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FEBRUARY - 1940





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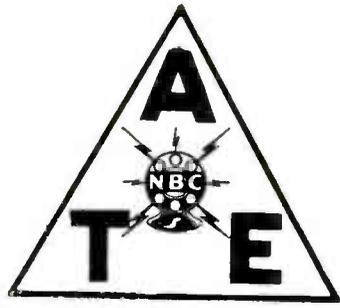


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NATIONAL BROADCASTING COMPANY

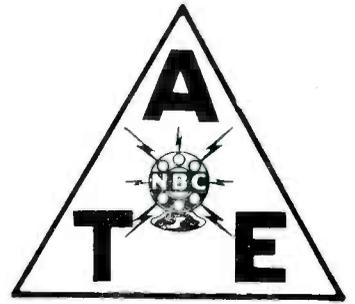
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JOURNAL



VOLUME 7 ISSUE 2

FEBRUARY 1940

LAKE PLACID

By H. C. MOSHER

It was my good fortune to be chosen as the one to go to Lake Placid to make four pick-ups of Mr. Lowell Thomas for the blue network December 26 thru 29. A. C. Knapp (CS) and W. J. Purcell, engineer-in-charge, have made these pick-ups for the past several years.

Alvin Van Valkenburg, formerly of NBC guest relations staff at WGY and now geology instructor at Union College, was going to Lake Placid and was glad to catch a ride. It was indeed a pleasure to have him with me on the trip. Seven a. m. Tuesday morning found us on our way as we expected to find plenty of snow in the north woods. However, except for a few small snowdrifts in Keene Valley, which did not hinder our passage, the roads were all clear. As we entered Keene Valley, we ran into a snow storm that made us thankful that we had started early. At the rate the snow was falling and the wind blowing, we knew it would not be long before the road would be impassable. Later that afternoon we learned that the road was blocked—we had gotten through just in time!

We arrived at Lake Placid at eleven a. m., and went directly to the A. T. & T. office. Here we met Mr. Thornton, manager, who informed us that our loops were installed and ready for use. Ten minutes later found us at the Lake Placid Club in Mr. Packer's office, from which we were to broadcast. A quick glance around gave the impression that this was going to be an ideal place for a broadcast of this kind. Mr. Packer's office was a spacious, luxuriously furnished room about 25 by 20 feet. The plate-glass windows on either side revealed adjacent offices. On one side was the Western Union news service for Mr. Thomas, on the other side, the office of Miss Drew, Mr. Packer's secretary.

An hour later we had changed the loops from Mr. Packer's office to Miss Drew's, where our equipment was set on a large table in front of the window facing the desk in the main office. While the two OP-5's and other necessary equipment were being installed, Mr. Packer had all doors (except that leading to Miss Drew's office, our control room) locked, and the walls of his office (our studio) covered with heavy blankets. We were about ready to check through to Fred Gladd at the Lake Placid test board when Mr. Robert Fenimore and Andy Anderson of the Elizabethtown A. T. & T. came in to make sure we had everything we wanted. Fred gave us an OK on all tests. Now we should have some time to ourselves until 4:30, when Lowell Thomas would return. So we sent a tele-

gram to the Schenectady NBC office, saying all was well. Eight words covered the situation, so Fenimore suggested adding "Skiing wonderful." He laughed as I completed the telegram.

Our lunch together was good but not as good as the rag-chew we had. It was interesting to learn that Fenimore had worked with Messers McElrath, Hanson, and several others of the NBC staff back in the early days of radio. To all of them he sends his best regards.

Many who have never been to Lake Placid in the winter asked me what I was going to do with my spare time. Truthfully speaking, it seemed a problem to me at first as I am not a skier. Although we did take our skates, we used them very little. When I checked in at the hotel Tuesday night, it was ten below zero. The next morning the temperature had dropped to twenty-six below. In spite of the cold, there was just as much activity as usual, so we followed the crowds. As we left town, we saw many ski slopes before we came to the Olympic Jump. There we stopped to watch some of the college teams practice on the thirty-meter jump. From there we went to Scott's Cobble, one of the favorite slopes, where we caught some pictures of Lowell Thomas and other prominent guests.

That evening who should walk in—just as our program was about to start—but W. J. Purcell! Then I knew why Bob Fenimore had laughed when I tacked the last two words onto that telegram to WGY. When Bill saw them he couldn't resist the temptation,—knocked off a few hours early and broke all records for travelling time between Schenectady and Lake Placid by covering the 140 miles in two hours and forty-five minutes!

The next morning we found the sky cloudless and the mercury resting at twenty-two below. As Bill had come to get in some skiing we lost no time in starting for Scott's Cobble. We kept the camera busy for about an hour, then waited in hopes of getting a picture of Bill in an undignified position, but he proved to be a better man on skis than we had thought.

As Mount Von Hovenburg is near Scott's Cobble, Van and I decided to visit the Olympic Bob-sled Run. From all appearances it would give a fellow quite a thrill but time did not permit us a ride—or did it? We were perfectly content to watch and take a few pictures.

On the way back to town we saw somebody jump from the 60 meter Olympic high jump. Turning in we got there just as Lake Placid's Art Devlin, class B champion ski jumper of the

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TRENDS IN RADIO

(Condensed from article "Expectations in Radio" by Ray D. Rettenmeyer in *Communications*, January, 1940)

The radio industry has just concluded one of its most successful years with over 9,000,000 radio receivers sold, with network billings up from 10 to 30% and substantial business increases in nearly every phase of the art. Too, the past year saw the establishment of television service, frequency modulation and commercial sponsorship of international broadcast programs. . . to mention a few of the outstanding events.

The outlook for the industry during 1940 is encouraging. With ever increasing interest in affairs abroad and with a presidential election taking place, radio receiver sales and network billings should show substantial increases. The European situation should result in an increase of exports of short-wave receivers and other radio apparatus, as well as place our international broadcasting on a paying basis. But let us consider the various fields separately.

BROADCASTING

Since its inconspicuous beginning some 20 years ago, radio broadcasting has come a long way . . . from 1 station to over 760, with approximately 47,000,000 in the hands of the American public.

Network billings for 1939 showed increases ranging from 10 to 30% over 1938. One authority has given the gross billing figures as follows: NBC, \$45,244,354; CBS, \$34,539,665; MBS, \$3,329,782 . . . a total of \$83,113,801. Increasing interest in news from abroad, a national election and an unexpected advance in general business conditions should all contribute towards making 1940 an even better year.

In transmitter design there is a definite trend towards improved appearance and better mechanical layout to permit easier servicing. Continued improvement in fidelity, circuit design, components and efficiency can be expected. This is especially true of efficiency, as high efficiency amplifiers have been making their appearance since Doherty first described his development. New modulation schemes will undoubtedly make their appearance in 1940.

Today vertical antennas have become practically universal as far as commercial broadcast stations are concerned. Some work has been done with short radiators equipped with ground screens with promising results. Shuntfed antennas have been used rather widely and from all reports have proved quite satisfactory. Both developments will probably be used more widely. Further, with more and more broadcast stations being licensed there is likely to be increased use of directional antenna systems. For the most part these will be two or more vertical radiators fed in the proper phase relationship.

With the increasing use of u-h-f for television, international broadcasting, frequency modulation and radio-relay stations, the tower manufacturers are likely to be kept busy, for in an increasing number of instances the u-h-f antennas will be erected on top of towers, since there are only a limited number of tall buildings.

The new volume indicator introduced early last year will most probably become a standard unit. Microphones may also come into the spotlight during 1940. Good results have been obtained with the "machine gun" mike and a number of other developments are believed to be in the offing.

Line equalization by means of predistortion has found some use and might receive more attention. It is claimed that this system of line equalization permits the use of long but inexpen-

sive non-loaded cable circuits, reduces the power handling requirements of the studio amplifier and simplifies the monitoring and control functions at the speech-input equipment.

TELEVISION

Considerable activity is expected in television during this year. Reasons advanced for this condition are based, in the main, upon increased quantity and improved quality of programs, and a probable reduction in receiver list prices.

It has been estimated that approximately 2,000 television receivers, were sold to the public during 1939. At an average list price of \$350 this represents a business of \$700,000. While not all that anticipated it still represents a fair sum for the first year of a new industry.

A well received action was the recent adoption by the FCC of their Television Committee's recommendation which permits television broadcasters to accept sufficient commercial programs to cover operating costs. This is undoubtedly a step in the right direction, since the expense of program production is one of the television broadcaster's paramount charges. Clarification of this ruling was the subject of an FCC hearing held recently.

During this year television transmitters will be simplified, improved and cheapened. Portable equipment, housed in carrying cases, has been put on the market. These units (operating in vicinity of 325 mc) permits good quality transmission and are used for relaying programs to the main transmitter. Since they are cheaper than the usual mobile units, they are suitable for the smaller stations where they may be used in the studio as well as for pickups.

In receivers there is a trend towards larger picture tubes. Estimates as to desirable picture size for home reception ranges from 12-inch diameter tubes to screens 8 or 10 feet wide. It is believed, however, that ultimately good pictures ranging from 18 to 24 inches in width will be considered satisfactory for the average living room.

Increase in receiver picture size can be accomplished by producing larger tubes or by means of projected images from very small tubes. Both methods are the object of experimental work. The advantages and disadvantages of each system are too well known to warrant discussion here.

Attempts are also being made to shorten picture tubes. Shorter tubes mean greater flexibility in cabinet design as well as mechanical layout. However, the amount a tube can be shortened without producing distortion is limited by the width of the deflection angle.

Good high-quality sound programs are now being transmitted on television stations at times when no picture is on the air. Hence, it would not be surprising if some of the new receivers were equipped with a switch to cut out the picture circuits and thus permit the reception of sound programs at reduced receiver power.

Considerable experimental work is being done on television pickup and receiver picture tubes, and new types may be announced during the year. Other probable developments for 1940 include demonstration of large screen television, and television relay stations using frequencies in the vicinity of 500 mc. Further, receiver prices are likely to be reduced during 1940. Merchandising experiments along these lines have indicated large quantity sales for television receivers when sold at lower prices.

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KFI - KECA

By H. M. McDONALD

PLANE HITS TOWER: What would you do if a plane hit your tower? Probably just what Jonathan Smith, engineer at KECA transmitter, did when that happened there Christmas, a clear, warm day, unusually quiet in the green fields surrounding the station.

He had just finished taking the one o'clock reading when he heard the noise of a plane flying around very low. As he stepped to the door to look out he heard a light click, then the motor stopped, and all was quiet. Glancing toward the tower, 475 feet high, he saw it swaying wildly, so violently that it seemed it would buckle and crash. Then a sight which stunned him. Near the top of the tower a portion of a wing of a plane was dangling, and beyond in the next field was a wrecked plane.

Smith was alone and could not leave the transmitter so he phoned to the police for an ambulance. They responded immediately and found the lone occupant of the plane has been crushed to death when it hit the earth. The news spread like wildfire and people came by the hundreds. For two hours he worked at top speed, answering phones, locking the gates to keep the curious out of the field, keeping those already in the field off the transmission line and tower, preventing reporters, dashing in and out to the phones, from brushing against equipment and knocking the station off the air.

Bit by bit he learned the story, not first hand, but second, third or fourth. The flyer had been stunting and was waving his hand to someone down on the road when he hit the tower, shearing a wing off the light, rented, plane. It skidded down and hit with a thud, no crash; the engine half buried in the soft earth.

Examination of the tower the next day disclosed only a couple of kinks, which steeplejacks, a hydraulic jack, and the insurance company promptly took care of.

NEAR MILLIONAIRE: Glen Litten, former manager and chief engineer at KFSB, now engineer at KFI-KECA, was approached several months ago with an offer of a share of the prize if he would furnish the radio equipment to an expedition preparing to leave for Cocos Island, off Costa Rica, where they were to search for the long lost Lima Treasure which, it is said, was being removed from Peru by the church, during troublous times several hundred years ago, when the guards were overpowered and the treasure stolen and cached on that Island.

Authentic (?) information on hidden treasure is frequently heard here and occasionally expeditions start out but they are usually manned with a mixed lot of fairweather adventurers and the trip ends before the destination is reached, generally with a mutiny or a shipwreck half way down the coast of Mexico. Litten considered the proposition, and the value of his equipment, and decided that the chance was too long. The expedition sailed without radio.

This week there are reports in the press that they have located the treasure, jewels and gold, the value estimated at sixty million dollars. Glen's share, after the Costa Rican government's cut, would have been just about a million dollars. He heard

the news, smiled, and in his usual philosophical manner remarked, "Narrow escape; think of all the trouble I'd have with all that money."

TELEVISION: After listening to a very interesting discourse by Wesley Turner, at a recent IRE meeting, on the RCA television transmitter-receiver demonstration unit used at the S. F. Fair, we were privileged to closely inspect the equipment while Turner demonstrated it most thoroughly. Henry Rhea of the Research Dept., Camden, here with new RCA mobile television equipment for W6XAO, was present and satisfactorily answered the many highly technical questions put to him. Irving Steinberger, associated with the local distributor of RCA products, discussed and illustrated the installation of television receivers, antennas, and oddities in reception, subjects upon which he is well informed.

W6XAO made an outdoor audio-video pickup of the Rose Parade in Pasadena New Years day, using their new mobile equipment, set up in front of the Elks Club, with a temporary antenna on their roof. The signals were picked up at the studios ten miles away in Los Angeles and rebroadcast by the main transmitter. Reported to be the first nemo television pickup made here and it excited much interest and comment.

They have also constructed a new radiator similar to the Franklin turnstyle type, designed to give greater definition to television pictures on a wide broadcasting band. It is a 60 foot vertical stacked antenna of four horizontal elements, made of duraluminum. The cylindrical pole is about 5 inches in diameter. At the top and at ten foot intervals four paddles extend out horizontally, each paddle being about five feet long, about two inches wide at the pole and nine inches wide at the outer end. Paddles are said to spread signal over wider area. First reports on results are that it has helped to equalize coverage and practically eliminated ghost images.

At present they are broadcasting nine hours a week, four hours live talent, five of films; 441 line, 30-60 frame interlaced U. S. standard images, waves horizontally polarized. FCC has just granted them a license to cover construction permit for a new portable mobile television station, W6XDU, 318,000-330,000 kc, 6.5 watts, experimental.

Ray Moore reports that signals improved materially at Headlee Blatterman's home in South Pasadena hills after elevating the RCA double dipole with reflector from the roof to the top of a forty foot pole.

Hear that a local radio manufacturer is selling a console type television receiver utilizing a 12 inch tube, complete with broadcast receiver, for \$395.

PACKARD ROLLS PACKARD: Bowling along the highway to the transmitter just before daylight one morning last week, Lyman Packard, engineer-in-charge of KFI, was marvelling at the smooth performance of his Packard 8. He took his eyes off the road just long enough to read the speedometer, which indicated 60, much faster than he had guessed. When he looked

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WOR

By R. A. SCHLEGEL

Br-r-r! Cold wave and drought continue with reservoirs nearly dry . . . outdoor ice skating first time in several years . . . Snow trains carrying capacity crowds to the mountains (hills to the Californians) but not enough snow around these parts to bother waxing the skis . . .

The home movie bug has bitten many of the WOR gang, including some of the announcers and production men. What started out as a social gathering each week by some of the Jerseyites has now become a movie camera club. The Long Islanders, not to be outdone, have also formed a group of movie camera enthusiasts and meet once a week at some one of the members house for discussions on how best to take movies through the lens cap. The two groups are planning on acting and filming a 400 foot stupendous, super-colossal epic. The L. I. camera men will make two hundred feet and the New Jersey boom swingers will do the other half of the fantasy. The film will then be run off before a joint meeting of the club and a 'Bolex' will be given the group making the best half of the picture. The club also intends to exchange films.

Giff Campbell, after testing, timing and playing ETs all day at the station, just bought himself an RCA portable recording outfit. At present, Giff is using steel cutting styli and paper discs. Caught Campbell reading the article on orthacoustic recording which appeared in the Journal so I expect him to go into the recording business which will cause no end of worry to Ray Lyon.

Memo to Don Hays and Henry Meyer: The darn thing nearly snapped my finger off when I tried tuning in stations other than NBC!

W2ARB gave me quite a demonstration on 20 meters with his new X-EC variable frequency control. It certainly sounds like the answer to an ECO prayer. W6QD tells me that they still have some of the early models (10-20-40 meter) at the lower price.

Al Helfer, WOR's diminutive announcer, has been purveying fancy neckties to the boys. The ties are of the patent type, a simple twist of the wrist and the tie is up snug, guaranteed not to slip. Everything went fine until Al received an urgent fone call at 4 am from Paul Reveal who wanted to know howinell to get the tie off.

Here's a note to fellows who get neckties caught in recording suction systems. You should use the Audiodisc Chip Chaser. It really does all its name implies, chasing the chip right up to the center post on a disc. It would even work well as a guard against the chip breaking on a suction system.

Ted Kasna gave quite a party New Year's Eve. Everyone was feeling quite happy by the time that several strangers tumbled in to help with the celebrating. Ted, always the gracious host, extended greetings and refreshments, after several brimming cups, the guests confided that they worked for WEAF but would not disclose their names. Kasna is still wondering who they were. This item may be of interest to the WEAF transmitter gang as it might give several of them an idea as to where they were on New Year's Eve. Kasna tells me that you had a good time but had considerable difficulty with the car later.

Never did hear how Bob Ward made out with that motor company that he was trying to convince had put an inferior motor into the car that he bought. Have you declared a one man boycott of their product?

Aside to Bob Brooke, Hollywood: Confidentially, it's not a

bad place. P.S. Any good jobs out there?

New York is experiencing some very unusual weather with the thermometer hovering around 10 to 15 degrees above zero for the past few weeks. The icy blasts sweeping up Broadway makes one think of Chicago with the winter winds blowing across the wide expanses of Michigan Blvd.

Newt Grieson, who used to work in our mail department, in town over the holidays. He's now with Chamberlain Bassett Research. Newt told us of a new antenna that Bassett will soon have on the market. The antenna will be a two band affair, center fed by a low impedance line and will be a half wave on the fundamental frequency and a center fed quarter wave on half the fundamental frequency. The antenna has an efficiency of 98%. Idea was prompted by many hams lack of space for a decent antenna on the lower frequencies. Impedance matching is taken care of by a special transformer developed by Bassett.

Charlie Singer and C. W. Harrison of the transmitter had quite an article on frequency modulation in the January issue of "RADIO." Harrison is a new member of the transmitter crew. How about something on FM for the Journal?

Note to Shirley Davis: What happened to that bowling team?

Now that I actually have my transmitter on 20 meter cw, Jim Carter beat a hasty retreat to 40 where he won't be bothered by the wheezes of my 100 watts working into an indoor antenna . . . One of the boys caught Carter buying cosmetics. What does this mean?

Alex Stanford at the transmitter, operates W2KSC on 160 & 80 meter fone and 40 cw. Alec helped the baby celebrate his first birthday.

Pat Miller has become convinced that 35mm cameras have their limitations and as a result he is putting all his mini equipment up for sale and is looking around for a 6.5 x 9 cm job.

Ed Franke at Carteret just bought a new Ford De Luxe with every imaginable gadget that a car could have. We demand an accounting, Ed.

It was a ten pound boy at the George Robinsons this time. Now they have a boy and a girl. Hadden, please note.

The WOR transmitter gang have been going around with their chests way out, the reason for this is that they have been operating their 50 KW over in the meadows for 15 months, or to be more statistical, 3221 hours without having lost time off the air due to transmitter failure.

It may seem that the Transcontinental Broadcasting System might be called a "Ghost to Ghost Network."

The bachelors of our staff are going into hiding for the next 10 months, Bill Boher is hiding behind a set of whiskers, Don Hale looking over costumes at a local theatrical shop and Ed Scatterday hiding behind dark glasses. The married men wondering what caused all this disguising until it suddenly dawned on them that this was Leap Year and that the eligibles were only taking the necessary precautions. Dick Borner indicated that he wasn't going in for disguises this year.

WQXR engineers voted to join the AFL's IBEW local 913 in a secret ballot conducted by the NLRB. The vote followed IBEW's contention that the CIO's ACA, which has a contract with the station, did not represent all eligible employees. Two of the five engineers voting for neither union three were for the IBEW.

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CHICAGO

By F. C. SHIDEL

The holiday season put away for another year everyone practically recovered and now looking forward to vacation time. Understand some are going South on an early schedule . . . "Slim" Corliss left an electric-train which he had purchased for his young son in the Enginer's lounge not thinking there were any kids around. When he returned he found a few of the Studio Engineers spending their lunch hour "Engineering" Slim's train—they were on the floor with it too—the big sissies.

The annual NBC Christmas party was, as in the past, a big pre-Xmas event for the NBC kiddies — and their proud parents—the party was planned and produced under the direction of Miss Judith Waller.

Congrats to Mr. Sidney N. Stratz upon his promotion to Vice-President in charge of the Central Division . . . Have received much favorable comment on Xmas issue of the Journal . . . Henry and the gang did a nice job.

Rudi Neubauer, Cashier, did a swell job again this year in collecting nickels and dimes for a Chicago needy family fund—the family really had a Merry Christmas for a change.

Bowling activities have assumed full swing for the winter season. Engineers and A. T. & T. boys are getting together after putting networks to bed on Monday evenings.

Connie Conrad has the honor and distinction of being the first paid up member in the Chicago chapter for 1940 . . . the precedent was soon proven as quite a number have since laid it on the line.

Group Councilman elections were completed January 11. Paul Moore was retained by his constituents for another term as Supervisory Councilman, as was Glenn Webster and Byron Speirs, day and night studio respectively. Harold Rayston was retained by the boys in Field. Bombaugh is the new WENR-WLS Councilman and Schomaker the new Maintenance Councilman. WMAQ had a dark horse winner in Harry Maule who took over on the second ballot receiving none on the first.

The first meeting of the Council was held January 12 at which the old and new Councilmen and a few guests broke bread before taking up the business for the new year.

"Ab" Abfalter is rapidly falling for the photography "bug"—he is now looking for an 8 mm projector—Joe Alusic is still the checker champ having repelled all invaders in Engineering—he is now working over the competition in Communications. The remote control chess game has been temporarily at a stand still while San Francisco makes some alterations.

Pat Paulson, Transmitter Chief at WBBM, passed away suddenly December 28th. Hugh White, W9LEP, home brewed a 3 tube receiver just for fun and after comparing it with his factory built receiver he is wondering why he didn't build a home made job long ago.

January 14th and no snow in Chicago—wish we could have that rain that has been falling in California—they don't seem to appreciate it!

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NEW YORK

By JON LARSON

Those I-never-go-anywhere boys, who had lately been praying and then campaigning for out-of-town assignments down in the solid south far removed from the hoary arts of Jackie Frost are at this moment already complaining of sunburn. It'll serve Al Wies and Ed Whittaker right for sending us (les miserables) Miami postcards with the haughty and patronizing greeting "Hello, Poor People!" For four weeks these favored sons of destiny will shun our frigid latitudes for "Hour of Charm" pickups? (All Gal Orch!) at Miami, Birmingham, Charleston and Atlanta. Quick Watson, the sunglasses . . . Aladdin never brought us such a shiny lamp!

With Kay Kyser in Cincinatti is our gadgeteer craftsman Wally Walworth. Al McMahon and he will no doubt assist as NBC salesmen by smoking *their* favorites. This is to be Wally's first stop on a schedule of several midwestern visits on behalf of that popular "Luckies" show which will attract the "bugs and cats like flies to honey!"

We too, thought that at this time a southern trip would be pregnant with wisdom and that if someday we should be granted the privilege we would happily set out for some balmy clime say, Mexico and Montezuma's old stampin' grounds. Even without a scrape-draped shoulder shaded by a generous sombrero (Sturgell import) we sadly become nostalgic for a hot breath of the dust of Aztec bones. To be at home there one simply must practice up on lethargy! Indeed, you are welcomed with open arms only if you promise not to work, and how easy that is to promise. For centuries no gringo has felt like working in Mexico! We dream of helping tempus to fugit with nary a care in a land where "pronto" is a horrid word. Brrrr . . . hey, shut that window, it's only zero outdoors of Radio City! What a rude awakening! Oh well, we must back to the mines but with an ear to the ground . . . Hark, what's that . . . three men of the NY staff going down Mexico way . . . and we're not going? Hmmm . . . yep, we're not going but we know a secret. Yeah, but of what does it avail us? The three sly old but unsure gentlemen who are (confidentially) going deserve to go so that's that. We'll tell all when their hoped-for six weeks trip materializes. Oh, well, we like Miami better anyway.

As we were saying Mexico ain't so hot . . . er, we mean . . . not so . . . well, it's too hot and . . . and languid. Taking siesta is not a J. L. Lewis innovation. The natives don't duck the prolific Vitamin D from 2 to 5 pm. for nothin'.

Aw nuts, we wish we were going, if only as a stooge! We know Mexico City is fascinating and a lovely place to live, Senior Gardenas. Mexico City papers, please un-copy the above rambling lament!

We're glad Div. Engr. Mr. George Milne is back with us again after losing a round to a virulent cold and he's already itching to toe the line at next Thursday eve's ten-pin session.

Last week all of us had a fright exceeded only by that of Ash and Mrs. Ashworth when their 5 yr old son Bobby lost himself in a nearby wood at Union, N. J. for several hours and while Ash was making a pickup at the Meadowbrook. We felt for Ash there, biting his nails. Local police had been informed and the search was on but it was not until the redoubtable and not-to-be-denied Master Ashworth found himself when he emerged from the wood and came upon a strange street and dirty-eyed asked the first passer-by where 404 . . . Road could be found. Whereupon at 11 p. m. Mother Ashworth's wondering boy marched nonchalantly home through the night to help her dry her tears, and glad are we to close

this story with a happy ending.

Tony Hutson doing "Town Hall Meeting of the Air" . . . Gee Bee (Glamor Boy) Butler still looking for that copy of the 1940 agreement . . . Campbell and Thomson sharing responsibilities in the absence of Al Wies . . . DB (Gain) Whittemore losing some somewhere in his new multi-element rotary antenna.

We already note the effect of Bill Glasscock and the Waring propinquity on Johnny (Lady-Killer) Pawlek with his new vestments, new dogs and classy Stetson chapeau . . . Predicted headline: Another Division of Females Succumb to Pawlek suave savoir-faire with the gentler dears.

Ashworth to Florida on week end of Jan 26th for Milton Berle show. Restless Sturgell unable to shake all his commercials for a hop down to see his family now wintering (hurried call for snow-suit and blankets) at his recently acquired Fort Lauderdale Spa where the balmy breezes this season haven't been so balmy.

The one inch of snow reported Miami on Jan 24th really was a dirty trick on the boys . . . Let's all go to Coney this week-end for a dip! Abundant snow-falls all over the states have left NYC proper practically untouched (Hollywood Brooke, are ya listenin'?)

The Evolution of a Television Cameraman



PHOTOS BY JOE CONN

COMPLIMENTS
OF
HERB RICE

NBC'S SALARY ALLOTMENT REPRESENTATIVE

INSURANCE OF ALL KINDS

WASHINGTON

By A. R. MCGONEGAL

WMAL has done it again. For the second consecutive year WMAL wins the GE plaque—this time with only one minute and two seconds lost time for the entire year of 1939. Bill Simmons made a joking remark last year about WMAL needing a trophy room at their new transmitter—it begins to look as though he was right.

And while we are on the subject of plaques, WRC-WMAL's program and executive staff have reason to be proud, also. They won the 1939 "Variety" plaque for showmanship.

It looks as though the ice skating bug has bitten deep—parties of Washington engineers are almost nightly cavorting (and frequently crashing) at both the local ice rinks. The cold wave we have been enjoying for the past month has given us some outdoor skating also. Wadsworth has been showing a roll of film taken at the recent "Ice Follies," into which he has spliced shots of various engineers taking to the ice for the first time. Quite a contrast, or sump'n. Plans are under way for an exhibition hockey match between NBC and our softball opponents of last summer, the newspapermen. The gate receipts, if any, are to go to the Finnish Relief Fund.

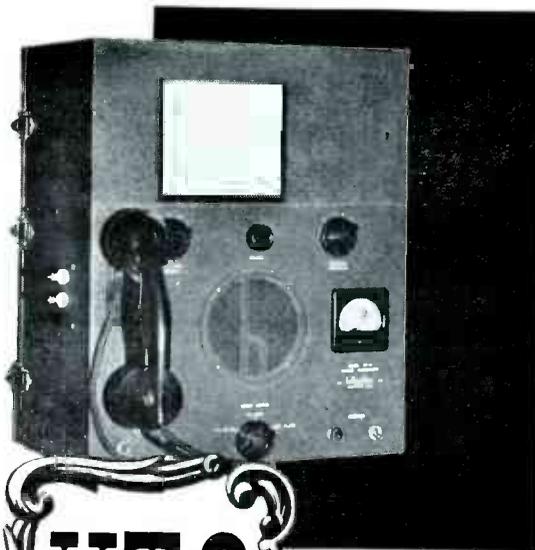
Speaking of relief, NBC's Washington office is busy with its annual task of collecting a "mile of dimes" for the president's infantile paralysis fund. A long counter on the sidewalk in front of NBC is laid out with parallel grooves, in which the dimes are laid "end to end". The stand holds 14,964 dimes, or one sixth of a mile, when full. It was filled more than six times last year, and collections this year are running far ahead of last. Some eight or ten local programs are aired daily from the stand.

A half-hour program featuring outstanding events in the fourteen year history of WMAL was staged on that station's anniversary, January Sixteenth. The program gave a prominent place to the efforts of H. A. Wadsworth, co-founder and constructor of the original station, and now station engineer of WMAL.

Plans are under way for the annual ATE dance, to be held at one of the nearby country clubs late in February. Music will probably be furnished by the same group of NBC musicians who made the last dance so enjoyable. NBC employees from other cities who plan to be in Washington around that time are urged to get in touch with us, in order that they may receive an invitation.

After nearly twenty years of still photography, your correspondent has finally succumbed to movies, having acquired a 16 mm Bell and Howell. At the present price of Kodachrome, it will be a long time before Hollywood has anything to worry about.

Many Uses For This



HT-8 RADIOPHONE

This efficient 25-watt radiophone (transmitter and communications receiver) has proved so popular in marine service that it is now being chosen for innumerable other uses. Here are some of the reasons why:

The transmitter covers five frequencies (crystal controlled), and the receiver six frequencies. All in the 2000-3000 range; or, if desired, two may be in the 3000-6000 range. And all selected merely by the flick of a switch on the front panel.

When the telephone handset is lifted off the hook, the receiver output automatically transfers from the built-in loud speaker to the handset. To transmit, you simply press the button on the handset and speak into the mike.

Permeability tuned coils make receiver tuning adjustable over a narrow range for each frequency. And a special oscillator circuit, with temperature and voltage stabilization, gives a highly stabilized frequency setting.

There is no noise or static in the loud speaker output when no carrier is present, as all this is prevented by a QAVC circuit.

A small separate unit with interconnecting cables provides power supply for both transmitter and receiver—12, 32, or 110 volts DC, but also adaptable to 110 volts AC.

Whether setting on a desk or mounted on the wall or in the bulkhead it occupies a minimum of space.

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TRENDS IN RADIO

continued from page 2

FREQUENCY MODULATION

Another subject of considerable importance is frequency modulation. During the past year several stations were built and construction permits granted for a number of others. In addition, several commercial models of both transmitters and receivers were placed on the market.

Field tests on this system of modulation have shown that at least three distinct advantages can be obtained through its use—high quality, static reduction and service are extension at ultra-high-frequencies. While f-m has had but little effect on radio business, it is expected to gain momentum rapidly during 1940. A number of new models of f-m receivers as well as combination a-m/f-m units will be introduced this year—it is also possible that special converters will be produced to permit the use of the

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audio portion of present a-m receivers. Also, by the end of 1940 it is likely that 250, 1000, 3000, 10,000 and 50,000 watt f-m transmitters will be on the market.

It is interesting to note that the FCC has allocated the following amateur bands for television and radiotelephone frequency-modulation transmission: 112,000—116,000 kc, 224,000—230,000 kc, and 400,000—401,000 kc. Special authorization has also been secured for a 1000-watt station, operating on 42.18 mc, to gather comparative data using a-m and f-m for both aural and facsimile programs.

RECEIVERS

Reliable figures place the 1939 receiver sales between 9 and 10 million—an exceptionally good year. Twenty percent of the year's sales are attributed to each of the first two quarters, 25% to the third and 35% to the last quarter.

Statistics show that the average receiver offered contained 6.6 tubes and had a list price of about \$56.00, that 31% had push buttons and that 47% possessed only one band.

COMMUNICATION RECEIVERS

The communications receiver field has been marked by noteworthy technical advances during each recent year. It is probable that temperature compensation and more accurate maintenance of frequency calibration will be two objectives of the manufacturers during 1940. This year will probably see a marked interest in ultra-high frequencies, with a resulting demand for communications equipment with bands to 2½ meters.

TUBES

Since January 1939 over 140 new tube types have been announced. However, for the new year one large producer of sets and tubes has announced the intention of standardizing on 36 types.

An important technical development, relating to tubes, during the year, was the announcement of a new basis for tube ratings. In the past, receiver designers used the published absolute maximum ratings as design maximum values. In cases where the power source voltage varied greatly from the original design value, the possibility existed that the tubes would be subjected to overload and consequent loss of efficiency. The new ratings have been chosen to allow for such variation in power source voltages.

FACSIMILE

While facsimile has not reached a definite point of conclusion and for the time being seems likely to continue on an experimental basis, it may come into more prominence as the year progresses. Despite promising field tests, laboratory work is still being directed towards higher definition, increased speed and better synchronization.

We note that the frequencies 1715 to 2000 kc, 56,000 to 60,000 kc, 112,000 to 116,000 kc, 224,000 to 230,000 kc, and 400,000 to 401,000 kc have been set aside for amateur facsimile experimenters.

AERONAUTICAL, MARINE AND POLICE RADIO

Much of the activity in the field of aeronautical radio during 1940 will be devoted to blind-landing systems. Also the possibility of using f-m for aircraft radio work is also being given consideration.

As would be expected, there was a decrease in transatlantic message traffic during the latter part of 1939, although this was offset to a large extent by an increase in coast wise message traffic. This year will see an increasing use of radio telephone equipment on small pleasure craft. Direction finders are also coming into more prominence. Also, some use has been made of u-h-f obstacle detectors.

Police radio is becoming better organized year by year. A development that will be watched with great interest is a two-way frequency-modulation short wave system being designed by Daniel E. Noble for the Connecticut State Police.

LAKE PLACID

continued from page 1

world, was leaving. When we expressed our regrets for not having arrived sooner, Art offered to make another jump so we could get a picture. We hope the picture will give you some idea of the thrill we got in watching him. (See Cover Photo.)

Friday morning things looked different. Although the temperature was up to ten below the sky was overcast and everything was covered with thick hoar-frost. It was really cold. As usual we reported to Jack Thornton to let him know where we should be in case anyone wanted us. Then we were off for a hike through the woods with the hope of getting some good winter pictures and possibly a shot at a white rabbit. The light was bad for photographic work and there was too much snow on the trees for hunting, but we had a good time just the same.

On the broadcast that evening Mr. Thomas had as one of his guests Mr. Garran, president of the Lake Placid Chamber of Commerce, who invited us to the Olympic Arena to witness the hockey game between Harvard and Princeton. Just before the game Lowell Thomas introduced Kay Kyser and Ginny Simms, who were to be crowned king and queen of winter the following evening. Kay Kyser started the game—a fast exciting game which Harvard won with a score of five to three.

With a duplicate set-up of such excellent equipment as the RCA OP-5's, we tried to forestall any possibilities of failure on our part. However it is almost impossible with guests present to conduct a broadcast without lights. Thursday night just before going on the air all lights went out for a few minutes. That didn't bother us much as we could proceed with the aid of a few flashlights, which Mr. Packer provided. We are glad to say that we did not need them after all. The next morning an overloaded 15 K.W. transformer supplying power to the club failed. It was replaced temporarily with another of the same rating, the largest procurable on such short notice. Although it had to carry a 100% overload it held until Saturday morning when one of proper size was installed.

Due to this trouble all electricians at the club were busy there, leaving no one available to maintain the telephone circuit at Jo Mountain where the ski races were to be held Saturday a. m. As a favor to Mr. Packer we stayed over that morning to assist if trouble developed at the scene of the races.

The Lake Placid Club owns several thousand acres of ski slopes and trails, skating rinks, golf courses, saddle trails, etc. The Clubhouse itself will accommodate some 1800 guests. It is a whole village in itself, including department stores, theater, gymnasium,—everything for the guests' convenience. Here Mr. Packer knows how to keep everyone happy. That is how it happened that we broadcast from the music room the last two nights when Lowell Thomas had about 300 guests with him to witness the broadcast.

The Mount Jo down-hill ski race was most exciting. Forty-nine contestants, representing nearly every college in the eastern United States, participated in the race. The trail started at the very peak of Mount Jo, and dropped 800 feet in five-eighths of a mile. As I climbed the steep and winding trail to the top of the mountain I wondered how anyone could safely come down such a trail on skis. When the first man got his starting signal, he lunged over the line with a loud "Whoopie!" and started the descent, pushing on his poles with all his might to gain speed. He swung around the first two curves and dropped out of sight. Only one minute and eleven seconds later he crossed the finish line. When the report of his time came back by phone the next contestant ejaculated "Boy! That's good time!" The next skier fell on the second curve, but jumped up and went on to the finish. Many took tumbles on the way down; others lost their skis. Gayle Aiken of Yale broke one ski, but finished the race

on the remaining good one. Gignac of Middlebury won the race with the time of one minute and five seconds.

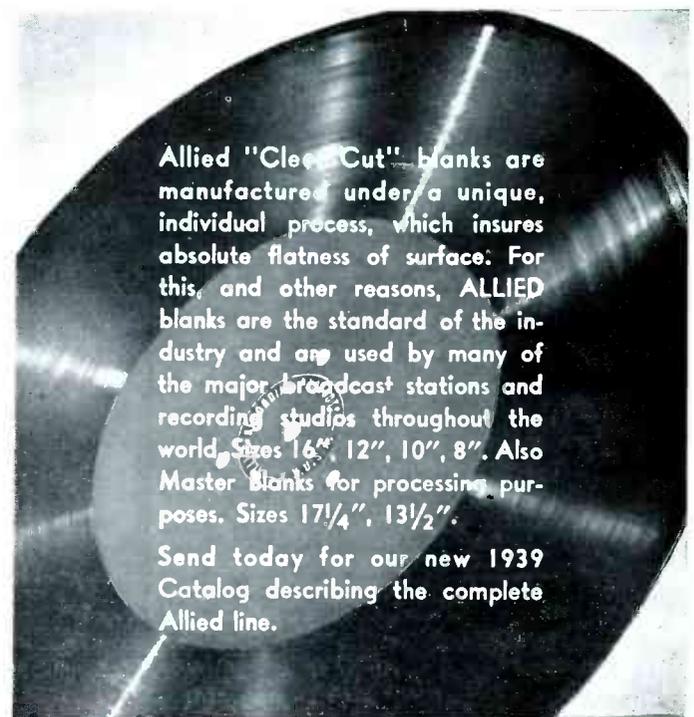
We hope we shall have many broadcasts from Lake Placid in the future. After experiencing the friendly and thoughtful cooperation of both the A. T. & T. fellows and Mr. Packer and his staff, I must admit that I should enjoy going again myself. If you have an opportunity to visit Lake Placid in the winter time, don't turn it down.

WOR

continued from page 4

IBEW presented an agreement to New Orleans stations WDSU, WSMB, and WNOE. The agreement calls for a closed shop, forty hour week, a minimum salary of \$49.50 per week and \$69 per week for the chief engineer. Engineers are to handle the studio controls which at present are handled by the announcers. This will mean the hiring of about seven more engineers for the three stations. The present salaries of the New Orleans engineers ranges from a low of \$20 per week to a maximum of \$35 per week. IBEW claims 100% membership. (I've often wondered why unions always claim 100% membership?) No originality.

It looks very much like this will end the dope for this month, I've been sitting in front of the typewriter for an hour trying to think up a good finish. Of course I could finish off with a "Confucius says" gag. Or could I? So long.



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CLEVELAND

By F. C. EVERETT

With the ending of 1939 the 50 B transmitter at Brecksville wound up its first ten years of service. Old serial number 2 is still pegging away faithfully with many of its original features and a smaller propensity for flying off the handle than when it was young and full of static. Appropriately enough it was at this time that the ATE decided to show their appreciation of the Engineer in Charge, Mr. S. E. Leonard, and it took the form of a Christmas present consisting of a nautically styled clock and barometer on wooden bases. Mr. Leonard has been with WTAM longer than any mere piece of equipment and it was a real pleasure to the chapter to present some tangible evidence of their regard.

The usual Christmas party was held this year at the Hotel Allerton with some 65 persons present. The staff presented Manager Vernon Pribble with a set of matched luggage following the dinner, sans speeches or practically so; followed by the usual skits and stunts aimed to prevent anyone from forgetting that he must not stick his neck out. With a tale of a big contract just signed by the sales department, the good feelings soon climbed high enough to spill over the top of the thermometer. Christmas held off long enough to permit a party for the children at the studio two days later when some forty odd children saw Santa Claus bring them gifts and refreshments.

With the terms of the new contract calling for the discontin-

uing of automatic nemos and increased activity at the studio due to a new account more man power was needed and Grant Makinson was changed overnight from a TE to a SE. With this change, several were made in the lineup, making Disbrow Field Supervisor as well as assistant to the Engineer in Charge and McMahon became senior Control Supervisor. This leaves the transmitter pretty short handed, although Makinson will probably be returning to the transmitter as relief in paying back holidays and similar situations.

A book entitled "The Glass Giant of Palomar" has changed the course of events at the transmitter. Although the reflecting telescope being built by H. L. Clark, aided and abetted by A. H. Butler, does not equal in size the 200 inch disc; great hopes are felt by the builders of a six inch reflecting mirror being ground by those members of the staff in their spare moments. A strange new jargon has filled the air with discussions of Foucault's tests, spectroheliographs and coelostats. If any long black tubes are seen protruding from the transmitter building or any of the above mentioned engineers homes, there is no particular danger of anti-aircraft fire, it will merely be these intrepid voyageurs setting forth to sail on their first spatial voyage.

New car report. F. E. Whittam, a Mercury. A. H. Butler, a Ford.

C. C. Russell, station engineer, bought his older daughter an Argus some little time ago, but this fall when that daughter went to college it left the next daughter clamoring for her share of the photographic art and so Pop was forced to hurry down and shell out for another one of the 35 mm. cameras. However he soon became tired of having his use of the camera interfered with, in fact it got so the gal wanted the camera every once in a while. So CCR returned triumphantly the other day with one of his own—a half 120 size with 2.9 lens. Now watch the developer fly.

A. B. Stewart, TE, took a little flier in the movie business the other day and claims he came out with a couple of good reels. Impossible to tell whether this is a permanent disease or just a passing fancy.

F. C. Everett, TE, had Santy bring him a set of chemical scales so he can weigh out the chemicals at home now.

The RI is in town. Beginning January 15, the FCC will maintain a branch office in Cleveland to service the various and variegated broadcast, airplane, police, school and amateur transmitters which make this territory so radio minded, as well as to give examinations to the operators both commercial and amateur who populate the territory. The telephone number is Main 4140 in case you think you ought to call up. The newspapers report that Mr. Russ will be in charge of the office, which should be good news to most of us; since Russ is a very decent chap indeed.

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RADIOPHONE FOR SMALL BOATS

Fishermen and sailors among the ATE membership will find it interesting to bend an occasional ear on 2738 kc., the channel assigned for inter-communication among boats equipped with radiophone apparatus. A listener in the vicinity of any coastal city can, during the popular fishing season, get up-to-the-minute reports on what fish are being taken and where, he can keep posted on the progress of boat races, and he can listen to the chatter among yachtsmen and fishermen offshore.

This channel is used by yachts and all sorts of small commercial and pleasure craft too small to warrant a regular commercial radio installation and operator but large enough to have use for some means of communication while out from shore.

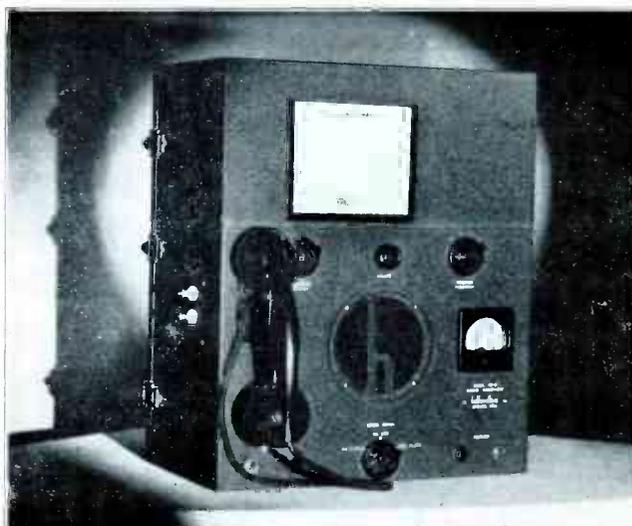
To the owners of these boats the modern radiophone equipment serves not only for pleasure, but for business and safety as well. By means of this modern radiophone equipment a boat owner is able not only to talk directly with other boats, but (through the telephone company's marine exchanges) to his home, office or any other land telephone. And, in emergency, he can call the Coast Guard directly for any needed assistance. He can receive calls as well as make them with the same facility as though he were sitting at his office desk.

One thing that makes all this possible is the fact that the license requirements for operating this type of equipment are such that a boat owner can qualify as his own operator with a couple of hours study. No appreciable technical knowledge is involved, nor code reading. A knowledge of Laws and regulations applying to radio communication is about the only requirement. Such a license does not qualify the holder to make technical adjustments such as might affect frequency stability or otherwise infringe existing regulations. But it does qualify him to operate freely in the channels provided for this type of service.

Obviously the equipment for this use must be dependable and foolproof. The trend is toward equipment which, when once installed and adjusted has all tuning adjustments locked and thereafter shifting from one frequency to another involves only the use of a single selector switch on the front panel. Usually at least three operating frequencies are provided: 2738 kc. for boat-to-boat communications, 2670 kc for emergency Coast Guard contacts and one or more in the 2100-2200 kc. range for contacting telephone shore exchanges, each of which has its own listening frequency somewhere in this range.

The accompanying illustration shows an example of a modern rig for this service. Its compactness can be readily judged from the telephone handset. This Hallicrafters HT-8 Marine Radiophone combines the transmitter and receiver in this one unit which is designed for either table or bulkhead mounting. The power pack is a separate unit with plug and cable connections. The upper left-hand rotary switch provides five crystal controlled transmitting frequencies, selecting not only the correct crystal but the corresponding pre-tuned circuits for each position.

At the right is a similar switch for selecting the receiving frequencies. This has six positions, five of which correspond to the transmitting frequencies. The sixth is for the weather report channel. This switch arrangement for tuning has the advantage



over a dial that there is no gamble in setting the switch to stand by on a given frequency for incoming calls. The pre-adjusted tuned circuits are "right on the nose" whereas dial setting is likely to involve inaccuracies. For standby operation the built-in loudspeaker serves but when the handset is lifted from its hook for actual communication the speaker is cut out and the receiver output automatically switched to the handset. A button on the handset constitutes the "send-receive" switch, automatically switching all changeover circuits.

The meter with its 3-position switch (lower center) provides a constant check on operation. The other controls on the panel are the audio volume gain for the receiver and the main power switches for the transmitter and receiver sections.

The transmitter puts out a 25-watt carrier. Models are available for 12, 32 and 110-volt d. c. operation but all models are also instantly convertible for operation from the 110-volt a. c. lines thus saving the ship's battery when operating while tied up at a dock. The coverage with a 25-watt carrier is ample for the requirements of most boats using this service. Marine telephone exchanges have their listening posts dotted along the coasts so that high power is not required to reach them and where boat-to-boat communication is desired between boats too far apart to affect direct communication the contact can still be established through the telephone exchange ashore and a land link.

Although this marine radiophone service is a relatively new one there are already many hundreds of boats equipped to take advantage of it. One list of Pacific Coast boats so equipped includes over 1100 and to this must be added those along the Gulf and East Coasts and the Great Lakes.

A 5-frequency system such as this HT-8 rig provides for all frequencies employed for land telephone, boat and Coast Guard contacts from Maine to Florida on the East Coast, or down the entire West Coast. It therefore meets all requirements for long cruises. For boats which operate locally only three of the channels need be employed but the others are always in reserve.

Jay Gehres RR #8 Evansville Ind W9A-M-WEOR-WB72

KFI - KECA

continued from page 3

up to the road again he saw he was off on the shoulder. The pavement was still wet from a rain and as he turned back on it the car slued and rolled over twice, maybe three times, with Lyman hanging on to the wheel with a vise-like grip. When the thumping and bumping stopped the car was upright again on its four wheels. He stepped out, felt around for injuries and found they consisted only of bruises and a skinned shin. In telling us of his narrow escape he finished with "AM I GLAD I WAS IN A PACKARD!"

FREQUENCY MODULATION: Much talk of FM out here but all theory and no practice, there being no FM transmitters hereabouts. Christensen and Tokar are planning rigs to operate on 2 1/2 meters, patterned after the one described in a recent issue of QST. If these "pioneers" get results it will undoubtedly revive interest in hamming here, which at present is at an all time low.

BOOM: KFI-KECA is enjoying the greatest business in its history. Resultant expansion and new construction necessitated augmenting the Engineering staff temporarily and the following men, all well known at Los Angeles stations and studios are with us at present: Norman Leonard, ex KMPC; Jimmy La Shaur, J. C. Riekenberg and Art Brearley, all ex KEHE.

BONUS: Everybody happy when the entire staff of KFI-KECA received an extra check for a weeks salary at Christmas time.

CONSPICUOUS BY ABSENCE: Unsee any article from San Fran in the Xmas issue of the Journal. How come??? Incidentally, we think the Journal Staff did a swell job with that issue. We liked every bit of it. Believe Schlegel's items are the newsiest.

BOWLERS VIE: In the field of recreation bowling has come to the forefront here. Curran appeared on the maple the other night wearing the approved footwear for the game and promptly beat Blatterman, scoring 193. Blatterman since seen at Spaulding's show windows and looks like Curran's lead will be short lived. Mason, Hidy, and Packard also bowl "some". How about a match Hollywood? If there are any bowlers (not too good) among the Engineers, give us a buzz. See by Mosher's (Schenectady) items that bowling is a favorite sport there also.

RACQUETEERS: Tennis is still the favorite out-door game of KFI-KECA engineers, although there is much interest of late in archery, skeet-shooting and golf. Curtis Mason recently won a trophy at the Live Oak Tennis Club. Blatterman, Cole' Leonard, and Alexander playing occasionally but unable to get out together because of press of duties. Out at the Big transmitter Sturdy trims Tokar quite regularly, but George is a good loser.

HONORABLE MENTION: In a late issue of "Broadcasting" we saw a nice plug for the Hollywood Engineers and a picture of Paul Green with nemo equipment in a hospital room picking up the Charlie McCarthy portion of a recent Chase & Sanborn program. Bergen there to have an infected face treated.

Also saw an item re Neal and Rohrer of KOA being appointed to Winter Sports Carnival committee of Denver Junior Chamber of Commerce, and commendation for Slusser for decorative Xmas lighting effects on their tower.

In another issue saw an excellent picture of Saxton and Fredendall testing RCA Orthocoustic recording equipment.

ATE JOURNAL INTO SIXTH YEAR OF PUBLICATION

This issue of the A. T. E. Journal marks the sixth year of publication of the monthly publication of the Association of Technical Employees Journal. Starting in 1934 as simply "an issue which was to be published several times a year" the magazine has grown to be a regular monthly publication.

The magazine started with only a mimeographed body with a printed cover. This was soon supplanted by printing and off-set printing and has since that time used the direct method of printing.

The first two issues of the magazine were published by the Washington chapter of A. T. E. but in December 1934 the New York Engineering chapter took over the publication. By May 1935 the magazine was being published by an inter chapter group in New York and has since been published in this manner.

In September 1935 the first advertising matter was introduced to the pages of the A. T. E. Journal.

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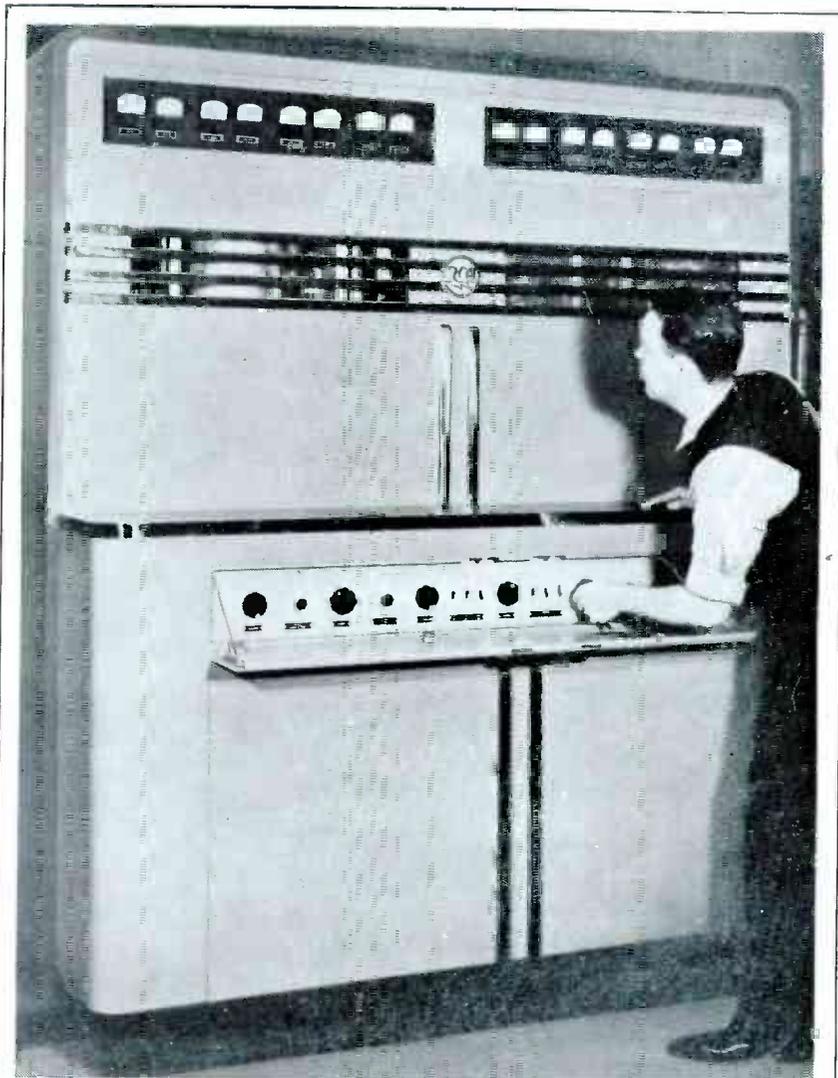
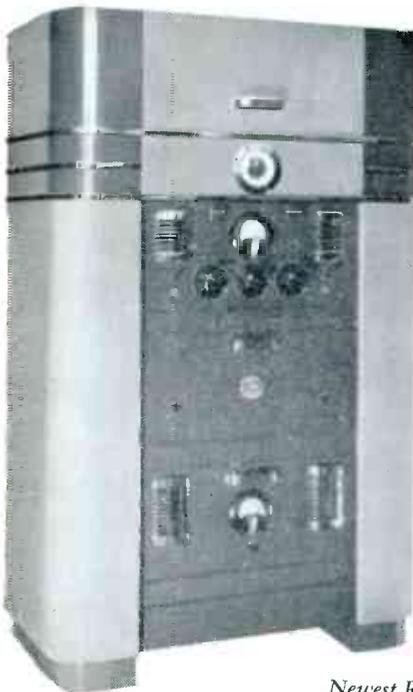
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