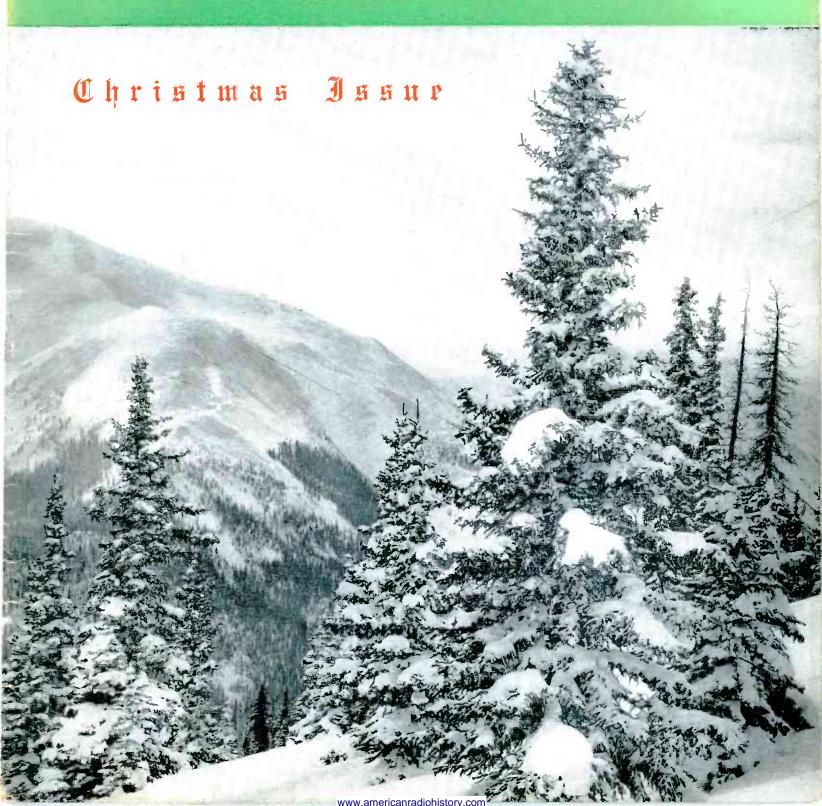
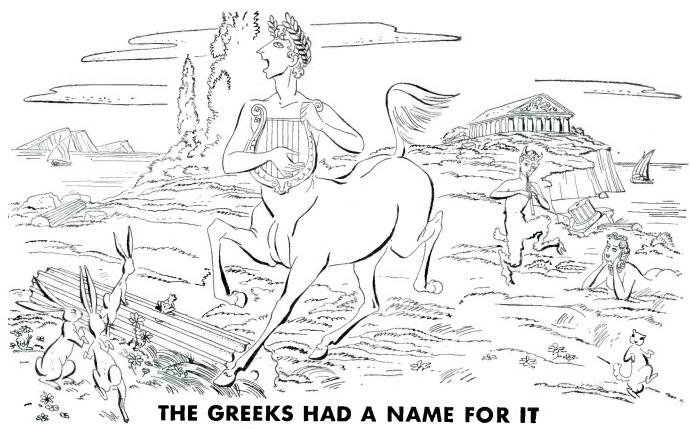
DECEMBER 1939





(which NBC has borrowed)...

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Every good wish to our friends at NBC for a

Merry Christmas

and a

Happy New Year

Bill Filler

Adolph Gross

TERMINAL RADIO CORPORATION

68 West 45th St.

80 Cortlandt St.

New York City

VAnderbilt 6-5050







Efficient, faithful engineering service is the basis of good broadcasting. That is the kind of service we have learned to take for granted in NBC. Newspaper headlines go to the artists, but my first thanks and appreciation go to the technical staff which makes artistic success possible in radio.

Sincere Christmas greetings to all members of the ATE of NBC, and best wishes for a year full of happy days in 1940.

DAVID SARNOFF.

Christmas greeting, 1939, from Lenox R. Lohr to the ATE Journal.

One of the best things about Christmas is the occasion it gives for sending good wishes. For those with whom we work these are especially warm, and I appreciate the opportunity to extend to ATE cordial holiday greetings.



To the Association of Technical Employees:

Again through the kind office of the ATE Journal, I extend to the Engineering Staff and Members of the Association of Technical Employees my Best Wishes for a Merry Christmas and a Happy New Year. This year has witnessed notable accomplishments by NBC, outstanding of which is the establishment of a television service in the city of New York. This is a tribute to the genius of NBC Engineering personnel and is the pioneer station from which will evolve the future television network system, enabling our national audience to both see and hear our presentations. It will be a long and hard pull to reach this goal, but the faith that I have in our Engineering personnel leaves me with no doubt as to our success.

Sincerely yours,

O. B. HANSON,



ALA CARARA CARAR



As we approach the end of a highly successful year, it is my desire to express my sincere appreciation and to extend the season's greetings to members of the A. T. E. and to our many friends who have so generously contributed towards our success.

EDWARD C. HORSTMAN,

President of A. T. E.



MUSIC CORPORATION OF AMERICA

thanks the

NBC

ENGINEERS

for their fine help and co-operation during the past year.



For Your Co-operation We Thank You.

THE BIOW COMPANY

9 ROCKEFELLER PLAZA NEW YORK CITY

Cordial Greeting of the Season

PEDLAR & RYAN

"THE O'NEILLS', "HILLTOP HOUSE", "HER HONOR NANCY JAMES", MARY SMALL, PICK AND PAT AND ALL OTHERS IN OUR HOUSEHOLD - JOIN ME IN EXTENDING THE SEASON'S GREETINGS.

EDWARD WOLF

The Three Wise Men

By Том Gootee, Chicago

I have acquired a rather infamous reputation lately, and some people have even intimated that I go around looking for trouble. But what they say isn't true. I'm a pacifist by nature, and a great lover of peace and good fellowship. It wasn't my fault that I became slightly involved with the law. And now that I'm out of jail I'd like to offer an explanation.

It all happened on Christmas Eve.

After work that night I bid a fond farewell to the boys in the Control Room, wished everyone a Merry Christmas, and then went across the street to Joe's Place. Inside at the bar I found my friend and colleague, Doctor Killfidget.

I wasn't particularly surprised to see him, because we always met at Joe's Place on Christmas Eve. It is sort of a tradition. The fact that we were there every other night of the year was

purely accidental.

'Good evening, sir," said the Doctor, when he caught sight

I acknowledged his greeting and sat down beside him at the bar. Glancing around I noticed there were few customers.

"Everybody seems to have other things to do tonight, eh, Doctor?

He nodded sadly.

"Yes, indeed, sir. Christmas isn't like it used to be."

Just then the bartender came up, and we both ordered Hot

Toddy.

For some reason there is nothing like Hot Toddy on a cold wintry night, especially the night before Christmas. Both the learned Doctor and myself are quite agreed on that point. In fact the Doctor once wrote his congressman, suggesting that a law be passed making December: "National Hot Toddy Month." But nothing ever came of that, for some reason.

It seemed that Joe had prepared it better than ever before,

for just such a testive occasion.

'Ah!' murmured the Doctor. "What delicious nectar! It's

like the very spirit of Christmas."

'By the way, Doc," I interrupted, "have you done all your Christmas shopping yet?"

"Oh, yes indeed, sir. I finished two days ago."
"That's good," I said. "But we won't have anything to do tonight!'

The Doctor was visibly downcast.

"That's true, sir. We usually go out and do all our shopping on Christmas Eve. But this year, sir, I—I—I just couldn't wait!"

"Oh, that's all right," I said, trying to be cheerful. I didn't want to hurt his feelings on Chirstmas Eve.

"Most people would be going home tonight," said the

I ordered some more Hot Toddy, and we fell into a deep silence.

There were only a few people in Joe's Place, and even the atmosphere around us seemed lonely and depressing. It was quite evident to me that we would have to think of something to do, or both of us might go to sleep. And there is nothing worse than sleeping through Christmas Eve.

While the two of us were thus lost in thought, or what

passed for thought, Pete came in.

Now Pete is quite a character around the city. Hs is probably the laziest little guy in the world, but he's certainly a square guy. Pete is just about five feet high, and looks like he's standing in a hole most of the time. As long as I've known him, I can't ever remember of seeing him do any work

—and neither can anyone else. Pete has been on and off the WPA so many times, under so many different names, that he is worn and naggard from just filling out WPA application

Pete always has a complex for the unusual, although he is by no means a show-off. In fact few people ever take a look at Pete more than once, and he is so short that some people don't see him at all. But he is very smart, even if he is lazy. And he has a habit of getting mixed up in some very strange

So I wasn't particularly surprised to see Pete come in dressed

up like Santa Claus.

I nudged the Doctor, and we both looked and laughed.

Pete is a thin little guy, and he was wearing a worn-out, faded red-and-white Santa Claus suit that must have been thirty sizes too big for him. He had an old pillow stuck in his pants so he would look heavier, and that had the effect of making him look like a round rubber ball. He was carrying his false whiskers in his hand, and he had a very disgusted look on his

We called to him, and he came shuffling across the floor. Probably sensing a free drink he was soon sitting beside us.

"Greedings of da season, boys," he said hoarsely.
"And what goes on with you?" I asked, looking at his faded "You look like a department store Santa Claus."

He shook his head sadly.

"No boys. I just ended a week of big business." His voice was so hoarse we could hardly understand him, and the Doctor suggested we purchase a large Hot Toddy for our good friend Pete. And also have one apiece for ourselves.

After this was done, and most of the Hot Toddy consumed,

Pete laid his whiskers on the bar and told us his story.

Aboud a week ago," he said, "I see dese fake Sandy Clauses all standin' aroun' on da street corners ringin' bells and collectin' dough in dese lil tin pots. Dis seems like a new racket ta me, so I buys me dis Sandy Claus outfit, an' a pot. Den I picks me oud a corner an' I stan' an' ring a bell. An' de people passin' by drop in some silver pieces now an' den, an' stuff like dat.'

Pete cleared his throat and coughed hard.

So I does dat fer aboud a week," he went on, "until tanight. I finds oud a while ago dat dose guys ain't workin' fer demselves, dey's workin' fer charity, an' hospitals, an' stuff like dat."

"Of course," put in the Doctor. "They do that every year." "Well," said Pete, "I didn' know dat. So I stops and counts up all da dough I got, an' I got over ten bucks. I know I ain't got dat dough in da right way, so what does I do?"

I shook my head.

"What did you do, Pete?" I asked.

"I took oud da two bucks I spends on dis Sandy Claus outfit, an' all da rest I sticks in one o' dose real Sandy Clauses

"That," said the Doctor, "is indeed commendable."

Pete looked at us and smiled.

'A very worthwhile thing for you to do," I added.

"And for such a gesture," proposed the Doctor, "I think we should all have another round of Hot Toddy.

Pete agreed, and we were soon in a very festive spirit.

We had several more rounds, and then fell to talking about how gullible most people were, especially around Christmas time. Pete's voice began to clear a little, but he still talked like his throat was lined with sandpaper. He started laughing about his "job" as Santa Claus, and I thought we never would get him stopped.

"An' de way I see's it," he said finally, "I got me a Sandy

Claus soot, all fer nix!"

Both the Doctor and I agreed that he should keep the suit, even though it was a terrible fit and he didn't look any more like Santa Claus than I would.

After several more rounds of Joe's delicious Hot Toddy the three of us started singing Christmas songs, like Jingle Bells and the Beer Barrel Polka. Nobody minded us making a lot of noise because the bar was practically deserted.

I was glad we had met up with Pete, because I was convinced that he was a gentleman and a scholar, even though he looked and acted like a bum. In fact, the longer we sat there and drank Hot Toddy, the better I liked Pete. Unfortunately the Doctor didn't share much of my appreciation for Pete, but the Doctor is well-known for his complete lack of enthusiasm for anything.

After awhile Pete started to recite the only poem he knew: "The Night Before Christmas." But he didn't know it very well, because after he finished the first verse he started all over again. We were beginning to wonder if he ever would stop, when the telephone rang down at the end or the bar. Pete stopped reciting when he heard the bell ring, and the bartender said it was a call for me.

I was a little surprised to receive a call at such a late hour on Christmas Eve, but I navigated along the bar to the phone. It was a call from my old friend Sam, on the north side of

Sam spent all of his spare time dabbling with ham radio, and he was always spending hig portions of his weekly pay check on new equipment. This arrangement didn't appeal to Mrs. Sam, but it went on anyway, whether she liked it or not.

Now it seemed that Sam had been rebuilding his rig into a classy 500 watt 20-meter job, in a new grey cabinet. He had been working on it for over a month, and at last he had finished it. So he wanted me and Doctor Killfidget to come up to his house that night, and help him get the rig going on the

"It won't take very long," he said over the phone. "You're in the radio business, and you can help me get the thing started."

'But, Sam," I protested, "it's Christmas Eve, and I am here with the Doctor and a friend. We're having a very sociable time, and I don't like the idea of going out into the cold."

'Well,'' said Sam. I was hoping you could help me. The wife isn't home tonight, and we can have the whole place to ourselves. In fact," he added, "I have whipped up several quarts of Hot Toddy, because I know you like—'

'Did you say Hot Toddy?' I asked, interrupting his expla-

'Sure," said Sam. "Can't you come up and help me?"

"Wel-l-l," I began to weaken. "I don't-

"It won't take long," Sam continued. "All we have to do is check over the wiring, and tune up the antenna. We ought

to have it on the air by midnight. Can't you come?"
"I'd like to, Sam," I said. "But we are entertaining an old friend down here, and it wouldn't be very mannerly for us to walk off and leave him alone."

"Bring him up, too," Sam's voice boomed over the A. T. and T. leased wire. "I've got enough Hot Toddy up here for an

"In that case," I concluded. "We will start immediately, and we'll arrive just as soon as our Yellow Cab can negotiate the distance from Joe's Place to your home.'

And that was how the three of us came to be at Sam's house. Of course Pete didn't want to go, because he felt that he hadn't been properly invited. But after several more rounds of Hot Toddy he agreed to make the trip uptown and help Sam fix his radio transmitter and antenna.

"You'll like Sam," I told Pete as we climbed into the taxi and started our perilous journey northward.

We settled comfortably in the back seat, and observed the few pedestrians that were bold enough to venture out on such a cold and frosty night.

I'or some reason we didn't feel very cold, and we came to the conclusion that the weather was certainly getting much warmer. We were in high spirits, and enjoying every minute of our long ride. The Doctor suggested that we roll down the side windows and shout greetings to everyone we passed. This we did, but I think the Doctor carried things a little too far when he started whistling at all the girls we passed and calling the traffic cops names.

Pete suggested several times that we stop at some of the taverns en route to Sam's house, but I assured him that Sam had plenty of Hot Toddy at his place and there was no need to delay. Poor old Pete still had on his bedraggled Santa Claus suit, and the pillow stuck in his pants served to rest his head on. He'd left his whiskers back on the bar in Joe's Place.

Finally we arrived at Sam's house, and while the Doctor paid the bill I helped Pete up the sidewalk into the two-story frame building. Sam greeted us with open arms, and ushered us quickly into the kitchen where he had prepared an enormous bowl of Hot Toddy.

"There it is, boys!"

Sam slapped his hands together with glee, and everyone was all smiles. I introduced Pete to Sam, and then explained why

Pete was dressed up in such an odd fashion.
"That's all right," Sam said to me. "Any friend of yours is a friend of mine!"

That put Pete at ease, and we were soon sitting around the kitchen table partaking of Sam's very delicious Hot Toddy.

"Yes," said the Doctor, when we had round, "we're all one big happy family!" ' said the Doctor, when we had started on our third

We drank another toast on that, and then Sam came over and starting chattering about his radio rig. I personally didn't want to even think about radio on Christmas Eve, but I knew I had to help Sam get his rig working and I might as well do it while I could still see straight.

Sam and I were talking about radio, and Pete and the Doctor were telling each other funny stories. But they were talking and laughing so loud that Sam and I decided to go down in the basement, where he had his rig, and continue our discussion there. Sam took down a milk bottle full of Hot Toddy, as it was pretty cold and we had to take precautions against catching a cold, or something.

I don't remember very much of what happened down in the basement, because we spent most of our time emptying the milk bottle, which didn't contain any milk. But I helped him check over the wiring of the transmitter, and we talked some about the circuit diagram. Everything seemed to look all right, so we connected a dummy antenna to the rig and turned it on. All the grid and plate current readings seemed to be about normal, so we connected the roof antenna in place of the dummy.

And then our trouble began.

For some reason it seemed impossible to load up the antenna at all, and it wouldn't couple to the final stage. We checked all the feeder connections, and everything seemed to be all right. Apparently the trouble was outside.

"What kind of antenna have you got up on the roof," I

Well, I've got a twenty foot wire that runs along the ridge of the roof, from the front of the house to the back. That's the best thing I could make up there, because both sides of the roof are too steep to do much climbing around.

"Maybe it's grounding up there," I suggested, "or your lead-

in wires may be broken.

"That's possible," said Sam. "Suppose we have a look?" "Is it easy to get up on your roof?" I asked.

"Well, not very," said Sam. "But we can make it all right. I can get a forty foot ladder that will just reach up to the edge of the eaves, then we can toss a rope around the chimney and pull ourselves up the slope of the roof to the ridge. It's kind of risky, but I've done it myself lots of times."

Then we'll climb up and have a look," I said, bravely.

Sam hunted up a long, heavy rope while I finished the Hot

Toddy we had brought down.

"Well," said Sam at last. "We might as well get started!" "We ought to take along some insulators, and extra wire," I suggested. "It'll save an extra trip if we take the stuff with

"And we'll need some wooden sticks to hold the guy wires, too," said Sam. He busied himself around his workbench, collecting small parts and miscellaneous junk. He found an old burlap bag in the back of the cellar, and I helped him dump the extra parts in the bag.

We climbed up the steps to the kitchen. Doctor Killfidget and Pete were still telling each other funny stories, and drink-

ing Hot Toddy. But I interrupted them.

Boys," I said. "We've got a little work to do up on the roof, and both of you might as well come along with me and Sam. It won't take very long."

But Pete didn't like the idea, and said so. He didn't want

to leave the Hot Toddy.

"Then we'll take up a bucket for emergency use!" said Sam, and that seemed to satisfy everybody, including myself. Pete agreed that that would be just as good, and we all put on our overcoats and mufflers. We quenched our thirst again before leaving the kitchen, and then went out into the darkness.

Outside it was dark, but not very cold. Just the same I was glad that I had partaken freely of Sam's Hot Toddy. In fact we were all glad. We were in such high spirits that the neighhors began throwing up the windows and looking out to see who was making all the noise.

But we ignored them entirely, and went on about our bus-

The Doctor helped Sam raise the ladder, and they leaned the top against the edge of the roof. Then Sam climbed up first with the rope, and threw a loop over the chimney. He called for us to follow him up, and the first thing we knew he had disappeared over the top of the roof. I could hear him thumping along the shingles as he pulled himself up to the peak of the roof.

"O. K., boys!" he called down from the darkness. "Who's

next?"

I looked at Pete, and Pete looked at the Doctor. "Shall I go next, sir?" Doctor Killfidget looked as though he had just been sentenced to death. I nodded sternly, and he climbed the ladder into the darkness.

Pete was even less enthusiastic after the Doctor had negotiated the rope climb. He had the sack full of extra parts slung over his shoulder, and he certainly made a ridiculous looking

He had his eye on the bucket of Hot Toddy that I was carrying, and after I started up the ladder that must have broken down his resistance. I had some trouble negotiating the top of the ladder with my precious bucket, and once I nearly fell off. But I finally made it all right. Then I found the end of the rope and hoisted myself up to the ridge of the roof.

In the darkness I could barely see the forms of Doctor Killfidget and Sam. They were sitting along the peak ridge of the roof, and looked like two crows on a fence. I crawled up

beside the Doctor, and sighed.

"Whew!" I exclamied. "That was some climb!"

"Is the Hot Toddy O. K.?" asked Sam.

"Oh, sure," I said. "But where'll we put it, so it'll be safe?"

The Doctor suggested we set it on the top of the chimney facing, and I carefully set the bucket down on the stone. "Is Pete coming?" I asked Sam.

"I think so! The ladder is wobbling back and forth like it

might be good old Pete.'

I glanced around the roof, and noticed that Sam's antenna was loose at one end, and was laying crosswise across the wooden shingles.

"There's your antenna, Sam," I said, pointing to the loose

"Yeah! That won't take long to fix," he agreed.

Just then Pete stuck his head over the edge of the roof, and crawled over the eaves. He certainly looked funny in that Santa Claus outfit, and the three of us laughed long and hard.

But Pete didn't think it was very funny, especially because the sack he was carrying weighed about twenty pounds. Pete

didn't weigh much more than that himself.

He pulled himself up the steep roof, and we helped him find a seat on the tin ridge. We slung the burlap bag across the ridge, so it wouldn't slide down the roof.

Well?" said Pete, when he had settled himself. "Where's

da Hot Toddy?"

Don't worry, Pete," said the Doctor. "It's quite safe on the chimney top.'

Yeah, but hows aboud havin' some?"

"We might as well have a few drinks," said Sam.

So I struggled across the ridge to the chimney, and brought back the tin bucket. We passed it around several times, and each time it seemed to taste better. In fact, we all agreed that the Hot Toddy tasted much better up on top of the roof than it did in the kitchen.

'It's de altitude,'' explained Pete.

But whatever it was, we certainly enjoyed it. In a little while I had almost forgotten about the antenna, and we all started singing some more Christmas songs. Unfortunately we didn't know very many Yuletide songs, and we had to repeat "Sweet Adeline" every other time.

We were indeed in festive spirit, and I was beginning to wish that Christmas came every month. Because I had never

enjoyed myself as much.

After awhile we didn't care much whether we fixed the antenna or not, because it was too dark to see in the first place and it was too dangerous in the second place. The roof sloped away from the ridge on both sides at a forty or fifty degree angle, and none of us was particularly interested in getting back to the ground that fast.

We sat in a row along the peak of the roof, and we were certainly a jolly bunch of gents. Doctor Killfidget started telling Pete some more of his terrible jokes, and we were all

in a very good humor.

The sackful of old parts was laying between Pete and the Doc'or, and Pete's curiosity finally got the best of him—between drinks out of the tin bucket. He untied the burlap and poked around in the dark interior of the bag. He came up

with four or five glass insulators.

Poor old Pete had probably never seen a glass insulator before in his life, in fact he had probably never seen any kind of an insulator. His contention was, that since he didn't know what they were, they must be worthless. So he started tossing them out into the great void of darkness that surrounded us on all sides.

Sam didn't seem to mind, though, and the first thing I knew we were all fishing into the bag to see what we could grab. Then we would toss or throw whatever we found over the side of the roof. Usually we could hear the pieces hit other objects, and it was all good clean fun.

Then we decided to see who could throw farthest. This was really very foolish, because it was so dark we couldn't tell who threw the farthest, except the sound. Sam threw a lightning arrester that broke a pane of glass a long way off, and Pete

threw a soldering iron that never did land.

We stopped throwing every once in a while, and took large sips of Hot Toddy from the bucket. Then we would start heaving Sam's equipment overboard. Sam said he didn't care, because he didn't want the stuff anyway, and it would be a good way of getting even with the neighbors for all the mean things they said about his ham station.

We were certainly having an interesting evening, and it was all good fun. In fact we were having such a good time that we didn't hear all the shouting and talking that was going on

down in the street, and all around the house.

However, we did hear the high, piercing scream of a Police Patrol Wagon coming up the street, and we stopped heaving long enough to listen. We all have a common interest in knowing just where a police car is going. But as we listened the siren kept getting louder and louder, and then the Patrol Wagon stopped in front of Sam's house.

'Oh, oh!" said Pete.

"Wow!" said Sam. "I wonder what they want here!"

We sat quietly in the darkness and waited. Then for the first time we were conscious of all the noise and talking that was going on, down in the street and on the sidewalk. There must have been a lot of cars on the street, too, because we could hear them stopping and starting.

Pretty soon there was a loud banging on Sam's front door. Then we heard the police going around the side of the house. Suddenly a voice came up from the ground beside our lad-

der, and all the people around the house became very quiet.

'Hey, you, up there!' said the official-sounding voice. "Come down or we'll start shooting!"

The silence was death-like.

Pete poked me in the ribs.

''It's da cops!'

'Sh-h-h!'' whispered Doctor Killfidget. We waited in silence, afraid to move.

"Hey! Anybody up there?"

I nudged Pete, he nudged the Doctor, and he punched Sam.

"N-n-no!" yelled Sam.

Pete took a long swig out of our bucket, and then blurted out: "Dey ain't nobuddy up here, coppers!"

That was the straw that broke the camel's back!

The ladder shifted slightly against the eaves, and then we heard another officer say:

If you birds don't come down from there in two minutes,

I'll blow you and this house to pieces!'

Just then the Doctor started to take the bucket from Pete. But it slipped from his shaking hands, went bouncing down the roof, and then sailed out into space—spilling our Hot Toddy all over the place.

Almost immediately there was crash on the ground, and a

"Ouch! Say! Who threw that?"

Doctor Killfidget had hit a policeman square on the head!

'Oh, oh!" said Pete. "Dis looks bad ta me!"

"Well," said Sam, loud enough for us to hear. "We might as well take a chance and scrain out of here. There's nothing to keep us here, now that the Hot Toddy is gone!"

"That's right, boys," I said. "Let's go, and every man for

himself!"

There was a wild scramble of confusion as we slid around on the steep roof. Tangled wire tripped poor old Pete, and he fell flat on his face. I started for the rope that was tied to the chimney, and the Doctor was right behind me.

I let myself down easily, not desiring to take a tumble over the edge of the roof. Above me I could hear Pete stumbling

around. Sam was down at the other end of the roof, and as I watched I saw him slide down the free end of his antenna whe and disappear from sight.

I looked over the edge of the roof beside me and saw six policemen, all with guns. And they didn't look very happy.

It's no use, boys, I said to Pete and the Doctor. "They've got us surrounded. This is our finish!"

Pete looked over the side, and gave a low whistle. "Chee!" he mumbled. "Da gendarmes!" "Well," I said. "We might as well go down and face the music, boys.'

"That's right, sir," spoke up the Doctor. "Honesty is the policy, at all times!'

"Phooey," said Pete.

I stuck my head over the side and called: "All right, officers! We're coming down!"

Then I started over, and was immediately conscious of being picked out by a search-light. As I descended I began to feet very guilty, and wished I'd stayed up on the roof.

I reached the ground, and two officers escorted me to the patrol wagon through large crowds of people that had gathered to view the strange sight. Over my shoulder I could see the Doctor and poor old Pete struggling down the ladder.

Everyone from miles around was standing all over the street and sidewalks, but Sam was nowhere in sight. In a minute they pushed Pete and Doctor Killfidget into the patrol wagon with me, and we were off for the station house.

It didn't take long to get there, either.

We went by two desk sergeants, and were whisked into night court. Then, of course, we were more embarrassed than ever! We walked into the courtroom single file; I was first, Pete followed me, and the Doctor brought up the rear.

The judge looked at each of us in turn, and then shook his

head.

"Too bad, too bad," he kept saying to himself. "Three more drunks, eh, sergeant?"

"Whaddya mean, drunk" interrupted PePte. "I never hadda drink in all me life!"

The judge turned to the Doctor. "And I suppose you're sober, too?"

Doctor Killfidget nodded his head very slowly, up and down. Then he emitted a very long and a very loud: Bur-r-r-rp!

The judge turned to me.

"Have you got anything to say about this?" he asked.

"Well, judge, you see it was like this," I began. "I pulled up at the intersection to make a left hand turn, and then this other driver came along and sideswiped me. And then the—"
"All right," said the judge, very sternly. "That's enough!"

"But it's de trut" said Pete, shaking his fist in the judge's

"I've had about enough from you three guys," said the judge. He certainly looked serious, and I was beginning to wonder if we really had done something wrong. After all, we were only trying to help out a fellow radio operator.

"You guys sure know it all," he began.

"Sure!" I spoke up, "we know everything!" And the Doctor and Pete nodded yes.

'So!" said the judge, "a bunch of wise guys, eh?"

"Yes, sir!" spoke up Doctor Killfidget. "We're the three wise men that came along at Christmas!'

"That's what you think," answered the judge. "Ten days in the county jail!"

And that's how it all happened.

It was quite a Christmas Eve, indeed, but we never did find out what happened to Sam.

THE END





The Season's Greetings

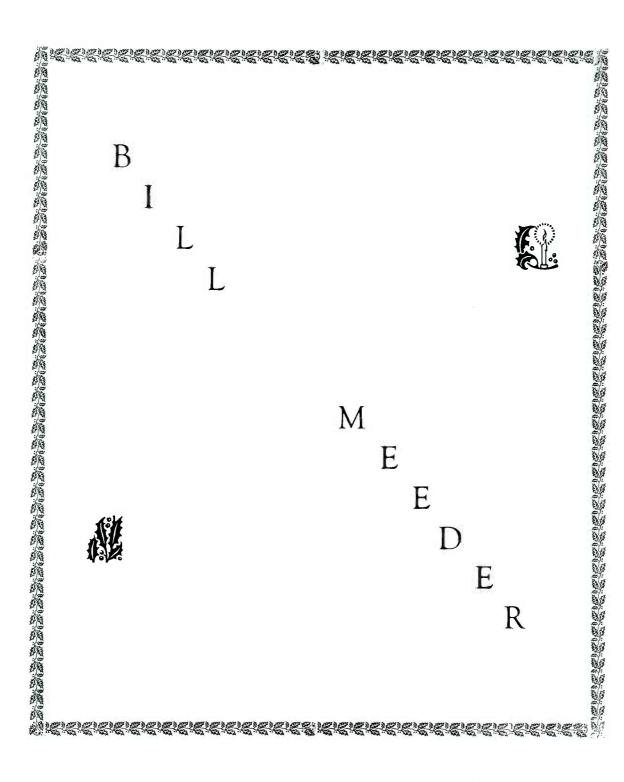
FROM

JOHNNY WINTERS



The Seasons Greetings

CHET KINGSBURY





In the Spirit of the Yuletide Greetings to the Engineering Staff FRANK BLACK



Sincere Season's Wishes
To The NBC ENGINEERS
JOSEPH HONTI



Lenore Kingston

Jane Daly in Affairs of Anthony Jinny in Midstream
73's
W9CHD



GREETINGS ENGINEERS ROSS GRAHAM



HAPPY GREETINGS FOR 1940

LUCILLE MANNERS



RCA-NBC ORTHACOUSTIC RECORDING

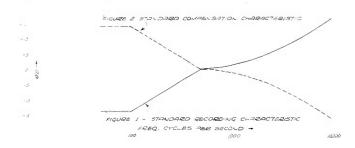
By ROBERT M. MORRIS, Development Engineer

In the reproduction of programs from electrical transcriptions there has unfortunately been a considerable amount of uncertainty as to the standards under which the recording was originally made. Under such conditions it has obviously not been possible to achieve optimum results. Means of catibrating a playback turntable have been lacking and knowledge as to the frequency response which a turntable should have has also not been available. The new Orthacoustic recording characteristic is shown in Figure 1.

Considerations entering into the development of this characteristic are:

- 1. Desire for a minimum background noise or maximum signal to noise ratio.
- 2. Desire for a minimum of distortion, particularly in the high frequencies.
- 3. The necessity for recognizing previous standards.
- 4. A desire to achieve the recording and compensating characteristics as simply and economically as possible.
- A desire to apply engineering information gathered in the development of other arts to the improvement of recording.

It should be noted that the characteristic is uniform below 100 cycles on a velocity basis, rises in velocity from 100 to 500 cycles on a constant amplitude basis and continues above 500 cycles in accordance with a pre-emphasis curve above constant velocity, which has been developed and standardized for the transmission of television sound on ultra high frequencies. The characteristic necessary for reproduction is the inverse of this curve shown in Figure 2. The curves as shown are ideal. In actual practice the corners at 100 cps and 500 cps are permitted to round off slightly, thus avoiding the use of more complicated multiple section filters.



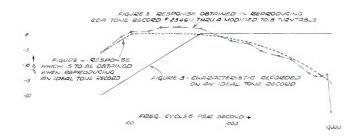
It should first be emphasized that in the reproduction of programs by electrical transcription, the reproducer head is as important to the quality of the results achieved as any other single element in the system. It is the studio microphone while a transcription is "on the air." Accordingly a reproducer of a quality in keeping with the rest of the broadcast station equipment is necessary if good results are to be achieved. A re-

producer must, therefore, be light in weight and light in pressure on the disk (not exceeding 2 ounces) otherwise the high frequencies will not be reproduced especially near the center of the record. The frequency response of the reproducer should be good to 7000 or 8000 cycles. Response less than this means that the transcription will suffer by comparison with locally produced program material. The mechanical impedance of the reproducer stylus must be low, which is to say that a lateral reproducer which is too stiff or too heavy is not suitable for high quality transcriptions, since it will literally erase the high frequencies from the disk. The reproducer arm and support must be sufficiently free of movement so that tracking is assured with less than 2 ounces needle pressure.

The pressure exerted by the playback stylus plays an important factor in the life of the disk. As previously mentioned the pressure as measured on a spring balance or postal scale should not exceed 2 ounces. A desirable value is in the vicinity of 1.5 ounces. Not only is the creation of scratch minimized by using this lessened pressure but the loss of highs toward the center of the record is also reduced.

To determine that a reproducer is calibrated in accordance with the standard playback characteristic shown in Figure 2, some standard tone record is necessary. A record approximating this requirement is available in the form of the RCA Victor record No. 2346-1. Frequencies recorded on the record in order from outside to inside are as follows: 10,000, 9,000, 8,000, 7,000, 6,000, 5,000, 4,000, 3,000, 2,000, 1,500, 1,000, 800, 500, 300, 200, 150, 100, 80, 50. Figure 5 shows an actual frequency response characteristic obtained with this tone record through a playback system. As long as the departures from the optimum curve (Fig. 4) are of the order of magnitude indicated by a comparison of the two curves (approximately ± 2 db) assurance is had that the playback circuit is adjusted for optimum reproduction of Orthacoustic transcriptions.

A network giving the high frequency compensation of this playback characteristic consists of a condenser shunting the output circuit of the studio amplifier. The value of C is determined by the formula $C=\frac{100}{R}$. Where C is the capacity in microfarads, R is the total circuit impedance (supply plus load in parallel) across which C is to be placed. R should be



measured by the substitution method. 100 is the numerical value of the time constant of C and R in microseconds.)

In the case of the RCA 70-B transcription turntable, sufficient attenunation of the low frequencies can be obtained in the MI-4856 pickup and associated internal filters to give the required bass compensation. The selector switches must be on steps bass No. 1 and treble No. 4 for this condition. Complete compensation for the 70-B turntable will be achieved then by setting the bass compensating switch on step 1, the treble switch on step 4 and applying a condenser of 1/3 microfarad across the 600 ohm terminated output of the associated amplifier. It is to be noted that in general amplifier output impedances differ from the manufacturer's designations. For instance, the 40-C amplifier when terminated with a load of 600 ohms exhibits a total line impedance of approximately 250 ohms for all frequencies at issue. This figure is obtained by measuring the total line impedance by the substitution method. C then equals 100 divided by 250. Therefore, a .4 microfarad condenser paralleled across the 40-C output along with the paralleled 600 ohm load accomplishes the desired compensation of the high frequencies.

An alternative method of obtaining the required playback characteristic is to use the network shown in Figure 6. This

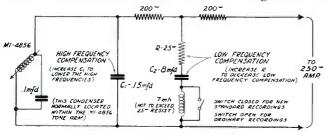


FIG. 6
COMPENSATION FILTER

network is placed immediately after the MI-4856 pickup and includes none of the internal filter circuits of the 70-B turntable.

The same filter shown in Figure 6 can, it is believed, be used with only very minor modifications in the values of the resistors and condensers for any of the magnetic type reproducers customarily used for electrical transcription purposes. The WE4A pickup head can be compensated by removing the input condenser of 0.2 mfd and charging the condenser in the mid-section from 4 mfd to 8 mfd. For the RCA type AZ4211 lateral pickup, the same constants as given in Figure 6 will serve. For other magnetic reproducers, the same circuit should at least be suitable as a starting point from which improvements can be made by changing the condenser values and checking the result by playing the tone record. There should be no hesitancy about changing values of the circuit constants in the filter, if a playing of the tone record through the amplifier and volume indicator and subsequent playing of a transcription indicates the change to be beneficial. The final results in reproducing a record are what count.

In the case of crystal pickup units, compensation can only be applied between a pre-amplifier and main studio amplifier or, as indicated in connection with the 70B turntable, on the output of the studio amplifier by shunting a condenser of suitable value across the circuit.

If it is desired to reproduce other transcriptions not having high frequency pre-emphasis with the same equipment, the compensation on the highs can be restored by placing an inductance of 7 millihenrys and not to exceed 25 ohms dc resistance in series in the midsection of the filter. This is shown in Figure 6 with a switch shorting the inductance to change the compensation.



Compliments of

RADIO CITY BAR and GRILL

HURLY BROS. and DALY



Compliments of

the MICHAEL REILLY TAVERN

RENDEZVOUS OF

RADIO FOLKS



The Best of Everything from me to you - -

FRED ALLEN

Dog-Gone You Allen

You Topped Me Again



Anyway Greetings Boys

Peter Van Steeden



Seasons Greetings

George Jessel



Compliments of

H. LEOPOLD SPITALNEY



A Merry Christmas

Happy Nem Year

from

CHARLES CANTOR

ta

THE ENGINEERING STAFF

of

THE NATIONAL BROADCASTING COMPANY







Top Row—Howard Petrie, Herluf Provensen, Glenn Riggs, Al Robinson, Ben Grauer, Ed. Herlihy, Milton Cross. Lower—Jack Costello, Dave Roberts, Dan Russel, Geo. Ansboro, Gene Hamilton, R. Waldrop, Kelvin Keech.

The Season's Greetings



Radcliff Hall, Bill Farren, Leon Leak, George Putman, Ray Nelson

NEW YORK ANNOUNCING STAFF



Top Row—Charles Nobles, Jack McCarthy, H. Gilbert Martyn, Geo. Hicks, Ray Feuerstein, Hugh McIlrevey, James Shellman, Ass't. Supervisor. Lower—Geo. Hayes, Lyle Van, Jack Fraser, Patrick Kelly, Supervisor, Reginald Stauborough, Ray Diaz, Night Supervisor, Roderick Mitchell.



Season's Greetings

FROM

JOSEF STOPAK



Season Greetings

AND

Our Thanks For Your Grand Co-operation

FROM

THE KIDOODLERS

Toylands Gift To Radio



The Season's Greetings

FROM

GLEB YELLIN



Happy New Year

Alden Edkins

To The "Gain Grinders"
SINCERE
HOLIDAY
BEST

WISHES

GENE HAMILTON

ANNOUNCER

BASS - BARITONE

NEW YORK

CLEVELAND

by F. C. EVERETT

As previously recorded in these columns all hands have been busy hitting the books and racking their brains in the prepation of various papers on phases of the work at studio and transmitter. The studio personnel have finished with their series of talks and the transmitter crew are still in the process of working off their assignments.

A list of the various members together with the information they have discussed or about to discuss may be of interest, showing as it does the gamut of activities about a radio station. These titles are not "official" but at least tend to show in a

general way what was discussed.

Caskey—Transcription and sound effects equipment.

W. C. Pruitt—Studio amplifiers.

B. C. Pruitt—Equalizers and filters.

Whittam—Field equipment, UHF equipment.

Francis-Master control and main equipment.

Cox-Studio layouts and circuits.

Gowing-Forms, laws, logs, regulations.

Hackett-Power supply for switching, automatic charger.

Biclac-Master control phone circuits, associated switching. McMahon—Checking with frequency meters, field equipment.

Disbrown—Photographic lenses and television application.

Clark-Distortion and noise measurement.

Everett—Inverse feedback.

Stewart-Control circuit.

Brandt—Heat loss study and water system.

Walker-Mercury vapor rectifiers.

Cheeks-The decibel.

Makinson—Antenna systems.

Butler-Transmission lines and terminations.

Burt Pruitt spent four months getting primed and prepared to take the new license examination and then walked up and had one handed him on a silver platter. Didn't have to look at the examination. Butler went out the first day of the duck season and knocked down a fine brace, but got zeroed the following trip. Cox knocked off ten of said quackers at his father's farm in Michigan, immediately followed by 10 days in bed with bronchitis and spent the remainder of his vacation recovering. Makinson's beam is back in the news with gear and mounting trouble. After being returned to the maker for repairs the wind immediately broke out a shaft pin necessitating another dismantling. Gowing is having trouble getting the dates to come through correctly on the log sheets from the transmitter. Clark keeps the road to Akron hot. Caskey still building a transmitter on paper, ought to be a dream, if, as and when. Pruitt (WC) spent his time in New York to what effect we haven't heard at the present writing. "Keep in touch, we will leave you know." Right now it looks as if we would have to find a Stanley to do the Livingstone act with the convention members in New York.

The concentric transmission line to the transmitter is now sporting a new set of internal couplings of entirely new design, containing no rubber. Outside couplings are still the same.



This is the way the situation looks to a duck or pheasant just before A. H. Butler speaks to it by Long distance.

Now to paint the whole works. Mr. Weinberger of RCA license labs., announced to the IRE that compared to broadcast tubes and receivers the business of selling things like broadcast transmitters, transmitting tubes and hamachewers stuff and other technical equipment was merely a drop in the bucket. Wonder which day the company will decide to officially designate as Thanksgiving.



"There are a million ways to say it, but we mean

Sensons Grectings

by a million d. b.

Cleveland Chapter"





Seasons Greetings to ATE

IRNA PHILLIPS
PAULINE HOPKINS
GERTRUDE PRYS

HOWARD KEEGAN OWEN VINSON ARTHUR BERG

CARL WESTER & COMPANY



Kitty Keene

PRESENTS

Season's Greetings

IN TWO ACTS

CAST OF CHARACTERS

KITTY KEENE			**		GAIL HENSHAW
CHARLES WILL	.IAN	1S			ROBERT E. GRIFFIN
JILL JONES					PATRICIA DUNLAP
BOB JONES					. HERB NELSON
NORMA VERN	ACK				ANGELINE ORR

Act I - A Merry Christmas

Act II - A Happy New Year

Direction: WYNTHROP ORR

Narration: DAN DONALDSON

BETTY ANN BROWN

NODLAG MEIDRAC II



MERCEDES McCAMBRIDGE

GREETINGS AND THANKS FOR HELPING US TO KEEP "MINDIN" OUR BUSINESS"



THE ESCORTS AND BETTY



THE FOUR VAGABONDS

NBC CHICAGO

WISH YOU A MELLOW XMAS

AND A

MOST SOLID NEW YEAR



Uncle "Mal" Claire
GREETS YOU WITH HIS NEW BOOK
"Tune-In Tales"



DON'T CUT US OFF UNTIL "WE'VE" WISHED YOU ALL A

Hery Merry Christmas "Mary Marlin"

AND A

Anne Seymour



SPASON'S Greetings
AN MANY THANKS TO ALL THE FELLOWS
OF THE ENGINEERING STAFF

HAROLD BETTS

AS
"DOGGIE DAN"
RADIO'S ORIGINAL ROMANTIC BACHELOR

THANKS BOYS

AND

BEST OF GOOD WISHES



FRAN ALLISON



"CURLEY" BRADLEY
"SHORTY" CARSON
JACK ROSS

The Ranch Boys
EXTEND GREETINGS AND THANKS
TO THE ENGINEERS
FOR THEIR COOPERATION



Best Wishes To "Youse" Suys

Still fizzing for ALKA-SELTZER

The Hoosier Hot Shots

KEN - HEZZIE - FRANK - GABE



Season's Best
from
The Heart of the West
VINCENT PELLETIER
CHICAGO





GARRY MORFIT

GOD HELP THE ENGINEERS ON A SHOW LIKE THIS!

CLUB MATINEE



To the boys who make us sound better than we are!

THE CADETS





Seasons Greetings

Clinton Stanley



CARLTON BRICKERT



Holiday Greetings

AND

73's

Henry Saxe

Murray Xmas

from

Murray Forbes



Merry Christmas

from

RUPPERT LA BELLE

Holiday Greetings

DAN DONALDSON

"TROUBLE WITH MARRIAGE"

"KITTY KEENE"

ROBERT E. GRIFFIN

MARY MARLIN

KITTY KEENE

Greetings

KEN CHRISTY

CHARACTERS CHICAGO



"MORE POWER TO YOU"

WM "BILL" GREEN
"The Dreamer" on "Smoke Dreams"



Seasons Greetings

Bob Jellison



The Season's Greetings

PERCY HEMUS "THE OLD WRANGLER"

we the charroteers

Wm. Williams, 1st Tenor Ira Williams, Baritone

Tenor Edward Jackson, 2nd Tenor one Howard Daniel, Bass Jimmy Sherman, Pianist

Extends to the ENGINEERS

The Season's Greetings

Along with our sincere thanks for your splendid co-operation.



Season Greetings

TO ALL THE BOYS Billy Amsdell

"HI"

Arthur Kohl

NBC - CHICAGO

GIRL ALONE TOM MIX
MEDICINE IN THE NEWS
MARY MARLIN AFFAIRS OF ANTHONY



Greetings

FROM

Mr. and Mrs. Pat Barrett uncle ezra & cecilia



The Season's Greetings

FROM

Johnnie Johnston

Your Serenading Troubador

SCHENECTADY

By H. C. Mosher

Late in the summer Peter Narkon (SE) and Chester Vedder (Ann'r.) started a WGY golf tournament which was entered into by all local golf enthusiasts with keen interest. The early cold snap and falling leaves hindered the match proceedings but did not stop our chief engineer, W. J. Purcell, from copping the honors. Bill came through with the lowest score of 160 for 36 holes. The enthusiasm of the entrants was so great that your correspondent broke down, bought a set of clubs, and entered. The less said about his score the better!

When the cold weather put a stop to the golf the bowling teams went into action. The first games were just a series of upsets. The good bowlers were off-form and the supposedly mediocre hurlers were hot. This upset started the season off with a bang. John Howe, manager of the league, says this is going to be the best season we have had yet. The Squeals, representing the technical staff, did not do so well last season but are out for blood this time. Kolin Hager, WGY manager, entered the league this year with the Squeals. His keen eye and accurate south-paw are putting the ball in the groove. Although this is his first year of bowling, his scores are rising steadily.

Howard Wheeler seems to be hitting the head-pin. His average of 155 puts him third from the top which is held by Bill Meenam (Press) with an average of 159. Howard Tupper started the season with a new ball which he had made to order. From all indications the ball is OK as Howard now holds the honors of high individual three, 579 and high individual single, 242. Wheeler, Narkon, Mosher, Cruger, and Strong are ATE bowlers this year.

October and November are busy periods for the Schenectady gang as New York State has its hunting season during those months. Many of the boys spent much time in the field with guns instead of mikes,—they might just as well have had the latter! Howard and Mrs. Wheeler, and Pete and Mrs. Narkon were the guests of the Al Knapps at their camp on Round Pond November 8. The ladies enjoyed the warm fire in the fire-place while the boys enjoyed their cooking and did some hunting. The sharpshooters had their biggest thrill when they saw a red fox approaching them in the open. Each drew a careful bead on the beast and cut loose simultaneously. The laugh was on them, as the fox did a beautiful back-flip and started in the opposite direction with throttle wide open.

Your correspondent spent two days in the big woods where he saw many deer but none with horns, except the nine-point buck his brother was fortunate enough to drop. Ray Strong, chapter chairman, missed the first part of the hunting season when he attended the national convention in New York City.

Gene Darlington, Manager of GE shortwave broadcasting, says New York City is not such a safe place to visit. He was in the big city to appear on Holbby Lobby Program and was walking up Lexington Avenue when the front was blown from one of the buildings. Some of the debris landed within five feet of him and he thought his time had come. He hastened to the studios, told his story about raising babies by shortwave, and took the next train home.

Stanley Godell, shortwave studio control engineer, pulled a fast one on the gang. October 1, unknown to any of us, he was married to Anne Ritchie Williamson Rollo. No one knows where they went for a honeymoon and Stan won't tell. Congratulations, OB! Prior to July 1 Stan was a member of the NBC guest relations staff at WGY. During that time he was studying on an RCA radio and sound course. It was his interest in the technical side of broadcasting that attracted Mr. Darlington's attention and led to the position he now has.



Holiday Greetings

SCHENECTADY CHAPTER

NEW!

Five G-E Frequency- Modulation Transmitters

Ratings: 250 watts; 1, 3, 10, and 50 kw

Almost complete freedom from **all** interference

Amazing high fidelity, low distortion

Complete accessibility without dis-assembly

Improved operating economy because of reduced tube requirements and lower power consumption

Better coverage of primary service area





G-E Television Transmitters

Ratings: 1 and 10 kw

High definition, high fidelity, dependability, economy.

Note these features:

Low-level modulation on a sub-carrier
Use of the superheterodyne principle
Vestigial sideband filtering at low level in
receiver-type tubes
Wide-band class B linear amplifiers
Specially designed G-E tubes

Congratulations..

Congratulations..

to the staff at W G Y. In the to the staff at W G Y. W G Y's first ten months of 1939, W G Y's first ten months of transmitter last and 32 seconds only 1 minute and 32 seconds only 1 minute and 32 seconds of scheduled time in 5580 hours of operation.

G-E Transmitting Tubes

Since 1913, General Electric has been a leader in the design and manufacture of radio tubes. Developments made by G-E scientists include such major advancements as the thoriated tungsten fillament, high-power water-cooled tubes, the screen-grid transmitting tube, mercury-vapor rectifiers, and metal tubes. Now, General Electric offers a wide range of standard tube types for all transmitting purposes—top quality at no extra cost. General Electric, Schenectady, N. Y.







Frank Dailey's MEADOWBROOK

Route 23 - The Newark-Pompton Turnpike

Cedar Grove, N. J.



LARRY CLINTON

Thanks

And Season's Greetings

FROM

Guy Lombardo and the Boys



Season's Best Mishes

GORDIE RANDALL WGY





LANDT TRIO AND CURLEY MAHR



Compliments of
The Southernaires
RADIO AND CONCERT ARTISTS

KFI - KECA

By H. M. McDonald

OUT OUR WAY: Mid November, sun shining, 85 degrees, neighbors lunching in their patio under a garden umbrella, lawns still green and a few roses in bloom, poinsettias coming out but not full for a month yet, new green in the tops of the palms.

And speaking of dining outside reminds us of a delightful lunch we had in the patio at the Gourmet on Sunset Boulevard a few days ago. Excellent food, in quiet, colorful surroundings; lunches as low as 40c (worth more) with blueberry muffins, marmalade and butterscotch pecan pie too. Saw Fred Albin and Alden Packard (CBS), chairman and vice chairman respectively, of the local I. R. E. there, each with a party. You NBC Hollywood fellows are overlooking a good place, close by.

MILLIVOLTS: "Field Strength at Broadcast Frequencies and It's Measurement" was the title of a paper given by George Curran, KFI-KECA design and measurement engineer, at the October meeting of the local I. R. E. chapter, held at Melody Lane on Wilshire. The talk was illustrated with slides and the use of a Brown field strength recorder, which was in operation, was explained; all well received.

TELEVISION: KFI-KECA is offering, free, a copy of "Magic Dials," the story of Radio and Television by Lowell Thomas, beautifully illustrated by Anton Bruehl, to all owners of Television receivers in Los Angeles County, if they will write to the station, giving their name and address, a description of their receiver, kind of antenna and quality of reception. Ray Moore, one of the best posted television men in the West, is mapping and compiling the data received. He reports that the survey is bringing forth many surprises, among them being: More general interest in television than anticipated; a unanimous request for better program material; and the number of RCA TRK-12 receivers hereabouts, all of them performing admirably.

HIGH FREQUENCIES: We read of the request to the FCC by the Pacific States University, better known to radio men as the Radio Institute of California, for a construction permit for a new non-commercial educational broadcasting station to operate on 41,300 kc with 100 watts. Judging by the caliber of men they turn out it must be a good school, John Hidy, George Tokar, Norman Leonard and Carl Estep all having been graduated from there, Carl Estep later teaching there.

John Hidy has been granted a license to operate his portable mobile class one experimental station under the call W6XDS, 31, 35, 37 mc, 50 watts.

HOUSEWARMING: KFI-KECA's thirty engineers are all definitely home conscious. With the completion of Charley Bruere's new house the number owning their own homes is brought up to 18, or 60%. This interest, coupled with Mrs. Bruere's ability as a hostess, and the refreshments, accounts for the grand success of the housewarming at the Brueres' last Sunday afternoon. So many attended that the house was filled to overflowing and many were served and entertained in the garden. Charley was well repaid for the many weeks he spent planning and supervising the construction. The house is attractive and practical; contains modern appointments and many innovations. If you plan to build get the layout of the kitchen from him; it's a master model and a beauty.

OFF THE AIR: Lloyd Jones, W6DOB, says the war has silenced 70% of the DX stations and for that reason, coupled with the loss of another rotary beam antenna in a wind, he is quitting the amateur field and will sell his one kw transmitter and National 101X for \$200, or the parts of the former for half of the net cost.

LETTERS AND GOSSIP: The IBEW and the ACA are showing renewed activity here and circularizing us lately. Hear that the former attempted to negotiate a contract with a San Diego station and that disagreement resulted in the men being out. Also that the station was off the air many hours a few days later. Details and confirmation lacking at this time.

ANOTHER DXer OFF: With the inroads that photography is making into amateur radio, hamming for the low power men should be better this winter. After hearing cameras and pictures discussed every day for six months, Wilbur Alexander, W6KIP, erstwhile super-dxer, has shelved his ECO and receiver in favor of a folding Super Baldina, F29 lens, rapid compur shutter, 35 mm film, and an armful of photographic magazines.

MERMAN WRECKED: Lyman Packard has discontinued his oceanographic studies for the time being, due to the loss of his diving helmet and associated gear, which went to Davy Jones locker when the boat he was launching in high breakers overturned. He came up under the boat and once felt the helmet under foot but after swimming from under and righting the boat he was unable to locate any part of the outfit, which was probably carried out by the undertow. He's building another, however, and will be exploring the ocean floor again, in the spring.

NEPTUNE ON A BINGE: "Pete" Dilts was an eye witness to much of the destruction done in the vicinity of Newport Beach, near his Balboa Island home, by high seas during the recent storm. Boats were wrecked, homes and other structures undermined and then tossed around in the sea like match boxes until they broke up. Few realize the force of the sea until they have seen piers and bulkheads crumble under its pounding.

Pete drives 25 miles each way five days a week to KFI Transmitter at Buena Park and likes it, and the diversity of scenery. The trip takes him along the sea coast, through oil fields, truck gardens and orange groves, He's building a power supply for his transmitter and will soon be on the air again, W6BH.

CHESS: Bryan Cole reports, "The KFI-KECA vs. NBC Chicago chess match, being played by mail, is moving along fast lately, the ninth move being made at this writing. All games are of a different type, Alusic of Chi uses a Bishops opening against Rodriguez of L. A. The game between Blatterman of L. A. and Penaz employs a Queens opening. Guill of Chi uses a Queens Knights opening against Johnson of L. A. Packard and Cole of L. A. find a Kings Knight opening by Roche and Cunningham of Chi a familiar game. It is probable that the match will be finished sooner than the early estimate of six months. We still challenge any five man team anywhere. Write Cole, KFI-KECA"

ACROSS THE BORDER, DOWN MEXICO WAY: It's more than the title of a popular song to Supervisor Clarence Seamans.

On his vacation, Clarence, who has travelled extensively, but never before by plane, flew down to Mexico City, that picturesque metropolis we've always wished to see, only 12 hours all daylight ride from here. He says the ride, the beauty and charm of the country and the adventures there exceeded all his expectations, a trip he'll long remember.

SAW TWO FAIRS: Seymour Johnson took in both World's Fairs on his vacation. Route was a circuitous one, which included the Royal Gorge, and most every railroad boasting streamliners, his weakness. He used his camera freely and entertained us for an hour recently with the 35 mm Kodachrome projection slides. N. Y. Fair much the larger but S. F. much more colorful. He is now up to his neck in blueprints out at the Vermont Avenue studios which are undergoing extensive alterations.

CARLSBAD CAVERNS: Ray Walling took side trips to Grand Canyon and Carlsbad Caverns while enroute to Texas this summer. He was much impressed with the Caverns, which are in southeastern New Mexico. They are the largest known to man and contain the largest and most beautiful stalactites and stalagmites ever found. After having lunch in a magnificent setting 750 feet below the surface, National Park guides conduct parties on the four mile tour of the most scenic parts of the Caverns. Takes two hours to encircle and view the wonders of the Big Room, largest in the world, three-quarters of a mile long and 625 feet wide and 350 feet high in places. Tour takes in five other rooms. Ray says the variety and size of the formations and the indirect lighting on them just can't be described; you MUST see them.

HALLOWEEN PARTY: The Hollywood NBCAA Halloween party, which was attended by about 37 couples from KFI-KECA, was a tremendous success. The affair was held at Whiting's Ranch, a large dancing pavilion (as we recall it) secluded in a grove of oaks back in the hills. We experienced some difficulty in locating the place and did not arrive until after 11 o'clock. We found the situation already well out-of-hand, someone trying to act as MC with three others wrestling the mike from him and each other and the crowd making more noise than the PA system. Dancing, interspersed with refreshments and general hubbub continued until 1:30 or 2; "a good time had by all", and many wives doing the driving home.

SPLENDOR IN SUSPENDORS: "Take no chances, double check everything" continuously admonishes Headlee Blatterman and when he doffs his coat these warm days it is plain that he practices what he preaches for he is not only wearing a belt but suspenders also, MAROON suspenders, two inches wide, the last word in strength and magnificence. Perhaps they are also the reason he has forsaken tennis for bowling lately and is currently rolling up scores of 150 to 180.

RST 599: Harold Christensen, W6KLU, gets out consistently so we asked what he uses. He replies: CW rig exciter is RK25 tri tet oscillator, 6A6 dual doublers, 807 driver, band switching, all circuits pre-tuned, covering all of the 40, 20, 10 meter bands without retuning; described in "Radio", March, 1938. Separate final amplifiers on each band running 300-400 watts. Phone rig, 420 watts input to a pair of Eimac 100TH tubes modulated by pair of 203Z's. Operating on 3.9, 14, 28 mc. He's now building a four element rotary antenna for ten meter work and hoping the cost won't run over ten bucks.

BORN 25 YEARS TOO LATE: After possessing Commercial First Class Licenses since March, 1915, the postman brings this ad: Dear Mr. MacDonald, Are you interested in becoming a radio amateur? We can offer you classes which will secure you a license in a very short time. Best of all, it's easy, quick and interesting. Rates low. Radio License Training School, Los Angeles. We wish you all a Merry Christmas and a Prosperous New Year.

Don't Touch That it's my living --



ALLEN PRESCOTT



Holiday Greetings

AL RICKEY

RADIO MUSICAL DIRECTOR





Season's Greeting and Best Mishes

FROM

FRANK MUNN



BEST WISHES FROM GUS HAENSCHEN AND ORCHESTRA MAY WE HAVE MANY MORE YEARS OF PLEASANT ASSOCIATION



Merry Christmas to the NBC Engineers

Thanks for your wonderful cooperation

GLENN MILLER



Season's Greetings to the NBC Engineers
ANDY SANNELLA



Greetings to the Engineers

ALFRED WALLENSTEIN





Season's Greetings



THE REVELERS



EASY ACES





Season Greetings

FROM

ABE GOLDMAN

PIANIST

ACCORDIANIST

ORGANIST

A Merry Christmas from the Merry Macs



NBC ARTISTS SERVICE WISHES TO ACKNOWLEDGE THE ALWAYS HEARTY CO-OPERATION OF A T E AND EXTENDS HOLIDAY GREETINGS



Music is my hobby

More power to you all -

Lowell Patton



Happy New Year

FROM AND OLD FRIEND

MARK SMITH



Holiday Greetings

IRVING MILLER

NBC STAFF CONDUCTOR



COUSIN AUDIO

by

FRANK BURNS, N. Y. Television

Audio's cousin Video has emerged from around the corner and scans staring us right in the eyes. We must remember, however, that she is a very close first cousin to Audio. She may be more appealing to the eyes but unless she is just as pleasurable to the ears she will find herself sharing the "spotlight."

In a television program sight and sound must be carefully co-ordinated. The desired picture is attained and the sound must lend the proper atmosphere. When a character appears in close-up on the screen, we must hear him in close-up, also, and when we see a long shot, the sound must vary accordingly.

This all "sounds" very reasonable but the practical problem is not nearly as easily solved as stated.

The best method of sound pickup has been found to be a mike boom similar to the one used on motion picture lots. It has fulfilled the requirements very satisfactorily. As a matter of fact, the one disadvantage to it has been the amount of floor space it takes up. This condition has been acute only because of the limited space in the studio from which the programs originate. Because of limited space, the mike boom at first seemed to cover much more of the studio than any self-respecting mike boom ever would. As a matter of fact, it takes up less space than the largest of the three cameras used. Also when one considers how important the sound is to the picture, it seems reasonable that the mike boom should consume just about one fifth the studio space taken up by cameras, excluding the cables connected to said cameras.

Most television programs consist of dramatic sketches and plays. Hence the microphone boom must be flexible enough to keep the microphone in the proper position with respect to the characters during all the action of the play. It must be able to move the microphone in any direction instantaneously in order to keep the characters "on mike" and attain the proper quality and balance.

This differs greatly from broadcasting where it is up to each member of the cast to choose the proper position in front of the mike. Here the microphone must assume the proper position for each member of the cast (a plague to the mob scenes) whether they be together, spread all over the set, sitting, walking or slow-

ly passing out from the heat. All of which must be done without the mike showing itself in the picture. When a switch is made from a close-up to long-shot the boom must be flexible and fast enough to get the microphone up and away immediately on word cue.

That is expecting a great deal from a mass of iron and pulleys which has never hurt anyone except possibly the two or three unfortunate persons who get in the path of its tail-end every so often.

However, the boom belies its appearing bulk in that it is so carefully constructed and counter balanced that it can accomplish all the aforesaid requirements with surprising ease.

With it the unidirectional microphone used can be rotated on its axis 360°. If desired, the boom will pan the mike from one side of the studio to the other through 180° as fast as the people behind can duck. Or it can extend the mike from five to fourteen feet as deftly as you'd reach for the next beer on the house. At the same time, the whole boom can be dollied in or out of the way of camera positions depending on how much sleep the operator had the night before.

When the boom is set for operation it is exactly like a long arm and hand for the operator and moves just as readily. That is why it is able to perform the above mentioned speedy maneuvers.

If the boom were not compliant enough to be moved directly and as quickly as the operator would move his own arm, the results would be varied, but all decidedly bad. Among other things, characters would consistently be off mike and worse still we would have to become accustomed to seeing a mike dangling in the middle of the picture every so often.

Quite naturally during the experimental stages of television the wholly important factor was the picture and preference was given to camera positions and shots over sound pickup. Since television emerged as an entertainment medium, however, it has been found that the audience is selfish enough to expect good sound right along with their picture.

And, although the mike boom hasn't changed in appearance or size, it doesn't seem to take up quite as much of Studio 3H as was at first suspected.



73's KEN GRIFFIN



SAM - GIL & LOUIE NBC CHICAGO



Heartiest Greetings

Philip Lord



Season's Greetings
TO YOU ALL

Evelyn Lynne



Here's to the members of ATE

Their Sixth year completing

And here's our opportunity,

To wish them - SEASON'S GREETING

LYON & MARLOWE

THE FOLLOWING CENTER FIRE WISHING THE N



Season's



CHARLES DEZEMLER

"Haircutter to Men"

PARKER & BATTERSBY

"Kodaks, Cutlery, Leather Goods"

TREPEL FLORISTS

"Flowers for all occasions"

CENTER MUSIC STORE

"Where stage, screen and radio stars buy"

WEBER & WEBER

"Men's Haberdashery—Knox Hats"

KAUFMAN & BEDRICK DRUGS

"Drugs - cosmetics - fountain lunch"

WILLIAM ROBERTS

"Custom Tailor"

FIRST FEDERAL SAVINGS

and Loan Association of New York

CHASE NATIONAL BANK

"Rockefeller Center Branch"

ARTHUR G. SOGNO, Inc.

"Jewelers"

EDWARD REED, Ltd.

"Gentlemen's Apparel"



By Bob Brooke

We send SUNKIST CHRISTMAS GREETINGS to you SNOWBOUND NORTHERNERS . . .

Christmas Late . . . Swimming continues . . . Shows pile up . . Recordings Double . . . BUGS in San Francisco . . .

SUN . . . The fall season has been magnificent . . . of course all falls are, but I think this one has topped the others I've seen here in the past ten years . . . Crystal clear days with temperatures around 90 and nights cool and starry . . . We've had no rain since the five inches reported for one day in September, although the mountains have had a good coating of snow at times . . . 18 inches of snow at Big Bear last week, lasted only long enough to supply winter sport for a week end . . . And speaking of winter sports, Sax has suggested an SF-Hollywood week end at Yosemite sometime late in January . . . We can get up a good party of skiers, skaters, miniature photographers, color movie addicts, etc. from each office . . . Then make joint arrangements for accommodations at the park, drive in from San Francisco or Hollywood and have a heck of a lot of fun . . . Sounds swell, SF, what say . . . In the meantime the old Pacific is staying warm enough for Fergy and Brooke to get in weekly surfrides . . . And the rest of the studio is playing golf . . , I shouldn't include engineers in the golf because most of the new recruits are announcers, producers, or people from the various departments . . . I think our Hollywood engineers are still too busy fixing up their new houses and attending domestic cares of babies to worry about golf . . I, being single, still play golf, and want to brag a little to Henry Meyer about the couple of 78's I've had at Brentwood . . . Also, Henry will continue to report the progress of our SUN regardless of unsympathetic attitude of the NY-Cgo-WOR editors . .

CHRISTMAS . . . Engineering Secretaries, Air Conditioning, Traffic, Special Events, all want to be remembered to you lads and lassies back East or up North and extend their Heartiest Greetings . . . So many people out here are from the other offices that at least at Christmas their thoughts turn toward their families, old homes, old friends, and wish they could spend Christmas with them . . . They're all happy and well settled here, but there isn't one of 'em who wouldn't give a lot to spend a Christmas with snow heaped up outside and eat turkey and cranberries in the well heated warmth of an Eastern home . . . Yes, we admit it and talk about it often, but it would take a lot to move us from dear old California even given the opportunity . . . On

Christmas day we can buy armfuls of Poinsettias for almost nothing at the red acres of them out Beverly Hills way . . We can trade them for Egg Nogs on our way to the game or races . . . We can have a big turkey dinner and go driving to see the flowers and homes in Pasadena or Beverly Hills . . . Or we can leave early and have our turkey up in one of the mountain lodges and ski or toboggan afterwards . . . Then later in the week we have the excited preparations for New Year's Rose Parade and Rose Bowl Game . . . Gee, come to think of it, to heck with the East ... Now then, an alibi for the lack of Christmas advertising and later than usual copy this month . . . We just don't get any Christmas spirit out here until we see the calendar turn into DEC and we see the Santa Claus sleigh parading the Boulevards . . . Yes, it takes a lot of plain and fancy publicity to get us started . . Just Hollywod Hokum, but we love it . . So we have a shorter more intensive buying period . . . Hollywood Journal copy is later than anybody else . . . But Christmas is just as GOOD .

SF BUGS . . . Hollywood has been trying vainly to help SF discover the origin of a mysterious BUG with a loud voice. Rumors have it, that so loud and raucous is its call that certain NBC executives have been accused by SF tabloids of getting the 'Bird.' A male speciman was sent Fullaway's father in Honolulu for classification, as he is Government entomologist for the Island . . . Another and much larger speciman was shipped to Mr. Saxton for observation, but it seemed to need the raw dank air of San Francisco and expired gradually about a minute after arrival. A Hollywood postmortem on the latter insect, not unlike a San Francisco crab cocktail, indicated it to be a common variety of Bug number OP-8 in catalogue ND-95.

GROWING . . . CBS have started the addition to their Hollywood plant mentioned some months ago in these pages . . . The new addition will occupy almost the entire remainder of their block on property until now used for parking . The structure will contain two auditorium studios seating over 400 each and in general design quite similar to our new stages . . . The dressing rooms and script rooms however, will occupy a second story of the building . . . So continues the radio invasion of Hollywood . . And with two shows back in Melrose and one in a theater we hear remarks wondering when our own building will require enlargement . . . Facts show however, that efficient RADIO CITY can well handle normal winter load and Melrose offers a still very modern plant for overflow . . . And KFI-

KECA leave their old downtown studios where they have been for nearly twenty years and move into the recently purchased KEHE plant halfway between downtown Los Angeles and Hollywood . . . The KEHE studios, completed by Hearst Radio four years ago, have been enlarged and remodeled by KFI-KECA to accommodate the larger staff and operations of the twin NBC outlets . . . Changes include a single story addition in the rear for operations offices and recording equipment, addition of a studio channel in master control, announcer delites in all studios, turntables in all booths, additional cueing systems and announce booths . . . will have a story and pictures early next year . . .

booths . . . will have a story and pictures early next year . . . MISC . . . Pickett of Master Control now the owner of a cow that answers to the name of Annabella . . . And a new barn for Annabella has been the cause of Pick's complain of tired arms and blistered palms . . . Let Pick know how much milk to deliver with the eggs . . . Joe Kay trying to drill a hard steel bumper on the best looking car in Hollywood to mount a ski rack . . . Alice Tyler with a block of tickets for a grandstand at Roseparade . . . Sax planning to host a goodly party at Tournament of Roses . . . Earl Sorenson giving up ham radio for colored movies . . . traded his half KW rig for some fine Bell and Howell equipment . . . Judge Brown hasn't heard from bar exams . All wondering who the expert NY photographer was Denny Denechaud has purchased a beautiful new home in Dark Canyon . . . Only about ten minutes from the studio and on a high hill overlooking San Fernando Valley . . . No swimming pool . . . Miv Adams is breeding Cocker Spaniels . . . Frank Figgins is still waiting for delivery on the Buick after some five weeks . . . Buddy Twiss is lining things up for New Years . . . trying to crowd all the New Year's activity in and still have a little fun . . . Gang practically live in Pasadena during the week between Christmas and New Years and it has spoiled many a New Year's Eve in the past . . . This year Santa Anita opening will fall in the midst of it . . . Dear Old Wo is no more . . . The well known call letters, WOEH, or NBC's first aircraft shortwave transmitter have been changed . . . Probably, to letters that will be even more famous as they will undoubtedly pass on from equipment to equipment . . . The new call is KNBC . . . At present simply replacing the license of the old WOEH transmitter . . It seems incongruous that such shiny new letters should name such a dilapidated old giant . . . Better that they had christened some brand new greyhound of the air . . . But the ways of the FCC are law and if we continue to say WOEH as we pass by I'm sure they won't care . . . And we are proud to have the call KNBC assigned to Hollywood . . . Forgot to tell you, Charley Norman bought a ranch in Oregon while up there on his vacation . . . 160 acres, with a house, 45 apple trees, for 30 dollars . . . Yes, 30 dollars . . . As I get it, Charley shot a deer on the property and became rather attached to it . . . So upon inquiring for the owner he was advised by neighbors that it was his for 30 bucks in taxes due . . . The two new Sound effects men from NY are Bill Nugent and Ed Padgett . . . Both very nice boys and we are glad to have 'em with us . . . Dick Stoddart back from a three week vacation in Palm Springs, Yosemite, and Big Bear . . . Got on an icy hill at 9,500 feet in Tioga pass and slid backwards into a wall of granite but sez he was lucky not to have slid the other direction and off a cliff . . . Carl Lorenz rebuilding the 1KW for phone but money saved for new stick went for several loads of topsoil for new yard at a bargain figure . . . Bert Capstaff on 160 phone with 30 watts and on 20 and 40 CW with 2 watts . . . Gets bigger kick out of the 2 watts cuz he works East Coast with it and hardly out of the valley with the 30 watter . . . Cappy baby doing fine at eight months . . . The O'Kelly's threw a cooperative Thanksgiving dinner for 25 neighbors and NBC valley gang . . . next door neighbor raised and donated a 27 pound turkey . . . (Jake doesn't

know who the picture was of—NY) . . . Bob Hope out of Vine Street theater for four shows to test larger audience reaction . . . Old Shell Chateau-Lucky Strike portable celotex booth hauled out of storage for job . . . Cappy mixing as usual and using ND-10s with special mixer . . . About time to start thinking of the ATE Dinner Dance . . . New Starbird mike booms being used extensively in studios for trick mike arrangements . . .

TRANSCRIPTION . . . Bev Fredendall of NY out for a survey of Hollywood needs and to line up recent Orthacoustic installations . . . Bev graduated from Cal Tech and folks live in Pasadena, so he has particularly enjoyed his stay . . . However, sez your home is where the wife and kiddies are and I'll be glad to get back to NY . . . Business in the recording room is tremendous and Mort Smith, Bob Callen, and Ken Hicks adding to income considerably with overtime . . . Mort reports all tables now cutting outside-in as new operating procedure . . . Also installation of a vacuum system for cuttings . . . Harry Alber of air conditioning built an excellent water column barometer to measure the adjustment of vacuum . . Bob Callen gave a demonstration and talk on the history of disc recording before the Engineering Seminar of the Radio Institute at USC . . . Bob discussed recording and played records from Caruso to Orthacoustic . . . Bob Schuetz sez, I'm Orthacoustic, How are you . . . And he has the fanciest desk lamp in the building for his new office . . . BUT he needs some pictures for the walls . . . His secretary, Helen Welty, tripping to Palm Springs and reporting marlin sword fish caught while yachting . . . Bob wishes the NY transcription group, Merry Christmas . . . Mort reports house, baby, and wife doing fine . . . Ken Hicks ditto .

GOSSIP . . . Alice Tyler heading a new troop of girl scouts and riding Tuesday nights with a riding club . . . Kay Phelan ice skating despite the weak ankle . . . Steve Hobart sez the cow of Pick's is a Rhode Island Red cow . . . also that he's waiting for the rains to wash his plantation away . . . sez Devil grass is the devil but otherwise the new lawn is OK . . . Wetteland is painting his house . . . Harry Alber has repainted Radio City roofs with aluminum to reflect the heat . . In Pick's barn is a special stall for his bike . . . Far as we know the SOS keys in the booths have only been used once and then for telco switching error . . . Al Korb's swimming pool just full of leaves for the winter . . . Our Schenectady Jack Benny recently dubbed ex-cornhusking champ of the eastern city due a couple of sour jokes . . . But he can take it or put it out . . . Had a ride in new Goodyear blimp Resolute the other day and found her a beautiful new ship of about 15,000 feet more Helium capacity than the Volunteer ... Carries six passengers and worked Akron with her new RCA transmitter all the way in from Ohio . . . Don DeWolf north to supervise painting and redecorating of SF home that tenants had vacated . . . Jake O'Kelly had a Contax shot of Denny reading headlines about ATE convention framed and it now hangs in the lounge . . . Framed pictures for the lounge would be welcomed by us . . . Miv Adams took the pictures of

Well, gotta go Christmas shopping . . . A REAL Merry Christmas gang . . . 73.

Greetings

Paul Carson

Organist

"One Mans Family" Bridge to Dreamland

"Brent House" Blue Moonlight



A Jolly

MERRY CHRISTMAS

and a

HAPPY NEW YEAR

TO OUR NBC ENGINEERS

FROM

BASIL RATHBONE - NIGEL BRUCE
The Sherlock Holmes Show



Best Mishes

from Hollywood

ALEX ROBB

WYNN ROCAMORA

CHARLES B. SMITH

CARROLL TORNROTH

HOLLYWOOD DIVISION NBC ARTISTS SERVICE

Quote

MERRY CHRISTMAS

NBC ENGINEERS

Unquote

THE GROUCH CLUB





Merry Christmas

ENGINEERS

THANKS FOR THE SWELL JOB

GORDON JENKINS

MUSICAL DIRECTOR WESTERN DIVISION



Seasons Greetings

to ALL of

NBC

from

the Lyons brothers HOLLYWOOD RECREATION CENTER

ACROSS THE STREET

EXTENDING

Sensons Greetings

to NBC

FROM JACK SCURLOCK'S

Radio City Barber Shop

SUNSET and VINE

GREETINGS

from

somewhere on

HOLLYWOOD BOULEVARD

[CALIFORNIA]

Now wired for sound



Merry Christmas

ENGINEERS

FATHER BARBOUR - J. Anthony Smythe MOTHER BARBOUR - M. Netta Ellen

PAUL

- Michael Raffeto

HAZEL

- Bernice Berwin

CLIFF

- Barton Yarborough

CLAUDIA

- Kathleen Wilson

IACK

- Page Gilman

TEDDY

- Winifred Wolfe

NICKY

. Walter Patterson

ONE MAN'S FAMILY

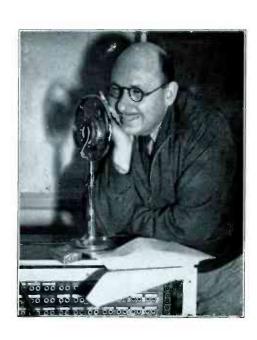
Merry Christmas BOYS

THANKS FOR THE YEARS YOU HAVE PUT US ON THE AIR FROM YOUR: STUDIOS-

- MASTER CONTROL ROOMS -
 - TRANSMITIERS -
 - AFFILIATED STATIONS -
 - TELEPHONE OFFICES -
 - MAINTENANCE DEPTS. -
 - FIELD DEPTS. -
 - SHORT WAVE STATIONS -

CARLETON E. MORSE

AUTHOR - One Man's Family I Love A Mystery



	100 M OT 10 M	Nino
	VINE STREET	NBC
MELROSE	NICK'S MELROSE GROTTO EXTENDS A Alerry Christmas and Happy New Year TO	SUNSET
	NBC Engineers and Friends	
NICK'S G Where frie welcomes y	endship and good food	I

A HEARTY
Herry Christmas
AND
Happy New Years
ENGINEERS

William Sabransky HOLLYWOOD STAFF ORGANIST

To the Engineers from Coast to Coast and in between - we hope you have a very -

MERRY CHRISTMAS

HAPPY NEW YEAR

Frank Watanabe and the Honorable Archie Sensons Greetings

TO

NBC Engineers
E. Broox Randall & Sons, Inc.

Insurance For Every Purpose

THREE CONVENIENT OFFICES
HOLLYWOOD - BEVERLY HILLS - SANTA MONICA

Sensons Greetings

NBC.

from

"THE TROPICS"

ACROSS THE STREET

Seasons Greetings



LOU FORBES

MUSICAL DIRECTOR
"I WANT A DIVORCE"

7 3

from

SAM HAYES

And a Sperry-Sperry Good Morning

,,30,,

Merry Clyristmas JAN FLEMING

WRITER
"I WANT A DIVORCE"



"and a Merry, Merry Christmas"



Don Forbes John Wald Wayne Miller

"RICHFIELD REPORTER" STAFF
RADIO CITY, HOLLYWOOD

Receiver Drift Overcome In New Design



The past few months have witnessed developments in communications receiver design which hams have been devoutly hoping for these many years. One is the virtual elimination of frequency drift, not only after the receiver has gone through an initial warming-up period, but right from a cold start! The second is direct frequency calibration of the band-spread dial on the 10, 20, 40 and 80 meter ham bands.

In the Hallicrafters "Defiant" receiver (Model SX-24) in which these two new features are incorporated, frequency stability is obtained through several means, chief among which are (1) an oscillator circuit design which is for all practical purposes independent of line voltage variations; and (2) compensated tuned circuits such that the combined drift tendency of all components is offset by the provision of one component of opposite and equal temperature coefficient. The result of this design is that overall drift, measured from a cold start for the four ham bands mentioned is:

Freq.	Max. Devia- tion during first Hour	Kc. off at end of:			
	mist modi	10 M.	20 M.	30 M.	60 M.
29 Mc.	2 kc.	2	2	0	0
14 Mc.	4 kc.	2	3	3	4
7 Mc.	2 kc	2	4	1	1
3.5	2 kc.	2	0	0	0

It will be noticed that, except in the 20-meter band, maximum deviation occurs within 10 minutes of a cold start, and that further correction takes place thereafter with the result that in the 10 and 80-meter bands the drift is *completely* compensated within 30 minutes and in the 40-meter band amounts to only 1 kc. Even the 20-meter band drift of 4 kc. is only about 10% as great as in the average ham receiver.

Oscillator frequency change with line voltage is truly negli-

gible, averaging only 30 cycles per volt change at 20 meters. This is the result of the oscillator circuit design which, among other things, includes the tuned circuit in the plate and the feedback coil in the grid, reversing the usual arrangement.

The band-spread system is electrical and may be used to spread any portion of the receiver's range, which extends from .54 to 43.5 mc. Its dial carries five calibrations, one for each of the ham bands mentioned above and one (of 100 divisions) for use on any range other than these four. Band-spread dial rotation is 360 degrees and it is driven by a 15/8 inch knob through a 7-to-1 step down mechanism.

The band-spread design is such that each of these four ham bands is spread over 180 degrees of the range to eliminate critical tuning. Even the 10-meter band provides dial spread of 20 kc. per 1/8th inch making it easy to tune any signal right "on the nose."

Although this receiver features all modern refinements and some distinctly in advance of the times, it sells for very appreciably less than the \$100. price class. Among these features, in addition to those already mentioned are: two degrees of crystal selectivity, two degrees of i. f. selectivity (without the crystal), automatic noise limiter, 4-band continuous coverage from 540 kc. to 43.5 mc., b. f. o., a. v. c. applied to both i. f. and r. f. circuits, "S" meter calibrated in "S" units and decibels, 2-position tone control, crystal phasing control, b. f. o. pitch control, stand-by switch with external connections for remote stand-by control, headphone jack on front panel, etc. The tubes are: 6SK7 r. f., 6K8 osc.-mixer, two 6SK7's i. f., 6SQ7 detector a. v. c.-first audio, 6F6 output, 76 b. f. o., 6H6 noise limiter and 80 rectifier.

Provision for alternate operation from a. c. or a battery and vibrator supply is made in the form of a plug and socket arrangement which permits instant changeover for portable, mobile, marine or emergency operation.

G ROCKEFELLER MS UNITE IN B C ENGINEERS



Greetings



ROCKEFELLER CENTER TOBACCO SHOP

"R. C. A. Building"

CAFE LOUIS XIV

"15 West 49th Street"

ROCKEFELLER CENTER GATEWAY RESTAURANT

"R. C. A. Building Concourse"

ROCKEFELLER PLAZA RESTAURANT

"32 West 50th Street"

ROCKEFELLER CENTER MILK BARS

"R. C. A. Building-Time and Life Building"

RESTAURANT MAYAN

"16 West 51st Street"

INTERNATIONAL CAFETERIA

"Concourse-International Building"

ECONOMY BLUE PRINT

"Photostats - Blue Prints - Giant Photos"

CHARLES HOWATT SPORT SHOP

"Complete line of sporting goods"

ROCKEFELLER CENTER BOOK SHOP

and lending library

COURMETTES and GAUL

Opticians, Inc.

A Merry Christmas

AND

A Happy New Year



BETTY WINKLER



PAT MURPHY

GIRL ALONE

SWEETHEARTS OF THE AIR



MAY SINGHI BREEN & PETER DE ROSE



JOHNNY GREEN

AND HIS

PHILLIP MORRIS ORCHESTRA



Its "No School Today" so

Greetings Boys



ARTHUR FIELDS AND FRED HALL





Sensons Greetings

CORNELIA OSGOOD

Best Wishes to the men at the CONTROLS from a man at the "MIKE"

JACK COSTELLO

NBC ANNOUNCER

RADIO CITY - NEW YORK

SEASONS GREETINGS

To The Most
Important Men
On Our
Broadcasts---

the Engineers



HORACE HEIDT

-- SINCERELY --

HORACE HEIDT

And All the Musical Knights

GREETINGS

FROM

CHARLES SEARS

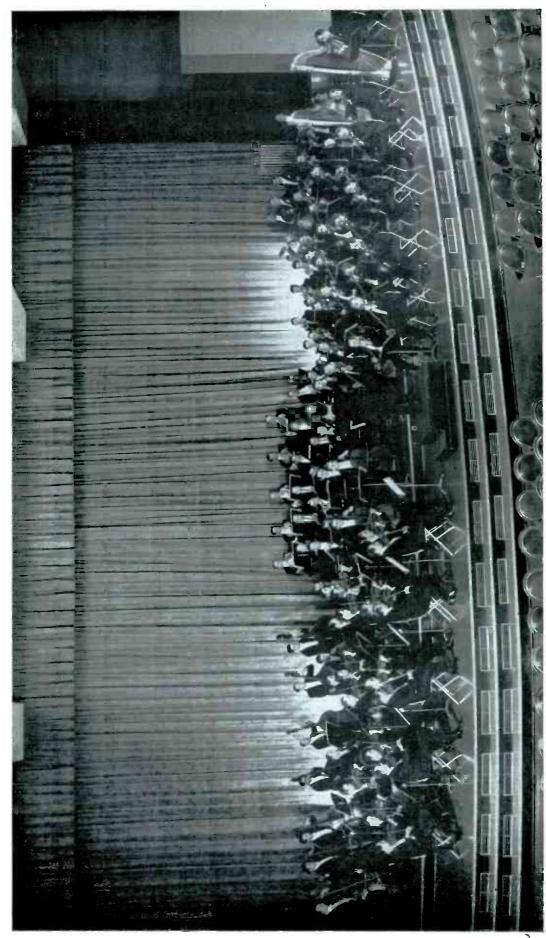


Senson Greetings

JOHNNY GARTH ORGANIST

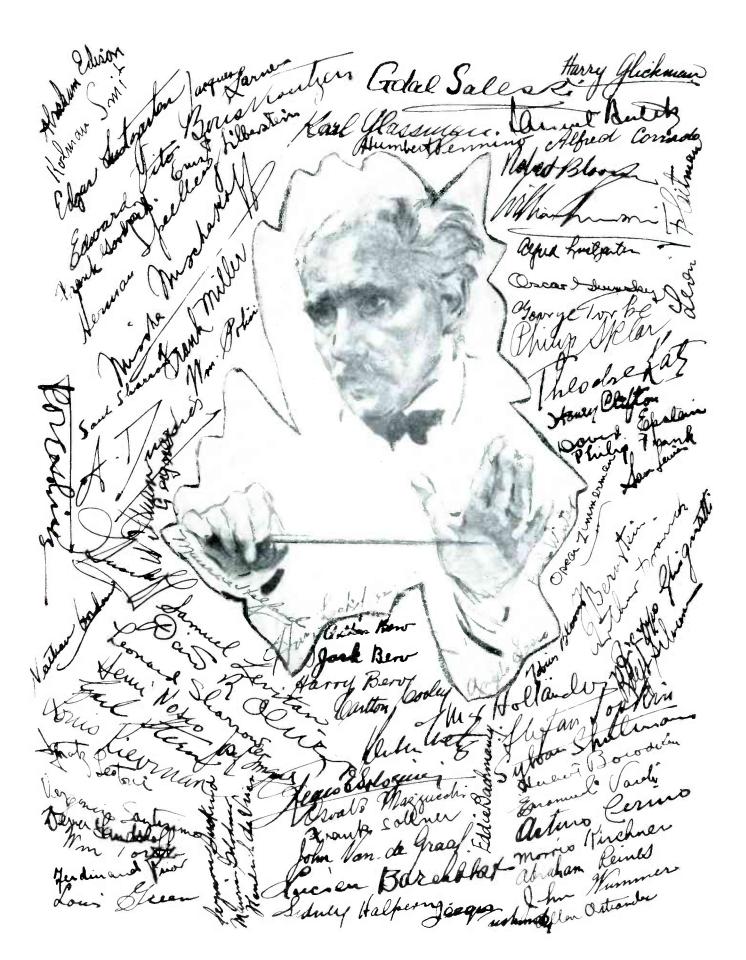
Seasons Greetings











WOR

R. A. SCHLEGEL

HAMACTIVITIES: Caught Dick James in the 'lounge' with his nose buried in a pamphlet called, "The Radio Amateur's License Manual" (advt.) He explained that he isn't going to build a ham station but is getting the license so that Pop Reveal will try to sell him some ham gear. Be careful, he might get you in a weak moment! Sam Morse is waiting for James to finish with the ARRL booklets so that he too can study for a ham ticket. The bug has bitten. Should you need any parts, see Reveal for the latest revised bargain list. Jimmy O'Connor isn't satisfied with the way his rig is perking and is busy tearing it apart for a rebuilding session. At present he is waiting for the new editions of the handbooks. Jim finally got his Premax vertical up but found the masonry on the chimney was weak and is now looking for another spot for that vertical. Ed Scatterday, W2LZD, now has an 810 working on 20 meters. He called CQ the other weekend and was amazed when everyone on the band came back at him. Ed was puzzled when he was asked for a number as he didn't know that the annual 'Sweepstakes' contest was in progress! Carl Warren, W1ZL, built up a cathode modulated rig using a pair of T20s in the final and is using it on ten meters with excellent results. Warren has the 'Journal' to thank for a veddy, veddy elegant phone number. . . . Dick Davis, W2CTQ, now on 20 meter cw but expects to be on 28,800 kcs fone with a beam to the west coast within a week or so. Dick has been busy around his new house adding a terrace. That ought to make a very good base for a tower though his wife probably has other ideas. Paul Reveal tiring of Jersey City and is thinking of moving back to a democracy. Perhaps he'll move into a DC neighborhood and sell all his ham equipment again. . . . Dick Dorrance of public relations and also a rabid 20 meter fone ham with the call of W2LEJ, lost his three element beam during one of our light breezes. Dick lives in an apartment house in Greenwich Village, the beam being some twenty-two stories above the street. The fall zephyr ripped out the guy wire anchors and sent the tower over the roof and down into the street. Luckily, no one was injured. Dorrance now has some kindling wood for sale. Latest reports are that the transmitter is going into storage. . . . Pat Miller is putting all of his ham equipment on the auction block so that he can buy a boat and get away from it all this coming summer. If this keeps up, I'll have the band to myself.

After much coaxing, I managed to get a few notes from the boys out in the Jersey meadows. Three of the fellows there are interested in amateur radio and strange to say, they all run comparatively low power. Those big tubes in the station transmitter must have a long life or else Charlie Singer squeezes them to the last electron. I couldn't get the calls of several of the hams in Carteret but did get the information that Alex Stanford is on 160 fone and George Riley is on 20 meters. How about giving me your calls so that we can add them to the list of hams? Ray O'Neil signs W2ALD and is a rabid Naval Reservist, no dope on your rig and frequency. . . . Add Carteret notes; The George Robinsons are expecting another blessed expense in

December. This will make number two and will probably be named Finis after George's great grandfather. SPORTS: The muscle bound atheletes of WOR have formed a bowling team. The entire staff of the maintenance department, some of the studio engineers and even several gentlemen from the announcing staff are showing up for practice on Tuesday evenings. Shirley Davis tells me that Max Urlass is noted for his 'gutter ball,' Peterson for his famous 'Bridgeport Hook' and Dick Borner has a perfect pickup for end pins. The team will not divulge the scores that are chalked up but they have been challenged by the Remington-Rand team. Wonder if NBC or CBS have a bowling team? The boys are ambitious. . . . Dick Borner doesn't have enough to keep him busy with bowling so he still plays checkers several evenings a week. Suspect that these activities of Borner's will suffer a bit now for Dick has just closed a deal whereby he becomes an owner of a handsome piece of real estate on Long Island. It sems odd that a batchelor should buy a house. . . . Camera news: Pat Miller, engineering, and Fritz Street of sound effects have been turning out some right smart photographs of late. This may be the reason that Shirley Davis has been keeping his in the desk. That photo shop on 40th Street is still planning a photo contest for WOR shutterbugs. No details as yet. . . . A few months ago George Brazee was wandering about Yonkers where he saw a car to his liking and bought it, bringing it back to New York with him. Now the city tax department is after George for non-payment of the city sales tax on the horseless carriage. Tax bureau also wants to fine him because they didn't find out about it for six months. Gifford (I can get it for you wholesale) Campbell wears white cloth gloves when handling acetate records. Giff does this to cut down surface noise due to finger marks.

THISNTHAT: From 'RADIO DAILY' we learn that an election is expected to be ordered by the NLRB to decide which union should represent WQXR, New York's hi-fidelity station, following a hearing, and further consideration of the opposing arguments. Local 913, IBEW-AFL union contends that it represents a majority of the station's technicians, although the ACA has a contract for its members with the station. . . .

NBC ATE President Horstman probably knows by now that the McClatchy group on the coast have gone IBEW as have the WLW VU chasers. ABT of IBEW organizer in town casting covetous glances towards the WHN group who at present are ACA while 913 (AFL) looking longingly at WMCA who are ATE.

Grapevine has it that a wk communications association is crumbling faster than an aspirin in a glass of hot water. The coming year will show a marked increase in labor activities among the radio technicians. It must be that 'per capita.'

See by the papers, that in Minnesota, where a Republican Governor has ended Farmer Labor domination of the state, a law has been passed requiring a cool down' period before a strike can be called. Notice of a labor dispute must be filed with the labor conciliator and under the law which permits

either employer or employees, if they are unable to agree within 10 days, to serve written notice of a strike or lockout with the labor conciliator, or merely to ask for assistance in conciliation. Under the law, neither party can then start a strike or lockout for 10 days. The labor conciliator calls a meeting and assists the parties in seeking an agreement. There is no compulsion. The two parties may extend negotiations. If they can't agree, they can call a strike or lockout. Of 269 disputes in the state in the past six months 145 were settled through the conciliator and 52 without intervention while only 15 ended in strikes and 2 in lockouts. AFL and CIO don't like this law claiming that their membership vote to strike and then change their minds during the 10 day waiting period. One can expect that this law may be copied in other states in an attempt to bring an end to costly labor disputes.

On November 1st the Western Union was ordered by the NLRB to abolish the Association of W. U. Employees as a bargaining agency and reimburse employees for dues deducted from pay envelopes since July 1935. The Board order, was based on a finding that the 20 year old Association was supported and dominated by the company. The board ruled that the company had discouraged membership of its employees in labor organizations other than the association by giving employment preference to those who were willing to join the association. The case was filed by the ACA.

Organized labor is very much against Attorney General Arnold's decision that jurisdiction disputes are in restraint of trade and shall be prosecuted under the anti-trust laws. Labor may yet wake up and clean its own house before the government steps in. And did you read that interesting bit about Willie Bioff, west coast agent for the IATSE?

Well, anyway, I hope you all had a very happy 'Franksgiving' and my best wishes to you all for the coming year, 73's.

Here's a partial list of WOR Hams:

W1ZL—Carl Warren 10 meter fone and 20 meter cw						
W2ADD—P. A. Reveal						
W2ADQ—J. Shannon 20 meter CW						
W2AIS-H. P. Miller 20 meter cw and fone						
W2ALDR. A. O'Neil						
W2CTQ-R. H. Davis 10 meter fone and 20 meter CW						
W2EOA-C. A. Kibling 10-20-40-80-160 fone and CW						
W2HJG—L. R. Tower						
W2HJY—J. C. Carter 20 meter cw						
W2HJG—L. R. Tower 80 meter fone—inactive						
W2JTB—Don Hale 20 meter cw—14350 kcs						
W2KGO—]. J. O'Connor 20 meter fone and CW (C.P.)*						
W2KPG—H. Donniez 20 meter fone and cw						
W2KPR—C. Samuelson RME 69 Rcvr. (C.P.)*						
W2LEJ—R. Dorrance						
W2LZD—E. E. Scatterday						
W2SH—H. Berger receiver (C.P.)*						
*Construction permit!						

No organization is stronger than the men who are part of it. The success of WOR, as eastern key station of the coast-to-coast Mutual network, during this past year is a gratifying testimony to the caliber and industry of the men who comprise its engineering staff.

Because of the admirable way that they have helped WOR maintain and improve its place in the sun during these twelve months finished, I am more than glad to extend my most sincere greetings of the season and wishes for 1940.

J. R. Poppele, WOR

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Columbia Broadcasting

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Holiday Greetings

THE

ED

PEGEEN

FITZGERALDS

WOR - MBS



Season's Greetings

FROM

ATE OF WOR



Season's Greetings

FROM

THE ANNOUNCERS

AND

PRODUCERS

OF

WOR



Greetings Boys CAPTAIN TIM HEALY



Sensons Greetings

FROM

VERNON CRANE'S STORYBOOK

NBC RED NETWORK

COLUMBIA RED LABEL RECORDS

VERNON CRANE Author - Narrator DAVID ROBERTS

Announcer



From Kent-Johnson Inc. a transcribed spot, To tell you gentleman thanks a lot.

Here's a toast to all for the coming year,

The corporation wishes you all good cheer!



IF & WHEN

By Jon Larson

In the last month's ATE article 'If and When' several omissions and typographical errors near the top of Page 3 are regretted, and at our own and Larson's request the following is submitted for your digestion.

The purpose of the so-called phasing line in the vertical fourelement H type antenna is that of an antenna impedance transformer between the main 600 ohm line to the four elements. In reality the phasing line which connects the sides of the H is, since it is a half wave in length overall, two quarter wave sections in multiple at the center of the H. To determine the impedance at the terminals or center of the H we must consider each half of the H separately, that is, by considering only side of the H and half the phasing line so that we have two halfwave elements fed by a quarter wave section. Now, if the Z at the junction of the two elements and the section is 1200 ohms (effective impedance at junction of any two half waves elements and a line at their maximum Z points) and the quarter wave section so constructed by proper choice of size of wire and spacing of conductors to have a theoretical surge Z of 600 ohms, then solving for the sending end Z by

$$Z_{0}^{2} = Z_{5} \times Z_{r}$$

$$600^{2} = Z_{5} \times 1200$$

$$Z_{5} = \frac{360000}{1200} = 300r$$

Likewise applying quarter wave line theory to the opposite side of the antenna and its respective quarter wave section the result is again 300 ohms and since these two impedances are across each other at the center of the H the resultant terminal impedance is 150 ohms, consequently a 4 to 1 mismatch. The desirable result would of course have been 600 ohms to properly match the main 600 ohm line from the transmitter but to have obtained this result the length of each sections from the center of the H to either side would have had to be a half wave instead of a quarter in order to repeat at the repetitious half-wave interval the 1200 ohm impedances from each end to the center so that the bridge at that point would give the desirable 600 ohm impedance. The possible use of two half-wave sections between the one-half-wave spaced sides of the H in order to secure the sought for 600 ohm terminal impedance was impractical since the matching sections would have had to be suspended in a V fashion with excessive supports and stays.

It was thought at first that perhaps the mismatch might be limited to 2 to 1 by using matching sections of higher surge impedance to arrive at a higher terminal impedance of perhaps 300 ohms but to increase the surge impedance of the sections from 600 ohms (as determined by wire size and spacing) to even 900 ohms the spacing of the No. 12 conductors would have had to be increased from 6 inches to several feet and this was not advisable.

Hence the decision to employ 4 to 1 mismatch and to reduce to a minimum the percentage of standing waves reflected back upon the main transmission line by using a reactance stub shunted across that line at a convenient point.

NEW YORK

We see by the papers where some young Philadelphia lawyers have started an organization to give legal advice for from a dollar up. Thought someone might be interested.

Ed Costello was the puffed up gentleman seen handing out cigars recently. The reason is a six pound six baby girl. This makes the score two girls no boys for Ed. Evidently he has been listening to the Eddic Cantor program, we suggest that Ed switch to the Bing Crosby show.

Frank Connolly suggests when drilling brass to keep both hands on the drill press handle. It leaves you with ten whole fingers when you are through. He should know.

Reference Recording continues to expand and the new additions will if you corner them answer to the following names: Ralph F. Clements, Sylvio Caranchini and Fred Frutchey.

Ed Gundrum and Fritz Rojas are thinking of taking up baseball seriously. They were seen practicing sliding and the comments are that they should continue to practice.

George Shields has wandered back to the fold after a few months stay at WEAF transmitter.

Have you seen Andy Waddell's cowpuncher hair do? It's a pip We wonder how Mel Lewis is making out with his television receivers.

Gil Markle deserted the ever diminishing Ancient Order of Batchelors when Miss Connie Gates said yes. Congrats O. M.

The white screen of cigar smoke seen recently around the NBC 5th floor came about when R. D. Compton, N. Y. Television, announced the birth of a brand new 8 pound 2 ounce, 22 inch long son born on December 1. Both Mrs. Compton and son are doing nicely at the Norwalk, Connecticut hospital.

REFLECTIONS FROM THE NBC TELEMOBILE

By Ross Plaisted, NYV

Advent of chill breezes caused eminent Ichthyologists Jackson and Resides to sadly lay aside rod and reel. Wily worried trout in swift-running streams far afield heaved sighs of relief and made plans for winter of peace and quiet Telemobile ace Dick Pickard who gave the LINK trainer workout at Aviation Bldg. NYWF before its close recently treated Programmer Burke Crotty to spin during visit of Telemobiles to Floyd Bennett Airport Don't look now but those who should know expect Stan Peck any day now to announce perfection of his newly discovered IMÁGINERY REAR-VISION MIRROR which can be instantly applied to any car. (Not an adv.) Mobileers Hettich and States with Orthiconner Goodale may have turned a gray hair or two when paid unsolicited visit by sinuous Walter Moccasin which slithered from grasp of Dr. Dittmars during recent Herpetological telecast from Bronx Snake-house. The race was a tie with viewers on opposite side of fluorescent screen getting bigger laugh out of it than camera-men. . . . Exseafaring telemobileers find many uses for snug knots when lashing and power cables with Al (Square-rig) Jackson seeming to have a bit the edge Swede jokes in inimitable dialect by Jack (Montana) Burrell furnish many a light moment after a heavy pull Understand Landsberg is practising aerobatics and low altitude flying with new V8 and States and Hettich are shopping for couple of good parachutes just in case Nomination for human road-map; Ed Wilbur whose 1935 car has visited every state in the U. S. MERRY CHRISTMAS FROM THE CREW TO ALL OF YOU.

GERTRUDE BERG

ON BEHALF OF

MOLLY - JAKE - ROSIE & SAMMY

PROFFER GREETINGS

AND APPRECIATION OF HELPFUL ASSOCIATION





Holiday Greetings

NORMAN CLOUTIER

NBC STAFF CONDUCTOR





The New York and Engineering chapters of ATE take this opportunity to extend their sincerest holiday greetings to the membership and many friends of ATE. May we have many more years of close association.

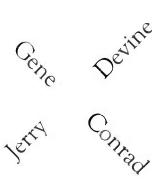
Since the National Broadcasting Company has become larger each year, so also has ATE increased its membership. With this increase has come the desire for a closer bond between the men working for a common cause. Numerous transfers and changes due to television and broadcasting advances have increased this desire. With this idea in mind, the New York and Engineering chapters present the pictures on the opposite page. How many can you idntify?

- 1. Donald Abbot, Studio
- 2. A. G. Poppele, Maint.
- 3. W. E. Mallaney, Field
- 4. Dewey Sturgell, Studio
- 5. Henry Gabrielson, Maint.
- 6. Coleridge Hutson, Field
- 7. A. A. Cooper, Maint.
- 8. R. A. Isberg, Television
- 9. Robert Bigwood, Studio
- 10. Charles Grey, Studio
- 11. Carlos Clark, Maint.
- 12. Robert Fraser, Mast. Control
- 13. Charles Phelan, Maint.
- 14. Robert Johnston, Studio
- 15. Courtney Snell, Field
- 16. R. J. Swanecamp, Studio
- 17. Allen Walsh, Lab.
- 18. Max Jacobson, Field
- 19. Gerald Sellar, Mast. Control
- 20. Andrew Waddell, Maint.
- 21. Harry Grelk, Studio
- 22. Donald Castle, Eng.
- 23. Serge deSomov, Studio
- 24. Bill Irwin, Maint.
- 25. W. H. Trevarthen, Maint.
- 26. Joseph Arnone, Eng.
- 27. David Muloney, Maint.
- 28. Loyal Lane, Mast. Control
- 29. George Nixon, Lab.
- 30. Charles Bennis, Mast. Control
- 31. H. E. Kenney, Mast. Control
- 32. James DeBaun, Television 33. Ted Kruse, Maint.
- 34. S. K. Heffernen, Maint.
- 35. Edward Nolen, Eng.
- 36. Gerald Hastings, Eng.
- 37. Allen Walsh, Lab.
- 38. Jim McCarthy, Field
- 39. Roland Lynn, Lab.
- 40. D. B. Whittemore, Field

- 41. Harold Flood, Field
- 42. Francis Connoly, Maint.
- 43. Philip Falcone, Studio
- 44. N. A. Lewis, Maint.
- 45. Jon Larson, Field
- 46. C. H. Campbell, Field
- 47. A. C. Ewert, Studio
- 48. Herman Gurin, Television
- 49. V. U. Tervola, Recording
- 50. Whitney Baston, Mast. Control 51. Robert Thatcher, Television
- 52. A. T. Williams, Studio 53. G. W. Shields, Studio
- 54. James Rojos, Mast. Control
- 55. Frank Williams, Studio
- 56. Jarrett Hathaway, Lab.
- 57. Fred Walworth, Field
- 58. Ogden Bowman, Studio
- 59. William Kelley, Studio
- 60. Gilbert Markle, Studio
- 61. Gordon Windham, Studio
- 62. John Fricker, Television
- 63. William Pooler, Studio
- 64. George Butler, Field
- 65. Irving Grabo, Field
- 66. Harry Geist, Maint.
- 67. E. J. Costello, Maint.
- 68. J. J. Kulik, Mast. Control
- 69 A. J. Horwath, Studio
- 70. Roland Jordan, Maint.
- 71. Milton Kitchen, Mast. Control
- 72. Charles Dickson, Studio
- 73. John Pawlek, Field
- 74. Alfred Wies, Field
- 75. Theodore Hahn, Mast. Control
- 76. Henry Meyer, Studio
- 77. Edward Gundrun, Maint.
- 78. Harold Ashworth, Field
- 79. Paul Herrold, Mast. Control



SINCERE YULETIDE GREETINGS JEAN DICKINSON



With TOMMY RIGGS

and BETTY LOU

Season's Greetings -- "so there, too!"



The Sensons Greetings

TO THE

NBC AND ATE

FROM THE

Washington Chapter

OF ATE



To ATE with Holiday Greetings and appreciation of their ever ready co-operation Alma Kitchell



Season Greetings Boys



FELIX KNIGHT



Greetings



FRED WARING AND HIS PENNSYLVANIANS

"The Song Is the Thing"

CHESTERFIELD PLEASURE TIME 7 P. M. EST, NBC RED NETWORK

PERSONAL MGR. JOHN O'CONNOR 1697 Broadway



Vest Wishes

FROM

TOMMY RIGGS AND BETTY LOU

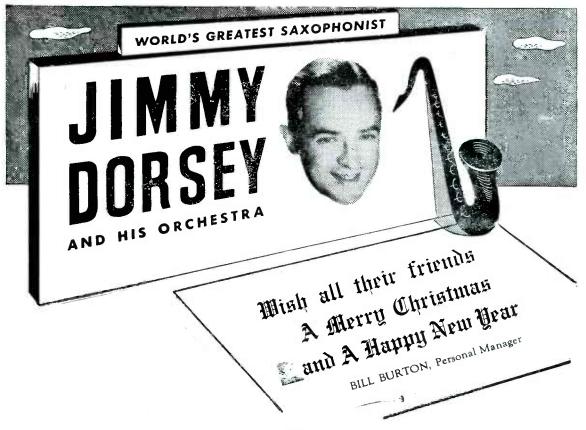




Season's Greeting and Best Mishes

FROM

KFI - KECA ENGINEERS



CHICAGO

By F. C. Shidel

Merry Christmas and Happy New Year to you all.

After reading the closing paragraphs of Johnny Larson's story in the November issue it is easy to see what broke his heart. . . .

New York traffic with the cooperation of Platz, Cole and Eichorst in the Chicago control room established an all time record for feedback coverage. They managed to get one out on both the red and blue and all supplementary legs at 11:00 a. m. November 4th.

Glenn Webster has moved into his new home in Park Ridge Mrs. Webster spent a few days in the hospital enduring a tonsilectomy.

The most recent Chicago NBCAA get together was staged at the Germania Club. Featuring dancing . . . free eats and beer.

Tom Gootee and Ed Bernheim are the most ardent coin collectors in our midst.... Gootee often gets silver dollars for his pay check and spends his days off looking for that certain mint to fill out his collection. Anyone want to sell a 1914 D penny?

All of us here in Chicago gladly welcomed home Hortsman and Maher from the New York convention. A general meeting was held the next day in the Sherman Hotel. Meeting was held in two sections so 100% attendance could be had. . . .

"By" Speirs was about with a very sore back after planting about 30 fruit trees on the Speirs farm near Wheaton, III.

Ray Bierman was the first of the Studio Engineers to attempt to listen to the difference between ordinary and orthacoustic recording quality. It was done much to the dismay of Vern Mills who is the head boy in recording room. As the story goes Bierman wasn't aware of the fact that Mills was dubbing a record and after Bierman switched from orthacoustic to non-orthacoustic on the play back table a few times Mr. Mills started his dubbing job all over again. . . .

George Maki, who has been Transmitter Relief Engineer and recently dismantled old WENR transmitter at Downers Grove just visited the station as an awe inspired ham in 1933. Little did he realize at the time that in six years he would be the one to pull the carrier off the air for the last time.

My spy tlls me that Curt Pierce is an authority on rewinding transformers that have been drilled into by poor aim with a bit brace. . . . Curt should be very familiar with Chicago-Denver train skeds as he is booked for seven round trips in seven weeks in connection with the Mars Candy Doctor IQ show now airing from Denver. . . .

A certain engineer and announcer were not fully aware of the exclusiveness of the Ambassador East Hotel in Chicago until they started to match pennies at the Nemo position in the room while waiting for call in time. . . .

The West Coast boys stopped for short visits in Chicago on

their way to the convention in New York. . . .

Our J. R. Miller, W9CP, now knows the rotating mechanism on his beam antenna can take it—he forgot to turn it off before going to bed or something. . . .

The ???? network activity in Chicago has hit a low tide. . . . Platz is rebuilding his exciter unit (yes again), Webster has been busy moving to his new home and hasn't gotten his rig set up as yet, Miller is busy studying, Conrad is busy, Clark still trying to peddle his rig, and yours truly never was in the net being like Eichorst . . . no key around the place . . . How about getting a phone net started? There are a lot of "Broadcast Engineer Hams" on the 20 meter phone band. W3FAR of KYW and W5CIU of KARK are the latest acquaintances made from W9CIU, OW5CIU, G. W. (Uppy) Upchurch, Transmitter house in a row boat in January and February after rains, the location being in the middle of a swamp. . . .

Lester Looney of Radio Facilities is spending some time at the WMAQ transmitter doing a general check up.

Jim Mheren is working transmitter relief at WENR-WLS while Homer Courchene is on vacation.

McDonnell of WENR-WLS was ill last week for a day—must have been that Thanksgiving preview.

LOOK LOOK LOOK LOOK

CAN YOU AFFORD TO LOOK SLOPPY????

FOR ONLY FIVE CENTS YOU CAN GET YOUR NECKTIE HAND-VACUUM CLEANED

WITH

THE MILLS LITTLE GEM COMBINED RECORD THREAD
SUCKER-TIE CLEANER. PAT. APPLIED FOR
SEE VERN MILLS IN RECORDING
ANYTIME

BETWEEN RECORDINGS OR PLAYBACKS
FOR THOSE CLIENTS WHO DO NOT GET DIZZY YOU
CAN GET YOUR TIE CLEAN WHILE A RECORD IS BEING MADE. USE THE LITTLE GEM TRANSCRIPTION
SADDLE. IT WON'T THROW YOU. EVEN AT 78 RPM.

Best Wishes and Season's Greetings

FROM

JACK BRINKLEY

CARTERS OF ELM STREET MA PERKINS
JUDY AND JANE CAROLINE'S GOLDEN STORE



Seasons Greetings
SHARON GRAINGER

"SHARON"

IN
"Affairs of Anthony"



HARVEY HAYS





To Wish You A

Merry 25th

Constance Crowder

Doris Cameron - Right To Happiness Mary Ellis Ames - Woman In White Grace Hancock - Carters of Elm Street



Sensons Greetings

FROM

VIRGINIA HAYS

A Merry Christmas

TO ALL OUR RADIO FRIENDS

KINZIE GRILL

JOHN'S FAMOUS STEAKS



Greetings FROM

RUTH BAILEY "ROSE KARANSKY"

IN

"Guiding Light" and "Right To Happiness"

Alice Craig in Woman In White



Season Greetings

DON McNEILL
BREAKFAST CLUB

NBC - CHICAGO



A Merry Christmas, Boys

CHICAGO LOCAL

OF

American Federation of Radio Artists





GREETINGS

CHICAGO CHAPTER

OF

ATF

A Very Merry Chrisimas

FROM

MA PERKINS AND HER FAMILY

VIRGINIA PAYNE

CHARLES EGELSTON

RITA ASCOT

GILBERT FAUST

DORA JOHNSON

MURRAY FORBES

CECILE ROY

FRED HOWARD

DICK WELLS

FROM

THE ALL AMERICAN GANG

JACK ARMSTRONG SHOW

CHARLES "Jack Armstrong" FLYNN

JOHNNIE

"Billy" GANNON

SARAJANE

"Betty"

WELLS

JAMES

"Uncle Jim"

GOSS

FRANKLYN "Eat More Wheaties" MacCORMACK



TELEVISION FLIES HIGH

By ED STOLZENBERGER, NYV

On the afternoon of Saturday, October 21, 1939, NBC Television programmed an aviation educational featuring United Air Lines personnel and equipment. The program was produced by "Tony" Bundsman, and was in the nature of a question and answer affair, thereby bringing out the high spots of public interest concerning personnel and equipment.

First Officer Bob Hawley, featured on the program, explained the rigorous training and experience required of all United Air Lines personnel before the safety of passenger transportation is entrusted to them. Various technical auxiliary devices were interestingly explained to the NBC Television audience, in their relation to air travel safety.

Happy with the results of the program, Mr. Ted Stern, of the United Air Lines Publicity Department, arranged a courtesy flight for the NBC Television Staff. The party assembled at the 58 East 42nd Street office of the United Air Lines at 10



A. M., Monday, November 20, 1939, and included Messrs. A. W. Protzman, H. M. Gurin, F. Burns, Bert Nazimento, F. J. Somers, J. R. DeBaun, R. W. Clark, R. A. Isberg, H. Baumann, A. D. Smith, J. W. Conn, and Ed Stolzenberger, all of the Television Engineering staff; because of their non-coincidence of days-oif, the Production and Program staff was unfortunately not represented.

We were whisked away in a deluxe airport Cadillac, via Holland Tunnel, Pulaski Skyway, to Newark Airport, where we were "officially" greeted by the United's "courtesy conscious" staff.

While the "Mainliner's" motors were being warmed up, cameras started clicking to record the event. Soon the PA system announced the NBC-United Air Lines courtesy flight ready, whereupon the portable stairs were rolled up and the Mainliner boarded. The camera enthusiasts investigated the relative merits of the various seats from the photographic point of view, were finally seated, and the wheels left the ground.

The smoothness with which these huge Mainliners handle as against shifting your own car from first to second gear, is amazing. The weather was cloudy, with brisk winds, temperature 32° F; at 2,000 feet, we passed thru a bank of fast moving southbound clouds; above the clouds—an exhilirating sight—warm sunshine on a sea of rolling clouds—an ideal tonic for anybody's Climbed to 4,500 feet, the clouds had now jangled nerves. passed, and the Good Earth appeared below. Our route took us past the Statue of Liberty, Manhattan's super-skyline, East River, (the Hudson River was cloud-covered,) Long Island Sound, Westchester County, and Westport, Connecticut; passed over V. P. "OB" Hanson's home, where we dipped a wing, and retraced our steps back toward Newark Airport. The cloud-bank over the Hudson had passed by the time we returned to New York City, and the Pilot flew us over the Hudson River on our way "down-town," giving us an excellent view of the famous Manhattan skyline and the lower New York Bay.

It is really impossible to describe with words the unending sequence of awe-inspiring sights made available thru the medium of aviation.

Our average air speed was 165 MPH, but judging from the incessant clicking of camera shutters, the NBC Television party was at ease and felt definitely "at home" in the warm, surprisingly quiet cabin. This was due, no small amount, to the geniality of Miss Helene Dobrick, RN, our Hostess on the flight described herein, and the capability of Captain Otis Kline and First Officer Bob Hawley which was so apparent in the take-off, general operation, and the landing, that together with a knowledge of prerequisite United Air Lines training demanded of their personnel, gleaned from the Television program, that it would be inconceivable not to be at ease.

Photo enthusiasm varied as follows: Gurin, 26; Clark, 36; Isberg, 4; Conn, 6; Stolzenberger, 32; 104 photos in all, plus ground pictures taken by United's Publicity photog. Photo of party lined up at plane, by Conn.

To the United Air Lines, and their "perfect staff," our sin-

cere thanks for an hour of "perfect relaxation."



Seasons Greetings

FROM THE

W L S
STUDIO AND TRANSMITTER
ENGINEERS





Sincere Holiday Hishes

MARY PATTON



HI BOYS

HUGH STUDEBAKER



To the Boys who make us sound better than we are



JULIA SANDERSON AND FRANK CRUMIT

"Battle of the Sexes" For Molle

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DON DOWD





TOM CASEY



FORT PEARSON





ELIZABETH HART PHOTOS BY-BOB BROWN





LES GRIFFITH

CHICAGO ANNOUNCING STAFF



Season's Greetings

TO THE ATE

FROM

"The Continentals"

BOB KESSLER

EARL TANNER

HERMAN LARSON

REINHOLD SCHMIDT

BOB CHILDE



Merry Christmas

FRANCIS DERBY

M.ERRY
CHRISTMAS
TO
ALL YOU
BOYS
AND
TO ALL
OF
YOUR
FRIENDS



VIC, SADE and RUSH

WASHINGTON

By A. R. McGonegal

Another deadline here, the column past due, and nothing written as yet, in fact, nothing to write about. That's the worst part of writing for the Journal. The deadline seems far off, and then suddenly it is upon ore, usually just about the time when the luckless scribe's mind is blankest. Well, nothing to do but get a good soft pencil and turn out something. It may not be good, but at least it will fill up space.

WMAL is again leading all NBC operated stations in the race for the GE plaque—only one minute two seconds lost so far this ear. Bill Simmons of WMAL suggests that a trophy room be built into WMAL'S new quarters to provide adequate storage space for such souvenirs in the future.

A. E. Johnson and K. B. Williams accompanied the President to Hyde Park last weekend. Williams returned to Washington early this week, while Johnson went on with the Presidential train to Warm Springs, Ga., for the customary Thanksgiving turkey and golf matches.

Note found in a trouble report turned in to Maintenance—"Mike receptacle No. 4 in Studio D is not there." That would appear to be real trouble.

The Battle of the Century — Operations Supervis or Don Cooper vs. Kid Streptococcus. The fight lasted some two weeks and was close all the way, but Cooper finally got the decision.

We hear that Charlie Fisher, of WMAL, is making quite a reputation for himself as a handwriting analyst. The only fist that has him stumped so far is mine—he can't even read that.

Filters for the new "orthocoustic" system of recording have been installed during the past month. Many of the speakers fed from Washington to the networks are now being recorded for later local broadcast, to the delight of said speakers who are thus able to hear themselves. Quality appears to be as good as the original program.

Lame ankles and bruized tibiae (shins to you) are being nursed by a number of Washington engineers and their wives, following a recent skating party. Bill Simmons swooped o'er the ice with the greatest of ease, while Wadsworth, Hamill, Fugazzi and McGonegal did *their* swooping vertically. All hands had hotdogs and highballs at the Hamills' afterward.

We are unable to extract much information regarding the ATE dance from the dance committee. Preliminary arrangements

are under way, but the date and place are not yet definitely settled.



FREE LUNCH - Taken after ATE meeting - Gentleman with no appetite is Chairman Ullman. Note coat to maintain dignity of office.

Picture of confusion—Announcer Bryson Rash, in closing a program, said it was being broadcast "over the coast to coast to coast Blue Network." Rash was listening with a headphone to the return Blue, which is about one word behind the outgoing circuit, and the repitition in his ear balled him up badly.

Much interest in ice hockey is developing among Washington field engineers since we have been picking up the professional games twice a week from Riverside Stadium. No one knew very much about it at first, including announcer Ray Michael, who broadcast the first game he ever saw—that should set some kind of a record. But all agree that it's a fast, exciting game to watch, even if one doesn't know the fine points.

NEW YORK

December 6, 1939.

The Gang, Engineer's Lounge, Radio City, N. Y. Dear Gents:

A little early for "Season's Greetings," but accept them just the same.

There have been several people, honest I hope, trying to locate me and, as there is no secret about me, I wish you'd post this long enough for anyone interested to read it.

Feeling fine and hope to see you all again some time.

Vy best "73's"

C. H. Pease (HP) "Charlie"

70 Sherman St., Springfield, Mass. Fone 4-2200



Season Greetings

Michael Romano



Sincere Holiday Greetings

WAYNE VAN DYNE



GREETINGS

from

OLAN SOULÉ

"TIMOTHY STOREY" - "MIDSTREAM" - NBC "SAM RYDER" - "BACHELOR'S CHILDREN" - CBS



Season's Greetings

from the

MORIN SISTERS

MARJORIE EVELYN PAULINE



Sensons Greetings

RUTH LYON

SOPRANO

NBC - CHICAGO

Karl Weber

WOMAN IN WHITE (Kirk Harding)
AFFAIRS OF ANTHONY (Andy)
AVALON TIME (Roger)

New RCA Television Equipment Demonstrated

Newly developed light-weight portable television field pickup equipment, so reduced in size and cost as to come well within the range of the average broadcasting station, was demonstrated under practical operating conditions for the first time recently by the Radio Corporation of America Laboratories before members and officials of the Federal Communiciations Commission in Washington, D. C.

Among those who witnessed the demonstration were James Lawrence Fly, chairman of the FCC; Commissioners Thad H. Brown, Norman S. Case, and T. A. M. Cravens, members of the FCC Television Committee; and Commission Engineers, headed by E. K. Jett, Chief Engineer.

Attracting much attention from Washingtonians and Government employees, the new equipment was set up on the grounds of the U. S. Post Office Department Building, where the FCC offices are located, at Thirteenth Street and Pennsylvania Avenue. Two cameras were in operation, one at street level and the other on the roof of the building. RCA Television receivers were installed in the offices of Commissioner Craven and A. D. Ring, FCC Assistant Chief Engineer.

The RCA Operating Crew, aimed the television cameras at the constantly changing scene along Pennsylvania Avenue, picking up all the life and activity occurring at a busy intersection of the National Capital's most famous thoroughfare. The Washington Monument could be seen from across the roofs of nearby buildings. Various members of the Commission and others appeared informally and briefly before the camera.

One of the most interesting features of the demonstration was the fading in and out on the television receiving screen of the two different camera-angle views. By this means, it was possible to see one view build up on the screen as the other faded out.

The apparatus was developed by the RCA Laboratories at Camden, N. J. to meet a demand for television field stations comparable in compactness to present day sound broadcasting equipment. Entertainment material, such as floor shows in Manhattan's night clubs and dramatic productions and musical shows on Broadway, now beyond the reach of NBC's present mobile television equipment will lie within easy range of the new portable unit.

To facilitate transportation of the apparatus, RCA engineers have assembled the various components in small carrying cases, each weighing from thirty-five pounds to seventy-two pounds. The dimensions of each case are about those of an ordinary suitcase. A complete one-camera assembly for program relay over wire lines requires only four of these cases, in addition

to a camera and connecting cable lengths. The total weight of such equipment is less than 275 pounds.

The basic one-camera unit, contained in four cases and a camera, may be converted into a two-camera assembly by the addition of a second camera and four equipment cases, bringing the total weight to 548 pounds. A third camera may be added by bringing three more cases into the equipment line, making the weight of the three-camera unit 862 pounds, exclusive of connecting cables. The radio relay transmitter with its associated power supply equipment weighs 250 pounds. With 1,000 feet of cable to serve the assembly, the entire three-camera unit weighs less than 1500 pounds. NBC's present two-camera fie.d unit, mounted permanently in two large motor trucks, has a total weight of about ten tons.

Striking innovations in the new field unit are a newly developed radio transmitter for use on wavelengths about one meter, the shortest yet employed in practical television work; a "delay" component for keeping several cameras locked in absolute synchronization, and a flexibility hitherto unknown in television equipment. The unit will operate on a power source of 110 volts, single phase, whereas NBC's present mobile station, the first built in the United States, requires a source of three-phase, 220-volt power.

Principal advantages of the new RCA television field equipment may be summarized as follows:

The cost is about one sixth, and the weight about one-tenth of the present mobile television equipment carried in two large vans. The new units can be transported in a station wagon or light delivery truck.

The power consumed by the new equipment is about one fifth of that used by the previous apparatus. This enables power connections to be obtained more readily in the field.

The power of the new transmitter is considerably less than the unit which has been used in New York for field pickups of television, but it operates on a wave length of about one meter and may be used with small but highly efficient antennas which multiply the effective power several times. On these wave lengths, electrical disturbances are not a serious factor nor is static produced by lightning.

New television pick-up apparatus, of the type demonstrated today before the FCC, has been produced by the RCA Manufacturing Company for the Don Lee Broadcasting System, Los Angeles, and the National Broadcasting Company. Another set of the apparatus will be built for the Columbia Broadcasting System.

Russel M. Seeds Company

Wish The Chicago Engineers who do such an outstanding job of putting its shows on the air

Merry Christmas





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Uncle Walter's Dog House for Sir Walter Raleigh Smoking Tobacco





Avalon Time for Avalon Cigarettes



Plantation Party for Bugler Blended Cigarette Tobacdo

Happy New Year

DENVER

By JOE ROHRER

Al Isberg, former reporter to this column, is transferred to NY television. He takes with him the best wishes of ATE at KOA. NY will find Al capable of many things other than technical ability. He is an all around swell fellow. We were quite amused at his first observance of eastern colloquialism "Eersters'l sperl if you burn em in erl" and such stuff. Imagine his first ride in a subway during rush hours after being used to the great open spaces out here in God's country. Hope nothing worse than just getting stepped on happens to old Al.

Russ Thompson on return from National Convention found his wife laid up from a bad fall. For quite a few days we had no information about the marble game in NY as he was too busy caring for the family. Russ had dishwater hands, house-maid's knees, and circles under his eyes. Glad to report all is well again. Next national convention Mrs. Thompson is going to start a movement for falling down stairs so that all councilmen can be called home after a week.

After our Midnight Chapter meeting, Roy Fell found it necessary to drive back to KOA and pick up the week end groceries. This entailed a minor little detour of thirty miles, as he lives on the other side of town from KOA. Roy was quite unhappy at that early hour of four-thirty A. M.

Schuknecht has around one hundred bucks tied up in model railroading. Last addition is exact replica of steam type locomotive which is just getting finishing touches. Carl says it's just the beginning.

Roy Carrier is in the dog house, at least he had to stay close to home and take care of Mrs. Carrier's dog while she vacationed.

TE Austin is still our great hunter, and has he a reputation with the magpies at the transmitter. They never put in an appearance on the days he works. Smart birds. Ozzie is designing a furnace. Says no commercial jobs are good enough. Of course he is twice as cold as the average feller as there is twice as much of him.

Frank Nelson is in charge of our clipping bureau but has plenty of assistance. You pick up a paper where it looks like someone has been clipping paper dolls, that's Nelson and you can bet it was a real doll. A nice collection of nudes has Nels. All the boys are conscientious reporters to his scrapbook.

Hamming is at its best. A review of Denver ATE stations: W9FA active on 40-80 CW, and watching the ATE frequency. W9LNB has a new exciter full of bugs, but will switch 10 to 160 meters when completed. W9DSD, FKQ, LNB, QKW are on 20 phone. W9UXI is on 10 meters. Speaking for myself,

W9EYN, a new compression unit completed using 9 tubes, all push pull. Compresses 20 DB before overmodulation.

We are getting acquainted with Pierce of Chicago field, in Denver with Dr. I. Q. Wish it were possible to meet other chapter members more often as we certainly have been able to profit by chatting with Curt. Lots of new ideas and I believe we showed him how to clean faders.

As a feature of this column and for just a touch of humor, at least one boner from the announcers log will be included each month. Schooley rings the bell this month. Our news broadcast starts with phrase, "From Coast to Coast and Pole to Pole, the News, etc." It came out like this: "From Post to Post and Coal to Coal," then after a breath the second attempt, "From Post to Coal and (pause)—Here is the Latest News."

S. E.

As I sit at the controls my head begins to bob
I drop off to sleep my hand on a knob
The announcer wakes me as he wheezes and chugs
Announcements and plugs
Announcements and plugs

On comes the organ a peaceful number During the second chorus I begin to slumber I'm dreaming of Asia with its Oriental rugs Announcements and plugs Announcements and plugs

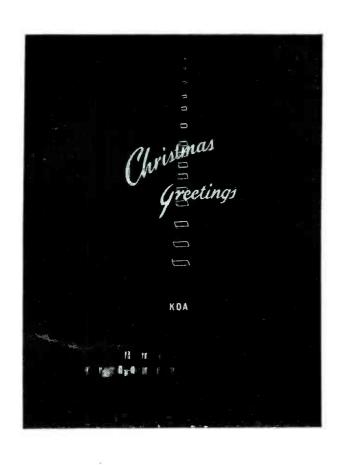
I sail the China Sea down to Singapore
I'm soloing with the organ an octave high with a snore
I see ocean liners being towed by tugs
Announcements and plugs
Announcements and plugs

We sail across the bay for a visit to Java
Of barren mountains overflowing with lava
Where the Javenese girls kisses and hugs
Announcements and plugs
Announcements and plugs

Out of this land I am now awake And I hear the announcer say "for goodness sake" If your girl friend neither kisses or hugs Buy a tube of zippo and shave your mugs It's driving me bugs

It's driving me bugs It's driving me bugs

BERT C. PRUITT, WTAM SE.





ATE

DENVER



The Seasons Greetings

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CHICAGO, ILL.

Byrd's Antartic Limousine Visits Schenectady

Thousands of Schenectadians gathered on the lawn and parking field of WGY to witness the arrival of Admiral Byrd's snow cruiser, Saturday, November 11.

The cruiser, which resembles a war tank and carries a five-passenger airplane pickaback style, will supplement the indispensable dog-team method of getting about the polar region. It is 55 feet long, 20 feet wide, and weighs 37 tons. A crew of four will man the cruiser, and it will carry enough fuel and

provisions to last a year.

Controls and electric equipment to provide motive power were built especially for the cruiser by the General Electric Company. Two generators are connected to its two 150-horse-power diesel engines, and a 75-horsepower motor is mounted right in the hub of each of the cruiser's four 10-foot-diameter wheels. From the control cabin the driver can apply electric drive to the wheels in all combinations, and the craft can be turned around in 30 feet. The ability to exert traction on any wheel, either forward or reverse, and in groups of two, three,



or four, is expected to enable the cruiser to travel easily through the snow fields. A system of hydraulic lifts allow the wheels to be retracted so that the cruiser can be slid on its belly across snow crevasses up to 15 feet in width. A special gear-reduction arrangement gives the cruiser a 10-mile cruising speed and a top speed of 25 miles per hour.

The surprisingly comfortable interior of the cruiser has been carefully designed and equipped for making the scientific observations which constitute an important objective of the trip. The control cabin is forward, above the engine room and a compactly-arranged machine shop, which is equipped with a lathe and welding generator. Instrument and tool lockers are behind the control cabin, and behind them are a photographic darkroom and the galley, adjoined by living quarters for the crew of four. A store room providing space for cargo and two spare tires is in the tail. The cruiser is insulated so that heat taken from the diesel engines will keep the interior of the cruiser warm in spite of outside temperatures of 100 degrees below zero.

Modernization of Admiral Byrd's flagship of the expedition, the U. S. S. Bear of Oakland, has included replacement of its old steam engine propulsion unit by General Electric dieselelectric drive. As a result, the ship's cruising speed has been

increased from four to nine or ten knots.

NBC pack-transmitters were used in making the broadcast from the upper deck of the cruiser. Officials of the General Electric Company, which constructed the four motors that power the cruiser's wheels, and members of the WGY staff greeted Dr. Thomas Poulter and his crew. Dr. Poulter, who designed the cruiser for the Research Foundation of the Armour Institute of Technology, and who has been at the controls on the long trek from Chicago, was interviewed by members of the NBC and G-E broadcasting staffs on the cruiser.

Dr. Poulter explained the operation of the cruiser and the manner in which its equipment is designed to carry it over the frozen wastes of the Antarctic. He explained that the craft was designed to operate at a temperature of 80 degrees below zero and that running it during the fall months here is similar to trying to operate a car in a temperature of 150 to 160 degrees above zero. Because of this, ne said, some difficulty has been encountered with the operating parts. He said that from the manner in which the machinery operated under the lower temperatures he believed that no difficulty would be encountered in operating it under Antarctic conditions.

After a 45-minute stop the cruiser resumed its journey to

Boston where it will be shipped to the Antarctic.

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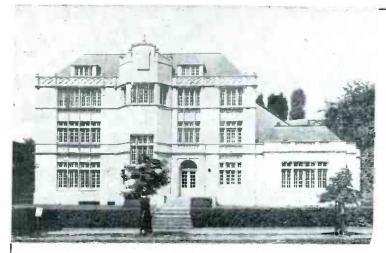
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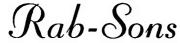


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Christmas Greetings

TO THE NBC STAFF

Dr. Gary M. Baker

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CHICAGO



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It has all the fine features of the former model plus these quality additions: 1 Additional Stage of I.F. (2 I.F. Stages in all); 1 Additional Tube (making 9 tubes in all); Dickert Automatic Noise Limiter; Separate Electrical Band Spread—Inertia Controlled; Drift-Compensated High Frequency Oscillator; 3 Watts output; Both Dials Illuminated.

Of course it retains all the essential features of the former model such as a Stage of Pre-Selection; Sponge Mounted Speaker; Beat Frequency Oscillator; Continuous Coverage from 545 kc to 44 mc, etc.

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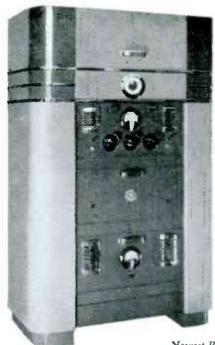
Season's Greetings NEW YORK ENGINEERING CHAPTER

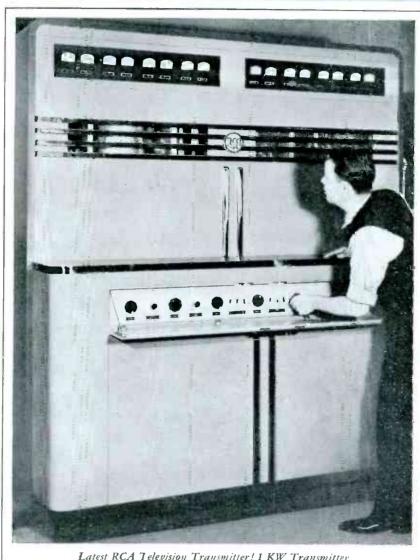
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