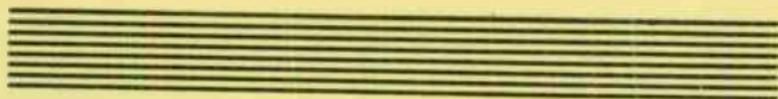


**PROFESSIONAL CHARGES**  
**for**  
**RADIO-TELEVISION**  
**SERVICE**



*Officially recommended by*

**National Radio Institute**  
**ALUMNI ASSOCIATION**





## A Special Service To Alumni Members

**T**HIS booklet was prepared as a special service to National Radio Institute Alumni Members. The prices quoted were determined by consulting Radio and Television servicemen within and outside the Alumni Association and after lengthy and careful consideration by Consultants at National Radio Institute.

The purpose of this book is to provide a schedule of charges, on the basis of the present value of professional radio and television services. Each charge is based on the time, expense and technical knowledge required to do the work with standard servicing instruments. The schedule makes estimates easier, eliminates guesswork in figuring the final bill. All customers get the same fair system of charges for *professional services rendered*.

T. E. ROSE  
*Executive Secretary*

National Radio Institute Alumni Association  
3939 Wisconsin Avenue, N.W.  
Washington 16, D. C.

# PROFESSIONAL CHARGES FOR RADIO SERVICE

● All charges in this rate schedule are *for professional services only*. Parts should be billed at list prices, as explained at the end of the schedule.

● Each bill should include one of the five following charges, to cover testing of tubes and check-up of set, *plus* tests needed to diagnose the nature and extent of the trouble which are included under Alphabetical Schedule of Charges on the following pages:

- |     |  |        |
|-----|--|--------|
| I   | Check-up and test at customer's home ..  | \$4.00 |
|     | This covers ¼ hour of time including trip to and from home, if located within 2 miles of shop. Charge for extra time or mileage at the rate specified in schedule. Minor repairs that can be made within time limit are included in this charge.                   |        |
| II  | Check-up and test at shop including pick-up and delivery of set .....  | 6.50   |
|     | This includes time and transportation expense for two round trips to a customer located up to 2 miles away from shop; charge for greater distance at mileage rate specified in schedule. Diagnosis and minor repairs or adjustments to be included in this charge. |        |
| III | Check-up and test radio-phono combination at shop, including pick-up and delivery of set where it is necessary to remove both the radio chassis and the phono ....   | 8.75   |
|     | This includes time and transportation charges for 2 round trips to a customer located within 2 miles from shop; charge for greater distance at mileage rate.   |        |
| IV  | Check-up and test console receiver or radio-phono combination at shop, when customer brings set in and takes it away   | 3.50   |
|     | Minor repairs that can be made within time limit (¼ hour) should be included in this charge.   |        |
| V   | Check-up and test table model at shop when customer brings set in and takes it away .....  | 2.00   |
|     | This includes time for minor repairs.  |        |
| VI  | Check-up and test transistor set at shop   | 3.50   |
|     | This includes time for minor repairs that can be quickly located and completed without removing chassis.   |        |

## Alphabetical Schedule of Shop Charges

NOTE: These charges cover the actual installation of the replacement part. Cost of parts and diagnosis is not included in these charges.

|  |                    |
|--|--------------------|
| <b>ANTENNA, built-in loop—install</b> .....  | <b>\$2.00</b>      |
| —repair broken wire .....  | 1.00               |
| <b>Antenna, auto—install complete unit</b> ..  | <b>Hourly Rate</b> |
| —install new lead-in wire .....  | 2.00               |
| <b>Antenna, home—simple outdoor installation</b>   |                    |
| not requiring ladder or poles .....  | 5.00               |
| —difficult installation .....  | <b>Hourly Rate</b> |
| <b>Antenna, FM</b> .....   | <b>15.00</b>       |
| (For the average installation, antenna, lead-in wire, and hardware can be purchased for about \$10.00, list price \$15.00, bringing total cost of job to about \$30.00.) |                    |
| <b>ALIGNMENT, trf set</b> .....  | <b>1.50</b>        |
| <b>Alignment, superheterodyne set:</b>   |                    |
| 1-band, AC/DC table model .....  | 1.50               |
| 1-band, 2 section console .....  | 2.00               |
| (Two tuning-condenser sections)  |                    |
| 1-band, 3-section .....  | 2.50               |
| 2-band, 2 section .....  | 3.00               |
| 2-band, 3-section .....  | 3.50               |
| 3-band, 2-section .....  | 4.00               |
| 3-band, 3-section .....  | 4.50               |
| 4 or more bands .....  | 5.00               |
| FM receiver .....  | 4.00               |
| AM - FM Combination — broadcast  |                    |
| bands only .....   | 3.00               |
| —broadcast and FM bands .....  | 5.00               |
| FM tuner .....   | 4.00               |
| <b>AUTO RADIO—original installation of set</b>   |                    |
| and antenna, with reasonable amount of   |                    |
| interference elimination for a custom-   |                    |
| made set designed to fit into the car  |                    |
| conveniently .....   | 7.50               |
| —original installation of single-unit  |                    |
| set and antenna with reasonable  |                    |
| amount of interference elimina-  |                    |
| tion; not a custom-made receiver   | 10.00              |
| —original installation of new two-   |                    |
| unit set and antenna .....   | 12.50              |
| —remove set from car and re-install  |                    |
| after bench work is done .....   | 4.00               |
| —interference elimination ...  | <b>Hourly Rate</b> |
| <b>AUTOMATIC RECORD CHANGER:</b>   |                    |
| —clean and oil .....   | 3.50               |

|  |                   |
|--|-------------------|
| —complete overhaul and adjustment,<br>including no new parts except new<br>motor pulleys of the slip-on type . . . | 10.00             |
| —adjust or replace part . . . . .  | Hourly Rate       |
|  | Minimum of \$5.00 |
| <b>BATTERY</b> replacement — rewiring required   | 2.00              |
| <b>COIL</b> installation:  |                   |
| Oscillator or rf coil in AC/DC table<br>model receiver . . . . .   | 3.00              |
| Oscillator or rf coil in console re-<br>ceiver—1-band . . . . .  | 4.00              |
| —2-band . . . . .  | 5.00              |
| —multi-band . . . . .  | 6.00              |
| (These charges include alignment after<br>replacement has been installed.)   |                   |
| RF choke . . . . .   | 2.00              |
| AF choke . . . . .   | 2.50              |
| Filter choke . . . . .   | 2.50              |
| <b>CONDENSER</b> installation:   |                   |
| Single paper, mica, or ceramic . . each  | 1.00              |
| Trimmer or padder (includes adjust-<br>ment) . . . . .   | 3.00              |
| Gang tuning unit . . . . .   | 4.00              |
| Single electrolytic  |                   |
| —tubular type . . . . .  | 2.50              |
| —can type . . . . .  | 2.50              |
| Dual electrolytic  |                   |
| —tubular type . . . . .  | 3.00              |
| —can type . . . . .  | 3.00              |
| Multi-section electrolytic   |                   |
| —tubular type . . . . .  | 3.00              |
| —can type . . . . .  | 3.00              |
| <b>CONNECTION</b> —locate and repair loose con-<br>nection causing intermittent trouble                            | Hourly Rate       |
| <b>DIAL-DRIVE</b> cable or belt, install   |                   |
| —easy job . . . . .  | 1.50              |
| —normal job . . . . .  | 2.50              |
| —special jobs requiring over 1 hour  | 4.50              |
| Dial-drive—repair friction type . . . . .  | 2.25              |
| Dial pointer or scale—repair or replace . . . . .  | 1.50              |
| <b>HOURLY RATE</b> . . . . .   | 4.00              |
| (This will vary considerably between large cities<br>and rural communities. We have given an average<br>charge.)   |                   |
| <b>INTERFERENCE</b> —install simple power-line<br>filter . . . . .   | 1.00              |
| —install and adjust wave trap . . . . .  | 2.50              |

—eliminate interference at source  
 Hourly Rate—Minimum of \$3.00

**INTERMITTENT TROUBLE**—Base your estimate on past experience and observed symptoms. If you guarantee the job, be sure to make the estimate high enough to cover the possibility of a call-back.

|   |                       |
|---|-----------------------|
| LINE-CORD, plain, 2-wire—install .....  | 1.00                  |
| Line-cord resistor—install .....  | 2.00                  |
| LOUDSPEAKER—install .....   | 2.00                  |
| —substitute PM for electrodynamic   | 3.50                  |
| MILEAGE RATE, per extra mile traveled ..  | .25                   |
| PHONO MOTOR—clean and lubricate .....   | 1.50                  |
| —replace motor, non-automatic player .....  | 3.00                  |
| —replace motor, automatic player  |                       |
|   | Hourly Rate           |
| PHONO PICK-UP—replace .....   | 2.00                  |
| —adjustment of special types  | Hourly Rate           |
| PUSH-BUTTONS, automatic tuning—reset:   |                       |
| Simple mechanical type, per station   | .25                   |
| Telephone-dial type, per station ...  | .50                   |
| Electrical (trimmer type), per station  | .25                   |
| Motor-operated type, per station ....   | .50                   |
| RESISTOR installation:  |                       |
| Single resistor .....   | each 1.00             |
| Voltage divider or bleeder .....  | 3.00                  |
| Ballast—substitute universal replacement for ballast type no longer available ..... | 2.00                  |
| SWITCH—install simple on-off type .....   | 1.50                  |
| —band-changing, 2-band set .....  | 4.00                  |
| —band-changing, 3-band set .....  | 6.00                  |
| —complex jobs on multi-band   |                       |
|   | Minimum of 4.00       |
|   | Plus .25 per terminal |
| —radio-phonograph .....   | 3.00                  |
| TONE CONTROL—install .....  | 3.00                  |
| TRANSFORMER installation:   |                       |
| AF transformer .....  | 4.00                  |
| IF transformer .....  | 4.00                  |
| FM detector transformer .....   | 5.00                  |
| Power transformer   |                       |
| —for time not exceeding 1 hour ..   | 6.00                  |
| —additional time .....  | Hourly Rate           |

|   |      |
|---|------|
| RF transformer  |      |
| —1-band .....   | 4.00 |
| —2-band .....   | 5.00 |
| —multi-band .....   | 6.00 |
| TUBE SOCKET—install .....                                 | 3.00 |
| TUBE TESTS—Included in shop or home<br>check-up and test. |      |
| VOLUME CONTROL—install .....                              | 3.00 |

## Professional Shop Charges for Television Service

The charge for replacing individual parts applies in all cases except those where it is necessary to replace all the by-pass condensers, or all the small resistors, such as when the manufacturer has used under-rated parts. In those cases, figure the approximate working time required and give the customer a flat rate for the job. A flat rate should also apply to repairable sets that have been through disasters and sets that have been damaged by inexperienced tampering.

- All charges are for professional services only except where otherwise indicated. Parts should be billed at list prices as explained at the end of the schedule.
- Each bill should include one of the following charges, to cover the cost of testing tubes or parts or any other tests that may be necessary to determine the nature and extent of the trouble.

### I Check-up and test at customer's home .. \$5.00

This covers up to ½ hour of time including trip to and from home, if located within 2 miles of shop. Charge for extra time or mileage at rate specified in schedule. Minor repairs that can be made within time limit are included in this charge.

### II Check-up and test at shop, including pick-up and delivery of set ..... 15.00

This includes time and transportation expense for two round trips to a customer located up to 2 miles away from shop; for greater distance charge at mileage rate specified in the schedule of charges, and for time exceeding 1 hour, charge according to the hourly rate.

### III Check-up and test at shop, when customer brings set in and takes it away ..... 3.50

This charge is for ½ hour time. Minor repairs or adjustments that can be made within time limit should be included.

## Alphabetical Schedule of Charges

|  |       |
|--|-------|
| <b>ANTENNA</b> —install simple outside or attic type .....   | 35.00 |
| (This charge includes the antenna, lightning arrester, 50 ft. lead-in, supports, and hardware necessary to complete installation.)   |       |
| —install complex antenna for fringe area. Charge list price for equipment used. Labor charge \$5.00 per hour for man in charge of installation, plus \$3.50 an hour for each helper. |       |
| —repair, resolder lead-in .....  | 5.00  |
| —install new transmission line .....   | 10.00 |
| (includes up to 50 feet of line and orientation)   |       |
| —orient antenna .....  | 7.50  |
| <b>ALIGNMENT</b> —adjust oscillator in sets where the oscillator can be adjusted from the front of the set without removing the receiver from the cabinet                            |       |
| Covered in Service Charge  |       |
| —adjust oscillator where set must be removed from cabinet .....  | 2.50  |
| —sound i-f alignment .....   | 2.50  |
| —video i-f alignment, stagger tuning   | 5.00  |
| —video i-f alignment, band-pass tuning .....   | 6.00  |
| —complete alignment .....  | 12.50 |
| <b>AUTOMATIC RECORD CHANGER (TV combination)</b> see listing under radio servicing   |       |
| <b>COIL installation:</b>  |       |
| Peaking coil .....   | 3.00  |
| Filter choke .....   | 3.00  |
| Focus coil .....   | 4.00  |
| Coil in tuner .....  | 5.00  |
| <b>CONDENSER installation:</b>   |       |
| Single by-pass (paper, mica, ceramic)  | 3.00  |
| Each additional .....  | 1.50  |
| By-pass, coupling, etc., in tuner where component is difficult to get at and it may be necessary to remove other parts to make replacement ..  | 5.00  |
| Single electrolytic (filter or by-pass)  |       |
| —tubular .....   | 3.00  |
| —can .....   | 3.00  |

|  |             |
|--|-------------|
| Dual electrolytic—tubular .....  | 3.00        |
| —can .....   | 3.00        |
| Multi-section—tubular .....  | 3.50        |
| —can .....   | 3.50        |
| <b>CONNECTIONS</b> — locating and soldering<br>loose or intermittent connection ..                                   | Hourly Rate |
| <b>CONTROL:</b>  |             |
| Single (brightness, contrast, volume,<br>etc.) .....   | 2.50        |
| Dual, concentric (Horizontal and ver-<br>tical hold, etc.) .....   | 3.50        |
| <b>DEFLECTION YOKE</b> —install .....  | 5.00        |
| —repair broken lead .....  | 2.00        |
| <b>FOCUS COIL</b> —install .....   | 5.00        |
| <b>HOURLY RATE</b> .....   | 5.00        |
| (This rate may vary considerably between large cities<br>and rural communities. An average charge is given<br>here.) |             |
| <b>INTERFERENCE</b> —install simple power-line<br>filter .....   | 1.50        |
| —install and adjust stub for FM in-<br>terference .....  | 3.50        |
| —install high-pass or low-pass filter .....  | 2.50        |
| —install and adjust wave trap .....  | 3.00        |
| —eliminate interference at source<br>Hourly Rate, Minimum of   | 5.00        |
| <b>LINE CORD</b> , plain 2-wire — install where<br>soldering is necessary .....                                      | 1.00        |
| —install plug type .....   | No Charge   |
| <b>LOUDSPEAKER</b> —install .....  | 2.00        |
| —substitute PM for electrodynamic .....  | 4.00        |
| <b>MILEAGE RATE</b> , per extra mile traveled ..   | .25         |
| <b>PHONO MOTOR</b> —see listing under radio<br>servicing   |             |
| <b>PHONO PICK-UP</b> —see listing under radio<br>servicing   |             |
| <b>PICTURE TUBE</b> installation, metal or glass   | 10.00       |
| <b>RESISTOR</b> installation:  |             |
| Single resistor .....  | each 1.00   |
| <b>SELENIUM RECTIFIER</b> —replace .....   | 2.50        |
| <b>TRANSFORMER</b> installation:   |             |
| AF output .....  | 4.00        |
| Sound detector .....   | 4.00        |
| Sound i-f .....  | 3.00        |
| Horizontal output (includes adjust-<br>ing width, drive, and linearity con-<br>trols) .....                          | 5.00        |

|   |       |
|---|-------|
| Vertical output (includes adjusting height and linearity controls) . . .  | 4.00  |
| Video i-f . . . . .   | 3.00  |
| Power transformer . . . . .   | 6.00  |
| <b>TRANSISTOR</b> — replace (if soldered to printed circuit board), each . . . . .  | 1.00  |
| If sockets are used, include charge in shop check-up and test.  |       |
| <b>TUBE SOCKET</b> , install—easy to get at . . . . .   | 3.00  |
| —difficult to get at . . . . .  | 4.00  |
| <b>TUBE TESTS</b> —No additional charge if this can be carried out within the period allotted to general check-up. If additional time is required, or where customer simply brings tubes in, per tube . . . . . | .10   |
| <b>TUNER</b> —install new coil strip in turret tuner when coil snaps in and out of position . .   | 2.00  |
| —install contact strip in turret tuner; strip riveted in position . . . . .   | 5.00  |
| —install new detent and shaft . . . . .   | 4.00  |
| —dismantle and clean turret tuner . .   | 5.00  |
| —clean contacts of turret tuner when not necessary to dismantle . . . . .   | 2.00  |
| —install new tuner . . . . .  | 10.00 |
| —miscellaneous repairs . . . . . Hourly Rate  |       |

## How to Figure Bills

**FIXED RATES.** The fixed rates in this schedule are based upon the following factors.

1. *The amount of skill and knowledge required to locate the trouble and figure out the remedy.* Thus, automatic-record-changer repairs are higher than other equivalent mechanical repairs.

2. *The average time a competent, fully equipped Radiotrician or Teletrician would need to complete the job.* The check-up and test charges cover only the time required to determine enough about the trouble to give an estimate. On jobs usually requiring additional time to isolate the exact trouble, the price takes this into account.

When you install a new coil in a circuit such as the video i-f, you will usually have to re-align the receiver after the replacement part is in place and you should charge separately for the alignment. When you install a new part in one of the sweep circuits, however, the price quoted for installing the part includes payment for the time spent readjusting

the receiver. When you make out the bill list "Readjustment of sweep circuit—No Charge."

On jobs that require exact duplicate replacement parts, extra time that may be required to get the correct replacement part is likewise considered. You are *not* taking a pleasure trip when you drive from one radio jobber to another in search of a part.

3. *The possibility of complications that might be encountered on the particular job.* Some troubles, particularly squealing, distortion, or too-frequent burn-out of tubes or some part, require an actual change in circuit design. Hum is another example; many a customer who complains of hum becomes so hum-conscious that he expects the Radiotrician to eliminate hum that he did not notice when the set was new.

In addition, the possibility of call-backs is definitely a complication, and has been considered in practically every charge. Rare indeed are the jobs where you can collect extra when the set fails within your guarantee period, and still keep the good-will of your customer. The charges in this schedule allow you to handle most call-backs cheerfully without asking for more money, regardless of the reason for the call-back. You should always charge list price for parts required.

Any system of professional charges is based on average conditions. It is intended that you adapt the rates and billing method to special cases whenever necessary, as illustrated by the examples at the end of this booklet.

**MATERIAL PRICES.** All radio parts and materials are to be billed at regular list prices as established by the manufacturer.

When no list price is known, the easiest way to figure it for billing purposes is to multiply your cost price by 2. If the result is an odd value, reduce it to the nearest 5 cents. On small parts like pilot lamps or replacement control knobs, which have no installation charge, use your own judgment in each case.

**BEGINNERS.** Because all rates in this schedule are fair charges for completion of the work, these rates can and should be used by beginners as well as experienced technicians. A beginner may take longer for the job and hence earn a lower hourly rate, but if in the end he does as good a job as an expert, he should get professional rates.

There is no such thing as beginner's rates in radio and television—if a beginner isn't able to make a perfect repair job, he has no right to charge for a make-shift job. Either return the set without charge, or sub-let the job to an expert.

Relatives and close friends are admittedly a beginner's biggest problem; it is far better to do work for them free and charge it off to charity on your books, than to cut the rates. Hundreds and hundreds of servicemen have been forced out of business because they could not live down the rumor that they'd fix radios at cut-rate prices because they were beginners and wanted experience. Remember that your time and knowledge is valuable whether you are a beginner or an experienced man.

**HOURLY RATE.** All prices in this book are based on an hourly rate of \$4.00 an hour for radio service work and \$5.00 an hour for TV work. This may seem high at first thought, but never forget that it takes into consideration all those little things that come under the heading of *overhead expense* and spell the difference between profit and loss at the end of the year. When you consider *all* of the time you spend on your servicing business, you may find that your *average hourly salary* for work may be considerably less than \$3.00 an hour at the \$4.00 hourly rate and less than \$4.00 an hour at the \$5.00 rate.

**OVERHEAD.** Under overhead expenses come such items as the following:

1. *Rent, heat, light, water, gas, and telephone bills* (or a proportionate share of them if you are working in your home).

2. *Depreciation and amortization of equipment.* If your tube tester has a useful life of three years, your overhead expense each month includes  $1/36$ th of its cost. Five years is about the longest time over which you can spread equipment expenses.

3. *Non-income-producing labor.* Such things as bookkeeping work, sweeping the shop, building shelves and benches, going out for parts and doing other business errands, talking to salesmen or people who "just drop in to see how you're getting along," and other shop maintenance jobs together add up to quite a bit of valuable time—either your own or that of someone you have hired—and the hourly rate for income-producing work must recompense you for this time also.

4. *Car expense and depreciation.* Gasoline, oil, repairs, insurance, license plates, tires, batteries, washing, waxing, and parking fees are examples of car expenses. The Mileage Rate of 25¢ per mile for extra-long trips may seem high to you, but it just barely covers these factors, and doesn't take into account the fact that you use extra time of your own in driving extra miles.

As to depreciation, 25% a year is not at all out of the ordinary for a commercial vehicle.

5. *Advertising.* In addition to ordinary telephone-book, newspaper, radio-program, and direct-mail advertising, you must consider good-will advertising through purchase of tickets to community raffles, etc., membership in the local Chamber of Commerce and other businessmen's group, contributions to churches, and to charities such as Red Cross and Community Chest.

6. *Taxes.* All federal, state, and local taxes applying to your business are overhead expenses.

7. *Miscellaneous.* In the course of a year, there'll be a hundred and one little miscellaneous things taking money out of your pocket. Here are a few: Losses or cost of collection when credit was unwisely given; postage; stationery; fire and theft insurance; radio and television magazines; membership in associations and clubs; small tools; etc.

All special jobs that do not come up often enough to justify listing in this schedule should be charged for at hourly rates, or use the rate given for similar jobs as a guide for estimating the charge.

**TUBES.** Servicemen should always remember that they are primarily selling professional services involving skill and knowledge. Replacing tubes is a necessary evil, but should never be allowed to influence your charges for repair work.

Many a man has lost all his profit on a repair job through including tube prices in the repair estimate and cutting what he should have charged for repair when the total seemed too high. Therefore, always let your main bills be only for the repair work. Quote tube prices separately, telling the customer which tubes are definitely bad and which are just weak.

If the customer can't afford a complete job, stick to your repair charges and put used tubes in the set *without charge* so that it can be used until the customer can afford new tubes. *Never sell used*

tubes, because they destroy confidence. Never cut your repair charges one single penny for *anyone*.

**CREDIT.** Here's another factor that has ruined many a serviceman. You should do all radio and television service work on a cash basis, collecting at the time you deliver the set, unless you know definitely that the person has a reputation for paying his bills promptly. It is a sad but true fact that whenever debtors are hard-pressed, bills for radio and television servicing are apt to be neglected.

You'll be a lot better off to turn down a job politely and let your competitor risk the loss, than to do the job on credit and then perhaps make an enemy through attempts to collect for the work.

If you are of a charitable nature, spend your spare time fixing up old radio sets, and donating them to deserving social agencies, hospitals, or aged-people's homes.

## **Business Ethics**

A good business and a good reputation can be built only upon a policy of honesty and fairness. Your charges must be honest ones for services rendered, and your charges must be fair both to yourself and to your customers. When people bring their radio and TV sets to you and say "Fix it up; I'll be back day after tomorrow," without even asking how much the charge will be, then you'll know you have a reputation based on honesty and fairness.

**GUARANTEES.** A suggested guarantee to be printed on your statement of charges is:

*Unless otherwise indicated, all repairs and materials listed above are guaranteed for 90 days, just as for a new radio or television set. Work and materials covered by the guarantee will be replaced without charge within this time limit if defective.*

*Guarantee starts on: (insert date of delivery)*

By .....  
YOUR FIRM NAME PRINTED HERE

**STORAGE CHARGES.** When a set is left at your shop beyond a reasonable length of time, you can collect storage charges or dispose of the set, provided you notify the customer in a suitable manner as provided by the laws in your particular state. One form of notification used by a large firm is a

letter that takes the following form when revised for radio or television servicing purposes:

Uncalled for radio and television sets are subject to a storage charge of 25c each per week, starting one month (30 days) after receipt of the set. Storage charges for your set will begin on

Radio or television sets left here over two months after the date storage charges start will be disposed of. Failure to call for your set on or before \_\_\_\_\_ will constitute a permission to sell or junk this set without recourse to its owner.

Type of Receiver \_\_\_\_\_

We are not responsible for sets left over 30 days.

Signature here \_\_\_\_\_

FIRM NAME AND ADDRESS HERE \_\_\_\_\_

## Examples of Bills

**CASE NO. 1.** Five-tube AC/DC set brought to shop by customer. Put in new dual electrolytic filter condenser, type 35W4 tube, and pilot lamp. Realign set. Brush out set and polish cabinet.

|                                     |               |
|-------------------------------------|---------------|
| BILL: Check up and test at shop     | \$2.00        |
| Install dual electrolytic condenser | 3.00          |
| 20-20 mfd electrolytic condenser    | 1.40          |
| Type 35W4 tube                      | 1.20          |
| Pilot lamp                          | .15           |
| <b>Total</b>                        | <b>\$7.75</b> |

**Comment.** A 20-20 mfd, 150-volt condenser costs 71¢; multiplying by 2 gives \$1.42, so make its list price \$1.40. Cleaning chassis, polishing cabinet, and alignment are all done within the one-half hour allowed for check-up and test.

**CASE NO. 2.** Go to nearby home, remove chassis, speaker and picture tube. Bring to shop. Replace intermittent Horizontal Phase detector coupling condenser.

|   |                |
|---|----------------|
| BILL: Check up and test in shop, including pick-up and delivery | \$15.00        |
| Testing associated circuits for final isolation of trouble      | 5.00           |
| Condenser installation  | 3.00           |
| Ceramic 68-mmf condenser  | .55            |
| <b>Total</b>  | <b>\$23.55</b> |

**Comment:** Locating an unstable resistor or condenser requires professional service of the highest order. The total bill should reflect this skill and time involved rather than the relatively low price of the replacement parts.

**CASE NO. 3. A 6-transistor set is brought to shop by customer (insufficient volume).**

|                                      |        |
|--------------------------------------|--------|
| BILL: Check up and test at shop..... | \$3.50 |
| Unsolder and test by substitution    |        |
| three transistors at \$1 each.....   | 3.00   |
| 2N109 Transistor.....                | 3.00   |
| Total.....                           | \$9.50 |

*Comment:* Carefully removing, testing and installing transistors requires professional services of the most skilled kind. The final bill should clearly show the time involved for each transistor removed and substitution test.

**CASE NO. 4. Go to the customer's house and install a new high-voltage rectifier tube.**

|  |        |
|--|--------|
| BILL: Check-up and test in customer's home ..... | \$5.00 |
| 1B3 tube.....                                    | 2.45   |
| Total .....                                      | \$7.45 |

**CASE NO. 5. Customer brings TV set to shop. Install a new high-voltage rectifier tube.**

|                                       |        |
|---------------------------------------|--------|
| BILL: Check-up and test in shop ..... | \$3.50 |
| 1B3 tube.....                         | 2.45   |
| Total .....                           | \$5.95 |

When making service calls in the customer's home, it is advisable to carry a supply of the tubes most often needed in radio and TV servicing. It's less expensive for the customer when you can make the repair on the spot and also it's more profitable for the serviceman. There is nothing that reduces the profit on a service job as rapidly as several trips between the customer's home and the shop. Of course, it is not wise to attempt difficult and time-consuming jobs in the customer's home. You can work far more efficiently in your shop because you have all the data, materials, and test equipment at hand and a bench to work on. Tube replacements, of course, can be made as easily in the customer's home as in the shop.

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Excerpt from the Constitution of the N R I Alumni Association:  
 "To cultivate fraternal relations among the alumni of the National Radio Institute, to foster the spirit of unity among the alumni, to encourage and aid the Institute in the dissemination of Radio, Television and Electronic knowledge; to consider and foster new ideas and trends in Radio, Television and Electronics; and by interchange of helpful information promote the welfare of the Institute and each alumnus."

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