Convenient Kitchens
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Convenient KITCHENS

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Convenient Kitchens

By JULIA POND[1]

Sometime during her life every homemaker may be confronted with the remodeling or improving of an old kitchen, or the planning of a new one. If satisfaction is to result, careful planning is essential. The purpose of this bulletin is to give concisely and clearly the fundamentals necessary to reach the goal of a convenient kitchen.

Because the kitchen plays so prominent a part in family life, the planning of it should be given every consideration possible. In the majority of cases homemaking is still a full-time job. Statistics prove that as much as 45 percent of the homemaker's working day is spent in the kitchen. This fact alone justifies every reasonable expenditure of money used in the improvement of that room. A well-planned kitchen means less time required for work done in that part of the house—and more time possible for the other homemaking duties, as well as for leisure time activities and family companionship. It may also promote a more wholesome, optimistic mental attitude in the homemaker.

WHAT DETERMINES "CONVENIENCE"

Factors that determine the convenience of a kitchen are:

1. Location of kitchen in relation to other rooms of the house.
2. Number of different activities carried on in the kitchen.
3. Size and shape of the kitchen.
4. Number, size and location of doors and windows in relation to light, ventilation and arrangement of equipment.
5. Source and type of water supply.
6. Amount and type of equipment.
7. Arrangement and grouping of both large and small equipment.
8. Amount and location of work and storage space.
9. Height of large equipment.
10. Adequacy of electrical wiring.

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LOCATION OF KITCHEN

The kitchen should be conveniently located in relation to a back or outside entrance, to cellar or basement, and to dining areas. It should also not be too far from the front entrance and main-floor bathroom.

SIZE AND SHAPE

A kitchen with one dimension longer than the other is preferable from the standpoint of arrangement of equipment. A small "square" kitchen can be very compact, if the doors and windows are located with the best arrangement of equipment in mind. Kitchens may vary in size from approximately 108 to 210 square feet, depending upon the number of activities carried on and the size of the family. If the kitchen is to be used only for meal preparation, and cleaning-up after meals, a room 8 or 9 feet wide and 12 to 15 feet in length will be large enough. When other centers (such as the dining and laundry centers) are in the kitchen, the length and often the width of room must be increased. A kitchen narrower than 7½ or 8 feet wide will not permit equipment being placed on both sides. If equipment is not so placed, wasted space and unnecessary steps result.

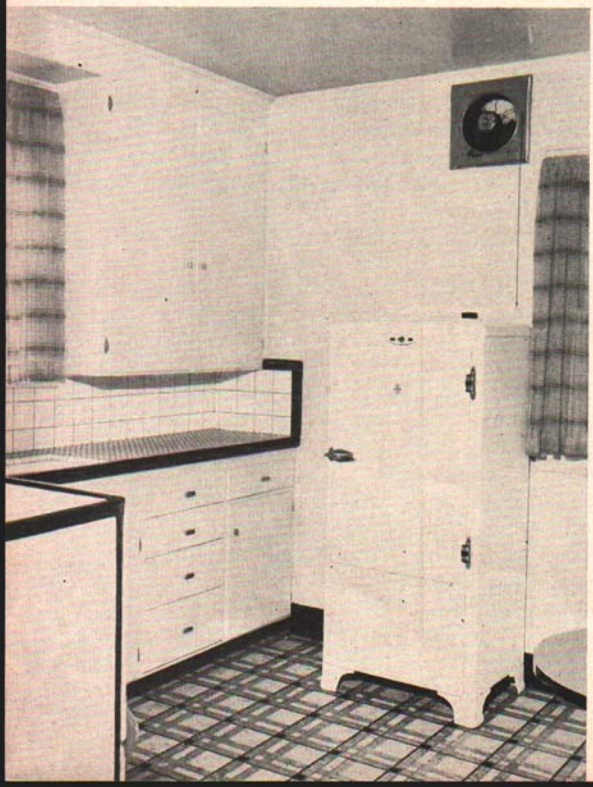


Fig. 1. The two windows provide adequate light and cross-ventilation. The electric fan in the wall above the refrigerator quickly rids the kitchen of undesirable odors. (Another view of the kitchen is shown in Fig. 26.)

Fig. 2. One large window above the sink is usually more desirable than two small ones. This gives more wall space for upper cupboards and simplifies the curtaining problem. Notice that the faucets come out of the sink itself rather than out of a linoleum-covered surface.

OPENINGS

The number, size, shape and location of the windows in a kitchen often determine the efficiency. Windows are necessary for adequate light and ventilation, as is illustrated in Fig. 1. They should be placed at least 45 inches from the floor, and in a position which will not interfere with the placing of wall cupboards. Although windows on opposite walls are desirable whenever possible, many of the more modern kitchens have corner windows. (See Fig. 27.) For the average-sized kitchen two windows are sufficient. If the light is not too strong, the windows may be placed directly over the sink or work-table. The more unbroken wall space there is in a kitchen, the greater are the possibilities for a convenient arrangement.

The kitchen should not be a hallway, and the doors should be located with that point in mind. For that reason, and also for the better placing of large equipment, there should be not more than two or three doors. Those should be grouped closely together, preferably in one corner or on one side of the room. (See Figs. 32 and 37.) In many instances, it is not possible to group the doors as closely together as in these illustrations. When that is the case, every effort should be made to locate the doors so the lanes of traffic will not pass through the kitchen work-areas. (Notice absence of doors in work-areas of kitchens in Figs. 24, 26, 27, 31, 33, 34, 36 and 40.)

WATER SUPPLY

The source of the water supply should be in the kitchen, if at all possible. The most convenient source is at a kitchen sink, conveniently grouped with the other large pieces of equipment and not off in a far corner. A supply of both hot and cold water will save many steps each day. The sink should be equipped with a drain adequate for disposing of all waste-water from the kitchen. In homes where it is necessary for the family members to wash in the kitchen, it is certainly desirable to have a separate sink or lavatory located away from the kitchen work-centers.

EQUIPMENT

There should be ample equipment of the size and type suited to each particular home. The essential pieces of large equipment are a range; sink; refrigerator; storage cupboards; "work-space"; and stool. These items—and the smaller equipment—should meet the needs of the family; be within the budget in both initial and operating cost; and be easy to operate and to keep in repair.

One very important characteristic of the range, sink, or work-space is that each should be the proper height for the person using them the most. The best test for this is, that the height should permit that person to work without stooping or stretching. Several heights should be tried out before deciding which one is best, and then the equipment should be adjusted to that height. The height of the work-space depends upon the height of worker and the type of work to be done. Research indicates that, for the woman of average height (65 inches), these measurements are preferable: 32½ inches from floor of the sink to floor of the room; 38½ inches from the floor to the top of the drain board, or work-table space; and 32 inches from the floor for the mixing table height.[2] When it is desirable to have all equipment of the same height, the usual height is 36 inches. Casters, furniture rests, blocks or platforms of wood can all be used to increase the height of such pieces as the range, portable tables, cabinets, or stools.

WIRING

Kitchens in home equipped with electricity should have at least one strong ceiling light, and in many cases supplementary lights over work-areas. The ceiling fixture should be fitted with a diffusing globe, and a

[2]Wilson, Maud; Roberts, Evelyn H.; and Thayer, Ruth—*Standards for Working Surface Heights and Other Space Units for the Dwelling.* State College of Washington, Agr. Exp. Sta. Bul. 345.

Fig. 3. A well-planned food preparation center in which the refrigerator, mixing cupboard, and sink are conveniently located. Notice the two different working heights.

100- or 150-watt bulb. The lights over the work-areas should not be at eye-level. It is desirable to have diffusing globes or washable shades on the lights to prevent glare. Tubular lights may be used also to supply light over work-areas.

Outlets should be provided for the refrigerator and iron. There also should be an outlet at the mixing cupboard, and one in the dining area. Electric ranges require their own special wiring.

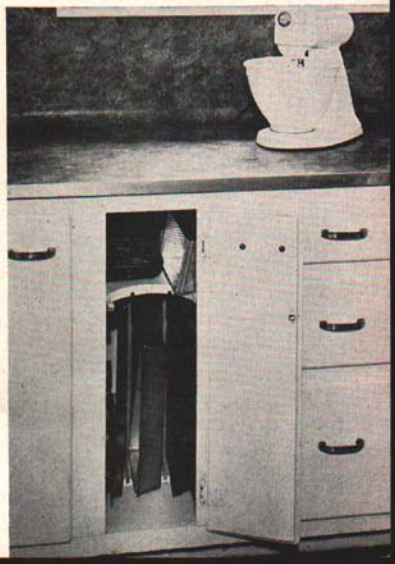


Fig. 4. Interior of the section in which baking pans are stored, in the mixing cupboard shown in Fig. 3. The vertical partitions are removable.

KITCHEN CENTERS

The three necessary work-centers in a well-planned kitchen are those for: (1) Food Preparation; (2) Cooking and Serving, and (3) "Clearing-Up" and Dishwashing. The "business center" is rapidly

becoming a fourth one. Also, a dining or eating area is frequently found in the larger kitchens. When each center in itself is properly equipped—and the different centers are grouped in an orderly manner—the result is a convenient kitchen.

FOOD-PREPARATION CENTER

Food-preparation work may either be the preparing of such foods as vegetables and fruits; or the making of cakes, cookies, pies, puddings, and the like. The efficient food-preparation center is equipped with a refrigerator and a mixing cupboard. The sink, with a drain and hot and cold water, should be adjacent to the mixing cupboard, or within a few steps of it.

An efficient mixing cupboard provides storage for staple foods and small equipment used in the making of cakes, pies, etc.—and work-table space. In the cupboard above the work-table can be stored spices, extracts, cornstarch, soda, salt, baking powder, dried fruits, measuring cups and spoons, mixing bowls, and recipes. Preparation cutlery, pie-pans, cakepans and breadpans, cookie sheets, strainers, sifters, graters, food chopper, flour, sugar, and mixing board can be kept in the lower or floor cupboard. (See Figs. 3, 4, 5, 6, 7 and 9.)

Near the sink (whether it adjoins the mixing cupboard or is a few steps from it) should be space for vegetable brushes, paring knives, and utensils in which vegetables and fruits are to be cooked.

Fig. 5. A "mixing center" in which the equipment is grouped to save steps. Perishable foods are kept in the refrigerator, and supplies and equipment in the cupboards. Space has been left between top of refrigerator and cupboard over it to provide for circulation of air.

Fig. 6. A mixing cupboard in which a lower work-height has been used. Notice how the bin wastes no space, because it is flat and box-like at the bottom. It does not need to be supported when open, and it won't bang shut. The large rubber, ball-bearing casters make it easily moved. This is a larger bin than many families need. It is 23 inches deep by 15 inches wide, and will hold 100 pounds of flour or sugar. The space at the end of the cupboard has been left for a refrigerator.

Fig. 7. This cupboard is placed next to the refrigerator, and a few steps from the sink. The doors are hinged so that the entire cupboard opens wide to leave everything accessible. Here are stored the staple foods and equipment necessary when such foods as a cake or biscuits are to be mixed. Notice the racks on the door (graduated in size) for storing spices, and the removable vertical partitions in the lower righthand shelf for storing pie-pans and cakepans.

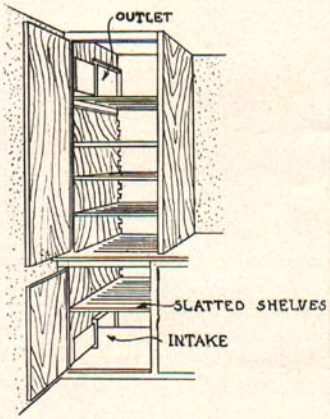


Fig. 8. A storage space for certain perishable foods.

Fig. 9. A food-preparation center. Notice lapboard in the mixing cupboard to the right of the sink.

Fig. 10. A lapboard provides a comfortable place to work while sitting to do certain household jobs. An ordinary chair with a back can be used instead of a high stool: This permits the worker to place the feet flat on the floor.

The distance from the board to the floor depends upon the size of the homemaker. The usual distance is 25 inches. The board should be wide enough to allow two average-sized pans to be placed on it.

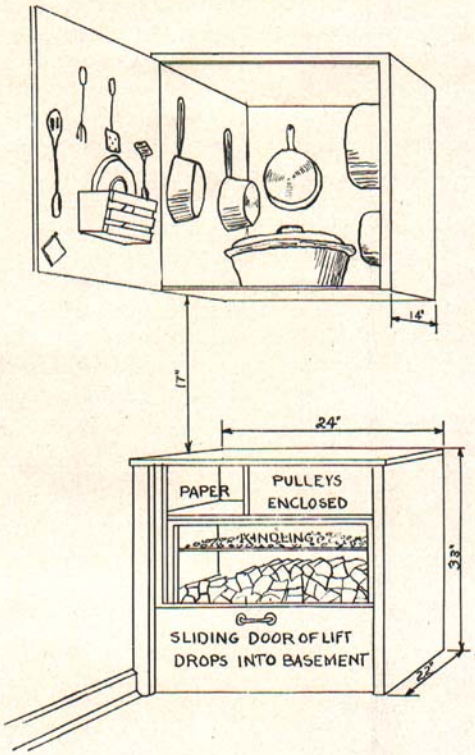


Fig. 11. This particular type of cupboard is for kitchen with coal- or wood-burning ranges. It should be located near the range. The supplies and small equipment used at the range can be stored in the upper part; the lower cupboard provides a space for the storage of fuel. The top of fuel-box can be used as a serving area.

(Some families may prefer to have a movable box for fuel, instead of the lift-type illustrated. In that case the box should be placed on swivel casters, so it can be pulled out into the room when filling it; or for putting fuel into the range.)

COOKING AND SERVING CENTER

The large pieces of equipment necessary in a cooking and serving center are a range; cupboard space for storing utensils and supplies used at the range; and table space on which the serving dishes may be placed.

The storage space near the range should provide room for such things as tea; coffee; salt; pepper; small quantities of flour and sugar; coffee and tea pots; large spoons and forks; potato masher; frying pans; saucepans; pan covers; hot pads; serving platters; vegetable dishes—and any other small equipment used near the stove. It is more convenient to hang the small equipment on hooks, rather than store it in stacks on the shelves. The spoons, forks, potato masher, and similar pieces may hang on the inside of the cupboard door. Vertical partitions should be provided for storing the covers and vegetable platters. The serving-space may be the top of the floor cabinet near the stove. If there is no cabinet near the stove, a service wagon or small portable table can provide such space. On some electric, gas, and kerosene ranges the flat top of the oven provides sufficient serving-space.

Fig. 12. Good storage and table space both are located near this range. The sink is only a step or two to the right. This arrangement means that no unnecessary steps are taken when cooking and serving a meal. The space between the top of the range and the cupboard over it is 24 inches.

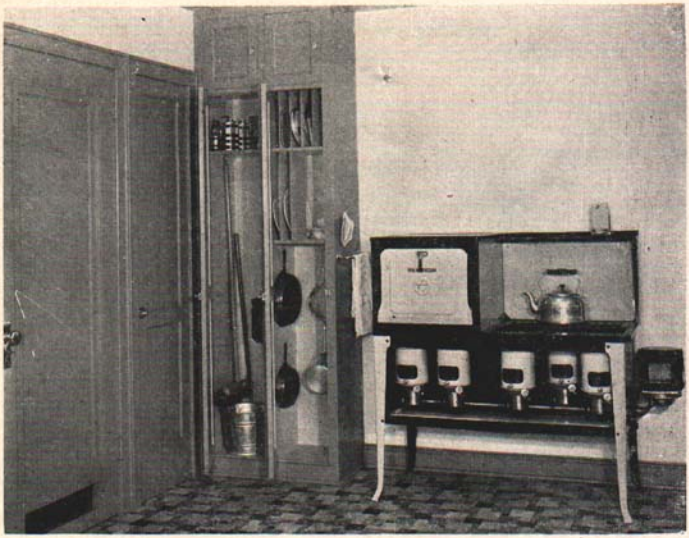
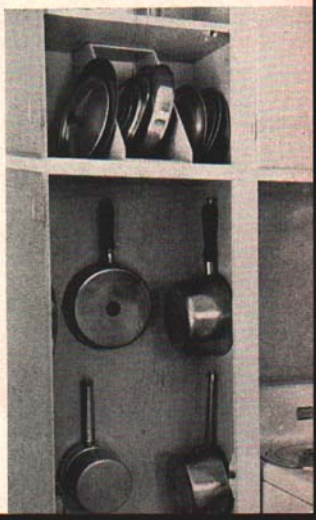


Fig. 13. A cooking center in a farm home dependent on kerosene for meal preparation. The one cupboard to the left provides space for storing utensils and supplies used at the range. Notice that the frying pans and sauce-pans hang—while the covers, vegetable platters and dishes are stored in the "pigeon holes" or vertical partitions. Cleaning supplies and equipment used in the kitchen are stored in the tall corner cupboard.

Fig. 14. ←

Fig. 15. This utensil cupboard is located at the left of the range in Fig. 14. It is a floor-to-ceiling type in which utensils can be hung. Notice the removable vertical partition rack for storage of covers. →



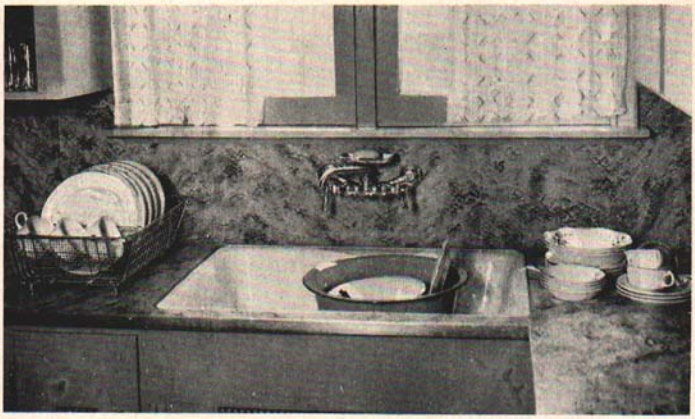


Fig. 16. A clearing-away and dishwashing center. With the soiled dishes stacked at the right, the dishes are washed in the sink, rinsed in the sink, drained in the dish drainer at the left, and placed in the cupboard just above the dish drainer. This arrangement saves time and energy because the process proceeds in a logical orderly manner. For the left-handed person, the arrangement should be reversed.

"CLEARING-UP" AND DISHWASHING CENTER

Because the sink is the center of the dishwashing area, there should be space on one side to stack soiled dishes and space on the other side to drain the clean dishes—and a cupboard in which to store them. For a right-handed person the dishwashing process will proceed from right to left—thus locating the draining area and the dish cupboard, for dishes frequently used, at the left of the sink (Fig. 16). A desirable minimum length for the counter is 32 inches at the left of the sink and 36 inches at the right.[3] For a left-handed person the process should proceed from left to right, and the arrangement of sink and dish cupboard be reversed. Never overlook these points when selecting and installing a sink and dish cupboards. A well-designed dish cupboard, with little waste space, is shown in Fig. 17.

SINK

A sink equipped with hot and cold water, and an efficient drain, saves more steps in the kitchen than any other piece of equipment.

[3]Wilson, Maud—*Planning the Kitchen*—Oregon State College Station Circular 131.

Sinks can be of several types: There is the double sink, for example, composed of two small sinks—each having a drain, but one center tap furnishing water for both. Dishes are washed in one section, and drained in the other. Or the sink may be of the single-bowl type, with or without drainboards attached. Or there may be one or two drainboards. For a right-handed person, the single drainboard should be at the left of the sink. For the typical left-handed person, the single drainboard should be at the right.

When the space below the sink is inclosed and ventilated, the soap, cleaning powder, dishpan, and dish drainer can be stored there. However, some prefer to store soaps, cleaning powders, and vegetable brushes in a cupboard directly above the sink—or in a cupboard above and to one side of sink.

In some instances two- or three-days' supply of potatoes, or other vegetables, can also be kept in the space under or near the sink. There should be a drawer nearby for clean tea-towels, kitchen hand-towels and dish cloths; and a place to hang those in use. The knives, vegetable brushes, dish drainer, cutting board, and saucepans in which vegetables are cooked should also be kept in the cupboard near the sink. And a garbage can, of course, should be kept under the sink or close at hand.

Fig. 17. There is no waste space in this dish cupboard. Only dishes of the same size and kind are stacked together. One-to-two inches of clearance has been allowed, so that the dishes can be placed on the shelf or removed easily. Cups, saucers and similar china are stored on the narrow or "half" shelves.

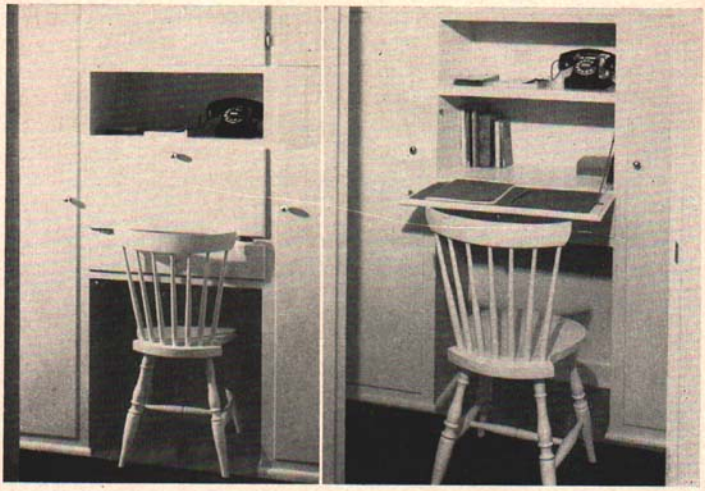


Fig. 18. An attractive and convenient business or planning center, recessed in the wall of the room. Hinged leaf enclosing the bookshelf drops down to form a writing table (view at right).

BUSINESS OR PLANNING CENTER

If at all possible, some provision should be made for a business or planning center in every kitchen. This center need not be costly, nor occupy much space. For example, hanging bookshelves, a portable table, and a kitchen chair make a usable and inexpensive business center. Another satisfactory arrangement (Fig. 18) is a chair, and a leaf securely hinged to the wall which may enclose recessed shelves when not in use.

A planning desk provides space to store receipted bills and home account books, as well as a convenient space on which to work when doing the family bookkeeping. Grocery lists and menus can also be written here.

In many kitchens, the planning desk is located at the end of the range, and near the dining room door or dining area of the kitchen. This arrangement permits the table-space of the desk to be used as a serving area as well (Figs. 19 and 20).

When space in the kitchen is limited, the planning desk can be placed in the dining room or in a central hall opening into the kitchen (Fig. 18).

Fig. 19. A combination cooking, serving and planning center. The dining room door is located to the left of planning desk. A chair instead of stool may be preferred; if so, the height of desk should be lower than in this particular kitchen.

Fig. 20. Another combination cooking, serving and planning center. The open shelves beside the stove can be used either for serving space, or for a writing table when entering accounts or planning menus for the week.

Fig. 21. The attractive dining center of the kitchen pictured in Fig. 3.

DINING CENTER

When the dining area is located in the kitchen, it should be away from the three main work centers and not a part of them. Preferably it should include table and chairs which can be moved, rather than the stationary type. A window near this area always makes it more cheerful. Attractive dining centers are shown in Figs. 21, 22, 23 and 29.

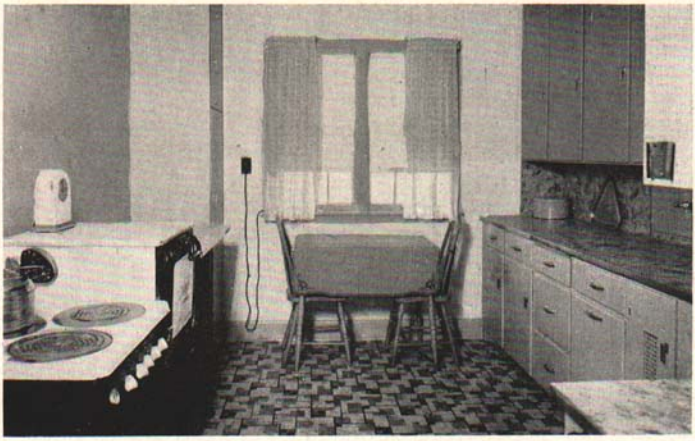


Fig. 22. A dining center in one end of the kitchen. Notice the outlet for the toaster or waffle iron, the cleaning closet in the corner, and the drop-leaf serving space beside the range.

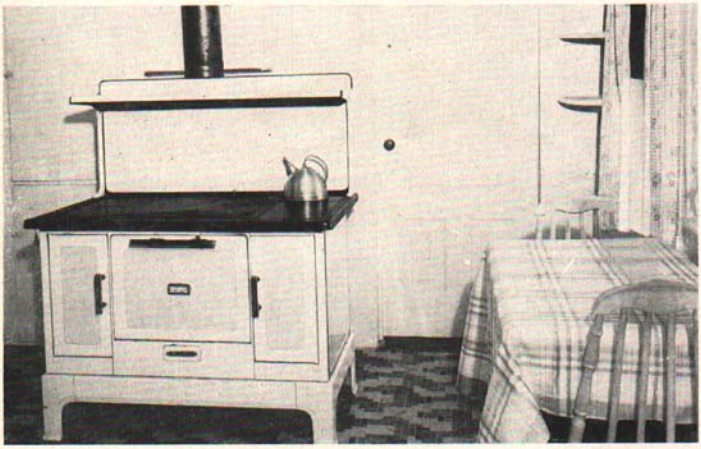


Fig. 23. Space in this kitchen is limited making it necessary to place breakfast table near the range. The cupboards, sink, and refrigerator are all located on the walls opposite the table.

LAUNDRY AND OTHER CENTERS

When it is necessary to do the laundry work in the kitchen, the equipment should be stored away from main centers of the kitchen rather than crowded between the range and cupboards.

In some homes it is possible to use one end of the kitchen as a laundry center. In such a case, the laundry equipment is located in that part of the kitchen and the laundry activities are carried on there. In other homes, a separate laundry room can be provided on the first floor or in the basement. The first-floor laundry is gaining steadily in popularity.

When space permits, it is advisable to have a service hall in which to store everyday wraps, set aside a place for the men to wash and, if necessary, store the laundry equipment.

A closet for cleaning equipment may be located in the service hall, in the kitchen, or in the central hall leading to the other parts of the house. If this closet is in the kitchen, it should not be located between any of the large pieces of equipment (Figs. 13, 22, and 36).

ARRANGEMENT OF CENTERS

These general rules should be observed in grouping equipment, no matter what the type of arrangement:

1. Group large equipment in appropriate centers.

2. Group the three essential centers in the order in which the work proceeds. Avoid as little back-tracking as possible and thus save steps. Work usually proceeds best from right-to-left, but a left-to-right grouping can be just as satisfactory if it is preferred.

3. Store small equipment near the work surface upon which it is to be used first.

If those rules are followed, the result will be a U-arrangement or corner arrangement. Usually the large equipment will be grouped in this manner: refrigerator; mixing cupboard and work-table space; sink; dish cupboard; range; cupboard for utensils and supplies used at range; and serving space. Frequently the refrigerator is near the outside door. If possible the range should be placed near the dining room door or dining center (Figs. 31, 32, 33, 35 and 40). In some kitchens it may be preferable to have the dish cupboard near the dining room door.

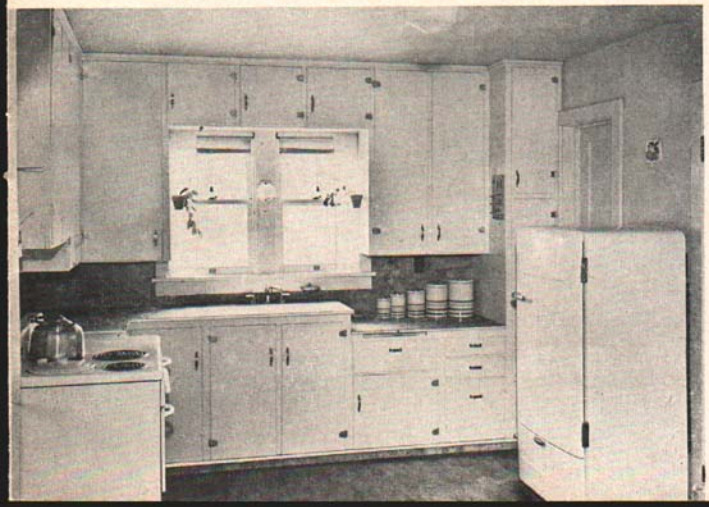
Studies made in Vermont in 1934 gave these very convincing results for the person who is in doubt about the importance of a compact, orderly grouping of equipment:

In an *improved kitchen* 131 steps and 2 hours and 6 minutes were sufficient to accomplish work which required 1,516 steps and 3 hours 46 minutes in the unimproved kitchen. These reductions effected a release of 45 percent of the homemaker's time, and the elimination of 91 percent of the steps. In one kitchen 152 steps were eliminated and 17 minutes were saved from the preparation, serving, and cleaning-up of one meal—due entirely to the compact arrangement of large equipment. Time spent in making a one-egg cake was reduced from 12 minutes to 5¼, while 80 percent of the steps were eliminated. In the process of clearing away after dinner and washing the dishes, the number of steps was decreased from 559 to 195.[4]

[4]Muse, Marianne—*Kitchen Equipment and Arrangement*—Vermont Agricultural Experiment Station.

Fig. 24. An "unbroken" U-arrangement, in which the refrigerator and mixing cupboard are located at the right of the sink; and dish cupboard, range, and serving space at the left of sink. The change in work-heights has been made at the corner. Other views of this kitchen are shown in Figs. 5 and 19. (The sink is only a temporary one.) Notice slots in doors of cupboard below sink which provide for ventilation.

Fig. 25. A "broken" U-arrangement, in which refrigerator is separated from cupboards by a doorway. In this kitchen the two work-heights are on the same wall. The change in height is made at the right edge of sink. Notice these features: wall outlet at mixing cupboard, drawers of various sizes, and toe space below the cupboards.



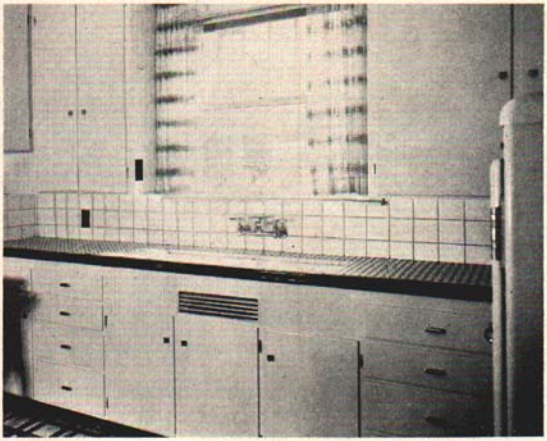


Fig. 26. A compact, convenient kitchen arrangement which includes these features: light in ceiling above sink, wall outlets for small electrical equipment, glazed tile work surface, double sink, ventilated cupboard below sink, and toe space at bottom of cupboard. (There are additional wall cupboards over the range, which is just outside of the picture, to the left.)

Fig. 27. An example of a U-shaped kitchen arrangement, in which adequate storage and working space are conveniently and compactly grouped.

Fig. 28. The range and a section of the lower cupboard extend out into the room to make a more compact kitchen possible, and to separate the dining (Fig. 29) and kitchen areas. With a finished panel backing, an older style range can be fitted into this type of arrangement as readily as the newer cabinet models. (See Fig. 40 for floor plan.)

Fig. 29. The dining area of the kitchen in Fig. 28. Notice (a) the method used to conceal back of range and (b) the drawer space which opens into the dining area. One or two open shelves may be substituted for part of the drawers to provide space for toaster, waffle iron, etc.

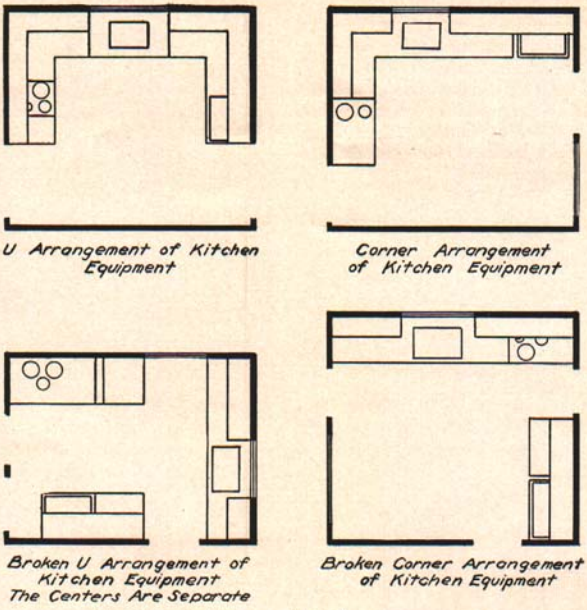


Fig. 30. Basic types of kitchen arrangement.

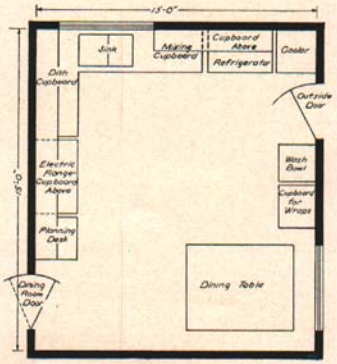


Fig. 31. Corner arrangement. Space for dining area.

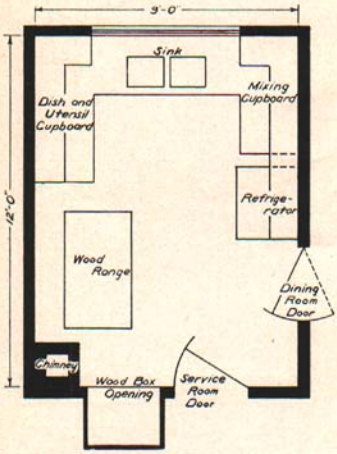


Fig. 32. U-arrangement. Small and compact.

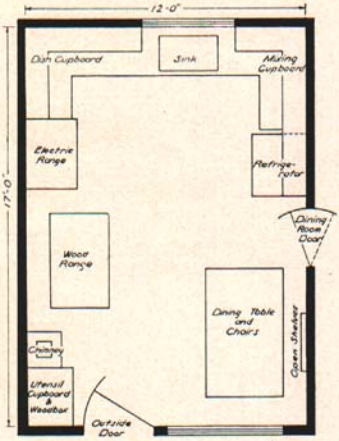


Fig. 33. U-arrangement. Space for dining area and two ranges.

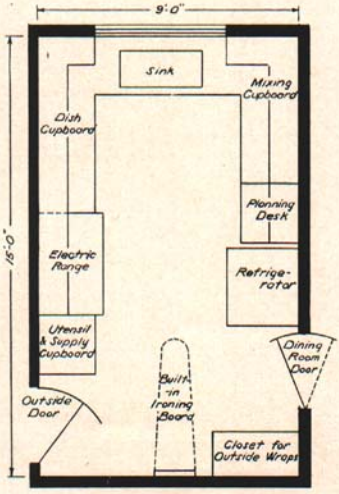


Fig. 34. U-arrangement.

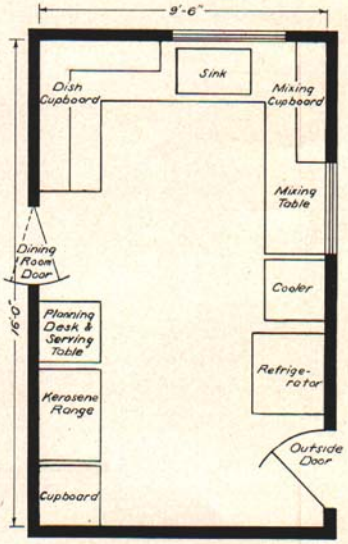


Fig. 35. Broken U-arrangement.

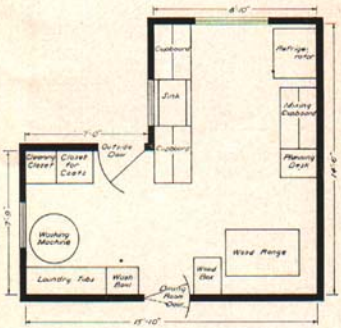


Fig. 36. Broken U-arrangement. Each center separate.

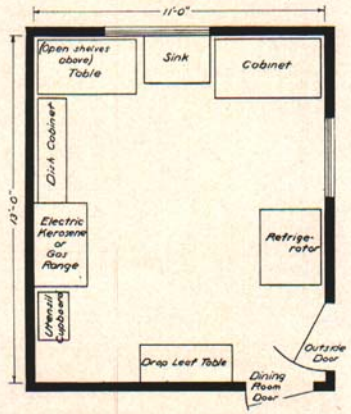


Fig. 37. A broken U-arrangement using portable equipment.

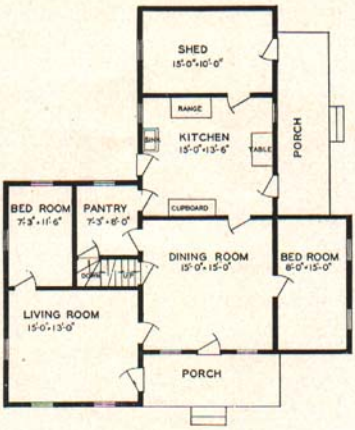


Fig. 38. Original house plan. Note the poorly arranged kitchen.

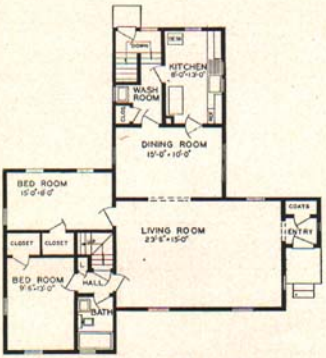


Fig. 39. The remodeled house plan of Fig. 38. Note the convenient kitchen arrangement.

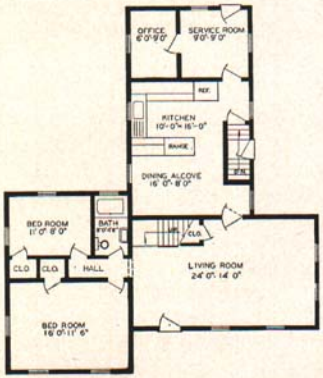


Fig. 40. Another remodeled house plan of Fig. 38. Note the convenient kitchen arrangement.

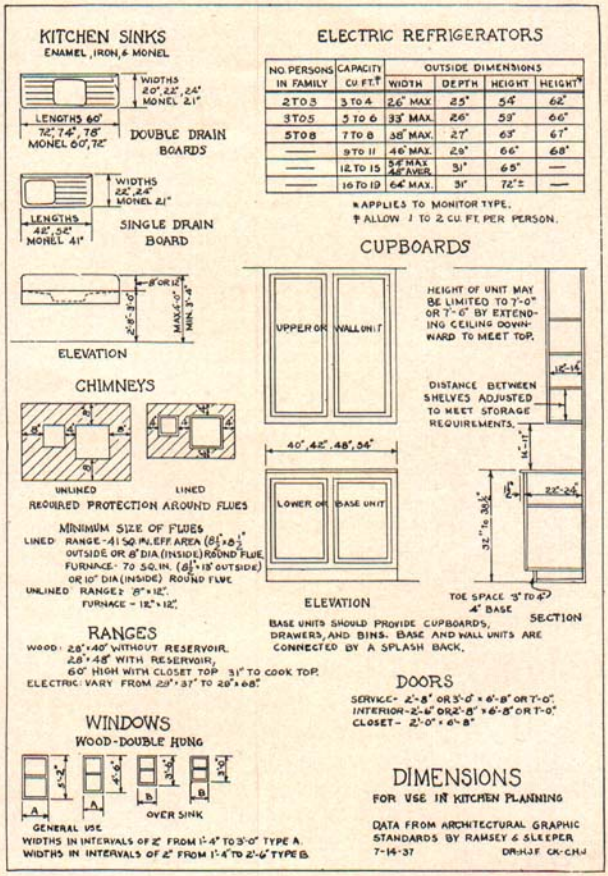


Fig. 41. Standard measurements for reference in planning a convenient kitchen.

WHEN BUILDING STORAGE CUPBOARDS

1. Build cupboard from floor to ceiling. The extreme top space can always be used for storing seldom-used equipment and supplies. If desirable, ceiling may be constructed to meet the top of the cupboard to avoid a dust-catcher.

2. Floors of lower cupboards should be 2 to 4 inches above floor of room.

3. Allow for "toe-room" by extending top beyond base 3 inches; or make top flush with base and push in board at base of cupboard 3 inches.

4. Lower cupboard should extend out from wall 22-25 inches.

5. Upper cupboard should extend out from wall 12-13 inches (outside measurements) or be as narrow as possible for storing articles in cupboard.

6. Shelves just wide enough to hold glasses, cups and spices may be built between the wider shelves.

7. Allow 14-18 inches between table top and lower shelf of upper cupboard.

8. Have equipment correct height for worker. Recent research indicates that for the woman of average height (65 inches) these measurements are preferable:

a. When different heights are used:

Mixing table	32 inches
Floor of sink to floor of room	32½ inches
Sink drain board or work table space of dish cupboard	38½ inches

b. When work surfaces are same height:

Work surfaces and top of sink	35-36 inches

9. Doors should not be too wide. Doors on upper cupboard should not swing out beyond edge of the work table. Two narrow doors are better than one wide one. A 10- to 12-inch door is best for doors of upper cupboards. Doors for lower cupboards may be as wide as 15-18 inches.

10. Hinge doors on the side that is the most convenient for the worker to open and close them.

11. Shelves that cannot be conveniently reached when one is standing on floor may be enclosed with separate doors.

12. Allow space between shelves and for depth of drawers so as little stacking as possible will be necessary. Drawers may vary in depth from 3 to 10 inches. The space between shelves may vary from 4 to 15 inches. Allow 1-2 inches of clearance between articles stored and shelf above.

13. Movable trays are more convenient than shelves in compartments below work table space.

14. Verticle partitions or "pigeon holes" are a conventient and satisfactory way of storing pie, cake, and muffin pans, trays and lids.

15. Provide knife rack for kitchen knives. This rack may hang on the wall, inside of a cupboard door or be fitted into a drawer.

16. Storage space for bread and cake should be metal lined and ventilated. A drawer may be built for this purpose.

17. Drawers may be used as bins. Large drawers with movable metal insets—or rather—narrow, deep drawers—may be used for the storage of 25-pound lots of food.

18. If bins are used, they should not be of the type hinged at the bottom—but of the type that can roll out into the room and does not need to be supported by the worker.

19. Whenever possible, hang up kitchen utensils rather than stack them on shelves.

20. If small articles are to be hung on the inside of the cupboard door equipped with shelves, the shelves should be 3-4 inches narrower than the cupboard itself.

21. More efficient use can be made of the hanging space on the inside of a door or a cupboard if hooks can be placed wherever desired rather than on one certain strip or section.

Some other standard measurements to consider in planning a new kitchen (or re-designing an old one) are listed and illustrated in Fig. 41.

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