

RCA SERVICE COMPANY

News

October, 1949



Published by and for members of RCA Service Co., Inc.
A Radio Corporation of America Subsidiary

The 'Voice with a Smile' Wins Friends

Telephone Courtesy Plays Major Role in Success of Our Business

Some day the Aladdins of science may rub their magic lamps and produce a telephone that will let us see as well as hear those we talk with over the wire.

Until this miracle is performed, the impressions we make on others while telephoning—and the impressions they make on us—must depend upon our voices and the way we speak.

An important part of our business is transacted over the telephone. The way in which these telephone contacts are handled plays no small part in the success of that business. Everyone who makes or receives telephone calls has an opportunity—and an obligation—to make friends for us.

Telephone courtesy is easily defined—it's simply this: prompt attention, thoughtful consideration and effective action on all calls. Telephone courtesy is a simple variation of the Golden Rule: "Telephone as you would be telephoned to."

Answer all telephone calls promptly. Nothing is more irritating to the other fellow than waiting on the line while the telephone rings unanswered.

Handle the call yourself if at all possible. Don't transfer the customer if you can get the answer. If you must keep him waiting, take his telephone number and tell him you will call him back . . . just be sure to do so as soon as possible.



Betty Moore, of the Theatre Service section, although herself a non-smoker, obligingly illustrates how not to carry on a telephone conversation while smoking

Don't be a "Mr. Weary"; don't whisper, don't yawn in the customer's ear. Will he buy that article or idea you're trying to sell? Probably not! A dreary monotone makes you sound disinterested. He's likely to feel the same way about you.

Slow down when talking on the telephone. If you don't allyourwordsturntogetherlikethisandnobodycantellwhatyou'resayinghalftthetime.

Don't imitate "Little Squaw Weed in the Mouth"; don't let a cigarette interfere with your telephone conversation. Some day somebody's going to think that you've been bound and gagged by a burglar and are calling for help. And how are you going to explain that when the police dash in?

Sometimes when you answer another person's telephone, it will be desirable to find out who's calling. The best way to do this without appearing inquisitive, and to make it clear that the information is for the other person, is to ask a question like: "May I tell him who is calling?" "May I take a message for him please?" "Would you like to have him call you?"

Be courteous in all your telephone contacts. Don't interrupt. Don't argue. Don't be impatient. Listen attentively so that the customer will not have to repeat himself.

When you have finished your conversation, say "goodbye" or "thank you," then replace the receiver gently. Slamming down the receiver is like slamming the door in your customer's face.

Summarily, it pays to have a good telephone personality. Whether you are an executive, a secretary, a technician, a switchboard attendant, success depends largely upon how you treat customers, make friends, create good will. And a telephone personality plays just as important a role as a face to face personality.



Vincent Giacoboni, of Purchasing, shows how "Mr. Weary" carries on his business. Vincent merely posed for this illustration. He does not do this in real life

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Rate increases, changes of address, and terminations of employment, complicate the payroll picture. Shown checking these increments carefully are Theodosia Mines, left, and Dorothy Gross

Pay to the Order of YOU

Simplicity of Payroll Operation May Be a Thing of the Past But Those Checks are Still on Time

It wasn't too many years ago that when our fathers or grandfathers completed a week's work they made their way to the pay shack and tarried not more than a few minutes while the paymaster counted out the exact amount due, without a single deduction.

The simplicity of yesteryear's payroll operation is, for the most part, a thing of the past. It may be found in the payment for domestic work and some professional services, but where even a small group of workers are involved that operation today entails scores of specifically-trained personnel, and a number of costly, intricate machines.

It does not suffice, in 1949, for the paymaster to merely open a bundle of cash each Friday and begin paying off his charges at a familiar flat rate. Rather he is beset today with voluminous deductions, varying expenses, and various tax laws.

The payroll department of an organization as large as RCA Service Company employs twenty-four persons, each of whom spends an entire work week in the complex and all-important business of paying your wages.

It is far from easy to describe the Payroll section's entire routine and function in these few lines. Suffice to give just an outline of its duties. An outline which may help those not connected with the intricate payment system to better understand the problems involved.

Upon receipt of a recently-hired employee's employment file from the Personnel Division, a master card is prepared by the Payroll section, and International Business Machine cards are punched. These cards are tant-

amount to placing the employee on the payroll. They contain complete payroll information.

From these IBM cards the Payroll section registers and deducts such items as taxes, group insurance, auto insurance, employee purchase, Blue Cross, and the issuance of United States Savings Bonds.



Paul Ziegler, manager of the Payroll department, left, and Frank Wright, check for accuracy one of the many Time and Expense reports processed during each week

From these IBM cards your check is written and signed.

Deductions and base pay are not the only items in the average pay check at RCA Service Company, however. There is the all-important Time and Expense report.

The Payroll section receives this report from supervisors weekly. Overtime and expenses, when paid, are explained on your check stub in the right hand corner, so that you might know for what report you are being reimbursed.

Several members of the Payroll section are involved exclusively in the processing of the thousands of expense reports received each week. They peruse a myriad of figures daily in order to reimburse you as soon as possible.

Accounting for cash advances, forwarding of advance checks, and the applying of expenses against advances, add complications to the reimbursing procedure.

Rate increases, changes of address, and terminations of employment are other factors with which the Payroll section must deal. In addition, a score of reports must be completed regularly to meet the exacting needs of tax and corporation laws as necessary forms must be completed periodically and forwarded to Insurance companies, hospitalization plan officials, and the United States Treasury.

Thus it is that the Payroll section's work is never done. That work, a far cry from the days of the lone paymaster and the Friday pay shack, still accomplishes the same fundamental aim—it provides you with a week's wages.

Those Magical Words May Clinch That Sale

Descriptive Catch-Phrases Can Help Sell RCA Service

Many years ago, when Elmer Wheeler, noted author and authority on tested selling practices, was a lad in upstate New York, he would set up a box each Sunday in front of his grandfather's farm, with an accompanying sign reading, EGGS, @20 CHEAP.

He deliberately put the cent mark in the wrong place so that the city folks would think he was just a farm boy and didn't know fancy city prices.

Sure enough, cars driving along at the great speed of 30 miles an hour, and with the screech of two-wheel brakes, would hump and clatter to a magnificent stop.

By the time the dust-splattered head of the family made his way to Wheeler's stand, his frau would invariably yell out, "Ask the boy if the eggs are fresh!"

Now, according to Wheeler, he could have said "One-day old eggs, lady," or some other trite statement. But he knew the city store folks could legitimately use the same psychology.

So, looking the woman smack in the eye, he would say, "Would you mind waiting for a moment until I get them FRESH from the hen house?" The woman didn't mind waiting for hen house fresh eggs.

Wheeler would then dash into the hen house, and at what he thought was the psychological moment would proudly reappear with the eggs in his hands. Did he have to tell the woman how old the eggs were? Why most women thought the eggs had just been laid for them personally. Five-second old eggs!

Now Wheeler, whose lectures were heard by more than one million persons last year, uses this story to illustrate his contention that everyone at times, whatever his occupation, uses magical words or methods to take them out of a tight social pinch, or a tough sales argument. We must agree whole-heartedly.

These magical words are hidden in every piece of merchandise — they are hidden in every service that you can render.

"This car can do eighty miles on a gallon of gas," says the auto salesman, thus ensuring a sale.

Ray Norton, Philadelphia Theatre Service engineer, shows the man who is affected most — the projectionist — what an RCA Service Contract can do for the owner of his theatre



Sam Parker, television serviceman from the Bayonne branch, used tested selling methods in promoting RCA service to the customer with whom he is shown completing a renewal contract

"This soap floats," says the grocer, thus reducing his stock of one particular brand.

It's the saving on a round-trip ticket, the mildness of a cigarette, the crunch of a cracker.

It's the sentiment on a greeting card, not the fancy paper it is written on. It's the protection of a service contract, not the impressive looking document handed the customer.

Yes, in the service business, we too can make magical words sell our wares. There are no tricks involved, no shenanigans pulled. These magical words are merely your opening, albeit most important phrase.

According to Wheeler, "your first ten words are more important than your next 10,000. In fact," he goes on, "if your first ten words aren't the right words, you won't have a chance to use the next 10,000."

This article cannot outline a sales talk for you, whether you be theatre service engineer, television renewal salesman, or TV serviceman. That talk depends largely upon the situation and resistance.

Suffice to remind you who have occasion to sell or resell our service to customers, that the magical words which in short tell the features of our contracts, are the words which should and must receive your most rapt attention in order to eventually receive the customer's most undivided attention.

There are many selling points for RCA service. They can readily be relegated to short phrases, "magical words."

An RCA Service contract provides protection for your equipment, your set.

An RCA Service contract provides you with peace of mind.

An RCA Service contract is the most economical in the long run.

You might think of others, to cover your specific service, but whatever they be, they must be short, powerful, and capable of arousing interest.

Of course, once these words have "opened sesame" for you, feel free to elucidate. Get in there and tell your customer why the contract offers protection, why it provides peace of mind, why it is the most economical in the long run, etc.

This main body of your sales talk should not be haphazard. It should be well planned. Just as you would benefit by remembering those magical words and using them over and over again, so would you profit by preparing your entire selling approach.

In future articles we hope to review the various selling approaches, and to offer hints on closing that sale. Between issues, however, when attempting to renew or sell a contract, remember the keynotes of RCA Service. Use these keynotes as potent factors in your sales talk — as "magical words."

They Are Working On the Railroad

M. W. Geiskieng, theatre service engineer from Denver, and his father, W. A. Geiskieng, engineer for more than forty-five years, have joined electronic skill and railroad experience in inventing a defective wheel detector for railroads.

The invention, which recently won for the Geiskiengs a top award of \$500 at the second annual Rocky Mountain Inventor's Congress at Pueblo, Colorado, is purported by its inventors to eliminate the two major causes of costly and disastrous train wrecks.

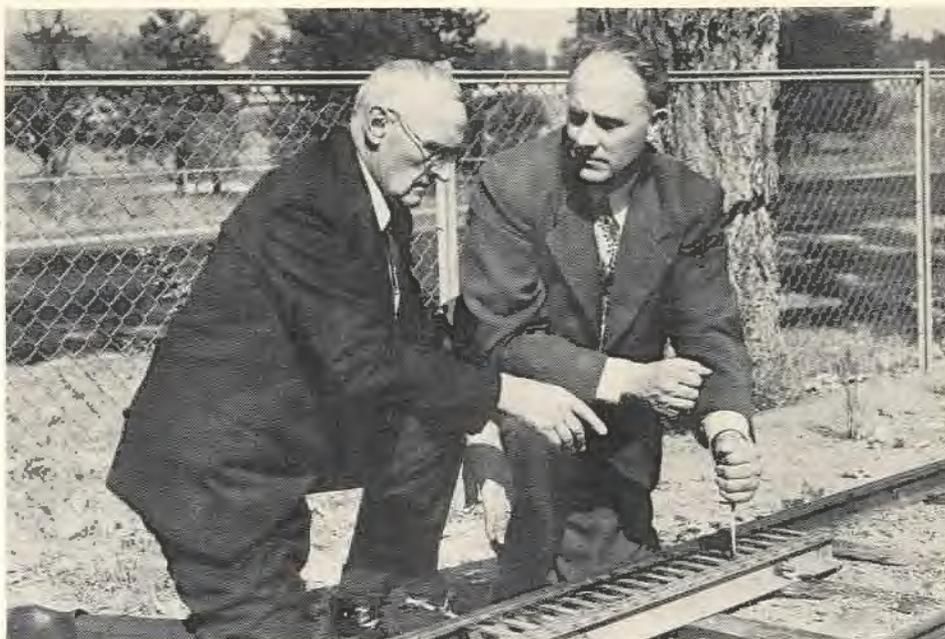
According to the elder Geiskieng, so many accidents happen from defective railroad wheels "that something just had to be done about it. This invention will serve the purpose.

"Steel manufacturers tell you wheels do not break, but we railroad men know they do."

Operation of the device is simple. When a train with a defective wheel passes over it, a red light set by the track warns the engineer that his train is in danger. It has two separate parts. One part warns of a broken flange, while the other warns of a broken tread or wheel that is out of gauge.

The tread is the part that rides on the track. The flange is the flared part that rides inside the track. When a wheel with a defective flange passes over the device, a red light goes on ahead of the train because contact with an electric recorder is made.

The device to detect broken wheel treads raises the outer part of the wheels about a quarter inch for three feet along the rail. If a



W. A. Geiskieng, left, and his son, M. W. Geiskieng, Theatre Service engineer, are shown discussing adjustments on one unit of the defective wheel detector for railroads for which they received top award at recent inventor's congress

wheel has a broken tread or is out of gauge, it will contact an electrical unit on the main part of the track, which lights a warning signal ahead of the train.

One of the devices has been installed on the midget train track at a Denver amusement park. Twice it has warned the engineer that the train's wheels were slightly loose and out of gauge.

According to the Geiskiengs, the invention will detect:

A flange broken out for three inches or

more and running to within three-quarter inch of the tread.

A broken tread six inches or longer running to within two inches of the flange.

A flat place on a wheel four inches or more in length.

A loose wheel or tire when a half to three-quarter inches out of gauge.

The invention, in which the Geiskiengs are attempting to interest railroad officials, is fully covered by a United States patent. A Canadian patent is pending.

This Will Shock You!

During the past two weeks, two of our employees were shocked, in more ways than one, when electric drills shorted causing them to fall off ladders.

These fellows, like most of us, were sure that low voltage is harmless.

The possibility of death or injury from electric shock has been proven not dependent entirely upon the voltage of the power supply. Rather is it dependent upon the current and the part of the body through which it passes. The current, in turn, is dependent upon the voltage of the circuit, the conductivity of the contacts, and the bodily resistance of the individual involved.

Circuits of voltages of 110 and lower can be very dangerous under conditions favorable to electrical shock. Under exceptional conditions, when the contacts are lowest in resistance, involving large areas of wet skin, severe shock may result from potentials as low as twenty-five volts, especially where the time of contact is prolonged.

An involuntary muscular contraction follows instantly when a person makes contact with a circuit. If this contraction results in freeing the person from the circuit, the brief interval of contact will result more likely in nervous shock than in death. If the contraction results in closing the hand more tightly on the

live wire or object, however, or it throws the person on a wet surface or against a grounded metallic object in such a position as to remain in contact with the wire or object, he will be unable to save himself.



RCA Service Company technicians, servicemen, engineers; any employee who might have occasion at one time or other to use hand tools should be fully aware that the voltage needed to power those tools, as low as it might be, can be deadly. If the following basic rules are followed, and they should be followed, possibilities of shock, injury, or death from portable electric tools will be greatly reduced.

Dry your hands; make certain you're not in a puddle or on a wet surface; stay off of metal bases, whenever possible.

Keep tools in good condition.

Use only approved and inspected extension cords.

Do not patch damaged cords. Shorten the cords or get a new one.

Protect the cord against contact with oil, hot surfaces, chemicals, and sharp edges to eliminate damage to the insulation motor.

Ground all portable electric tools, such as drills, and electric hammers.

If grounding connection is made to a water line which includes a water meter, make sure of a positive ground. Some water meters are good insulators.

A grounding connection should never be made to a gas or fuel pipe.

In short, be careful not careless! Use the electric tools in your possession to aid you, not to kill you!

Employee Discount On TV Contract

To make certain that those employees of RCA who have an RCA Victor television receiver are enthusiastic about the instrument, a discount plan covering the initial and the renewal forms of RCA Victor Television Owner Contracts was put into effect October 1.

As of that date, all employees of Radio Corporation of America and its subsidiaries, are entitled to a 10% discount from the standard rates for contracts purchased covering their own receivers.

The discount plan, offered at a time when RCA television receivers are enjoying their greatest public acceptance, is a major step in the Company's program to make its products and services available to employees at the lowest possible cost, and to make its employees further cognizant of RCA's superior workmanship and service.

Any initial contract purchased with an RCA Victor instrument through Employee Sales will automatically be subject to this 10% discount.

All other contract orders must be accompanied by the prescribed discount authorization form to qualify for the 10% discount rate. The form must be properly filled out and approved by the authorized person in the purchaser's organization. In the case of RCA or one of its subsidiaries, this authorized person will be a member of its Personnel Department.

The form should then be mailed with the installation request or renewal application and appropriate remittance to the branch which serves the employee.



D. H. KUNSMAN

D. H. Kunsman Appointed Assistant to President

D. H. Kunsman has been appointed staff assistant to the president of the RCA Service Company.

Mr. Kunsman comes to the Company from Montgomery-Ward, where he was assistant to the mail order vice-president.

Employed by Montgomery-Ward in 1933 as a messenger, Mr. Kunsman rose through the ranks in that organization's mail order division. During sixteen years with that company, he worked in Chicago, Oakland, California, Denver and Baltimore.

Mr. Kunsman attended Wisconsin State Teacher's College, and completed extension courses at Northwestern University.

He is married, has two children, a boy and a girl, and recently moved his family to Westmont, New Jersey.

G. H. Metz Named New Service Company Personnel Manager

G. H. Metz, former employment manager of RCA Victor Division, Camden, was recently appointed manager of Personnel Division of RCA Service Company.

Mr. Metz, well known in the labor relations and personnel fields, was graduated from LaSalle College with an A.B. degree in 1939. He completed work for his Master's degree at the University of Pennsylvania in 1945, and is at present working toward his Ph.D.

He was employed upon graduation from LaSalle as public relations and personnel assistant to the educational director. He left that post in 1941 to become occupational analyst with the Bureau of Employment Security, U. S. Employment Service. From 1942 to 1945 he was unit chief in the Bureau of Manpower Utilization, War Manpower Commission.

Mr. Metz joined the Radio Corporation of America, Victor Division, in 1944 as chief job analyst. In 1946 he was appointed wage and salary administrator and in 1948 was named employment manager, the position he held at the time of his promotion.



G. H. METZ

Mr. Metz is 32 years of age, resides in Haddonfield, N. J., and has a family of four children.

Here and There

From the Miami branch office comes news of an antenna installation, caught in the heart of a recent hurricane, which withstood winds estimated up to 200 miles per hour. Also from Miami: John Whidden has joined the ranks of property owners, and Herschel Chattin can now be seen cruising down the Miami River in his home-made boat.

An undesirable addition to channel eleven pictures was recently noticed by members of the Bayonne, N. J. branch office. Manager Joe Shuskus had to solve the problem.

J. L. Jenkins, of the Louisville branch office, recently replaced V. A. Vicksell as manager of the New Orleans branch office.

Members of the San Diego branch office were vacationing recently. M. E. Lamphear spent a week in central California and another week fishing off the San Diego coast. William McDaniel visited San Francisco, while G. T. Davis travelled liesurely through Oregon by trailer. T. W. Hockenberry visited friends around Hollywood.

Returned to the Cleveland branch office are Jack Laschinger, who spent several months in Erie, Pa., and John Pittner and Dave Conover, who came back from Camden. Dee Rochlus left the Cleveland office for homemaking. Diane Cooke has taken her place.

They're still talking about that softball game between the Bronx and Westchester branch offices. The "squeeze" home by Ralph Lindfors, which won the contest for the "Bronx Bombers," brought the crowd (of six) to their feet. It is said that the sun, reflecting off Warren Brey's head, caused many errors.

Bob Klein is the new I. & S. supervisor at the Rhode Island branch office. Chief-technician Herb Benedick has also checked in there.

Glen Rock, N. J., branch office reports that Ed McMullen, Howard Haines, and George Keller recently completed "cross-over" training.

MARRIAGES:

Margaret E. Milligan, Pittsburgh district office, to John A. Smith, Jr.

Toni Sneider, Bayonne branch office, to Jack Murphy, Rahway.

Mae Olsen, Bayonne branch office, to Frank Long, Bayonne branch office.

BIRTHS:

Daughter to Mr. and Mrs. Harry Bruten, Transportation.

Daughter to Mr. and Mrs. James Burns, Erie branch office.

Daughter to Mr. and Mrs. Robert Goes, Cleveland branch office.

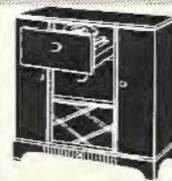
Son to Mr. and Mrs. Bill Hendry, Rhode Island branch office.

Daughter to Mr. and Mrs. Wally Meyer, Oak Park branch office.

Daughter to Mr. and Mrs. Robert Nerenberg, Bronx, N. Y. branch office.

Daughter to Mr. and Mrs. Parker Valentine, Bayonne branch office.

CONSUMER PRODUCTS



'Strive for More Sales' Television Managers Told

With development, growing pains, and the biggest part of our expansion now behind us, we must hereafter remember the lessons learned in getting organized and profit by them, C. M. Odorizzi, vice-president in charge of service, RCA Victor Division, pointed out during the third district manager's conference of the Consumer Products Service Division, held in Camden last month.

"Look at the future objectively," Mr. Odorizzi told the supervisors, managers, division heads, and Company officials in attendance, "we must from here on in all work for the general good of the overall Company."

Availing that the optional service contract makes for good competitive spirit, and that Service Company employees must strive for more sales together, Mr. Odorizzi outlined these five guiding principles:

- 1—There must exist a consumer demand for the kinds of services we offer.
- 2—The RCA Service Company must stand on its own.
- 3—Service operations must earn a reasonable return on the Company's capital investment.
- 4—Must attract and hold good employees.
- 5—Must be a worthy competitor, an accepted member in each community in which it operates.

Plans and prosperity for the future were the unofficial, yet underlying themes during the meeting. In line with Mr. Odorizzi's keynote remarks, principal members of the Service Company led the gathering in discussing more economical and more profitable operation in the Consumer Products Service Division.

A reduction of six to seven hundred thousand dollars in operating expenses each year is anticipated through drop shipment of supplies direct to our branches by the vendors, the gathering was told. This will eliminate the cost of warehouses, save property and inventory taxes, insurance costs, spoilage, obsolescence, and capital interest charges.

Built-in antenna developments may appreciably affect installation material requirements, those in attendance were told. A close watch on this situation is being maintained.

As to the feasibility of the built-in antennas, the gathering was told that they are satisfactory in wood frame dwellings, within fifteen miles of a station, provided no shielding effects from intervening objects. Tests at representative locations prove that about thirty



C. M. ODORIZZI

per cent of the installations can be made under those conditions, but the "V" type portable antenna is much better, having proven reasonably satisfactory in sixty to seventy per cent of the installations tested.

It was pointed out that we are not competitive in the B and C zones, even with new reduced rates. A new twenty-mile radius "branch zone" was proposed for which A zone rates will apply. This would make us competitive in multi-branch markets while concentration is heaviest.

Each district will submit new A zoning plans in its multi-branch markets based on profit and cost, not mileage from the transmitter as the limiting factors. Each district will have to make aggressive selling effort where reduction in zone rates takes effect. A decision on this method of operation will be made by January 1. Personal dealer contact is mandatory.

From the Tube department came an appeal for greater co-operation. The absolute need for the Service Company is now a matter of the past in many locations, it was claimed. We must now earn the respect of local servicemen.

These servicemen purchase tubes, test equipment, batteries, and components which make up a considerable part of the overall RCA income. We must help them maintain high standards set by Service Company. There is business enough for all, and then some.

A new and more versatile roof bracket was shown. It is lighter, yet does not sacrifice strength. Provision for raising jig reduces labor on erection of tall masts.

High frequency antenna costs may be reduced by using aluminum elements.

Large branch organization charts will be prepared within ninety days. Study of existing methods will be made to set standards.

It was reported that accidents cost \$20 per man last year. Safety measures must hereafter be stressed at all meetings, all unsafe practices must be curtailed, equipment must be carefully checked.

A flat rate service charge was advocated at the meeting. A committee was appointed to make survey and present program for approval. Published rates will now be marked net cash with a ten per cent service charge added when cash is not paid at conclusion of job. Serviceman will mark up labor and material and expense—total in cash column—then deduct ten per cent upon receipt of cash.

Advertising will play a major role in the future sales program. More space will be devoted to factory branch service in RCA home instrument advertisements. Television spot announcements will feature service story.

Telephone directory advertising will be more extensive, with possibility of display ads in Metropolitan areas. "Factory branch service" will get more prominent space on trucks. Signs will be used wherever investment warrants.

In the R.P.T. organization, it was said that a special simplified report is needed to control defects immediately. Test points will be established so that a pre-determined number of sets can be analyzed each time a new line is started or any major changes are made in an existing run.

Two suggestions were made to offer better and more profitable non-residential service. One was to continue the present rate, and render preventive calls and better service. The other was to reduce present rate and charge for evening, Sunday, or holiday service as well as making quarterly inspections.

E. C. Cahill, president of the Service Company opened the meeting with a review of general policy changes and introductory remarks. Those who led the discussions in their specialized fields were R. L. Olmstead, J. J. Barrett, J. A. Milling, D. H. Stover, A. L. Conrad, G. S. Fish, C. P. Guthrie, T. G. Whitney, M. G. Gander, F. W. Wentker, W. J. Zaun, C. H. Metz, E. A. Hilderbrand, E. O. Johnson, J. F. Murray, Jr., S. W. Natkin, H. A. Hayes, H. F. Bersche, F. S. Lakewitz, W. M. Tomlin, S. F. Nielsen, R. C. Gray, W. W. Werner, R. N. Baggs, J. Lippencott, D. M. Schmidt, F. W. Smaltz, J. M. Toney, D. H. Halpin, and W. L. Jones.

RCA Demonstrates Color Video to FCC

Company's System Eliminates Problems Delaying Authorization to Begin Polychromatic Televising

Hardly had images appeared on the television screen in black and white than the viewing public began, albeit prematurely, to wonder when they would behold them in color. The wondering was accompanied by some misgivings. Would they have to discard their old black and white sets for new and more expensive ones that would keep them abreast of the polychromatic times?

The answer has come in a gratifying form from the RCA Laboratories. They keep their sets.

Late last month, the television industry turned its collective attention away from built-in-antenna claims and "Kukla, Fran, and Ollie" as the Federal Communications Commission opened hearings on the controversial color subject which, because of its glamour, has achieved more prominence than the other problems of uhf-vhf allocation which were directly responsible for the "freeze" more than a year ago.

The new RCA color system, made public shortly before the FCC hearings, eliminates all major technical and economic problems that have delayed even a start in the way of color television broadcasting.

The system, which RCA has been demonstrating before the Commission, does not require any changes in present transmission standards and assures continued usefulness of stations and home receivers now in operation.

Under the proposed RCA system, existing receivers will need neither modification nor additional equipment to reproduce conventional black and white pictures from color

program transmissions. Equally important, they can accomplish this with the same picture fidelity as with today's monochrome transmissions. Addition of an adapter would enable such sets to reproduce images in color. New sets, with built-in color facilities, would be able to receive programs in both color and in black and white.

How best to achieve color without making obsolete the equipment in the hands of the broadcasters and the public has been a source of controversy in the television industry for many years. The RCA system, which is entirely electronic, does this by very ingenious methods.

Restricted by space requirements, this article cannot attempt to describe the system's operation in its entirety. In general, however, this is how the system works:

The studio apparatus provides separate picture signals for each of the three primary colors—green, red and blue. This part of the equipment is the same as used for the RCA wide-band, simultaneous system previously proposed. Each of these three signals, as in the case of current black and white systems, may contain frequency components up to four megacycles.

The three picture signals are sampled successively at high speed by an electronic commutator, and these samples are then combined with standard synchronizing pulses into one overall television signal which conforms strictly to present-day transmission standards for black and white television.

At the receiver, the composite signal is

broken down into the three primary color signals by means of an electronic commutator synchronized with the one at the transmitter. These then are fed to three separate kinescopes. One of these has a green phosphor, another a red phosphor, and the third a blue phosphor, and the three signals are, of course, fed to the appropriate kinescope. The three separate color pictures these produce are combined optically into a single full color picture.

Naturally, it isn't quite as simple as this brief explanation makes it sound. We haven't mentioned the mixed-highs principle or picture dot interlacing, both of which play important roles in enabling the system to resolve very fine picture detail. RCA began demonstrating its color television system before the FCC and the press on October 10 and will continue field testing the system using two color circuits and four cameras. From the experience in the field tests, RCA will start designing receivers and converters and will produce these units in small quantities for further field testing. Estimates as to the cost of the first color television sets, which might be offered to the public by RCA, range from \$400 to \$1000, depending upon type, size, etc.

Estimates as to the cost of an RCA converter to enable existing black and white sets to reproduce color pictures, range from \$125 to \$175, not including installation.

One thing is quite certain: regardless of the technical details of the color system as may eventually be authorized by the FCC, television receivers will not be any simpler. In fact, one can safely say that the additional circuits and their physical elements will put even more emphasis on technical knowledge and skill in the servicing of receivers.

Custom TV Installation Featured on Appliance Dealer's Letterhead

JOHN DE VALE, PRESIDENT

BERKSHIRE 7-4200



Appliances • Television

ESTABLISHED 1927

5701 WEST BELMONT AVENUE

CHICAGO 34, ILL.

A special antenna installation, made recently by the Chicago, Milwaukee Avenue, branch, is featured on the strikingly modern letterhead of one of Chicago's most progressive appliance dealers.

The installation, unique in that it permits

movement of any television receiver on display from one location to another by merely pulling out the phone-type jack, is pictured on the letterhead of DeVale, Inc., Chicago dealer for whom it was originally designed.

Four individual antenna masts were in-

stalled, each with three separate antennas, giving a total of twelve individual antennas. Each antenna feeds three outlets to the special phone-plug jacks. These jacks are fastened to the antenna by terminals with a short lead of approximately thirty-six inches.



The simple operation of RCA Victor's 45-rpm record attachment (Model 9JY), recently repriced to \$12.95, pleases Dorothy Hand, Customer Relations department

Victor Launches 45-RPM Campaign

*Promotion Planned to Stimulate Sales
of the Nonbreakable Seven Inch Records*

The RCA Victor record department recently launched a comprehensive advertising and promotion campaign on RCA Victor 45-rpm records.

The new campaign utilizes consumer newspapers, trade publications, radio, point-of-sale displays, and an educational film to tell the 45-rpm story.

The record campaign is planned to complement similar promotion already under way on 45-rpm instruments. One series in the new advertising campaign ties in with the recent repricing of RCA Victor's automatic 45-rpm record player attachment (Model 9JY).

Repricing of the attachment from \$24.95 to \$12.95, and inauguration of the extensive advertising campaign, are curtain raisers in an all-out-drive by RCA Victor to spread the mass distribution of 45-rpm instruments and increase sales of the nonbreakable 45-rpm records.

Part of the advertising campaign is a heavy newspaper schedule calling for large-size ads in the 79 newspapers in some 60 key cities most of which will be carried on a weekly basis until the end of the year.

In addition, the Company's consumer record magazine "RCA Picture Record Review," with a circulation of more than 200,000 among record buyers, will be used for special stories on the 45-rpm system and announcements of latest 45-rpm record releases.

RCA Victor's well known "Music You Want," radio program, carried nightly by 112 stations throughout the country, will also be

used to spread the 45-rpm music and story among music lovers, as will the company's popular educational film "Command Performance."

The all-out-drive to acquaint record buyers with the finest recorded music reproduction system, does more than anything else to clarify RCA Victor's current position in the phonograph field, according to J. B. Elliott, vice-president-in-charge of RCA Victor Consumer Products. "The 45-rpm system is less than six months old. Yet, in that short span of time more than 100 manufacturers of phonograph record players, turntables, and changers have accepted the 45-rpm system and are incorporating it in their new model.

"The 45-rpm music reproduction system, after more than ten years of development in the RCA Victor laboratories, brings records and instruments up to date, and releases them from such undesirable hangovers from the past as distortion, surface noises, and record damaging changer operation."

According to Mr. Elliott, dealer support and ordering have surpassed anticipation. To date, record orders have outnumbered distributors' current inventories, being especially heavy on red seal and popular albums and children's sets. Orders for the automatic record player attachment are likewise running far ahead of estimates. These orders are coming in from the selling line, from the people who are in the best position to judge the salability of any promotion.

The heavy 45-rpm campaign will continue to the end of the year. It will play a most important roll in Christmas buying.

Atlanta Station Erects Super-Gain Antenna

The new super-gain antenna, developed by RCA to meet television requirements for higher power, greater power gain, and limited directional effects, will shortly be installed by station WCON-TV, Atlanta.

The new super-gain TV antenna, surmounted by a fifty-six-foot FM pylon antenna, will be mounted upon a 1,000-foot tower now under construction. The structure, to be erected within the city limits of Atlanta, will be the tallest broadcasting tower in the United States.

The new antenna, a distinct departure from present television types, consists of an array of dipole and reflecting screen combination units measuring 8½ x 11 feet and weighing 600 pounds. These units will be mounted on the four sides of a specially constructed tower.

The WCON-TV tower will mount forty-eight of the new antenna units in twelve layers around all four sides of the tower. With this type of antenna, the station will be able to achieve 50-kw effective radiated power to give television coverage to rural areas within a one hundred-mile radius of Atlanta. When installed, the antenna is expected to produce a power gain approaching twelve.

Multi-Unit TV System Scores

'Antenaplex' Received Favorably
In Initial Installation Locations

"Antenaplex," RCA's first multiple outlet television system for multi-unit structures, has received favorable recognition since its initial installations in New York and Philadelphia early last summer.

Designed to accommodate a large number of television receivers within a single building, the new system is proving more and more valuable to apartment house owners, hotel managers, and office building superintendents.

"Television Antenaplex" includes either a separate antenna for each channel in a given area, or merely a separate cross-arm for each station, mounted on a single mast, depending on the location of local transmitters in relation to the receiver site. It obviates the impractical alternative of installing a large number of individual antennas on the roof—one for each receiver in the building—with the adverse effect each has on the other due to interaction.

"Television Antenaplex" signals are fed to specially designed electron tube amplifiers, the outputs of which are combined and fed to room outlets. Each outlet requires only one cable to supply all television and radio channels, thus simplifying wiring and reducing costs.

Any television set which meets the RMA standards for reduction of interference can be connected with this system.

In multiple dwelling structures, "Antenaplex" minimizes the optical effects of reflections from obstacles in or near the signal path between transmitter and receiver.

At the present time, the RCA "Television Antenaplex" system is available only in a few Eastern television areas. It is expected that the system will be available on a nationwide basis the latter part of the year.

Robert A. Seidel Named Victor Vice-President

Robert A. Seidel, has joined the RCA Victor Division as vice-president in charge of distribution. Mr. Seidel will make his headquarters at the Division's home office in Camden.

Mr. Seidel is former vice-president and comptroller of the W. T. Grant Co., and is well known for his activities in the retail dry goods field.

In 1946, he received a commendation from the War Department for his services as consultant to the director of operations, Army Service Forces, which resulted in the development of the supply control system used by the U. S. Army.

RCA Victor Line of New Sets Leads Television Field

RCA is leading the field in television. The latest line of RCA Victor television receivers has been so eagerly accepted by the fast growing video audience, that dealer demand has surpassed supply.

RCA Victor's anniversary model receiver, selling in the low price field for \$199.95, is outdistancing all 10-inch and low priced competition.

The anniversary model has met the needs for style, performance, reliability, and economy.

In addition, initial production runs of the first RCA Victor television receivers with 12½-inch picture tubes were completely sold out in record-breaking time. Consumer demand for all three of RCA Victor's new 12½-inch models has made a definite imprint on the pattern of television receiver models indicated for the future. The intermediate 12½-inch size is expected to represent a grow-

ing percentage of receivers for many months to come.

RCA Victor's new and most popular line of television receivers was introduced at the most opportune time. Television is entering what portends to be its greatest season to date. Its programs are each week more varied, better produced, and more entertaining.

In addition, this is the first year that the World Series, always a major factor in the sale of radio sets, was available to all video stations on the coaxial network regardless of where the games originated.

More extensive coverage of local football contests is likewise playing a major role in the upsurge of television set buying.

All these factors, plus the Christmas buying season, are bound to insure a steadily increasing market for television sets, hence, steadily increasing sales for RCA Victor, more work for the Service Company.

N.Y. Insurance Requirement Met

Owners of television receivers in New York State are assured replacement of parts and tubes, including the kinescope picture tube, under a plan announced recently by the RCA Service Company and approved by the Insurance Department of New York State.

The plan provides for the replacement of parts and tubes during the one-year period of a Renewal Service Contract under an insurance policy issued by Massachusetts Bonding and Insurance Company. The insurance plan may be applied to all renewal contracts purchased in New York State.

The plan has been developed as a protection for RCA Victor television set owners, after a recent ruling by the New York State Attorney General declared inclusion of provisions for replacement of parts and tubes in a renewal contract a violation of the state's insurance laws. In seeking to make provision for replacement of parts and tubes during the term of the television owners renewal service contract and to comply with the ruling, the insurance plan was formulated.

"The insurance plan serves two purposes," A. E. Spottke, vice-president of Massachusetts Bonding and Insurance Company, stated. "It serves not only to give added protection to television set owners purchasing renewal service contracts, but also helps the entire television industry operating in New York State in finding a solution to the problem previously faced by television organizations desiring to offer an important service in a consumer's renewal service contract which would be in compliance with the state's insurance laws. The insurance plan accomplishes this."

Alvin M. Day, Jr.

Alvin M. Day, Jr., technical trainee in television, attached to the Camden branch, died on September 6 at the age of twenty-five.

Mr. Day, victim of an unfortunate street massacre which claimed the lives of thirteen persons, began work with RCA Victor as a laboratory assistant in 1946. He was transferred to the Service Company in December, 1948.

Mr. Day will be missed by all his co-workers who considered him to have a bright future in the television industry.

He was married and a father. His home was in Mantua.

Radio Repair Campaign

There are an estimated ten million radio receivers now needing repairs in homes all over the country. Aimed directly at the consumer, and strongly slanted to emphasize the fact that, for relatively low cost, the average

noisy or inoperative radio can be restored to first class condition, the RCA Tube Department has launched a radio repair and tune up merchandising campaign for use by radio service dealers.

Purpose of the campaign is to stimulate new business for the radio service dealer by overcoming the average consumers impression that radio repairs may be too expensive. In addition, the campaign provides the dealer with the ready-made means to merchandise and pricing of services effectively and proficiently.

BIM Service Hints

From Harold K. Lubcker, Philadelphia District, comes this bit of information:

To obtain a reliable source of 90 Volt D. C. for the BIM Emission Tester, without resorting to batteries, the following gadget was constructed. Connect a 240 K resistor between pins No. 5 and No. 1 of an amphenol octal plug and connect suitable leads to these pins. Remove the 6H6 from the amplifier and insert the plug. The (plus) 90 Volt D. C. will be available from pin No. 5. Cut the "ground" lead in the Emission Tester Cable about 18" from the phototube socket and insert the microammeter at this point. Connect the leads from the octal plug to those formerly connected to the 90 Volt battery.

This method eliminates costly batteries and provides an added safety feature in that the machine cannot be started until the 6H6 tube is reinstalled, thereby reducing possible damage to the test equipment.

C. M. Kasey, Cleveland District offered this short cut to better service:

Install two insulated pin jacks in the side of the Jr. VoltOhmyst Case and connect the 90 Volt "B" battery. This will serve as a convenient source for the 90 Volt D. C. required for the BIM Emission Tester. Since the drain is very low there will be no decrease in the over-all life of the battery.



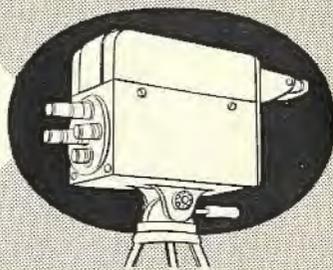
Here's the new home of the St. Louis branch office. The new structure, located at 3942 Laclede Avenue, contains 6000 square feet of floor space. It provides modern appointments for office, shop, warehouse, and a twelve-truck garage.



Technical



Products



'Big 5 Sales Plan' Breaking All Records

Backed by Checkup Promotion Campaign is Reaping Contracts And Plenty of Xmas Money

The "Big 5 Sales Plan" has proven a "natural."

The plan, which was announced to begin September 1 and run through November 30, bids fair to surpass any prior operation designed to secure more theatres under RCA contract service. All districts are confident of exceeding their quotas.

Atlanta district is in first place. Dallas and Kansas City close on their heels. Al Kidwell of Cleveland heads the engineers with \$66.89.

Offering cash commission awards to field engineers and supervisors, the plan got off to a quick start, and within three weeks almost one hundred contracts were sold. Added impetus was given the initial phases of the operation by offering a "Special Fall Checkup" to exhibitors at a very low price. The check-up program is accomplishing its objective of uncovering more and better prospects for theatre sound service.

Teamwork has played a vital part in the scoring to date. RCA theatre supply dealers and their salesmen, and RCA theatre equipment salesmen have in many cases sold a number of service agreements, and that has meant not only building scores toward their quotas, but has helped the districts in their scorings.

Talk now is not about *meeting* the national quota, but just how far beyond that quota can we go. Latest "guesstimates" are between 160 percent and 200 percent, leaning toward the latter figure. In the process, many engineers and supervisors, none of whom have been assigned quotas, will have earned substantial commissions, all payable before Christmas.

Eugene Lawless Appointed Eastern Sales Representative

Eugene T. Lawless, former RCA Beverage Equipment field representative for the South Central region, was recently appointed sales representative for the entire Eastern territory.

Mr. Lawless joined the RCA Victor Division in January, 1946, after having served in the Marine Corps during the war.



Paul Smith was recently honored for having completed twenty-five years of service with RCA. Shown above are his co-workers in the Theatre Service section who gathered in the office of Carl Johnson, manager of that section, to witness the presentation to Mr. Smith of a Company service pin. Left to right, front row, are F. H. McCarthy, Margaret E. Sauerhoff, Betty Moore, Mr. Johnson, Mr. Smith, Edward Stanko, Virginia Morgan, L. R. Watson, and Gloria Thompson. Standing at the rear are Edward Greipp, left, and L. B. Hart

Theatre Television Finds Ready Audience in World Series Fans

Theatre television, itself just out of the experimental stage, made significant strides during the recent World Series.

RCA experimented successfully with theatre video when it carried TV images of the World Series games beyond the horizon and over a mountain for instantaneous projection on a sixteen by twelve foot screen in the West Side Theatre in Scranton, Pa.

In addition, RCA completed its first installation of instantaneous television theatre equipment in New England in time for the opening of the baseball classic.

For the Scranton showings, telecasts from Philadelphia and New York, each approximately one hundred miles away, were picked up by a receiver specially installed for the purpose at the mountain-top FM radio station

of the *Scranton Times*. There, the signals were converted to microwave frequencies and beamed over a single line-of-sight microwave link to a receiver atop the theatre, from which they were fed direct to the television projector.

Announcement of the telecasting of the World Series in the Pilgrim Theatre, in Boston, resulted in land-office business at the box office for advance tickets. Although tickets did not go on sale until September 30, orders came in by mail, telephone, and wire from Boston and other New England cities as early as a week before, and a cue had formed at the box office hours before the first tickets were placed on sale. The theatre seats 1800.

The television projector was installed on the rim of the balcony and projects fifteen by twenty foot pictures on the theatre's screen.

District Managers Hear Future Plans

New Business Will Result In Better Coverage and Service Chicago Gathering is Told

Stressing the need for new business in all product lines, W. L. Jones, vice-president in charge of Technical Products Service Division, developed the theme of the meeting when district managers and home office officials of the Technical Products Service Division gathered in Chicago recently to discuss plans for the coming year.

Reviewing the division's sales and financial performance during the past year, Mr. Jones told those in attendance that this new business will result in better coverage and service to our customers.

In the absence of C. M. Odorizzi, vice-president in charge of service for the RCA Victor Division, E. C. Cahill, president of the Service Company, discussed overall policies and planning for the future.

Although each of the speakers at the meeting reviewed in detail the accomplishments of their particular section during the year, the discussion was sparked with plans for a more prosperous future.

Mr. Jones announced that sales efforts are being aggressively pushed to increase contracts for service to the armed forces and other government agencies. He announced that the air force has given the Service Company notice of an award for contract covering services for communication equipment.

Adolph Goodman, manager of district sales, described the new Camden repair shop and the plans underway to increase this service to our customers. He also covered operations in the districts with emphasis on broadening service to our various classes of customers.

W. W. Jones, manager of Industrial Service, and G. A. Toepperwein, manager of Industrial Sound Service, discussed the potential market in the industrial electronic fields together with plans for expanding this service.

C. E. Johnson, manager of Theatre Service, pointed out the value of good working relationships with dealers. He also covered the participation of the Service organization in the theatre television field and plans underway to broaden our activities in this field.

F. W. Wentker, advertising manager, discussed the advertising and sales promotion program for 1950.

This meeting, which was held in conjunction with the TESMA-TEDA convention and trade show gave all those in attendance an opportunity to see and renew acquaintances with dealers and exhibitors. The highlight of the show was the Theatre Television demonstration on Wednesday evening, September 28 at the Stevens Hotel. The quality of the picture was very good and the showing was well received by the audience among whom were a large number of prominent exhibitors and circuit officials.



W. L. JONES

Trade Show Sees Theatre Exhibit

The most recent developments in commercial theatre television, in addition to a complete line of theatre equipment, were exhibited by the RCA Theatre Equipment Section at the TESMA-TEDA trade show.

The occasion marked the first showing in the Middle West of RCA's theatre video equipment. The TV equipment exhibited was a prototype of the first commercial instantaneous theatre video equipment now being produced at the Camden plant.

Among theatre equipment displayed were: the latest Brenkert projectors, the new Brenkert Hi-Enarc and Super-tensity lamps, RCA's improved and restyled line of weather-proof in-a-car speakers and junction boxes, the "high power" and "super power" series of drive-in theatre sound systems, and a new series of Snowwhite vinyl plastic theatre screens.

Prompt Repairs for Drive-Ins

The RCA Service Company recently put into force a plan whose provisions insure drive-in operators prompt and economical service for RCA in-car speakers and junction boxes.

Under the terms of the plan, RCA Service will make prompt repairs on speakers and boxes, including speaker replacement mechanism, if needed for a nominal flat weekly rate. Exhibitors will thus be able to budget a low and uniform upkeep rate for equipment throughout the operating season. In addition to parts, the plan includes labor charges, shipping containers and prepaid transportation in both directions for repaired speakers.

Theatre Service Hints

In case of an emergency where the XT-2741-C power transformer fails in the MI-12236, 12210 or 12220 amplifiers, a Stancor P-6011 can be used as a substitute. It is an exact duplicate physically and electrically. **R. J. DELCASTILLO.**

Motiograph amplifiers equipped with CIC capacitors should be immediately checked to see if the by-pass and coupling capacitors are in good condition. One system was found with every by-pass and coupling capacitor defective. **HARRY H. FRAZER.**

Where rack installations are made in Drive-In theatres and the rack is not entirely filled with panels, I find that a sheet of auto body metal cut and slotted to the proper size to fit the open spaces makes an excellent substitute for standard metal panels. To present a neat appearance the panel should be painted or sprayed with a black lacquer or enamel. **C. R. SHEPARD.**

Where the audio section of the fader switch in the MI-9202 pre-amplifier is defective, an emergency hookup can be made as follows: Remove the audio leads from the defective switch. Connect the inputs to the audio switch together (with a 10,000 ohm resistor in series with each input) to the output of the switch. The sound changeover is made by switching exciter lamps. **H. M. MORROW.**

Small red or green hull's eye indicators mounted in place of the toggle switches which are seldom used on the front panels of PG-90/91 cabinets and wired to one of the filament circuits will enable the projectionist to determine whether power is at the tube sockets of the amplifier. **A. L. FRIEL.**

A noisy PG-230 volume control can be located and the section causing the noise can be localized by shorting out each section while moving the control through the noisy area. A temporary repair can be made by "shorting out" the noisy section until repairs can be made. **H. D. OWENS.**

A dental mirror is a handy tool to have in your tool bag. Just used one to locate trouble in a motor which was located near the projection room front wall. It can also be used in other inaccessible places. A mirror of this kind can be purchased in any physicians' supply store. **A. L. FRIEL.**

A service hint which appeared in a recent issue of the RCA Service Company News indicated how an extension bell could be connected to a subscriber telephone line. The Telephone Company has informed us that any kind of attachment to a telephone line is a violation of their policy and regulations. Please be guided accordingly.

Numerous requests have been received on how to obtain the Pict-O-Guide Volume I. Any RCA employee can obtain a Pict-O-Guide manual by sending \$1.00 to Mr. J. W. Baird, RCA Victor Division, Employees Sales Store, 114 North 5th Street, Bldg. 22-1, Camden, N. J.



Increase in Drive-In Construction Laid to In-Car Speaker

Pre-War Development by RCA Ended Spill-over of Sound Affording Individual Volume

An increase in construction of drive-in-theatres, from an average of less than eight a year before the war to about 250 since, has been credited largely to the development of the in-car speaker by J. D. Phyfe, RCA engineer.

Since the introduction of the in-car speaker, ending the public nuisance caused by spill-over of sound into adjoining residential areas, and at the same time giving each patron individual control over sound volume, drive-ins have mushroomed from a total of about sixty to more than 1000, with virtually all of this expansion confined to the four years since the war.

Construction of the first sixty out-door theaters, Mr. Phyfe reported at a recent sectional meeting of the Society of Motion Picture Engineers, was spread over the eight-year period from 1933, when the first drive-in was built at Camden, to 1941, when RCA introduced the in-car speaker.

The in-car speaker removed most of the restrictions on locations where use of centralized speaker systems at the screen would have classed the drive-ins as a public nuisance, according to Mr. Phyfe. In addition, high postwar construction costs for indoor theatres, together with postwar improvements in projection and sound equipment expressly designed for outdoor theatres, further influenced the advance of the drive-in.

The backbone of drive-in patronage is a new clientele that was formerly a "forgotten audience"—parents with infants and small children, the physically handicapped, invalids, convalescents, the aged, the deaf, whole families dressed as they please in the privacy of their own domain on wheels.

"Each year, rapid strides are manifest in drive-in theatres," Mr. Phyfe added. "There is now available a highly scientific toll system

eliminating the use of tickets. On the horizon, pointing to further opportunities for drive-in operators are the possibilities of innovations to permit daylight operation, in-car heating to extend the operating season, and means of overcoming fog interference in some areas."

Development in theatre equipment is aimed primarily at improving the quality of the projected picture and reproduced sound. Trends in equipment to be introduced during the coming season, according to Mr. Phyfe, will be toward the following improvements:

1.—More light on drive-in screens, achieved through use of more powerful arc lamps. These lamps will use amperages ranging to 180 amperes, and will require cooling devices to protect both equipment and film.

2.—Amplifying systems covering the extensive output range of seventy to 1000 watts, capable of distributing peak signals without distortion to large numbers of in-car speakers, often totalling 1000 or more.

3.—In-car speakers of extremely rugged, light-weight, convenient construction, with improved junction boxes.

4.—Post and road lighting to guide theatre patrons to their ramps and provide ample, yet attractive overall lighting effects within the parking area at a minimum cost.

5.—Signalling devices for concession service.

Theatre Pact Re-Signed

RCA, for the twelfth consecutive year, will provide services and replacement parts to sound reproducing equipments in 107 theatres of the Tri-States Theatre Corporation, Des Moines, Iowa, as a result of a recently negotiated agreement. Thirteen drive-in theatres are included in the pact.

The pact was negotiated by W. V. Toney acting for the theatre group, and for RCA Service Company, Inc. by Carl Johnson, manager of Theatre Service section, P. N. Connet, Kansas City district service manager, and E. D. Van Duyne, Kansas City district service supervisor.

Electron-Optical Shadow Invented

The sensitivity of electron microscopes to stray magnetic fields has always been a headache. Such microscopes have been known to drift when placed near everything from recording tape to the wire in a strapless brassiere.

Last month, however, physicists of the National Bureau of Standards announced the invention of an "electron-optical shadow" method. With this technique, they claim they can use an electron microscope to measure tiny magnetic and electrical fields.

In an electron microscope, a beam of electrons, passing through a doughnut-shaped magnetic "lens," is focused on a fluorescent screen, which serves as an "eyepiece." Bureau of Standards scientists place the magnet to be studied near the source of the electrons. Beyond the lens they insert a fine wire mesh. The magnet deflects the electrons so that a distorted shadow image of the mesh is projected on the screen. From the amount of distortion they can estimate the forces emitted by the magnet.

The "electron-optical shadow" method is said to be the most delicate tool ever developed for probing magnetic and electrical forces. It should prove invaluable to scientists doing research on radio, radar, and scores of other electron gadgets.

RCA SERVICE COMPANY NEWS

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Editor
LLOYD STUART KOPPEL

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