

The Kitchen - A Two-Part Article



PART ONE - Kitchen Design Tips

It's often been said that "man cannot live without a kitchen". Whether it be a clearing with a campfire along a gurgling stream or the most modern, up-to-date kitchen imaginable, we depend on kitchens for our daily sustenance. It is for this reason that your kitchen is likely to be your most important – and most revealing – room in the house.

Kitchens help us satisfy our most basic human desire – SURVIVAL – and they have always reflected our lifestyles. During the "pioneer days", kitchens were set up in the backs of wagons, providing mobility as we marched Westward. Later, as pioneers became settlers, the kitchen became the focal point for many family activities. This was especially true during the Winter months, as it was often the only source of heat for the household. A study of an authentic early American kitchen would disclose some interesting details about the lives and lifestyles of its inhabitants.

As houses grew in size, kitchens began to reflect a more independent lifestyle. They were often set at the back of the house to isolate smoke and the smells of garbage while the home's occupants were busy elsewhere. In many cases, separate "Summer kitchens" were built apart from the main residence to contain the heat of cooking. In those days, kitchens were rarely visited by more than the cook, the iceman and the servants.

Today, we spend more of our waking hours in the kitchen than any other room in the house. As always, modern kitchens reflect our personal tastes and habits. So, if you're thinking about remodeling your kitchen, here are some guidelines to help you tailor a kitchen to suit you and your family's lifestyle.

Begin with an evaluation

If you haven't already done so, you should start your re-design with a careful evaluation of your normal kitchen activities. Is there more than one cook in your household? Does your family gather here for three meals a day...or in a separate dining room? Is your kitchen well-trafficked – or perhaps too well-trafficked? Are your dining habits informal or formal? Do you have a regular dining schedule, or does it vary significantly from day-to-day? Do you do a lot of entertaining...with many people in attendance or just a few?

Don't forget to consider the appliances you'll need to make meal preparation convenient for you. Large capacity oven or small? What kinds of specialized countertop appliances will you need and how much space will you need to store them? Pasta-maker? Bread-maker? Toaster Oven? Now is the perfect time to plan for the accommodation of any new appliances you have been wanting.

As you evaluate your objectives and the resources you have to work with, your kitchen design should begin to come into focus for you.

The Work Triangle

As any expert will tell you, optimal kitchen efficiency depends on a *Work Triangle* composed of the three primary kitchen areas...the stove, the refrigerator and the sink. The total distance around this *Work Triangle* should be between 12 and 22 feet. Designers recommend 4 to 7 feet between the sink and the refrigerator; 4 to 6 feet from sink to stove or cooktop; and 4 to 9 feet from cooktop to refrig-

erator. Such a triangle arranges the appliances, countertop and storage spaces carefully to minimize travel around the kitchen during food preparation...and maximize efficiency.

This design process can be simplified by transferring your kitchen layout to graph paper containing 1/4" squares, with each square representing one foot. If you're planning to use this approach, we suggest that you also cut out scaled-to-shape appliances that you can move around from location-to-location on your layout without having to re-draw it.

An excellent alternative, of course, is to get your hands on one of the great, inexpensive computer software programs developed especially for kitchen design. They make easy work of creating an exciting and efficient design.

The Work Centers

Surrounding your work areas are three basic *Work Centers*: The *Clean-Up Center*, which is focused around the sink; the *Preparation Center*, which includes the refrigerator, stove and adjacent countertop; and the *Serving Center*, focused around a separate area of countertop.

Ideally, in a single cook kitchen, you should have 48 inches of walkway between opposing *Work Centers* – 54 inches in a two-cook kitchen. And, since the sink is the least mobile of all kitchen “appliances”, it’s best to start your planning process with the *Clean-Up Center*. The most important consideration here is counter space. For right-handers, designers typically recommend 36 inches of counter space to the right of the sink, 30 inches to the left...and that the dishwasher be placed to the left of the sink. To make loading and unloading convenient, china and silverware storage should be in close proximity.

The *Preparation Center* should allow the refrigerator door to open into the *Work Triangle*. Approximately 4-1/2 feet of counter space is necessary, preferably including a surface for cutting or chopping. And, since small, countertop appliances such as food processors, blenders, mixers, toaster ovens, bread makers, can openers, etc. will be used here, an adequate number of GFI (ground fault interrupt) electrical outlets should be nearby. Now is also the time to consider special storage “garages” for these small appliances.

Be sure to locate the *Preparation Center* near the sink. This is particularly useful for slicing, cutting and peeling operations. Keep this in mind: It is highly inefficient to locate the refrigerator next to the range. Since the range dissipates heat, it will interfere with the cooling efficiency of the refrigerator. Gas ranges should be located away from windows where flames could be extinguished by breezes...or worse yet, set fire to billowing window curtains.

The *Serving Center* needs a minimum of 2-feet of counter space, including a “landing area” of heatproof material for sitting pots and pans that have just come from the cooktop or oven. Nearby storage space should be provided for pots, pans, cooking utensils, serving dishes and possibly, table linens.

With these three *Work Centers* in mind, you might also consider a kitchen *island*. If mobile (with the simple addition of casters), these *islands* can add extra counter or storage space where needed. If stationary, they can even include a cooktop, sink or additional eating area. Kitchen *islands* cut down on cross-traffic and serve to “tighten” the *work triangle* for improved efficiency.

Additional Work Centers

Additional *Work Centers* for baking, serving drinks or buffet-style serving may also be worthy of your consideration. The most common of these is an in-the-kitchen eating area. Often surrounding a kitchen *island*, such *eating centers* greatly simplify meal serving. A peninsula or protrusion countertop can also make a convenient eating area. But, be it an *island*, peninsula or protrusion, make sure you allow at least 24 inches of countertop “elbow room” between diners. The standard height for this area is 36”. For breakfast-only dining, a minimum depth is 15”. If you think you’ll be using this area for more than one meal a day, you should consider increasing this depth.

Cabinets & Countertops

Whatever your kitchen design, the cabinets will probably represent your largest investment. Designers stress that you should try not to skimp on cabinet space. At least 10 linear feet of base cabinets and 10 feet of wall cabinets should be provided in all kitchens. And, since cabinets will occupy the majority of your wall space, they will largely determine the decor of your kitchen. As a result, you should choose the style of your cabinets wisely.

Custom cabinets offer the most flexibility, and you'll discover that building them yourself will cost you about **one-fifth** of what you might expect to pay for professionally-built, custom-made cabinets. That's a substantial savings! What about cabinet materials? Wood, of course, is the most popular and offers a variety of strengths, grain patterns and colors. Plastic laminates consist of several sheets of heavy paper, the top sheet usually covered with a wood grain print then coated with a layer of heavy, transparent plastic.

Countertops can be made of wood, plastic laminate, concrete, granite, marble, tile, metal or virtually any durable material. Wood adds warmth to kitchen countertops. However, unless it's coated properly, it will easily stain, cut and harbor bacteria. "Butcher Block" countertops should be rubbed frequently with salt...or coated with a non-toxic finish such as Salad Bowl Finish or *Preserve Oil Finish*.

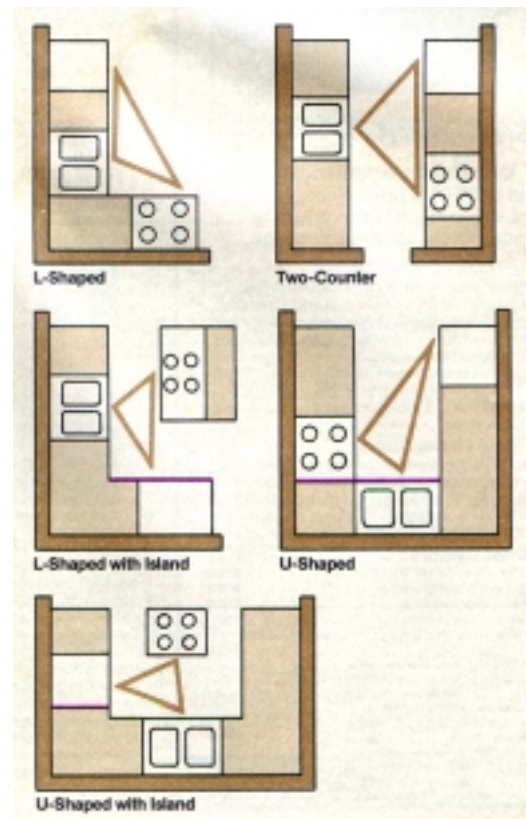
Adding More Space

Many contemporary architects have combined kitchens with living and recreation areas, to create large "great rooms", designed to accommodate a variety of family activities. Such a concept provides the luxury of a large kitchen, although your appliances may only occupy a small portion of this space. If you have a tiny kitchen and have considered opening it up into a "great room", you may be tempted to knock down a wall. Just remember to check your house plans before you do so to make sure the wall you want to eliminate is not a "load-bearing" wall.

If you want to open things up a bit, but would prefer not to knock out a wall, there are several options. For example, skylights provide the illusion of more space, as does opening-up a ceiling all the way to the rafters. If your kitchen has a South-facing wall, consider building an attached, lean-to greenhouse. Besides adding more space, these greenhouse additions offer two additional advantages: Properly designed, they can shave a substantial amount off your Winter heating bill – plus – you can use them to grow some fresh vegetables, an herb garden or even miniature fruits, all year long.

Rebuilding or remodeling a kitchen may require building, electrical, plumbing or other permits, depending on the building codes in your area. We suggest that you contact the building department in your community or the Department of Housing & Urban Development in Washington for more specific information.

Today's kitchens can be anything you want them to be. Dining rooms, family rooms, green-



By varying the placement of the three primary kitchen areas and experimenting

with peninsulas, protrusions and islands, you can easily adapt the basic kitchen floor plans shown here to create numerous possibilities. The Work Triangle concept will easily conform to all but a single-counter design.

houses or perhaps nothing more than a sink, stove, refrigerator and a small amount of counter space. But whatever shape your kitchen takes, it is likely not to be determined merely by your need to survive. Replacing the kitchens of the past (campfires, open hearths, chuck wagons and separate “Summer house” kitchens) are the kitchens of today...and those of future...all, specifically tailored to your lifestyle. Convenience, preference and most of all, “personal flavor” now season the room which has, for centuries, provided us all with “our daily bread”.

PART TWO – Dress Up Your Kitchen With These Great Cabinet Door Ideas

Above all else, your cabinets set the style for your entire kitchen. No matter what appliances, curtains, floor or wall coverings you choose, it's the cabinets that will ultimately dictate the “style” of your kitchen. That's because they're the most visible, and thus the most important element to consider when you design or remodel your kitchen.

And, it's really the cabinet doors and drawer fronts that most express this style. Because of their importance, making new cabinet doors is probably the easiest way to remodel your kitchen. Change these doors (and drawer fronts) and you've changed the kitchen decor. It's that simple!

Most cabinet doors are made in one of two ways: Either as a solid board front...or as a frame-and-panel style. Unless you decide to build from veneered particleboard or MDF, you run a great risk of a single-board door warping eventually – even if it's made of plywood. That's why all of the doors we've made here are of frame-and-panel construction.

Making The Frame

Door frames are typically made from four pieces: two vertical *stiles*, a top *rail* and a bottom *rail*. A rabbet on the inside edges of all four pieces holds the *panel* in place. When constructing frame-and-panel doors, there are a variety of ways to join the *rails* and *stiles* together. You could use biscuits or dowels...you could use half-lap joints...or you could use the longest-lasting joint of all (and the least likely to sag), the mortise-and-tenon joint.

Start by determining the final size of your cabinet doors. This will depend on the way you want to hang them. You can either choose to insert them completely inside the cabinet frame — cut a *lip* around the door edges so they're partially inset – or do neither, allowing the doors to completely overlap the door opening.

If you're planning to inset them, be sure to make them 1/16” smaller in height and width than your opening to allow for clearance. The easiest way to do this is to make them the same size as your opening, then use your Jointer (set to take a 1/32” cut) to *shave* them down to the final desired dimension.

If you want them to partially or completely overlap your door opening, make them 1/4" to 3/8" larger than your door opening, all the way around.

Start by cutting the *rails* and *stiles* to size. Usually, these are 3/4" thick by 2” wide, except for the top *rail*. That's because, in two of the doors we've built here, we made our top *rails* slightly wider so we could cut a simple curve in them with a Bandsaw. This curve will not interfere with the joinery.

Next, cut a 1/4" deep by 5/16” wide rabbet on the inside edges of your *stiles* and *rails*. You could either use a Dado set-up...a Router Table with a straight bit...or a Shaper set-up with a 1” Blank Cutter and a 1-1/4” Shaper Collar. The Dado method is probably the easiest for straight-sided stiles and rails, while the Shaper or Router set-up will cut a smooth rabbet in either the straight or

curved edges.

Use a Hollow Chisel Mortising set-up with a 3/8" Chisel to cut a 2" long by 3/4" deep by 3/8" wide stub mortise in both ends of each *stile* (See fig. 1). These will mate with the tenons formed in each end of your *rails*. Of course, if you've chosen one of our curved-top door styles, your top mortises may have to be longer or shorter than 2".

Now, using your Dado set-up with a Tenoning Jig...or a Molder set-up with a Blank Cutter, form the tenons in the ends of your *rails*. These tenons should be 3/8" wide by 3/4" long on the front side and 7/16" long on the back side (See "Corner Joint Detail" drawing). Assemble the frames with glue and set aside to dry thoroughly.

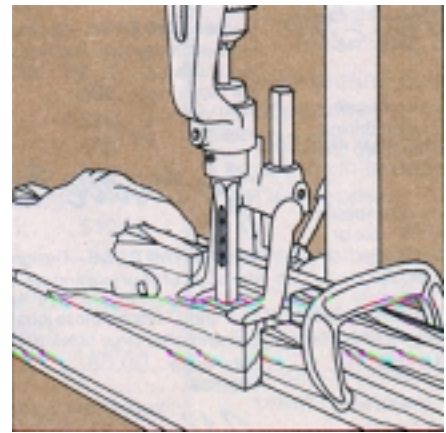


Fig. 1 Using a mortising accessory to cut a stub mortise.

Making The Panels

When making the panels, you have a wide variety of materials from which to choose. These include not only different woods, but other materials such as copper, brass, tin, enameled steel, hardboard, plastic or glass. Most of these materials can be easily machined on your MARK V to create a variety of styles. Here are just four possibilities;

Raised Panel Depending on the height and width of your doors, you may have to glue-up stock, edge-to-edge, to create the large panels you'll need. Make sure that the end grains "cup" in the same direction, and never dowel the panel stock together, since dowels could split over time. Joint all edges, then use a Glue Joint Cutter with your Molder or Shaper to assemble your door panels (See Fig. 2).

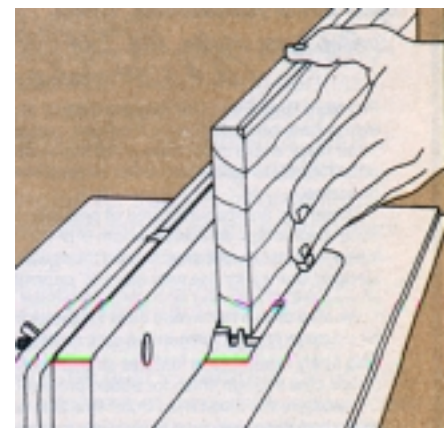


Fig. 2. Cutting a glue joint with a molder. (You can also use a shaper.)

When making wood door panels, always be sure to cut the panels slightly smaller to give the wood room to expand and contract without splitting as the humidity and temperatures of the environment change. Otherwise, your panels could split the frames on hot, humid days.

To determine how much "play" you should provide for your panels, first determine its critical dimension. Remember that wood expands 10 times more *across* the grain of the wood than it does *with* the grain. So, if you run the grain of your panel vertically, the critical dimension will be the *width* of the panel. If you run the grain horizontally, your critical dimension will be the *height* of the panel.

Once you've found this dimension, apply this rule of thumb: If the critical dimension is under 12", allow a total of 1/8" of play (1/16" all the way around). If the critical dimension is over 12", allow a total of 1/4" (1/8" all the way around).

Once you've cut your panels, tilt your MARK V's Worktable to 15-degrees, turn your panel on edge and use a Hollow-Ground Planer Saw Blade to cut a bevel all the way around the panel's edges. Adjust your Rip Fence and the height of the Worktable so that the Saw Blade leaves a 1/8" *step* between the raised surface and the bevel...and so your bevel tapers down to a 3/16" thickness at its outside edges (See Fig. 3). A panel-raising jig can simplify and bring added safety to this task. Here's a link to the plans for building such a jig.

Fancy Panel As with the raised panel, glue-up your stock and cut it out, slightly undersized.

Set up your MARK V to shape, then select a cutter (or combination of cutters) that will produce the fancy edge you like best. We used the Combination Quarter-Round Cutter to create the panel shown in Fig. 4.

Mount the Cutter on the Shaper with the 1-1/4" Collar and make your first pass, cutting all the way around the edges of the panel. Adjust your depth-of-cut so that the shaper leaves a 1/4" thick tenon on the edge. Change to a 3/4" Collar and make a second pass. By using progressively smaller Collars, you'll avoid "hogging" (taking too big of a bite in a single pass).

After your second pass, the tenon should be about 3/8" wide – wide enough to mount the panel in your rabbeted frame and show off your fancy edging. Additional decorations can be cut in either the edge or the surface of your panel by making additional passes with other Shaper or Molder Cutters.

Decorative Metal Early settlers used punched sheets of tin and copper much like we use screen. The holes in the metal allowed the air to pass in and out of furniture such as "pie safes", but not the little "critters".

To reproduce this effect, purchase sheets of copper, brass or tin that are approximately 1/64" thick. Tin (these days, it's actually rolled steel) is by far the least expensive. It's also quite versatile. By rubbing it down with gun bluing, it will

take on a blue-brown sheen. Paint it flat black and rub it with *Rub 'N Buff Gold*, and it will take on a coppersy sheen. There are several different antiquing and gilding kits available at crafts stores that could be used to achieve different effects on tin.

Start by making a full-size pattern out of paper and attach it to your metal with rubber cement. Punch holes where desired with a nail or an awl to create your pattern. Or, you could do what we did...take an old center punch and use your Disc Sander to grind its tip to a square (like a typical nail) point to make the process of punching safer and easier (See Fig. 5).

Remember that the punching may cause your panel to buckle or curl. Don't be alarmed. When you've finished punching your holes, just bend it straight again. Buff the surface with #0000 steel wool and cut to size.

Pennsylvania Dutch Cut a piece of 1/4" thick tempered hardboard to size. If you like, use your Shaper or Molder to make some decorative molding by shaping the edge of a board, then simply ripping that shaped edge off your board using your Table Saw.

Paint that molding and the panel with enameled paint. White is the traditional color for Pennsylvania Dutch designs, but you can use other colors, if they suit you better. You may also wish to wait until after you've assembled the panel into the frame and paint the entire cabinet door at once, as we did.

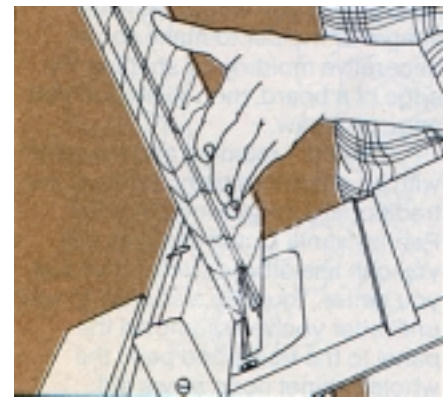


Fig. 3. Making a raised panel. Be very careful, as this operation must be performed without an upper saw guard.

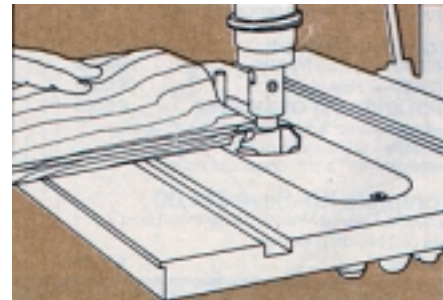


Fig. 4. Forming the edge of a fancy panel with a shaper.



Fig. 5. Punching tin with a square-ground center punch.



Once the enameled paint has dried, lightly pencil a design on the surface. There are probably several books on Pennsylvania Dutch designs available at your local library, if you need ideas. Then, with either acrylic or oil paints, color in your designs.

Mounting The Panel To The Frame

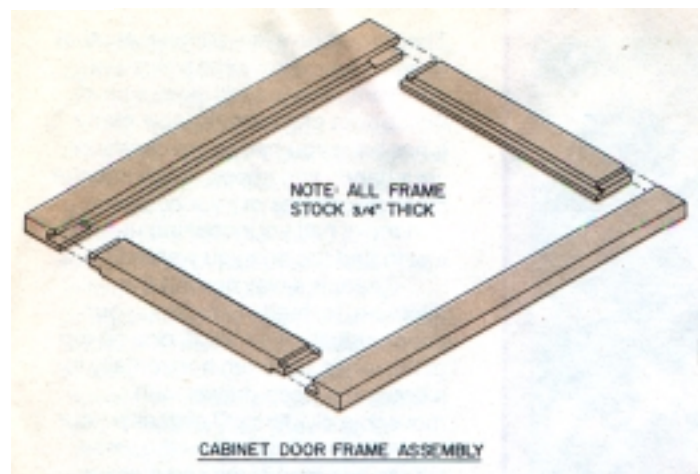
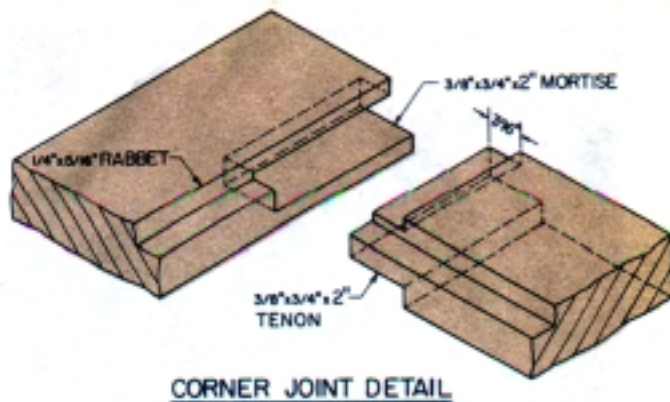
When mounting wooden panels to the frames, **don't** glue them in. As we mentioned before, the wood panels need room to expand and contract with changes in the environment. The easiest way to provide this room is to mount the panel in the frame with four #8 x 5/8" long roundhead screws and washers. Position these screws a few inches left and right of center at the *end grains* of the panel...giving the critical dimension (across the grain) as much freedom as possible. Drill oversized 7/32" pilot holes for your screws to allow for movement. Metal, tempered hardboard, plastic or glass panels can be attached with glazing points or with screws (except glass panels, of course).

Finishing and Installation

Stain the doors to match the cabinet frame, if desired. Then choose a waterproof finish that cleans up easily. We recommend either tung oil or polyurethane. Tung oil will give you a soft, natural finish and bring out the grain of your wood. Polyurethane will give you a deeper, glossier look. Either will wear well.

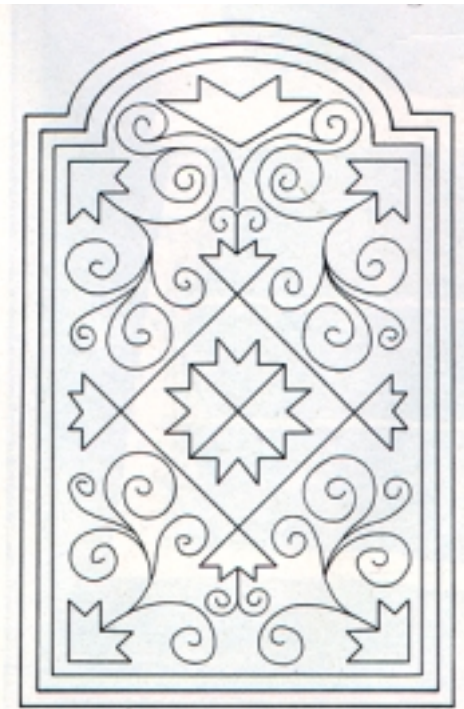
Clamp or wedge the doors onto the cabinet frame in position and drill for hardware. Attach the hinges, catches and pulls, then stand back and admire your work.

You'll be amazed how one simple project...new cabinet doors...can give your entire kitchen a new look!





Typical Pennsylvania Dutch Pattern



Pattern For Punched Tin