

Merry Christmas

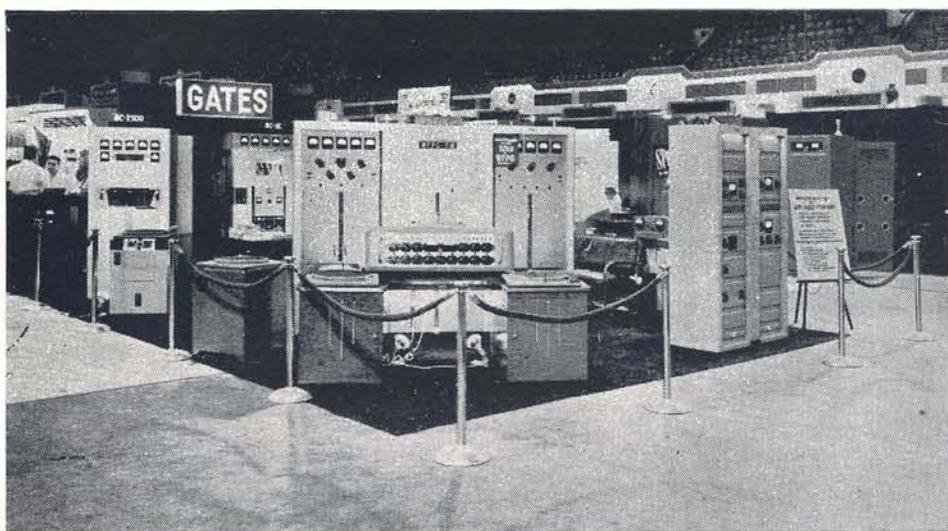
STUDIO REVIEW

GATES RADIO CO.

QUINCY, ILLINOIS

DECEMBER, 1947

Eastern Office Moved to Washington, D. C.



One of the largest NAB conventions was held in Atlantic City, N. J., this fall. The prominent Gates exhibit is shown above. Practically everyone who attended the convention visited the Gates booth. Much interest was shown in the FM transmitter sold to the Neptune Broadcasting Company of Atlantic City. The new Audio line now in production caused many complimentary remarks. See you next year

The Gates eastern zone office has been moved from New York, N. Y., to Washington, D. C.

Through experience it was learned we would be able to better serve our customers by locating an office in the capitol city. Mr. Owen J. McReynolds, assisted by L. J. Cervone, Sales Engineer, and Mrs. Katherine Miller, secretary, are ready to help you in any possible way.

The address is:
Warner Building,
13th and E Street, N. W.
(Across from the F. C. C.)
Washington, D. C.

Telephones: Metropolitan 0522, 0523.
Besides the various offices a large sales and display room has several transmitters, amplifiers and other equipment for inspection by prospective customers.

You are cordially invited to inspect our offices and to take advantage of the Gates facilities for making hotel, plane or train reservations. The office personnel will be ever willing to give assistance on any broadcast or general problem. Make Gates your headquarters when in Washington, D. C.

STATE COLLEGE PA. BURNS

For the second time within a month Gates emergency service was called upon to furnish the equipment for a station that had had the misfortune to burn. State College Pa. called on the morning of November 19 at 9:30 a. m., ordered a complete 250 watt station and by 5:30 that same evening all the equipment was on its way to the broadcaster. At Gates there is no red tape when it comes to **EMERGENCY**. Call Gates for service and get results.



For You!

From the janitor
to the president,
From the stenos
and engineers.
We wish you
Seasons Greetings
And best of luck,
next year.

1948

WELCOME TO THE GATES FAMILY

To the already large list of Gates equipment users will soon be added the stations at Weston, W. Va.; Tullahoma, Tenn.; Bastrop, La.; Eau Claire, Wis.; Wadena, Minn.; Albertville, Ala.; Middlesboro, Ky.; Maysville, Ky.; Columbus, Nebr.; Dothan, Ala.; Muskogee, Okla.;

Pekin, Ill.; Marquette, Mich.; Fairmont, W. Va.; Tuscaloosa, Ala.; Fredricksburg, Texas, and Bloomsburg, Pa.

Phasors have been completed or in the completion stages for KCOR, San Antonio, Texas; La Crosse, Wisconsin; WKRG and WABB, Mobile, Ala., stations; Wadena, Minn.; Muskogee, Okla., and Tuscaloosa, Ala. These are just a few of the most recent stations to purchase Gates phasing equipment.

SPECIAL POWER SUPPLY DESIGNED FOR DEPARTMENT OF AGRICULTURE

One of the newest projects to be completed in the factory is a power supply for the Department of Agriculture. This unit was designed by the Gates engineers and is one of the most up-to-date pieces of equipment to be shipped. Extra precaution was used in making this unit safe from a standpoint of operation since the power output of 10,000 volts makes this item a potential "electric chair" for an inexperienced operator. This unit was one of several that are now being made to the specifications of the respective purchasers.

Gates Presents . . . Rainey and Henry



Ed and Gordon

MIDWEST SALES ENGINEERS

The station managers and engineers of the central states will welcome another Gates sales engineer. Mr. Gordon Henry, although a native of the corn husking states was recently located in Washington, D. C., and the western states. Gordon is a member of the bar as well as a highly experienced radio man. He spent several years at the NBC stations in the capitol city; also worked for FM network company. Mr. Henry is one of the oldest "hams" in the business, still retaining his original call letters since 1924.

If you see a green "Studie" stop at your place, you will know it is one of the Gates boys, since both—Ed Rainey and Gordon Henry—believe in flying low in those light green cars. (This is not a paid ad for Studebaker cars.)



GATES MYSTERY OF THE MONTH!

WHO IS DAN?????

WHERE IS HE?????

That last box of "Turtles" is gone, but were they delicious.

GATES STUDIO REVIEW

Published Bi-Monthly by the Gates Radio Company, Quincy, Illinois

MAIN OFFICE AND FACTORY—123 Hampshire Street, Quincy, Illinois.

WASHINGTON, D. C., OFFICE—Warner Building, 13th and E Street, N. W.

WEST COAST OFFICE—1350 No. Highland Ave., Hollywood 28, California.

EXPORT AGENTS—Westinghouse Electric International Co., 40 Wall Street, New York, N. Y.

DISTRIBUTORS:
Specialty Distributing Co., Atlanta, Chattanooga, Macon and Savannah.
Houston Radio Supply Co., Houston, Texas.
Canadian Marconi Co., P. O. Box 1690, Montreal Quebec, Canada.

EDITORIAL

Recently our credit department received a report on an individual who had purchased complete Gates equipment for his new station. An interesting fact is that this gentleman was formerly employed as an engineer for the ——— Manufacturing Company and previous to that by the ——— Corporation, both manufacturers of well known radio broadcasting equipment.

I hurriedly checked the records and it appears that the only two Gates ex-employees who have become broadcasters are both Gates users. I assume there are reasons why a former employee would not buy his employers equipment, such as the little unpleasant things that sometimes come up when working together. But it seems to me that if the equipment he had been working with was head and shoulders above the others, as is usually claimed by all companies, then the fellow would still have bought that equipment, grudge or no grudge, and of course I am assuming there was a grudge.

The fact that this fellow bought Gates equipment after working with two of our foremost competitors, if you will pardon our boasting, is a good sign because we feel that deep down in his heart he must have realized Gates was as good if not better than the other equipment. Another point—rather important too—we have been hearing so much about increased costs. In checking a June, 1940, Gates price list I found that our price increase (as an overall average on the entire line) has been less than 4% and in many cases, that 4% is actually in better quality. In fact, the Gates line is 100% better than in 1940—in material, workmanship and appearance. From that angle the actual cost of Gates apparatus today is lower. Compare! 4% is a very small increase when you consider that costs of component parts have increased 45% and labor even more! All this adds up to greater operating efficiency and sales which have increased 1000% over 1940. YES, WE SAID ONE THOUSAND PER CENT.

P. S. Gates

A CONFIRMED GATES USER

Courtesy of Bob Compton, WCAZ, Carthage, Illinois



Before

After

—Erleen Ayes, Ft. Madison, Iowa



KBIZ, Ottumwa, Iowa Destroyed By Fire

in that building. An emergency call to same morning. Afternoon transcription such emergency cases helped another

: During the early morning hours of October 17, Radio Station KBIZ at Ottumwa suffered a complete loss of all its studio equipment. The entire building which houses the studios was destroyed. As the transmitter house was located outside of town, broadcast service was not interrupted as temporary setup was installed
: Gates factory saw studio equipment on a truck and on its way by 8:30 a. m. that programs were on the air as usual.—another instance where Gates speedy service for broadcaster in that OFF THE AIR PINCH.

REGARDING SERVICE AND REPAIR PARTS

Gates customers requiring either spare or replacement parts can assist delivery tremendously by giving all possible data on the components required. In many instances it is difficult to identify from just the simple description given us in wires and letters what is actually wanted. Transformers and meters, particularly antenna meters, are the most exasperating items.

When reordering an antenna meter be sure to give the manufacturer's name, type, full scale reading, nature of scale, either expanded, squarelaw, linear or otherwise if special; if an RF ammeter, indicate either internal or external thermocouple, and if external, indicate the number of ohms between the thermocouple and the meter itself.

A typical instance of wasted correspondence is the case of a station whose installation has been hit by lightning, that wires us "ship immediately replacement meters for BC-5A transmitter." With this limited information we have no way of knowing what was the final arrived at antenna meter scale required, or the host of factors that control the individual characteristics of the meters for this station. A few extra words giving more detail on the initial wire would have saved much unnecessary delay for the customer.

Transformers are necessarily confusing items because of the many types and special characteristics. In all instances every number and letter on the case and terminal board of the transformer should be stated. This is particularly important on service items for apparatus manufactured prior to and even during the war, inasmuch as the transition cycle has changed the ma-

GATES COMPANY MEMBER NATIONAL SAFETY COUNCIL

The Gates Company is a member of the National Safety Council. The task of making our factory a safer and better place to work has been undertaken by Mr. Gordon Hinkle, 1947 manager of the Quincy Gems baseball team. Gordon has been appointed Safety and Personnel Director. Mr. Hinkle has had much experience in this type of work and we know the many visitors in our plant will notice the many safety precautions and good personnel practices which have been put into effect.

COULD BE!

Sunday School Teacher: "And why did Noah take two of each kind of animal into the ark?"

Bright Child: "Because he didn't believe the story about the stork."

* * *

At Esther Hall—a business girls' dormitory in Des Moines—the telephone is located in the dining room. When it rings, the nearest girl picks up the receiver and says: "This is Esther. Who in the hall do you want?"

* * *

"There is hardly anything in the world that some man cannot make a little worse and sell a little cheaper, and the people who consider price only are this man's lawful prey."—John Ruskin.

materials supplied under general type classifications.

To help us give you the best service—specify details fully . . . help yourself . . . help us—since Gates is setup to actually give you immediate service.

Before returning any items to the factory a written RETURN AUTHORIZATION should be secured.

IMPROVED RAIL AND AIR SERVICE TO QUINCY

We welcome and invite all interested in broadcasting and equipment to visit our plant and also the new FM Radio Station WQDI in Quincy, a completely Gates equipped station. If you will advise by wire or letter some representative of the company will be happy to meet your train and assist you in every way. For your convenience train schedules to and from Chicago and St. Louis are listed below:

Leaves Quincy	Arrives Chicago	Leaves Chicago	Arrives Quincy
2:45 am	8:30 am	12:45 pm	5:48 pm
6:10 am	11:35 am	4:35 pm	9:46 pm
12:07 pm	8:30 pm	6:30 pm	12:40 am
10:05 pm	8:00 am	10:00 pm	6:30 am
Leaves Quincy	Arrives St. Louis	Leaves St. Louis	Arrives Quincy
3:49 am	7:45 am	8:30 am	12:01 pm
9:30 am	1:45 pm	5:00 pm	7:15 pm
5:58 pm	10:10 pm	11:30 pm	2:56 am

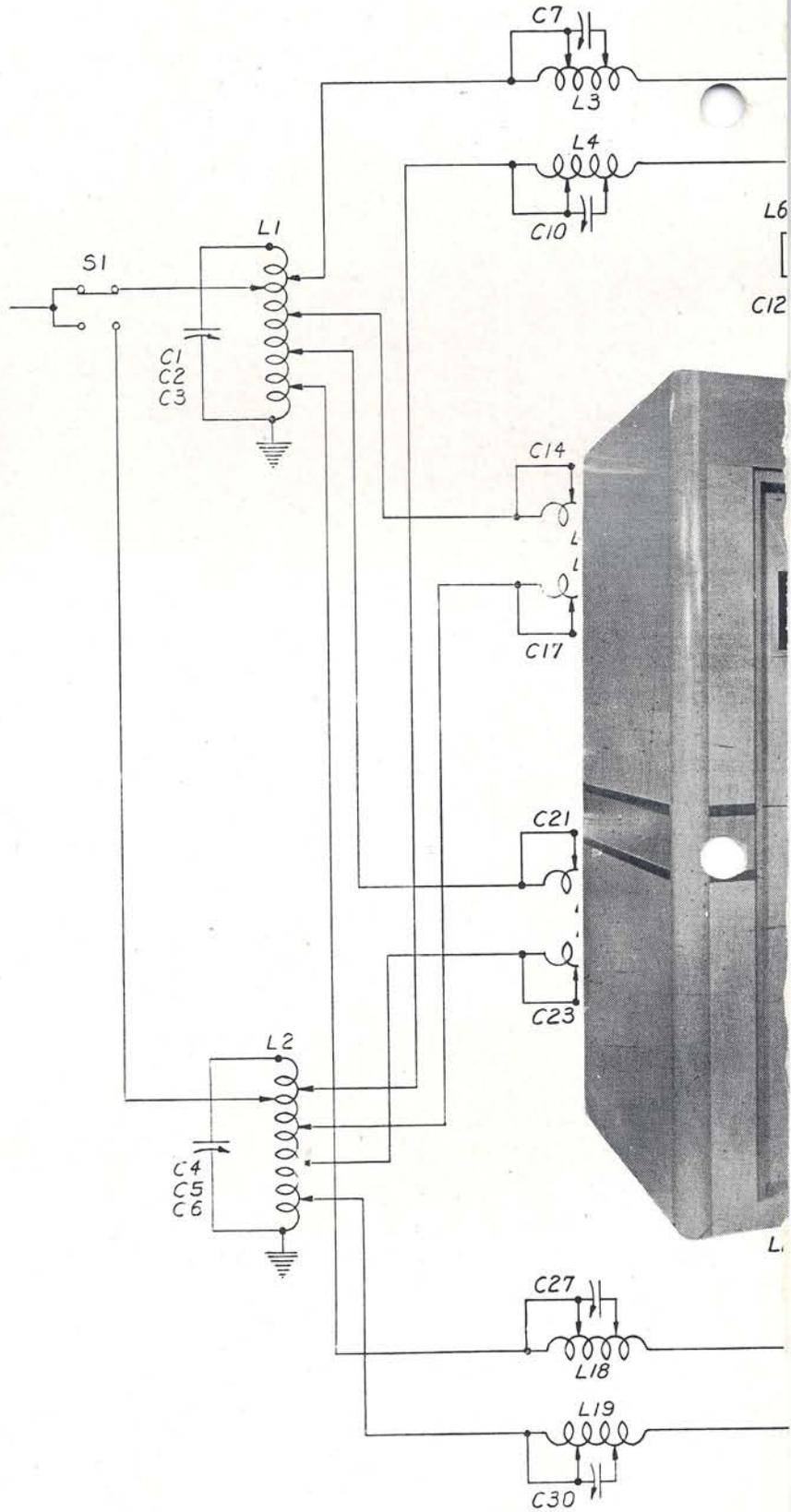
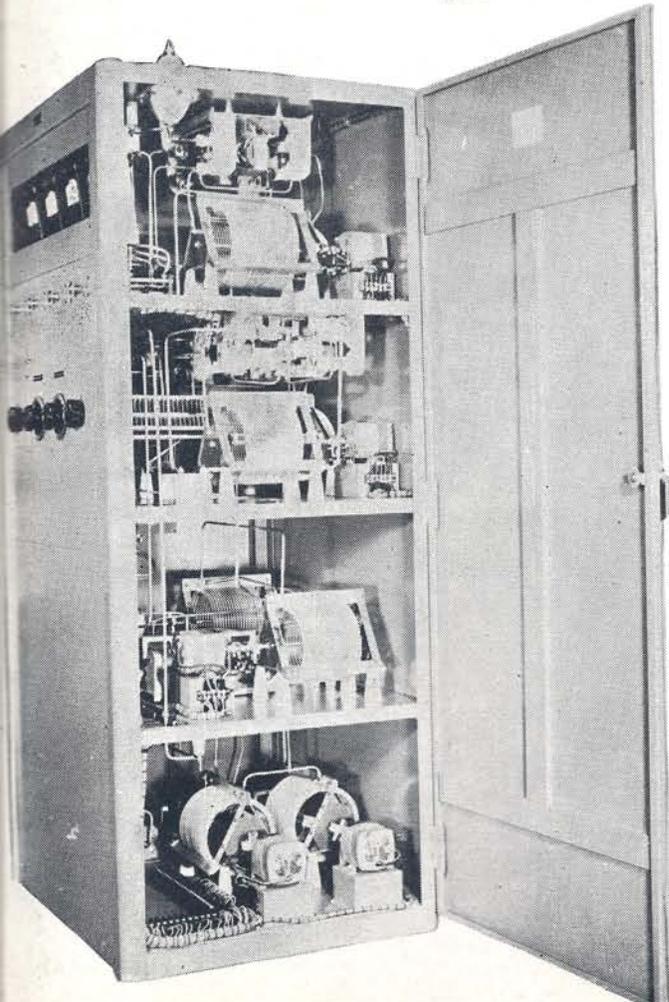
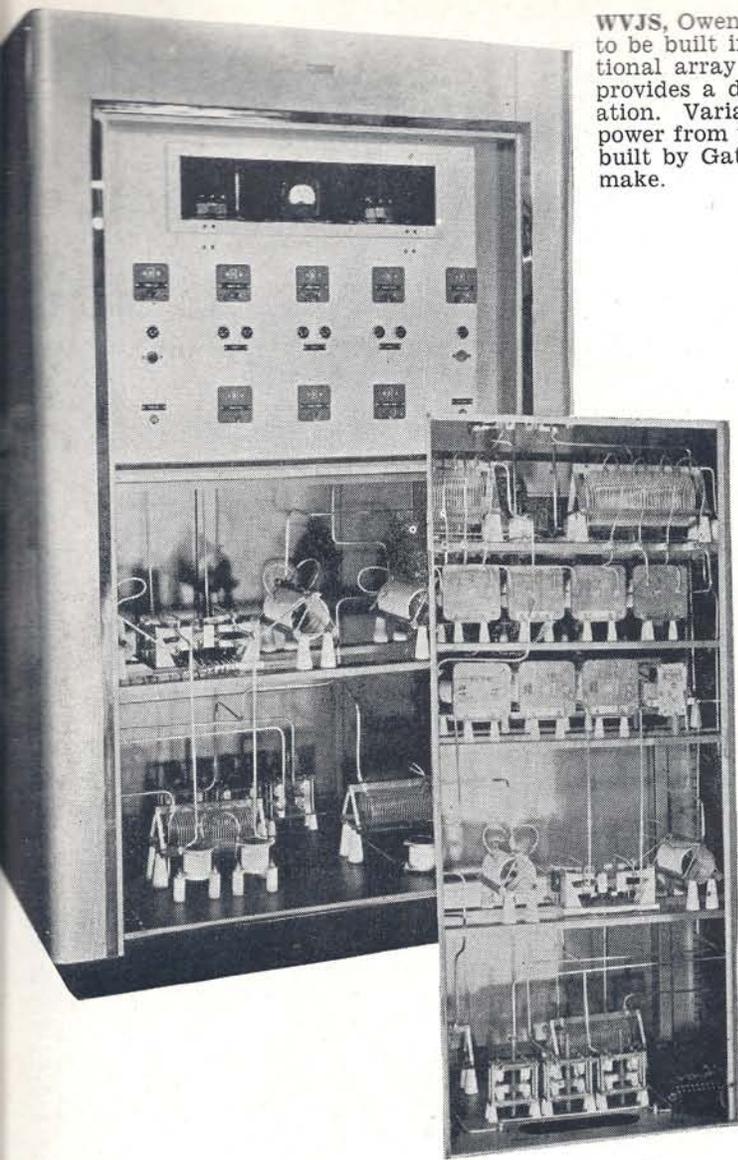
Effective January 1, Quincy is to have air service by two national airlines from the new municipal airport. This airport is a class 4, supposedly one of the sixth largest in these United States. Schedule information will be supplied in a later issue. Those customers using their own planes or private service have the choice of three airfields in this immediate vicinity. The newest, Doc's AirPark on the Missouri side of the Mississippi River is only three miles from the Gates plant.

Christmas Seals



. . . Your Protection
Against Tuberculosis

WVJS, Owensboro, Ky., has one of the neatest phasors to be built in recent months. The three tower directional array included towers of unequal heights, and provides a different pattern for day and night operation. Variable inductors control both the phase and power from the front panel. The cabinet was specially built by Gates to match a transmitter of competitive make.



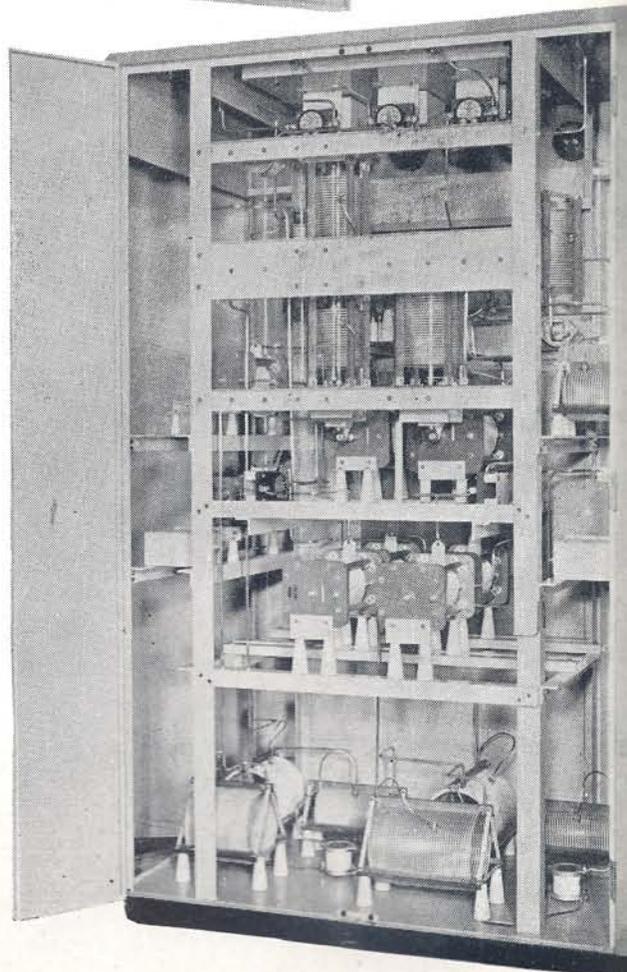
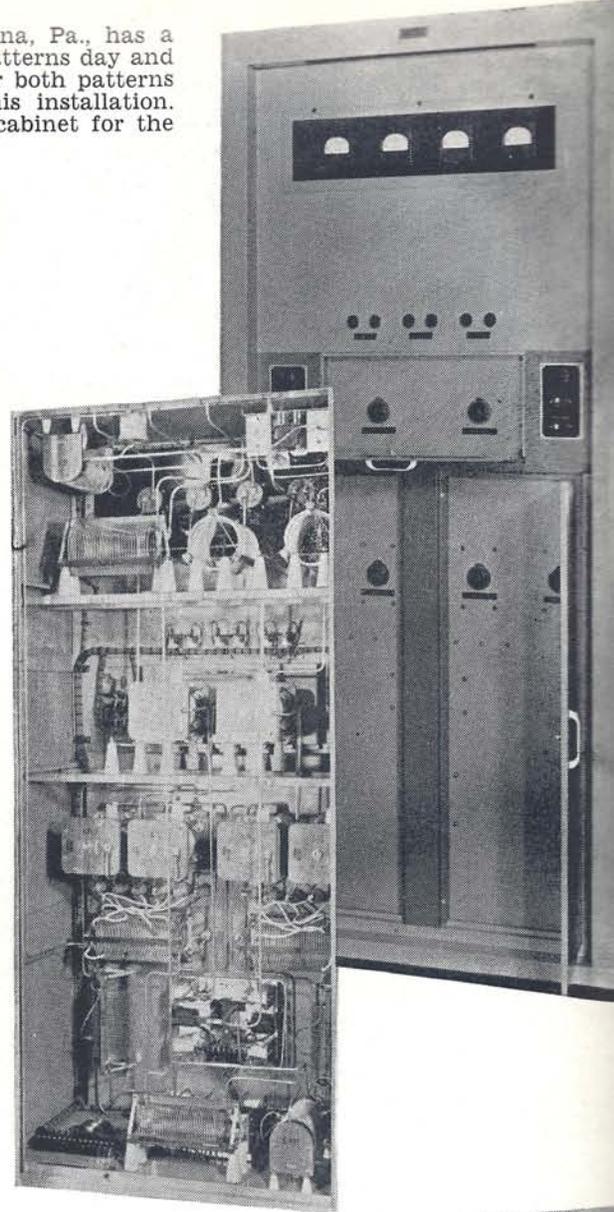
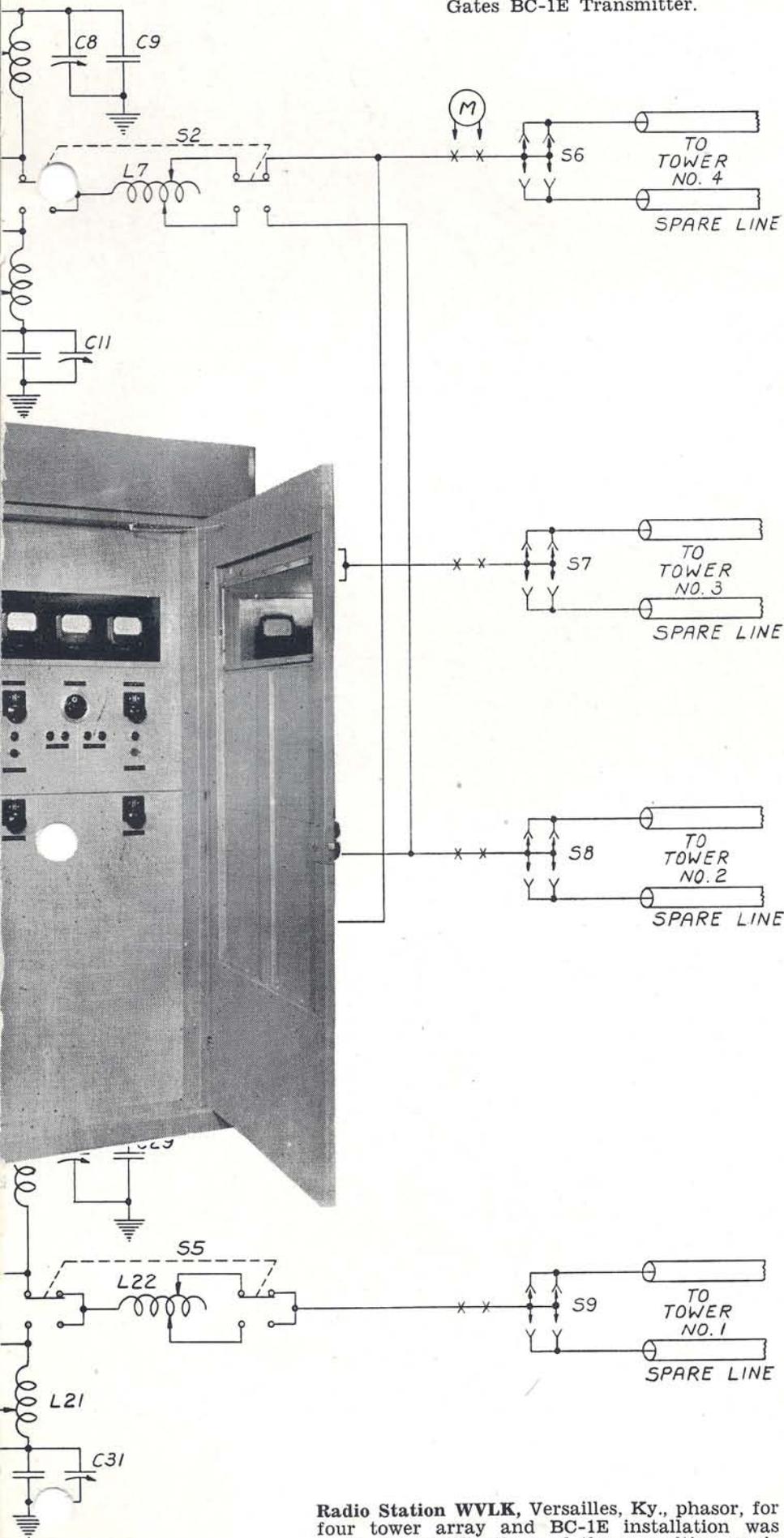
WCAX, Burlington, Vermont. The phasing cabinet was installed at the center tower in this three tower array. Critical coils are all motor driven and can be controlled from either the center tower or the transmitter building. The control panel at the transmitter building incorporated supervisory lights indicating proper operation of all pattern change relays. Meters in phasing cabinet and termination units are all protected by make-before-break switches.

WPRP, Ponce, Puerto Rico. Specially built unit to match transmitter. Gas filled unit for sub-tropical climate. Directional operation. Proving proof of pe

C32

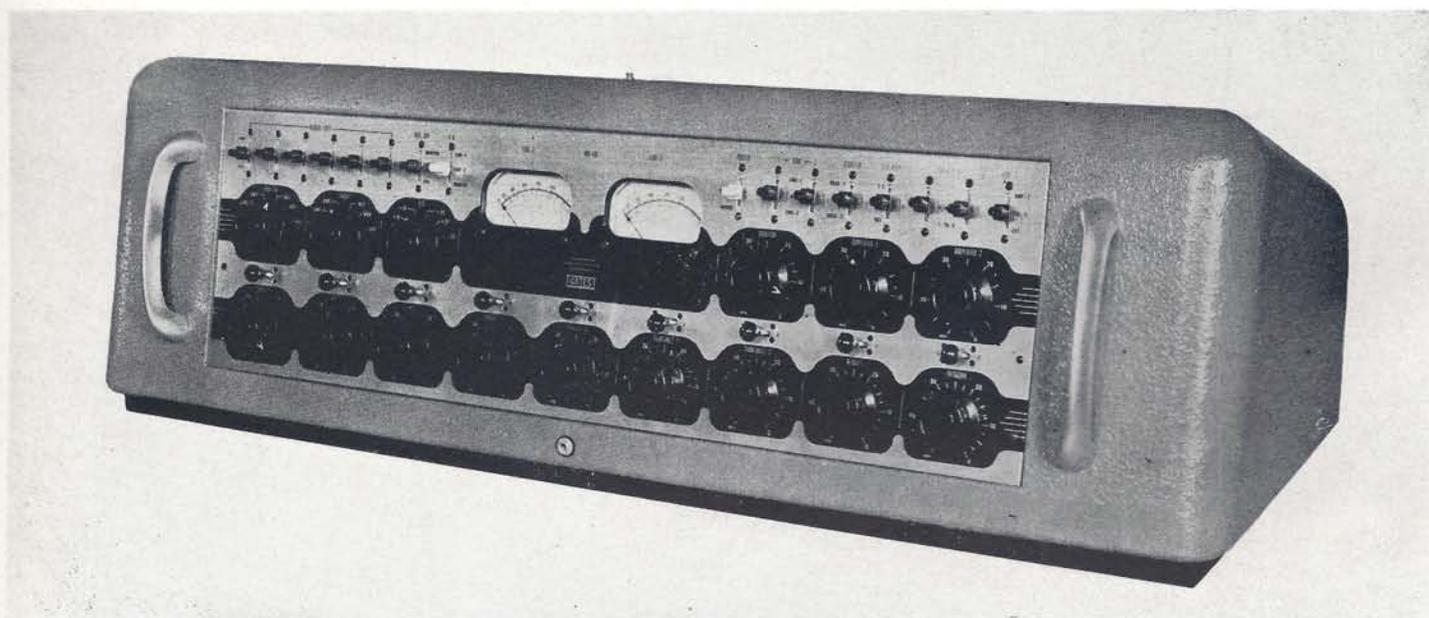
Phasors

General Broadcasting Company, Altoona, Pa., has a three tower array and uses different patterns day and night. Variable power adjustments for both patterns and open wire lines were used in this installation. The unit was enclosed in a matching cabinet for the Gates BC-1E Transmitter.



Radio Station WVLK, Versailles, Ky., phasor, for four tower array and BC-1E installation was built per specifications of the consulting engineer in conjunction with careful co-ordination of our phasing engineer. Note the numerous inductors and capacitors necessary for this unit. Ganged variable coils make continuous phase adjustment possible. Continuously variable power adjustments were also incorporated.

Rico, is using this spec-match the Gates BC-5 led capacitors for use in were integral parts. Non- was included for facili-ormance measurements.



Gates SA Audio Equipment

Gates new line of SA Audio Equipment is now in production. Many of you who were fortunate enough to attend the NAB Convention will, no doubt, remember the new line of amplifiers. A dual channel console, all types of rack mounting amplifiers, power supplies, patch panels and switch and fuse panels are included in these new units. Complete information on each is available in individual catalogue bulletins.

An entirely new idea has been achieved in the design of this "all accessible" unit. This feature was made possible by use of a cast aluminum housing with full door, opened by means of a thumbscrew on the front. Wiring is compact, neat and easy to service.

These units will mount in any cabinet made for standard 19-inch rack equipment. They are above comparison with any other line of studio equipment in appearance, convenience and mechanical advancement. Make your studio installations the best with the new SA line.

SA-50 Console

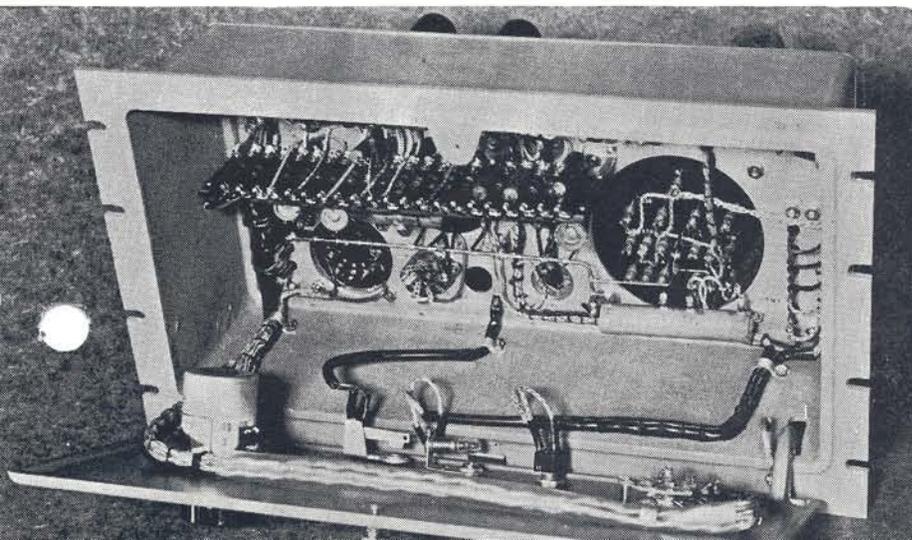
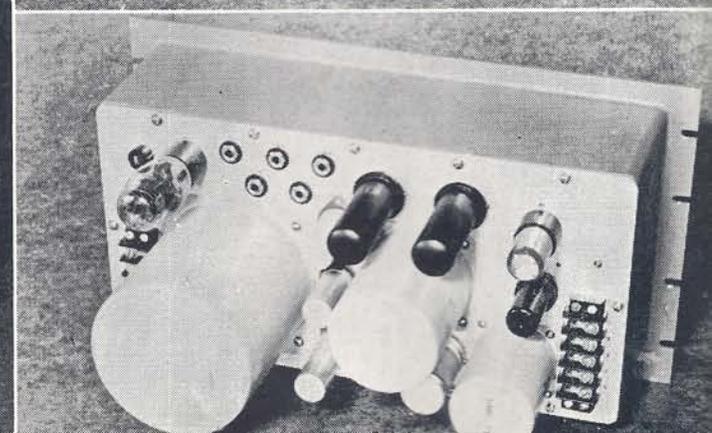
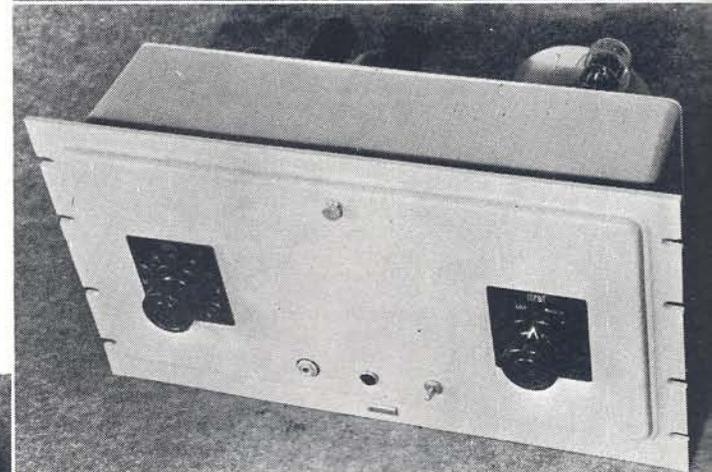
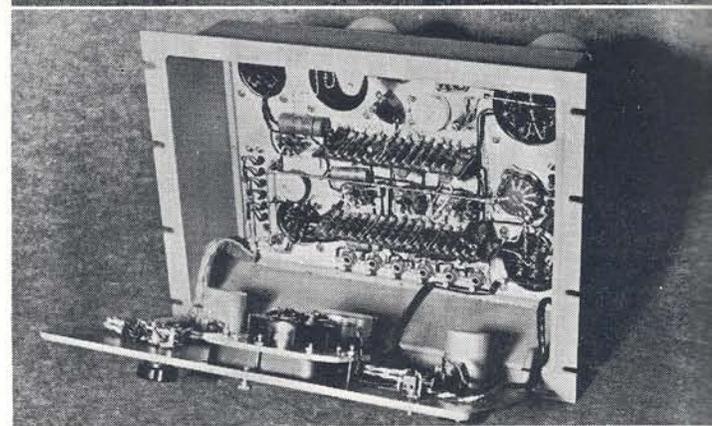
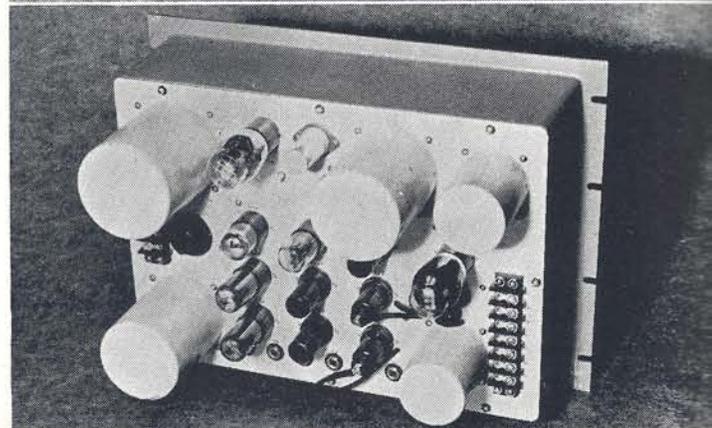
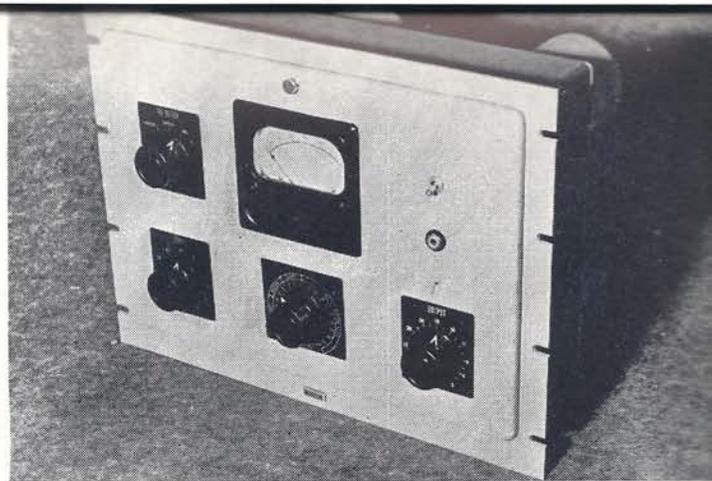
This is a brand new console featuring two program channel operation with monitoring for either channel, high level mixing, over-ride and consecutive cueing on remote lines, and a host of other features. The SA-50 is particularly designed for use in FM and AM stations and will provide you with the most versatility in any application.

SA-38 Limiting Amplifier

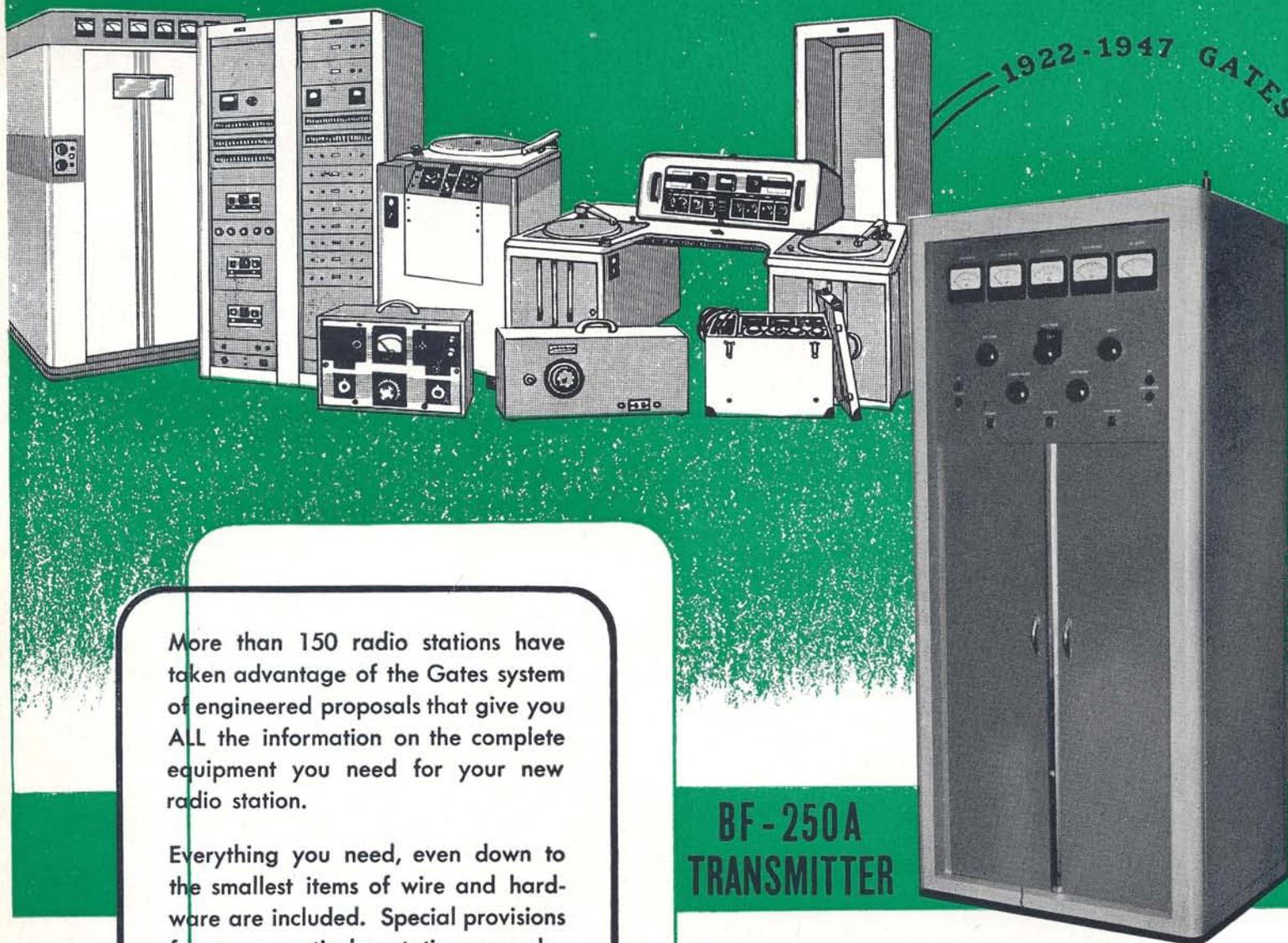
The SA-38 Limiting Amplifier uses a three stage push-pull circuit with compression action applied to the first stage developed through an electronic circuit. It features extremely fast attack and a wide choice of release time. High amounts of compression can be used without encountering more than 1% distortion. All DC voltages are electronically controlled within very low limits which stabilizes the operation of the SA-38.

SA-10 Monitoring Amplifier

The SA-10 Monitoring Amplifier is built in the SA-3 cast aluminum housing to fit 10 $\frac{1}{2}$ inch panel space. This amplifier is designed for general purpose applications such as monitoring, recording, auditioning, or with a suitable pad in the output will feed a program line. Heavy duty parts specially designed to meet the high standards of the radio industry are used throughout.



HOW TO HAVE A Complete Radio Station



More than 150 radio stations have taken advantage of the Gates system of engineered proposals that give you ALL the information on the complete equipment you need for your new radio station.

Everything you need, even down to the smallest items of wire and hardware are included. Special provisions for your particular station are also taken into consideration. Whatever your requirements are,—let us know.

BF-250A TRANSMITTER

BRANCHES—

Eastern Sales Office:
13th and E Street, N. W., Washington, D. C.

Western Sales Office:
1350 N. Highland Ave., Hollywood 28, Calif.

Canadian Sales:
Canadian Marconi Co., Montreal

International distribution overseas by
Westinghouse Electric International Company
40 Wall Street, New York 5, N. Y.

GATES

The transmitter shown at the right is the Model BF-250A for broadcasting FM. This model is the basic unit for all higher powers. Your inquiry concerning the complete line of Gates FM equipment will be promptly answered, giving complete information.

FOR EVERY
BROADCAST NEED—
DEPEND ON GATES—
ALL WAYS

GATES RADIO COMPANY
QUINCY, ILLINOIS, U. S. A.

Merry Christmas!

GATES

AS WE GET IT WE GIVE IT TO YOU

RADIO CLASSES

Sometime after the first of the year classes in radio and electronics will be conducted by Fred Grimwood and the various engineers. The groups will be segregated according to their knowledge of radio.

There will also be classes in machine operation and sheet metal work if wanted. Definite time will be announced later.

* * *

WATCH FOR YOUR COPY OF THE O. I. A. G.

* * *

Hateful to me as the gates of hell,
Is he who, hiding one thing in his heart,
Utters another.

—Homer.

* * *

Leadership is the ability to get others to do what you want them to do and do it willingly.

* * *

WHAT WHAT WHERE WHO—WHY.

OUR AIM FOR '48

Our ambition is to make our company:

- A better place to work.
- A better neighbor in our community.
- A better company to sell to.
- A better company to buy from.

Each of us can help some day every way.

P. S. Gates.

Safety plays an important part in the achievement of these aims.

* * *

November 17 Gates personnel enjoyed a Thanksgiving dance and party in the gym of the YMCA. Games, stunts, dancing and swimming were enjoyed, after which a delicious ham supper was served in one of the dining rooms. The affair was in charge of Gordon Hinkle who was assisted by Clare Heald.

* * *

ONLY FOOLS SAY "It CAN'T BE DONE" and "I can't do it."

WELCOME



With the advent of the New Year extensive plans are being formulated for a bigger and better Gates year. Sales, the most important must be increased. To do this more complete coverage of all territories is planned. To accomplish our aim two new salesmen, Mr. Stanley Whitman and Mr. Harold Arment have been hired. Although working out of Quincy office they will retain their respective residence in Waterloo, Iowa and Tulsa, Oklahoma.

Mr. Whitman has been connected with radio since he started as an amateur in 1927. Recently he has been connected with stations at Waterloo, Iowa and Yankton, S. D.

Mr. Arment has been a semi-consulting engineer and worked in the radio field since the early '30's. His residence in Tulsa will facilitate easy access to those Southwestern states now seldom covered.

* * *

Two new employees in the factory are Charles Frese in the machine shop and Earl Schroeder in the Turnable division.

In the office Agnes Westermeyer has taken over some of the duties of the accounting department.

Ora Hadsell, long time Quincy resident, is now in the photocopy and sales promotion department.

* * *

Pippenger has brokedown and proceeded to get himself one of those new "Studees," only to be different he has a grey job.

* * *

WISDOM

He who knows not and knows not he knows not, He is a fool.....shun him.
He who knows not and knows he knows not, He is simple.....Teach him.
He who knows and knows not he knows..... He is blind.....lead him.
He who knows and knows he knows, He is wise.....follow him.

—Anon.

CIGARS AND CANDY



Mr. and Mrs. Rolland Klapprott - a baby girl, Linda Sue, born October 29 at St. Mary's hospital.

Mr. and Mrs. Robert Flotkoetter - a baby girl, Judith Ann born November 15, St. Mary's.

* * *

BRAIN

WILL

BODY FEELINGS

Everyone consists of four elements: Body—Brain—Will—Feelings.

To have a harmonious nature these four must be in order. If you put "Will" on the top you have a Kaiser. If you put "Body" on top you have a brute: if you put "Feelings" on top you have a Fool. "Brain" at the top is the mark of sanity as well as success. Of course you must have a strong body to keep alive, for the body is the energy tank. A man may either stand or fall by his feelings. We must control them, not be destroyed by them. They are like five good servants but a bad master. If "Will" is on top man is obstinate. He may become powerful but still have many enemies and sometimes end up a failure.

"Brain" is the vital force. The part that thinks and the part that remembers. Give the world the best you have and the best will come back to you. The best results in office, factory and on the battlefield can usually be traced to those whose enthusiasm inspires others all along the line.

* * *

A sight to see these last few days is Fuzz Klapprott on hands and knees in the 'Pekinese' dog house—one of these medium size dog houses. P. S. Nibs gave them the name.... You have to get on your knees to peek in. "Peek in Knees."

* * *

Courtesy, Consideration and Loyalty—Cooperation.

ABSENT MINDED? ? ? ?

We have heard of these people but would you believe it they even work here.....Harold Laws absentmindedly promised his wife a piano last summer ? ? ? ?



Ruth Howard put one of the cups on her finger so she would remember to bring it down and put it away.....she discovered it again when she was up the hill, still carrying it hooked to her finger Absent? ? ? ? ?

Huskie was looking for rings and next thing she knew she had walked out of the jewelry store with the whole ring tray under her arm.....absentminded? ? ? ? Were they diamonds? ?

The sheet metal boys who go coon hunting and forget to take the dog along. Absentminded? ? ? ? ?

Fred Damm's trouble remembering where HE puts his pipe when he's working down in the phasing department. Absentminded? ? ?

The sparkle on the Xmas tree this year is nothing compared to the sparkler Herman gave May. But she has to wait till Leap Year before He'll give in—or does she?

* * *



The basketball team comprised of personnel from the various departments in the plant has been very busy with practice for the coming season. December 3rd the Gates "Hot Shots" beat the Adams Tire team in an overtime game 24 to 22.

The second game in the league was played December 17 with Gates the loser 31—30.

* * *

Glad to hear that Elva Watts who is out on sick leave is now recuperating at home and hopes to be out in another month or two.

* * *

Dorothy Calhoun has another new "brother."—Also a new diamond ring.

THE NIGHT AFTER CHRISTMAS

"Twas the night after Christmas, and boy, what a house,
I felt like the devil and so did the spouse
The eggnog and turkey and candy were swell,
And ten hours later they sure gave me H.....I.

The stockings weren't hung by the chimney with care—
The darn things were sprawled on the back of a chair,
The children were nestled all snug in their bed,
But I had a cake of ice on my head.

And when at last I dozed off in a nap,
The ice woke me up when it fell in my lap.
Then for some unknown reason I wanted a drink
So I started in feeling my way to the sink.

I got along fine until I stepped on the cat,
I don't recall just what happened after that.
When I came to, the house was all flooded with light,
Although under the table, I was high as a kite.

While visions of sugarplums danced in my head
I somehow got up and then back to bed.
Then what to my wandering mind should appear
But a miniature sleigh and eight tiny reindeer.

Then the sleigh seemed to change to a red fire truck
And each reindeer turned into a bleary-eyed buck
I knew in a moment it must be old Nick—
I tried to cry out, but my tongue was too thick.

Then the old fellow whistled and shouted with glee,
While each buck pawed the earth and looked daggers at me.
Then he called them by name and made me shudder,
When I heard them I felt like a ship minus rudder.

"Now, Eggnog! Gin! and Brandy!
Now Fruit Cake! Cold Turkey! Gin Rickey and Candy!
To the top of his dome, the the top of his skull,
Now wack away, crack away, with thumps that are dull!"

Then in a twinkling I felt on my roof
The prancing and pawing of each cloven hoof.
How long this went on I am sure I can't say
Tho' it seemed an eternity, plus a long day.

But finally the night after Christmas had passed,
And I found that I could really think straight at last.
So I thought of the New Year a few days away,
And I've made me a vow that no tempter can sway.

I'm sticking to water, don't even want ice,
For there's nothing as tasty or nothing as nice,
The night after New Year may bother some guys
But I've learned my lesson, and, brother, I'm wise.

You can have your rich victuals, and liquor that's red,
But what goes to my stomach won't go to my head.
So a big Happy New Year to you and to all;
I'm back on the wagon, and hope I don't fall!



Jingle Bells, Jingle Bells
Jingle all the way
Oh, what fun "twoud" be to have
Money left on Xmas Day.

Dear Santa:

Will you please try to find some of the things we have written down below. It will make these people most happy:

Grimwood—the record "She's Too Fat For Me."

Gladys—a bow tie that squirts water at the first person who unties her little bows.

John Anderson—Another pair of spectacles for the "family."

Harold Laws—A piano—need we say more.

Bob Schutte—a little income tax exemption.

Ivan Ryan—a toupee.

Lindsay—Something on the BC5 line besides Steel Frames to play with.

Shade—a secretarial chair with thermostatic heat control for back and seat to warm weary body on cold mornings.

Fay—a black chiffon JOB like that worn by the Calendar gal in the engineers' room.

Bill Parker—a ground level FM Antenna.

Nibs—a devise to awaken him in morning. to feed him breakfast, comb his hair and to stand out on the corner in front of bus early every day.

Gerweler—Hm! Hm! Hm m m m. . .

Vandenboom—a reserved parking spot beside the stockroom door for his car.

Bruening—A manual on how to handle "stock problems."

Dusty Rhodes—a crew of men to move him when his house is ready.

Hinkle—a drape for his calendar.

Willie and Carl—a suit of red flannels, apiece to keep them warm in the office.

Sharpe—a stay at home outfit to match her boyfriends.....Cozy HUH? ? ? ?

* * *

The gals on the second floor assembly line took another TB test per Dr. Miller's recommendations after the six week period had expired.

* * *

Howard Decker plans on spending the holidays in Arkansas where his wife and child are now staying with her folks.

* * *

Clint Carter's two free throws in one basket ball game cost Wally Kabrick \$1.00 since he had bet Clint and Johnnie Anderson fifty cents apiece Gates would lose. Those shots won the game.

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We are passing these on for your information:

SOCIALISM: If you have two cows, you give one to your neighbor and keep one for yourself.

COMMUNISM: If you have two cows, the government takes them and gives you a little milk each day.

FASCISM: If you have two cows, you keep them but give the milk to the government. The government sells the milk to you.

NAZISM: If you have two cows, the government takes them from you and shoots you.

CAPITALISM: If you have two cows, you sell one and buy a bull.