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# MANAGEMENT

TELEVISION • ELECTRONICS • RADIO • AUDIO • AIR-CONDITIONING • APPLIANCES

Volume 3 Number 10

July 1954

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REPAIR**

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INSURANCE**

**2-WAY  
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**TELEVISION TECHNICIAN'S LECTURE BUREAU**

**Expand Your Earnings — Service Appliances**

# Service Management

PAUL H. WENDEL, Editor and Publisher

VOLUME 3, NUMBER 10

JULY, 1954

## COVER PICTURE

**WALLACE JOHNSTON, President**

Wallace Johnston Appliances, Inc.

&

Past President, National Appliance and  
Radio-Television Dealers

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EVERY SERVICE BUSINESSMAN KNOWS THAT:

# Handling the Customer

IS AS IMPORTANT AS  
**REPAIRING THE TV SET**

Here are a few customer questions and problems.

**Do your servicemen know the best answers?**

Customer invites you to have a drink with her.

"Why are the test patterns good, but the pictures poor?"

You do some damage to the customer's furniture.

"Are you sure my set will work after you fixed it?"

You have some screws left over after repairing the set.

Customer insists on keeping an old CRT which you replaced.

"Did I buy a lemon?"

"What kind of set do you have in your home?"

Customer asks you to stay for lunch.

"Why is my neighbor's picture better than mine, when I paid more for my set?"

Children interfere with your tools.

"This is the same trouble that you fixed last week, I am not going to pay again."

Customer tells you which parts need replacing even before you look at the set.

"My credit is good, charge it."

Fierce dog is in the room, which makes you nervous.

"Why is it my set never acts up when the serviceman is here?"

"How long will my picture tube last?"

Customer asks you how much money you make.

You call at the house and find the customer in a negligee.

**THE RIGHT ANSWERS ARE FOUND IN THIS VERY VALUABLE BOOK. RIGHT FOR THE SERVICEMAN; RIGHT FOR YOUR COMPANY; AND RIGHT FOR THE CUSTOMER TOO.**

- Compiled by the 150 working supervisors and technicians of Central Television Service, Inc., largest independent TV service company.
- Written with the assistance of a psychologist on the staff of Chicago University.
- Foreword by Milton S. Kiver.
- Cartoons and sketches make it entertaining as well.
- Over 90 pages crammed with vital do's and don't's in the customers' homes.
- 50 question true-false test included for servicemen to test themselves.
- Distributed by Service Management magazine as a service to the entire television industry.

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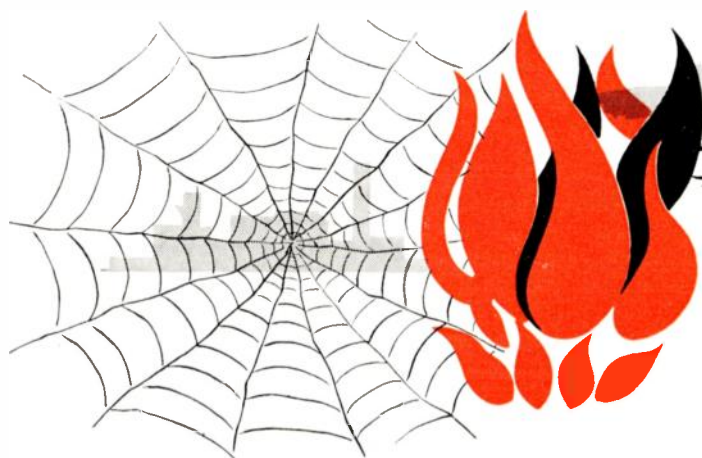
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## INCOME INSURANCE

By **Robert G. Horr**, President  
Agricultural & Empire State  
Insurance Companies

A NEW FORM of policy called Earnings Insurance has been developed to protect retail stores and service enterprises against loss of earnings and possible failure in the event that sales are curtailed by fire or other disaster.

Practically all store operators insure against destruction to building, fixtures or merchandise, but scarcely any are covered for the *mark-up* on inventory which will be lost during a forced shut-down. Such an interruption may last for months, and it is this money which is urgently needed to hold a business together during an emergency.

Even though every tangible asset is fully insured, if an item bearing a \$10 price tag is destroyed, the dealer will receive only the purchase price from his insurance company, perhaps \$5 or \$7, whatever his discount may be. The mark-up which would have been made on the sale of the item is lost. The owner who leaves his mark-up uninsured is gambling against a heavy loss—not only in thousands of dollars, but of his staff, his customers, his own livelihood—even his entire business.

### LENGTH OF INTERRUPTION

In the event of a catastrophe which completely destroys merchandise and fixed assets, surveys show that it takes anywhere from one and a half months to a year or more, depending on the type of business, to resume normal operations—and an interruption of more than three months puts 95% of all mercantile enterprises which have a fire out of business permanently!

The necessity for this "other half" of

store insurance can hardly be over-emphasized. Earnings Insurance is equally as important as the standard fire insurance policy on property, because the financial loss from interruption can even exceed the property loss. To protect a business fully against fire or other destructive peril is a two-phase procedure: (1) insurance which will replace the *physical* assets, and (2) insurance which will replace the *earnings* while physical assets are being restored.

### OTHER COMPENSATIONS

A good comparison is furnished by the average workman who clearly realizes that if he has an accident he must be insured not only for his hospital and medical expenses, but also for his compensation while he is unable to earn an income. Most merchants understand the necessity for protecting their physical property with insurance, but fail to recognize the equal need to protect the earning power of that same property.

Some of the losses which may be sustained when a business is interrupted are: (1) Sales, (2) Opportunity to earn expenses which continue even when sales cease, (3) Profits, personal salary or drawing of owner, (4) Key personnel or other help who depend upon immediate income and therefore must find new jobs, (5) Dividends to stockholders if any, (6) Payments on taxes, notes, interest charges, insurance, perhaps rent, and other continuing business costs.

Business earnings are simply the gross income of the business, minus cost of sales. To put it another way,

business earnings equal the sum total of all operating expenses and profit—and this is what is lost for a period of time in the event of destruction of the business, in whole or in part, by fire, lightning, windstorm, explosion, earthquake or other peril.

### INCOME IMPORTANCE

A business is conducted for the income it produces. If the property is destroyed the income is destroyed. If there is anything more important than tangible assets—that is, buildings, fixtures and merchandise—it is a continuing profitable income. Banks are even more interested in the earning capacity of a company than in collateral because they are in business to take interest, not to take title. Although earning power is more precious than property, too many business men still think in terms of protecting tangibles but not potentials.

An actual case from insurance records shows how Earnings Insurance applies. The proprietor of a city store rented the first floor and basement of a three-story brisk building located in the center of the retail district. One noon hour during a busy Columbus Day sale a clerk in the basement restroom threw some waxed paper from her lunch into a fiber waste basket. When the store closed a little after 6:00 p. m., another sales lady snuffed out a cigarette as she was leaving and tossed it into the same waste basket, unaware that a spark still glowed on the butt.

At 7:53 p. m., a factory worker who occupied an apartment across the street

(Continued on page 20)



# Editorial

## "OUR OPINION"

There are two very important facts about the electronic servicing business that over-shadow all other information when you study the registrations that have been submitted for the National Electronics Service Directory.



The first of these facts is that the electronic servicing business is a very complex activity. The second is that it has fostered the development of a lot of stable, dependable service companies.

Electronic servicing as a business has grown quietly and without fanfare. No high-powered publicity men have proclaimed, in glowing phrases, the month-by-month growth of the service activity in stature and in economic importance. And because the activity of servicing as a business has expanded so subtly and unobtrusively its present make-up and potent power is scarcely understood by most men actually in the service business and not at all by people in the replacement industry who are not actively in contact with service business.

Service businesses have steadily expanded their fields of activity to avoid total dependence on income from any one individual product used in the homes. TV service companies that once passed up AM/FM radio servicing are now soliciting this business from their TV service customers. Major and traffic appliances are other products that are adding to the income of some businesses. Many of these appliances are "service orphans" and their owners welcome the help their TV servicers offer to keep them in good operating condition. And it is confidently expected that the installation, maintenance and winter storage of room air conditioner units will become a substantial factor in the operation of TV service businesses in the years ahead.

Now that we are in a buyers' market many parts and equipment manufacturers are having to face up to the tasks of realistic selling—the first time some of them ever have had to do

some real "shirt-sleeves" sales sweating to sell their products. Nationally, the replacement parts industry suppliers had a pretty cozy time of it for quite a few years. New TV markets kept opening up regularly and the main sales problems were concerned with keeping Parts Distributors happy.

Now it looks as if the new market gravy train has about run its course. UHF is not proving to be the panacea that everyone hoped it would be. It is also apparent that the development of color TV will be a long, slow process. This all adds up to the fact that we will be in a buyers' market for a long time to come. It also spells out the grim fact that the replacement parts industry must learn to sell its wares—and

it will be *hard sell* for there are a lot of other industries that are competing for those same consumer dollars.

One of the things we have learned for sure about this 1954 electronic service industry—it is definitely *service sales-minded*. In a quarter of a century of close association with the service activity, your editor has never known of another program that had the impact of the SERVICE MANAGEMENT service selling programs. The important thing about this impact is *not* how many service companies are using the service selling mailing pieces; the important thing is the high percentage of service companies who are taking the *selling ideas* and adapting them to their particular operations and local situations.

This *sales receptiveness* on the part of the service industry should be welcome news to every manufacturer who has a product to sell in the replacement parts market. It should be welcome news to antenna, converter, tube, component and other manufacturers for  
(Continued on page 30)

### Letters to the Editor

#### Mailbox Salesmanship

Having read your article, concerning mail advertising under "Your Business Problem" (SERVICE MANAGEMENT, April, 1954), we would appreciate any information you might send us in reference to this type of advertising.

We are considering going into a campaign of this sort, and we are sure that you will have many good ideas that we can use.

SERVICE MANAGEMENT is certainly a valuable asset to anyone in the industry and we read it from cover to cover each month.

Harry T. Arnstam,  
Admirable Television Service Co.  
Miami, Fla.

\* \* \*

We would like very much to receive the SERVICE MANAGEMENT monthly mailing pieces for promotion business as explained . . . by Lawrence Kanover.

All the personnel here enjoy your magazine very much and find it both helpful and interesting.

L. M. Roscoe, Jr., Owner,  
Roscoe's Television

Kansas City, Mo.

\* \* \*

#### Picked at Random . . .

Kindly send me all available information on the antenna program that was used by the Central Television Service Co.

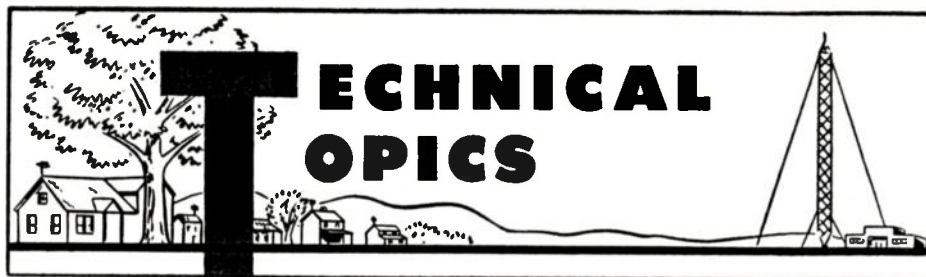
The above information was mentioned in the May issue of SERVICE MANAGEMENT.

Raymond G. Hawley,  
Hawley's Television Service  
Warwick, Rhode Island.

\* \* \*

SERVICE MANAGEMENT as a trade journal is tops with me. There are many perimeters of technical electronics management that your magazine covers that are not to be found elsewhere.

F. S. Brockway,  
Paul & Irv's Radio & TV,  
Mount Shasta, Calif.



## Adjacent Channel Trapping in Transmission Line

By EDWARD M. NOLL

ADJACENT CHANNEL interference minimization can be a trying problem. It is certainly annoying to the viewer to realize there is sufficient signal strength from a fringe station but you are not able to view that station because of interference from an adjacent local channel. Of course, there are a number of factors that influence the ability of a receiver and antenna system to reject interference of this sort such as:

1. Critical adjustment of receiver traps.
2. Proper tuner response shape.
3. Antenna Type and pattern.
4. Antenna Orientation and positioning.

All of these considerations are important in reducing the problem. However, here at the lab. and, for our own receiver system, we decided to take an additional step; namely, to try to trap the transmission line so as to shunt the undesired frequency or frequencies.

Now it is often quite a problem to trap out the interference from just a single station. The difficulties multiply when there are a number of fringe and local stations that can interfere. The interaction at our location is . . . . local channel 3 interferes with fringe 2 and 4; a local ch. 6 with a fringe 5; and a local channel 10 with fringe 9 and 11.

One effective line trap is the use of a half-wave open section of line and a sliding section of aluminum foil to act as a sliding loading capacitor, figure 1. The trap can be inserted at antenna terminals of receiver. However, we have had better success and more consistent results by attaching stub to transmission line where line enters house. The stub is tuned and fastened to cellar rafters. The aluminum foil is moved along line for best location as a second person observes the picture on receiver or attaches a field

strength meter at receiver terminals (field strength meter is set on frequency of interfering signal and stub is tuned for a minimum reading). The tuned line acts as a series trap across the line and tunes line for best signal to interference ratio.

The above procedure traps the interference from one station for your customer. How can we trap interference from each fringe station is still another problem. However, if we remember that there is a correct position for the foil each half-wave length along a section of line and thus we can find a number of suitable locations if we use a *long stub* (three or four wavelengths long). Furthermore, each frequency we are to trap has a different half-wavelength spacing along line where the proper positioning of foil can trap interfering signal. Therefore, there can be locations along line where the proper positioning of foil can trap two frequencies.

For example, a half-wavelength on channel 3 is 91.5 inches and a half-wavelength on channel 6 is 68 inches. If 300 ohm line used as stub has a dielectric constant of .82 the half-wave separations along line would be 75" ( $91.5 \times .82$ ) and  $55\frac{3}{4}$ " ( $68 \times .82$ ) respectively.

Thus half-wave positions along line could be:

Ch. 3	75	150	225
Ch. 6	$55\frac{3}{4}$	$110\frac{1}{2}$	$167\frac{1}{4}$

This relationship is proving to us that somewhere along a 225" piece of line there is *one position* of foil where both signals are trapped. Accordingly, a 20-foot length of line was attached to cellar rafters and connected as illustrated in figure 2.

Tune up procedure was as follows:

1. Connect field strength meter at

receiver antenna terminals and set to channel 3.

2. Move foil along line and mark all locations where a minimum reading is obtained.

3. Now set field strength meter to channel 6 and locate similar points for this signal.

4. Find location where two minimums (one from each station) are very near to each other. Attach two pieces of aluminum foil near this point (two pieces are used here to permit more precise setting later).

Inasmuch as stub must also trap channel 10, two shorter foils are also connected near the other end of stub. Pieces are shorter so they have less influence on low band signals but are still long enough to be effective on the higher frequency high bands. Final tuning of the line is as follows:

5. Move foil #2, figure 2, for a minimum on channel 10 sound carrier frequency. Sound interference on channel 11 is more severe than channel 10 picture interference on channel 9. Same setting permits adequate rejection on both channels at same time favoring 11.

6. Move small #1 foil to a channel 10 sound carrier minimum.

(Continued on page 24)

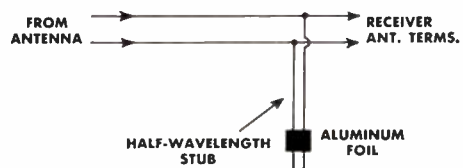


Fig. 1

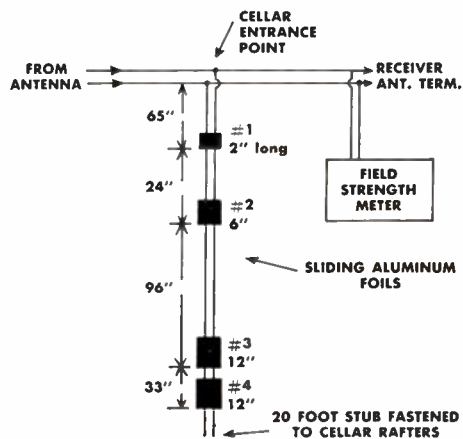
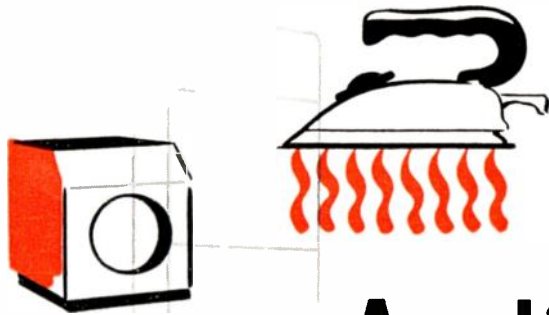
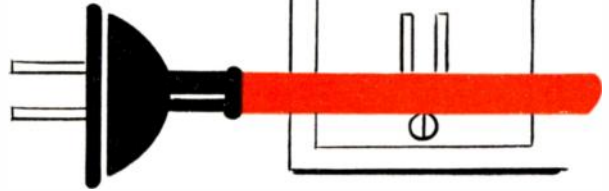


Fig. 2





By Tom Michael



# Appliance Repair

WALLACE JOHNSTON APPLIANCES, Inc., of Memphis, Tenn., is one of the healthiest businesses in the South . . . an appliance repair center for the thousands of appliances the company has sold to its hundreds of *really* satisfied customers.

The business reflects directly upon the personality and character of its president, Wallace Johnston, who is also the past-president of National Appliance and Radio-Television Dealers Association. Both are big, friendly, busy and prosperous.

All over the Mid-South people who buy an appliance from Wallace Johnston's—anything from a tiny fan to a fancy television set—know they will get their money's worth and that the firm stands solidly behind every product it sells. Regardless of the time passed since any sale was made—Johnston's will always repair any item it has sold.

W. J. Appliances has, as many other firms do, expert and reliable repairmen; it also has, as some other firms do not, just about any spare part that might be needed.

**Parts and Service.** Those words do not convey the entire success story of Wallace Johnston, Inc., but they are the biggest part of it.

The company has filed more than 60,000 cards: one for every appliance the firm has sold which is still in operating condition. On these cards are kept all facts concerning each call made in connection with that particular appliance. These files are in the office of one of the industry's ablest Service Managers (and Vice President of the Johnston concern), Mr. J. A. 'Johnny' Johnson. He is a man who has worked with the company from its beginning—22 years ago. "Wallace always handled the sales end and I handled the service end," says Mr. Johnson.

Wallace Johnston Appliances' history began Feb. 1932 with three employees, including Wallace himself, who had decided two months before that he could do well by setting up a business to sell refrigerators. He was a 27-year-old with \$5,000 for capital. Sales that year came to \$30,000 and the company lost \$972. Last year, sales totaled more than \$1,000,000. Yes, the books show a meaty profit.



*Sleek store frontage is one result of the hard work of a modern-minded manager . . . Wallace Johnston.*

The Johnston line of retail goods has increased in proportion to its sales. Customers may shop for ranges, heaters, freezers, automatic washers, wringer washers, dishwashers, disposals, sinks, cabinets, radios, television receivers, vacuum cleaners, water coolers and commercial refrigerators. Also: ironers, attic and window fans, floor furnaces, dryers and many other traffic appliances.

Any wise business man can see the obvious profit (and actual necessity) of maintaining a servicing department to handle maintenance of appliances sold in these diversified fields. Wallace Johnston does.

A most reliable servicing department operates now in the able hands of 18 employees.

Three of these men are shop men, three work on small appliances, three on major appliances, seven make outside-the-shop-calls, one is a dispatcher and finally—an office girl completes the total. The shop operates with three trucks and four coupes for its trouble calls.

Mr. Johnston maintains that "automatic washers are the appliances that require the most service." Refrigerators, he says, give them little trouble.

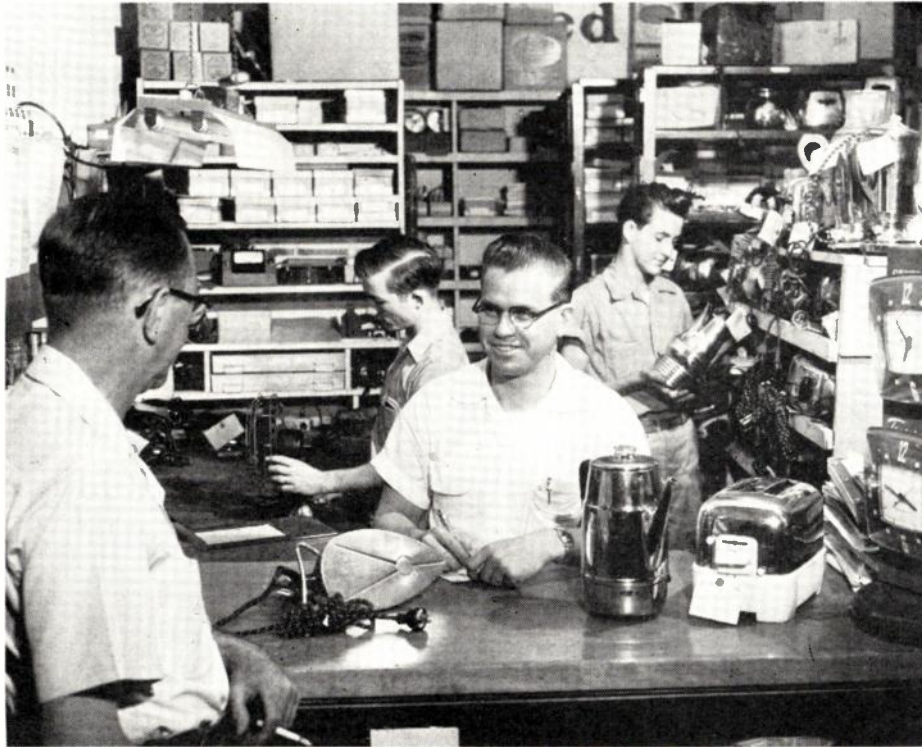
The service department employees of Wallace Johnston are highly specialized technicians. One handles general service, including TV installation, two are restricted to cover washer servicing entirely, another installs washers and refrigerators, one is reserved for work on attic and kitchen fans, while yet another focuses all of his attention upon gas and water heaters.

For the maintenance and repair of all these products, the firm keeps some \$40,000 worth of spare parts on hand. And, if a customer should call for some part not in stock—a rare event—Wallace Johnston, Inc., calls on one of its many outside sources of supply and obtains the needed item as fast as a flash flood.

The parts department men have a special expression for the job of hunting down this piece of equipment. They call it 'bird-dogging'—a word which is a company policy within itself. This means that when a customer comes in wanting a non-stocked part or an out-of-production old-model appliance, the employees get hot on the footing-it or phoning-out angle until the unknown is found. The Johnston customers know about this service and

*(Continued on page 14)*





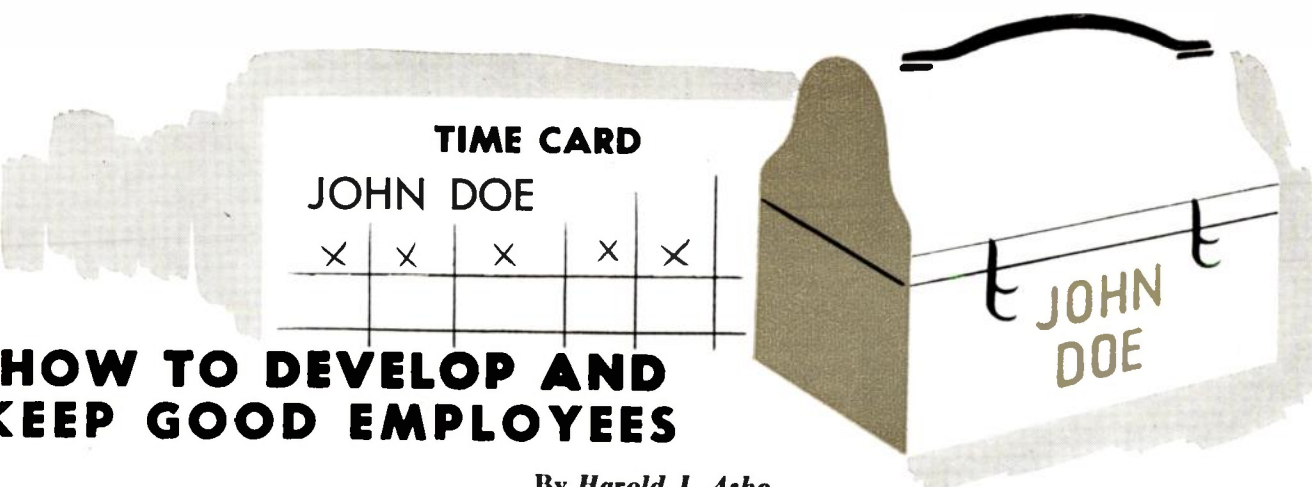
*Traffic appliances are returned to the customer in excellent working order from this Wallace Johnston department. Important ingredients always on tap are know-how and needed parts.*

*Service and repair problems are talked over between Service Department Manager Johnny Johnson, right, and top employees like Troy Jones.*



*To know what is wrong with an appliance, it helps to know what's been wrong with it. The more than 60,000 cards kept on file by Miss June Gale and Sidney Gammon tell the story on repairs at Wallace Johnston Appliances, Inc.*





# HOW TO DEVELOP AND KEEP GOOD EMPLOYEES

By Harold J. Ashe

GETTING COMPETENT servicemen for a radio-TV service shop may be no problem. However, even if there is a surplus of available servicemen in an area, retaining such employees may not be so easy.

Turnover of employees may be high. Although the dollars-and-cents cost of turnover may not be exactly computed, constantly changing help can be a drain on profits. It may take a new serviceman weeks to become familiar with the shop and its policies. Mean-time, service work suffers and expensive errors are made. Time spent in breaking in a new employee might be much more productively spent in keeping old employees happy.

Where there is a steady parade of new employees coming and old ones leaving, shop morale is apt to be low and efficient operation suffers. There is likely to be friction between employees because of disgruntlement terminated by quits.

For these and other reasons a stable staff is desirable. It warrants considerable attention by a shop owner. Getting and holding good employees must be worked at just as in getting and holding customers. In fact, the two tasks are interrelated. Satisfied employees are likely to mean satisfied customers.

## EMPLOYEES ARE PEOPLE

Underscore this fact in your mind: A shop owner indifferent to his employees as individuals is likely to attract to him only servicemen indifferent to him. If he manifests no concern for the welfare of his employees, he can hardly complain if employees are cool to him and his interests.

Driving employees is a poor substitute for leading and persuasion. In this connection, a few sweeping generalities may not be amiss to lay the foundation for this discussion.

An individual becomes no less unique a personality by reason of taking gainful employment. In fact, this personality which makes an employee unique must be recognized by shop owners if the most is to be gained from each employee.

Every employee is subject to the fears, hopes and frustrations, the likes and dislikes and prejudices which bedevil the human race. His reactions to pressures are many and varied. In varying degree, and depending on temperament and other factors, each employee seeks recognition for his talents and efforts. This is one of his strongest drives: the seeking of recognition and the hope he is needed. If he fails to attain this his ego suffers — and his work suffers. He is frustrated and unhappy. He may seek employment elsewhere, regardless of how satisfied his employer may be with him. This is no less true of the Casper Milquetoasts than of more assertive employees. This is an intangible which actually may be more important than his pay check.

## JOB SECURITY

What do employees seek in employment? Without exception, various studies indicate that wages, as such, are not of first importance. Job security is high on all lists. So are working conditions. Thus, holding servicemen is not always solved by a wage raise, although in individual cases this may be imperative, and without which all other devices may be futile.

If wages are sub-standard, efforts to keep employees happy by other means will avail little. Temptation to go elsewhere will be too great, even to shops where job conditions are unsatisfactory. However, if wages are those prevailing in the area, then a manager may need to look elsewhere

for the causes of turnover. He may need to review his relationship with his employees and find inducements, some representing no cash outlay, which will bring satisfaction.

## MEETING OF MINDS

Ability to communicate is of primary importance. Many shop owners fail miserably in this respect. In other words, they know what they expect from employees but they cannot convey this clearly and unmistakably to them. Sometimes shop owners are guilty of inconsistency in demands and contradictory in directives. Instructions may be the product of momentary whim or caprice, even ill temper. Standards may rise and fall from day to day like a fever chart. Owners who set up shop rules only to violate them baffle their help. In such an atmosphere, even the most intelligent employee becomes puzzled. He works in a state of confused uncertainty and nervous tension, if not shop anarchy. This is more common in service shops than might be suspected. A good many otherwise competent shop owners possess this fundamental defect. It accounts for much employee turnover.

Some shop owners have found a typed set of rules and policies for employee guidance useful. This helps to clear up misunderstandings. It standardizes routine procedures, reduces the need for oral instructions and correction. Such rules may help management itself. Putting instructions down on paper, as one shop owner explained, crystallized his own ideas of what he expected from employees. Until then, as he ruefully admitted, he made up the rules — and changed them — as he went along.

One excellent serviceman with superior skills asked why he quit a job said: "The first requirement was mind-





The "old" employees kept leaving —

reading. Since I hadn't any crystal ball I had to resign."

Too often, in communicating with an employee, a shop owner knows what is in his own mind, but fails to get it across. In human relationships, generally, much misunderstanding is traceable to this error. We know what we mean and therefore assume others do too. Brevity is not a virtue if attained at the sacrifice of precise understanding.

It may not be enough to tell an employee *what* to do. It may be no less important to tell him *why*. This is especially valuable in getting a new serviceman off to the right start in regard to shop policies. The *why* of an instruction will impress itself upon an employee when *what* alone may not. Thus: *Why* a job ticket must be made out a certain way.

#### QUESTIONS AND ANSWERS

When an employee shows a genuine interest in his work, questions should be encouraged. Answering questions is cheaper than correcting errors after the event. Questions, as such, are not necessarily an evidence of ignorance. The new employee who asks many questions may do so only because he is anxious to reflect his employer's policies and attitudes.

The do-it-because-I-say-so method of getting work done is as antiquated as the 12-hour day and sleeve-holders. It is a needless barrier standing as a roadblock barring decent, intelligent understanding and mutual respect between employer and employee. Employer self-interest exposes the folly of such a relationship. It is an offense to the essential dignity of an individual. It will create hidden resentments which will be reflected in the ledger and other equally sensitive points. The better the employee the more likely he is to place a high price on his personal dignity.

Often a thoughtless remark, made without malice, may rankle for days, feeding on itself. Personal behavior which a shop owner would not tolerate in an employee is too often considered the prerogative of management. Such behavior, unacceptable in an employee, is no less reprehensible in management. In fact, it may have a more devastating effect on shop morale than if it were a characteristic of a lesser employee.

Thus, men may be expected to be even tempered regardless of provocation, with the shop owner reserving the right to blow his top at the slightest excuse. In his time, this writer recalls several "scenes" staged by shop owners in front of both employees and customers. Letting off heads of steam can be expensive, both in respect of customers and loss of employees.

#### DIPLOMACY

Lecturing employees and "balling them out" may be necessary on occasion but it should be done diplomatically.



He quit after a bout with the broken-down truck —

ically and on a high level of objective impersonality. It should be done quietly and privately, outside both the ears and eyes of others. Pointedly taking an employee out of ear-shot but within view of others, and for the obvious purpose of dressing down the erring employee, will be resented. It will prompt the victim to find ways of getting even. The Chinese are not the only ones attaching great importance to "losing face."

Taking unfair advantage of an employee because of his relationship as an employee is unwise. Nothing should be said or done which can even subtly imply an inferior status.

Though employees, among themselves, indulge in practical jokes on each other, a shop owner should hesitate to do so. A technician, for instance, may feel he has to tolerate such jokes by his employer as a condition

of employment at which time resentments may be set up. Besides, there is nothing less practical in a service shop than some of the more offensive "practical" jokes indulged in. A wise shop owner will stand aloof from such practices . . . yet not criticize his help.

Good employees want to feel they are participating in a venture and are a part of it. This feeling of participation can be encouraged by inviting suggestions from employees. Because of the few employees involved, there is an opportunity for face-to-face discussions as to better ways of performing tasks, of routing service calls, as well as time-saving short-cuts, new techniques, etc. A few minutes spent every day by a shop owner "visiting" with an employee, even while working at the bench, trying to draw him out, may be a vital factor in keeping employees contented. This should be done on the basis of intellectual equality in the realm of ideas pertaining to the work, and regardless of the owner's superior knowledge of the subject at hand. Time permitting, it may pay an employer to take a certain amount of interest even in his employees' personal problems, their hopes and ambitions without, however, getting involved in intimate personal affairs.

#### THE 'IDEA' BOX

Many ideas and suggestions of employees may be without value, or be impractical in application; however encouraged nevertheless. An employee who is thinking about his job constructively is a better employee and a happier one. Impractical ideas must be rejected with diplomacy lest an employee be needlessly crushed. If not too much is involved, even ideas of dubious value may occasionally be

(Continued on page 19)



The boss had a good sense of humor(?)



# ASSOCIATION NEWS

BY PENNY MARTIN

## PITTSBURGH, PENNA.

The Radio & Television Servicemen's Association of Pittsburgh, Inc., fired the opening gun in a campaign to acquaint the public with the efforts of the Association by a telecast on Pittsburgh's new Educational Station, WQED.



The program, "What's Wrong With My TV!" acquainted viewers with some of the ills that occur in television receivers and the advisability of securing reliable service when needed.

The entire staff of WQED including Ed Wegner, Ed Horstman and Wm. A. Wood, are to be complimented on the excellent help provided to make this program successful.

This enterprising group has offices at 1741 East Street, Pittsburgh 12, Pa. John F. Cochran is President and Tom Ging, Secretary.

\* \* \*

## DICKINSON, NORTH DAKOTA

The newly organized "TRI-STATE RADIO AND TELEVISION TECHNICIANS ASSOCIATION" includes Eastern Montana, Northwestern South Dakota, and Western North Dakota. Under their present plans the whole state of North Dakota will be included eventually.

The first four meetings met with enthusiastic success as attendance exceeded all expectations. Being new, they are also experiencing the same problems that so many older organizations have gone through, and President Dale Thomas has put in an urgent request for any information or literature concerning the formation of an organization and how to keep it alive and rolling.

How about some co-operation? Lend a helping hand to a brother serviceman. Put Dale Thomas, Dickinson, North Dakota, on your mailing list to receive your organization's publication.

How about it, Bert Bregenzer? . . . Palmer Murphy? . . . Hal Chase? . . . Frank Moch? . . . Phil Hamberger? . . . Jack Hughes? . . . Harvey O'Dowd? . . . Murray Barlowe? . . . Tom Sandberg? . . . J. P. Graham? . . . Fred Colton? . . . H. F. McFarland? . . . or anyone else that has some valuable information to send along. I know Mr. Thomas will appreciate any help you can give him.

\* \* \*

## TISA, CHICAGO, ILLINOIS

What is the truth about TV?

How often does it require service? What can go wrong? How much should it cost? How long should a picture tube last? When can color TV be expected? How big will the picture be?

How much will it cost to maintain a color TV set?

These and many more questions are in the minds of the public. Most people just don't know where to find the answer. The result is confusion and sometimes unnecessarily high cost. The problem of disseminating this information falls upon organizational work.

To solve this problem, the TELEVISION INSTALLATION SERVICE ASSOCIATION, realizing its responsibilities to the public, has created a lecture bureau fully qualified to answer any question regarding TV as far as it affects the set owners and viewers.

Any group desiring this program at no cost whatever, can communicate with TISA headquarters at 5908 S. Troy St., Chicago 29, Illinois, for full details and arrangements.

President Frank Moch also informs me that the members of this association realize there are many people less fortunate than they. Time lies heavy

(Continued on page 26)



OFFICERS OF THE EASTERN CONFERENCE, INC.

Left to right: John G. Rader, of Reading, Pa., Treasurer; Harold B. Rhodes, of Paterson, N. J., Chairman; Bert A. Bregenzer, of Pittsburgh, Pa., Vice Chairman, and Ferdinand J. Lynn, of Buffalo, N. Y., Secretary.



# What Is Service?

By R. H. Schneberger  
National Service Manager  
Crosley Radio and Television

Whether we sell labor or merchandise, service is an important part of the transaction of sales. We can't isolate it even if we tried. Poor service hinders sales. Good service builds sales. This is basic. Therefore since sales provide profits, which are the life blood of any business, service must be



considered as an adjunct to sales. The Service Department of a merchandising organization must be considered in the light of its contribution to the total effort. Even though the Service Department is a net expense, its necessity and importance must be considered in the same light as other supporting services such as rent, light, heat, delivery, credit, collections, etc. None of these taken individually, apart from the business, produce any profit in themselves; yet without them no business would function.

But it must also be remembered that a well-operated service department with a good manager who is sales and promotion minded can in large measure offset the necessary expense of a service department by merchandising parts, accessories, and supplies as well as labor.

Following is a brief outline of the elements that go into making a good service operation in any merchandising organization. It is offered as a kind of criterion or standard of excellence to guide the thinking of management.

1. *A full appreciation and realization of Service Responsibilities:*
  - A. To the ultimate consumer.
  - B. To the dealer.
  - C. To your own organization.
  - D. To the distributor or jobber.
  - E. To the manufacturer.
2. *Proper Attitude and Approach:*
  - A. To build product sales on service.
  - B. To let good will and consumer acceptance be the incentive to buy merchandise and labor rather than price alone.
  - C. Service can be the tie-in that promotes and clinches the sale of a product.
  - D. Service men can demonstrate equipment to the user to keep it sold.
3. *Competent Service Management:*
  - A. Recognition that a service department as we know it today is a "business within a business" and takes a business man to operate it.
  - B. We must endeavor to sell all the labor we buy just as we do with merchandise; at a profit if possible, but always in a way that will build confidence.

## 4. Adequate Shop Facilities:

- A. In these days of complex electronic devices and automatic appliances we can no longer expect ordinary tools and techniques of a decade ago to meet the requirements of today.
- B. Shop equipment becomes outmoded and must be modernized or replaced in the interest of efficiency and economy. This must be taken into consideration in charges.

## 5. Trained Shop Personnel:

- A. We must build an organization of trained technicians and utilize their best skills. Failure to do so is an irretrievable economic loss.
- B. We must endeavor to keep good people. Excessive turnover is not conducive to high morale and good service.
- C. Keep bringing up apprentices to take the place of men who move up in the organization.

## 6. Aggressive Parts and Accessory Promotions:

- A. Not only can such an activity be profitable but it provides contact with our customers; we must keep in mind we have more than one product to sell.
- B. The margin in accessories offsets some of the necessary free service incidental to sales.

## 7. Adequate Display of Parts, Accessories, and Supplies:

- A. We need only look at the Dime Store and the Super Market to realize the impact and the possibilities of adequate display.
- B. People find it hard to buy what they can't see. If we display we can sell.

## 8. Use of Mailing Pieces:

- A. A periodic mailing program provides a point of contact.
- B. It keeps your name and your location in your customers' thinking.

We realize these standards are not easy to attain. But any approach to them is progress. All those who have tried have succeeded in some measure and found the results well worth the effort. Any of these items may be ignored but the consequences can not be escaped. A successful operation is one where constant attention is given to improving little things that otherwise might hinder profit and progress.

## SELLING SERVICE

By HAROLD CHASE

Courtesy is the most powerful "tool" the service industry has to combat customer dissatisfaction which at the same time costs only a little effort, no actual cash outlay.



Courtesy starts with the original phone call by your letting the customer diagnose his own set trouble if he or she wishes.

Courtesy is continued by your not disagreeing, though you may know differently; merely say, "How does the set act?"

Courtesy on call starts by not leaning on the door bell too hard and by giving the customer a chance to get there before ringing again. It is continued in the home by listening carefully to all complaints and by answering all questions. Courtesy in the home also means cleaning up after repair and always thanking the customer for his business.

So many delivery, sales and service personnel today have forgotten how to say, "Thank You." If you adopt the "COURTESY METHOD OF SERVICE SELLING" you will be outstanding in your field. Another bit of courtesy that we use that makes a hit is a thank you letter. This letter is used if a customer pays a bill promptly, when he recommends us to a friend, or in fact, for any reason where we are favored by the customer.

Yes, courtesy is an important "tool" of the SERVICE SELLING. We offer as proof the body of a letter we received yesterday:

I want to pay my compliments to the Service Man that you had take care of our Television. In my opinion he was most efficient, indeed, and was extremely courteous, conscientious, and anxious to please us.

Mrs. Fohey and I hope that all of your Service Men are half as good as he is.

## WHAT WOULD YOU DO?

*Mr. Al Robertson, owner of the Al Robertson Appliance Stores, recently sent us a copy of the following letter which he received:*

"Dear Sir:

I have read your articles and answers to dealers' problems since they have been appearing in "Electrical Dealer" and have gotten many sales helps from them. I have a problem that I haven't seen answered and I am writing to ask if you can offer any suggestions.

My radio-TV serviceman, on outside calls, is 21 years old, but is small and looks to be only about 12 or 14 years old. He knows his stuff and I have no complaints about his work, but I do get frequent complaints from customers about sending out a "school kid" to work on their high-priced TV set. I explain to them that he knows his stuff, is 21 years old, belongs to the National Guard, etc., but I think there is still some feeling that they would rather have an older man do the work. Outside of having him raise a mustache or bleach his hair white, have you any suggestions?

I would appreciate a direct reply.

Thanking you,

Yours truly,  
V. W. Hodge"

### WHAT IS YOUR ANSWER?

Send it c/o Service Management, P. O. Box 1321, Indianapolis, Ind.

## Appliance Repair

(Continued from page 8)

depend greatly on it. Letters and phone calls are received daily asking for parts that perhaps no other company would bother to worry with. This is real service to people; a dedication of a business to its chosen goal.

As may be expected, it often happens that the firm loses money on these parts transactions. However, Johnston knows that if a customer is done a service, he will remember it when he needs that new appliance and decides to buy. Proof of his philosophy is tallied in an ever-growing number of new customer names added to the appliances-sold-file.

The parts department maintains a special library of appliance catalogs for use when a piece is not among the more than 10,000 different kinds of parts in stock. Besides the catalogs, the firm keeps a file of pictures of parts handy to help those who can recognize the thing they are looking for when they are unfamiliar with its technical name. It is this type of unusual service that has led the Wallace Johnston Company to its present eminence.

The firm's concern for its customers is matched by its concern and personal regard for all its employees. The turnover is practically non-existent and most of the 50 workers have been there for many years . . . and plan to stay. A typical gesture was made by the management when, on the firm's 20th anniversary, two years ago, each employee got 20 silver dollars, plus a dinner dance with special entertainment.

The man responsible for such a good story of business leadership is a definite heavyweight and champion of his company. An addiction to hard work that has been with him all of his life never shoves his weight much below 250 pounds. This hard work is by no means confined to his own business. He fires his extra energy into the Idlewild Presbyterian Church, of which he is an elder; the Memphis Rotary Club, of which he is president; NARDA (past-president), and many other civic and charitable enterprises. His office shows the tribute the people feel for him as it is studded with plaques and other testimonials to his service in behalf of *Everybody*.

Big and soon bigger and then BIGGEST . . . that's Wallace Johnston, Inc., appliance sales and servicing story.



## FROM FIRST TO FOREMOST

### 50 Years of Setting Standards

Ray L. Triplett with the first commercial tube tester—a Triplett production—and Triplett Model 3423, the leading tube tester of today and tomorrow. See it at your parts jobber. Model 3423 Mutual Conductance Tube Tester. Dealer's net \$199.50



The only tube tester designed with 50 years experience. Two important lessons are learned, from experience, by the manufacturer of test equipment. First, the value of test equipment to a service man is in direct proportion as it reduces his necessary labor and increases his profit for the same span of work time. Model 3423 will give you no false readings to waste time—the patented circuit for tube testing employs actual signal (4KC) for grid signal. It also has a complete coverage of all tube types—six plate voltages (including 0-10 variable). Micromhos scales read 0-1800, 0-6,000, 0-18,000 and 0-36,000.

Secondly, test equipment costs money and the purchaser must be protected against quick obsolescence. In Model 3423 the multiple switches allow making any combination of tube connections and is protection against such obsolescence.

Ask your jobber to demonstrate the many other extra features of this tester.



# TRIPLETT

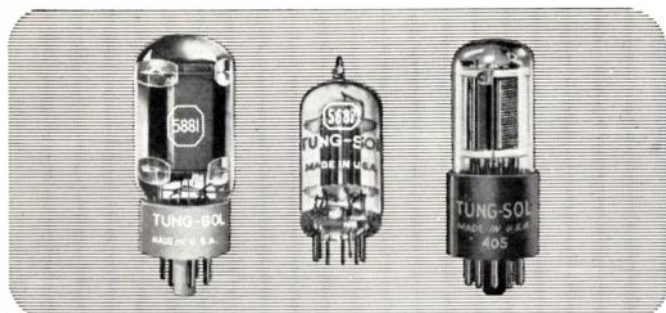
Electrical Instrument Co.  
Bluffton, Ohio



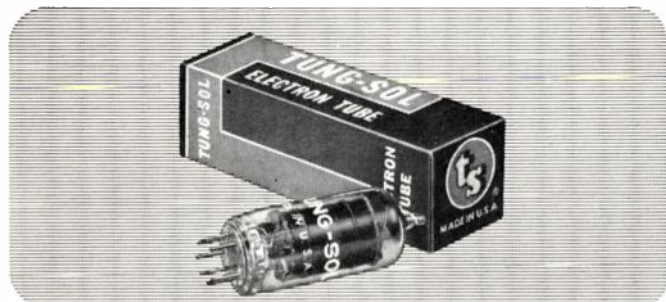
# TUNG-SOL TUBE QUALITY PAYS OFF IN SALES!



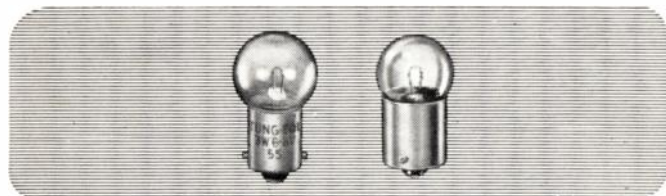
Black and White Picture Tubes



Special Purpose Tubes



Radio and TV Receiving Tubes



Dial Lamps

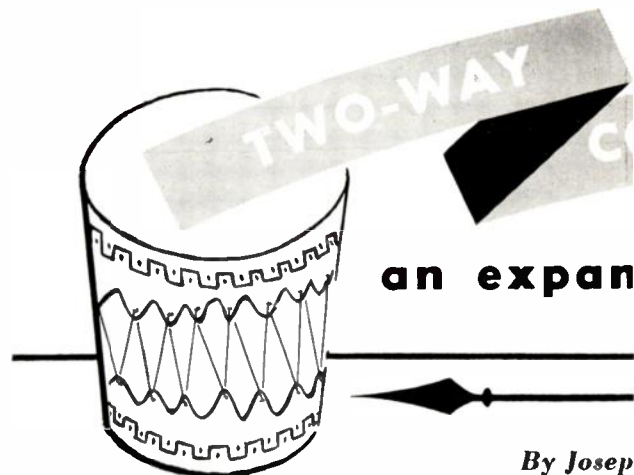
The performance quality of Tung-Sol Tubes will keep customers convinced that you're the best serviceman in the business. Tung-Sol Tubes meet highest set manufacturers' specs—protect you against call-backs. Tell your supplier you'd rather have Tung-Sol.

**TUNG-SOL ELECTRIC INC., Newark 4, N. J.**

Sales Offices: Atlanta, Chicago, Columbus, Culver City (Los Angeles), Dallas, Denver, Detroit, Newark, Seattle

**TUNG-SOL®** *dependable*  
**ELECTRON TUBES**

**Expand Your Earnings — Service Appliances**



THERE ARE TWO WAYS to run a radio service business, but Two-Way does it only one way.

Two-Way Communications Service, Inc., shuns the "stick 'em today, for tomorrow we may be out of business" approach in favor of an "anything for our customers" attitude. It pays off in profits.

This fast-growing Motorola service station in Traverse City, Mich., could serve as a pattern for anyone who thinks radio is here to stay.

For a number of years Motorola has been carefully building a national service organization to give users of two-way radio round-the-clock maintenance. Today there are more than 650 such authorized service stations throughout the United States, Alaska and Hawaii. Each is a privately owned business, carefully screened and franchised by Motorola to assure customers competent, dependable service.

Two-Way Communications Service is a typical service station. Not so many years ago it was a sideline business for Jay V. Ealy, who had begun earning his way by installing the first Motorola B-battery powered auto radio receivers while he was still in high school.

Ealy knows his radio—the theory from attending three technical schools, and the practice from designing and building equipment ranging from complete broadcasting stations to instruments for measuring beta and gamma rays.

Growth of his two-way radio installation business encouraged Ealy to go all-out, and in the spring of 1952 he started



JAY V. EALY, LEFT, AND ALBERT MAX-BAUER have built their business on the premise that customers deserve the best, and without delay. A call to Two-Way brings one of the two station wagons, two panel trucks or a pick-up truck in a hurry.

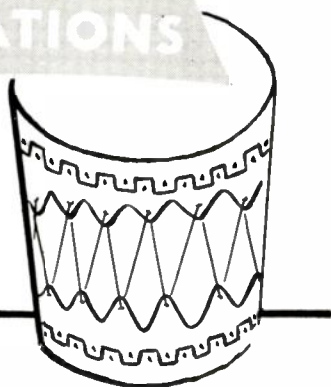


# COMMUNICATIONS

## ling field



4. White



construction of a new shop and office building. He also incorporated the business with himself as president and with one of his early service men, Albert Maxbauer, as vice president.

Two-Way's service bench is the envy of the northern half of Michigan. Within arm's reach are more than \$20,000 worth of test instruments, handy to the six skilled technicians. The bench was designed with maximum comfort for the employees, plenty of leg room, tools and test gear within easy reach, and with multiple test panels planned for the entire back panel.

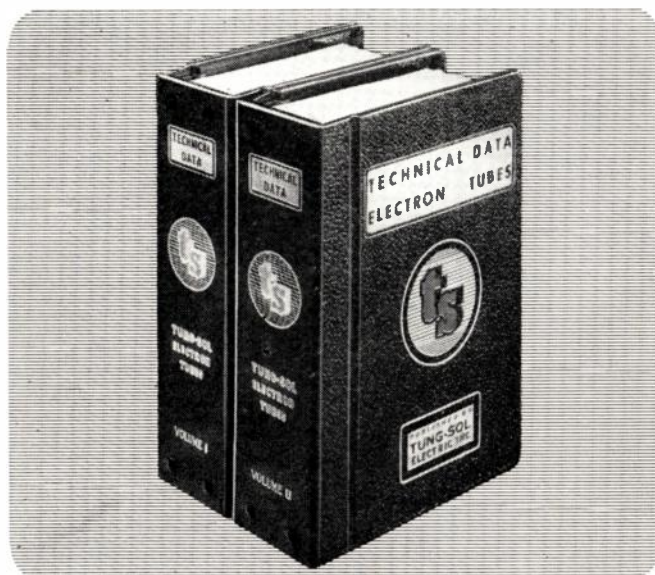
All conduit runs and pull boxes for transmission lines, battery power and plating equipment are accessible from lower doors. Also kept in these shelved compartments are special instruments and bridges not commonly used as bench equipment. One master meter panel is designed to handle all types of mobile units. Eventually, dual patch arrangements will extend the versatility to other test positions.

Besides having a fine service and construction shop, Two-Way maintains a stockroom containing almost any  
(Continued on page 20)



**\$20,000 TEST BENCH . . .** Fast and complete servicing is maintained by men working at this custom-built work bench. Every test instrument, bridge and accessory is within easy reach on the shelf or stored beneath the bench top.

## TUNG-SOL TECHNICAL DATA PAYS OFF IN SERVICE !



T-58 700 pages—600 tube types



NEW! 1954 Edition! T-70 160 pages of data on CR tubes, receiving and special tubes, dial lamps



T-31 300 blueprint base diagrams for 1100 tube types

Here's the most practical set of tube reference books in the industry—all the information you need for everyday jobs! They're easy to read—easy to use (always lie flat when open.) You'll get work done faster with Tung-Sol Technical Data Books. Ask your tube supplier about them.



TUNG-SOL makes All-Glass Sealed Beam Lamps, Miniature Lamps, Signal Flashers, Picture Tubes, Radio, TV and Special Purpose Electron Tubes and Semiconductor Products.

# TUNG-SOL® easy reference TECHNICAL DATA



# OUACHITA SERVICE PHILOSOPHER



**Talks about Pride, Performance and Products, and a few other things.**

**By JACK DARR**

Well, sir, as I set here writin' this, summer has set down to stay down here in the Hills. M' roses are valiantly bloomin'; wife's garden is doin' real nice. Had a mess of melon yesterday. Sure did taste good, too. We're real proud of th' whole thing, like we are about this time every year. Reason we feel this here stirrin' of pride, seems like we feel like we did it all ourselves. Even if Mother Nature did do most of th' work, we feel responsible, kinda, and henceforth, we take all th' credit!

Pride's a dang good thing, despite what th' Good Book says about it, *IF* it's applied in th' right way. Ain't sayin' that you oughta go around with yer nose stuck up in th' air 'cause you're so proud of yourself. Nope, that hain't th' kind I meant.

Kind I meant is that down inside kinda pride; th' kind that makes you proud of what you've done, but still keeps you humble enough that you don't go around showin' off. Heerd a feller t'other day, or saw it in a book somewhere. Don't rightfully recommend where 'twas, but it made a mighty powerful impression on me. Used jist six words, with a semi-colon between 'em, but they was powerful. Quote, "Pride of Workmanship; Pride of Product."

Now, there he said a mouthful, didn't he? Jist stop and think that over fer a minute or two. Pride of Workmanship; Pride of Product. Translatin' that into language that'd apply to our business, that would mean that you were doin' the kind of work that you could be proud of; the kind that *you* knew was the best in town, in its particular line, and that you were willin' to admit to yourself was jist about all right.

Now, there ain't nothin' braggin' about that, just as long as you kinda keep the sentiments to yourself, and don't go around town makin' a nui-

sance of yourself! This is jist the feelin' that you get, inside, when you've turned out a good job. Makes you feel good, don't it? And, like I say, *you* know when you have turned out a good job, if you're as hard to please as you should be. They ain't but dern few men in this, or any other technical line of work, that don't know, for sure, inside of themselves, when they've turned out jist as good a job as can be done.

Means that you've used the finest materials, the very carefulest techniques, and all in all, done the best job that is possible. Also, you know dang well that there couldn't nobody turn out a job that'd top it, whether it's installin' a TV antenna or puttin' on a line plug. Makes no difference how big or how little the job is, as

long as you've done it right, that feelin' of pride is right there.

## Pride 'n' Prejudice

This calls fer a word of caution, right along about here. Like I said, when you get this feelin' of pride in your work, you be dang sure that it is an honest feelin' from a job done *right*: not jest a self-satisfied feelin' from a permanent conviction that there ain't anybody anywhere as smart as you are.

Boy, when you come down with that disease, you'd better look out! I'll admit to comin' down with an attack or two of it in my time, like everybody else would, if'n they would be right honest with themselves. Calls for a mighty lot of soul-searchin', at times, and the ability to be absolutely honest with *yourself*, which is jist the heck of a lot harder than lots of folks realize. F'rinstance, if you're puttin' up antennas a certain way, and one of your competitors is doin' it different, you gotta be honest enough to admit it, if his antennas work better'n yours do, and go an' see what he's doin' right that you're doin' wrong, and so forth. In other words, you've gotta take an analytical approach to yourself, and that's hard to do. You can do it, though, if you can muster up the strength to be absolutely *honest* with yourself. If he's doin' a better job than you are, why hooray fer him; go an' study some of his jobs, an' see what you're doin' wrong, and change up your methods to suit the needs. That ain't sayin' that you gotta copy whatever he does; no sir. Just find out what factors are influencing the jobs, and what it is that his antennas have that yours haven't, and make some changes in your methods where necessary.

## Best 'n' Bestest

Like I said, about the best way to judge that part of it is by the results. If your jobs are workin' better than his, why then you're the best; if your jobs stand up better'n his, why, you're the best. If his jobs perform better than yours, why, he's the best, and you need improvement. Incidentally, as I'm fond of sayin', that don't relieve you of the necessity for continual study and research, in order that you can do your jobs still better. Y'ain't never gonna git to the point where there ain't nothin' you can do to improve your work. Don't ever let that idea git hold of you. If you do, you're worse off than you were. When you sink into that attitude, the world is gonna sail right off and leave you, while you'll find yourself in a stasis. Definition of that word, I'm told, is 'a state of complete cessation of movement,' and that's what you'll have, once you get the idea that you've done perfect, and

## "MISS MANAGEMENT"



"Of course they're blank - I told you I needed a new typewriter ribbon."

there's nothin' left to do that would improve your work a particle.

Kinda got the idea the other day that I was bored with radio servicin'. Settin' there wishin' for a TV set to come in, with somethin' interestin' wrong with it, jist so I could exercise my keen mind on it. Y'know, it wasn't fifteen minutes after that I was settin' on th' same stool, stuck tighter'n a jug on a danged ACDC radio! Couldn't fix it fer heck! So, y'see, no matter how much you know, or think you know, there will always be the opportunity to learn something new, every day. I gct a fair-sized intercom job to put in and while I kinda consider m'self a real hotshot on intercoms, so simple and all that, I'll bet anyone in th' audience a cuppa cawfee that I'll learn something new out of it.

Brings to mind something else I mentioned a minute ago. Pride of Products. Of course, this feller was makin' whatever this was, and he evidently thought pretty highly of it, from th' way he spoke, and I honored him fer it. That's the way we all oughta be, about the stuff we sell. Even if we're only repairmen, and jist sell replacement parts, we ought to be so proud of the kind of parts we sell that we're willin' to brag on 'em, and stand back of 'em with a good solid guarantee. Of course, that implies a mite of caution in selectin' those parts; we gotta be sure that the parts we pick out are actually the best that can be had, from experience and tests made ourselves.

#### *Guaranteed Products*

F'rinstance, I once bought some ceramic condensers. Made by a company I'd been tradin' with fer years, and so I had all the confidence in the world in 'em. Feller got to arguin' with me about 'em, and I told him, "Tell you what I'll do. If that condenser *ever* goes out, I'll give you a new one, free!" Of course, it was jist a little bitty .01, and in a battery set, so I was pretty safe, but that jist goes to show you what kind of pride of product I had, jist on account of their reputation, cause I'd been usin' 'em for twenty years or so, then.

Same thing goes for radio sets, PA systems, TV sets, or anything else we sell the public. I feel like it's a lot better to sell 'em a product that we'd stick our own neck out on than to sell 'em something that only has a low price to recommend it. I always tried to stick with a policy of trying out any new product myself before I tried to sell it to my customers.

While you're doin' this neck-stickin' out, you'll find out that there is another benefit accuin' to you through the process. You'll find out that your

customers will grow to have a tremendous respect for you as a feller who always means what he says, and says what he means, and is willin' to back up any statements he might make. Once you git that kind of a reputation firmly established in people's minds, you're in like Flynn. You'll find out lots of the unpleasantness that the chiselers suffer will be avoided, because your customers will have faith in you and your work or your products, and that is the biggest help you could possibly have!

Speakin' of this business, I was talkin' to a doctor friend of mine a day or so ago. He'd been up the night before almost like Dr. Pepper: at 10, 2 and 4, A. M., that is, and he looked kinda hollow-eyed. 'Noiher feller at the table says t' him, "Doc, when you started in medicine, you made your bed, now" . . . and Doc shoots back, "Yes, and now I'd sure like to git a chance to lie in it!" Radio-TV business is kinda like that. We made our beds a long time ago, and now we've gotta lie in 'em, and that means keepin' up with it, all the time.

Heard a good name for some of these crazy comedians you see on TV nowadays, "Vidiots!"

Y'all come.

### **Good Employees**

*(Continued from page 11)*

initiated just to keep those making suggestions interested and on their toes.

General working conditions need upgrading if the best employees are to be retained. Often, employees quit for stated reasons which seem obscure, even pointless. The employee himself may not know the real reason for dissatisfaction. Quitting can stem from an apparently trivial situation, yet this cause, slight though it appears, may be of long standing and a source of never-ending irritation to an employee.

As an example, one shop owner could not keep a third serviceman though the other two were employees of long duration. After several successive replacements quit he finally found the cause. Each had left in disgust at having to drive a broken-down service truck. The older employees' seniority rated the two new trucks.

A bookkeeper left one shop owner because the latter had relegated him to a poorly lighted, badly ventilated cubbyhole. Tossing out a small partition would have made the difference.

Even though a shop owner may be satisfied with outmoded fixtures and shop layout, and consider this solely his own concern, a good many employees may take a contrary view. Other things being equal, good em-

ployees prefer to work in an up-to-date environment. Not only will a modernized shop impress customers but it will also help to hold the best employees.

With an increasing number of employers, large and small, taking a more enlightened view of employer-employee relationships, the very smallest shop owners should recognize that times have changed. If they wish to get better employees and retain them they must be better employers. There is an upgrading process in which, while employers are seeking better employees, employees are just as anxiously seeking out more thoughtful and considerate employers.

### **New Brochure Available**

A booklet describing how management can effect considerable economies through the use of "electronic towels" has just been issued by the Electronic Towel Corporation. The brochure not only describes savings by dispensing with costly paper towelling but also shows how sanitary facilities can be maintained economically and effectively for proper personnel and guest relations.

The booklet may be obtained free by writing the Electronic Towel Corporation, 342 Madison Avenue, New York City.

**HVO-II** for under chassis replacement in Zenith sets having 12" to 19" round tubes. **HVO-9** Autoformer for RCA, Hoffman and Hallicrafters sets designed for picture tubes 21" and up. **HVO-10** for "fast retrace". Merit TV Replacement Guide No. 405 covering practical recommendations for replacements in over 6000 models and chassis; Auto Radio Replacement Guide Form No. 3 can be obtained from your Jobber or by writing:  
**MERIT COIL AND TRANSFORMER CORP.**  
4425 N. Clark Street, Chicago 40.

# MERIT

LISTED IN  
RIDER'S TEK-FILE & SAMS' PHOTOFACT  
INDEX. TAPE MARKED TO HELP YOU—  
ORIGINATED BY MERIT.  
MERIT IF-RF COILS INCLUDE A COMPLETE  
LINE OF TV REPLACEMENTS.





(left)  
**SERVICE BACKS UP SALES . . .**  
*Behind Two - Way Communications Service's attractive showrooms are the service shops, including complete drive-in facilities for mobile radio installations and maintenance. A 128-foot tower lifts the antennas into the clear above surrounding trees.*



(right)  
*Installations and maintenance are made easier when every needed part and accessory is on hand. Two-Way Service keeps a constant inventory tabulation — has never run out of vital stocks.*

## Two-Way Communications

(Continued from page 17)

conceivable part which might be needed. George Scheck, stock manager, maintains constant inventory to insure against shortages.

William E. Dunn heads the special parts construction section. In the fabrication department are a variety of power tools, lathes, metal bending, shearing and welding equipment used to construct special or custom units.

In addition to the replacement stock of parts, Two-Way keeps on hand several spare mobile transmitter-receiver units and "Handie-Talkie" portable radiophones ready for immediate use on frequencies most common in the area. These are loaned to customers whenever necessary at no cost to them. There are also low-power base stations in both low and high frequency bands, which are portable and have local or remote control facilities with emergency power units for use during any major station modification or in emergencies.

In conjunction with the emergency equipment, Two-Way

keeps on hand several portable antenna systems that can be erected and readied for use in a matter of minutes.

For civilian defense use, the company has rack-mounted base station monitor receivers, mobile receivers and associated transmitters on amateur frequencies. All are at civilian defense disposal 24 hours a day.

It is this "Plus" service to customers that has built Two-Way Communications from a small home shop into an organization now covering the northern half of the state of Michigan. Among the 27 base stations and 200 mobile units serviced directly on a scheduled basis are such varied customers as county highway maintenance, taxicabs, police, fire, highway trucking, light and power departments, construction, petroleum, pipelines, marine, and aircraft. Plans are in the making for a Miscellaneous Common Carrier station to offer communications to those who would normally not be eligible or in the market for a station of their own.

On the basis of past performance and reliability, Two-Way Communications Service, Inc., is a key Motorola service station. As Jay V. Ealy phrases it, "We feel that Two-Way has but one main item to sell, and that is service. Anything we can do to give our customers 100 per cent communications is worth the cost."

## Income Insurance

(Continued from page 5)

from the store was just settling down to read his evening paper when he happened to glance out the window and notice that the store was full of flame, and black smoke was billowing from its ventilators. He rushed to the 'phone and called the fire department but by this time the flames had made considerable headway. Burning into the floor and working their way through the partitions, they gutted the surplus stockroom in the basement, virtually destroyed all its contents. By the time the fire was finally extinguished at 9:46 p. m., the flames, dense smoke, water and condensation had also damaged much of the stock on the store floor.

Since the fire occurred during the busy Autumn season, the landlord had difficulty finding a contractor who could start work immediately on building repairs. It finally took 17 weeks

**For further information concerning Income Insurance contact Agricultural and Empire State Insurance, 10 Washington Street, Watertown, New York.**

to complete all repairs, replace fixtures and redecorate. Replacement of merchandise took another 3 weeks. The store was closed down all during the months of highest sales, including a busy Christmas season. Meanwhile, the owner had made an effort to rent temporary quarters and continue his business on a partial basis, but a number of difficulties made this unprofitable.

As a result of the fire, he sustained a 90% loss on his merchandise and furnishings. This amounted to \$36,816 which was fully paid by his property insurance. However, he also lost \$8,496 in estimated earnings for 20 weeks. This may be looked upon as the mark-up on stock which he would have sold during the entire period of interruption. Earnings Insurance would have compensated the owner completely for this additional amount, which would have been calculated as follows:

### 20-Week Shutdown of Store

26,526 Net Sales for same 20-week period of previous year.

\$9,284 35% Increase (based on first 4 months of fiscal year).

\$35,810 Estimated Sales for loss period.

\$23,920 Cost of Stock to make above sales.

\$11,890 Gross Earnings (mark-up).

\$3,394 Expenses Discontinued during Shutdown.

\$8,496 net Loss on Sales.

As can be seen, Earnings Insurance guards against loss of business time—a particular period of earning power. Certainly it is important for the merchant to insure his life, his home, car, business property—but how much more important to protect his business time, his *continued opportunity to produce* the wherewithal to pay for his home, children's education, taxes, various kinds of family insurance, and all other living expenses! Yet this is the gaping hole in the protection plan of a large majority of merchants and other business owners. A good business man also has a responsibility to the other owners of the business if any, to his employees, and to his creditors, to guarantee the productive power of that business.

#### RETAINING THE STAFF

It is highly important that the owner of a successful store retain his key personnel, and perhaps his entire staff. If property protection is adequate the physical assets of a store can be purchased or rented again, but the real essence of any business is the experience and good-will following of its personnel. In the final analysis this can be the greatest loss of all.

Especially vulnerable are stores which must rely on a good traffic location, high number of unit sales and small mark-up. It is extremely difficult for these retailers to find a suitable temporary location while permanent quarters are being re-established.

Service enterprises are one business group, besides stores, which face a grave risk from shutdown in event of fire or other sudden peril. These require a specialized type of building and fixtures which, if destroyed, make it almost impossible for them to find temporary quarters in which to operate. Therefore, it may take them a year or more to rebuild suitable premises. A similar policy is available to protect them against this loss and possible failure due to interruption of business.

The merchant who leases premises is subject to the same perils, loss of earnings, and continuing expenses during shutdown, as one who owns and occupies his own building.

The idea of insurance against lost earnings due to a forced shutdown is not a new one, but such policies have been written to cover manufacturing plants and other large corporations, and were not practical for mercantile

businesses. For this reason, more than 90% of all stores are unprotected against loss or failure due to interrupted earnings, although it is obvious that every store needs this coverage just as much as its regular property insurance. The new Business Earnings policy is tailored specifically to the needs of the merchant. It is short, simple and complete. It is reasonable in cost and can be deducted as a business expense for tax purposes. Most of all it really protects the earnings of a business against its worst peril—interruption.

#### OTHER PERILS

While it is true that fire is the most frequent cause of business interruption, merchants are too inclined to disregard other perils that can damage and shut down a store. Although they can be equally disastrous, the additional premium is negligible and well worth the protection. These perils occur more frequently than most people realize.

For example, 506 tornadoes were officially recorded in the U. S. in 1953, and they destroyed property worth \$200 million. Sixteen windstorms were ranked as national catastrophes, causing more than one million dollars damage apiece. The bad storms are not all in the southwest, by any means.

Violent storms strike every state in the union every year.

Nor are earthquakes confined to the western states alone. Two of this country's most disastrous quakes occurred in Missouri and South Carolina, and claims have been paid in most other parts of the United States, including the supposedly stable northeast.

#### ALL-IN-ONE

Other causes of property destruction that may force a business shutdown are smoke from someone else's fire, explosion, riot or civil commotion, theft and damage by vehicles or aircraft. Protection of earnings against interruption by these and other hazards can all be lumped together in one complete package of protection for surprisingly little cost.

Every store owner should consider these questions. If your business burned to the ground tonight, even though your fire insurance fully covers your property, would you be able to stay in business? Would you be able to support your family, meet your monthly obligations, retain your personnel and customers? In fact, do you have any idea how much all this would amount to? You can figure it out in a moment. First, take a guess as to how many

(Continued on page 25)

#### THE NEW MODEL TV-11

## TUBE TESTER



Operates on 105-130 Volt 60 Cycles A.C. Hand rubbed oak cabinet complete with portable cover

**\$47.50**

- Uses the new self-cleaning Lever Action Switches for individual element testing.
- Because all elements are numbered according to pin number in the RMA base numbering system, the user can instantly identify which element is under test. Tubes having tapped filaments and tubes with filaments terminating in more than one pin are truly tested with the Model TV-11 as any of the pins may be placed in the neutral position when necessary.
- Uses no combination type sockets. Instead individual sockets are used for each type of tube. Thus it is impossible to damage a tube by inserting it in the wrong socket.
- Free-moving, built-in roll chart provides complete data for all tubes.
- Phono jack on front panel for plugging in either phones or external amplifier detects microphonic tubes or noise due to faulty elements and loose external connections.

**EXTRA SERVICE**—The Model TV-11 may be used as an extremely sensitive Condenser Leakage Checker. A relaxation type oscillator incorporated in this model will detect leakages even when the frequency is one per minute.

**SHIPPED ON APPROVAL**  
**NO MONEY WITH ORDER — NO C. O. D.**

Try it for 10 days before you buy. If completely satisfied send \$11.50 and pay balance at rate of \$6.00 per month for 6 months.—**No Interest or Carrying Charges Added.** If not completely satisfied return to us, no explanation necessary.

#### MOSS ELECTRONIC DISTRIBUTING CO., INC.

Dept. D-55, 3849 Tenth Avenue, New York 34, N. Y.

Please rush one Model TV-11. I agree to pay \$11.50 within 10 days after receipt and \$6.00 per month thereafter.

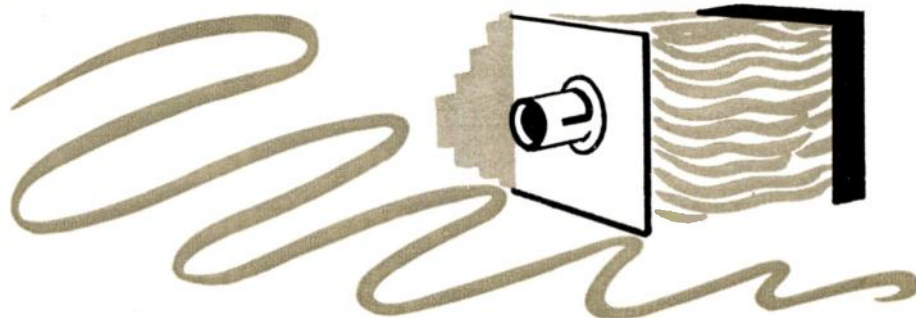
NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

ZONE \_\_\_\_\_ STATE \_\_\_\_\_





A good indication of the expected increase in the use of home electric and electronic products was the recent action of the **NATIONAL ASSOCIATION OF HOME BUILDERS** when they unanimously adopted a voluntary standard on electric service entrance capacity which will give the house-holder 100-ampere capacity in place of the presently normal 30-60 ampere capacity . . . **NEDA** has appointed a committee to investigate the possibilities of cooperative buying . . . With the recent purchase of the Watt Electronic Products, Ltd., the **GENERAL INSTRUMENT CORP.** announced the formation of a Canadian subsidiary, **GENERAL INSTRUMENT-F. W. SICKLES OF CANADA, LTD.** Hugh T. Watt, former president of Watt Electronic Products, will remain in charge of this operation . . . **GRAMER TRANSFORMER CORP.** has purchased the Halldorson Transformer Co. as a part of its expansion program in the distributor field . . . **DAGE ELECTRONICS CORP.** recently announced its affiliation with Thompson Prod. Inc. of Cleveland, Ohio. Dage will function as a decentralized unit of Thompson's expanding electronics division . . . **BELL SOUND SYSTEMS, INC.** of Columbus, Ohio, another Thompson's Prod. affiliate, announced the appointment of Bill Kolans & Company of South San Francisco to handle the Bell hi-fidelity sound equipment in Northern California . . . The recent appointment of **DR. BURTON BROWNE** to handle the advertising for the communications division of **HALLICRAFTERS** re-unites two of the industries outstanding pioneers . . . Milton J. Shapp, President of Jerrold Electronics Corp. recently announced the appointment of **HERBERT JACOBS** as general manager of Jerrold, a large manufacturer of master antenna systems. They also announced the acquisition of a basic patent for TV antenna systems used in all community antenna systems and building installations. The Kallman

Patent covers a Master Television Antenna System that employs an individual antenna directionally tuned for each channel, and a method of feeding these signals into a common transmission line and then tapping off two or more receivers, electrically isolating either the receivers or the antenna to prevent interaction . . . **THE CHICAGO ELECTRONIC LABORATORIES** at 1214 W. Madison announces the opening of its new service division for repair, maintenance, and re-conditioning of selective electronic instrumentation and equipment . . . **R. E. HOLBEIN** has been named Service Parts Mgr. of the Television and Broadcast Receiver Div. of the Bendix Aviation Corp. . . . The **RADIO - ELECTRONICS - TELEVISION MANUFACTURERS** has started mailing copies of a brochure outlining its recommended course for television technician training to industrial and trade school supervisors throughout the country. The recommended training course was prepared by RETMA with the cooperation of the New York Trade School and is designed to increase the technical proficiency of practicing TV service technicians. At a later date, RETMA plans to prepare courses for other levels of radio and television service training . . . **NED K. OWYANG**, manufacturing engineer at the Harrison Plant of the RCA has been awarded a citation for his contributions for improving tube qualities . . . **WALLACE JOHNSTON**, immediate past president of NARDA, was presented with a bronze plaque by the association's membership as a token of appreciation for his efforts in their behalf during his presidency . . . **MARSHALL L. (MIKE) REMUND** was recently named Jobber Sales Mgr. of Jensen Industries, Inc., manufacturers of phonograph needles . . . **ALEXANDER WEISS**, President of the Detroit Television Service Association urges stronger self-policing in the service industry. In a recent talk at a state-wide meeting Weiss said, "To



**HUGH T. WATT** . . . direct descendant of James Watt, inventor of the steam engine.



**H. JACOBS** . . . of Jerrold



**WEISS** . . . "A job we must perform ourselves."

protect the consumer against the malpractices inherent in an industry as young as ours, we must continue to police ourselves from within and co-

(Continued on page 27)

## RCA Offers 'Allergic' Phototube for Electronic Inspection Uses

A phototube electronically "allergic" to spots before its "eyes" was announced today by the RCA Tube Division for a wide-range of industrial inspection applications.

Designed for production-line inspection of soft drinks, medical solutions, and similar translucent liquids, the light-sensitive tube reacts to even minute, transparent impurities which may be bottled inadvertently, according to Douglas Y. Smith, general marketing manager.

The phototube (RCA-6405/1640) had been available previously on a custom-order basis for use in beverage-inspection and ampul-inspection equipment, he said. It has been added to RCA's commercial line to meet the needs of other industrial applications having critical factors of microphonics and sensitivity gradient.

Equipment using this phototube is designed to react only to pulses of light caused by particles in motion. Before the bottled liquids pass the inspecting "eye" of the phototube, they are rotated swiftly, then suddenly stopped, causing the contents to swirl inside the bottles. A beam of light is then focused on each bottle as it passes the phototube. Even transparent bits of cellophane or glass will disturb the light beam sufficiently to cause the phototube to react and to trigger an electronic reject system.

The RCA phototube has a wide spectral response and can be used with an incandescent light source. It is highly sensitive to red and near-infrared radiant energy. In most inspection applications, banks of phototubes are used.

## SELL ENTERTAINMENT NOT TELEVISION — SAYS JOHNSTON

Non-discount dealers were urged to make certain that they really offered more in display, delivery, service, merchandising and terms than the discounters, and to dramatize those "extras" by hard selling, when Wallace Johnston, immediate past president of the National Appliance & Radio-TV Dealers' Association addressed the opening session of the second annual NARDA regional meeting which was held here at the King Cotton Hotel, May 24.

"We're selling not television but entertainment, education, greater happiness in the home; not appliances, but an easier life for mother and that good feeling of a little extra luxury which we feel that our people and our way of life deserve; not air-conditioning but comfort, relief from hay fever, cleanliness and better health; not freezers, but food preservation and the economy that it brings—in other words, we're not selling things and stuff, but services, satisfaction, and pleasure. But —we're not selling it hard enough," Johnston stated.

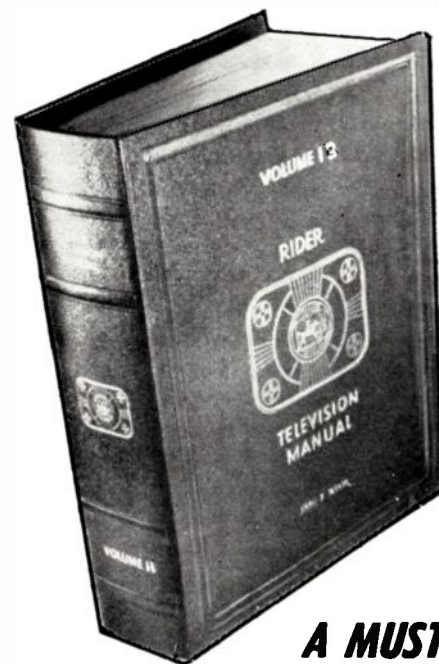
He urged his retailer audience to stop thinking in terms of price and terms, and to sell in terms of product merit.

"If we don't first make certain that what we have to offer is conspicuously superior to what the discounter offers and, second, merchandise the very dickens out of that superiority, articles in the consumer press extolling the advantages of discount buying will continue to have a measure of foundation and the satisfaction we get out of our industry will be greatly reduced," Johnston concluded.

# RIDER'S TV-13

with replacement parts listings . . .

INCLUDES MAY 1954 FACTORY DATA!



**A MUST FOR THE WELL-RUN SHOP!**

Includes complete color servicing data on RCA and CBS Columbia! More than 2,300 pages covering over 50 manufacturers!

Complete unpacking and installation data . . . circuit action description . . . alignment data . . . signal waveforms for troubleshooting . . . complete replacement parts listings.

Factory authorized data, with full production runs and changes thru May!

Absolutely the most complete, latest data available — a "must" for every modern shop doing quality servicing.

Cuts down call backs and servicing time on jobs — this manual pays for itself in no time!

Brand new . . . just on the market. Order yours from your jobber — today! The equivalent of more than 2,300 (8 1/2 x 11") pages. Hard cover. Only \$24.00.

write for complete 32 page  
**NEW RIDER CATALOG**

**JOHN F. RIDER** PUBLISHER, INC.  
480 Canal Street, New York 13, N. Y.



"TUNING IN" NEW HALLICRAFTER ADVERTISING are: (left to right) William J. Halligan, Sr., president of Hallicrafter Co., William J. Halligan, Jr., communications sales mgr., and Dr. Browne, head of Burton Browne Advertising.

July, 1954

**Expand Your Earnings — Service Appliances**



# Your Business Problem?

QUESTION: From Mr. Steven Erdel, Erdel's TV Service, 504½ Louisville Ave., Monroe, La.



"Mr. Kanover: We have but one channel operating in our town at present. There seems to be a good potential business in stacked antenna installations. How do you suggest that we obtain this kind of business?"

ANSWER: Your local station is on channel 8, I believe. West of you and receivable on a well-installed, stacked array are stations operating on channels 6 and 12; east of you is a channel 3 station and to the north a channel 7 station.

People buy television receivers for the pleasure they will get from them. The more stations they are able to receive the greater the pleasure they will get from the TV set.

Your area should be a good market not only for stacked arrays of antennas, but also for towers, rotators, boosters and the best quality of transmission line. Your question is, of course, what is the best way of selling these antenna system installations.

In the first place, you can quickly identify the exact people you want to sell. They are the present owners of TV sets. Second, since the cost of a premium-type of antenna system is substantial, your sales effort should be directed toward those set owners who can afford to buy them.

For the sake of illustration, let's say that TV set market saturation in your area is 40%. This would mean that out of every ten homes only four have purchased TV receivers. Obviously you would save money by concentrating your promotional efforts on this forty per cent of the population since they are the ones who will buy the premium installations if you get your sales story across.

Because you are able to identify the individual home owners who would buy these installations, your best bet is to use direct mail promotions.

Now there is one very important thing to remember about direct mail sales promotions: Do not plan on a "one-shot" mailing to produce results for you. Remember this, these people to whom you will try to sell premium antenna installations are also regular prospects for TV service. So even those people who do not buy the antenna installations you offer may call you for service when they need it if your promotional material is good.

With the requirement for making regular mailings to these prospective buyers of antenna installations, you should develop an addressing-mailing list with the names on addressing plates so that regular mailings can be handled quickly and economically. The best machine I have examined for service companies is the model 800 Elliott Addressing machine. The most significant advantage of this machine is that your office typewriter can be used for cutting the addressing plates.

The mailing pieces you use in your mailings should be carefully prepared to suit the individual requirements of your area. The letters could tell what good programs are available over channels 3, 6, 7 and 12. There are some good consumer booklets that tell the antenna story in simple language. If you haven't seen it, the editor of SERVICE MANAGEMENT will send you a copy of the very excellent antenna mailing piece that is used by Central Television Service in Chicago. I also understand that Channel Master has a very good consumer booklet that is available in quantities to TV installers. Ask your Channel Master distributor about it.

Requests for information about the use of direct mail promotions have come to me from quite a number of other companies. I would like for the television service department of The Broadway Department Store, 1308 Factory Place, Los Angeles, Cal., and for Mr. E. Slepian the Radio Doctor at 501 Franklin Street, Buffalo, N. Y., to consider this an answer to their letters, too. Those who wish to know more about the model 800 Elliott addressing machine should write to: Mr. Edward O'Hara, Elliott Addressing Machine Co., Cambridge, Mass.

This is the time of the year when the air conditioning industry works up to 24 hours a day, 6 days a week. During the summer I expect to visit six cities to see how many television service companies are taking advantage of the business that is available to them in the air conditioning instal-

lation business. My itinerary will include Boston, Mass.; Buffalo, N. Y.; Philadelphia, Pa.; Chicago, Ill.; Cleveland, Ohio; Washington, D. C., and Baltimore, Md. During the months ahead I will tell you how you can plan now to get into this booming air conditioning business in 1955.

Keep sending your business problem questions to me. Address them as follows: Lawrence Kanover, 145 Hudson Street, New York 13, N. Y.

## New Mallory Catalog

The 1954 edition of the P. R. Mallory & Co., Inc. standard stock catalog is now available.

Designed for use by radio and television servicemen and dealers, this new catalog contains 61 pages covering all electric and electronic components manufactured by Mallory. Lines included are: Batteries, capacitors, controls, resistors, rectifier stacks, switches, vibrators, mobile and AC-operated power supplies, television components and equipment, and test equipment. Every item is described thoroughly, and photographs appear on each page to illustrate important features.

A copy of the catalog may be obtained from any Mallory distributor, or direct from the Company by writing to P. R. Mallory & Co., Inc., Distributor Division, P. O. Box 1558, Indianapolis, Indiana. Ask for Catalog Number 554.

## Technical Topics

(Continued from page 7)

7. Now position foil #4 carefully for a minimum on channel 3 sound carrier (channel 3 sound interference on 4 more severe than channel 3 picture interference on 2).

8. Now move foil #3 for a minimum on channel 6 picture carrier.

9. Move back to #4 foil for a new minimum on ch. 3 sound carrier. Back again to foil #3 for a minimum on ch. 6 picture carrier. Jockey back and forth a few times to have a minimum for both signals as there is some interaction between foils even at this point of overlap.

10. Reset #1 foil for minimum on channel 10 sound.

It is to be stressed that the foils can be set just as well by observing the interference on desired channels and adjusting for minimum interference using same procedure. The use of a field strength meter makes the work easier.



**Muskegon Radio-Television Association Gangs Up to Hear Al Bernsohn, NARDA'S Director, Speak.**

Pictured above are: rear row (left to right): Vern Watson, Director; Glen Barber, Harvey Towsley, Walter D. Plant, NARDA member past 2 years; A. W. Bernsohn, NARDA Director; Ken Stults, Reg. Vice Chairman of NARDA; John Botbyl, Chester Nienhuis, Secretary; Wally Lund, Treasurer. Front row: Ralph Warner, Director; John Kelley, Sgt. at Arms; Gordon Ruppel, Director; Joseph Sienkiewicz, President; Melvin Griesbach, NARDA member since Jan.; Keith Crankshaw, Vice President; Clifford Stinson, Chairman of Board of Directors, local.

## Income Insurance

(Continued from page 21)

months it would require to find temporary quarters or rebuild your own, replace furnishings, fixtures and stock, and return to normal. Apply this time to your peak sales period—particularly the Christmas or spring season. Estimate your total sales for this period and subtract the cost of goods sold, and the expenses that cease during shutdown. This is the amount of money your business can lose if you have a total fire. Can you afford it—or would you have to eat into the insurance money paid on your property, thereby making replacement impossible?

Chambers of commerce, banks and union officials have endorsed the new Business Earnings policy as a great benefit to the mercantile world. It sustains payment of obligations, encourages investment, and upholds credit. It maintains wages, salaries and dividends, particularly in case of a major catastrophe which might affect an entire community. It serves as a general safeguard and stabilizer to business.

### Need A Good Give-Away?

When repairing TV sets in the home the serviceman would do well to hand his customer a give-away gift for good will.

Leshner Corp., of Hamilton, Ohio, has placed on the market a new lightweight, disposable soft wiper . . . ideal for dusting TV sets after repair work.

## Need Help?

The September issue of SERVICE MANAGEMENT will introduce a brand new department . . .

It will be called "OPPORTUNITIES."

The OPPORTUNITIES department will be the market place through which readers may:

1. Offer their businesses for sale.
2. Seek partners.
3. Locate businesses they want to buy.
4. Find jobs or help.
5. Help manufacturers locate service companies that are equipped to handle specific types of specialized electronic or electro-mechanical equipment.

A special, low advertising rate will be given to all who wish to use this department. Inquiries may be directed to SERVICE MANAGEMENT box number, 1321.

Watch for OPPORTUNITIES in the September issue.

This new material is lintless, non-absorbent, non-woven. It is so strong it may be used, rinsed and re-used and so inexpensive that a consumer may dispose of it after it is soiled, the manufacturers point out.

Write the manufacturers for further information.

## INFORMATION on how to build this closed-circuit TELEVISION CAMERA

**Cost of Parts**

**\$150**

**\$200**



**Technical Information You Have Missed in Current Issues of Noll's ELECTRONIC STUDY GUIDE:**

### CONSTRUCTION DETAILS FOR

1. Closed-Circuit Television Camera
2. Transistor Probe
3. One Megacycle and One-Half Megacycle Marker Generators for IF and VHF Ranges

**Sequential Studies of transistors, color television, antennas, and circuit mathematics**

Write for literature or send one dollar for sample lesson (includes marker generator construction detail) of study guide. No obligation.

**Edward M. Noll**  
TTLB Educational Section  
Box 94, Hatboro, Pa.

Name.....  
Address.....  
City..... State.....



for such people as orphans, cripples and the aged. Therefore, members of TISA are prepared to render service on institutionally owned TV sets where there is no charge for entrance.

They also feel that the juvenile delinquency problem is increasing in scope and extend the same offer to non-profit organizations which operate "off the street" centers for children.

\* \* \*

#### **ARTS, CHICAGO, ILLINOIS**

*Special note to Mr. Thomas and Ray Samberson, President of the ASSOCIATED RADIO & TELEVISION SHOPS OF BORGER, 214 N. Hedge-coke, Borger Texas (who wrote asking what type of programs drew large audiences):*

The ASSOCIATED RADIO & TELEVISION SERVICEMEN of Chicago drew exceptionally large audiences with the following lectures:

*January, 1954:* An introduction to, and a brief history of the Chicago Better Business Bureau; how it operates and its place in the field of sales and customer relations.

Speaker: Fred Fisher . . . Courtesy—Chicago Better Business Bureau.

*February, 1954:* A practical talk and demonstration with tape recorders. Mechanical troubles and how to cure them. What to look for on recording complaints. Theory and operation of the erasing and recording head mechanism.

Speaker: Irwin Pollock . . . Courtesy—The Pentron Corporation.

*March, 1954:* A general discussion on developments of color TV tubes to this time; a chalk talk demonstration of the CBS tube system and drawbacks, and those of the RCA three gun system and the planar mask idea. A word picture of CR tube manufacture and some pointers on troubles that may be due to tube failures inherent in production.

Speaker: Wasil Evanchik . . . Courtesy Sheldon Electric Company, Irvington, N. J.

*April, 1954:* A general discussion of station operation, types of tubes used, tube life, tube check routine. Troubles present when a station is on the air. Letters from TV viewers, complaining about reception and the public relations problem it entails. The troubles encountered due to the switchover from Channel 4 to Channel 2. The importance of the aerial in good reception. (This program proved so interesting that the questions and answers kept them there until after midnight.)

Speaker: Richard Shapiro . . . Courtesy—Station WBBM-TV-CBS.

\* \* \*

#### **RADIO TELEVISION GUILD OF LONG ISLAND**

The RADIO AND TELEVISION GUILD OF LONG ISLAND has initiated an exceptionally interesting program to combat one of servicemen's big headaches . . . back-door selling by distributors. A committee has been set up to shop the distributors and make reports to the members of the Guild.

The enterprising editor of the GUILD NEWS, Murray Barlowe, writes: "The effectiveness of our distributor shopping program was demonstrated quite clearly during the past few weeks. The activity started soon after the shopping report was presented to the membership at the Mineola and Patchogue meetings. All but one or two of the distributors who were found to be selling indiscriminately over the counter, contacted the Guild to indicate their willingness to cooperate. They wanted a clarification of Guild policy on where to draw the line—who they should and who they shouldn't sell to. Without exception, they indicated their willingness to sign and respect the Code of Ethics that all advertisers in the GUILD NEWS must sign."

The Guild has never maintained that its advertisers "are absolutely innocent and lily white." The criteria of advertising is the distributor's willingness to sign a pledge that he will respect his position as a *Distributor* in the "Manufacturer-Distributor-Serviceman" set-up. Further, it is the policy of the Guild News to drop an advertiser when the shopping report shows that he is violating the agreement. When the report of the shopping committee indicates that the condition has been corrected, the ad would then re-appear. A member who misses the shopping report presented at the meetings could then determine which distributors were living up to their agreement.

They have many proofs of the success of this program but space doesn't allow me to reiterate them here. If back-door selling is one of the problems in your area . . . don't just gripe about the situation. Take the bull by the horns as the Long Island Guild has done. For further particulars on the accomplishments of the shopping program contact Murray Barlowe, Box 87, Bethpage, New York.

#### **ESFETA, INC., NEW YORK**

For the fifth consecutive year delegates from associations from widely

separated areas of New York State met in an annual meeting of the EMPIRE STATE FEDERATION OF ELECTRONIC TECHNICIANS ASSOCIATIONS, in the Hotel Arlington, Binghamton. Present were fifteen delegates from the associations in Binghamton, Kingston, Rochester, New York, Buffalo, and Long Island.

Licensing formed an important topic of discussion, with the Binghamton Chapter, Southern Tier RSA, reporting on the successful meeting with the City Fathers in which they discouraged the adoption of a local TV license bill which was not in the technicians' best interests.

They also reported on the present status of the State bills, of which there were three introduced (as did ARTSNY of N. Y.), developing the fact that a state license bill came close to being voted on in the past session of the legislature. Unless a special session of the Legislature of the State is called, there will be no chance of a vote being taken this year on these license bills. No doubt they will be taken up for introduction next year.

It was therefore stressed that every association, as well as the State Federation, be on its toes and keep informed of the progress of any license laws introduced in the State. It was also stressed that the individual member keep in contact with his local Assemblyman, to keep informed on such possible licensing legislation.

Nomination and election of officers followed, with the following results: President, John A. Wheaton of RTG of L. I.; Vice-President, Andrew Wentworth, of RTG of Rochester; Secretary, O. Capitelli, of ARTSNY; Treasurer, Charlie Kohl, Ulster Electronic Technicians' Association of Kingston; Sergeant-at-Arms, Raymond E. Trumpait, also of Kingston.

Members of the Board of Directors include: RTG of Rochester, David Viale; ARTSNY, Max Liebowitz; RTG of L. I., Henry Wawryck; Southern Tier Chapter RSA, Joseph A. Kucher; UETA of Kingston, Raymond E. Trumpait; Hudson Valley ETA, Thomas P. Thorne.

Max Liebowitz was appointed chairman of Liaison and Publicity Committee, and Harold Eskin of Rochester, chairman of Credentials Committee.

#### **HARTFORD, CONN.**

The recently incorporated Television Service Association, Inc., of Connecticut, with chapters in Hartford and New Britain, is interested in contacting independent service associations in that State for the purpose of coordinating State-wide programs.

Interested Associations in Connecticut should contact F. E. Silverman, P. O. Box 1711, Hartford 1, Conn.

#### ATLANTA, GA.

The recently formed Radio & Television Service Association of Greater Atlanta, Inc., assisted by the Better Business Bureau of Atlanta, launched their campaign to channel service business into legitimate, full-fledged service companies with 2/3 page ads in Atlanta newspapers. Forty-six service company members were listed in the first ad.

#### CINCINNATI, OHIO

The Association of Television Service Companies has added newspaper advertising to their public relations program which started with telecasts over station WKRC-TV.

#### PHILADELPHIA, PA.

The Council of Radio & Television Service Associations is unfolding a three phase program that will include a telecast of 13-week series of 15-minute public information programs on TV operation and service; a drive to bring activities of fringe servicers to the attention of the BBB, legal departments and the City, State and Federal tax departments; and a series of technical lectures for Council members' organizations.

### Kaleidoscope

(Continued from page 22)

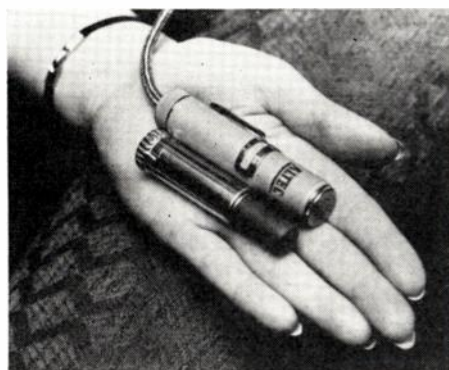
operate to the utmost with public agencies such as the Better Business Bureaus." Weiss stated that the recent exposure of the midget antenna frauds was only the first of many vigorous steps that must be taken to restore public faith in the electronics service industry . . . The **EASTERN TELEVISION SERVICE CONFERENCE** recently issued a professionally prepared brochure covering the minutes and proceedings of their second annual meeting recently held in Philadelphia. The ETSC, organized to co-ordinate the programs of more than 40 individual associations was incorporated under the laws of N. J. . . . One of the new books recently announced by **JOHN F. RIDER** is titled "How to Install and Service Auto Radios." Its author is our own **JACK DAAR**, genial editor of the Ouachita Service Philosopher department.



#### DU MONT COUNTER DISPLAY FEATURES AN ACTUAL PICTURE TUBE GUN

A counter display which incorporates an actual electron gun of the company's "Hi-R" (High Resolution) Picture Tube is being made available by Allen B. DuMont Laboratories, Inc., Cathode-ray Tube Division.

This point-of-sale piece is an integrated part of a current campaign to promote the use of high quality components in television repair service. It was prepared for use by distributors handling Du Mont Teletron replacement picture tubes.



Altec, Lansing's new "lipstik" microphone, said by the manufacturer to be the smallest mike on the market. The "lipstik" is 3" long, 5/8" in diameter, and as demonstrated above, is not much larger than milady's handbag accessory. Its applications include use in coat lapel or breast pocket, affixed to manuscript, in hand, or on stand.



OWYANG DESCRIBES his changes in the RCA tube design to L. S. Thees, gen. commercial mgr. of RCA.

## GET THESE STANDARD TV LABOR CHARGES CHARTS

Here are the labor charges charts that should be posted in every shop that sells TV Service to the general public.

TVL-1 gives you a cross-check on adequate changes by specific service operations. TVL-2 will help you estimate TV service charges quickly and accurately.

Compiled by the editors of **SERVICE MANAGEMENT** with the cooperation of the Television Service Association of Michigan, they have been welcomed by service operators everywhere for their value as service pricing reference guides.

The Standard TV Labor Charges Charts are printed on bristol board, 11"x14", and are suitable for use as desk or wall charts.

Send one (\$1.00) dollar for a pair of these charts — TVL-1 and TVL-2 — for reference in estimating TV service jobs and for checking over-all service charges against individual operations charges.

**SERVICE MANAGEMENT**  
Circulation Dept.,  
161 Luckie Street, N.W.,  
Atlanta 3, Ga.

Enclosed is one (\$1.00) dollar. Please send me a copy each of the Standard TV Labor Charges Charts — TVL-1 and TVL-2.

Name \_\_\_\_\_

Address \_\_\_\_\_


City \_\_\_\_\_

State \_\_\_\_\_



# P

## RODUCT REVIEWS



### Multi-Set Couplers

To fill the need for a low-cost multiple TV receiver installation, Technical Appliance Corporation, Sherburne, N. Y., announces the availability of a complete line of multi-set couplers. Units are of the high-efficiency, signal-splitting design employing newest circuitry and component developments.

Extremely compact, measuring  $2\frac{1}{4}$ " x  $4\frac{1}{4}$ " x  $\frac{3}{4}$ " deep, the Taco Multi-Set Couplers may be installed in a few minutes.

A rapidly growing application involves the use of the coupler in connection with TV antenna installations such as the Taco Trapper where the antenna will feed signal to a television receiver as well as to an FM receiver. In such installations, the antenna must be capable of providing a usable signal across the FM band.



### Model "99" Converter

Blonder-Tongue Labs of Westfield, New Jersey, is now supplying for immediate delivery, a new low-noise all-channel UHF Converter for class "A" signal areas.

Listing at only \$19.95, the model "99" is unusually styled in a sturdy mahogany plastic cabinet with blond knobs.

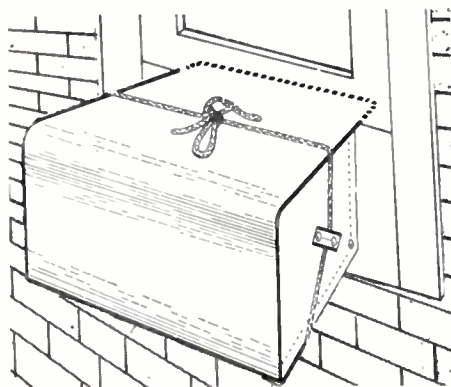
Complete with 6T4 tube, crystal diode mixer, and selenium rectifier, it measures  $6\frac{1}{4}$  x  $4\frac{3}{4}$  x  $4\frac{3}{4}$ . It operates on 110 volts, 60 cycle A. C. Shipping weight is four pounds.



### Custom Fitted Covers To Boost Service Sales

A complete line of custom fitted air conditioner covers to fit all brands and sizes manufactured from year 1947 through 1954 inclusive is being made available by All-Weather Supply Co., Inc., 1186 Broadway, New York City.

These covers are made of extra heavy gauge, marbled grey plastic vinyl which is flameproof, weatherproof, and is durable as well as attractive. The covers can be installed from inside the room in a matter of minutes and wire formed to fit snugly.



### Re-Designed Tuner

In a strong effort to capture the interest of perceptive purchasers in the rapidly expanding high fidelity field, Altec Lansing is introducing its new 303C Tuner.

Re-designed to meet the changing requirements of home music system enthusiasts, the 303C offers immediately recognizable improvements in the matter of increased sensitivity, operating simplicity, and beauty of cabinet enclosure.

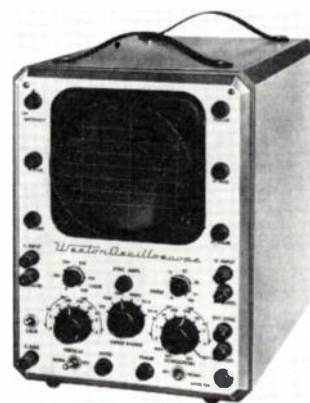


### Weston Back in Service Field

First shown at the Radio Parts Show in Chicago, and soon to be available to service organizations through regular distributor channels, was the new line of test equipment manufactured by the Weston Electrical Instrument Corporation, 614 Frelinghuysen Avenue, Newark 5, New Jersey.

Known as the WESTON 980 Line, this group includes the following instruments: Calibrator, Sweep Generator, Oscilloscope, Vacuum Tube Voltmeter, Volt Ohm Milliammeter, Proportional Mutual Conductance Tubechecker, and accessories.

A complete description of these new instruments, as well as information on the new alignment method is contained in bulletin R35 available direct from the manufacturer.



### Plastic Drill Kits

To acquaint contractors, maintenance, repair and service men with "Hi" Plastic Screw Anchors, we have developed three introductory kits that include a quantity of anchors plus carbide tipped masonry drills in a handy plastic case. The complete kits are being sold at approximately the regular cost of the anchors alone.

After the anchors are used, the plastic box comes in mighty handy as a container for screws, nails, small parts . . . and fishing flies.

"Hi" Anchors are made of Ethyl Cellulose and are approved by Underwriters' Laboratories, Inc., for indoor and outdoor use. They are unaffected by moisture, corrosion, heat or cold, will not age or otherwise deteriorate. Recognized testing laboratories report that they hold screws permanently in any material that can be drilled.

These new introductory kits are available through wholesalers. For additional information, write Holub Industries, Inc., 413 DeKalb Ave., Sycamore, Illinois.



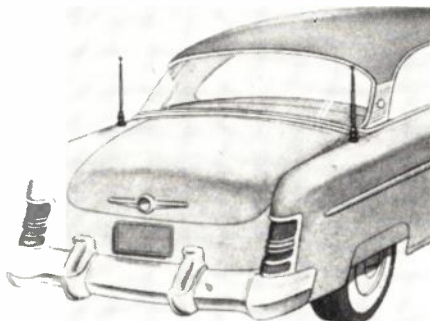
### Low Cost Converter

A unique, low-cost all-channel UHF converter called "Tuck-A-Way," providing full UHF coverage for less than the cost of two UHF channel strips, as well as unprecedented flexibility of installation, was introduced by General Instrument Corporation at the 1954 Electronic Parts Show (May 17-20) in Chicago.

The new Tuck-A-Way converter can be installed behind, on either side, on top of, and, in the case of certain table models, below the television set, according to Edwin A. Freed, Sales Manager.

### Rear Deck Antenna

Designed to provide exclusive advantages not obtainable with other types of antennas, a new Dual Rear Deck auto radio antenna kit is now in production at Snyder Manufacturing Company of Philadelphia.



Dual mounting on the rear deck of the car, as described by Snyder sales manager Dick Morris, provides a number of advantages including clear, unobstructed driving vision, better reception because the antennas are placed away from the ignition system and easy mounting on accessible rear deck locations.

### Noise Generator

A new and exceptionally versatile unit is announced for measurement of noise factor in any receiver. Manufacturer states that this is the first Noise Generator completely self-contained with no additional equipment required. Quickly indicates amount of noise inherent in receivers to permit correction of this interference.



Known as the Model 755, this unit contains two indicating meters and is divided into a VTVM section and a Generator Noise section.

For additional information kindly write direct to: The Hickok Electrical Instrument Company, 10535 Dupont Avenue, Cleveland 8, Ohio.

### New 3-Way System

University Loudspeakers, Inc., of 80 South Kensico Avenue, White Plains, New York, has announced the production of a new, compact, versatile 3-way High Fidelity Loudspeaker System . . . the University "Companion."

Designed as a 3-way tonally-balanced high fidelity loudspeaker system employing combination woofer-mid-range and tweeter reproducers together with a full-fledged inductance-capacitance type dividing network, the University "Companion" is housed within a specially engineered balanced double port bass chamber.



## Those Who Value Profits Value Markem Service Systems

The successful men in the television and appliance service field recognize the value of an efficient paper control system. To them, the paper control system is the medium by which their service business operates.

Follow those who have learned that Markem means reduced cost for service and increased operating efficiency. What Markem did for them . . . MARKEM CAN DO FOR YOU.

1. Will reduce the number of telephone operators required to service a given number of accounts.
2. Will give service technicians a complete case history on each receiver being repaired.
3. Will give your telephone operator a complete case history enabling her to speak authoritatively to customer requesting service.
4. Will eliminate the possibility of sending a service technician to a wrong address.
5. Will enable you to set up all the required service records at one typing or writing merely by inserting the proper number of units.
6. Will reduce paper work and papers and require less space.
7. Will eliminate individual customers' folders and files.
8. Will reduce the time required to route service calls by any pre-designated areas.
9. Will enable telephone operators to do all of the following operations without leaving seat or phone:
  - a. Catch duplicate service calls
  - b. Catch nuisance calls
  - c. Stop service to delinquent accounts
  - d. Identify type of service to be rendered immediately
  - e. Receive, post, and schedule all incoming service requests.

For "An Analysis of a Markem Paper Control System" send just 25¢ to:

## MARKEM SERVICE SYSTEMS

145 Hudson Street, New York 13, N. Y.



A new "Successful Service Management" program for TV and radio service dealers, containing all information needed to set up and organize an efficient service dealer business, was announced today by the General Electric Tube Department.

The program, which fills a 318-page loose-leaf binder, is divided into three sections, Mr. Thompson said. These cover business practices, merchandising, and technical data. Each section was prepared by specialists in the particular field covered.

Included in the business practices section is such material as accounting for the service dealer and preparation of Federal income tax returns. Under merchandising are included a discussion of the value of advertising and promotion, as well as specific "how-to-do-it" material on advertising, direct mail, window and store displays, and other means to increase service business.

The technical data section includes material on trouble-shooting with an oscilloscope, alignment techniques, UHF servicing, and service tips.

The Successful Service Management program is available through authorized General Electric tube distributors.

A new Automatic FM Booster designed to improve FM reception in virtually every location is announced by Electro-Voice, Inc., Buchanan, Michigan.

The new Tune-O-Matic high gain Model 3005-FM Booster is specially designed to take full advantage of all features of FM. Makes a good signal completely impervious to noise—makes a weak signal usable—in difficult city locations and in outlying low-signal areas.

For full information, write for Bulletin 202 to Electro-Voice, Inc., Buchanan, Michigan.



*HARRY A. EHLE, V. P. in charge of sales for IRC presents plaque to Dave Lee and associates, Joe Belusko and David Miller.*

(Continued from page 6)

it bespeaks of a *selling force* that is both interested and willing to fight for a bigger share of the consumers' dollars.

This same sales receptiveness should also inspire manufacturers to review their own advertising and sales promotional programs directed to the replacement parts industry. If a sales promotional program is predicated on trying to keep Parts Distributors loaded with the product it's all wet in today's market. Parts Distributors do not create business; they merely supply what the service industry needs. Show the service industry how to sell the services in which a product is used and it will keep those products *flowing through* the channels of distribution, rather than piled up as an inventory headache to Parts Distributors.

Armed with the information we have gleaned from thousands of Directory Registration forms and a knowledge of the wide-spread interest in the SERVICE MANAGEMENT service selling programs, we offer this bit of advice to manufacturers — Make your product advertising a selling story and carry it directly and aggressively to the service industry. They will do a selling job for you. PHW

An easy-to-install "Third Dipole Kit," which can be used to improve signal reception of a Davis "Super-Vision" antenna on certain channels is now available from Davis Electronics, Burbank, California.

For additional data, write Davis Electronics, P. O. Box 1247, Burbank, Calif. (See photo at right.)

The second annual Radio & Television Service Clinic and Electronics Fair, sponsored by the Texas Electronics Association, will be held at the Adolphus Hotel in Dallas, Texas, on August 27, 28 and 29.

The Clinic Committee, under the chairmanship of W. J. (Bill) Inman of Dallas, has arranged a fast-moving schedule of lectures and talks on timely subjects that will be even more interesting than the popular program that was given in Fort Worth last year.

The Texas Electronics Association numbers among its membership local associations in every major City in the State. On a national scale, TEA is an affiliate of the National Appliance and Radio-TV Dealers Association (NARDA).

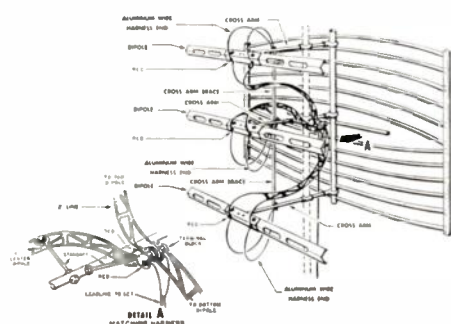
Registrations for the Clinic should be addressed to: Will A. Shaw, Executive Secretary, TEA, 1610 Eighth Ave., Fort Worth, Texas.

A new approach for protecting iron and steel surfaces from corrosion is announced by the Chemical Division of Galvicon Corp.

The product known as "Galvicon" is applied by brush or spray method. It combines with the base metal and actually galvanizes it. In most cases it will outperform the standard zinc coatings which are applied with heat.

It is now possible not only to give mechanical protection, but chemical protection as well, on location or in the plant without the necessity of dismantling or interrupting operations.

Complete technical information and literature may be secured by writing to: Mr. H. L. Grebinar, GALVICON CORP., 40 W. 29th St., New York 1, N. Y.



Here's the most terrific Time and  
Trouble saver you've ever seen  
the **CLASSY CHASSIS CARRIER!**

TAKES MOST OF  
THE LIFT AND LUG FROM  
TV REPAIR WORK!

Carries up to 27" tube  
and chassis easily!

**\$19<sup>95</sup>**  
A VALUE...  
YOURS **FREE** WHEN  
YOU BUY SYLVANIA  
TUBES

THE GREATEST  
WORK-SAVER EVER  
OFFERED TO SERVICE  
DEALERS!

**SEE HOW IT SAVES!**

1. Saves effort and energy... a breeze to wheel... a snap to carry!
2. Saves extra steps and extra labor. Carries your TNT Kit... everything all at once.
3. Saves valuable service time... permits more calls per day... you make more money.
4. Prevents damage to tubes, wiring and set.
5. Prevents damage to customers' furniture, woodwork and floors.

You'll say it's stupendous... the greatest and most valuable helper a TV Serviceman ever had!

An easy-wheeling, aluminum carrier that lets you move a heavy TV chassis (up to 27-inch tube) anywhere... with no lugging, no straining, no bumping. And no risk to tubes, floors, or polished surfaces. You save time, save money, save effort, and win renewed confidence from your customers.

**Yours FREE!**

This sensational work-saver now yours **FREE** with your purchases of Sylvania Tubes.

But don't delay! Offer expires August 31st. So, order your Sylvania Tubes and get your carrier reservation in **NOW!** Call your Sylvania Distributor for full details *today!*

SYLVANIA ELECTRIC  
PRODUCTS INC.  
1740 BROADWAY  
NEW YORK 19, N. Y.

**SYLVANIA**



In Canada:  
Sylvania Electric  
(Canada) Ltd.  
University Tower Bldg.  
St. Catherine St.  
Montreal, P. Q.

**LIGHTING • RADIO • ELECTRONICS • TELEVISION**

**Expand Your Earnings — Service Appliances**



**NOW** **any** selenium rectifier  
can be replaced with a

**Federal**

**Federal's**  
**COMPACTED • EYELET TYPE**  
**UNIVERSAL LINE**

meets all replacement needs  
where size is a factor

**ONE SOURCE OF SUPPLY**

... Federal's Universal and Regular Lines  
provide complete coverage of today's  
selenium rectifier requirements!

**SERVICEMEN!** Now you can buy all the selenium rectifier  
types you'll ever need ... from Federal!

Whatever the make or rating of the rectifier being re-  
placed, Federal's new, smaller-size *Universal Line*—or Federal's  
*Regular Line*—will meet all requirements!

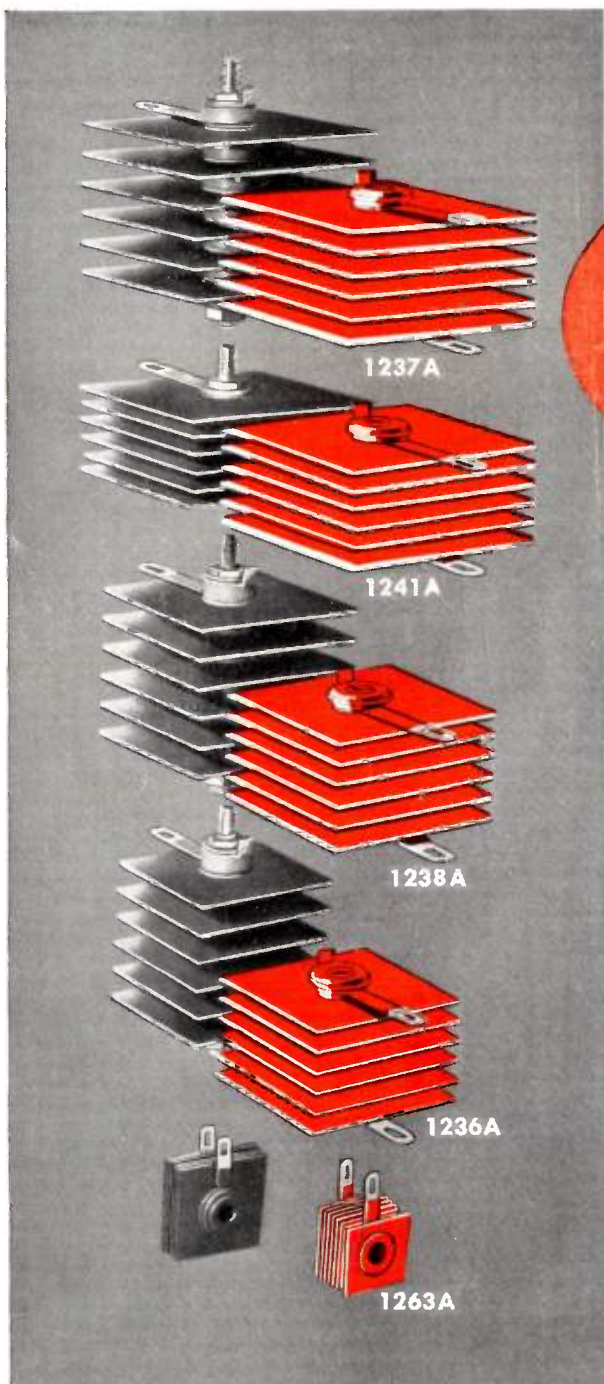
The Universal Line's smaller "H" dimension does the  
job where space is a factor. The five types are listed below.  
All are eyelet construction, with 6/32" mounting screw  
enclosed. They are designed to handle approximately 70%  
of all replacements.

Make *your* servicing job easier ... more profitable ... by  
simplifying rectifier procurement. Get *uniform* quality, de-  
pendability and performance—plus *long, long life*—by re-  
placing with Federal's *Universal* and *Regular Lines* ... in  
the easy-to-identify "Rectifier Red." Ask your distributor,  
or write to Dept. F-35A.

**UNIVERSAL LINE RATINGS AND DIMENSIONS:**

Type	Max. DC Ma.	"H" Dim. Max.	Plate Size
1263A	65	21/32"±1/32"	11/16" Sq.
1236A	300	1-3/8"±1/32"	1-5/8" Sq.
1238A	350	1-3/8"±1/32"	1-3/4" Sq.
1241A	400	1-1/4"±1/32"	2" Sq.
1237A	500	1-3/8"±1/32"	2" Sq.

Federal has available a new type bolt and nut for mounting rectifiers  
in tandem. Order bolts by Part No. IDR-6131; nuts by Part No. IDR-6015.



Federal Selenium Rectifiers are listed in  
Howard W. Sam's Counter-Facts and Photo Facts

America's first and largest manufacturer of selenium rectifiers

**Federal Telephone and Radio Company**

A Division of INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION

COMPONENTS DIVISION

100 KINGSLAND ROAD

CLIFTON, N. J.

In Canada: Federal Electric Manufacturing Company, Ltd., Montreal, P. Q.

Export Distributors: International Standard Electric Corp., 67 Broad St., N. Y.



**Federal**  
**"S-C-S"**  
**GERMANIUM**  
**DIODES!**

—in the industry's  
most useful  
**PACKAGE LINE!**  
Ask your  
Distributor!

**Expand Your Earnings Service Appliances**