

\$100

3-inch tube is best seen from distance of 13½ inches.

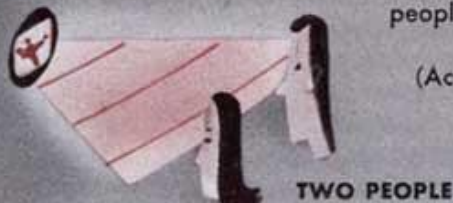


### CHOOSING THE RIGHT SCREEN SIZE

How big the viewing screen of a television set should be depends on the audience it must entertain. This chart shows, for various screen sizes, the number of people who will get a clear, undistorted, comfortable view of the picture. (Actually several more would be able to see reasonably well.)

\$200

7-inch tube can be watched comfortably from 33 inches away.



\$325

Optimum view of popular 10-inch size is at 48 inches.



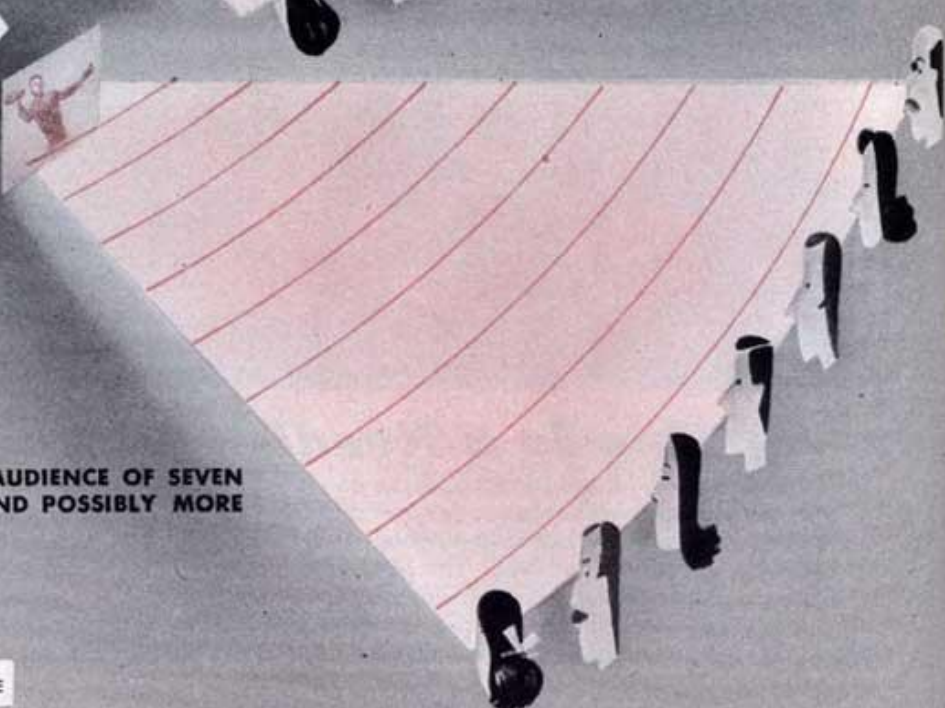
\$400

12-inch tube permits viewers to sit 57 inches away.



\$650

16-inch size of projection screen gives comfortable view at 96 inches.



**Buying a TV set? Here are some practical suggestions to help you decide what you want for how much.**

Cover drawing  
by Reynold Brown



# What You Want to Know About Television

**By Carl Dreher**

*Drawings by Jere Donovan*

*"How big a set should I buy?"  
"How can I tell what's a good buy?"  
"Should I install it myself?"  
"How about the antenna?"  
"Where should I put the set?"  
"What about fire and shock hazards?"  
"What's the best place to buy a set?"*

THESE are the questions people are asking about television. Last year a novelty, the galloping postcards now threaten the automobile as the center of family interest. Grownups stare respectfully at moth-eaten movies that wouldn't pull customers in a free theater. Children are fascinated into silence. Pronged antennas, the proud badge of TV ownership, sprout like antlers from all kinds of roofs. So hungry is the public for this supergadget that sets have been sold where there are no programs whatever.

Unless you have a sales resistance for radios, cars, and gimmicks unusual among readers of this magazine, you are probably talking yourself into TV right now. I won't even discuss what you can see in the little flicker-window. That would be like asking grandpa with the goggles where he could go in his merry Oldsmobile. As a new fan for old vaudeville myself, I know you want to talk about the machine, not the scenery.

Let's suppose you have stopped shuddering at the price tags. You know that TV is a three-figure dish even at the low end of the menu. You want steak—the question is, how thick? Or, rather, how wide? Incidentally, a "7-inch tube" refers to the *diagonal* of the picture, not the width.

Looking at TV is like reading this page. For one pair of eyes, it's plenty big enough. But if you want two people to look at the same time, that comes to four-eyes wide; so you'll have to move *back* from the screen and make the picture *bigger*. Two heads, it seems, are bigger than one.

To decide how big a screen you want, count your money (in \$100 bills) on one hand, and your heads on the other. At present prices, a good rule of thumb is \$100 a head. That's the price of a pass to your private theater.

Charted on the opening page are the common screen sizes (tube diameters) and the number of viewers each can serve well. Calculations are based on six times picture width, for good viewing, within an angle 25 degrees each side of center. Standees and floor-squatters would increase the potential audience, but not the comfort.

On this basis, the little 3-inch \$100 job, with a screen the size of six postage stamps, can hardly accommodate a crowd of two people. Even a 7-inch set is on the intimate side. And nothing less than a 10-inch screen

## WHERE TO BUY



Whether you pick a television shop that's large or small, in your own locality or another city, make sure it will stand behind its wares. Don't be afraid to try several places before deciding.

will keep the kids literally out of your hair.

The 10-inch set is the big seller today because it fits the average family with one or two children. If you want to run a small television theater for your friends, get the projection set with a 16-inch picture or, if you can afford it, the more expensive, equiv-



**Smallest**—and cheapest—television receiver now on market is this 3-inch Candid®, made by Pilot Radio Corp. It is priced at about \$100.

**Set below** has a 12-inch picture tube. GE's new model 814 has 18 tubes and aluminum-backed viewing screen. The price in the East is \$389.50.



## INSPECTION



**Look closely** and ask questions. If the salesman doesn't know the answers, make him find out—or look for another salesman who does. See the text of this article for important points to check.

alent direct-view job, which gives a better image. Actually, either of these will accommodate, in reasonable optical comfort, more viewers than the chart shows.

All viewing tubes, whether 3-inch or 20-inch, make their pictures out of 525 individual lines (like the "dots" in the pictures here) and theoretically all might be capable of equal sharpness. But the bigger sets may produce better images, because they have improved circuits and more tubes, giving a sharper, clearer, steadier picture, as well as better reception on weak stations or if you live far from the transmitter.

Now that you have settled on *screen size* by counting noses and dollars, consider *set size*. Cabinets vary like boxes of soap flakes with the same contents. Your best bet, if you buy television is to buy *television only*. Don't go overboard for combination radio-TV-long & short record-player outfits complete with home-movie screens and electric organs. If you want these things, get them separately. TV is a swift-

**Most popular** size is 10-inch, made by most manufacturers for \$325 up, depending partly on cabinet. Westinghouse, below, costs \$400.



## HOME DEMONSTRATION



Ask for a home demonstration, particularly if you buy your set in a store far from your neighborhood, before closing the deal. Quality of reception is very different in different areas.

changing piece of equipment: today's biggest screen will seem cramped in a few years. The less other stuff you have glued onto your present set, the freer you'll feel to improve it later.

And another point: It is practically certain that television will go up into the higher frequencies before very long. Some areas will not be affected; in others, sets will have to be adapted. This may be a factor in how much you want to spend on one now.

Settled on screen and set size, and thereby price range, you now consider makes. This is a tough one. A young business, quick with promise of profit like the young automobile business, TV promotes a lot of nameplates. Many you know as old friends in radio or appliances. Others are newcomers. But all use the same tubes and many the same basic components. Again as in automobiles, the reputation and service facilities of the dealer are important.

With a lot of good money on the line, you have the right to take your time and ask

**For de luxe entertainment,** Du Mont makes the Westminster® combination below with 24-inch direct-view screen. It costs about \$2,500.



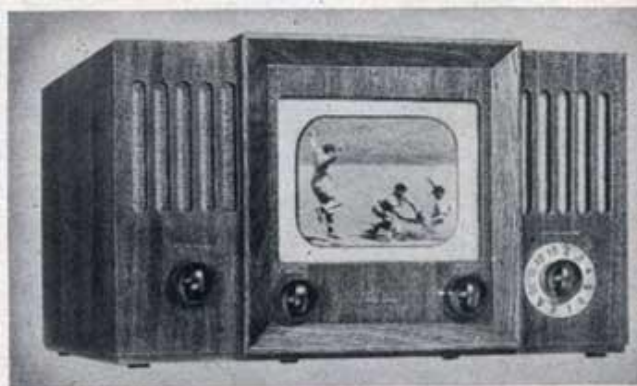
## SERVICE



A highly complex electronic gadget, a television set is not easy to repair. Unless you are an expert and like to tinker with such things, the seller's one-year guarantee is worth its cost.

questions. Look over the floor samples for general workmanship. In demonstrations, check into these significant points:

**Sharpness.** Tune in a station that is broadcasting its test pattern—a chart made up of lines and circles that is put on the air between programs or when there are no



**Seven-inch set** permits more than one person to watch show, sells for around \$200. Tele-tone's model (above) operates on either AC or DC.

**Projection set** gives pictures as big as largest direct-view tubes but not quite so clear. RCA combination model below costs about \$1,500.



## ANTENNAS



programs. (It is difficult to judge picture quality from a regular program picture.) Adjust the set for the best image, and then look closely at the black-and-white lines that converge toward the center. *The farther in they show up clearly, the better.*

**Contrast.** The inner black ring of the test pattern, circling the station call letters, should be really black, while the successively lighter gray rings should be obviously different shades of gray.

**Drift.** Watch the test picture after the set has been on at least 15 minutes, to see if it holds its sharpness. If the set requires frequent retuning, be suspicious.

**Controls.** Some receivers have semi-automatic tuning—the picture stays sharp when the station selector is switched from one station to another. This eliminates a lot of knob-fiddling but means you'd have to go inside the set to adjust it.

**Number of Tubes.** In general, the more the better.

**Number of Stages of Amplification.** Again, the more the better. If the salesman doesn't know, ask the serviceman.

### How to Check Sensitivity

**Sensitivity.** Find out—from the salesman or instruction book—the sensitivity of the set (measured in microvolts per meter) on each channel. It should be at least as great as the field strength *near your home* (also measured in microvolts per meter) of the transmitter using that channel. (Most transmitting stations will tell you their field strengths in your locality if you write them.) You can make a visual check on sensitivity by simply tuning in each station.

**Audio System.** Listen critically to music—live rather than recorded, if possible.

**Cabinet.** A television set is a piece of furniture, and a prominent one. Make sure the design will be pleasing in your home.

**Home Demonstration.** Usually a set will work better away from the interference caused by traffic, doctors' equipment, and neon signs in the business district. But sometimes the reverse is true, especially if you live far from the transmitters or in the "radio shadow" of a hill or building. Ask to see the set operating in your home. If the dealer refuses—often he will—insist on a money-back guarantee.

If you are not fond of electronic tinkering, buy your set *with* installation and a one-year guarantee, which costs 20 per cent of the purchase price. And ask whether that cov-

## WHERE TO PUT IT

### IN THE FIREPLACE?

Obvious location for set is focal point of room. Often this is fireplace, and some are put there.



### IN THE WALL?

If you own your own home, good solution is to mount set flush with wall that has closet behind it.



### AVOID GLARE:

Visibility of daytime programs may be affected if set faces windows.

ers the picture tube for a full year, or only 90 days. And how about an option to renew the guarantee at the end of the year?

Yes, it is possible to install and service a television set yourself. It is even possible to build a set from available components or complete kits. But just because you were a hot-shot with a soldering iron in your radio days, don't think TV is easy meat. Television is a lot more than visible radio. It is more like *radar*—which was the maintenance terror of the Army and Navy.

Practically all TV antennas are based on the simple dipole—two arms extending at right angles to the supporting mast. Together the arms measure half the wavelength of the band to be received. There are many modifications and extensions of the half-wave dipole. Some of these are reflecting rods, folding bars that double back on themselves like trombone slides, and



The dining room makes a good video theater, since it has easy-to-move chairs and a big table for refreshments and ash trays.



### WHAT FURNITURE?

Place comfortable chairs close enough to set; keep lamps out of direct view.

multiple units or arrays to favor particular stations or portions of the band. Usually separate units are needed to cover the present low band (channels 2 to 6) and high band (channels 7 to 13).

Signals are piped down from the antenna through twin leads that are matched to the receiver, or through the more expensive coaxial cables that reduce signal loss.

You may be able to get by with an indoor aerial if you live in an area where the transmitter lays down a powerful signal. This can be of plastic-insulated twin lead-in wire or almost any sort of wire. A more elaborate aerial stuck out of the window is better, though. And a roof aerial picks up still more signal and gives better protection against "ghosts," or reflections. But then, if you live in an apartment house, you have the landlord to reckon with.

Among the accessories that you may

**SAFETY**

**Closely packed components** make sets run hot, may cause fire if vents are blocked.



**Loose antennas** are a hazard. Make sure yours will stand up under winds, ice.



**Special television lightning arrester** in lead-in wire is required by electric code.

wish to consider are enlarging lenses, filters, and boosters.

Lenses will give you a larger picture, but you'll have to sit almost directly in front of them. Before buying one, make sure it won't interfere with the tuning knobs. Lenses may give an impression of a rounded screen; if you don't mind this, or appearances, a lens may be a good investment, especially for a 7-inch set. Some sets with built-in lenses to produce 60-square-inch pictures from 7-inch tubes may be good buys. But the picture produced is not the equivalent of an unmagnified picture from a 12-inch tube.

Filters that fit over the screen may improve the picture under some conditions. They provide color discrimination and improve contrast—with some loss in light. This usually can be made up by increasing the picture brightness. Filters also improve the picture's visibility, because room light has to pass through the filter twice, while the tube's light passes through only once.

A booster—an extra, separate stage of radio-frequency amplification—may help, particularly with a small set far from the transmitter. To find out, try one.

Before you buy your set, decide where you are going to put it. You may be able to mount the set in a wall or bookcase that has a closet on the other side.

Perhaps the ideal place for TV viewing is the dining room. This keeps the living room for living—reading, writing, cards, and talk can't stand the competition when the set is running. With TV in the dining room, you simply turn the chairs to face the set.

TV sets have some special hazards—although the Underwriters Laboratories are not too worried. With 20 tubes going, the

sets put out more heat than a radio. Blocking ventilation holes behind and under the set may result in a fire. If you ever smell insulation cooking, turn off the set, pull the plug, smother the set with a rug or use a nonaqueous extinguisher.

There is no serious shock hazard with small sets; large ones should—and most do—have an automatic switch to cut off the power when the cabinet lid is lifted. But you can get quite a jolt from the picture-tube terminals, even after the set has been disconnected. If you remove the cathode-ray tube from the set, handle with care—it can explode like a big incandescent lamp. There is no danger when it is inside the cabinet, since the screen is covered with a plate of safety glass.

The roof antenna is a greater potential danger than the set itself. It should be securely mounted so that winds, snow, or ice cannot break it loose to fall on passers-by.

Where to buy depends on where you live. Generally, the *biggest* dealer nearest you is safest—TV isn't a car you can roll into any service station. If you are investing in a big-screen, big-money set you will gravitate to the plush salon with the most models. This may also be a good place to buy a small set. But a neighborhood dealer is handier when you have trouble after hours. He may even listen more attentively to money talking—something knocked off the list price is not unknown even today.

For accessories, kits, or assembled sets that you expect to service yourself, mail-order buying is optional. Big mail-order houses have been satisfying radio customers for decades, and they can be expected to do the same for television purchasers. **END**