An Amazing Experiment

*Sight
And
Sound*





Batteries of Iconoscope cameras and mikes are used even for simplest television scenes. This studio scene is typical.

Curtain Time FOR A NEW AGE OF ENTERTAINMENT



NBC Mobile Television Unit for outside pick-ups—The equipment is carried in two 10-ton trucks.

Programs by NBC to match the progress of Television

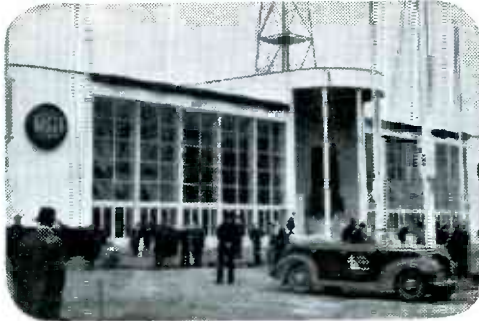
While RCA has concentrated on the technical aspects of television, NBC has studied another phase, the programming of television.

To produce television programs calls for intricate techniques. Practices are unique, and differ from those of radio, the stage or the movies. Progress has had to be largely by the trial and error method. NBC has devoted great effort, much time and a large outlay in money to the development of programming.

NBC pioneered many of the program forms which are today accepted standards of radio broadcasting. The same spirited leadership will characterize the further activities of the National Broadcasting Company in the new art of television.



This miniature model of a small city being built in NBC studios, will appear full-size when televised.

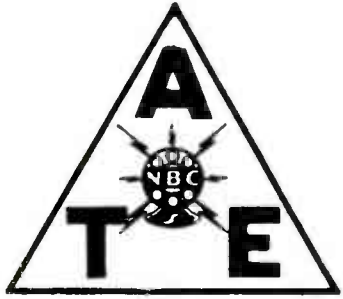


RCA Building at New York World's Fair. Visitors will see all the services of RCA including television.

NATIONAL BROADCASTING COMPANY

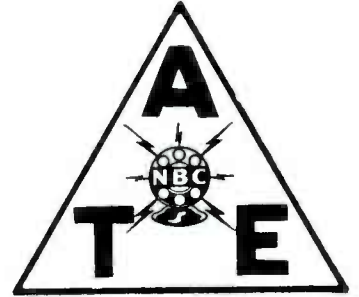
THE WORLD'S GREATEST BROADCASTING SYSTEM

A Radio Corporation of America Service



*Fay Gehres
RR #5
Evansville Ind
WB 37 - W 9 A 1 N - W E O A*

JOURNAL



VOLUME 6 ISSUE 11

NOVEMBER 1939

1939 NATIONAL CONVENTION

F. R. ROJAS, National Sec'y-Treas. ATE

The sixth annual convention of ATE is in session at the time this is written. Representatives of the engineering personnel at the cities where NBC maintains an engineering staff assembled at the Hotel Taft in New York City on October 16, 1939, at 9:00 A. M.

Attending the convention were:

- E. C. Horstman—Chicago—President.
- W. C. Pruitt—Cleveland.
- R. C. Thompson—Denver.
- C. L. Townsend—Engineering.
- R. G. Denechaud—Hollywood.
- C. C. Gray—New York.
- J. W. Summers—San Francisco.
- R. K. Strong—Schenectady.
- D. A. Ullman—Washington.
- George Maher, Jr.—Chicago—Nat'l Sec'y-Treasurer.
- F. R. Rojas—New York—Ass't. Nat'l Sec'y-Treas.

Prior to opening of the session, President Horstman outlined the achievements of the last year. Unity within ATE tending toward advancement of the engineer's position within the industry was pointed out as the prime objective. The manner in which this had been accomplished during the past year was related. It was pointed out that the ATE at present is a more solidified unit than ever before due in part to the success of previous national conventions in bringing together the representatives of the various chapters. These men, on returning to their home offices, can, from first hand observations, relate the close similarity between the work in the various units and also the differences where they occur.

The National Convention upon convening immediately went to work discussing the working problems in the various chapters. This was a laborious and long drawn out affair due to the rapid strides in advancement in the radio field together with the rapid evolution of television from the laboratory stage toward an operating basis. The latter move created new problems which

had to be met. During all these discussions, the spirit of fair play and tolerance was prevalent. Incidentally, most of the national councilmen at some time or other, at the invitation of Mr. Townsend and the Engineering Chapter, viewed some of the television programs. Naturally, they were impressed and further received a clear-cut picture of the working problems in television.

The proposed modernized constitution came up for some discussion and the stage was set for a better general understanding of the whole situation.



Mr. E. C. Horstman, Chicago Chapter Chairman, was reelected as president of the Association of Technical Employees for the year of 1940 while Mr. C. C. Grey, New York Chapter Chairman, was elected vice-president. President Horstman reappointed Mr. George Maher, Jr. of Chicago and Mr. F. R. Rojas of New York, National Secretary-Treasurer and Assistant National Secretary-Treasurer respectively.

Naturally, while there was much work in connection with the convention, including night sessions and much committee work, the national councilmen managed to squeeze in a moderate amount of social activity. This consisted of visits with old friends now living in the metropolitan area, visits to the New York World's Fair, which was very well received, tours through Radio City, and as stated previously, visits to television programs. Some members of the New York and Engineering Chapters came to Convention Hall to meet members of the National Council and to renew old acquaintances.

In retrospect, the spirit of ATE evidenced at its founding in 1933 has prevailed. As stated, there was the desire of technical employees of NBC to attain and perpetuate a cordial relationship between the National Broadcasting Company and its technical employees. This present National Convention has reiterated the hope and desire for a continuation of this situation.

IF AND WHEN

By JON LARSON

When the news came through at the Mare Island Navy Yard at Vallejo, California on September ninth that the National Geographic Society South Sea Expedition was postponed, all the final preparations of months came suddenly to a halt. The apprehensions of members that the European situation might seriously delay or postpone the year long trip were justified. The great disappointment could be read even on the faces of the crew of the "Hamilton."

We were discussing antenna installations on board when the sad news broke. Commander Fritchie, who had just arrived to take up executive duties until the arrival of the new skipper, Captain Yeandle, was heartsick since he had been granted the transfer for the trip from a desirable east coast post. Captain Yeandle was on his way from Washington to take command at the time. Later in the day further word was flashed that the "Hamilton" and three other west coast Coast Guard vessels were to proceed to the Atlantic coast for patrol duty. Thus, was a most interesting and fascinating venture prevented from even beginning.

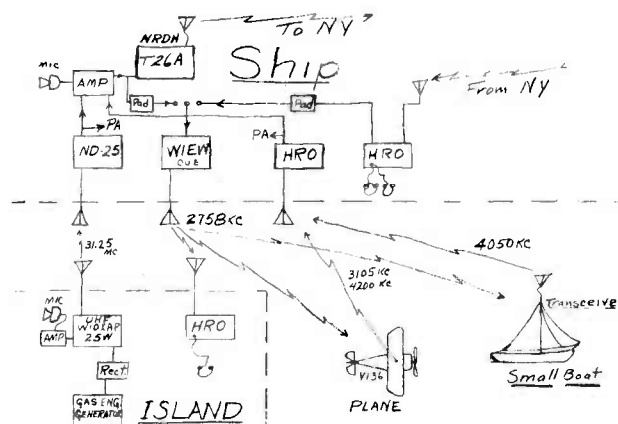
The first arrival on the west coast was Dr. Piggot of the scientific party, who arrived there about September first. He had in his care several tons of scientific instruments and gadgets which he practically lived with and watched over continually. We had the pleasure of meeting Dr. Piggot on September sixth and were quite sympathetic with his problem of having to handle such a great deal of delicate gear.

On September seventh the vessel was taken to the Navy Yard at Mare Island for the installation of special booms and overhaul of the ship's engines. By this time there had been hauled aboard about ten tons of equipment and supplies, including personal trunks and effects, and all was assembled on the large after-deck. In fact, practically all necessary impedimenta awaited the remaining dozen members of the scientific party who were to leave Washington on the very day of the postponement which caught them less than a half an hour before leaving.

In addition there were included, of all things, one ton of TNT and twenty tons of the common ordinary specie of sashweights to be used in sinking charges of the explosive at the ocean bottom so as to measure sediment depth and other characteristics of Chez Monsieur Davy Jones. Miles and miles of one-half inch steel cable were to be stored for ocean sounding work. There were also some 2,000 citrate of magnesia bottles (a year is a long time!) devoid of their usual contents and labels but with notes requesting the finder to advise when and where found. This was to determine the path of ocean currents from certain positions. The Grumman Amphibian V-136 which was assigned to the expedition had reached the coast but had not yet been hauled aboard.

Arrangements had been made with Mr. John Cox of RCA Communications regarding procedures to be followed in the operation of the various frequency assignments. To reduce error and loss of time each frequency was designated a channel number preceded with significant letters which indicated the origin or point at which that frequency was to be used. The reception and cueing was to be done either from San Francisco or Honolulu RCA, controlling their respective transmitters and receivers. Most of the islands in the South Pacific lie within their Australian and New Zealand beams. For covering Easter Island the plan was to reverse the Seattle beam.

A great variety of frequencies was available for use at the RCA transmitters at Bolinas whereas NRDH aboard the ship was limited to one each of the 6, 9, 12 and 17 mc. NBC frequencies.



Planned Program Setup

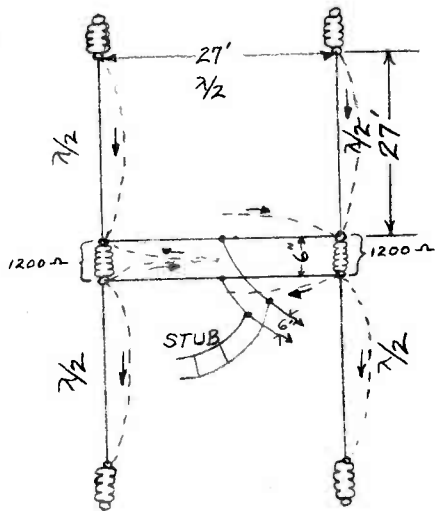
Probably more than anything the subject of antennas will carry the most interest so here follows a rather lengthy description of those selected because of space and other limitations. The antennas decided upon included a 17 mc four element H type beam supported or hung in an upright position from the 18' crossarm on the mainmast which satisfied a half wave spacing between the sides of the H to give either bi-directional directivity along the axis of the ship or at 90 degrees to the axis, depending upon whether or not the half wave phasing line between the sides of the H were transposed at one of its ends. This half wave phasing section actually provides two quarter wave transformers in parallel at the center where the main transmission line is attached. Employing a 600 ohm transmission line and a phasing line of 600 ohms impedance determined by our friend

$$Z = 276 \log \frac{2D}{d}$$

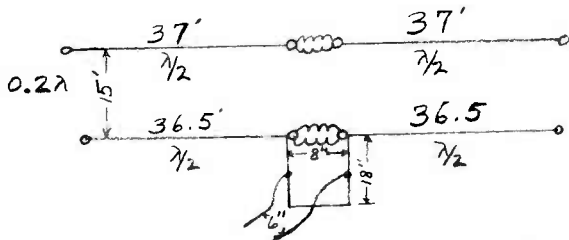
results in approximately a 4 to 1 impedance mismatch. To remove the resulting standing waves the plan was to use a reactance stub at a convenient point on the transmission line. All four half wave elements of the antenna are fed at their ends or at High Z points by the phasing line where the Z is approximately 1200 ohms since, although at Z at each end of a half wave radiator is theoretically infinity when free in space the effective Z is actually lowered to about 2400 ohms at its junction with a phasing line or feeder. The simple zep is a good example. Now, when another half wave element is tied to the opposite side of the phasing line the resultant Z is one half of the 1200 ohms. Then to continue analyzing the antenna consider half of the phasing line (that is, from the center of the H to one side) as a quarter wave antenna transformer whose surge impedance and load Z_r will determine by transmission line theory ($Z_0^2 = Z_r \times Z_s$) the sending end Z_s ; or, given the sending end and load Z we can solve for the required Z_0 of the quarter wave line for maximum transfer of power between

these unequal impedances. Continuing, since there will be effectively two quarter wave sections across each other at the junction of the 600 ohm transmission line the sending result at that point would be 600. But since the load at each section is also 1200 the two sections would repeat the impedance from one end to the other. This is really the recently brought out and so called Q type of antenna, though horizontal. On the 'Hamilton' this was impractical due to excessive trapping in the air. Quarter wave 600 ohm phasing sections were decided

'Hamilton' Antennas
(NBC)



Vertical H type bi-directional fore and aft along the axis of the ship and tuned to 17,310kc. Supported from extended main crossarm on mainmast downward. To change direction 90 degrees transpose at one end of center section. Current distribution and direction of current flow shown.



Horizontal two waves in phase antenna with reflector uni-directional at 90 degrees to the ship on 12,662.5kc. Supported from mainmast to mizzenmast.

upon as being neater and more practical but resulting in transferring the 1200 ohm load impedances of 150 ohms where the regular transmission line is mismatch. A reactance stub either open or closed was to be attached to the line later at a convenient point. The use of single or dual concentric lines were not considered because their use under shipboard and tropical conditions was not deemed advisable.

The second beam antenna selected as most suitable for use was a horizontal 12 mc two-half-waves-in-phase antenna with 0.2 wave spaced reflectors, giving a uni-directional pattern broadside to the axis of the ship since it was to be supported horizontally between the two masts. A quarter wave stub was to be employed for providing a match to its corresponding 600 ohm line.

A horizontal Q type beam employing dual half wave matching bars was seriously considered since it might be operated equally well on its sub harmonic on 6 mc but again due to excessive aerial trapping, weight and very small spacing of the bars it was avoided.

Mechanical problems also ruled out the use of rotatable multiple close-spaced affairs. A fixed close-spaced horizontal three element antenna was to be tried between both masts on both 12 and 17 mc when the opportunity presented itself.

For 9 mc the plan was to employ a single horizontal half wave element with .2 wave spaced reflector in place of the 12 mc antenna. Since the reflector spacing is not too critical except in reducing back to front ratio for improved reception in reducing noise from unwanted directions the 12 mc antenna with its reflector could easily have been used on 9 mc by readjusting the lengths of the flat-top portion by removing or restoring shunts across certain insulators in the antenna. Likewise the shorting bar could be displaced and the xmission line readjusted on the new stub length. On 6 mc and successively lower frequencies the regular single sloping wire ship's antenna would most likely be used for higher angle radiation and shorter distances.

Of course, due to the presence of a great many guys and ship's gear the directivity and discrimination of these antennae could not accurately be predicted and so in the last analysis their effectiveness could only be determined by results. On the choice of some practical form of directive antennas a serious attempt was made to realize as much gain as possible to make the most of the 400 watt carrier power.

The transmitter, a Coast Guard version of the 14C WE normally used on shipboard in the Bell System ship-to-shore service is a 10 channel dial switching frequency selector operated xmitter rated at 400 watts output employing an air cooled final tube of 1 kw plate dissipation (251A) operated as a linear class B RF amplifier. Three channels were set aside for NBC frequencies for instant use. Since the output stage utilizes a single ended unbalanced output a network coupling unit was provided to feed the balanced type of transmission lines instead of single wire affairs as used in Coast Guard work. The transmission lines were to be switched within the radio shack.

The included sketch of the proposed set-up of NBC equipment on the various islands and pickup points, including the plane, indicates the remaining equipment complement.

May this opportunity be taken to express sincere appreciation to all the staff of the San Francisco office and particularly Mr. Peck, Mr. Greaves and Mr. Parks for their hospitality and gracious help.

The support and guidance of Mr. McElrath and Mr. Milne in recommending and sponsoring for this program engineering assignment a member of the Engineering staff of NBC was most refreshing to ATE:

Thanks to Abe Schechter too for giving the Engineering Department another break in the field of special events.

The trip promised much in novelty and the unusual and anyone can imagine the dismay and disappointment of all the members of the expedition upon its postponement. Indeed, with deep feeling can we say C'est la guerre! It upset many a man's personal arrangements and plans which had taken considerable money, time and effort. The anticipation and hope is greater than ever. Caramba, Los Imperialistones! After all don't the Tahitian damsels wear respectively a flower over the left ear to indicate that she has been spoken for, a flower perhaps over the right to show that she might be mildly interested and, with white flowers over both ears to make it clear that though once too occupied she is now interested—but definitely!

HOLLYWOOD

by BOB BROOKE

Still summer Weather . . . Radio City faultless under top load . . . Schuetz back in California . . . Convention . . .

SUN . . . What a day . . . What waves . . . Just climbed out of the surf, had a delicious hamburger at Jenny's and now for some Journal Copy . . . Note in morning paper that NY temperature was 33 degrees yesterday . . . 98 here at the moment . . . Also Henry we may have five inches of rain in a day, the other day, but at least it rained and got it over with . . . No weeks of cloudy suspense before a storm . . . Our Southwester (Hurricane) followed the heat wave reported in last issue and am sorry to tell Andy in SF that the Raratonga, anchored next to us at the Isthmus, lost a prop in a comb and went into the San Pedro breakerwater with the loss of two lives . . . Some fifty boats were lost at sea and am glad we weren't out in the Pup at the time . . . At least it *was* equipped with a sea anchor and plenty of life belts . . . Think in this warm water a person could exist for several days with a life belt . . . In any event the continued warmth of the present is adding a serious hazard to the invading Eastern football elevens . . . The 100 plus weather also has cooked all the pretty aluminum paint on Radio city roofs down into the tar covering . . . Each day we say, "Probably last swim this year," but water stays 69° so guess we'll still be swimming Christmas . . .

BABY . . . Les Culley sez guess they'll keep the baby . . . Telegraphed report of birth erred in date and name . . . September 23 and the little lady's name is Claire . . . Also credited to Culley, "Coming along swell, expect to have her washing dishes next week" . . .

CONVENTION . . . Convention is in session at this writing . . . Received three page letter from Denny last night, in his beautifully typed comprehensive way . . . Thorough, Sensible Denny has the unqualified confidence of the chapter . . . Personally I feel that the few Hollywood motions before the National Convention are entirely fair and were probably inspired by the desire to clarify and consolidate the Hollywood scene and eliminate after more than five years operation, certain questionable policies still shrugged off by, "Wait till we're settled" . . . "It's a temporary condition" . . . etc.

MISC . . . Parkhurst and Barron of SF down during their vacations . . . Parky watching Mort 'record' with considerable interest . . . Sez the twins are fine and 9 months old . . . Barron catching up with old acquaintances and didn't see much of him around the plant . . . Parky thinks SF Fair will reopen next year . . . reports new double turntable acetate equipment in SF . . . "Later than this even" . . . However, MO sez a big order in to duplicate ours too . . . Parky sez headlines in SF were about our 107 but that they were experiencing their hottest day in history too, 97 . . . NO SMOKING in Reference recording, So Smitty thinks he'll get a pipe with an 8 foot stem to stick out the door . . . One of those Harem pipes with hoses might be better . . . Bob Callan reports the new setup in transcription will be strictly professional . . . Carl Lorenz and Al Korb bemoaning the war as a taker away of all DX . . . Carl and Al to High Sierras for deer and trout . . . Snow up there and came back with limit of trout and one deer . . . Fall brings renewed Ham interest and reminds me to work

three fellows so I can renew my license in December . . . Spent at Republic following a spell with MGM . . . Gang keeping their fingers crossed for Jimmy Brown who has to take his bar exams during October vacation . . .

BOB BACK . . . We had a hunch Bob Schuetz liked California . . . Heard him mention wishing there was a branch of the Engineering Group out here . . . And that was while he and Strang were building the place . . . Now we're mighty happy to welcome him back as manager of the Electrical Transcription Department . . . Bob will coordinate and promote all the recording services of NBC from Thesaurus to Network rebroadcasts . . . His office is on third floor and will have Helen Welty as secretary . . . Helen, was secretary for the NY construction boys during building, and has been with Sales traffic since . . . Bob is equipping the new office with monitoring facilities and adding sufficient recording equipment to make Hollywood one of the best equipped layouts in the country . . . A story when completed . . .

JOURNAL . . . Mort Smith sez we left his name out of the list of World War veterans . . . sez we shouldn't cuz he can remember only too vividly bouncing around the North Sea as Chief Radioman on a destroyer . . . Remembers how the ink many hours copying press from the Equipment Room AVR-11 to renew my commercials last week . . . Good for five years now . . . what a relief . . . Alice Tyler on vacation at NBC Desert Ranch and in San Francisco . . . MacKenzie started Engineers going to the ranch and most everyone has spent some time there since . . . A fine dude ranch in a fertile river bottom in the middle of the desert . . . Tremendous Halloween Barn Dance scheduled by NBCCA for the 27th . . . Old clothes, bobbing for apples, and fun . . . Sax reports no camera activity since return from NY . . . Kay Phelan taking Spanish at night school . . . About everybody back from vacations to cover daily schedules expanding to several pages . . . De's daughter Dorothy skating in chorus for Food Show . . . De has been enjoying the surf weekends lately too . . . War has cancelled Hughes proposed Sub-strato flight to Paris . . . Dick Stoddart settled down to office routine running the Hughes radio laboratory . . . Dick has three of the country's best aviation engineers working for him and has installed a five thousand dollar General Radio test bay, using almost every bridge, analyzer, or frequency generator GR makes . . . Joe Kay had decided on the big Pontiac convertible over a Mercury . . . Is having a time getting delivery as he can't seem to catch a shipment with an 8 cylinder, black, red leather, black top, white side wall job . . . Brooke's fliv with 70,000 miles is causing worry as to repairs or a new car . . . Hasn't dared go near the Auto Show . . . Buddy Twiss to Bozeman Montana for a series of Farm and Homers . . . Jake O'Kelly sez no more visits to his claim until spring account snow and roads . . . Also reports Tropics across the street has become a great hangout for the after midnighters . . . Zombies and Hurricanes prevail as most popular drinks . . . NBC vocalists at nightery permit considerable heckling . . . Reed of NY in for visit during his vacation . . . Al Korb thinking of asking the Coast Guard to patrol his new swimming pool . . . sez traffic pretty heavy . . . Paul Green's wife, Marie, doing vocal

spots on the Al Pearce show . . . Charley Russhon working hard bottles hopped around while firing . . . And how everything movable moved while bouncing thru those short choppy North Sea swells . . . Believe he worked some transports following the Armistice, before joining our merchant marine . . . Orchids to Journal staff for fine job during slack summer months . . . Hollywood will cooperate fully in Christmas advertising this year . . . It is also planned to go after local advertising for regular issues and print it adjacent to the Hollywood Column . . . We are wondering how a separate column on Movie-Radio activity would go . . . A column of artist gossip with radio flavour . . . And a bit of movie sound department data along with it . . . Written by engineers for Engineering readers . . . Before we expand tho I guess we had better start getting this copy in on time.

GOSSIP . . . Johnny Frazer, announcer, has bought a lot out in the valley and has dug himself a swimming pool, but hasn't thought about a house . . . Understand the dirt he dug out has been left alongside the hole in case he gives up swimming . . . Charley Norman back from a late vacation looking very tanned and fit . . . Lots of salmon and a 256 pound five point buck . . . Our NBC floating observation balloon, the Goodyear Volunteer, back in town after a flight down the Coast from the SF Fair . . . See her towing signs all day but note in the papers that she is scheduled for dismantling at Akron soon . . . Kay Kyser to broadcast from a movie sound stage on the RKO lot once only . . . First big show from an actual stage since the Warner Brothers Lucky Strike series . . . The RKO stage just a few feet from NBC's birthplace in Hollywood . . . Two new Sound Effects men here from NY . . . Alice Tyler also back from vacation looking like a million . . . sez she occupied a room at the Ranch once stayed in by Garbo, MacKenzie, and Ferguson . . . Why didn't I hear about that room from Mac or Fergy . . . Friend with Australian Radio Commission sends a couple of His Masters Voice records on the Lyre birds and Kookaburra's . . . Anybody got a library of odd records that would like 'em . . . Jake O'Kelly threw a nice birthday party for Cappy recently . . . Producer, Bob Redd, got back at a speedcop in an unexpected way . . . Asked Police Department for a motorcycle officer to help record some actual motorcycle sound effects . . . Unknowingly man sent was a copper who had recently given Bob a traffic tag . . . After giving said officer quite a workout on the parking lot Bob gave him the old line, "Don't you remember me?" . . . Tongue hanging out officer hits the deck in a dead faint . . . Bob Callan, epicure, reports finding a new place down town that boldly advertises filet of Horsemeat . . . Bob, "Believe me it's good" . . . Must be what happens to some of the Santa Anita ponies or maybe Bing owns the place . . . You know, Jake O'Kelly is a darn good reporter . . . Jake sez working special Bob Armbruster program with a big orchestra gave him a real thrill after all these years in master control . . .

So Long Gang, Remember the Christmas Issue . . . 73

STALKING THE STUDIOS

FANS: Andy Devine is closely watching the fortunes of Notre Dame's eleven this season as he has a standing bet that the Fighting Irish will dump U. S. C. in their next meeting . . . Lesley Woods, Road of Life's Carol Evans, accepts radio roles with a single string attached—that there be no Saturday p. m. rehearsals. She is one of radio's most rabid grid enthusiasts

. . . Jack Benny's athletic interests center around the fight game, and this resulted in his getting a big kick when he met Joe Louis in Detroit recently. Incidentally, Joe feels the same way about Buck . . . Bob Hope, Skinnay Ennis, and Jerry Colonna, NBC's Pepsodent boys, are among Hollywood's most rabid golfers. In spite of its complexities, the game takes a new turn when they play it. The general idea is to make as much noise as possible when the opponent is swinging. Nice business . . . Ruth Bailey (Rose Kransky of Guiding Light) has taken her tennis pretty seriously. Unknown to Ruth, her husband entered her name in a recent tournament and she came within an ace of winning. She's more serious than ever, now.

DOUBLE THREATS: Milton Berle, NBC's new gag-buster, has his name in lights right under the Broadway success, "See My Lawyer" . . . Since Bobby Hackett joined Horace Heidt's Pot O' Gold aggregation, Ralph Wingert, who has been doubling in brass, has more time to devote to those smooth arrangements which he does with Buzz Adlam . . . Kenny Stevens, Joe Penner's "Tip Top" singer, is at the Earl Carrol in "The World's Fairest."

PRESAGE: Christina Lind, vivacious blonde singer, will soon be heard in a new NBC series. She would be an ornament in pictures, too.



Allied "Clear Cut" blanks are manufactured under a unique, individual process, which insures absolute flatness of surface. For this, and other reasons, ALLIED blanks are the standard of the industry, and are used by many of the major broadcast stations and recording studios throughout the world. Sizes 16", 12", 10", 8". Also Master Blanks for processing purposes. Sizes 17 1/4", 13 1/2".

Send today for our new 1939 Catalog describing the complete Allied line.

ALLIED RECORDING PRODUCTS CO.
126 W. 46th STREET NEW YORK, N. Y.
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SAN FRANCISCO

By TAD FULLAWAY

By the time this is in print the vacation season will be over for all hands with the exception of those lads that saved a week for around Christmas time. Time to listen to football—to start fattening the turkey—and to think of buying those Christmas presents. Also time to be wondering who is going to have the watch on New Year's Eve. By the time this gets to you the National Convention will be a thing of the past and we will all have something to discuss and argue about on those lightly scheduled nights. To add a Hollywood touch while you fellows back east are watching the leaves fall and ordering the winter's coal San Francisco is enjoying her summer temperatures and best days. Honestly gang—it is around eighty-five every day.

Along with the rest of the gang NBC San Francisco did its bit to keep the world informed on the rapidly moving events that preceded the outbreak of the "Second World War," though for the life of me I can't understand why it should be so called, for at present it is still confined to only three powers. With everyone talking war these days it might not be amiss to review where some of our gang were during the last big European war.

Control Supervisor Kilgore just missed being called, for at the time he received his card to report for the draft the armistice was signed. Field Supervisor Greaves, tho not old enough at the time to see active duty, got his taste of war conditions for at the outbreak he was visiting in England. He promptly returned to this country, travelling through the submarine zone in a completely darkened ship. Ed Manning, of the KPO transmitter, enlisted and served as a motorcycle dispatch rider, though he did not get across. Perhaps that accounts for his present partiality to motorcycles and speed.

Studio Engineer Barron enlisted as a radioman in the Navy and served for nine months, ending up as operator on a merchantman—a member of the armed guard put aboard ships by the Navy. His duty included stops at the Great Lakes Naval Training Station, the Harvard Radio School as an instructor, and duty at Coco Solo, Canal Zone. Way after the armistice he was still a member of the armed guard of a vessel running relief food supplies to Italy when the Navy put out its Alnav which released him. At that time all radiomen were in the service and the commercial interests had a hard time finding operators. The Navy decided that all those holding licenses would be discharged provided they would sign on a merchantman as operator. Discharge, one trip on a merchantman, and you were free to do as you pleased.

Dewing, Studio Engineer, at the outbreak of the war was an operator on British tankers running out of San Francisco to China. His last ship went to China and was then taken over by the British Navy, sent to Borneo to load oil for Scotland. Dewing came home as a passenger and in 1917 enlisted as an Electrician (R) first class in the United States Navy. He was sent to Honolulu where he was an operator ashore for a while. He then went to sea, if we call it that, as operator on the station ship MONTEREY and later on the tug SUNNADIN. In 1918 he was made Chief and was sent to the island of Maui, in charge of all the shore stations, where he finished his four year cruise.

Cassidy, of Maintenance, enlisted at Houston, Texas, as a radio operator in the Signal Corps and was ordered to aviation duty. He was sent to radio and observers' schools at Austin and then to Ellington Field as instructor. In 1918 the Air Corps was

formed as a separate organization from the Signal Corps and Cassidy landed in the 2nd Provisional Wing—190th Aero Squadron. Just as the outfit was loaded to head east and overseas the armistice was declared.

Of all the gang, perhaps Watson, Studio Engineer, covered the most territory. At the outbreak Tommy was an operator in the Australian coastal service. Wanting excitement he enlisted in the Australian Army. His reminiscences of his enlistment are funny—it was "Mr. Watson will you do this, and Mr. Watson will you sign here." As soon as he had signed it became, "Watson do this, and Watson go there." So it goes. Anyway, he left Australia with the first contingent that was sent over, running into excitement from the first. It was one of the cruisers of his convoy, the SYDNEY that sunk or rather ran aground the well known German raider EMDEN. His contingent landed in Bombay, India going from there to Mesopotamia. From Mesopotamia, his outfit fought their way against the Turks all the way to Bagdad. He eventually crossed Persia to Russia across the Caspian Sea and got as far as Tiflis on their way to the oil fields at Baku, when the armistice was signed. Watson was sent home via Calcutta and Bombay to Australia to be mustered out of active service as a Lieutenant in the Signal Corps.

Speaking of Tommy Watson, whose picture appears in this column, it seems that he is a most versatile gentleman. He not only mixes a mean program but from the picture it would appear that he also handles a mean violin. Wonder if Carl Ravazza, that leader man from the Hotel Sir Francis Drake in San Francisco, who is pictured with Tommy is thinking of signing Watson in his string section?



Left—Tommy Watson. Right—Carl Ravazza

Photo by Brewster

Morrison, after finishing his tower and installing his signal squirter went home the other night to find a notice under his door from the city building inspector notifying him that the inspector's office had not issued a building permit and for Morrison to hurry and get a drawing of the tower and the base specifications to his office. Anyone else ever hear of requiring

a building permit for a radio antenna quizzes Morrison. After completing the tower Morrison blew his final amplifier tube so had to rebuild the whole final using a pair of Eimac 100th tubes.

Parkhurst, in addition to his ham activities, has joined the ranks of the camera addicts with a new Bell and Howell Filmo Eight. First roll of pictures featured the Parkhurst twins, Terry and Jerry. Kilgore, Andressen, Palmer, and Greaves welcomed Parkhurst to the ranks of movie makers with many a suggestion of what not to do to make good pictures. The ads all say you shoot the pictures—we do the rest. Sounds easy doesn't it. What happened to the idea of various chapters shooting sixteen millimeter movies of chapter activities for exchange showings throughout ATE?

Don't think it has been mentioned—but Alan O'Neil is due congratulations on the birth of his baby boy, born to the O'Neils the twenty-seventh of August. Another thing we failed to mention is that Greaves, when he returned after his vacation, found parked in the middle of his desk a pair of baby shoes. Imagine his surprise. It will be a baby sometimes this winter.

From the pictures of Jacobs and Rothery below they look like ball players—good enough anyway to beat the announcers at the NBC Athletic Association outing last month and to win a desk lamp for the control room desk. Rothery may be a ball player

but he certainly can't play golf—as he, Kilgore, Sugg, Greaves, and Fullaway found out. Perhaps it would be a good idea not to mention any of the scores turned in by the fellows.

The present license situation has a few of the boys worried. With the amount of service that can be gained operating the relay broadcast transmitters it seems that all hands will have to take the examination every time for renewals—what a bother. Let's hope that the regulations are changed before any of us have to stand for examination.

Best story of the month concerns the local songstress that was to sing two numbers on a program, "I'M FREE AGAIN" and "GOING HOME." Ten minutes before she was to go on the air she was given notice that her talents would no longer be needed. How true the song titles were!

VISITORS—Again the parade of summer visitors. Joe Kay from Hollywood, Bob Waldron from New York (formerly of NBC San Francisco), Bob Clark, NY Television, formerly NBC San Francisco, McKenzie and Division Engineer Saxton, both former San Franciscans and now from Hollywood, and finally Jon Larson from New York, who as you all know, was to go to the South Seas until his ship was called to the east coast on the Neutrality Patrol. Many others undoubtedly passed through and to them a hello and a sorry we missed you.

And now it is a good-by until next month. A HAPPY THANKSGIVING to all of you.



First Baseman - Cliff Rothery



Catcher - Harry Jacobs



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An Amazing Experiment

by TOM GOOTEE, Chicago SE

The planet Mars recently spun closer to the earth than it ever had in some twenty or thirty centuries of spinning. Even at that comparatively "close" distance it was, of course, several billions of miles from our little world. But some publicity-wise radio men in one of the eastern states conceived the idea of attempting to communicate with Mars—at that "close" distance—by means of short-wave radio. But after hours of directing radio transmissions to the planet—and receiving nothing but hash—the operators were convinced that (1) it was impossible to communicate with Mars, and (2) if the radio waves *did* reach the planet it would be impossible to receive the signals there.

And as the great planet Mars went spinning away, the radio operators and technicians packed up their equipment and went home to sleep. The experiment was *not* successful, and it was conceded impossible to communicate with Mars.

However, I would like to now state publicly that I made a similar experiment on the night in question—and I achieved remarkable results! Until now I have refrained from publishing the amazing results of my strange experience, due to my great modesty and also my inability to get the true facts mentally coordinated and arranged. On the night of my famous experiment I must confess that my mind was a *little* befuddled.

I have been interested in astronomy for some time, and divide most of my spare time between my telescope and my ham radio. When I learned of the proposed eastern experiment I decided that I, too, would attempt to establish communication with the planet Mars. I made elaborate preparations for my experiment, and had all of my intricate laboratory equipment in excellent shape for the Big Night.

My assistant, Doctor Killfidget, was with me the night of the experiment. We arrived at the laboratory rather late, due to stopping off at several hard-drink emporiums, but we were soon in readiness for what we hoped would be a truly Great Event.

The learned doctor took his place at the telescope and was soon peering intently into the astronomical apparatus. It turned out, however, that he was studying a big blonde that lived in an apartment house ten blocks away—instead of the stars. I chided the Doctor sternly, and then took a look myself.

We often entertained ourselves on dull nights by peering into other peoples' homes with our high-powered telescope.

But the sky was cloudless! There was an immense galaxy of stars overhead, and I knew that soon the planet Mars would begin approaching the earth! Both the Doctor and myself were exultant with anticipation.

I left him at the controls, and crossed the huge room to my intricate transmitting and receiving equipment. My ham rig is not a pretentious transmitter, but it serves my purposes very nicely. I built it myself, out of old automobile parts and piano wire. The tube complement includes two cathode-ray scanning tubes as I hear television is on the way, and I want my rig to be ultra-modern. Among other features of my equipment are: automatic gain suppression, four gear speeds forward, hot and

cold running water, reverse volume expansion, illuminating tuning dials, water-cooled 863's in the output, chromium beer-spigots, and the entire equipment enclosed in a neat, grey crackle-finish container which I made out of several old egg-crates.

I turned on the filament switch, and in a second the filaments began to glow a bright cherry red. I applied the plate voltage, and soon the plates began to glow a pale green. All was in readiness! I watched the meters jiggle back and forth with a fiendish glee. Somehow, even then, I felt that we were making history!

With the transmitter oscillating on several widely-separated frequencies I tuned up the antenna circuit. At last we were ready!

I threw the switch on my Super Skywalker receiver and listened. A rumble of distant static greeted my ears. I turned to my assistant, seated at the telescope.

"Well, Doctor!" I chortled, "We are ready to begin!"

His only answer was a long, low whistle as he gazed through the instrument.

"Oh, boy!" he exclaimed, "Look at that!"

I turned to him.

"Doctor!" I thundered, "What are you looking at?"

"The brunette in 311," he said indifferently.

That was the last straw!

"Doctor Killfidget!" I gasped, "Either you attend to your business, or I shall continue alone!"

The doctor was downcast. He protested vaguely. Then his eyes began to fill with large tears, and I knew I had hurt him deeply.

"Very well, Doctor," I said softly, "You may stay. But no more monkey-business!"

He nodded and took his position at the telescope behind me. *All was in readiness!*

I tuned the transmitter to 10 meters, plugged in my Little Speed Demon Bug, and starting sending my famous ham signal: W9NUTS. The letters went crackling out into the ether like wet clods of soft mud.

But there was no answer.

I patiently tuned my Super Skyjumper back and forth from 1 meter to 10 meters—but I heard nothing.

The doctor was crestfallen.

"Perhaps," he began, "Perhaps we can't hear them, sir."

I knew there were large tears in his eyes as he spoke. Onions will do that.

"Let us not give up hope!" I answered. "You scan the skies for a glimpse of Mars. I'll continue here."

I retuned my rig to 13 meters and again addressed the outer world. Retuning was a comparatively easy task since my home-made equipment oscillates equally well at all frequencies, without a crystal. But despite my efforts I could hear nothing in the receiver.

A complete change of tubes in the receiver seemed to help

matters, and I returned to my key. Chattering out from my Little-Gem Handy-Dandy Multi-Directional All Wave Special Antenna went my signals to Mars—clipping along at eight words per minute.

Then I stopped to listen to the receiver. The laboratory was in almost complete silence. Only the rumble of static in my Little Daisy Liteweight Phones disturbed the calmness of the great room. Behind me the Doctor was slowly scanning the heavens for sight of the planet.

I disconnected my sending key, switched on my Little-Unique Carbon Microphone, and again addressed the world above me.

"Hello, Mars!" I shouted. I had to shout as all the carbon granules were loose. "Hello, Mars. Can you hear me?"

It seemed a futile question. But I was persistent. "Hello, Mars," I repeated.

Then suddenly came an answer through the receiver: "Phyzpjge Blop Drfxzptf Zct!"

Through the maze of static had come words! Words spoken by someone on the planet Mars! I was almost speechless with surprise! I hastily switched on the microphone and answered:

"Hello, Mars! I can hear you!"

There was a slight pause, and then came a reply: "Phyzpjge Blop Drfxzptf Zct!"

But before I could answer again, the Doctor gasped loudly.

"Come quick, sir!" he called wildly. "I've found Mars, sir. Here, come and follow it as it approaches the earth!"

I jumped up from my bench and dashed across the laboratory. "Take over the radio, Doctor!" I ordered.

Then I stepped to the platform, adjusted my good eye to the telescope, and grasped the controls.

I was almost blinded with the brilliance of what I saw! The planet was like a ball of fire, and seemed to be approaching the earth at a tremendous rate of speed!

I was literally amazed, and speechless. Never had I seen such a sight before! There it was, the great planet Mars! Head up, and hoofs pawing it came galloping across the sky like a valiant steed. It was pure white, except for some small blotches of grey and black.

Then from the receiver across the room came the distant voice again, only louder than before:

"Phyzpjge Blop Drfxzptf Zct!"

"Answer them, Doctor," I shouted.

But the poor doctor had collapsed in a dead faint. The shock of actually communicating with Mars was too much for the old Doctor! He lay prostrate across the bench, a soldering iron in one hand and a Ham Manual in the other. The book was opened to the section on "Mint Juleps" and "Plantation Cocktails."

I turned back, and peered through the telescope again. I carefully adjusted the controls, and once again viewed the strange spectacle of the distant planet. It was magnificent, and seemed to dwarf everything in the sky! Never have I seen anything to equal it in immense beauty!

Closer and closer it seemed to be coming—although I knew it was still billions of miles away. It was spinning rapidly in its orbit, and wiggling just a little. As I watched it began to do loops and fancy spirals! Then it turned over on its back and puffed out large clouds of smoke.

The smoke drifted out behind the planet. It formed into rings and lines, and then spelled out the words: "Hello, Lucy." Never before in my life have I seen anything to equal the phenomena!

Then the great planet suddenly started to skid. It slowed

up, and then veered from its course. Then the speed increased again, and it started back into the great void of space. Back into the Great Unknown.

I watched it as the huge planet glimmered into the distant sky. I could hardly discern the tail lights. There was a green light on the left, and a red light on the right. And in between the two tail-lights was a large sign saying: "Honk Your Horn, We'll Pull Over."

Then almost as quickly as it had come the great Mars was gone!

I sat there in the silence of my laboratory for several minutes before I could move. The greatness of my experiment had simply overwhelmed me. It seemed as though I had glimpsed into the Celestial Infinity, that I had seen the Eternity for a few brief seconds!

I glanced across the room at Doctor Killfidget. He was still sprawled across the bench—unknowingly he had missed seeing the huge spectacle. The receiver was dead. The great laboratory was in complete silence.

As I sat there alone and realized the great immensity of the Unknown World above me—the vastness of the stars and planets—I felt quite small.

Of course, I felt even smaller when I found I'd hung my hat over the lens by mistake the night before.

I often wonder just what it was I saw and heard.

But then I often wonder what it was that Doctor Killfidget saw.

It all seems so long ago, and far away.

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DENVER

By AL ISBERG

The vacations are over, the aspen are gold patches against the green-brown mountain slopes, hunters are trekking through the woods in search of big game and this is another deadline date for the Journal. Last month we were very conspicuous because of our absence—especially in the photographic contest. I had planned to send several entries while I was traveling around on the Gulf coast but they weren't packed during the last minute preparations. Next time I might send them in when the contest starts.

September was a historic month in Rocky Mountain Radio History. KVID, the blue NBC affiliate, was granted authority to operate full time on 630 KC with a directional array protecting stations in Missouri and Indiana. The new transmitter is an RCA IG and it's really a honey. The directional antennas consist of two self supporting towers 320' high spaced 1560' on a line running approximately North and South. At night one tower is excited 100° out of phase with a current ratio of 1.5 to 1. The signal at one mile is about 50 microvolts in the direction of the protected stations and about 320 microvolts on the other lobes of the pattern covering the populated areas. Mr. W. M. Witty, RCA's representative at Dallas, and Doc Taylor of RCA, supervised the installation and Mr. A. E. Cullum, consulting engineer at Dallas, Texas, made the field surveys to satisfy the commission's requirements. RCA phase monitors and de lux RCA studio equipment complete the station's facilities.

KFEL, the Mutual outlet which shared time with KVID remained on 920 KC full time with their original plant. Four full time stations with all the network facilities available will no doubt provide the push button radio fans some finger exercise, let alone stimulate general local sales effort and programming.

Nelson is grandpa again. He really doesn't seem old enough but who would guess I had three offspring at my youthful age? Nels didn't tell 'em for five weeks but somehow the cat got out of the bag and is he being razed! Better brag about it next time—before it happens!

Glen and Oma Glasscock are anticipating their first experience with bottles and other infant necessities. Better be a boy to uphold the Navy tradition.

Joe and Evelyn Rohrer can't make up their minds about a family. We are beginning to doubt Joe's sincere promises that "next year, I'll show a real he-man baby. One that can take any man at Indian wrestling left-handed." Guess Joe has been reading Paul Bunyon.

Ham activity seems to be flourishing again with Russ Thompson, W9QKW back on in his new home; Dutton, W9FKQ; McClellan, W9DSD; Williams, W9UXZ; and Nelson W9CZR on 20 fone. Rohrer, W9EYN, is on occasionally, Neal, W9LNB, is building an all band exciter, and of course N9FA is batting for the Naval Reserve.

Flash! It is reliably reported that engineers at the KOA transmitter are putting sand bags on the roof! It's not for air raid protection in spite of the proximity of the bombing field. They are intended to hold down the base of the new 37 MC receiving antenna for the emergency radio link to the studios should the telephone lines be damaged by storms. The antenna tower is about fourteen feet high and is painted regulation colors. Quite a contrast against the background of the 470' tower.

So long for now. Probably next month another one of the gang will have this column. It's not confirmed yet but quite certain that I might get a crack at video in New York real soon. Perhaps Little Nemo might get some real inspiration there! 73

W O R

Fall finds us nearly back on normal operating schedules with all but two of the staff back from their vacations. Charlie Kibling and Bill Boher, who have been on special summer assignments, have yet to take theirs.

After reading Brooke's Hollywood column, I can see where the New York Chamber of Commerce has been making a serious error. No matter what kind of weather California has it is given a big build up. Hereafter, instead of keeping quiet about our infrequent spells of bad weather, we'll have to tell of the number of days the sun didn't shine. Much of Los Angeles must be below tidewater level because we saw a picture in one of the local papers showing a Los Angeles traffic cop in waders directing traffic which consisted of several row boats. Of course I understand this was only a publicity stunt.

Our chief engineer, Jack Poppele, recently returned from a trip to the coast and from all indications, he enjoyed himself very much.

Cy Samuelson back from his vacation tour of the west. Cy spent a day in Chicago where he met and talked with Ed Horstman, the NBC ATE president. Leaving Chicago he continued on to Yellowstone Park, Salt Lake City and then down to Bryce, Zion and the Grand Canyons. Cy had excellent weather until he reached the Grand Canyon where it had been raining for several days and continued to rain while he was there. Who says it doesn't rain on the desert? It doesn't rain often but when it does!

I was all set to write an expose on photographic contests, especially the N. Y. Herald Tribune and the 'Journal' contests as I had several entries in both and didn't expect to place. I had to kill the stuff prepared and also explain to my brother — that the contests are on the level because they are saying that one must write for the Journal before one's photographic ability is recognized. Professional jealousy, I calls it. I wish that Pat Miller had entered some of his pictures, he really has taken photography seriously and is turning out some excellent pictures although some of his enlargements look like carbro transfers but I suppose that is because the negatives are so small. One can't expect too much from a "mini."

Now that the fishing season is over, Paul Reveal's trading association is doing such a volume of business that it is almost impossible to keep track of the ham equipment that is being swapped around among the gang. First Kibling sells a transmitter to Ed Scatterday and then Miller sells his RME to Scatterday, this leaves Ed with an extra receiver which he bought from Reveal so Scat sells the receiver to Herman Berger, Berger knowing that a transmitter should accompany the receiver, buys a transmitter from Reveal and is now all set to bust loose under his old call of W2SH. Hank hasn't been on the air for years. It wouldn't surprise me if he were to dig up an old two filament audiotron from the depths of his junk box.

Shirley Davis spent several days up on Cape Cod and brought back several bushels of fish just to prove that he can catch them.

Why were those fish packed in a "Fulton Fish Market" basket?

The maintenance gang are getting ready for the Christmas season as they have added a jig saw to their line of power equipment. We suspect they are going to make jig saw puzzles for the folks back home.

Ted Kasna is now a full fledged suburbanite, heard him discussing lawn culture with Dick Borner. The boys were using such terms as, humus, topsoil, weeds, germination percentage, etc.; and how is your crab grass?

Dick Borner is now a big real estate operator, having acquired a house on Long Island and is now busy trying to find a tenant so that he can live off the fat of the land.

Bill Ulrich asking many questions about real estate, taxes and the like. It looks like he will also become a country gentleman.

Last month I reported that Vince Barker of NBC television was getting back on the air. This was in error as Jim Carter has Barker's transmitter and is busy getting it into operation. He reports that he has been able to work the west coast.

Ed Scatterday, W2LZD, is modernizing his transmitter, putting in an RK39 buffer and an 810 final. Ed will try and work what little DX is left. Oh well, I got my card from Danzig several months ago and also have a few extra cards from Poland that I'd like to swap for one from Zone 23. I'm still trying to figure a way to disguise a rotary beam and tower to look like a maple tree.

Carl Warren, our announcing amateur with the call of W1ZL, comes in with the information that the South African stations are back on the air again. Carl hasn't much time for amateur radio at present. *Cherchez la femme?*

James MacKenzie Reid (call me Mac) is now a full fledged country gentleman, having completed a hot house on his estate in Pleasantville. He has high hopes of having flowers this winter.

Lou Jurgensen was looking for an overcoat the other day when the weather suddenly changed from summer to chill fall temperatures and he had the pro football game at the Polo grounds.

Jim O'Connor will soon have his 20 meter vertical antenna up. I understand that when it comes time to tune the antenna system, he is going to have a PL installed from the roof to his apartment so that he can tell his "frau" to turn the rig on and off while he is busy making adjustments.

Jim Shannon spent his vacation trying to get the standing waves off the transmission line which feeds his co-ax antenna. Last reports have it that he is going back to the old reliable matching stub and open wire transmission line.

Prime Minister Chamberlain no doubt sent Winston Churchill a note asking for particulars on the sinking of the "Royal Oak." Had Chamberlain been a radio engineer he probably would have worded the memo: "Churchill see me re Royal Oak. Why?"

Saw some pickets parading in front of an undertaking parlor with signs reading, "Do not Patronize this undertaker, etc." What next?

R. A. SCHLEGEL.

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NEW YORK

by T. KRUSE & J. LARSON

After seeing the profiles of the Television Engineers on the front cover of the last issue of the Journal, we no longer wonder why up to now only the back of their heads have been shown. But nasty!

Doc Dickson received some free publicity recently when the World-Telegram published a picture of his new home. It's a grand looking place in Georgian Colonial style, and it's located at Clarendon Hills, Kinderkamack Road, River Edge, New Jersey. We are anxiously awaiting an invitation to the house-warming.

If you have a few minutes to spare, ask Johnny Kulick about the advantage of a three element over a two element antenna.

Hank Kenny was heard complaining about never having seen a Special Event. We know, but we have to fill the column somehow. Flash! W2EP, Art Holub is on the air on twenty and eighty. He was overheard working DX with Ed Gundrum W2BXY about thirty-five miles away. Good luck OM.

Art Mitchell, W2RW, can be found daily on 3772 KC. I am sure "Mitch" would like to hear from his many friends in Radio City.

We are looking forward to seeing some familiar faces at the ATE convention this month.

Have you a little VI in your home? If you have please see A. W. Christopher, NY Maintenance Supervisor.

Ask Art Poppele how he enjoyed listening to a Toscanini rehearsal from the insides of a Hammond Organ speaker.

Ashworth again carrying on for Lucky Strike and Kay Kyser on out of town spots, the last being down North Carolina way.

The long arm of Television has called Johnnie Fricker and is now assigned to follow the varying violent video voltages.

Saturday, October 20th, was the first football date for New York field. Thompson was quarterback for the NBC at the Harvard-Penn game at Cambridge.

KONVENTION KRAKS

President Horstman, on purchasing a package of cigarettes via a vending machine and noting the three cents carefully attached said, "This town is a cinch. You can never go broke. If you need some money all you have to do is buy a package of cigarettes and you get three cents." Unquote.

Largest gale of laughter was recorded during reading of the minutes of October 19, 1939. Maher, National Secretary-Treasurer, is struggling through minutes of previous sessions. Thompson, Denver, is rearranging chair for comfort. First, one easy chair is put in corner. Found to be unsatisfactory due stiffness and is exchanged for another. This one all right for hardness but located in draft. Thompson moves again. Maher moves again. Maher loses patience at continual interruptions says, "Say Thompson, when you stop feathering your nest over there we will proceed with the minutes."

Who said after \$2.80 and the future appeared so distant and uncertain. "Don't forget, boys my pride is at stake."

Why did the National Councilmen find a certain waffle shop of modern design so popular?

The mimeograph brought to New York from the National office in Chicago and dubbed "the propaganda mill" was found to be very helpful.

CHICAGO

By F. C. SHIDEL

Chicago NBCCA outing as of September 21st at Lincolnshire Country Club turned out to be a large event. Everyone having a swell time. The Tennis finals were run off and Whipple of the Guest Relations staff took first honors over Bolas of Sales, 6-2, 6-2 . . . The Softball Feud between engineering and musicians was again brought up for nine innings and the engineers maintained their supremacy by the score of 17 to 3 . . . Highlights of the game were Hockins home run with the bases drunk and the consistent defensive work of Joe Gallichio of the musicians at first base . . . "By" Spiers won an RCA portable radio as door prize . . . Dave Kempkes got in on a three way split for the golf blind boogey prize . . . There comes a time when everyone earns himself a real nickname . . . the dancing party in the evening was responsible for the boys hanging the handle of "wolf" on our Mr. J. R. Miller . . . Hortsman's second riding party was a big success and highly acclaimed by all attending, in fact there is a definite demand for more of these get togethers aboard a horse.

The vacation list has finally disappeared from the bulletin board . . . Berny Bernheim has returned to work, he being the last one on the studio engineers' list . . . Connie Conrad is doing his last day this date (October 12th) before leaving for a trip to Ohio . . . Bernheim visited Radio City and had the courage to stay away from the Fair . . . Also Havre De Grace, which is hard to believe.

Joe Alusic is the engineering threat on the Chicago vs KFI-KECA Mail Chess Game . . . Mail was late this week so cannot give dope of fifth move.

Curt Pierce visited Radio City and the Fair while on a pickup of the Doctor I. Q. Show at the Stanley Theater in Philadelphia.

Horstman and Maher have been preparing for their trip to the National Convention for weeks . . . Everything all set . . . Driving in Horstman's car . . . Good luck

For Brooke's information . . . while his beloved Hollywood was frying with temperatures of 107 our top here in Chicago was 99.2 dropping as low as 58 at night.

Am wondering if any of the boys using rotaries are bothered by birds building nests in the things.

That's all for this time . . . Remember . . . Flash basis . . . Switch on the third feedback.

Back of the Sky Rider 23

hallicrafters, Inc. CHICAGO
 No. 2505
 P-23
 Drift Characteristics at 40°C
 C₁ = 313.5
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New Dual Rating System by RCA

An entirely new system of ratings for air-cooled transmitting tubes has been announced by RCA. Instead of one set of maximum ratings for each tube type, *two* sets of maximum ratings are given. These ratings are designated "Continuous Commercial Service" (CCS) and "Intermittent Commercial and Amateur Service" (ICAS).

The CCS ratings are essentially the same as the former maximum ratings. The ICAS ratings, however, are considerably higher, permit the use of much greater power input, and provide a relatively large increase in useful power output. For example the a-f power output of two 809's in class B is 100 watts at the old maximum plate-voltage rating of 750 volts. At the new ICAS rating of 1000 volts, the power output is 145 watts—an increase of 45 per cent. In plate-modulated telephony service, the r-f output of the 809 is 38 watts with the CCS ratings and 55 watts with the new ICAS ratings—also an increase of about 45 per cent. Operating data for the 811 and 812, including both CCS and ICAS ratings, are given elsewhere in this issue of HAM TIPS. Similar data have also been prepared for the 802, 804, 806, 807, 809, 810, and 814, as well as for the new 828, and can be obtained on request.

The new system provides transmitting-tube ratings which recognize the diversified design requirements of modern transmitter applications. For example, there are numerous applications where the design factors of *minimum size, light weight, low initial cost, and maximum power output* are far more important than extremely long tube life. In such cases, the set designer may very properly decide that a small tube operated with ICAS ratings better meets his requirements than a larger tube operated with CCS ratings.

It is self-evident, of course, that the harder a tube is worked the shorter will be its useful life. Although no rule can be set up which will accurately predict the life performance of an individual tube under specified operating conditions, it is practical to make an estimate of tube life on the basis of average results from a large number of tubes. In average amateur service, a tube operated at the higher ratings can normally be expected to give about 50 per cent of the life obtainable with CCS ratings.

The engineer designing a broadcast transmitter has quite a different problem. A broadcast station may operate tubes on an average of 18 hours a day. Tube failures are expensive both in themselves and in advertising revenue lost because of interrupted programs. Consequently, since *reliability* is his main concern, he should operate tubes at the CCS ratings, or perhaps even lower. Only in this way can he obtain the long tube life required for continuous commercial services.

It is apparent from the foregoing considerations that increased transmitting-tube ratings are practical for many applications. The new ICAS ratings, together with the CCS ratings make it possible for the radio amateur and the radio engineer to choose the operating conditions best suited for the job at hand. Undoubtedly, the introduction by RCA of this new system of dual ratings for transmitting tubes represents a most important contribution to the art.

Because of the interest RCA's new Dual Rating System is certain to excite, especially among radio amateurs, a 16-page booklet has been prepared giving ICAS maximum ratings and typical operating conditions for the tube types: 802, 804, 806, 807, 809, 810, and 814. This booklet may be obtained on request from RCA Manufacturing Co., Inc., Commercial Engineering Section, Harrison, N. J. Abbreviated data on the types listed above are shown on page 6, column 2; both CCS and ICAS values are given for purposes of comparison.

CLEVELAND

by F. C. EVERETT

JUMBLES AND CRUMBLES . . . The studio has had a major shakeup in working hours, some of those who have come to work in the evening for years are now retiring with the chickens in order to open up at 5:30 AM . . . And vice versa, of course. . . Caskey arrived at the studios at five thirty AM for duty recently only to find the schedule had been changed and he was due in for the night trick. Pruitt (WC) dittoed a couple of weeks later only to discover a change and that he had the day off . . . Makinson has busted out with a new HQ-120 which he considers the cats latest meow and regards all punk receivers such as Nationals and RMEs and such ilk as below his operation. . . Everett secured a new ham license after letting the old one expire, but no signal has appeared to clutter up the ether. . . Brandt went to a meeting of a hunting club and emerged with a hunting permit and membership, and was heard to be mumbling about a shotgun the other day . . . Caskey is fussing around with an electron coupled oscillator and is chirping that he is going to take the chirp out of it or blow a fuse . . . Pruitt (Burt) installed a swell work bench in the basement and is laying in a fine stock of tools and equipment. One of the joys of owning your home, eh? Bidlac is catching up on his sleep after having had the painters and slaving his life away tearing down a shed on his private property . . . Cheeks has gone back to his studies at Case, and all the old program sheets at the transmitter are again filling up with equations and figgers . . . Pruitt (WC) maintains he has the tallest corn between here and the Pacific Ocean, which he grewed himself, by heck . . . when most of us are beginning to look forward to next year's vacations the studio is just finishing theirs. Cox is now on his yearly pilgrimage to the Michigan farm, and is believed to have dropped the idea of a trip to the coast. Hackett is the next and last on the list for this year. . . Stewart bought a camera and developing set for his son's birthday so will soon be coming to work with developer stains on his fingers . . . Checks bought tools for his son's birthday and will probably saw off a finger . . . Wittam pulled the prize rabbit out of the hat while repairing mike cords. After attaching plug to new cord he was called away to do a show. Upon returning he cut off a plug to put on another new cord. After he had attached said plug to the new cord—yep, you've guessed it—he found that he had been using a plug newly cut from the just previously repaired cord. . . Pruitt (Burt) boning for the license exam, wonder if this new system will be a nightmare . . . Walker just went through the trials and tribulations of moving, and is now on a shakedown cruise with a strange house. . . Speaking of cruises, Sailor Walker and Marine Clark must be a bad combination on that evening shift, what with a war on in Europe. Probably the night shift will land some night and find the situation well in hand and being held fast . . . Transmitter has large maps on the wall contributed by Butler, and the war is fought on them daily . . . Flaming hillsides are warning all hands to prime the oil burners and stokers . . . Football nemos are with us again . . . By the time this is in print the voting on the new constitution will be over, but whichever way it goes, the boys who worked it out deserve a lot of credit for it was a large job, and has provoked a lot of discussion . . . Thanks to all those who have contributed information to this and other issues . . . Guess we need a Paul Pry at both studio and transmitter to wangle the scandal.

WASHINGTON

By A. R. MCGONEGAL

Here's an item eleven years old to start off the "news" page . . . an entry in a WRC log dated December 12, 1928.

"Took carrier off air also motor-generator set according to orders from control room. BY wouldn't give us any program." Those were the good old days!

That was a swell party that Wadsworth gave recently. Can you imagine eight broadcast technicians in the same office all being off duty the same evening? The gang looked over his vacation movies, and were especially interested in a reel of WMAL station activities taken more than ten years ago. English won the "bank nite" prize, a tin bank filled with pennies. To make it a double feature, Fugazzi brought along his shots of the visit of the King and Queen of England, a by-product of his work in the Field Group. The party broke up just in time for three unlucky members of the group to change their clothes and open the stations up next morning.

And speaking of opening up, I see that the KPO engineers are unhappy, about their new five-thirty opening time. They don't know how lucky they are—we have been opening up at five A. M. for years. And our winter weather is not as nice as it is in San Francisco, either.

Clark is back from Miami vacation with lots of tan and a choice collection of color shots. "Much too warm for complete comfort in Florida this time," says Speed.

That article on Chicago's Master Control desk, by Tom Goo-tee, in the October Journal, was excellent, particularly the diagram. Why not run a series of similar articles and diagrams covering each of the NBC offices? It always helps to know what the other fellow is doing, and how he does it.

Our wandering commentator, Baukhage, is back in Washington from his sudden visit to Berlin and way stations. Leaving by plane on a few hours' notice, he caught a Europe-bound Clipper at Port Washington and was in Berlin before most of us missed him from the News room. Welcome home, old refugee.

And speaking of Europe, a heavy feedback on a recent war program was reported as "east of Nantucket." That gives Denver a break in its role of the source of all troubles.

Ullman soon won't know his way around the studios. Back only a few days from his vacation, he is gone again; this time to New York on ATE business.

John Hurley, formerly a Washington announcer and now with the NBC legal department, was pressed into service to read news flashes during the war crisis. In spite of years of experience, John's voice showed distinct signs of "mike fright" during his return engagement.

Visited our next-door neighbor, WOL, during the war-news rush of business. Discussing the problems of twenty-four hour operation with the engineer on duty there, I mentioned how well WRC's 5-D was taking it, and suggested that we could run indefinitely. "Well, we can't," said WOL's man. "A rat crawled into the transmitter two days ago, and its pretty warm in there. Another day and we'll be standing outside and watching the transmitter through a window." Lucky that I had a cold.

Our new studios are already outgrown. The "Quiz of Two Cities," a program originating in Baltimore and Washington, and fed to WFBR and WMAL, has had to move to the Wardman Park Theatre, due to shortage of studios. The "Hour of Charm" was put on from the Capitol Theatre for the same reason. A number of shows have gone on from the Mayflower Hotel Ball Room. And only two years ago, we moved into our

new home thinking we were taken care of for years to come.

WMAL . . . Heard on the PL from Master control during line tests early one morning: "Take your shorts off!" . . . "Put 'em on!" . . . Whoops! And with television just around the corner . . . Eddie Burg back from vacation . . . took a trip down in Virginia and spent remainder of period enclosing a porch at the Burg mansion . . . Charlie Fisher planning a more accessible auto radio . . . says he gets a back ache from crawling under the dashboard . . . old age, Charlie, old age . . . Picture of disgust or sump'n . . . Wadsworth taking his receiver apart to find cause of AC hum . . . then finding it was coming in through the antenna . . . Simmons recovering very nicely after his recent encounter with an uncouth water cooler . . . everything was going along fine one evening at the transmitter when the compressor unit of said cooler went bad and made its presence unwelcome by exuding malodorous fumes a la SO₂ . . . large doses of fresh air soon revived Bill, however.

WRC . . . Everything going along fine at the "farm" in near-by Hyattsville . . . most of the crops in now . . . some corn down in the south forty still waiting to be shucked, however . . . snakes all hibernating for the winter now . . . Newman breathing easier . . . Stahl enjoying a tonsillectomy . . . two dollar word . . . Rogers, WRC's only batchelor, still successfully dodging . . . wonder who will give up first, Rogers or Fisher, WMAL's hold-out . . . English has new Plymouth . . . Newman in New York for week-end.

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New Band-Switch 5-160 Meter X'mitter

To the home builder goes the credit for each basic advance of the radio receiver art and in each instance the home builder has carried on until manufacturers produced equipment of such technical value and moderate price as to no longer justify the efforts of the home set builder. This was true in the case of broadcast receivers and again after the inauguration of short-wave broadcasting.

In the amateur ranges the home constructor held out longest. But in recent years manufacturers have entered this specialized field with the result that the average ham no longer finds justification in constructing his own receiver equipment. Even those of the minority capable of coping with the complications of modern communications receiver design find it more economical to buy than to build.

Judging from recent trends it seems that the ham is beginning to reach similar conclusions concerning his transmitting equipment. Even though manufactured transmitters have heretofore been almost entirely in price brackets well beyond the range of the average ham pocketbook a growing number of ham shacks have boasted such equipment. With the recent introduction of a compact transmitter which falls in the price class with the moderate cost communications receiver there is already indication that history is repeating itself.

This transmitter takes advantage of the production principles which resulted in the replacement of home-built ham receivers by those of the manufactured variety—competent design backed by modern production efficiency and economy.

This new Hallicrafters HT-6 transmitter provides operating convenience and flexibility heretofore almost unknown. It not only operates on every ham band from 160 right down to 5 meters, but is highly efficient on all bands. Even at this lowest wave-length efficiency is maintained by avoiding switching of the final tank circuit on this band and instead mounting the 5-meter tank coil directly on the tank tuning condenser. On all other bands all circuits operate through the band switch to provide instantaneous changeover from one range to another.

The r. f. section includes three separate channels each of which may be set up for any band by means of plug-in units which include coils, tuning capacitors and incidental circuit components. These units are tuned when first installed and thereafter any one of the three channels is switched in instantly by means

of the selector switch on the front panel. The only incidental operation is that of retuning the final tank circuit when changing from one band to another.

Tubes employed are a 6L6 oscillator and 807 output. For crystal controlled operation these stages work straight through except in the 5- and 10-meter ranges. In 10-meter operation the 6L6 functions as both oscillator and doubler. In 5-meter operation a separate 6J5 oscillator is included in the plug-in crystal unit and the 6L6 is utilized solely as a doubler. The result of these arrangements is that more than ample drive for the 807 is obtained on these bands, as well as on all others.

E. C. O. units are available for all bands from 20 to 160 meters inclusive. Both c. w. and phone operation are provided for, the built-in modulator utilizing a 6F5, 6J5, push-pull 6L6 line-up which provides ample gain and output for complete modulation of the carrier from a D104 crystal microphone or equivalent. Separate built-in power supplies take care of the r. f. and audio requirements and a built-in meter with switch provides current readings in the oscillator plate, p. a. grid, p. a. plate, and modulator circuits.

The HT-6 provides *carrier* power of 25 watts on all bands except 5 meters where it is slightly less. Each tank coil unit includes an adjustable antenna coupling coil which permits accurate matching to the antenna. Once this adjustment has been made for each band and antenna no further adjustment is necessary when switching from one band to another.

The three channels may be set up for different bands or for different frequencies in the same band. This latter possibility permits instant change from one frequency to another to dodge QRM, or from phone to c. w. portions of a given band.

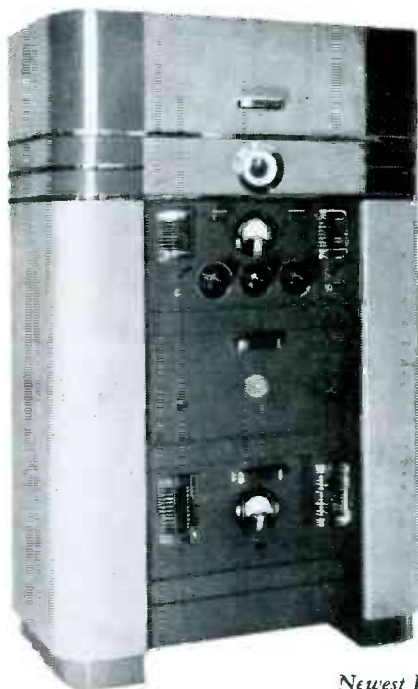
The entire rig is housed in a battleship gray cabinet of heavy gauge steel 20 inches long, 16 inches deep and 9½ inches high, and is completely self-contained except for the microphone, key and antennas. It is ideal for use where space is limited, as in city apartments, or where cost or other circumstances do not permit the use of high power. Even in stations already equipped for high power on one or more bands the HT-6 will serve conveniently for local operation or for use on bands not covered by the larger rig.

It is entirely understandable why a transmitter such as this should offer wide appeal to many hams. It is questionable whether the parts alone could be purchased for the price of this rig, and certainly it would be difficult for the home constructor to duplicate the efficiency and flexibility which it provides.

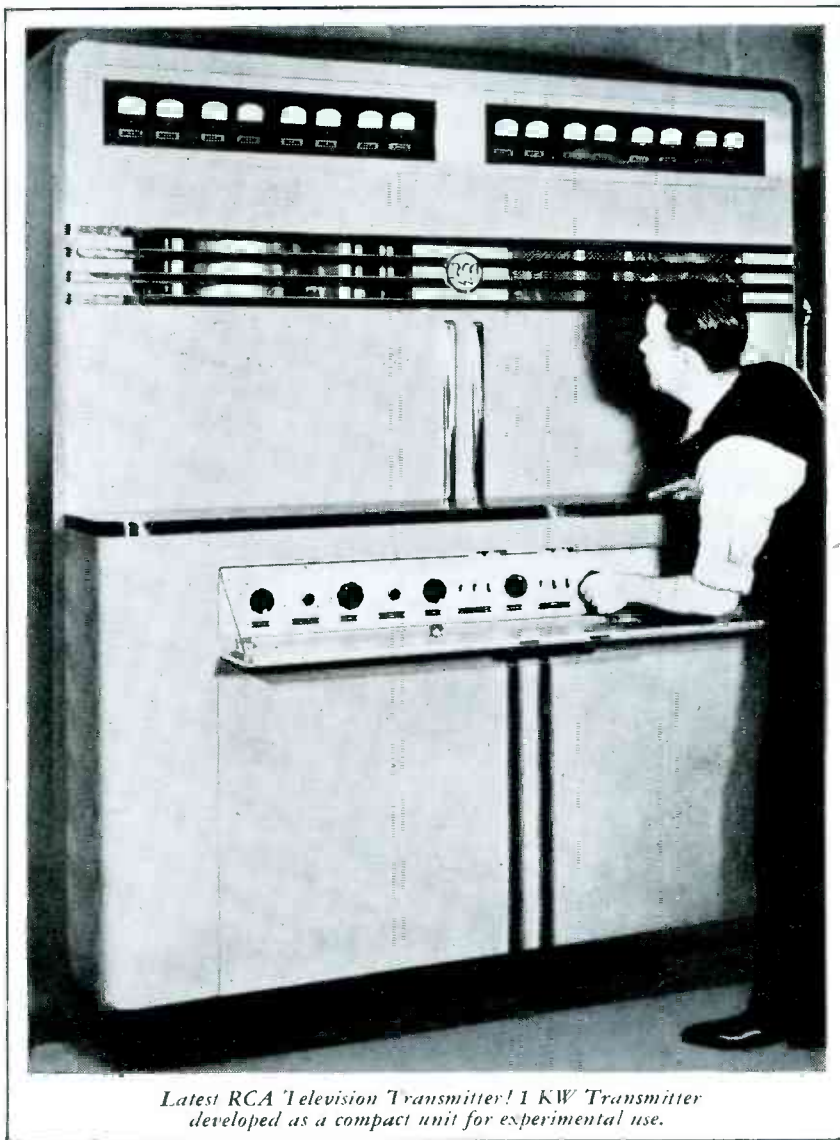
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