

# COMMUNICATIONS

## In the Home



CIRCULAR SERIES

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for Communications

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ISSUED BY THE SMALL HOMES COUNCIL

## UNIVERSITY OF ILLINOIS BULLETIN

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COMMUNICATIONS  
SMALL HOMES COUNCIL

**G4.4**

## WHY PLAN FOR COMMUNICATIONS?

The telephone and the radio are so taken for granted that they are likely to be slighted when a house is planned. A careful long-range plan can do much to insure the convenience desired for everyday use of communication devices. Such convenience can be attained by a few relatively inexpensive installations made *before the interior walls are completed*. The purpose of this circular is to provide information for planning of this kind.

## WHAT TYPES OF COMMUNICATIONS WILL YOU NEED?

The several types may be classified as follows:

1. From the home to distant points (telephone, radio, television).
2. From the exterior to interior of the home (door announcer, mail receiver).

3. From one room to another, or from one part of the property to another (intercommunication devices).

Because the telephone is the basic item of home communications, this circular discusses it in detail.

## THE TELEPHONE

**TELEPHONE LOCATIONS** are the important responsibility of the home owner himself. Each location is determined by the convenience and degree of privacy which the user of the telephone desires.

In making your decision, consider these factors:

1. Activities and habits of persons in the house.
2. Floor plan of the house.
3. Probable arrangement of furniture.

4. Special considerations such as business needs.

5. Outlets for future changes or additions.

6. Cost. Consult the telephone company for costs of *installation and operation*.

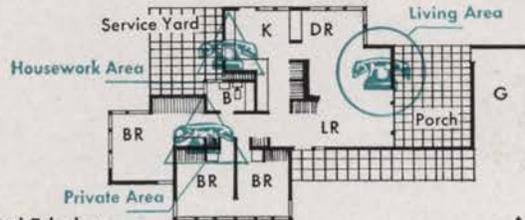
Costs should be judged in terms of convenience to the home owner.

### SMALL, ONE-STORY HOUSE



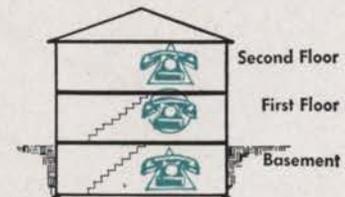
O = Areas for Permanently Connected Telephone

### RAMBLING STYLE HOUSE



△ = Areas Needing Portable Telephone or Extension

### HOUSE WITH SEVERAL LEVELS



## CHECK LIST FOR SELECTING TELEPHONE LOCATIONS

### 1. Small, one-story house

(Only one instrument likely.)

- Quick accessibility from all parts of house. (Convenient to kitchen as well as living room and bedrooms.)

- Adequate space for telephone chair, note pad, and directory.

- Reasonable privacy when desired.

Consider ultimate telephone service desired, as well as immediate needs.

### 2. House with rambling one-floor plan or with more than one story

(One instrument meeting location requirements of No. 1, plus additional instruments or "plug-in" outlets.)

Outlets convenient to:

- Housewife's work areas.
- Basement recreation or work areas.
- Second floor or bedrooms.

One outlet offering:

- Complete privacy — den or guest room.

### 3. Farm house

(Probably one instrument. Meets location requirements of No. 1.)

Additional considerations:

- Quick accessibility to work areas.
- Accessibility to persons coming in from out-of-doors.

Consider extensions to farm shop, dairy barn, or other farm work centers.

## SPACE FOR INSTRUMENTS

A desk, table, shelf, or section of a built-in cabinet may provide suitable space for the telephone. Wall recesses ("niches") are frequently used; however, they are often inconveniently located in halls or stairs, and usually are unattractive from an interior decorator's viewpoint. In all cases, the space for the instrument (except for wall-mounted set) should meet these requirements:

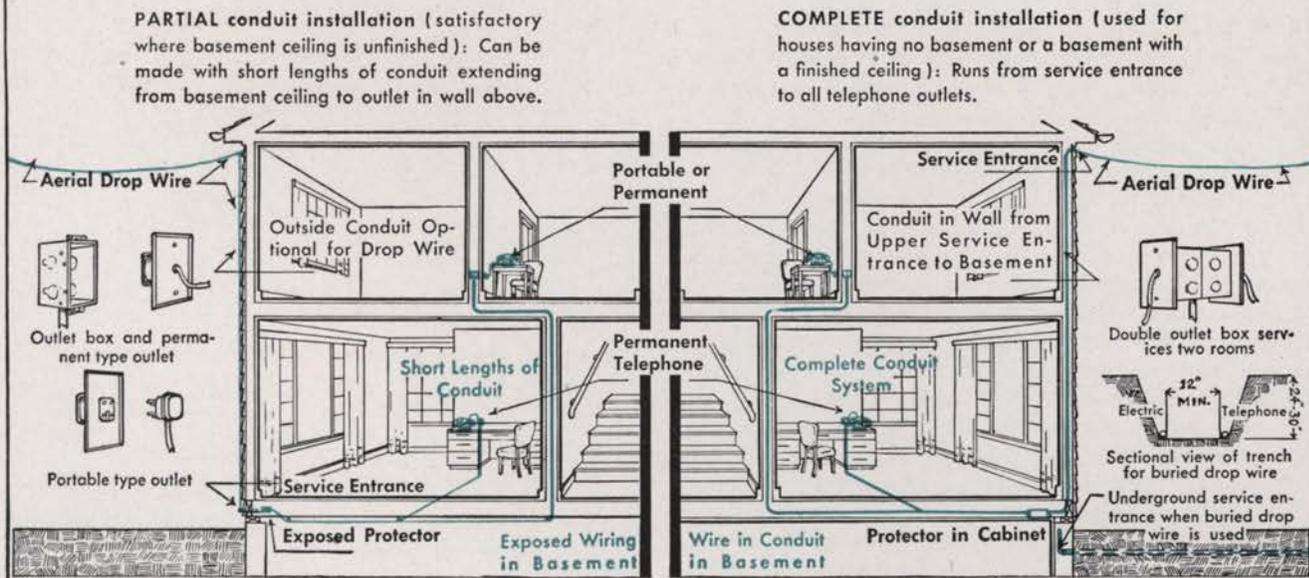
1. Sturdy, steady support (no "spindly" tables).
2. Dimensions adequate for the instrument.
3. Location adjacent to telephone outlet.
4. Space for directory, seat, and note pad.



Dimensions indicate minimum space requirements for this dial, bell-in-base telephone.



# INSTALLATION OF TELEPHONE



Telephone wiring can be installed more satisfactorily if telephone outlets and conduit are built in **during** construction. It is virtually impossible to conceal telephone wires after the house is built because insulation and other construction materials often block the

space within walls and floors. Outlet boxes and conduit, however, are optional with the owner and are installed at his expense. The above diagram shows two methods of wiring — partial and complete installations of conduit.

## WIRING INSIDE THE HOUSE

### 1. TELEPHONE OUTLETS

a. Outlet **boxes**: Same type as electrical outlet boxes; usual location . . . 18" above baseboard. Double outlet box can service two rooms.

#### b. Two types of **outlets**

Permanent type for fixed telephone. Plug-in type for portable telephones. (This service requires one permanently connected telephone.)

### 2. CONDUIT

a. **Conduit** is pipe through which wires can be pulled after construction. It is installed in walls and floors **during** construction.

b. Conduit simplifies servicing of wires; eliminates unsightly appearance of exposed wiring along baseboards and woodwork.

c. Two types of installation: Complete and partial.

### 3. PROTECTOR

a. Needed to guard against abnormal voltages from sources other than the telephone system.

b. Usually placed in basement on a joist or on wall near **service entrance** (point where the telephone wire enters the house).

c. For a complete conduit installation, the protector should be placed in a cabinet (cabinet necessary in order to connect conduit system).

## WIRING OUTSIDE THE HOUSE

### AERIAL DROP WIRE

There are three types of aerial drop wire installations:

- 1) Wire running from telephone company's pole to the house and down side of the house to service entrance in the basement. (This is the most common installation.)
- 2) Wiring running down outside of house through conduit. (This protects wire against accidental damage or tampering.)
- 3) Service entrance made at upper part of house and the wire run to the basement through conduit built in the wall. (This protects wire and improves appearance of house.)

### BURIED DROP WIRE (Used Instead of Aerial Drop Wire)

This installation connects house to company's lines by means of wire laid underground from pole to a service entrance made in the foundation of the house. This is more costly than an aerial installation, but it improves the appearance of the property.

Special requirements for this installation:

- 1) An underground service entrance is needed at the point where the wire enters the house.
- 2) If telephone and power lines are laid in the same trench, certain specifications must be met.

**SPECIAL FACILITIES:** Arrangements to insure privacy, signalling systems, remote bells, and inter-communication devices may be needed by the large home, the farm home or a home used for business purposes.

**FUTURE TRENDS:** Dial and bell-in-base instruments, long-distance dialing, communications between the home and mobile units will become more common.

### FARM INSTALLATIONS

Telephone service, furnished over electric power lines, is now available in some areas for farmsteads remote from telephone lines. To use this service, locate your telephone near an electrical outlet.

Avoid having poles on front lawn by bringing telephone line in at one side of farmstead. Keep the telephone line away from trees.

Consult the telephone company when planning your telephone installation. Most companies provide a telephone-planning service without charge to prospective home-builders.

WHO PAYS FOR WHAT?	
Telephone Company	Owner
Inside wiring	Outlet boxes, plugs, and jacks
Protector	Conduit
Aerial drop wire	Protector cabinet
	Buried drop wire ( trench, steel armored cable )
All installations must meet telephone company's specifications	

# RADIO AND TELEVISION

**RADIO:** Planning for radio involves consideration of the types of radios in use in your home, their locations, the reception desired, and future advances likely to be made in radio.

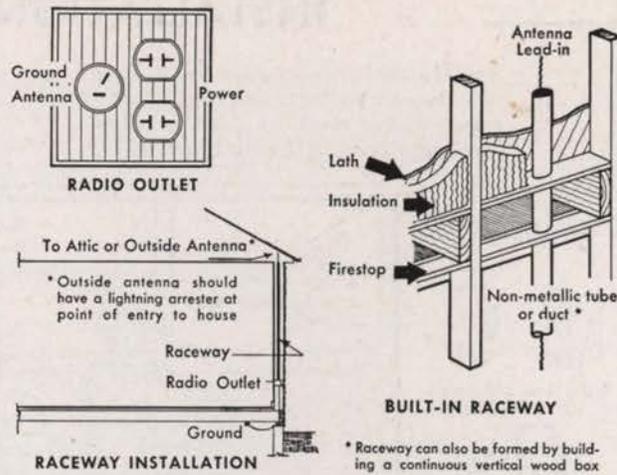
Some radios have a built-in antenna (aerial) and do not need a ground connection. The only requirement for this kind is that there be a power outlet at the desired locations. Although many of the larger or console sets are of this type, in general, the smaller table or portable models fall in this class. These are most frequently used in the den, kitchen, bedroom, sewing room, play room, and workshop.

Many radios will give fairly satisfactory reception with no ground wire and only a few feet of antenna wire laid on the floor near the set. The latter practice, however, is not representative of good planning. Better performance can be obtained if an antenna and ground are used, particularly if the broadcasting station is some distance away. Hence, it is wise to provide a radio outlet at the locations where a radio is likely to be used permanently, such as in the living room, den, and recreation room.

At each of these locations, there should be two outlets for power, a third outlet for the antenna, and a fourth for the ground connection. These are usually combined in a device called a **radio outlet**. (See Fig.) This is installed in a standard outlet box of the electrical wiring system.

A **non-metallic raceway enclosure** for the antenna lead-in wire should be provided between each radio outlet position and the attic. (See Fig.) This will make it easy to change the lead-in when advances in radio and television require it. Even if your present radio does not need an antenna and ground, radio outlets and lead-in raceways should be installed during construction to provide for future requirements.

Where there is more than one radio, it is best to connect each set to a separate antenna.



## CHECK LIST FOR RADIO LOCATION

Place your radio outlets so that your radio is:

- Convenient to a comfortable chair or a bed.
- An integral part of the room — not stuck in an isolated corner simply because that seems to be the only place to put it. (Radio may become part of a built-in cabinet assembly.)
- Near adequate storage space for phonograph records if the radio has a phonograph attachment.
- Within easy view of several persons when television screen is installed.

**TELEVISION:** A television receiver is of little value today unless the home is within fifty miles of a television broadcasting station. This is the present limit for reception. Television programs are regularly broadcast from Chicago, Los Angeles, Boston, New York, Philadelphia, and Schenectady. Exactly when television will be available in an acceptable form to all localities is not known.

If you are planning to use a television receiver now or in the future, don't fail to install a non-metallic raceway enclosure for the antenna lead-in wire. Technical information regarding the television antenna and the lead-in can be obtained from the receiver manufacturer.

## MISCELLANEOUS COMMUNICATION NEEDS

Other devices for communication are frequently provided in the home. These can be made more convenient and permanently useful if a little forethought is given to their installation when the house is built.

**DOOR ANNOUNCERS** (push-buttons, bells, buzzers, chimes) are installed with wiring connected to the wiring system of the house through a transformer. For convenience, both front and rear (or side) entrances may be wired to an announcer which produces different tones for each door. Door announcers are usually provided and installed under the contract for electrical wiring and fixtures.

**MAIL RECEIVERS** (either slots or receptacles which permit mail to enter the house) are valuable protection for mail, particularly when the family is away from home. The slot should be large enough to admit magazines. The practice of installing the slot in a storm door or entrance door may result in damage or loss of mail. The best kind of receiver is one built into the wall beside an entrance which is easily accessible to the postman. Mail receivers are usually provided with the builders' hardware and installed by the general contractor.

**INTERCOMMUNICATION DEVICES** (rarely used in small homes) are well worth their costs in terms of convenience for (1) a farm and (2) a household where there is an invalid or where duties are scattered over two floors and a basement. The telephone system can be arranged for this service; or, the owner may provide his own telephone set or a speaking tube arrangement. Consult an electrical contractor or the telephone company, if electrical or telephonic intercommunication devices are desired; your general contractor, if a speaking tube is wanted.