



# the PHILCO SERVICEMAN

VOL. 23 NO. 5

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**WATCHDOGS OF QUALITY  
AT WORK ON  
PAGES ONE TO THREE!**

## PHILCO'S

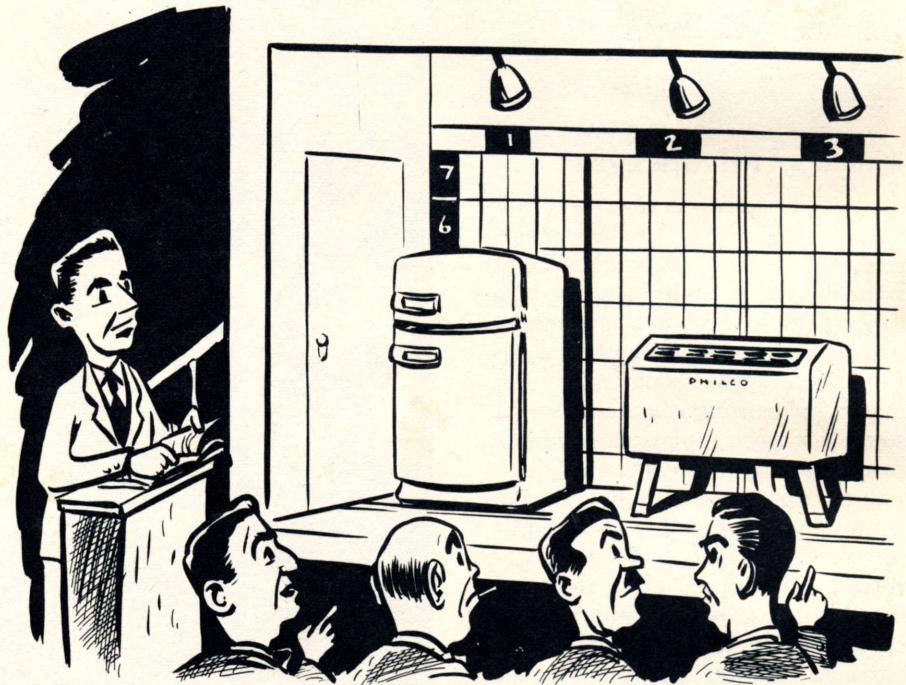
### "Private Eyes" IN ACTION!

**D**ETEKTIVE WORK, it would appear, is far removed from the activities involved in producing and selling electrical appliances for the home. Yet, as part of Philco's overall appliance program, one group has been specifically organized to apply the principles of detection (and correction) to insure continued efficient performance of these appliances. They are the Philco guardians of performance once the product has reached its ultimate destination.

Known as the Field Engineering Department, these men are literally the watchdogs of Philco appliance quality and are charged with keeping performance levels at an even keel in the field. To support a task of such scope they have been adequately backed with the finest tools and most up-to-date knowledge obtainable.

It has been recognized in all manufacturing fields, and the appliance industry in particular, that electrical and mechanical products are subject to complications in various forms. This, of course, is the basic reason for the creation of the service field itself. Despite innumerable safeguards and precautions, failures do occur . . . even in new products.

When troubles occur on newly developed products in the custom-



er's home, the situation calls for prompt action to protect both the consumer and the company. It is here that Field Engineering is called upon to perform the formidable task of locating the trouble and pinpointing the fix, all with the least possible delay. Since product reputation hangs in the balance, nothing is spared to master the problem and guard against a recurrence of it.

The story we are about to tell actually happened and illustrates how many variables can be present in the solution to a field problem.

It is an example of how a seemingly insignificant factor, over which the manufacturer had no control, can create a serious situation, one that involves the expenditure of thousands of dollars and hundreds of man-hours to solve the problem. It is a story that rivals detective fiction in the number of false leads and blind alleys that had to be explored before the fix was finally discovered.

The problem started innocently enough with a few scattered complaints in various parts of the coun-

*(Continued on page 2)*



Refrigerators from cities where complaint existed were shipped to Field Engineering headquarters for intensive study.

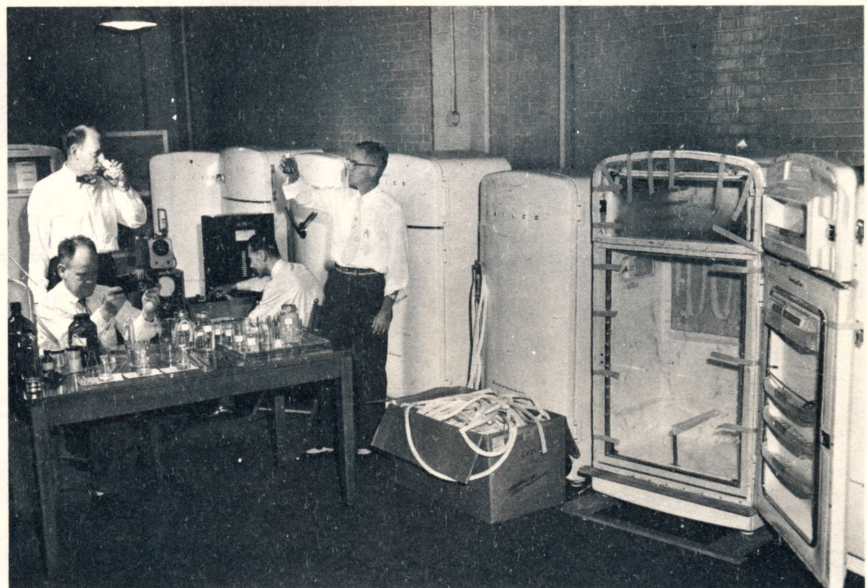
## Philco's "Private Eyes" . . .

(Continued from page 1)

try. In each case, the complaint centered around a medicinal taste from ice cubes manufactured in a refrigerator. Local field personnel had immediately attempted a fix by replacing certain parts they felt might be causing the trouble. In some instances replacement of the evaporator door, ice trays or dew-point compensator relieved the condition, but by this time additional complaints had been received. Throughout all of the local investigations, no general pattern could be developed to establish a basis for study. Replacement of parts worked in some units, but in others did not change the condition.

Since the situation had baffled the local representatives, Philco's Field Engineering was called in to take over the investigation. This started with a full scale check of all the complaining areas by Field Engineering's corps of troubleshooters. Before the survey had reached full steam, the symptom in question suddenly stopped. And shortly thereafter, just as suddenly, started again.

Taking up where they had left



An organized, around-the-clock schedule was set to complete whatever electrical, mechanical and chemical tests were necessary to locate the trouble.

off Field Engineering transported a number of the refrigerators to their headquarters for exhaustive study. During these tests another puzzling aspect placed a stumbling block in their path. Some of the units when checked upon arrival were in perfect condition, exhibiting none of the medicinal taste from the ice cubes. Others retained the taste during initial testing, but then ceased, producing ice cubes of normal taste.

The next step taken by Field Engineering was an attempt to artificially reproduce the conditions that were causing the complaint. This was to be tried both in the laboratories and at the original locations where the trouble had first occurred. In both places the units were completely dismantled and each part or component subjected to a battery of mechanical, electrical and chemical tests. The water itself was placed under suspicion and large glass containers of it shipped to Philadelphia for further chemical analysis.

Here the first clue presented itself. Chemical analysis proved that some unknown substance had combined with chlorine present in the water to produce a medicinal taste. The job seemed narrowed down to locating the substance causing the condition and removing it, thereby

alleviating the condition entirely. But a number of other factors were involved that proved the foreign substance in itself was not the sole cause.

First, an attack was launched to discover where the substance was located within the refrigerator. One by one the parts were checked and a conclusion reached. In every case where the substance had been incorporated it had proved harm-

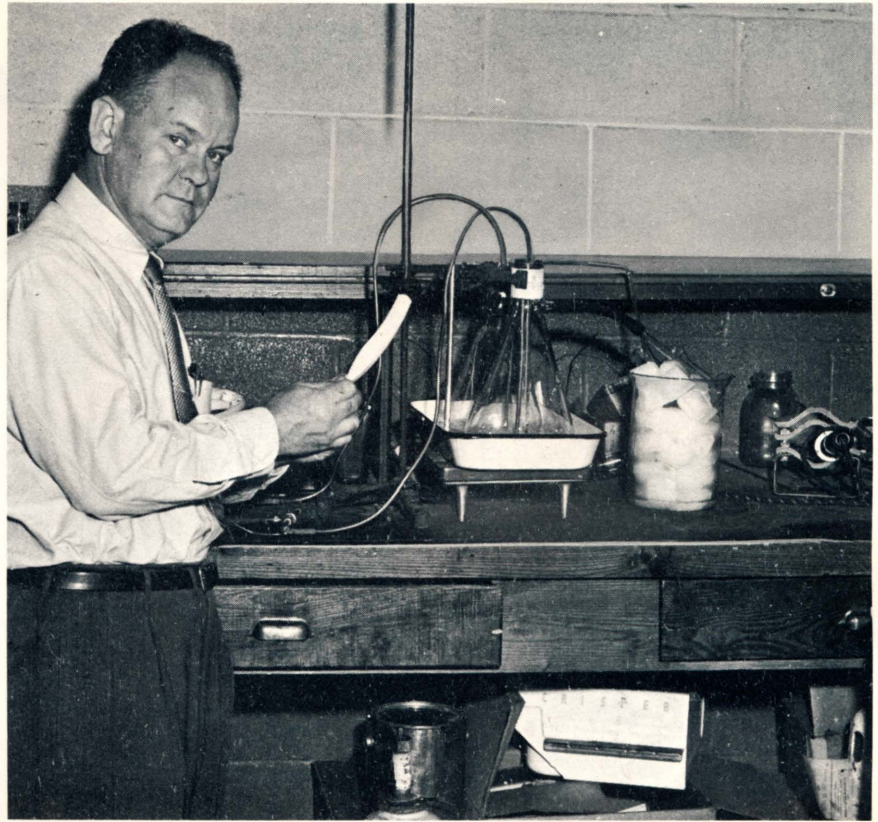
less, except where it was contained in the door gasket where this substance is not normally used.

Armed with this knowledge, Field Engineering was then able to reproduce the medicinal ice cube taste in their laboratories after much trial and error examination. This led to the realization that the door gasket substance in combination with other factors was producing the trouble. Since other units were operating with similarly constructed door gaskets, yet showing no sign of bad ice, the problem finally narrowed down again to finding what other factors were causing this substance to produce bad tasting ice.

Field Engineering is known to take their work seriously and leave no stone unturned in coming up with the answers. This is evidenced by the fact that, when they were hot on the trail of water as a causative agent, they called in the Academy of Natural Sciences as a consultant. The Academy is widely known as the foremost authority in this country on all phases of water.

Another clue came to light with the discovery of an extremely high concentration of chlorine in the water secured from the original sources. Further investigation in these areas revealed that when the complaints were at the height of their frequency, the cities in which they occurred were experiencing unseasonably high temperatures and refrigerators were thus being operated at high level temperatures. In addition, water supplies were at their lowest levels in history, and the local water companies had added large quantities of chlorine to the supply to make the water safe and more palatable.

In recapping the problem thus far, Field Engineering had learned that (1) the refrigerators under investigation had been operating at abnormally high room temperatures; (2) due to the unseasonable heat, water reserves had been at an all-time low; (3) the concentration of chlorine added to the water had been stepped up; (4) a material not normally used in the door



One of many tests—here an engineer is blowing 100 degree air over samples of various refrigerator materials. The same air was then "bubbled" through chlorinated water and chemical analyses made in an effort to reproduce the condition.

gasket was present. Finally, these factors together, had combined to produce ice cubes that tasted like medicine.

Replacement of the door gasket obviously would relieve the condition in the cases reported. However, it was still up to Field Engineering to insure that future products would not incorporate the odor causing substance which would become evident when and if the other conditions (heat and added chlorine) were present.

By the process of elimination it was finally found that one of the suppliers to Philco's door gasket supplier had unwittingly added the substance to his product in an effort to produce a more flexible compound. This had not been reported to the gasket supplier nor Philco who were under the impression that the door gaskets were being manufactured to original specifications. And that wrote finis to a situation that seemingly had no end.

All of this tremendous effort em-

bracing the broad fields of electrical, mechanical and chemical research was completed in an amazingly short time. These problems assumed by Field Engineering cannot be handled in leisurely fashion, yet each and every lead must be run down to its final conclusion. Often there are blind alleys that lead nowhere and frustrating problems that refuse to fall into patterns. But in every case, each complaint is subjected to the full force of the entire Philco organization if it is necessary.

On the basis of having solved this problem, engineering specifications are now written to prevent such an occurrence from happening again.

Philco's Field Engineering for appliance products operates in an atmosphere that might appear confusing to the unpracticed eye. Yet, for all the hurried field trips, all night lab sessions and general whirlwind activity, there are cool minds at work to insure Philco's continuing goal of "Famous For Quality The World Over".

**PINPOINT YOUR  
SERVICE FIXES  
WITH**

**PHILCO  
YEARBOOKS**



**TELEVISION**

1948, 1949, 1950, 1951, 1952,  
1953

**HOME RADIO**

1946-47, 1948-49, 1950, 1951,  
1952, 1953

**AUTO RADIO**

1946-47, 1948, 1949-50,  
1951-52-53

**SEE YOUR**

**PHILCO**

**DISTRIBUTOR**



# AROUND THE DIAL

**T**O BE SURE OF adequate sound, check the video I.F. system for alignment.

Video in the sync, and buzz in the sound may be caused by a faulty I.F. system.

When you consider what's being done with electronics these days, nobody's safe—not even the termite!

They've gone and developed a listening device so sensitive that it detects a termite's footfall, the crunch of food in its jaws and the tom-tom like sounds it uses to communicate what may be a danger signal to its mates. The instrument consists of a tiny microphone, a hip-pocket power unit and ear-phones and promises to make the pest exterminator's job easier when the scientists have completed the task of classifying termite sounds and their causes.

If this keeps up, we wouldn't be surprised if some day you, as a service technician, will be listening to the "heart beat" of an audio tube with an electronic stethoscope, checking the trouble on your transistorized "symptom chart", and making the fix by injecting "service serum" by radar hypodermic!

Excessive gain at certain I.F. frequencies can produce a ghost in the picture.

Hi-fi, the new multi-million dollar plum of the appliance industry is a "natural" for the service technician. Until recently, custom built units for the home hobbyist had restricted the demand for this type of service. Now, thousands of mass produced high fidelity instruments are rolling off the assembly lines, creating new service potentials in every city, town and hamlet. Go

after hi-fi service, it's a rewarding experience when you stop to count the extra profits!

Insufficient filtering will cause a distorted tone quality.

For a surprisingly small investment you're in another highly profitable sideline when you consider tape recorder repair. It's right down your technical alley and most important, catching on in leaps and bounds with the public.

Improper value of the first audio plate load resistor can cause distortion.

Ah spring, it's wonderful! Or it can be for you if you take advantage of the extra business that is sure to result if you . . . 1 . . . feature complete antenna inspections to put 'em in ship-shape after hard winter punishment . . . 2 . . . push the installation of safety devices such as lightning arrestors . . . 3 . . . plan a "rejuvenation" drive to get those older model radios, portables, etc., out of the closet and back into operating condition. It's done successfully every spring by hundreds of enterprising service technicians!

Excessive peaking in the I.F. amplifier can cause distortion.

An open screen I.F. bypass can distort the sound by effectively detuning the I.F.



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Toledo, Ohio—Benarr Distributors presented the following Philco Service Achievement Awards . . .

Photo #1—Edward E. Knipper, Benarr Service Manager and third year award winner Paul Miller, Miller Television, Maumee, Ohio.

Photo #2 — Benarr - man Harold Barbre, handing award to Don Wilhelm, Don's Telerental, Toledo.

Photo #3—Portland, Oregon—Under the Philco sign, Don C. Halsey, sales representative, Appliance Wholesalers, makes presentation to D. R. Crouch, Don's Radio and TV, Ashland, Oregon.

Photo #4—first year award winner Russel Rice, owner Home Equipment Company, Genoa, Ohio.



4

# SHOP TALK CORNER

## NEWS-VIEWS-COMMENTS FROM PFSS MEMBERS IN THE FIELD

**I**'M SO CONVINCED that Philco TV is the best, that I got married so as to have my own apartment so I could buy a custom 400 Philco TV for my very own.



Robert M. Kohn  
ETA-OLIN TV SERVICE  
New York, New York

*If that isn't the finest testimonial Philco has had yet for its custom 400 this editorial department will eat its hat. Thanks, Bob!*

I have subscribed to PFSS for quite a while now, received the Philco Award for three consecutive years, and also have advertised Philco products and service in my local papers. I have sold countless Philco products to my customers, all satisfied.

Lately with incompetent service, many Philco products are not performing up to par, causing a great deal of customer dissatisfaction. This looks as though it would be good for the service business, how-

ever, not only must we keep the Philco customers happy with their Philco products, but we have to keep them sold after the bitter taste of poor service.

Incompetent service is doing a great amount of harm and must be corrected in some way. If it is possible to plug reliable good service on your "Philco Playhouse", and also in your national ads tying in the Service Award Plaque, I'm sure that all Philco servicemen would appreciate it and that the public would have some standard to judge when calling for service on Philco products.

The evil specter of incompetent service is growing larger every day with back-alley hammer and chisel artists hurting everyone's business.

The majority of us in this association both service and sell Philco products. We find them the finest performing in the industry, however, poor service doesn't do a good product nor competent technicians any good!

Any help that can be given through your facilities would be gratefully appreciated.

F. E. Silverman  
TELEVISION SERVICE  
ASSOCIATION  
Hartford, Conn.

*Your comments are greatly appreciated and give us an opportunity to explain Philco's policy regarding this matter.*

*As you know, the basic policy of PFSS is to upgrade the practicing technician with the full weight of the most comprehensive service training package obtainable anywhere. The small membership fee you are charged for this package does not begin to offset the cost of this tremendous training program, and is only possible through direct contributions from Philco Corporation and its Distributors.*

*We are fully aware that some manufacturers spend a substantial share of their service money talk-*

*ing about the technician, but fail to back up their talk with the type and amount of training that can establish the technician as a reliable and competent worker.*

*Poor service can be traced to one factor . . . poor servicemen. All the advertising and back-slapping in the world cannot cover up for a lack of training and ignorance of servicing techniques. We firmly believe that PFSS members themselves have become the most powerful testimonials of what benefits the consumer will receive when he contracts for high quality Philco service.*

For your work bench items I would like to submit the following.

So much of our printed material required binders and we have a large stack of Riders and the early volumes seldom used, and Atwater Kents, Grigsby Grunow, etc., about out of use. I take the contents out of Vol. I and then II, wrap them up in heavy paper and put them away with a little ceremony for work well done and use the binders for the new material.



Ira N. Faurot  
FAUROT RADIO AND  
TV SERVICE  
Smith Center, Kansas

*A good housecleaning every once in a while is bound to reveal technical data that is completely outdated. A good idea, and we especially like the sentiment attached to "a little ceremony". Who knows, that ancient material might be valuable some day as collector's items!*

Your Pat Murphree, Philco Service Manager and Instructor on TV (Crumpacker Distributing Co.) is

the best I have studied under, bar any craft, and I have studied many.

At this point I have stopped to size up this sheet of paper. It is not big enough to put in all the nice things I have to say for this man. Pat will take everyone's problem to heart with real feeling behind it and make you happy that you have asked a foolish question.

Philco will always be in the lead with men like Pat Murphree heading their operations.

I thank the Houston Philco gang for all they have done for me.

R. H. Stutz  
CITY SERVICE CO.  
Houston, Texas

*Pat will be mighty glad to hear all your fine words about him. We're sure all you Houston members will agree Pat is a serviceman's serviceman.*

Since I am new in your organization I don't know too much about it. But I have been reading THE PHILCO SERVICEMAN for a period of about four months. So from what I read, I think you have a good organization, that is why I joined and am proud to be in it.

I have just started my business, since I have just graduated from school. Of course, this is just at nights as I work for a large shop in the day. So I have only one suggestion, that is, why don't you give an invitation to new servicemen about three times a year to join your organization?

I enjoy your magazine very much. Keep up the good work.

Dave A. Schmitt  
SCHMITT'S TV  
Lindenwald, N. J.



Who makes a better salesman for Philco than one who services the products?

L. J. Mahar  
BILL'S TV SERVICE  
Buffalo, New York

*No one, Mr. Mahar, no one! We feel that the service technician more than any other individual, holds the fate of Philco's quality and reputation in his hands. It is for this reason that Philco places such emphasis on its service training program and maintenance of PFSS as the industry's best service organization.*

We have great respect for your service put out on TV and Radio and it cannot be praised too highly.

Ted Hamilton  
HAMILTON RADIO & TV  
What Cheer, Iowa

This is not a gripe *but* why, when I am a TV serviceman and do a little radio service work do I get just a half of a book of refrigeration, air conditioning, etc?

Mathew K. Smith  
Tujunga, Calif.

We like and appreciate service information on Radio-TV but have no use for ranges, refrigerators, air conditioners, etc.—suggest you keep such information segregated in separate folders.

Cecil R. Gray  
THE ELECTRON SHOP  
Duncan, Oklahoma

Please a separate book for TV service notes and a yearly binder.

W. P. Fuller  
Foxboro, Mass.

*In response to many requests last year, the Philco "Service Supervisor" was redesigned so that you can tear out and save only the information needed for your particular service. The pages are punched to facilitate easy filing in binders.*

*Since it would be impractical to edit separate publications for each Philco Service Category, (Radio, TV, Phono, Refrigeration, Air Conditioning and Washers) it has all been combined in the one edition. However, since you can separate the pages that means you can file only the specific category that interests you.*

Being a recruit in this field I don't have many comments or advanced ideas.

I work for a power company servicing the public, mostly in residential areas and as the time pro-



gresses we boys also must keep up with the new electronic equipment. So with "Industrial Electronic" (factory use) you enter into part of the radio field.

I received my information through a technical institute and have accomplished enough to do part time service work, with the hopes of being up to "A-1" and a store.

I enjoy your monthly publications and also the service information I have received.

Harold H. Peck  
INDIANA MICHIGAN ELEC.  
Ft. Wayne, Ind.

The pressure of more immediate matters and the burden of a busy service enterprise may have caused us to overlook some of our obligations, among which is included the expression of our appreciation to PFSS for its month-by-month supply of technical information, our most important tool. Oddly enough, however, we have on several occasions described the type and scope of PFSS service to manufacturer's representatives as an example of what can be done by them to furnish the service technician with his most valuable service implement.

The following comments, repeated as nearly word-for-word as memory will service, are indicative of the need for a PFSS for every product on the market: "I see by that little sign in the window that you are qualified to service Philco TV's. Well, if someone doesn't do something about that thing of mine I'm going to trade it in for some other make. I've had it to half-dozen different shops and no one seems to be able to do anything with it."

(Continued on page 8)

# 10 DOLLAR AWARD!

## IN TRANSIT TRUCK TIP

**T**IME AND AGAIN we have stressed that the simple ideas are often the best. This month's ten dollar award proves it. The winner is Ralph Wammack, General TV Service of Hamilton, Ohio.

"My idea is this: on our truck floor, television sets have a tendency to slide around when making sudden stops, especially chassis that have been removed from the cabinet. To correct this we tried setting the chassis on rubber mats such as are found for use in bathtubs and prevent the bather from slipping around. Since placing this type of mat on our truck floor we have had no trouble with damage

to receivers while in transit."

Short and sweet! This idea is in no way complicated, yet when and if you have ever had to repair the sometime considerable damage done to a chassis that has been banged up in a truck, you'll realize what this simple idea can accomplish.

Remember, the idea does not have to be technical or complicated in nature. Quite often the idea such as this one can eliminate the need for additional technical ideas that come as a direct result of not using the simple devices that prevent damage.

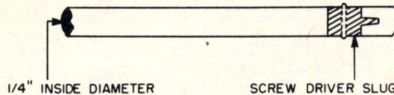
We'd like to see more of this type idea where your fellow serviceman does not have to construct anything and can put it into effect on his very next job.

# 5 DOLLAR AWARD!

## ADJUSTMENTS MADE EASY

**F**OR THE FOLLOWING IDEA five dollars goes to Gary Altmonshofer, 2305 11th Street, Columbus, Nebraska, proprietor of Gary's Radio Service.

"For ease of adjusting vertical height and linearity on 1954 21" TV receivers. We found it difficult to always hit the screw slot on the adjustment screws. I found that by taking two 14-inch lengths of brass tubing cut from an old auto radio



antenna, which just fits snugly over the pot. shaft, you can adjust both adjustments simultaneously and have no trouble always hitting the slot. Because the tubing is chrome plated, it looks good as a service tool, too. Some modifications can be made to suit, however, we did not find it necessary."

# 2.50 AWARD!

## QUICKIE FOR HOME AND AUTO RADIOS

**A**ND \$2.50 TO N. E. Johnson, Johnson Radio & Refrigeration Service, 1200 1st St., Canadian, Texas.

"This idea is used when drilling a hole through the radio chassis or a speaker frame on the instrument panel of an auto as a serviceman must often do for the purpose of installing phono sockets, extra switches or rear seat speakers in autos.

"In doing this work, the drill bit will go too far and damage some

wiring, a condenser or some other parts. To eliminate such accidents, I use a piece of 1/4" copper tubing or a piece of wooden dowel, or rip a piece of wood about 1/2" square and with the drill bit properly placed in the drill chuck, I then cut the copper tube or the wood, whichever I am going to use, about 1/8" shorter than the drill bit. If I use wood, I place it in a vise and run the drill bit through it lengthwise. This lets the bit stick through just enough to penetrate the metal and not damage anything on the other side. If the copper tube is used, do likewise."

## Shop Talk Corner

(Continued from page 7)

Well, needless to say, this lady did not turn her set in because, upon being brought to the shop, we found that its ailment was a severe case of horizontal pulling on strong signals, which was aptly covered by Philco Service notes, and, what had been a "dog" to the other places, was merely routine service to us, thanks to PFSS.

Chester M. Luchessa  
ALBANY TELEVISION  
SERVICE

Albany, California

*Thank you Mr. Luchessa for writing to us about so gratifying an experience. We're sure this sort of customer conversation has become day by day routine for thousands of PFSS members.*

# PHILCO

*"Quality High"*

## WHEN GOING GETS HOT!



Caught in a raging blaze that destroyed a home, this Philco Refrigerator was delivering ice cubes and refrigeration to its owners soon after the fire. The only replacements necessary were a temporary gasket and a new power cord. After a repaint job, the owner, Major C. L. McMillan, expects many years of uninterrupted service from his rugged Philco appliance.