

FUN WITH DUTCH OVENS

By
Gary A. Yerkes

This book is dedicated to my loving wife who asked me to type up that first recipe and who has supported me throughout the assembly of this book.

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Note: "Fun With Dutch Ovens", as published on the internet, contains approximately 150 pages of recipes which are not reproduced here. This handout was prepared for the purposes of the Dutch Oven demonstration at Wood Badge Course NE IV-113. The intent is to provide participants with enough information to take back to their troop and enhance their Scouts' cooking experience.

Don Callihan, Coach/Counselor

INTRODUCTION

My wife had spotted a recipe that she thought would be great for me to cook. I was reading "Scouting" magazine and low and behold, I came across a recipe for pizza in a Dutch oven. Now I had two recipes that I wanted to save. After typing them up on the computer, I decided to kill some time and surf the Internet. I did a search on Dutch ovens and the result is several months of work and this book.

This book is a collection of recipes and ideas from that search plus additions from various other scouting resources (like Pow Wow books and Scout basic training handouts). I have done my best to ensure that permission for using this material was obtained. I do not consider myself the author of this book. I have just assembled the talents of many people into a collection of recipes for ease of use.

Some of the material contained within has restrictions attached by the original authors. The below list contains two major sources for the material in my book and their usage statements.

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I have talked to John by E-mail and got his OK. We will also be swapping recipes in the coming months.

I hope to keep updates of this book available on the internet. You can find it at: (www.geocities.com/yosemite/1081). Select Scout Cooking and you'll find it.

You can also send corrections, comments and maybe a good recipe to me using the email address found on the page.

REFERENCES and THANKS

Dutch Oven Cooking, second edition by John G. Ragsdale
World Championship Dutch Oven Cookbook by Kohler and Michaud
Balboa Scout Camp Campmaster Bob Kienke
Dutch Oven Cooking (c)1990 by Mike Audleman
Dutch Oven Cooking, Version 2.3 -- July 1995 Original Compilation in 1990 © by Mike Audleman with additional editing in 1994 and 1995 by John W. Lyver
Jerry Schroeder, former scouter and now has a great web page with lots of fun recipes.
All my great new WEB friends.
IDOS (International Dutch Oven Society) 41 East 400 North #210, Logan, Ut. 84321
Enjoy this book and good eating.

SOME HISTORY of the DUTCH OVEN

The origin of the Dutch oven has been the cause of much discussion and debate. It is sufficient to say that Dutch ovens first came to this continent from Europe before the United States of America was a country. Some claim the name comes from Dutch peddlers they imported the ovens from Holland and sold them door to door from their wagons. Paul Revere is reported to have been one of the early manufacturers of Dutch ovens in this country. Lewis and Clark carried Dutch ovens on their cross country trek. The fur trappers, explorers, pioneers and cattle drivers all depended on the Dutch oven to provide a wide range of hardy meals as they blazed their way into the history books. In more recent times, cattle ranchers, river rafters, black powder clubs, back country horsemen, trail guides and boy scouts have enjoyed the fun of preparing food with these ovens, as well as the quality of food that can be produced. In recent years there has been a rapidly growing interest in use of Dutch ovens for camping, picnics and backyard gatherings.

Competitive cook offs have developed over the last two decades. They provide opportunities to get together, develop and share recipes, enjoy lots of good food and enjoy doing something well. Many have become very proficient at preparing excellent meals in these apparently primitive devices. One reason Dutch oven cooking is making a strong comeback may be because it clearly an art rather than a science allowing to chiefs time to relax and be creative.

SELECTING A DUTCH OVEN

Dutch ovens come in a variety of sizes. The chart below will help you decide the correct size for based your use. I have found a good starting size is the 12" (6 quart) oven.

OVEN CAPACITY	OVEN SIZE	TYPES OF FOOD
2 quarts	8"	Recipes for 2 people, vegetables, desserts
4 quarts	10"	Anything for 2-6 people, beans, rolls, cobblers, good size for testing recipes.
6 quarts	12"	Main dishes to serve 12-14 people, or side dishes of rolls, desserts.
8 quarts	14"	Main dishes to serve 16-20 people, or side dishes of rolls, vegetables, potatoes, desserts
14 quarts	16"	Any food for large groups

There are virtually hundreds of option and size combinations available, so it would be impractical for me to tell you which oven is the one for you. Each type of oven is designed for a different type of cooking situation. I will go over the various options and you will have to decide which oven or ovens fit your needs.

There are two materials used in the forming of a Dutch oven. The majority are cast iron. There are, however, ovens made from aluminum. These ovens are light weight alternatives that do not

rust. The aluminum will reflect heat so you will need to use more coals than with the cast iron to produce the same amount of heat. Almost everyone I have talked to prefer to use cast iron. It is said that you can get a more even heat with cast iron and that once your cast iron oven is well seasoned, it will add to the overall flavor of meals that are cooked.

In shopping for an oven, you should look for one that is obviously well made. Look at the bail handle. It should be of heavy gauge wire and securely attached to molded tangs on the side of the oven. Ovens that have riveted tabs should be avoided. Most oven handles will lay down against the side of the oven in both directions. If you look hard enough, you will find some that allow the handle to stand up at a 45 degree angle on one side. This allows for easier access to the handle when positioning or removing the oven from the fire.

Another area that bears close examination is the handle on the lid. It should be a loop attached to the lid on both ends and hollow in the center allowing it to be easily hooked. Stay away from the ones that have a molded solid tab on the lid for a handle. These are very difficult to grasp and manage with a load of coals. The loop style offers much better control.

While examining the lid, check that it has a lip or ridge around the outer edge. The lip keeps the coals from sliding off the lid and helps prevent ashes from falling into the food while removing the lid. Don't get me wrong, the ridgeless ones can be used but it is difficult to keep coals on the lid and if you are not meticulous in cleaning the ash from the lid each and every time you open the oven, you will end up with ash in your food. The lip virtually eliminates the problem and the lid can be lifted, even fully loaded, with ash and coals with little difficulty.

Another feature to look at is the legs. The most common variety is one with three legs, although flat-bottomed ones and four legged ones can also be found. For outdoor cooking, legs are a necessity as they maintain the height of the oven above ground allowing air for the coals underneath. The flat bottomed ones can be set up on rocks (which are scarce as hen's teeth in Florida) or up on steel tent pegs. If you figure in Murphy's Law, the flat-bottom ovens are best left in the store or on the kitchen stove where their use was intended. I highly recommend three legs over four simply for the stability factor. It is much more stable with three legs sitting on rough ground than with four.

The last option to look at is a second handle attached to the lid or upper rim on the oven base. Some ovens are offered with a skillet type handle attached to the lid. This, in theory, is a good idea, but in reality they seem to be more in the way than an assistance. The handle does assist in using the lid up-side-down as a skillet or griddle. When using it as a lid, they get in the way of the bail handle and also misbalance the lid when lifting by the center hoop. They also tend to be in the way during storage and packing situations. Fixed handles on the oven base, with one exception, should be absolutely avoided. I believe the theory behind these handles was to make the oven easier to position in a deep fire pit. If you insist on considering the handle, take a couple of red bricks with you to the store and place them in the oven. Then give the oven a lift by the handle and you will see the uselessness in the handle. A loaded 12" oven can weigh 20 to 25 pounds, a real wrist breaker.

The one exception is a small tab sometimes offered which is about 1 to 1½" deep and 2-3" wide on the upper lip of the oven. This tab makes pouring liquids from the oven very easy and its small size has never caused storage or packing problems for me.

Other valuable features to look for are:

1. A looped handle on the lid. This can be used to lift the lid during cooking.
2. Avoid a long handle that sticks out from the side. A better choice would be a Dutch oven with a heavy wire handle that is attached on either side of the oven. This handle will allow you to rotate the oven during cooking and aid in carrying. This handle can fold out of the way when not needed or be positioned during cooking for easy lift.

ACCESSORIES AND EQUIPMENT

In addition to the Dutch oven, here are some other items you will find helpful.

- lid lifter
- spatula
- shovel
- paper towels
- cooking oil
- aluminum foil
- measuring cups and spoons
- flat round pan such as a pizza pan for each oven
- heavy leather gloves or pot holders
- long handled spoon
- tongs
- small whisk broom, not plastic, for removing ashes from lid
- aluminum pie plates
- firestarter/stove
- pancake turner

These items are available through the Scout Shop or at many local retailers. There are pot covers and other specialized accessories available although you may need to obtain them through mail-order. Many books are available that include information on the care and selection of Dutch ovens and they also include a great variety of recipes.

Oven Seasoning Method #1

(From Dutch Oven Cooking) Just a tidbit of information for those who have a need for seasoning cast iron cookware. After using it for years and following the instructions that came with my oven, Lodge brand ironware, I think I've gotten a more fool proof way of getting a nice even rock hard seasoning in minimum time.

I finally broke down and bought a #10 (4 quart) outdoor Dutch oven. The seasoning instructions said (basically): "wash, dry, thin coat of Crisco, bake for 1 hour at 300 degrees" Remembering my experience in the past with this generic set of instructions, I tried a new way. The old way will work, but you usually get puddling of the melted Crisco and it doesn't 'cure' well enough and is usually sticky and not so good.

This time I washed the iron with boiling water to remove any casting oils, then baked it (plain, dry) in a 200 degree oven for a while to ensure that all water was dried out and not remaining in the pores of the metal. DO NOT heat too long as oven will rust. Once the iron had cooled barely enough to handle, that is still warm enough to thin the oil and help it to soak in, I rubbed a very thin coat of corn oil into the metal, making sure I got every exposed spot of iron on the .

I baked it at 425 degrees until the oil turned very dark, nearly black. I let it cool just enough again, then repeated the oil rub/baking process. At that point, it looked beautiful, nice dark color, rock hard finish.

Just for the heck of it though, I rubbed and baked one last time, nice dark Dutch oven with a beautiful 10-year-old looking seasoning.

Baked a couple of Cornish game hens (and carrots, potatoes, cob corn) in it this weekend using coals, and it turned out great and NOTHING stuck to the iron! I'm happy! Next time...bread! (Personal note from author. I used this method when I picked up my new Dutch oven. It worked well. Make sure that you have some OLD pot holders on hand to handle the Dutch oven. Your oven is oily and the oil will get on the holders. Your spouse may not be too happy if this happens. If it does, offer to keep the soiled pot holders and buy her new ones. It worked for me.)

Oven Seasoning Method #2

One of the most important keys to enjoying your new cookware and to assures that it lasts for years is to properly prepare or season the pieces.

Seasoning prevents rusting, and will fill the small rough areas in the surface to keep food from sticking, making cast iron easy to clean.

Cast iron comes from the factory with a protective coating to prevent rusting in transit and storage. The protective coating must be removed prior to seasoning your oven.

The best way to do this is to scrub the oven with a mild detergent and warm water, inside and out. After this initial washing, THIS SHOULD BE THE LAST TIME YOU USE SOAP OR DETERGENT ON YOUR COOKWARE.

To season the oven, most manufacturers recommend a light coating of vegetable oil or shorting be wiped on all surfaces of the oven. DO NOT USE BUTTER OR MARGARINE.

Place the cookware in a conventional home oven at 350 degrees for 2 hours. Wipe all surfaces with oil and return to the oven at 200 degrees for 6 hours. EVERY 2 HOURS THE SURFACE SHOULD BE RE-COATED WITH OIL.

When this process is finished, your cookware will look like it has a waxy, yellow finish and will be non-stick cookware.

After each use of your oven, you will need to re-coat with a little oil. With continued use, the oven will eventually become black and the flavor will be enhances.

If your oven ever loses its seasoning due to rust or improper care, you can brush off the rust or grime and then re-season the oven in the same manner just described.

Charcoal Preparation

Buy a high quality charcoal (like Kingsford charcoal); the cheap stuff does not burn predictably.

Fill one charcoal lighter can with charcoal for each Dutch oven and place on fire grate above a roaring fire. For each 3 to 5 cans, light one additional can. When most of the briquettes show some light gray color, the charcoal is ready to be used. For 5 Dutch ovens, prepare 6 charcoal cans.

To eliminate the need for lighter fluid, there are various other methods of starting charcoal.

One method that can take 1/3 the time involves using charcoal starter made from a five gallon can with a hole cut out of the side and a wire grate placed in the center of the can. A charcoal chimney can be purchased from your local Dutch oven dealer or Bar-B-Que dealer.

HEAT CONTROL

Cast iron cooking requires a constant even heat where possible. When using your oven outdoors, here are a few tips that will be helpful to know.

When cooking outdoors, high quality charcoal briquettes are recommended. Briquettes provide a long lasting, even heat source.

By varying the number of briquettes placed underneath and on top of the Dutch oven, the temperature inside the oven can be accurately controlled.

For boiling, deep frying, and stewing, you will want more coals on the bottom where this higher heat will be transmitted the liquid in the oven and then the food. Baking requires that you put more coals on the lid.

Prior to cooking you will want to preheat the Dutch oven. You do this by placing a few coals under and on top of the oven for a few minutes before cooking.

Here are two easy formulas to help you control the cooking temperature.

BAKING

OVEN CAPACITY	COALS ON TOP	COALS ON BOTTOM
2 quarts	7-9	3-5
4 quarts	11-14	4-6
6 quarts	15-18	6-8
8 quarts	18-22	7-9
14 quarts	21-24	9-22

GENERAL COOKING

OVEN CAPACITY	COALS ON TOP	COALS ON BOTTOM
2 quarts	3-5	7-9
4 quarts	4-6	11-14
6 quarts	6-7	15-18
8 quarts	7-9	18-22
14 quarts	9-11	21-24

Each briquette adds about 20 degrees

NOW TO CHECK THE TEMPERATURE OF YOUR OVEN

Put a teaspoon of flour into a pan; place the pan inside the Dutch oven and cover. Cook 5 minutes.

Light brown flower = 350 degrees F

Dark brown flower = 400 to 450 degrees F

Note: If the flour turns dark brown in under 3 minutes, the oven is too hot for proper cooking.

It is important to remember that these hints are only a guide to help you get started. You will need to adjust briquettes according to your recipe. Keep in mind that the weather, temperature and ground sort can effect cooking temperature as will the brand of charcoal you use. Remember to be patient, do not try to cook to fast.

A strong wind or breeze will raise the temperature.
Direct sunlight will raise the temperature.
Higher air temperature will likely raise the temperature.
High humidity in the air will lower the temperature.
Shade will lower the temperature.
A high altitude will lower the temperature.



Besides getting the correct temperature, many of your recipes require that you have correct heat placement. For example;

Stews, soups, chili, and other liquid dishes require more heat on the bottom than the top.

Meat, poultry, potatoes, beans, vegetables, and cobblers require even heat distribution of heat on the top and bottom.

Cakes, breads, biscuits, and cookies require most of the heat on top and little heat on the bottom.

Some sauces require heat only on the bottom.

Stacking of Dutch ovens is a convenient way of saving space and sharing heat. This is best used for dishes that require even heating.

The greatest sin in Dutch oven cooking is to run out of heat. If cooking is going to take more than an hour, it is advisable to start a new batch of charcoal about 30 minutes after your original charcoal was started. This will result in fresh coals most of an hour after the original ones started, so if you need more heat to finish the dish you will have it.

It can take twice as much charcoal to cook a dish if the wind is blowing much at all. If it is blowing briskly you will want to fashion some kind of wind break to save charcoal and to enable the oven to be heated evenly.

CLEAN UP

If you have used a well-seasoned oven, clean up is easy.

First, remove any excess food particles with a metal or wooden spatula. Next, place some water (NO SOAP OR DETERGENT) in the oven and reheat until water is warm. Scrap off any residual food (Teflon scouring pad may be used). Wipe dry. Put a thin layer of vegetable oil or shortening on the inside of the cookware (DO NOT USE BUTTER OR MARGARINE). Wipe out excess oil.

"Burning out" your cookware is not recommended, as this will require re-seasoning your oven.

Cast iron should be stored in a cool room, Dutch oven lids should be inverted with a paper towel between the lid and the oven.

If the oil in your cookware becomes rancid, reheat until the oil is liquefied and then wipe out any excess oil. Re-wipe with fresh vegetable oil or shortening before use.

Greg's Personal Favorite Method of Cleaning

Add 1 to 2" of clean water and bring to a boil (uncovered) this will open the cast iron pores and allow the food to release. Scrape again, if the water is very dirty repeat with fresh water and after boiling pour off $\frac{1}{2}$ the water. (trick) Wad up a foot long piece of aluminum foil and use it to scrub the Dutch oven. For all of you who now protest, I encourage you to try this because it has never harmed our seasoned Dutch Ovens. The foil is soft enough that it actually self-destructs as it removes the toughest particles. Rinse the Dutch oven and add 1" water and boil. Discard water, dry with paper towels and oil interior with 1 tablespoon vegetable oil, same for lid.

Greg Gough, Scoutmaster Troop 201, Ozark, MO.

MEASUREMENT CONVERSIONS YOU MAY NEED

1 tablespoon = 3 teaspoons

2 tablespoons = 1 ounce

$\frac{1}{4}$ cup = 4 tablespoons

$\frac{1}{3}$ cup = $5 \frac{1}{3}$ tablespoons

$\frac{1}{2}$ cup = 8 tablespoons

1 cup = 8 ounces

1 quart = 4 cups

1 gallon = 4 quarts

2 cups = 1 pint

1 stick butter = $\frac{1}{4}$ pound or $\frac{1}{2}$ cup or 8 tablespoons

1 pound bread loaf = about 17 slices

$1\frac{1}{4}$ pound loaf = about 20 slices

$1\frac{1}{2}$ pound loaf = about 23 slices

SUBSTITUTIONS

1 cup milk = $\frac{1}{2}$ cup evaporated milk + $\frac{1}{2}$ cup water

1 cup reconstituted dry milk + 2 teaspoons margarine or butter

1 cup buttermilk = 1 tablespoon vinegar + 1 cup sweet milk or $\frac{1}{4}$ cup butter + $\frac{3}{4}$ cup milk

$1\frac{1}{2}$ teaspoons cornstarch = 1 tablespoon all purpose flour

1 cup honey = $1\frac{1}{4}$ cup sugar + $\frac{1}{4}$ cup water or other liquid

Emergencies should be the only excuse for substituting ingredients in a recipe.

Food Safety Features

August 1999

Food Safety While Hiking, Camping, and Boating

Outdoor activities are popular with Americans nationwide. The fresh air and exercise revives the spirit and the mind. Hiking, camping, and boating are good activities for active people and families, and in some parts of the country you can enjoy the outdoors for 2 or 3 seasons. In many cases, these activities last all day and involve preparing at least one meal. If the food is not handled correctly, foodborne illness can be an unwelcome souvenir.

"Keep hot foods hot and cold foods cold."

Whether you are in your kitchen or enjoying the great outdoors, there are some food safety principles that remain constant. The first is "Keep hot foods hot and cold foods cold." Meat and poultry products may contain bacteria that cause foodborne illness. They must be cooked to destroy these bacteria and held at temperatures that are either too hot or too cold for these bacteria to grow.

Most bacteria do not grow rapidly at temperatures below 40 °F or above 140 °F. The temperature range in between is known as the "Danger Zone." Bacteria multiply rapidly at these temperatures and can reach dangerous levels within 2 hours.

If you are traveling with cold foods, bring a cooler with a cold source. If you are cooking, use a hot campfire or portable stove. It is difficult to keep foods hot without a heat source when traveling, so it's best to cook foods before leaving home, cool them, and transport them cold.

"Keep everything clean."

The second principle is that bacteria present on raw meat and poultry products can be easily spread to other foods by juices dripping from packages, hands, or utensils. This is called cross-contamination. When transporting raw meat or poultry, double wrap or place the packages in plastic bags to prevent juices from the raw product from dripping on other foods. Always wash your hands before and after handling food, and don't use the same platter and utensils for raw and cooked meat and poultry. Soap and water are essential to cleanliness, so if you are going somewhere that will not have running water, bring it with you. Even disposable wipes will do.

Food Safety While Hiking and Camping

Sometimes you just have to get out and walk around in the solitude and beauty of our country. You may want to hike for just a few hours, or you may want to hike for a few days. One meal and some snacks are all that's needed for a short hike. Planning meals for a longer hike requires more thought. You have to choose foods that are light enough to carry in a backpack and that can be transported safely.

Hot or Cold?

The first principle is to keep foods either hot or cold. Since it is difficult to keep foods hot without a heat source (although the new insulated casserole dishes will keep things hot for an hour or so), it is best to transport chilled foods. Refrigerate or freeze the food overnight. For a cold source, bring frozen gel-packs or freeze some box drinks. The drinks will thaw as you hike and keep your meal cold at the same time. What foods to bring? For a day hike, just about anything will do as long as you can fit it in your backpack and keep it cold – sandwiches, fried chicken, bread and cheese, and even salads – or choose non-perishable foods.

Clean

The second principle is to keep everything clean, so remember to bring disposable wipes if you are taking a day trip. (Water is too heavy to bring enough for cleaning dishes!)

Safe Drinking Water

It is not a good idea to depend on fresh water from a lake or stream for drinking, no matter how clean it appears. Some pathogens thrive in remote mountain lakes or streams and there is no way to know what might have fallen into the water upstream. Bring bottled or tap water for drinking. Always start out with a full water bottle, and

replenish your supply from tested public systems when possible. On long trips you can find water in streams, lakes, and springs, but be sure to purify any water from the wild, no matter how clean it appears.

The surest way to make water safe is to boil it. Boiling will kill microorganisms. First, bring water to a rolling boil, and then continue boiling for 1 minute. Before heating, muddy water should be allowed to stand for a while to allow the silt to settle to the bottom. Dip the clear water off the top and boil. At higher elevations, where the boiling point of water is lower, boil for several minutes.

As an alternative to boiling water, you can also use water purification tablets and water filters. The purification tablets – which contain iodine, halazone, or chlorine – kill most waterborne bacteria, viruses, and some (but not all) parasites. Because some parasites – such as *Cryptosporidium parvum*, *Giardia lamblia*, and larger bacteria – are not killed by purification tablets, you must also use a water filter. These water filtering devices must be 1 micron absolute or smaller. Over time purification tablets lose their potency, so keep your supply fresh. Water sanitizing tablets for washing dishes can also be purchased (just don't confuse the two). Water purification tablets, filters, and sanitizing tablets can be purchased at camping supply stores.

What Foods to Bring?

If you are backpacking for more than a day, the food situation gets a little more complicated. You can still bring cold foods for the first day, but you'll have to pack shelf-stable items for the next day. Canned goods are safe, but heavy, so plan your menu carefully. Advances in food technology have produced relatively lightweight staples that don't need refrigeration or careful packaging. For example:

- peanut butter in plastic jars;
- concentrated juice boxes;
- canned tuna, ham, chicken, and beef;
- dried noodles and soups;
- beef jerky and other dried meats;
- dehydrated foods;
- dried fruits and nuts; and
- powdered milk and fruit drinks.

Powdered mixes for biscuits or pancakes are easy to carry and prepare, as is dried pasta. There are plenty of powdered sauce mixes that can be used over pasta, but check the required ingredient list. Carry items like dried pasta, rice, and baking mixes in plastic bags and take only the amount you'll need.

Cooking at Camp

After you have decided on a menu, you need to plan how you will prepare the food. You'll want to take as few pots as possible (they're heavy!). Camping supply stores sell lightweight cooking gear that nest together, but you can also use aluminum foil wrap and pans for cooking.

You'll need to decide in advance how you will cook. Will you bring along a portable stove, or will you build a campfire? Many camping areas prohibit campfires, so check first or assume you will have to take a stove. Make sure to bring any equipment you will need. If you are bringing a camp stove, practice putting it together and lighting it before you pack. If you build a campfire, carefully extinguish the fire and dispose of the ashes before breaking camp. Likewise, leftover food should be burned, not dumped. Lastly, be sure to pack garbage bags to dispose of any other trash, and carry it out with you.

Use a Food Thermometer

Another important piece of camping equipment is a *food thermometer*. If you are cooking meat or poultry on a portable stove or over a fire, you'll need a way to determine when it is done *and* safe to eat. Color is not a reliable indicator of doneness, and it can be especially tricky to tell the color of a food if you are cooking in a wooded area in the evening.

When cooking hamburger patties on a grill or portable stove, use a digital thermometer to measure the temperature. Digital thermometers register the temperature in the very tip of the probe, so the safety of thin foods -- such as hamburger patties and boneless chicken breasts -- as well as thicker foods can be determined. A dial thermometer determines the temperature of a food by averaging the temperature along the stem and, therefore,

should be inserted 2 to 2 ½ inches into the food. If the food is thin, the probe must be inserted sideways into the food.

It is critical to use a food thermometer when cooking hamburgers. Ground beef may be contaminated with *E. coli* O157:H7, a particularly dangerous strain of bacteria. Illnesses have occurred even when ground beef patties were cooked until there was no visible pink. The only way to insure that ground beef patties are safely cooked is to use a food thermometer, and cook the patty until it reaches 160 ° F. For chicken, cook breasts or cutlets to 170 °F; legs and thighs to 180 °F. Pork should be cooked to 160 ° F. Heat hot dogs and any leftover food to 165 °F. Be sure to clean the thermometer between uses.

Keeping Cold

If you are "car camping" (driving to your site), you don't have quite as many restrictions. First, you will have the luxury of bringing a cooler. What kind of cooler? Foam chests are lightweight, low cost, and have good "cold retention" power. But they are fragile and may not last through numerous outings. Plastic, fiberglass, or steel coolers are more durable and can take a lot of outdoor wear. They also have excellent "cold retention" power, but, once filled, larger models may weigh 30 or 40 pounds.

To keep foods cold, you'll need a cold source. A block of ice keeps longer than ice cubes. Before leaving home, freeze clean, empty milk cartons filled with water to make blocks of ice, or use frozen gel-packs. Fill the cooler with *cold* or *frozen* foods. Pack foods in reverse order. First foods packed should be the last foods used. (There is one exception: pack raw meat or poultry *below* ready-to-eat foods to prevent raw meat or poultry juices from dripping on the other foods.) Take foods in the smallest quantity needed (e.g., a small jar of mayonnaise). In the car, put the ice chest in the air-conditioned passenger section, not in the trunk. At the campsite, insulate the cooler with a blanket, tarp, or poncho. When the camping trip is over, discard all perishable foods if there is no longer ice in the cooler or if the gel-pack is no longer frozen.

Cleanup

Whether taking a hike or camping at an established site, if you will be washing dishes or cookware, there are some rules to follow. Camping supply stores sell biodegradable camping soap in liquid and solid forms. But use it sparingly, and keep it out of rivers, lakes, streams, and springs, as it will pollute. If you use soap to clean your pots, wash the pots at the campsite, not at the water's edge. Dump dirty water on dry ground, well away from fresh water. Some wilderness campers use baking soda to wash their utensils. Pack disposable wipes for hands and quick cleanups.

Food Safety While Boating

Keeping food safe for a day on the boat may not be quite as challenging as for a hike, but when you are out on the water, the direct sunlight can be an even bigger food safety problem. Remember the "Danger Zone"? It is true that bacteria multiply rapidly at warm temperatures, and food can become unsafe if held in the "Danger Zone" for over 2 hours. At 90 °F or above, food can become dangerous after only 1 hour. In direct sunlight, temperatures can climb even higher than that. So bring along plenty of ice, and keep the cooler shaded or covered with a blanket.

Keep Your Cooler Cool

A cooler for perishable food is essential. It is important to keep it closed, out of the sun, and covered, if possible, for further insulation. Better yet, bring two coolers: one for drinks and snacks, and another for more perishable food. The drink cooler will be opened and closed a lot, which lets hot air in and causes the ice to melt faster. Pack your coolers with several inches of ice, blocks of ice, or frozen gel-packs. Store food in watertight containers to prevent contact with melting ice water.

Keep Cold Foods Cold

Perishable foods, like luncheon meats, cooked chicken (Yes, that includes fried chicken!), and potato or pasta salads, should be kept in the cooler. Remember the rule: hot foods hot, cold foods cold? And the 2-hour rule: no food should be in the "Danger Zone" for more than 2 hours? Well, unless you plan to eat that bucket of fried chicken within 2 hours *of purchase*, it needs to be kept in the cooler. For optimum safety, consider buying it the night before, refrigerating it in a shallow container (not the bucket), and then packing it *cold* in the cooler.

Of course, some foods don't need to be stored in the cooler: fresh fruits and vegetables, nuts, trail mix, canned meat spreads, and peanut butter and jelly. (However, once canned foods are opened, put them in the cooler.)

If you don't have an insulated cooler, try freezing sandwiches for your outing. Use coarse-textured breads that don't get soggy when thawed. Take the mayonnaise, lettuce, and tomato with you to add at mealtime. In a pinch, a heavy cardboard box lined with plastic bags and packed with frozen gel packs or ice will keep things cold until lunchtime. Freeze water in milk cartons for your cold source.

Seafood

If you are planning to fish, check with your fish and game agency or state health department to see where you can fish safely, then follow these guidelines:

Finfish:

- Scale, gut, and clean fish as soon as they're caught.
- Live fish can be kept on stringers or in live wells, as long as they have enough water and enough room to move and breathe.
- Wrap fish, both whole and cleaned, in water-tight plastic and store on ice.
- Keep 3 to 4 inches of ice on the bottom of the cooler. Alternate layers of fish and ice.
- Store the cooler out of the sun and cover with a blanket.
- Once home, eat fresh fish within 1 to 2 days or freeze them. For top quality, use frozen fish within 3 to 6 months.

Shellfish:

- Crabs, lobsters, and other shellfish must be kept alive until cooked.
- Store in live wells or out of water in a bushel or laundry basket under wet burlap or seaweed.
- Crabs and lobsters are best eaten the day they're caught.
- Live oysters should be cooked within 7 to 10 days.
- Live mussels and clams should be cooked within 4 to 5 days.
- Eating raw shellfish is extremely dangerous. People with liver disorders or weakened immune systems are especially at risk.

Cleanup

Cleanup on the boat is similar to cleanup in the wild. Bring disposable wipes for handwashing, and bag up all your trash to dispose of when you return to shore.

General Rules for Outdoor Food Safety

Plan ahead: decide what you are going to eat and how you are going to cook it; then plan what equipment you will need.

- Pack safely: use a cooler if car-camping or boating, or pack foods in the frozen state with a cold source if hiking or backpacking. Keep raw foods separate from other foods. Never bring meat or poultry products without a cold source to keep them safe.
- Bring disposable wipes or biodegradable soap for hand- and dishwashing.
- Plan on carrying bottled water for drinking. Otherwise, boil water or use water purification tablets.
- Burn leftover food and carry trash back with you. Do not leave trash in the wild or throw it off your boat.
- If using a cooler, leftover food is safe only if the cooler still has ice in it. Otherwise, discard leftover food.
- Whether in the wild or on the high seas, protect yourself and your family by washing your hands before and after handling food.

For additional food safety information about meat, poultry, or eggs, call the toll-free USDA Meat and Poultry Hotline at 1 (800) 535-4555; Washington, DC area, (202) 720-3333; TTY: 1 (800) 256-7072. It is staffed by home economists, registered dietitians, and food technologists weekdays from 10 a.m. to 4 p.m. Eastern time, year round. An extensive selection of food safety recordings can be heard 24 hours a day using a touch-tone phone.

Information is also available from the FSIS Web site: www.fsis.usda.gov

How to Make a Cardboard Box Oven

Supplies

- 1 corrugated cardboard box, approx. 18"H x 18"W x 12"D, top cut on 3 sides
- 1 roll heavy duty aluminum foil
- 6 heavy metal unpainted coat hangers or heavy gauge wire
- 1 roll duct tape
- 1 wire cutters
- 1 pliers
- 1 punch (to put holes in cardboard)
- 1 ruler
- 1 pencil or pen
- 1 piece of cord or a rock

Instructions

Using your cardboard box where the top has been opened on three sides (instead of down the middle) and your roll of heavy duty aluminum foil, begin to line the inside of the box with the shiny side of the foil turned toward the inside of the box. It's easiest to start with the outside edge of the "door" to the oven and continue down into the box, along the bottom of the box, and back up the other side (see diagram) all with one piece of foil. After you have completed those sides, then start on one of the remaining uncovered outside edges and continue down inside the box and back up the last remaining uncovered side. Always make sure you have enough overhang with the foil so you can secure the foil to the outside of the box. Use duct tape to secure all edges to the outside of the box and to cover all seams in the foil.

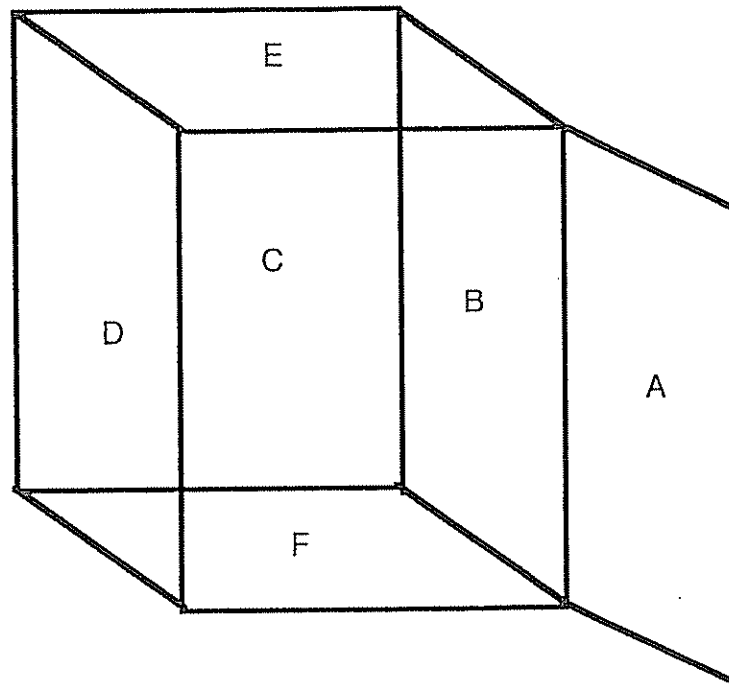
To make the racks for your oven, use either coat hangers or pieces of heavy gauge wire, cut it to extend through the sides of the box with approximately a 3" extension outside the box on each side. Placement for the baking rack should be just a little over half the height of your oven. Use three wires placed approximately 3" from the back and 3" between wires so as to hold even small pans. Measure and mark where the holes should be punched. Punch holes for wire to go through. Insert the wires through the box and bend down the wires that extend through each side of the box. Repeat this same process for another rack approximately 2" from the bottom of the box. This rack can be used to hold your heat source. If you do not wish to make a second rack, you must make some small balls out of aluminum foil to hold your heat source off the bottom of the box.

Tape over all of the ends of the wires that you have bent down on the outside of the box. Also tape over any other exposed cardboard on the inside of the box. You may also want to put a piece of tape over the foil where the "hinge" of the door is to keep the foil from tearing after repeated opening and closing of the door.

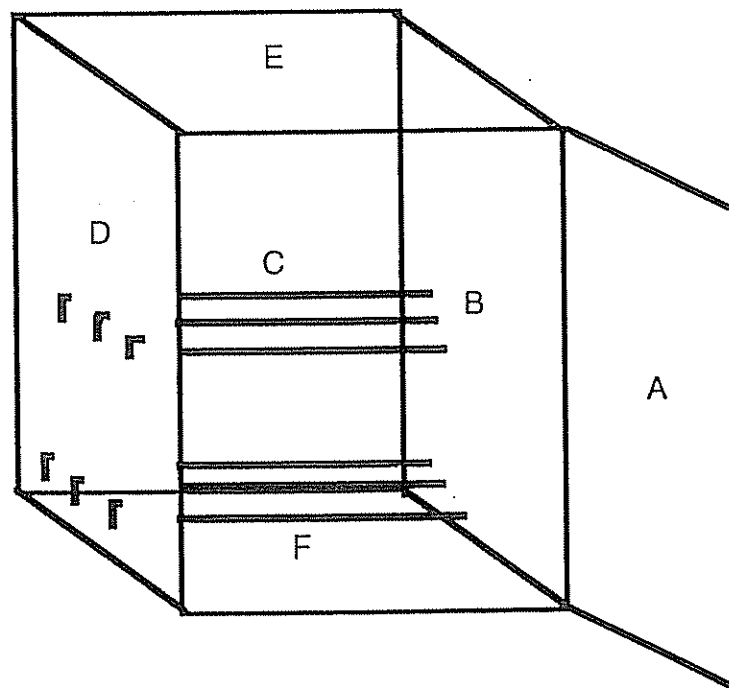
To make a latch for your door, you can punch an extra hole in the side of the box away from the "hinge" edge and put one more small piece of wire through it with the wire bent down on both ends, but taped on the inside of the box. This leaves you with a hook on the outside. Then put a hole in the door with a piece of cord running through it that you can tie to the hook. Tape over the cord on the inside of the door. Another alternative is to just sit a rock in front of the door.

Notes: The size of the box can vary but should be close to these dimensions. If you want to use a larger box you will have to experiment with your fuel source to adjust the heat level in the box. Your box can also be arranged so that the door opens up or down instead of sideways; just install your shelves from the other direction.

CARDBOARD BOX OVEN



Line inside of box with heavy duty foil with the shiny side toward the inside of the box. Use long continuous pieces where possible. Cover inside of A, B, C, & D with 1 strip securing edges with duct tape. Repeat process with E, C, & F. Be sure to cover all inside surfaces.



Use pieces of heavy wire or unpainted coat hangers to make racks. Cut each piece about six inches longer than you need to allow enough to secure them on the outside. Place wires close enough together to give full support for small pans. One or two shelves can be made depending upon your needs. A low shelf can support your pan of coals.

Using your Cardboard Box Oven

One of the most important things to remember is to have your oven at the proper temperature and keep the temperature constant. The general rule to follow to determine the temperature of the oven is that each charcoal briquette produces approximately 50 degrees of heat.

Temperature	Briquettes
150	3
200	4
250	5
300	6
350	7
400	8 etc.

Don't try to cut a briquette in half. If the required temperature is in between, use an extra briquette. Then just check the food more often and perhaps reduce the cooking time. Keep in mind also that if the temperature is cold outside it will affect the cooking time.

WARNING: YOUR OVEN CAN GET HOT ON THE OUTSIDE TOO!

When you're using your oven don't place it on anything that can burn, scorch, or melt. The oven will get very warm on the outside too. You can place the oven on a heavy wooden picnic table with a couple of sheets of aluminum foil under it or perhaps on the cleared ground out of the way where it won't get bumped into.

Don't light your charcoal in the box. Prepare your briquettes in your fire ring and when they are hot use tongs to put the required number of briquettes in a pan that you will place in the oven. Don't forget the pan gets hot too so don't try to carry it with your bare hands. If you are baking something that will take more than about 45 minutes you will have to replenish the coals that are burning down with other hot coals.

Your box oven can be used for anything that you would cook in your oven at home as long as the size and the weight of the food is not too much. You can use it to heat your metal plates on a cold morning so your breakfast doesn't get cold as fast. You also can use it to keep foods warm while you're making other parts of the meal. Three briquettes (150 degrees) are generally good for warming or keeping things warm.

RECIPES

CUSTARD PIE

4 eggs or equivalent
1/2 cup sugar or measurable substitute
1/4 tsp. salt
2 cups milk (2 % or skim can be used)
1 tsp. vanilla
1 9" unbaked pastry shell

Preheat oven to 400 degrees. Combine all ingredients and mix until thoroughly blended. Spoon or pour slowly into pastry-lined pie pan. Bake at 400 degrees for approximately 35 minutes.

A variety of additions can be made to this recipe to suit tastes.

- 1 cup shredded coconut
- Canned pie fillings to cover the bottom of the pastry shell
- Semi-sweet chocolate pieces
- Caramel pieces
- Bananas

Use your imagination!

BROWN BETTY

3 cups sliced apples
2 cups of soft bread crumbs or small cubes
1/3 cup brown sugar
1 tsp. cinnamon
4 tbsp. butter or margarine, melted
3/4 cup orange juice

Preheat oven to 350 degrees. While the oven is preheating put your butter or margarine in a metal cup in the oven to melt. Mix apples, bread crumbs, brown sugar and cinnamon. Place in a buttered baking dish and over the top pour the melted butter and the orange juice. Bake about 45 minutes. May be served with cool whip.

Variation: Add some fresh peaches in with apples

LIPTONS ZESTY CHICKEN
FROM AN ADVERTISEMENT IN READER'S DIGEST
BY LIPTON SECRETS

SERVES 4

4 boneless skinless chicken breast halves (about 1 pound)
3 tablespoons margarine or butter, melted
1 envelope Lipton Recipe Secrets Fiesta Herb with Red Pepper Soup Mix
1/2 cup plain dry bread crumbs

1. Preheat oven to 350F
2. Dip chicken in melted margarine then in Fiesta Herb with Red Pepper Soup Mix combined with bread crumbs. In 13X9-inch baking pan, arrange chicken, drizzle with remaining margarine.
3. Bake 20 minutes or until done.

STACKED BOBS

1 pound stew beef
6-12 medium mushroom caps
4 pineapple rings
1 green pepper
1 medium sweet onion
6 wooden skewers

INSTRUCTIONS

Remove fat and gristle from stew beef. Cut into bite size pieces. Marinate in Teriyaki sauce overnight.

Cut green pepper, onions, pineapple, and mushrooms into bite size pieces.

Put meat, pepper, onion, mushroom, pineapple, meat pepper onion mushroom and pineapple on a skewer. The meat internal temperature can be controlled by how close the meat is placed to the other items. The further away, the more the meat will be cooked. If jammed together, the meat will be rare. Place the 6 skewers across a metal cooking pan and bake in the oven for 12-15 minutes at 350F (7 briquettes)

MINI MEAT BUNDLES
FROM AN ADVERTISEMENT IN READER'S DIGEST
BY LIPTON SECRETS

SERVES 6

1 env LIPTON RECIPE SECRETS FIESTA HERB WITH RED PEPPER SOUP MIX

1 1/2 pounds ground beef

1 1/2 cups fresh bread crumbs

4 green onions, chopped

1 large carrot]

2 eggs

3 slices bacon, each cut into 4 pieces

1. Heat oven to 350F
2. In large bowl, combine all ingredients except bacon; shape into 6 oval loaves. Arrange in baking or roasting pan sprayed with non-stick cooking spray. Arrange 2 pieces of bacon on top of each loaf.
3. Bake 45 minutes or until done.

ONION-BAKED PORK CHOPS
FROM AN AD IN READER'S DIGEST
BY LIPTON SECRETS

MAKES 4 SERVINGS

1 env. "LIPTON RECIPE SECRETS ONION SOUP MIX"

1/2 cup dry bread crumbs

1 egg, well beaten

4 pork chops, 1" thick (about 3 pounds)

1. Heat oven to 375F.
2. In shallow plate, combine onion soup mix with bread crumbs.
3. Place egg in shallow bowl. Dip chops in egg then bread crumb mixture, coating well. Place in lightly greased 13X9-inch baking or roasting pan and drizzle, if desired, with melted margarine.
4. Bake 30 minutes or until chops are done turning once.
5. Serve.

STEAK SAUCE
CONTRIBUTED BY BARNACLE BILL'S RESTAURANT
WHITFORD, MD

COMBINE ITALIAN SEASONING, WATER, CHOPPED ONIONS AND SMOKED KNUCKLE AND SIMMER FOR 3 1/2 TO 4 HOURS. STRAIN. ADD BEEF STOCK (CONCENTRATE GRAVY MASTER)

FOR CHICKEN SAUCE, ADD SOUR CREAM INSTEAD OF BEEF STOCK.

ROUND GORDON BLUE

INGREDIENTS (SERVES 4)

2 POUNDS THIN SLICED ROUND STEAK (1/2 POUND PER PERSON)

6 - 12 FRESH MEDIUM MUSHROOMS

1 MEDIUM SWEET ONION

4 SLICES (MEDIUM THICK) VIRGINIA BAKED HAM

4 PIECES MONTEREY JACK CHEESE

1 CAN STEWED TOMATO

1 CAN TOMATO SAUCE

12 ROUND WOODEN TOOTH PICKS

DIRECTIONS

CLEAN AND DRY MUSHROOMS. SLICE LENGTHWISE.

LIGHTLY BROWN MEAT.

SAUTE MUSHROOMS AND ONIONS.

LAY MEAT FLAT. ADD HAM SLICE AND CHEESE.

ROLL MEAT UP. SECURE WITH THREE TOOTH PICKS

PUT FOUR PREPARED ROUND STEAKS IN COOKING PAN.

ADD MIXTURE OF STEWED TOMATO, TOMATO SAUCE, ONIONS AND MUSHROOMS.

COOK IN 400F (8 BRIQUETTES) UNTIL CHEESE MELTS (APPROX 20 MINUTES)

MONKEY BREAD

Ingredients per patrol;

2 tubes of plain biscuits (any brand 10 to a pack)

2 tbs. of cinnamon

8 tbs. of granulated sugar

4 pats of butter

1 gallon size zip lock bag

1 aluminum pie plate

Directions

Mix cinnamon & sugar in zip lock bag

Cut each biscuit into 4 parts

Place a few at a time in cinnamon and sugar mixture

Shake well to coat evenly

Pile coated balls pyramid style on pie plate

Cut pats of butter in half and place all over the pyramid

Bake in box oven at 350 degrees approximately 15 minutes

Note: Cooking time may take longer if the oven door is opened often or if the door doesn't close well.