



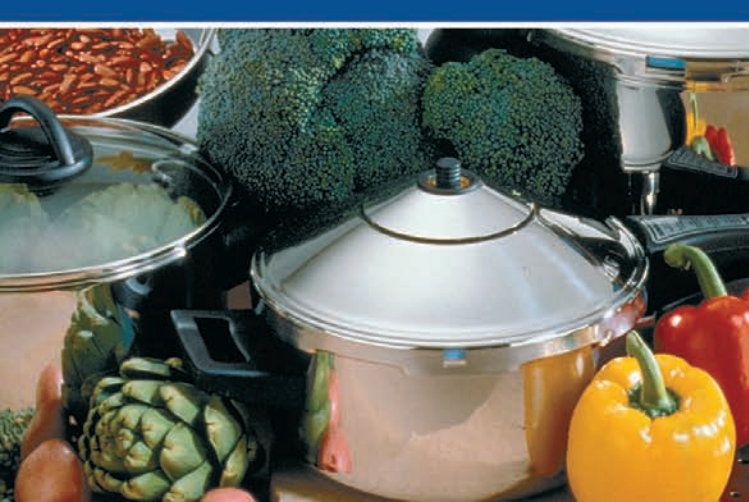
BONUS!
Excerpts from the
K.I.S.S. COOKBOOK 

GOOD OLD BOAT

The sailing magazine for the rest of us!

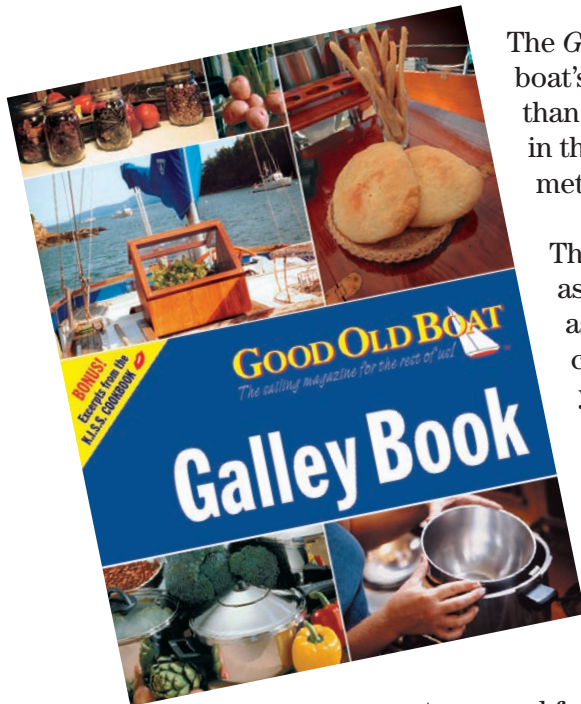


Galley Book



GOOD OLD BOAT


The sailing magazine for the rest of us!



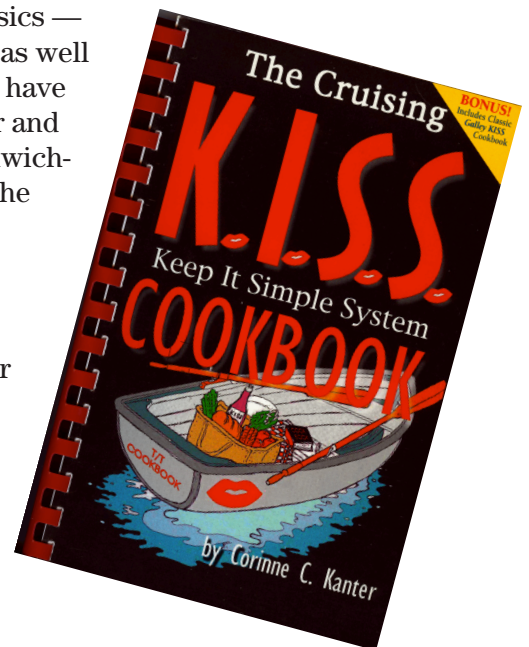
The *Good Old Boat Galley Book* is about simplifying life in your boat's galley, which, no matter how grand and elegant, is smaller than the smallest guest bathroom in any home. Yet, while working in this restricted place, some sailors actually turn out very gourmet fare!

This collection of articles isn't so much about what they cook as it is about how they manage to do so! It's about making do as well as about doing without. No oven in your galley? You can bake on a stovetop. No refrigerator or ice? No problem — you can eat rather well without a cooler. This book is about harvesting the bounty of the seas that surround you as much as it is about storing and preserving the foods you have available. It's about saving on cooking fuel through pressure cooking. It's about baking bread, gardening aboard, making yogurts, growing sprouts, and producing hearty one-pot meals. It's about the elegance of simplicity.

It's also about the basics — stoves and fuels and provisioning, as well as tips, tricks and tools to make sure you never have to head for shore just because you're hungry! Even if peanut butter and jelly is the extent of your "cooking" ability, there are ideas for sandwiches and pizzas that will impress the crew or guests you meet along the way.

Along with the *Good Old Boat* articles are excerpts from Corinne Kanter's wonderful book, *The Cruising K.I.S.S. (Keep It Simple System) Cookbook*. And, throughout, there are recipes to whet your appetite. Excerpts from *K.I.S.S.* will be noted by .

Even if it's a tight fit, please join us for some fellowship in the *Good Old Boat* galley. Welcome aboard!





Karen Larson

Founding Editor
Good Old Boat Magazine

GOOD OLD BOAT

The sailing magazine for the rest of us!



Thanks for purchasing our *Good Old Boat Galley Book*! We're pleased to provide you with this collection of articles. The documents on this disk are in Adobe PDF format and are compatible with Acrobat Reader version 3.0 and higher.

A few comments about this CD-ROM and its contents:

- Please do not copy this disk or its contents to distribute to friends (or anyone else for that matter). All material contained on this disk is copyrighted by *Good Old Boat* magazine and SAILco Press. This is how we make our living . . . and you would like for us to stick around in the future, wouldn't you?
- The size of the pages in our magazine is 8.125 x 10.875 inches. Some content might be clipped at the margins if you print it at full size on 8.5 x 11-inch paper. You can get around this by printing at a slightly reduced size.

A few notes on navigation:

- At the side of some PDF viewers there is a thumbnail page display (called either "Thumbnails" or "Pages"). Clicking on one of these pages is a good way to get around a big magazine document.
- Try the magnifying glass in the PDF viewer toolbar. Clicking with it makes the screen image larger. If you use the Control key (Windows) or Option key (Mac) when clicking with it, the image will get smaller.
- You can click on an article title in the Contents page or a recipe in the Recipe Index for quick navigation to the correct page.

We hope you get as much enjoyment from this CD-ROM as we did gathering these articles for you!

Click on an article title below or on a recipe in the Recipe Index for quick navigation.

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Sailor and writer Webb Chiles is credited with saying something to the effect that when the engine in his boat died he was set free — no maintenance chores, no need to get fuel, no more worries associated with whether it would run or not.

I am married to a refrigeration engineer who was prepared to design the onboard refrigerator to beat all refrigerators, but the choice to live without an icebox during a recent vacation set us free in ways we hadn't expected. There was no need to run to civilization in a quest for ice. We had no worries about the quality of the food left on little ice or concerns about what must be eaten soon because it surely must have been thawed too long. And we didn't have to run the engine to keep a refrigerator alive.

Above all, our icebox was no longer a bottomless cubicle, the purpose of which seemed to be storing ice and little else. It became, instead, a marvelous vast storehouse for flour, spices, and canned goods. It offered stowage space the likes of which I'd never had on our bilgeless racer/cruiser.

The biggest freedom was in the escape from civilization. We

Honey, I tossed

generally take our vacation cruises to the north shore of Lake Superior and Isle Royale National Park. In that part of the world, marinas and facilities are not handy. Civilization is usually at least a day's sail away. With ice melting in about six days, our stays in the wilderness were limited to about four days at a time or longer if we went without once the ice was gone, but planning for the transition is a bit challenging.

To avoid the awkward stage, we had proposed two possibilities: build a refrigerator or learn to live without ice. We chose to try the *sans* ice approach first. We may never again consider the alternative. Our diesel engine thanks us for making this choice, since it won't have the wear and tear associated with running a couple of hours a day for the sake of cold food. And we'll avoid the need to return to civilization in search of fuel to power the engine that keeps things cold so we don't need to return to civilization to buy ice. (If that isn't a Catch-22, what is?)

My first major adjustment, as provisioning officer onboard *Mystic*, was in cooking to avoid leftovers. At home I thrive on making large batches — pots of spaghetti for example — so I can freeze the excess for later use. Frozen blocks of spaghetti sauce and other mass-produced meals also helped when

we were living with a cooler. They served as “ice units” until thawed. Then we ate them. On board, with an ice chest for food storage, I couldn't cook by the potful, but saving leftovers to eat another day was not much of a problem.

With our changed lifestyle, however, I began buying the smallest cans and jars and thinking critically about how much rice or pasta to cook. It's a science. You don't want to go hungry, but on the flip side, you don't want to encourage overeating. And you certainly don't want to throw food away. We found, fortunately, that leftovers easily last one day, so when I miscalculated, we polished off the rest the following lunch or dinner. Some leftovers worked out nicely as omelet filling for the next day's breakfast.

Eggs don't need ice

Omelets require eggs, of course, and we typically think of eggs as something requiring refrigeration. In her book, *Cooking on the Go*, (from 1971 and unfortunately out of print) Janet Groene argues that many foods do not need refrigeration:

“Because we have roomy refrigerators at home, we get in the

habit of chilling many items that can be kept safely without refrigeration. Cheeses and sausages traveled the world long before the days of refrigerators or ice lockers.

“Of course you keep fresh meats chilled for safety, but we have kept cooked meats for second and even third appearances on our table. Packaged bacon doesn't last more than three days in warm temperatures, but well-salted pork and slab bacon, as well as cured hams, date back hundreds of years before the discovery of electricity ... it really isn't necessary to go without many of the items you keep refrigerated at home.”

Groene notes that not too long ago people packed fresh farm eggs in salt, where they kept for a year. In three and a half weeks, we never had an egg go bad onboard *Mystic*, although I was skeptical at first. There are a number of actions you can take to help eggs last. One set of routines deals with sealing the shells. These involve smearing them with shortening, Vaseline, or salad oil. Other people swear by dipping them exactly two seconds in boiling water. Another set of routines involves keeping the inner membrane moist by turning the eggs regularly. Mother hens do this on

by Karen Larson
illustrations by
Dave Chase

out the cooler

the nest. Just to be safe, I decided to grease the shells with Vaseline AND turn them every day. It's possible that either method would have been enough.

We are not big egg eaters at home, typically, but we left for vacation with nearly four dozen eggs, since I planned to use them in baking, hard boiled in salads, and in omelet making.

In the beginning I was cautious and tested each egg before using it. People who have lived without refrigerators suggest that you crack each egg into a separate container and not directly into your frying pan or bowl full of ingredients, so if it is bad, you can toss just the egg and not the rest of your meal. Even before breaking an egg, you can test it in a glass of water. If the egg has developed gas and floats, it's bad. If it sinks to the bottom of the glass, it's good. It's a bit like testing for witches in Salem. If she floats, she's a witch and has to be burned at the stake. If she sinks, what a pity. We'll let the record show that she wasn't a witch. This time-honored test works better for eggs than people.

Cheese tricks

Refrigerators and coolers are also nice for keeping cheese. How do you go three weeks without cheese, we wondered. As it turns out, grated parmesan can last, as can cheese that comes in wax. In her book, *The Care and Feeding of Sailing Crew*, Lin Pardey talks of long-life processed cheese that can last up to two years without refrigeration in sealed containers, and of other wonders, such as canned cheese.

Lin probably led the way for all of us who have tried the non-refrigerated lifestyle. Not that she did so on purpose. She appears to enjoy cooking, and she and Larry both prefer fresh foods. So Lin prizes her well-insulated cooler on *Talesin*. Unfortunately the Pardeys' icebox runs out of ice on long passages and at anchor, just as ours does. As a result, Lin wrote *The Care and Feeding* in 1980 and republished it with new information in 1995. It's a terrific reference for anyone provisioning for a long trip or planning to do without ice.

Lin reports that waxed cheeses keep perfectly for up to two months

at temperatures below 55°F.

Unwaxed cheese, she says, "should be wiped lightly with vinegar and then wrapped in plastic wrap and stored where it will not be bumped around too much." She also discusses storage of feta and hard cheeses in oil.

I read Lin's book after we returned from our trip, however I had heard that cheese stored in olive oil will keep, so I tried that. I kept chunks of cheddar and havarti for three weeks in containers full of oil. The Tupperware container leaked and was a mess to store, but a jar with a tight lid worked very well. This process offers a nice way to store oil for cooking, too. The cheddar lasted well, while the softer havarti turned very mushy before we returned to civilization. Hard cheese is the key for this storage technique. Lin mentions in her book that cheese becomes "creamier" as it ages with this technique. I'd second that opinion. Lin's directions for storing cheese are more elaborate than mine and sound like a process worth trying. She also mentions the concept of waxing your own cheeses and of the "drunken Stilton." All of this is in the chapter she titles "Day 37" and should be in either version of her book. The Pardeys' books are available from Paradise Cay Publications, 800-736-4509.

Baking aboard

The next obvious problem with life without an icebox is what to do when the bread turns blue. Over the past year or two we'd experimented with onboard bread baking. We'd cooked bread in our pressure cooker, pan-fried Indian fry bread, and baked a couple of yeast loaves. We make muffins regularly, but creating good bread was a bigger challenge. I wasn't crazy about the taste of the pressure-cooked bread, and baking yeast loaves seemed messy and time-consuming. This year, however, I came armed with 40 pounds of white and wheat flour (twice as much as we needed, it turns out) and a number of new

Bread recipe (from *The James Beard Cookbook*, 1959*)

1 package yeast	2 cups lukewarm water
2 Tbs. sugar	1 Tbs. salt
5-7 cups flour	(one egg white, if desired)

Dissolve the yeast in the lukewarm water in a large bowl. Add sugar and salt and dissolve them. Gradually add flour.

Turn out on a table and knead. Cover with the bowl and let it rest for 10 minutes. Knead.

Let it rise in the bowl for another 1-2 hours until it's double in bulk. Knead.

Form into two loaves (French-style long ones, round ones in an oven-proof bowl, regular pan loaves, etc.). Sprinkle the bottom of each container with cornmeal and place the bread on it. You don't need to grease these pans. Slash the tops of the bread and spread with an egg white, if desired. Let the bread rise another five minutes.

Place in a cold oven and turn it on to 400. It should cook in 35 minutes. (In reality, with our boat oven, we turn the temperature on about halfway, whatever that setting might be. Then when we think about it, we turn the temperature up all the way. We remove the bread when it looks done, but it probably takes longer than 35 minutes.)

**My copy was purchased in the '70s, but I guess it is a bit of a relic.*



yeast recipes. The second recipe we tried turned out to be such a winner that we never tried another one. It simplified the risings and didn't seem so messy somehow. It was a mock French bread from the *James Beard Cookbook*, and we liked it so much we'll be cooking our own bread with all that extra flour this winter even though Minneapolis abounds with wonderful bread shops. (See sidebar for recipe.)

With each baking I made two small loaves. The first we consumed almost in its entirety straight from the oven. There may

not be anything better than warm bread, and we reveled in the luxury of having it. The other loaf lasted a couple of days. Now that we've discovered this easy bread, we may leave the dock with fewer loaves of the store variety. We prefer those we can cook ourselves, and the vacation lifestyle seems to encourage the breadbaking routine. Marilyn Palley (see sidebar on Page 62) recommends a book called, *Fast Breads!* by Howard Early and Glenda Morris.

Meat or meatless meals

Meat is another issue for the sans-cooler cook. While we don't eat as much meat as we used to, we weren't ready to go without. Canned chicken and ham are available on the grocery store shelves in small tuna-sized containers. I also found small containers of corned beef and tiny little hams, canned shrimp and crab meat, salmon, and fish balls.

There are a number of spreads along the lines of deviled ham and chicken. And of course there are small canned hot dogs (masquerading as sausages), Spam and other

You what?

Tossed out the cooler?

The first time Karen suggested that we spend a whole vacation without ice, I talked her out of it. I had visions of a very unpleasant couple of weeks eating some of my least favorite foods ... all from cans.

I'd been a refrigeration engineer for about 29 years, and I had some strong ideas about what kind of refrigeration system should be installed in our C&C 30. I'd been designing the system in my head and on paper for about five years. I wanted something with less than half the run time of currently available systems, because I knew that once there was a refrigeration system on board, it would dramatically increase the energy budget. I'd heard horror stories of boats that have to run their engines one, and in some cases, two hours a day to keep that little tiny box cold. I didn't want the noise, wear, and fuel consumption. The design that I came up with was complicated and unproven, and it would add 70 to 100 pounds to the weight of the boat. Even doing all the work myself, the parts would not be cheap. Although I targeted much higher efficiency, the boat's upgraded electrical system would be taxed to about the reasonable limits of its capacity. I had put off building this monster for five years. Ice is really simple, and 70 pounds of it holds our icebox for six to seven days. We'd have to live on the boat forever to pay off the refrigeration system with the savings in ice.

The problem was that we really wanted more range on our vacations. We wanted to go out and stay out for more like a month without having to resupply anything. We'd solved most of the problems in doing that by the time Karen suggested going iceless the second time. She was more insistent this time. She wanted to do the research for an article, she said. That did it; I caved in. Well, almost caved in. I rushed out and bought a pressure canner and quickly canned some pork and turkey before we left. These meats proved tasty, and I will can more for next season, but frankly we didn't need them.

We ate very well for more than three weeks without any ice or refrigeration. The food was good. I enjoyed all the meals except one, which is probably better on average than I do ashore. From a systems standpoint, Karen solved the problem with the lowest-cost, lightest-weight option. The design five years abrewing in my head didn't compare with zero weight, zero cost, and good meals anyway. Karen truly had set us free.

I was so impressed with what she had accomplished that I suggested that we get rid of the refrigerator at home. It is a noisy, poorly designed thing that just might last forever out of sheer nastiness. She thought that might be going too far.

Moderation in all things, I guess.

Jerry Powlas

"delicacies." I also planned to supplement our supplies of meat with completely acceptable no-meat pasta meals. Jerry wasn't so sure he'd find even the occasional vegetarian meal to be all that acceptable. There's nothing quite like being held captive a day or two from a grocery store and learning there's nothing on board you like to eat. He may have feared this new "adventure" to be a ruse of mine to take a few pounds off him when he would be unable to defend himself. (*See sidebar at left for his thoughts.*)

I had just finished reading Don Casey's latest book, *Dragged Aboard*, in which he makes it seem like anyone is capable of canning meat. I was inspired by this and shared the book with Jerry, who went on a dedicated hunt for a larger pressure cooker — one capable of doing canning. The small one on our boat was not up to the task. In the days of microwaves, instant meals, and grazing, pressure cookers are becoming a thing of the past. Small ones, such as our boat pressure cooker, were available, but large ones may be disappearing from the North American scene along with buggy whips.

Jerry's search began with Target and K-Mart, where the small ones can be found, and moved to an upscale home cooking specialty store, where a sweet young clerk asked in all innocence, "Pressure cooker? Is it an electric appliance?" and led him to the toasters and coffee makers. Once he found the pressure cooker section, there were only small ones and another clerk who asked, "What do you do with one of these anyway?"

The obvious answer, for anyone who grew up with a mother who used one frequently, is you blow up your kitchen with these devices. It seems we all have fear-of-pressure-cookers tales to tell. Perhaps that's why they're falling from favor these days. Jerry finally landed a full-sized canning pressure cooker at the Fleet Farm store, a chain in our part of the country that caters to farmers, truckers, and other independent types.

By now, however, we were only a couple of weeks away from the start of our vacation, and we were in the usual pre-trip blitzkrieg of vacation preparations and work project wrap-ups. I was no longer interested in canning additional meat for our trip. One evening we invited Jerry's younger daughter over for dinner, and I prepared a pork roast and simultaneously baked a couple of turkey thighs for use in the next night's meal. Jessie is a marvelous pitch-in gung-ho daughter, and before the evening was over, the three of us had canned the remaining pork roast and turkey as a great group activity. We left for the trip with 11 half-pint jars of the best canned meat we'd ever tasted. Next year we'll do more of this and include cubed beef and hamburger.

Mayo's not untouchable

We hear so many stories about mayonnaise and are likely to be confused by them. I'm no expert on the subject, but my current level of understanding is that if the stuff is kept pure, it can last. Mayonnaise mixed with other foods must be kept cool, it would seem. And you shouldn't "contaminate" a jar of mayonnaise by sticking a utensil back in there after it has been in contact with other food.

We have heard of some people getting small packages of mayonnaise from fast food places for their boats. That works, too. We bought small squeeze bottles of mayo, and one lasted two weeks. It was emptied before it began to smell or cause any concerns. Unopened jars of mayonnaise sit on grocery store shelves for months. As it turns out, they can do the same once they're opened, as long as other food doesn't come into contact with the mayonnaise. I'd love to understand why this is so and will welcome further dialogue on this subject for our Mail Buoy column.

Milk is a problem

Cold milk only lasts a week or so. If it isn't kept cold, the number of days diminish dramatically, of course. I like milk. As an aging woman, I need to drink it or get my calcium in some other form. So I missed this on our vacation. I bought powdered milk, which we used in cooking, but I used it on cereal twice and never again. I never drank it straight. Jerry can happily drink that stuff, and I really wanted to be able to do so also. But life's too short. I ate cheese and took my vitamins. I'm told that UHT (ultra heat-treated) milk is a passable substitute, but I don't have any experience with it.

The following information is from Michael Greenwald's *The Cruising Chef Cookbook*, an excellent cooking resource I've just discovered (Paradise Cay Publications, 1996.):

"Pasteurized milk takes up precious space in the refrigerator and spoils within a few weeks. Long life, ultra heat-treated milk is an unrefrigerated product which comes in a paper box. It tastes as fresh as pasteurized milk, contains more vitamins, and lasts six months without refrigeration. It comes in half-quart and quart (liter) boxes which are slightly more expensive than refrigerated milk. This product is hard to find in the USA but is the most common way of buying milk in many parts of the world."

Margarine lasts well

Butter and margarine are also part of the non-cooler cooking equation. I had read somewhere that stick margarine, softened and repackaged in plastic tub containers, keeps well without cooling. This is true. I had feared that it would turn into liquid gold without the help of an icebox, but it did not melt. Toward the end of our vacation, when we did a touch-and-go in civilization for diesel fuel and a pumpout, I was able to buy a few groceries at a camping store. We were running short on margarine, so I bought a couple of sticks of butter. I

repackaged these sticks in the margarine tubs, and the butter lasted as well as the margarine did.

Fruits, vegetables suffer

By the end of three weeks, we were left with apples, oranges, grapefruit, potatoes, onions, garlic, and cabbage. We also had a large assortment of canned fruits and vegetables. The other fresh fruits and vegetables had long since vanished, and even the apples and oranges had seen better days. I had read about a West Marine product called Evert-Fresh bags, which keep certain fruits and vegetables fresh longer. These bags were particularly recommended for lettuce. The lettuce must be absolutely dry when placed in the bag, however. Unfortunately I shop at one of those stores which tries to impress shoppers with a fine-mist spray on the leaf lettuce and spinach. Even when I'm not provisioning for a trip, I hate that "blamed" mist.

I waited until the last day possible to purchase the fresh foods for our trip and wound up at home trying to dry out the leaf lettuce and fresh spinach. Something halfway, but not completely, dry went into the Evert-Fresh bags. The result was that these foods didn't last as long as they might have in a fresh-air environment. Wiser now, I will try this again with improved drying on our next vacation.

Ice for drinks? Come on!

Cold drinks aren't terribly important to us. We didn't miss ice for our drinks, since we don't tend to put ice in them anyway. However, Lake Superior stays cold all summer long. The 50°F water is an excellent cooler for cans and bottles, if we choose to use it that way. We found that storing cans next to the hull below the waterline was enough for us.


We did meet one cruising couple traveling with a freezer, who offered to give us some ice, since they felt so sorry for us. But I had to turn down the offer. What could we



do with a small supply of ice, when our cooler was already filled with bags of flour? Another pair of friends who anticipated seeing us on that vacation had just gotten their cantankerous refrigerator to work after several years of frustration. They were so self-assured now with their working freezer that they threatened to sail by pummeling us with frozen Brussels sprouts. This wasn't pity. This was revenge ... perhaps because we had chosen the easy way out.

No big deal, really

Living without the cooler was not the challenge I had thought it would be, but I wasn't alone in believing that we were facing a tremendous lifestyle change and challenge. When buying supplies at the grocery store one day, my collection of purchases looked a bit unusual, so I mentioned to the clerk there that my husband and I were going off into the wilderness for three and a half weeks without refrigeration or a cooler. The clerk was so impressed you'd have thought we were heading off to scale Mt. Everest without gear.

But in fact Jerry and I were just going back in time to great-grandmother's day ... to a time even before the ice man came around from door to door ... back to a time when people canned and prepared food for the seasons when they wouldn't have any. Most of these people never had the luxury of sailing off to remote places in sailing yachts and living from the stores they had aboard. (Even the menus of the sailors of the same time period were far from grand.) Their lives seemed hard and uncompromising, while we experienced the best vacation we have ever had. There were no hardships. We were better off without the trappings of civilization because we didn't experience the tyranny of ice or endure the rattlings of the engine in order to keep a refrigerator going. Great-grandmother never had it so good. 

The truth about Terry...


Reese and Marilyn Palley take my primitive experiments to the next level of sophistication. They typically go cruising without meat and other fresh foods which are hard to store and which they believe cause seasickness and have other damaging effects on the body. Their article in Cruising World in May 1998 explains their unconventional approach to eating aboard. In this note, Marilyn expands the concept into a philosophy.

Being at sea on a sailboat is empowering. Leave behind on land all excess extravagances and hassles. Simplify. Simplify. Enjoy the basics. We have insulated ourselves psychologically and physically from a natural reality and convinced ourselves that we must have everything. Two life lessons I learned after my first time at sea — an Atlantic crossing from Dakar, Africa (no supermarkets) to Antigua — are first, the elimination of “stuff,” and second, the need for self-reliance in problem solving. One becomes “soft” on land. Without a store or telephone at sea, we have only ourselves to handle our needs and crises. How rewarding! Go to sea and take charge of your world.

**by Marilyn
Arnold Palley**

Terry, who answered our ad for crew, arrived in the middle of the night. He left his comfortable English home and lifestyle to fulfill his dream of sailing across an ocean. We were pleased and grateful to have his presence, though we were concerned about his excess weight. His concern about us also grew as he toured our boat's galley. No refrigeration. Our larder was full of canned goods, grated parmesan cheese, UHT milk, cabbage, potatoes, onions, and limes. He was a meat man; his request for his “last supper” before we headed out to sea reflected this preference.

Three days of seasickness later, his system was cleansed. The wonderful “Sea Change” worked its magic on Terry. As his spirit resurfaced, so did his culinary creativity. With the *Fast Breads!* recipe book in hand, he insisted on being chef. We dined on three-course meals, all healthy and simple — good “diner” eats! Comfort food, easy to digest, nourishing, and tasty. “Gourmet” is a matter of perspective.

Arriving 23 days later at our destination, we celebrated at a local elegant restaurant. The dictionary definition of elegance is simplicity. As our sense of taste had heightened from being at sea, pasta al fresco was our choice. The full-length mirror of the restaurant's decor revealed a beautiful room and a much thinner, healthier Terry. 

No cooler? What did you EAT?

Perhaps I can share a few menus — not recipes — I'm all for simple, uncomplicated onboard meals. I don't go along on sailing trips as the galley slave. I want to be on deck sailing and sightseeing, not below creating gourmet delights. My ideas were culled from those who've been there and done that: sailors Cathy and Dan Hauptert, sailors Ken and Pat O'Driscoll (who introduced us to cold pasta salad even though they were using a refrigerator), sailing writers Reese and Marilyn Palley (whose article in *Cruising World* in May 1998 was very timely and helpful), author Janet Groene, and world cruising women who communicate on a listserver I subscribe to. Next year I'll incorporate meal ideas from Lin Pardey also.

Typical breakfasts included omelets, cereal with blueberries or bananas (early in the trip while we still had the fruit and before I decided that powdered milk is not a beverage fit to ruin good cereal and fruit), pancakes, eggs, French toast, oatmeal, and coffee cake.

Typical lunches included ham, tuna, or chicken salad sandwiches; pasta salad; grilled cheese sandwiches and soup; peanut butter sandwiches; and leftovers. Canned spreads worked as picnic food when we wanted to leave the boat and spend the day exploring. Wary of taking a pre-made chicken salad or similar mayonnaise-based lunch along for a day in the sun, we ate strange spreads from small cans. These are adequate, but not exciting. The best is the deviled spread, but variety in all things mundane is best. They all got dull and downright boring after several similar lunches. But they fueled our bodies, and the sights we were able to take in while unattached to the mother ship fueled our souls. It's a tradeoff.

Dinner presented more variety. We had salad in the beginning, fresh broccoli for a while, and an endless variety of ways to cook potatoes. Canned vegetables picked up where the fresh food left off. Dinners included mashed potatoes with the meat we canned; pasta with beef and broccoli; chicken with rice and spinach; stuffed cabbage using canned corned beef; pasta with sauce (small jars of marinara, alfredo, clam and other sauces are available in the stores); and corned beef and cabbage.

I got creative with cold pasta dinners. Some of our favorites included pennette rigate pasta with canned corn, olives, canned shrimp, chicken, or no meat at all. After one such meal, Jerry vetoed the use of canned crab for this, but others might like it. I did. All this went well with whatever else I had to throw in. Carrot slices, hard-boiled egg slices, and artichoke hearts work, too. We mixed these ingredients with oil and vinegar dressing. I bought several small jars of prepared salad dressings for variety, but preferred the oil and vinegar styles best. Mayonnaise would work, too.

We made a scalloped potatoes and ham recipe in the pressure cooker that has been a real winner for two years now. We tried some prepared rice packages: curry, saffron, stir fry rice, lentils and rice, black beans and rice, red beans and rice, and so on with our canned meat or with canned sausages (a.k.a. hot dogs). Salmon fish cakes mixed from canned salmon and mashed potatoes were a big winner. The possibilities were endless.


Jerry (ever the engineer) suggested several years ago for our standard two-week vacations that I

create full menus on a spreadsheet and then sort this by item to determine how much of each item to buy. It's far more organized than I would have been, but it worked very well. However, when asked to share our provisioning lists with fellow sailors, I realized how hyperdetailed our food preparations appeared to be.

This year's longer trip helped me understand for the first time what planning must be like for a much longer voyage without reprovisioning stops. Although I did create daily menus, I didn't live by them. I had so much variety aboard in our food lockers that I cooked serendipitously ... more like I do at

home. It starts with, "Let's see, it's somehow gotten to be dinnertime. What

needs to be eaten? What is fast to prepare?" And finally, "What would we like to have tonight?" I often referred to my onboard menu lists for inspiration, but I was able to manage the use of fruits and vegetables, eggs and potatoes, leftovers and partially used cans of things more effectively without the constraint of a previously prepared menu.

This is how we'll go in the future. Menus will guide my shopping and help inspire my cooking, but daily meals will be planned at the time of the meal. That might be called "just-in-time menus." I'll keep the food lockers supplied as I would at home, and meals will happen when they happen. From now on, we will not bother with the hassle of ice for our weekend trips. We won't take a cooler full of ice and a few perishables back and forth to the boat. Even for weekend trips, we have been set free. 

by Karen Larson

An update

"Honey, I tossed out the cooler" is revisited

by Karen Larson

A long vacation in the summer of 1998 led to our discovery of "life without ice." I discussed what we'd learned in the article, "Honey, I tossed out the cooler," published in January 1999. We have made more discoveries since then; yet the art and science of life without ice has not changed very dramatically.

What is most telling is that we have continued to live without a cooler on vacations and even on weekends when we could choose to carry ice. Having a few blocks along is an easy thing to do when you won't be out long anyway. Going without ice was caused by our interest in wilderness cruising. But our onboard supplies are planned around ice-less meals these days, and even the weekends are easier if we show up at our boat with only a bag of fresh fruit and vegetables, eggs and cheese, and some bread and butter. The rest is already aboard, so things are stowed quickly.

Over the years since I wrote the article, we've tried a few new ideas on our own and sampled a few products that are available to make camping food more interesting. The re-publication in this collection of our good old article from 1999 seemed like the right time for an update.

We still keep these foods for weeks at a time without problem: eggs, butter, cheese, and mayonnaise.

I have continued to try different breads and baking techniques. There are some good packaged fast-baking breads (with their improvements of the traditional beer bread mix, the folks at Tastefully Simple make several excellent quick breads <<http://www.tastefullysimple.com>>). And there are some good pressure cooker bread recipes as well. But I still prefer making and eating the many wonderful yeast breads. My only revelation in

New tips discovered in recent years, including a process for making yogurt.

that arena came during the summer of 2007 when I learned about the superiority of bread flour. Until that time, I believed that bread flour was for use in bread machines only, and I, therefore, used all-purpose flour for my many yeast bread recipes. The bread flour vastly improves the results with yeast breads, but I didn't understand that until I read the article by Kim Ode, published in this collection.

Meat remains the real area where discoveries remain to be found. We have tried pre-cooked bacon packages that are available in the meat department near the bacon but require no refrigeration. They're fine if you really have to have bacon in your life. But they seem spendy for what you actually get in the package. We've purchased prepared meals that need only to be boiled in their bags. These are also rather pricey. Some are better than others, of course, depending upon individual tastes.

Next we discovered vacuum-packed freeze-dried meats at a boat show. Unfortunately for us, these were Army surplus meats, so they could only be purchased in huge cafeteria-sized cans. Once we opened a can of this size we faced a food-storage dilemma. To salvage what was left, we purchased a vacuum-packaging bag sealing system. That worked rather well, and some of the meat purchased this way was pretty good. We liked the chicken chunks and dried hamburger patties. Some, such as the pork chops and steak, was mediocre. I don't believe that this Army surplus meat is available anymore, although others may have similar products. The man at the boat show was selling out the stock he had and getting out of the business.

For us, the best bet has always been canning our own meat. We've learned that it is possible to can meat that has been cooked as easily as meat that has not yet been cooked. Bonnie Dahl's article on this subject in this collection of articles is particularly good. That inspired me to try uncooked meats and get more creative in what foods we canned. Somewhere along the way we also realized that the best meats to can are the cheap meats, since the canning process is going to cook them practically to death. If you think of pot roast and shredded barbecue pork, you've got a pretty good idea of the final result of canning most meats. In order to seal the jars, they've been cooked hard and long, but they're good in all kinds of pasta meals and with potatoes or couscous.

We also canned soups while we were at it. One thing we learned about canning soups is that you should not add any noodles to the soup until you're warming up the canned soup for immediate use. The canning process turned the noodles in one of my soups into mush.

I have stopped trying to keep milk, because my interest in having milk on cereal has waned over the years, but I learned a few things about ultra-heat treated (UHT) milk before I lost interest. As it turns out, UHT milk is difficult to find in the center of our country, at least in Minnesota. Perhaps we're too close to Wisconsin dairy country. However, I have found Parmalat and other brands on the shelves in Annapolis, and I assume other parts of the East Coast also carry UHT milk. I have also found it in Seattle and make a similar assumption about the West coast. And it can be found in stores in Canada, at least I've seen it on several occasions in Ontario. I have ordered containers directly from Parmalat in the past,

although shipping is expensive for such a heavy product. UHT milk tastes the same as the traditional milk that is in the grocery dairy section. The difference is that UHT milk doesn't need to be refrigerated until it has been opened. Therein lies one of the problems: the typical container size is more than you really need at once. Smaller containers are sometimes available, but they appear to be more difficult to find.

These days, when I need milk in a recipe, I use dried milk. And I choose yogurt for many breakfasts. Yogurt can sit without refrigeration for several days, and when it's gone I make yogurt from dried milk, water, and dried yogurt starter. In the October 2002 newsletter I wrote about yogurt:

I had run across several sailing magazines and newsletters in the past year that discuss recipes for making yogurt aboard. Some talk about the need for refrigeration (to keep the active culture alive in a previously made yogurt, for storage of milk, and for storage of the yogurt after it has completed its miraculous transformation). But refrigeration and iced storage was not an option for us. Some sources believe you need a yogurt maker (not so), and others think the nice warm engine room would be a good place for maintaining a warm temperature for the culture (this one was written by a powerboater).

But one source discussed a method for making yogurt using powdered milk. Another noted that dry yogurt culture or "yogurt starter" was available at health food stores. And a third called for the use of a wide-mouth thermos for maintaining the temperature during the culturing process. Now we were in business. Combining a little from each source, we derived our own process that worked (as long as I followed the directions — we made yogurt five times in two weeks with one batch turning out as warm milk after I dumped the yogurt starter right into the hot milk without giving it a moment or two in a lukewarm brew).

What did we do with yogurt once we had it? I bought pie fillings (which are not as sweet as jellies and jams) to add to the unsweetened yogurt. We ate this as dessert after dinner, and the leftovers were good on pancakes in the morning. I brought vanilla along and plenty of sugar, expecting these brews of plain yogurt to be horrible without help. The sugar was seldom needed.

We never opened the vanilla. Yogurt can also be used as a substitute for sour cream and as an ingredient in salad dressings and many recipes. You can also mix fruit, nuts, and granola with it. And much more.

The process we developed for yogurt

Equipment: wide-mouth thermos, candy thermometer (or other thermometer capable of reading temperatures around 110-200 degrees F), yogurt starter, powdered milk, and water.

Boil water to preheat the thermos and for dissolving the powdered milk.

Measure 2 cups of boiling water. (To this you can add Knox gelatin if you want the yogurt to set up a bit firmer. We tried it without and also with the addition of ½ teaspoon and another time with the addition of 1 teaspoon, or a full envelope, of Knox gelatin. By the time we got to the addition of 1 teaspoon, the leftover yogurt and its whey had the consistency of Jell-O.)

Mix ⅔ cup powdered milk into the boiling water and stir thoroughly. (We also noted that evaporated milk can be used instead of the powdered milk, although we did not try this. Naturally, real milk, including UHT milk, can be used.)

Allow this mixture to cool to 110-120 degrees F. This is the temperature you will be attempting to maintain by incubating it in a thermos.

Meanwhile, mix another ¼ cup of lukewarm milk and add the yogurt

starter to it. We only needed half an envelope of this starter for such a small batch. That was ½ teaspoon. The envelopes we found each contain a teaspoon of starter. You can also use about ¼ cup of plain yogurt as a starter. This could come from a previous batch you've made or it could be purchased commercially (Dannon Plain Non-Fat Yogurt, for example). It cannot be started with yogurt that contains sweeteners, fillers, or fruit. The yogurt culture must be active. Pour the lukewarm yogurt milk into the larger batch when the larger batch has cooled to 110-120 degrees F.

Mix well and pour the whole thing into the pre-warmed thermos.

Let the thermos stand undisturbed for at least four to eight hours or so. Our sources said the tartness increases with incubation time, although I was not able to notice much difference between batches pulled a bit before four hours and those at the other end of the spectrum. Jerry felt that the early yogurt was milder, however.

This yogurt lasted just fine for a day after incubation without refrigeration. Our cruising ground is almost always cool, however. We don't know how well it would last without refrigeration in the tropics.

I should mention that all the fuss over thermometers and incubation times may be overrated. More moons ago than I can count I was a student at the University of Hamburg (Germany) on a junior-year exchange program. I lived in a dorm for foreign students. A couple of Czechoslovakian students there taught me to make yogurt their way. It's been a long time, but as I recall I heated milk until bubbles just began to form at the edges of the pot. Then I added some quantity of plain yogurt. Then I wrapped the entire pot up in a couple of towels and left it alone for some unknown and unimportant number of hours. Voilà! Yogurt. I don't recall that it ever failed.



Provision for the long haul



Ample food gives you more cruising choices

by Janet Groene

WHETHER IT'S FOR A WEEKEND OR a season, I provision with every calorie, can, vitamin, and vitamin I can cram in. Excess food is cheap insurance. With an ample pantry, we can decide to linger longer or take the long way home. Extra food means hearty meals, even if we are stranded by weather or a mechanical breakdown and plenty to share if we meet nice folks and want to invite them aboard for a meal.

It saves money, because food prices in the boondocks are 10 to 100 percent higher than in our local supermarket, not to mention the cost of taking taxis to and fro. It's healthier to eat home cooking, and it's fun to anchor in the middle of nowhere and make a boffo dinner without another soul in sight.

We've cruised nonstop for as long

as eight months aboard a 29-foot sloop, without having to buy anything but fresh produce. To get that much food into a boat that small means discovering stowage places you never knew existed. It means balancing provisions so you don't end up like the couple who lived on creamed corn and artichoke hearts the last week of their transatlantic passage. It means protecting foods so they aren't lost to rot, rats, and rust. And it means thinking in terms of nutritional value per ounce and per cubic inch.

How much of what?

It's daunting to think about feeding two people for two months, two adults and four teenagers for three months, three couples for a two-week charter, or one couple for a circumnavigation. There are countless variables, depending on how you eat, your refrigerator and freezer capacity, and whether daily fishing is part of the plan. Re-supply also has its variables, depending on whether you buy ice and bread or make your own, and what local specialties you prefer to buy along the way.

The most difficult plan, but the most reliable, is to make up a menu for three meals a day for one week, with a shopping list for everything on the menu plus staples, cleaning supplies, and paper products. If you'll be gone only a couple of weeks, double this list. If you'll be gone

for months, make a two- or three-week master menu and multiply it. Chances are, it will be weeks before anyone realizes that you're having chicken potpie every third Monday night or raisin-pecan oatmeal every other Saturday morning.

A more versatile scheme is to break down the day's rations into units. Say you have a crew of four, and each has two scrambled eggs for breakfast. Ergo, eight eggs equals one main dish breakfast unit.

Each person has one burger for dinner, so one pound of ground round, divided into four patties, equals one dinner meat unit. A can of peaches divided four ways is one fruit unit. Enough pancake mix to feed the crew equals one breakfast maindish unit.

If you'll be gone 12 days, you'll need 12 units each for breakfast main dish, breakfast fruit, lunch main dish, lunch dessert, dinner meat, dinner starch, dinner vegetable, dinner salad, dinner dessert, and so on. While the unit method is more haphazard, you have all the puzzle pieces in hand and can combine them according to your whim.

As a rule of thumb, you'll need for each person on board, per day, a minimum of:

- 1 cup of milk (UHT — ultra heat-treated — or the equivalent in canned or powdered)
- 1 cup flour at about 20 cups per five-pound bag
- 1 egg
- 1/8 pound butter



You may never drink milk or eat eggs, but they'll be used in cooking. You'll use flour for baking, more or less according to how many recipes you make from scratch and whether you buy or bake your daily bread. Generally, one portion of trimmed, boneless meat is four ounces per person; for bone-in meat and poultry, plan six to eight ounces per serving. Root vegetables, steaks, chops, fruit and many other foods are bought by the count, that is, one potato or one T-bone per person, per serving.

Do the math. You'll get 32 half-

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ounce scoops per one-pound can of coffee and 64 eight-ounce glasses of Crystal Light from a can containing eight packets that make two quarts each. At home, start dating such things as toothpaste and shampoo, to see how long it takes your family to go through the large, economy size. You'll soon have an idea of how many of what you'll need per month.

Where to put it

Stowage space can be categorized as:

- **Galley stowage:** for staples you use every day, as well as for menu

Top 10 pantry lifesavers

1. Rice, because it can be served as a hot breakfast cereal, dessert pudding, starch side dish, and an ingredient in hundreds of dishes. Buy a variety of rices (jasmine, texmati, arborio) and, for nutritional backbone, favor brown rice over polished.

2. Peanut butter can turn bread or crackers into a meal, snack, or dessert. Use it as a fat in cakes and cookies, a flavoring ingredient in sauces such as chicken satay, a protein-rich spread for toast, or just eat a spoonful as a pick-me-up when the going gets rough.

3. Canned tuna can be eaten straight from the can when high seas prevent cooking, and it's delicious in many main dish recipes. Add canned or pouch tuna to chowder or a casserole to stretch a small catch into a feast for a big crew.

4. Self-rising flour may lose its oomph after months in damp sea air, but it's the ultimate shortcut ingredient. For the same price as regular flour, it combines flour, salt, and baking powder to speed your production of pancakes, coffee cake, quick breads, batters, and biscuits.

5. Popcorn is everyone's favorite snack food. It's cheaper and more space-efficient to buy it in bulk and carry a stovetop or microwave corn popper, and it's pure food without salt and saturated fat. Sprinkle popcorn with flavored gelatin or cinnamon sugar for a quick dessert, with hot sauce and herbs for a

cocktail snack, or with butter-flavored salt to serve with apples for a light supper. Popped corn can be ground in a food processor and mixed into batters and doughs for added interest and nutrition.


6. Nonfat dried milk can add nutrition to recipes, and 20 quarts can be carried in a carton no larger than a box of cornflakes. For drinking, mix it at least three hours ahead. Protein is slow to recombine with liquids, so it takes several hours to lose its chalky texture, chilled or not. If you don't have refrigeration, turn it into cocoa, yogurt, or a posset made with hot milk, sugar, a touch of vanilla, and a tiny nugget of butter.

7. Rolled oats make a filling, healthy breakfast cereal and add texture and interest to breads, cakes, and cookies. They can be lightly cooked to a chewy texture, cooked into the creamiest, most gentle cereal for upset tummies, or eaten raw. Add dried fruits, raisins, nuts, or other grains (rice barley, cornmeal, grits) and have a new

cereal every morning. For the kids, stir in a handful of M&Ms just before serving. An oatmeal scrub also helps ease itches and rashes. You'll get four times more servings out of a box of oats than the same size box of ready-to-eat cereal.

8. Grits or cornmeal are down-home favorites that go gourmet when you call them polenta. Serve as a hot cereal, sweeten to make Indian pudding, stir in eggs and bacon bits to make a one-dish breakfast meal, or serve hot cheese grits as a starch side dish with dinner. Chill cooked cornmeal mush, cut into slabs, fry until crispy, and serve for breakfast with maple syrup, or grill it for a dinner side dish.

9. Seeds for sprouting stay dormant for months, even years, then spring to life as a vitamin-packed salad. Check health food stores and catalogs for dozens of types of sprouting seeds, not just the familiar alfalfa and mung.

10. Drink concentrates such as Crystal Light, bottled lemon- and lime-juice, Tang, and frozen concentrates allow you to carry gallons of tasty drinks in cupfuls of space. If you can re-supply water along the way, don't waste space on canned sodas, juices, and cocktail mixes. 





items for the next day or two.

- **Standby stowage:** where you'll keep canned goods, paper products, and staples such as canned tomatoes or soups that are frequently moved into galley stowage.
- **Dead storage:** this takes time and effort to get into. These areas might include bins under dinette seats and bunks.
- **Dead-dead storage:** this requires major effort to get into, but here's where you'll find your "ace in the hold" for paper towels, toilet paper, canned coffee, and other bulky, lightweight items. Remove floorboards and drawers, and fill every inch of space behind the scenes. It may be weeks before you have to dismantle the boat to get at these places again.

Keeping it safe

Rats and roaches are a rare problem, but humidity is ever-present, taking the crunch from crackers, invading flour, weakening baking powder, turning bread green, and inviting all sorts of livestock to feast on dry pastas, rice, and everything else that requires cool, dry stowage. Here are some random tips on long-term food storage.

- It isn't practical to store everything in


"We've cruised nonstop for as long as eight months aboard a 29-foot sloop, without having to buy anything but fresh produce."

metal cans or glass jars, but they are your only protection against dock rats, which can chew through everything else including wood and heavy plastic. For serious voyaging, invest in canning equipment. Can your own meats (but not fruits, vegetables, and foods you can buy in cans) and seal up delicate items such as spare parts in a safe, sterile, break-proof environment.


- Take paper labels off tins and mark them with grease pencil. Even dry boats sometimes flood, and if the paper goes awash, it clogs bilge pumps. In a damp boat, seal each can of food in a plastic bag. In a wet boat, coat cans first with a self-healing rustproof, such as Texaco's Compound L, then wrap individually in plastic. It's messy, but is the ultimate defense against rust. If cans have flip-tops, tape them down and seal cans in individual bags. If the flip-tops get dislodged enough to break the seal, food spoils.

Aluminum cans are even more vulnerable than steel in salt water, which can eat through in as little as 24 hours. Protect them, too.



- Freeze pastas, grains, and flours 24 hours in the containers where they will be stowed, then let them come to room temperature without opening.
- Where possible, buy cans and packages that have a "use-by" date. If not, use a marker to date each piece so you can use oldest items first.
- Hard, fresh cabbage keeps for weeks in a cool, dry place if you don't cut through the head. Peel off leaves from the outside as needed.
- Wash fresh lettuce, dry thoroughly, and wrap in a clean linen or terry towel. It will keep several weeks in the refrigerator. Don't stow fresh produce in plastic wrap. Wash apples, hard pears, citrus fruits, and green tomatoes. Then dry them completely and wrap them individually in paper towels. Turn often and use as soon as they're ripe. 

Squeezing it all in

- Have the butcher skin, trim, and bone meat, then package it (without plastic trays) in portions suitable for your crew size. Then freeze it in the supermarket's super-cold freezer. Pick it up on the way to the boat.
- Don't buy it in a can if it comes in a pouch, a box if it comes in a bag, or a glass bottle if it comes in plastic.
- Don't buy it full strength if it comes in a concentrate form. For example, buy tomato paste rather than tomato sauce. Favor condensed or dried soups, bouillon cubes over canned broth, and concentrated cleaning products rather than ready-to-use.
- Don't take up valuable fridge space with foods that don't have to be refrigerated, such as hard cheeses and sausages, peanut butter, and some margarines. 



The trailersailer's galley

How to eat well despite a lack of space and equipment

by Gregg Nestor



EATING WELL IS AN INTEGRAL PART of boat safety. A hungry crew is more prone to seasickness, lethargy, and lower morale. Any one of these conditions can adversely affect the cruise. However, many owners of trailerable boats overlook this aspect because, I suspect, their Spartan galleys make food preparation a daunting task. This does not have to be the case. Like any other aspect of sailing, a little forethought, preparation, and proper equipment can add to the safety and enjoyment of the outing.

A trailersailer's galley can take many forms depending upon the type of sailing it does. If you usually daysail, your galley may be nothing more than a picnic basket, cooler, and insulated thermos. While this is the simplest galley, it can be versatile, producing meals from cold-cut sandwiches to wine, caviar, and paté using paper plates or leaded crystal and linen napkins. You are only limited by your imagination. You may choose to dine on board or, depending upon your sailing area, in a secluded cove, on a picturesque beach, or in a picnic area. Its versatility is what gives this galley its appeal.

Trailerable pocket cruisers used for weekend adventures or longer usually have a dedicated galley of sorts, and your planning and creativity will be

centered on it. For a couple of days on the water, you can rely more on perishable, home-prepared, and otherwise bulky food stocks. Weekenders often have the added versatility of having a lot of activities on shore. Grilling and picnicking ashore allow you to use your standard backyard barbecue techniques for meals and also provide you with unlimited preparation space, a commodity not available on your boat.

A new dimension

For trailersailors who spend most of their cruise on the water, the galley takes on a new dimension. Just because your galley is small does not necessarily mean that your meal options need to be limited. However, as the amount of time you spend on board increases, you will want to decrease the amount of perishable, home-prepared, and bulky food stocks. Your onboard galley equipment will also change with increased time on the water. Don't be envious of the daysailer with his wine and caviar. With careful planning and equipping the galley ahead of time, you can also be enjoying those finer things. Think "out of the box" — or in this case "out of the boat."

"Just because your galley is small does not necessarily mean that your meal options need to be limited."

Cruising on a 22-foot trailerable, we have developed a galley that allows us maximum versatility and variety in minimal space. Our approach to the galley on board *Splash* is not that much different from our approach to backpacking. Having close to 30 years of Scouting experience, we merely modified our woodland techniques to account for our change in venue. While we're talking about backpack provisioning, we're not talking about trail mix, beef jerky, and freeze-dried foods. Rather, we enjoy meals like rice scampi, calzones, and beef pot pie.

Our technique for selecting galley equipment (also sailing gear and provisioning, for that matter) is based on our "three-pile method." Everything (and we mean *everything*) that goes on board goes through the same selection process. The first pile consists

of those items that we absolutely, positively, must have on the boat. In the second pile are those things that would be nice to have along, making life easier or more comfortable. The third pile contains those items that can be broadly classified as "luxuries." Once we have our piles established, we stow everything from the first pile, skip the second altogether, and select

Except for the stove, our galley gear is shown above.

one or two things from the third pile. How else could we reasonably include our wine glasses and corkscrew? Once things are stowed, we check for space. This is our opportunity to stow a few things from the second pile.

Non-skid bottoms

Instead of relying on disposables, we use real, unbreakable dishes, cups, glasses, and flatware. These have non-skid bottoms or have been modified by the addition of silicone beads to their bottoms. Another way to make these items non-skid is by using rubberized non-skid drawer liners as placemats. Using real eating utensils makes us feel more at home and decreases the amount of trash that we need to store on board. Going back to one of our backpacking corollaries (“what you bring in, you need to bring back out”), if we bring in a minimum amount of disposables, we’ll have a minimum amount of trash at the end of the cruise. It is possible to generate a lot of trash if you do not plan carefully. Once the trash is generated, it becomes unwanted cargo until you reach a port where it can be tossed out.

Refrigeration on a trailersailer means an ice chest. Ideally, depending



The BakePacker, an aluminum grid that fits in a 7½- to 8-inch cook pot.

on your space, two ice chests would be better: one for frozen items, which is opened up maybe once a day, and a second one that you go into more frequently. But most trailersailers will only allow space for a single ice chest. In any case, consider keeping a separate, smaller, soft-sided cooler containing cold drinks and snacks readily available in the cockpit. The fewer times you open your galley ice chest, the colder the food will stay.

Food preparation usually requires some degree of slicing or dicing. An assortment of knives and a cutting

surface are essential in the galley. Our knife assortment consists of a small paring knife, a mid-size serrated-edge knife, and a large chopping knife. With these knives we can prepare fruits, vegetables, meats, and fish. Some pocket cruisers are equipped with a cutting board that covers the galley sink when not in use, but ours is not. We have had good luck using an inexpensive plastic cutting mat purchased from a marine retailer.

Backpack kit

Our collection of pots and pans has been scaled down to a stainless-steel nesting backpack kit. The kit consists of a frying pan and three pots. For serving and cooking pieces, we have found that the oversized fork and spoon from a stainless-steel, government-surplus mess kit are sized just right. Our Scouting adventures gave us a lot of experience cooking in heavy cast-iron Dutch ovens. While we don’t consider a Dutch oven to be a good choice in your trailersailer’s galley, we find that Dutch-oven pliers come in very handy. These versatile pliers are meant for grasping hot cooking vessels, either with the pliers portion itself or by using the hook on the opposite

Sample BakePacker recipes

Chicken and Rice

- 1 packet of flavored rice/sauce mix. (I like to use Lipton’s Rice Medley variety, because it also contains dehydrated vegetables. Lipton also offers Chicken Broccoli Rice, Chicken Fried Rice, and a Cajun variety, all of which work well. **Note:** *I tried replacing the rice/sauce mix with noodles/sauce mix, but the noodles/sauce tended to stick together on the bottom of the BakePacker bag.*)
- Whatever ingredients are listed on the back of the rice/sauce mix bag. (Usually, that is water and butter or margarine. In place of real butter or margarine, you can use butter-flavored granules. The granules are available in the grocery store, come packaged in a plastic bottle, and do not require refrigeration.)
- 1 6- or 8-ounce can of chicken. (I’ve substituted other canned meats and even tuna.)

Follow the directions on the back of the rice/sauce mix bag. Add all ingredients, including the meat, into a BakePacker bag. Mix the ingredients inside the bag by gently and thoroughly squeezing the bag. Place the plastic bag of food on the BakePacker, covering as much of the grid as possible. Loosely fold down the top of the plastic bag, and place the BakePacker into the pot. Be sure to have the proper amount of water in the pot. Cover the pot, and bring water to boil. Start rice cooking time when water begins to boil. Depending upon the rice variety, total cooking time is about 10 minutes.

Beef Pie

- 1 package of pizza crust mix
- 1 10- to 15-ounce can of beef stew.


Add pizza crust mix and water (per mix package instructions) into a BakePacker bag. Mix the ingredients inside the bag by gently and thoroughly squeezing the bag.

Place the plastic bag of food on the BakePacker, covering as much of the grid as possible. Pour beef stew over the top of the crust mix. Fold down the top of the bag, and place the BakePacker into the pot. Be sure to have the proper amount of water in the pot. Cover and bake for 20 minutes.

“Poached” Fish

The BakePacker is worth your investment if you only use it to prepare fish. The smell that comes from cooking fish is eliminated (and so is the messy clean-up) when you cook it with the BakePacker system.

- Add a teaspoon of flour to a cooking bag. Shake the bag to coat. Place bag over grid.
- Season 1 or 2 pounds of fish to your liking. Place fish in a single layer in the bag. Dot with butter or sprinkle with butter-flavored granules. Add 3 lemon slices, if desired.

Close bag as above. Bake for about 18 minutes. 

end to loop the bail on a pot or kettle.

We wash our galley gear in the water around us, using dish soap, and then rinse things with a spray bottle of potable water to which a few drops of chlorine bleach have been added. The rinsed gear is placed in a mesh bag and hung outside to air dry. When the gear needs to be quickly stowed below, we dry it with a chamois. We have found that a synthetic chamois works just as well as the more expensive natural chamois.

Even though you can minimize cleanup by not using real dishes, cups, and flatware, the cooking utensils still need to be cleaned. However, we have discovered a cooking technique that spares us ever having to scrub our cook pot.

Novel cook pot

The BakePacker is the most novel galley item we discovered while back-packing, and I have found it to be very useful aboard our trailersailer. This is a cook pot accessory in the shape of a 7½-inch-diameter vertical aluminum grid (see photo on Page 14). It was developed and originally promoted as a way to help American soldiers reheat prepared foods in winter conditions. The BakePacker became popular among outdoorsmen as a better way to prepare their food.

This cook pot accessory is designed to cook solid foods, although it is not a steamer or pressure cooker. It is an aluminum grid that fits into your 7½- to 8-inch cook pot and functions as multiple mini-heat exchangers. Water is poured into the cook pot to the top level of the grid. The food to be cooked is placed in a 1-gallon freezer/storage plastic bag or an oven roasting bag and then set inside the pot on top of the grid. The cook pot is then covered with its lid, and the water is boiled. The rate

We usually don't have a full-sized container of anything aboard. For condiments, fast food restaurant packets are great.

of heat transfer from the water via the BakePacker grid to the food in the plastic bag is higher than that of traditional cooking techniques. This is accomplished at a relatively low temperature of 212° F. Cooking is done by means of the grid, not from the boiling water.

Since the food is cooked in a plastic bag, it does not get scorched or dried out. Due to the high heat transfer rate, foods cook faster, and you can actually bake in the cook pot! The BakePacker Standard version cooks enough food to serve three to four people. Furthermore, with the BakePacker, cleanup of the cooking vessel is non-existent. What you are left with is a cook pot containing about an inch of hot water, which you can use to wash your eating utensils, unless you decide to use it for coffee or tea.

"Using real eating utensils makes us feel more at home and decreases the amount of trash that we need to store on board."

As the length of our time out on the water increases, it is important to have cooking versatility. We wouldn't want a steady diet of one-pot meals from the BakePacker. By combining traditional cooking methods (with our stainless-steel nesting backpack kit) along with the BakePacker cooking method, we can vary our diet and meal types.

No experimenting

Since both of us have scientific backgrounds, we tend to take a rather analytical approach to life in general. When it comes to meal planning for our trailersailing, an analytical approach helps to decrease the number of unwanted surprises and disasters in the galley. Another one of our corollaries is: no experimenting with a new recipe on board. All recipes are tried first on



shore, even using the same pots, pans, stove, and utensils that will be used aboard. This not only determines the viability of the recipe, but also its complexity, timing, and whether or not we even like it.

When planning a sail, we also plan the meals. Once the menu is set on paper, we figure out what ingredients are needed. Keeping in mind that space is limited, we usually don't have a full-sized container of anything aboard, unless we know that the whole amount is necessary for the planned recipes. Typically, we take just enough onion powder, garlic, flour, or paprika called for in the recipes. We use little vials and pouches specifically designed for small amounts of spices (available at outdoors stores), 35-mm film canisters that are labeled, and even labeled zipper-type bags to hold what we'll need. Fast-food restaurant packets of condiments are great, unless a recipe calls for a larger amount. Many food products that you buy will be exorbitantly packaged. Eliminate any unnecessary and bulky packaging before you stow it in the galley.

The galley aboard a trailersailer is what you make it, and meals can range from a brown bag to a gourmet meal. All it requires is a little forethought, imagination, and the right equipment. Of course, knowing a little bit about how to cook is also helpful.

Bon appétit! 

Resources

BakePacker

Strike 2 Industries, Inc.
8516 N. Greenwood St.
Spokane, WA 99208
509-484-3701

<<http://www.bakepacker.com>>

For further reading...

More simple but tasty boat-tested recipes, as well as advice on meal planning and provisioning, can be found in *The One Pan Galley Gourmet* (2004) by Don Jacobson and John Roberts. It's available at <<http://www.goodoldboat.com/bookshelf.html>> or by calling 763-420-8923.





Keep menus for favorite recipes nearby.

KEEPING THE GALLEY AS EFFICIENT as possible goes a long way toward maintaining morale and even invites crewmembers to take up cooking chores. Here are some secrets to make your galley more navigable and user-friendly.

Instead of looking up those favorite recipes every time you need one, write down recipes you use frequently on recipe cards. But don't stop there; laminate them or cover them with clear contact paper (available in the storage/shelving section of discount stores) and mount them on the inside of your galley cabinet doors or another out-of-sight, but handy, location. Picture-mounting putty works well for this. A recipe card can be grabbed (with the putty still on the back) and placed anywhere on a bulkhead or counter visible to the cook.

Galleys can be crowded with crewmembers passing through. Reduce the amount of maneuvering required for cooking by storing items used together in the same space.

Storing your galley equipment intuitively saves time, energy, and frustration for the cooks, especially those who are not familiar with it. Here are some examples:

- Sharp knives near the cutting boards
- Measuring utensils near or even inside mixing bowls
- Mixing spoons and whisks near those mixing bowls
- Cups near the water pump
- Can opener near the pots and pans

Clear sink

While cooking, keep your sink clear of dirty dishes as much as possible so it can be used for storing ingredients. This reduces the number of items that will have to be grabbed or watched when the boat sways due to an unexpected swell or wake.

Create an easily reached snack zone away from the galley so anyone can grab a quick snack without getting in the way of the cook. Stock it with small amounts of a wide variety of snacks to keep interest high.

Have a small bin or hammock somewhere in the galley just for fruit and vegetables that need to be eaten quickly. I have gotten into the habit of going through all of our produce daily and sorting out the fruit and vegetables that are nearing the end of their lifespan. These go in a small hammock that hangs above our galley counter. Now everyone knows what produce needs to be used first for meals. We also line our produce hammocks with opened paper bags to reduce bruising from the hammock strings. It also helps to keep the hammock spread out, and the paper absorbs moisture.

Collect all the non-perishable items necessary for a

Gastronavigation

Secrets to help you navigate the galley

by Theresa Fort




Having simple meals bagged together is a great help.

favorite meal or entrée and store them together in a plastic bag. Have several of these “meals-in-a-bag” stored within easy reach near your stove. Some of our quickie meal favorites include:

- Cajun dirty rice mix with canned chicken and green beans
- Hash-brown mix with a small can of chopped ham and canned mushrooms
- Macaroni-and-cheese mix with canned tuna
- Canned navy beans with canned chicken, salsa verde, and canned green chilis

Having all the basics for a meal together in one bag within easy reach is a great help when a meal needs to be prepared quickly.

An efficient galley is a joy to work in. Now all those who wander into your galley will not be lost. They may even share in the cooking. 

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Quickie meals that can be kept ready in a bag

Hash browns with ham and mushrooms

1 package dried hash-brown mix
1 small can of ham, drained
1 small can of mushroom pieces, drained
1 cup grated cheese (optional)

Cook hash browns according to directions on package, adding the ham and mushrooms. When done, top with grated cheese and allow to melt before serving. For a little more flavor, add a can of green chilies also.

Macaroni and cheese with tuna

1 package macaroni and cheese
¼ cup milk (or 2 teaspoons powdered milk and ¼ cup water)
¼ cup margarine
1 6-ounce can tuna in water
1 teaspoon lemon pepper
½ teaspoon dill

Cook and prepare macaroni and cheese according to package using milk and margarine as directed. Drain water from tuna and add to macaroni and cheese along with seasonings. Serve with quartered fresh tomatoes.

Dirty rice with chicken

1 package dirty rice mix
1 6- to 8-ounce can chicken
1 small can green beans, drained, or 1 cup fresh green beans cut into bite-sized pieces

Cook dirty rice mix according to package directions. If substituting fresh green beans, add them to the rice midway through cooking. Otherwise, add the drained canned green beans when rice is done. Add chicken with liquid when rice is done. Heat on a low burner until all ingredients are hot. Serve in bowls.

White chili

2 cans white navy beans
1 6- to 8-ounce can chicken
1 small can green chilies
1 7-ounce can salsa verde

¼ teaspoon ground cumin
½ teaspoon dried cilantro
salt to taste

Salsa verde is a green hot sauce found in the Mexican section of the grocery store. We like the Herdez brand. But Old El Paso has one, too, in a large jar (use one-half cup). Combine all ingredients in a large saucepan and simmer for 20 to 30 minutes until hot. Serve in bowls with grated cheese on top, corn tortillas or tortilla chips, and sliced fresh vegetables.

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Metric Conversion Tables

Formulas Using Conversion Factors

When approximate conversions are not accurate enough, use these formulas to convert measures from one system to another.

Measurements	Formulas
ounces to grams	# ounces x 28.3 = # grams
grams to ounces	# grams x 0.035 = # ounces
pounds to grams	# pounds x 453.6 = # grams
pounds to kilograms	# pounds x 0.45 = # kilograms
ounces to milliliter	# ounces x 30 = # milliliters
cups to liters	# cups x 0.24 = # liters
inches to centimeters	# inches x 2.54 = # centimeters
centimeters to inches	# centimeters x 0.39 = # inches

Ounces to Grams		
Ounces	Convenient Equivalent	Actual Weight
1 oz	30 g	(28.35 g)
2 oz	60 g	(56.7 g)
3 oz	85g	(85.05g)
4 oz	115 g	(113.4 g)
5 oz	140 g	(141.8 g)
6 oz	180 g	(170.1 g)
8 oz	225 g	(226.8 g)
9 oz	250 g	(255.2 g)
10 oz	285 g	(283.5 g)
12 oz	340 g	(340.2 g)
14 oz	400 g	(396.9 g)
16 oz	450 g	(453.6 g)



POUNDS TO GRAMS AND KILOGRAMS

<i>Pounds</i>	<i>Convenient Equivalent</i>	<i>Actual Weight</i>
¼ lb	115 g	113.4 g
½ lb	225 g	226.8 g
¾ lb	340 g	340.2 g
1 lb	450 g	453.6 g
1¼ lb	565 g	566.99 g
1½ lb	675 g	680.4 g
1¾ lb	800 g	794 g
2 lb	900 g	908 g
2½ lb	1125 g; 1¼ kg	1134 g
3 lb	1350 g	1360 g
3½ lb	1500 g; 1½ kg	1588 g
4 lb	1800 g	1814 g
4½ lb	2 kg	2041 g
5 lb	2¼ kg	2268 g
5½ lb	2½ kg	2495 g
6 lb	2¾ kg	2727 g
7 lb	3¼ kg	3175 g
8 lb	3½ kg	3629 g
9 lb	4 kg	4028 g
10 lb	4½ kg	4536 g

LIQUID MEASURE CONVERSIONS

<i>Cups and Spoons</i>	<i>Liquid Ounces</i>	<i>Approximate Metric Term</i>	<i>Approximate Centiliters</i>	<i>Actual Milliliters</i>
1 tsp.	⅜ oz	1 tsp.	½ cL	5 mL
1 Tb.	½ oz	1 Tb.	1½ cL	15 mL
¼ c; 4 Tb	2 oz	½ dL; 4Tb	6 cL	59 mL
⅓ c; 5 Tb	2⅔ oz	¾ dL; 5Tb	8 cL	79 mL
½ c	4 oz	1 dL	12 cL	119 mL
⅔ c	5⅓ oz	1½ dL	15 cL	157 mL
¾ c	6 oz	1¾ dL	18 cL	178 mL
1 c	8 oz	¼ L	24 cL	237 mL
1¼ c	10 oz	3 dL	30 cL	296 mL
1⅓ c	10⅔ oz	3¼ dL	33 cL	325 mL
1½ c	12 oz	3½ dL	35 cL	355 mL
1⅔ c	13⅓ oz	3¾ dL	39 cL	385 mL
1¾ c	14 oz	4 dL	41 cL	414 mL
2c; 1pt	16 oz	½ L	47 cL	473 mL
2½ c	20 oz	6 dL	60 cL	592 mL
3 c	24 oz	¾ L	70 cL	710 mL
4 c; 1 qt	32 oz	1 L	95 cL	946 mL



Equivalent Charts

EQUIVALENT CHARTS

Butter and Shortening

1 oz. butter	2 tbsp.
½ stick butter	¼ cup
1 stick butter	½ cup or 8 tbsp. Or 4 oz.
1 pound. butter	2 cups
1 pound shortening	2 cups

Baking

1 square chocolate	1oz. = 4 tbsp. grated
6oz. Semisweet chocolate chips	1 cup
1lb. Cocoa powder	4 cups
1oz. of baking powder	2½ tbsp.
1 package dry yeast	¼oz. or 1 tbsp. or 1 cake

Breads & Cereals

1 pound Loaf	14 regular or 20 thin slices
1 slice fresh bread	½ cup soft crumbs or cubes
2 slices bread	1 cup soft bread crumbs or cubes
4 slices bread	1 cup fine dry crumbs
1 slice dry bread	¼ cup dry crumbs



Bread, Cookie, Cereal Crumbs

1 oz. dry bread crumbs	¼ cup
28 saltines	1 cup fine crumbs
15 graham crackers	1 cup fine crumbs
22 wafers	1 cup fine crumbs
15 ginger snaps	1 cup fine crumbs
19 chocolate wafers	1 cup fine crumbs
3 cups uncrushed cornflakes	1 cup crush cornflakes
3, 4 oz. rolled oats	1 cup
1 pound uncooked rolled oats	5 cups cooked oats
1 cup uncooked rolled oats	1¾ cups cooked oats

Cheese & Milk

4 oz. Cheese (Cheddar, Swiss)	1 cup shredded
1 pound. cheese	4 cups shredded
1 cup freshly grated cheese	¼lb.
8 oz. cottage cheese	1 cup
¼ pound crumbled blue cheese	1 cup
¼ pound hard cheese (Parmesan, Romano)	1¼ cups grated
4 oz. soft cheese (Monterey Jack)	1¼ cups shredded
3 oz. cream cheese	6 tbsp.
8 oz. of sour cream	1 cup
½ cup heavy cream	1 cup whipped cream
1, 5 oz. can evaporated milk	⅔ cup
1, 12 oz. can evaporated milk	1⅔ cup
1, 14 oz can sweetened condensed milk	1¼ cup



Equivalent Charts

Cornmeal

1 Pound. cornmeal	3 cups uncooked cornmeal
1 cup cornmeal	4 cups cooked cornmeal

Eggs

2 egg yolks	1 whole egg (for custards and sauces)
2 egg yolks + 1 tbsp. water	1 whole egg (for baking purposes)
1 egg yolk	1½ tbsp.
1 egg white	2 tbsp.
1 medium egg	3 tbsp.
5 large eggs	1 cup
6 large egg whites	1 cup
12 large egg yolks	1 cup

Fruits

1 pound. apples	3 medium or 3 cups sliced
4 medium apples	4 cups sliced or chopped
1 pound dried apricots	3¼ cups chopped
3 medium or 1 pound bananas	1⅓ cups mashed bananas
2 cups pitted cherries	4 cups un-pitted
8 oz. pitted dates or candied fruit	1 cup
8 oz. coconut	2½ cups shredded
1 pound cranberries	4 cups
1 medium lemon	3 tbsp. juice
1 medium lemon	1 tbsp. grated rind
1 medium orange	⅓ cup juice
1 medium orange	2 tbsp. grated rind
8 medium peaches	4 cups sliced
12 oz. pitted prune	2 cups
1 pound raisins	2¾ cups
1 pint berries	1¾ cups



*The Cruising **K.I.S.S.** Cookbook*

Meats

1 (5 pound chicken)	4 cups chopped cooked
1 pound cooked meat	3 cups diced cooked chicken
1 pound cooked ground meat	2 cups cooked ground meat

Nuts

4 oz. shelled	1 cup chopped
1 pound nuts in shell	2 cups shelled

Pasta

1 cup uncooked medium noodles	1 heaping cup cooked noodles
1 pound noodles	6 cups uncooked or 7 cups cooked
8 oz. or 2½ to 3 cups uncooked	3½ cups cooked noodles
1 cup uncooked macaroni	2 cups cooked
8 oz./ 2½ cups uncooked macaroni	4 cups cooked
1 pound spaghetti	4 cups uncooked or 8-10 cups cooked



Equivalent Charts

Rice

1 cup uncooked quick-cooking	2 cups cooked
14 oz. quick-cooking rice	4 cups uncooked or 8 cups cooked
1 cup uncooked converted rice	3 to 4 cups cooked
14 oz. converted rice	2 cups uncooked or 8 cups cooked
1 cup long grain rice	3½ cups cooked
1 pound long grain rice	2¼ cups uncooked or 6¾ cups cooked
1 cup uncooked wild rice	3 to 4 cups cooked
1 pound wild rice	3 cups uncooked or 11-12 cups cooked
12oz. brown rice	2 cups uncooked or 8 cups cooked

Vegetables

1 pound dried beans	2½ cups dry or 6 cups cooked
1 cup dried beans	2½ cups cooked
½ lb. fresh or	2 cups cooked beans
1, 6 oz. can green beans	2 cups cooked beans
1 pound beets or one 6 oz. can	2 cups cooked and diced
1 medium bell pepper	1 cup chopped
1 pound cabbage	4 cups shredded
1 large carrot	1 cup grated
1 pound celery	4 cups diced
1 pound fresh mushrooms	6 cups sliced
1 large onion	1 cup chopped
1 16 oz. can tomatoes	2 cups
1 pound fresh peas unshelled	1 cup shelled
4 medium potatoes	4 cups sliced or diced
1 pound potatoes	3 cups chopped



Miscellaneous

1 cube bouillon	1 tsp. instant or 1 envelope
1 pound coffee	3 ¹ / ₃ cups ground coffee
1 oz. cornstarch	3 tbsp.
1 envelope un-flavored gelatin	¼ oz. or 1 tbsp.
1 small package flavored gelatin	3 oz.
1 large package flavored gelatin	6 oz.
¼ pound marshmallow	16 regular-size or 1 cup packed
1 oz. salt	1 tbsp.
1 gill	½ cup
1 jigger	1½ oz.
1 wine glass	¼ cup
1 pony	1 oz.
dash	8 drops
pinch	¹ / ₃ of ¼ tsp.
4 pecks	1 bushel



TEMPERATURES

<i>Temperatures</i>	<i>Fahrenheit</i>	<i>Centigrade</i>
room temperature	68°	20°
water boils	212°	100°
baking temperature	350°	177°
baking temperature	375°	190.5°
baking temperature	400°	204.4°
baking temperature	425°	218.3°
baking temperature	450°	232°

Use the following formulas when temperature conversions are necessary.

Centigrade degrees $\times \frac{9}{5} + 32 =$ Fahrenheit degrees

Fahrenheit degrees $- 32 \times \frac{5}{9} =$ Centigrade degrees

BAKING PAN SIZES

American

8 x 1½ inches round baking pan
9 x 1½ inches round baking pan
11 x 7 x 1½ inches baking pan
13 x 9 x 2 inches baking pan
2 quart rectangular baking dish
15 x 10 x 2 inches baking pan
9 inch pie plate
7 or 8 inch spring form pan
9 x 5 x 3 inch loaf pan
1½ quart casserole
2 quart casserole

Metric

20 x 4 centimeters cake tin
23 x 3.5 centimeters cake tin
28 x 18 x 4 centimeters baking pan
32.5 x 23 x 5 centimeters baking pan
30 x 19 x 5 centimeters baking pan
38 x 25.5 x 2.5 centimeters baking pan
22 x 4 or 23 x 4 centimeters pie plate
18 or 20 centimeters spring form
23 x 13 x 6 centimeters spring form
1.5 liter casserole
2 liter casserole

CAPACITIES

Square cake pans

8 x 8 x 2 inches = 6 cups
9 x 9 x 1½ inches = 8 cups
9 x 9 x 2 inches = 10 cups

Pie Plates

8 x 1¼ inches = 3 level cups
9 x 1½ inches = 4 level cups

Round cake pans

8 x 1½ inches = 4 cups

Loaf pans

8½ x 4½ x 2½ inches = 6 cups



9 x 1½ inches = 6 cups

9 x 5 x 3 inches = 8 cups

INGREDIENT MEASUREMENT CONVERSIONS

All-purpose flour, un-sifted and spooned into the cup

<i>Volume</i>	<i>Ounces</i>	<i>Grams</i>
¼ cup	1.1 oz	31 g
⅓ cup	1.5 oz	42 g
½ cup	2.2 oz	63 g
1 cup	4.4 oz	125 g

Granulated sugar

<i>Volume</i>	<i>Ounces</i>	<i>Grams</i>
1 teaspoon	.1 oz	4 g
1 tablespoon	.4 oz	12 g
¼ cup	1.8 oz	50 g
⅓ cup	2.4 oz	67 g
½ cup	3.5 oz	100 g
1 cup	7.1 oz	200 g

Firmly packed brown sugar

<i>Volume</i>	<i>Ounces</i>	<i>Grams</i>
1 tablespoon	.5 oz	14 g
¼ cup	1.9 oz	55 g
⅓ cup	2.6 oz	73 g
½ cup	3.9 oz	110 g
1 cup	7.8 oz	220 g

Confectioners sugar

<i>Volume</i>	<i>Ounces</i>	<i>Grams</i>
¼ cup	.1 oz	35 g

Abbreviations

Cup c.

Tablespoon tbsp.

Teaspoon tsp.

Pound lb.

Ounce oz.

Large lge.

Small sm.

Package pkg

Dozen doz.

Pint pt.

Conserving water aboard

How to drink, shower, and wash the dishes on about a gallon a day

DEPENDING ON THE SOURCE YOU QUOTE, THE AVERAGE landlubber uses between 70 and 120 gallons of fresh water a day. The average sailor could cross an ocean on that amount of water. Conserving fresh water is a major concern for all boaters, whether you have a watermaker or not. But, for those who cruise away from ports without a watermaker, it's a way of life.

Aboard *Lindsay Christine*, our 30-foot Mercator Offshore sloop, we have turned water conservation into a game. The four of us — my husband and I and our two children — try to make each tankful of fresh water last the longest time. We all get involved in saving drips and dribbles. The children come up with interesting ways to reuse water left over from any activity . . . like the time when Alex decided to add the water from one of his science projects to a sauce cooking on the stove. I wouldn't say the taste of vinegar and baking soda was terrible in our spaghetti that night, but . . .

After living this way, particularly while on passages, it is a wondrous sight to see fresh water pouring from a hose or spigot into our jerry jugs. We feel almost like kings receiving gold and precious jewels. And the feeling of knowing that our water tank is full again is no less wondrous. We start to think of leaving port immediately so we can get the optimum distance or time for that priceless tankful.

Aboard *Lindsay Christine*, we have a built-in 35-gallon fiberglass tank for our fresh water. When we set off for a trip, we usually carry an extra 15 gallons of water in three jerry jugs, and a full 1-gallon insecticide sprayer for freshwater showers. One of those 5-gallon jerry jugs is set aside for showering. One jug we add to the tank as we use our water. The last jug we always keep around. We add it to the tank only when we are about to fill our tank again. It is

our emergency jug, available if our pump breaks or our tank becomes contaminated.

Including showers

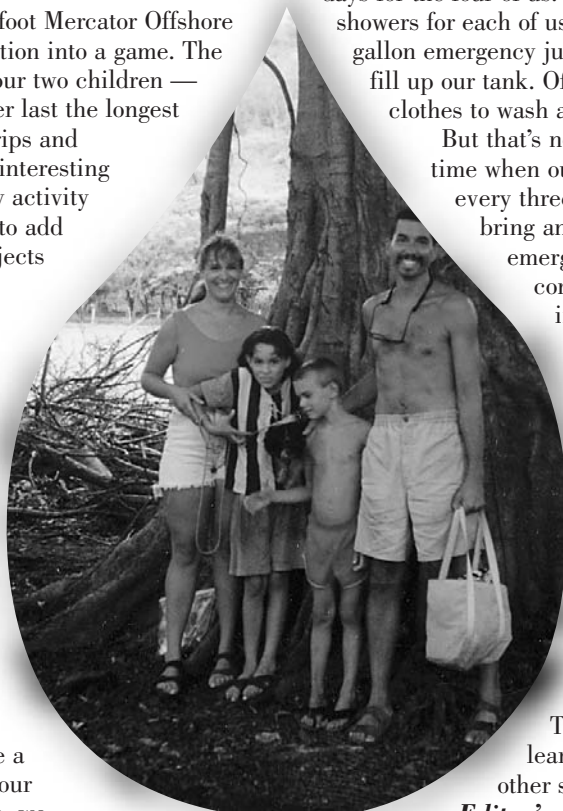
So, how long does that amount last us? If we are sailing in remote areas with little chance of refills, our water can last 40 days for the four of us. This includes three freshwater showers for each of us. And, we would still have our 5-gallon emergency jug full of water when we came ashore to fill up our tank. Of course, we would have a large pile of clothes to wash as well.

But that's not how it always was. There was a time when our 35-gallon tank had to be filled every three or four days. A time when we didn't bring any extra water jugs filled for an emergency. A time when a shower for one consisted of using several gallons instead of the half gallon that we each use now. We were naive back then — babies in the game of water conservation. It has been three years since we left to go cruising.

How do you get 46 gallons of water to last an average of 40 days for a family of four? Rather than approaching conservation as a problem of scarcity, we like to see our conservation as a form of cherishing a beautiful and useful gift. It is one gift that we have to use, so we might as well rejoice in its use.

The following rules are what we have learned from our own cruising and from other sailors.

Editor's note: *Theresa explains how her family lives on about a quart of water a day per person which, as she says, is about the amount each person needs to consume to stay healthy. This achievement is all the more remarkable when compared with the normal planning figure of one gallon per day per person, with a 50-percent reserve. This second figure may be a better planning figure if you're going offshore*



*A cruising friend once said,
“If you can’t see your hand
in a basin of gray water,
you know you’ve reused it enough.”*

by Theresa Fort

where rainwater will be your only source of resupply, and you cannot accurately predict how long your voyage will take.

Golden rules of water usage:

- Don’t restrict your drinking
- Make every drop count
- Reuse it until you can’t ever use it again
- Use sea water whenever possible
- Enjoy it!

Water is too important for your body, especially when you are actively sailing, to restrict your drinking. In order to stay healthy, each person aboard should consume 32 ounces (1 quart) of water a day from any source by eating or drinking. Only in dire circumstances should drinking water be rationed. Daily, the four of us do drink a quart of fresh water each. Sometimes our consumption is less when water comes from other sources like fresh fruits and vegetables, juices we have brought, milk from tetra packs, or other foods.

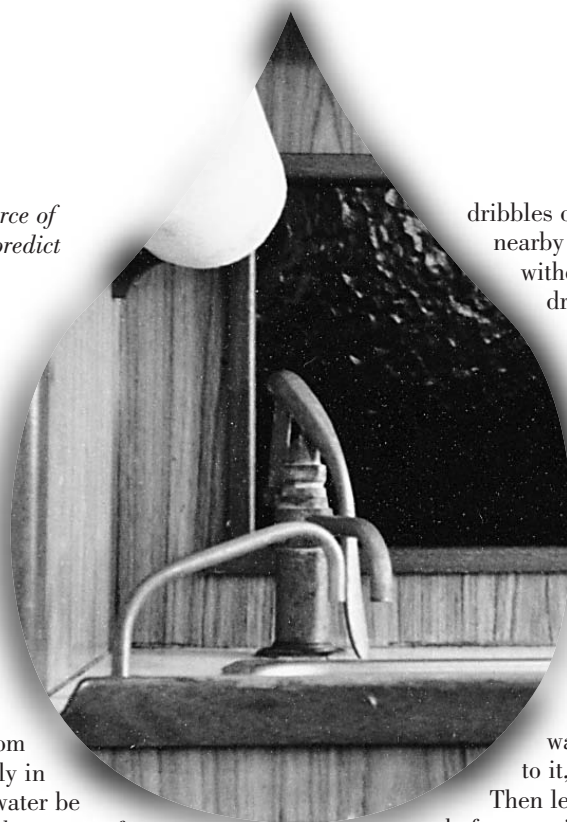
Here are some ideas on how to conserve water in the galley, a main location of freshwater use and conservation.

Install a hand pump for your fresh water (*See photo, this page*). Controlling the amount of water coming out of your faucet is one of the most important ways to conserve water. Foot pumps and pressurized faucets are more difficult to regulate than an old-fashioned hand pump.

A saltwater pump is wonderful to have aboard for water conservation. Rinsing the sink, your hands, your cans before opening them, or the countertops with sea water can save an enormous amount of fresh water.

Catch the dribbles

Keep a clean cup under your hand pump to catch any



dribbles or over-filled cups. Always have it nearby so that more water can be added or withdrawn when measuring, cooking, or drinking.

Potatoes can be boiled in sea water. Pour the hot salt water into your wash basin, and you’ll have hot water for dishes that night. Give the potatoes a light rinse with fresh water, and they’re ready to use.

Pouring off water you just cooked spaghetti in? Pour it into a basin to be used again. Incidentally, only use fresh water to cook pasta. It becomes a sticky, slimy mess when cooked in salt water.

Wash fruits and vegetables in sea water that has a tiny bit of bleach added to it, instead of using your fresh water.

Then let them dry thoroughly in the sun before stowing.

Reuse the water in canned foods whenever possible. If you’ll be cooking rice, you can add your canned-vegetable or canned-meat water to the water for the rice. It will flavor the rice and save you some fresh water.

When using your pressure cooker to bake bread or to cook rice or puddings, some recipes suggest you put your mixture in a separate bowl inside a pressure cooker atop a few inches of water. Substitute salt water for that outside water.

Washing dishes can be one of the most water-expensive chores aboard a boat. In warm climates we wash and rinse dishes in sea water. If we dry our dishes immediately with a towel, the salt buildup is not noticeable. The warm air seems to help finish the drying. In cooler climates, washing and rinsing in sea water doesn’t work for us as well. At those times, we wash in sea water and rinse in a little fresh water. Warming sea water on the stovetop in one of the pots from our meal with the addition of a little detergent helps begin the cleaning process. When it comes to rinsing the dishes, we pump a little fresh water into the sink, then use a clean cup to

“Controlling the amount of water coming out of your faucet is one of the most important ways to conserve water.

Foot pumps and pressurized faucets are more difficult to regulate than an old-fashioned hand pump.”

scoop and pour over the larger dishes to rinse them.

Seawater wash

Away from a water supply, we usually bathe with sea water. If the water is unsafe to swim in, or when we are underway, we use a bucket of sea water to get us wet. We lather up with an inexpensive shampoo — bar soap doesn't lather in salt water. Then we rinse with a few buckets more. My daughter and I, with our thick hair, used an amazing amount of fresh water when we washed and rinsed our hair in the old days. Now we wash and condition our hair with buckets of sea water. We then quickly rinse our hair with a little fresh water from our portable shower — this helps prevent the terrible affliction of stiff, unmanageable hair we call “Barbie Hair.”

After our bath, we towel off immediately to keep the salt water from building up on our skin. We keep a few towels aboard just for saltwater use and wash them whenever we get to a port. If the towels get to be too cardboard-like, we bring out a few new ones. Then on a windy day, we hang the old towels up in the rigging. The wind will beat out most of their stiffness.

But, after a week of daily seawater baths, we start to yearn to be freshwater clean. That's when we bring out our portable shower. We use an insecticide sprayer for our shower. By buying it new, we were sure that it had never carried any chemicals. Pumping up the pressure allows us to get a pressurized shower while using very little fresh water. When we are conserving fully, we only use the fresh water to rinse off. It feels wonderful! Especially after an overnight passage. Warming up the water a little on the stove before filling the shower allows us to enjoy a hot shower. Also, painting the spray bottle black allows you to warm your water on deck on a sunny day.

Twelve showers

As mentioned earlier, we keep a 5-gallon jerry jug of water for freshwater showers. If we are very careful, we can get 12 showers out of the 5 gallons, plus what the sprayer holds.


Our laundry is usually done when we are in a port, close to a water supply. We wash our clothes when we are away from a port only if we have extra fresh water and our tanks are full. This often happens when we catch rainwater. We have tried several times to wash our clothes in sea water and rinse in fresh. When it came to rinsing the clothes, it seemed as though we were using more fresh water to rinse out the salt residue than if we used all fresh water for the whole process. So now we wash and rinse in fresh and reuse whatever we can.

The first bucket of soapy wash water gets reused right away. Then the first rinse becomes the wash water for a second load. The second bucket of wash water gets reused. Then the second rinse water becomes the wash water for another load. We continue this until our wash is done or until we can't spare the water.

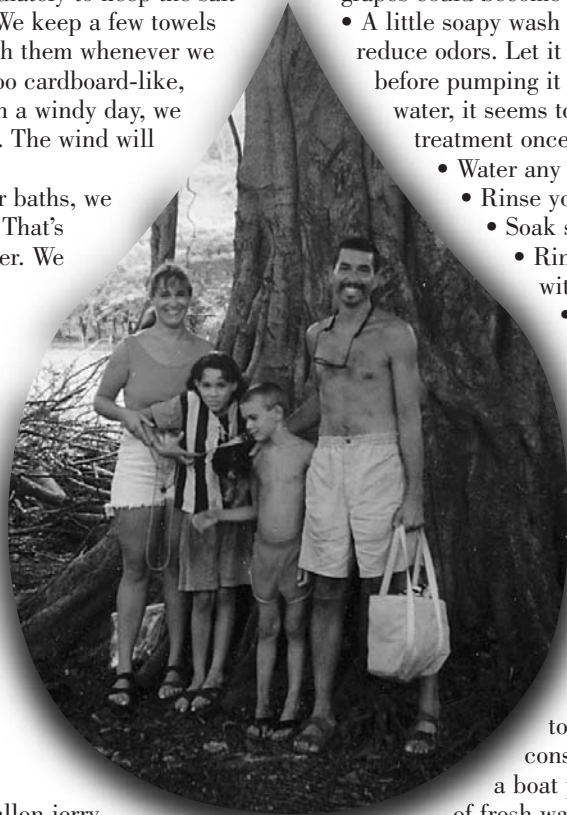
Now that you have saved all of that extra gray water, what do you do with it?

- Wash down the decks with your water to get the salt buildup off your boat.
- Pour soapy wash water into the bilge to help keep it smelling fresher. Pump it out after an hour or so of soaking. Make sure to use water without any debris. We once got a grape lodged inside one of our bilge pumps. I never knew grapes could become such deadly projectiles.
- A little soapy wash water can also be used in the head to reduce odors. Let it sit in your pipes for an hour or so before pumping it completely out. When cruising in sea water, it seems to help the head to get a freshwater treatment once in a while.
- Water any plants you have with it.
- Rinse yourselves with it.
- Soak stained clothes in it.
- Rinse the salt buildup on your stanchions with it.
- Rinse the salt buildup on the standing rigging with it.
- Wash your dishes in it.

A cruising friend once said, “If you can't see your hand in a basin of gray water, you know you've reused it enough.”

Conserving fresh water has become very important these days even on land. We hear the call to conserve in every news medium. Many states have severe shortages of water at certain times of the year or even all year long. Maybe the way to teach our society about water conservation is to put each person aboard a boat provisioned for a week with 10 gallons of fresh water and no hope for a refill until the week is over. Living aboard a boat for even short periods can quickly teach conservation of all kinds: space conservation, tool conservation, storage conservation, and especially water conservation. Think of the changes that could take place if we all thought about the loss of each drop or dribble of sweet fresh water down the drain. 

As a family of four, the Forts have sailed more than 10,000 miles aboard Lindsay Christine, their Mercator Offshore 30 sloop. Their cruising has taken them along the West Coast of the U.S. (including Alaska), Mexico, and Central America as well as the western Caribbean. They currently sail part-time on the east coast of Florida.



Making a distiller

After some experimentation, our pressure cooker has become a successful distiller with the addition of these items:

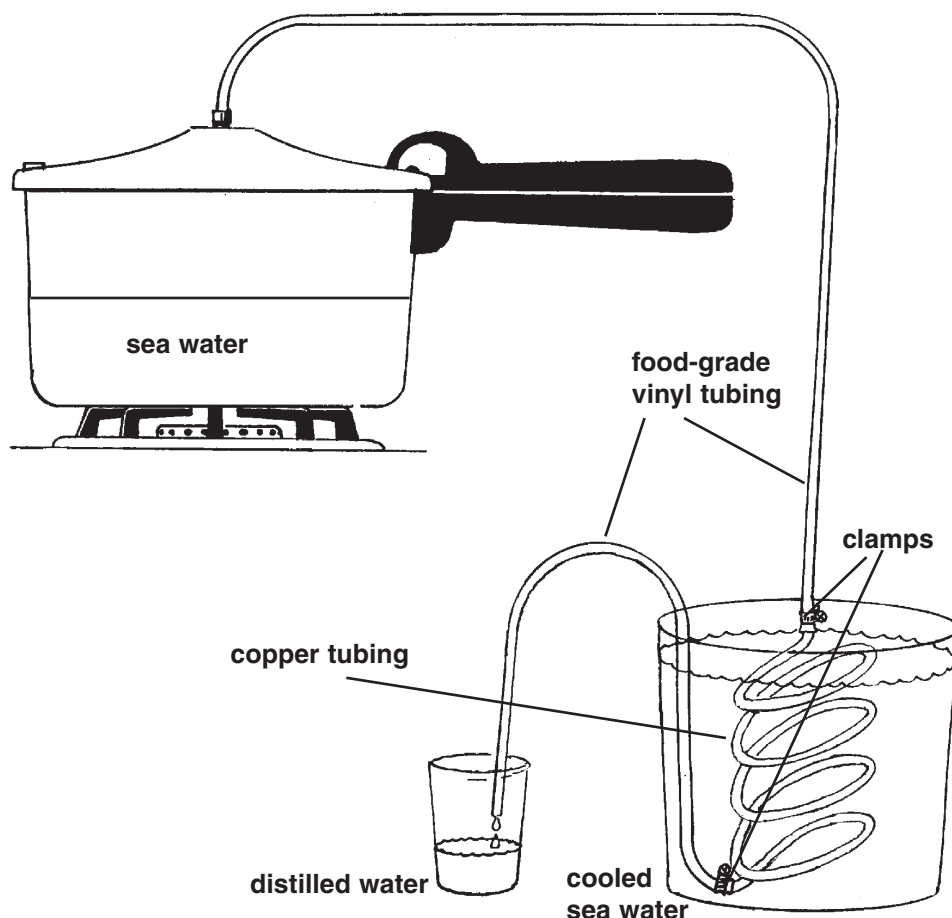
- 10-feet of 1/4-inch outside diameter copper tubing
- two 3-foot lengths of 3/8-inch outside diameter (1/4-inch inside diameter) food-grade vinyl tubing
- two hose clamps
- a bucket
- a water container

How we put the distiller together and run it:

First, we fill the bucket with cool seawater and bring it below to our galley. Then we fill our pressure cooker 2/3 full with sea water or any other water that may or may not be contaminated. Our copper tubing is wound into a coil around something cylindrical so it will fit completely into the bucket of cool sea water with one end pointed up toward the pressure cooker on the stove.

Our pressure cooker has a vent pipe with an outside diameter of 1/4-inch. We slide one of the 3-foot lengths of food-grade vinyl all the way onto the vent pipe in the lid. Then with a hose clamp over the vinyl tubing, we slide the copper tubing into the remaining loose end and tighten the clamp. The remaining piece of food-grade vinyl tubing attaches to the copper tubing end at the bottom of the bucket with a hose clamp as well. Then the remaining end of vinyl tubing is placed inside the water container, which sits next to the bucket. It helps if your container is shorter than your bucket.

Now we are ready to assemble the pressure cooker and heat the seawater. As steam builds up inside the cooker, it begins to make its way through the tubing. When it reaches the copper



coils, it condenses into pure water and flows into the water container. The key to making this distiller run efficiently is to replace the seawater in the bucket once it warms up. Be careful not to burn yourself when you lift the coil out of the bucket to change the water. As the flow develops, we turn the burner to medium low because less heat is required. Once the steam begins going through the tubing, we usually get about 1 cup of water after about 25 minutes on medium heat.

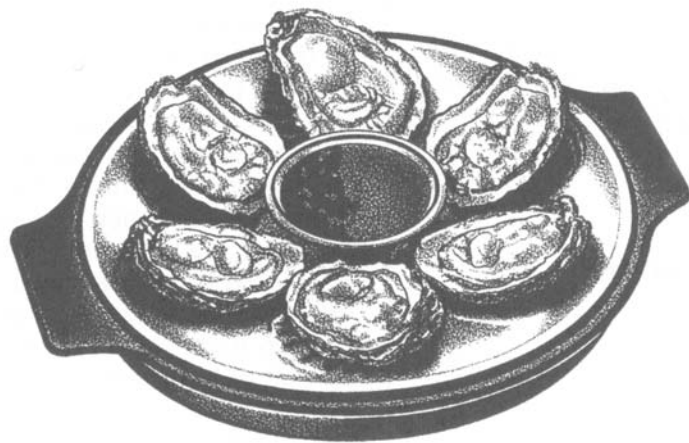
Keeping the copper tubing in a coil with the vinyl tubing already attached helps with storing and quick assembly. Before using the tubing for the first time, rinse it with clean water. Be sure to use only food-grade tubing, as not all

vinyl tubing is safe for drinking water use. We have never found the vinyl tubing to pop off the vent pipe or melt with the heat. The pressure that builds up is not the same because of the lack of the weighted regulator on the vent pipe, so the temperature is not as high either.

While this process is slow and uses quite a bit of energy, it could save your life in an emergency. In many situations you could use this process to create pure water. Water tanks can run dry or become contaminated. Or you may be somewhere which only has contaminated water available. You may also need distilled water for your boat's batteries.



Harvesting the bounty of the Seas



*A cruising chef shares sound advice
and delicious recipes for sailors*

Sailor Michael Greenwald has created a marvelous cookbook featuring the sea's rich and varied bounty and offering menus using ingredients that will remain fresh on long passages. Over the next year we'll share bits and pieces from his *Cruising Chef Cookbook* (Paradise Cay Publications, 1996). Our focus will be on recognizing, obtaining, cleaning, and cooking these treasures.

Michael's book is spiced with delightful illustrations by Rebecca Thomson and Michael's own poetic prose about the sailing lifestyle. We don't have room to share all the recipes, let alone his marvelous musings. Pick up a copy for yourself and see what we mean. These excerpts are offered as a how-to for those who would enjoy the gifts of the oceans they sail.

The first thing to note is that recipes for mussels, oysters, and clams are somewhat interchangeable, as are recipes for scallops, surf clams, and pen shell mussels. In addition, excellent variety can be achieved by mixing one or more different species together. Almost invariably, each complements the other, and everyone compliments the cook.

Clams

Steamers, longneck, or soft-shelled clams

Longneck clams are found in Atlantic waters as far south as Cape Hatteras. The leathery "neck" contains both of the clam's siphons. Longnecks live just below the sand surface in the intertidal zone. They are gathered commercially by the millions, while many more are collected by amateurs for home consumption. The demand is greater

than the natural supply; for this reason commercial farms raise them by the ton.

Longnecks are hunted at low tide by watching for the telltale squirt as the clam, detecting your advance, hastily withdraws his siphon. When a relatively larger number of squirts indicate a concentration of clams, turn the sand back and collect the mollusks. When plentiful, they may be collected by the quart or the bushel basket. The largest, four to five inches long, is just as sweet and delicious as the smallest.

Longnecks are sandy clams and should be washed several times in a bucket. Change the water a few times and agitate the clams to loosen clinging sand. Then soak them for a day in a mixture of sea water and corn meal. Finally, serve a small cup of clam juice with each portion of long necks. The diner may then swirl each clam in the juice to free it of the last bits of sand.

Longnecks may be eaten raw by slitting the rubbery "skin" along the edge of the shell, shucking off the tough neck, and dipping it in cocktail sauce.

We have always preferred them steamed, allowing about one quart or more of clams per person. Serve them with a cup of clam nectar, some melted butter, a few

seafood fritters on the side, and cold beer or a big jug of lemonade. After longnecks have been degrittled, they may be used in all of the recipes calling for sweet, tender clams. Longnecks are great for clambakes.

Little clams

Little clams are tender and just need a little steaming. Big clams may need to be ground or eviscerated and pounded. Use the little clams, or tenderized big ones, in soups and chowders; tougher ones in Mrs. Kelly's

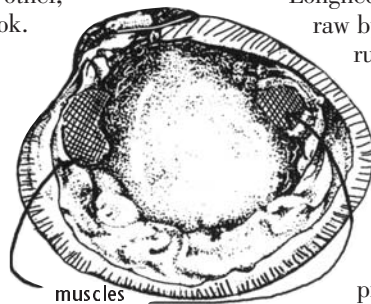
Clam Pancakes, or grind, add hot peppers and onion, batter, and fry. You can also

just cut them into thin strips, dip in egg and milk, double bread, and fry.

Opening clams: To open fresh clams, use a clam or butter knife, place it on the shell lips and tap with a hammer until the knife blade forces a slight opening. Slip in with a thin, sharp knife and cut the incredibly tough abductor muscles. Clam abductor muscles are located on either side of the shell toward the rear, so don't go hewing around inside the shell with your knife. Never try to break away the lips of a clam or cockle as the shell usually fractures, leaving shell fragments in the meat. Open over a bowl to catch the juice. Chill before opening.

Steamed clams

Any clam can be served steamed, but the guide to good eating is to use only the smallest ones, such as cherrystones, or the most tender species, such as razor clams, and grind the rest. If your steamed clams



Opening a clam

do turn out to be made of old golf balls, don't throw them out. Grind and use them for fritters.

Place ½ inch of water or wine in the bottom of the pot and dump in the clams. Close the lid and steam for about 15 minutes, or until all of the clams are open. Do not overcook; this toughens the meat. Serve with hot melted butter.

Mrs. Kelly's Clam Pancakes

Mrs. Kelly called these clam fritters, but they resemble potato pancakes.

Combine:

3 medium potatoes, grated and squeezed
2 eggs, lightly beaten
1 large onion, grated and squeezed
1 cup breading mix or cracker meal
1 teaspoon salt and pepper
2 tablespoons baking powder
2 cups clams, ground or well chopped

Make into patties about two inches in diameter and no more than 1/2 inch thick. Fry in vegetable oil until potatoes are quite brown. Drain or blot excess oil and serve immediately.

Clambake

Some of the best seafood we have eaten was cooked at a clambake. All you really need for a clambake are lots of clams and potatoes, but all sorts of delicious things *can* be added. Traditionally, a pit about 18 inches deep is dug in the sand and lined with flat rocks or bricks. The pit requires 8 to 10 pounds of rocks per square foot. A big fire is built and allowed to burn for at least an hour, adding fuel steadily to make a good bed of coals. When the coals are ready, sweep them toward the edges of the pit to expose the hot rocks. Add a 6-inch layer of seaweed or chopped lettuce.

Add food to the pit in a single layer. Brush small or medium potatoes with oil or butter, wrap in foil, pierce many times with a fork and place on the stones, close to the coals. Corn on the husk also goes here. Fish is usually cut into individual portions and wrapped in foil. Chopped vegetables, such as summer squash and tomatoes, are often enclosed with the fish. If live crabs are on the menu, they should be contained in a mesh sack. Place whole fish that have been gutted and scaled directly on the clams or crabs. Traditionally, the fish are wrapped in banana leaves to make handling easier. You can use foil, but leaves are much better.

After you have added the food, cover it with a 4-inch layer of seaweed. The briny

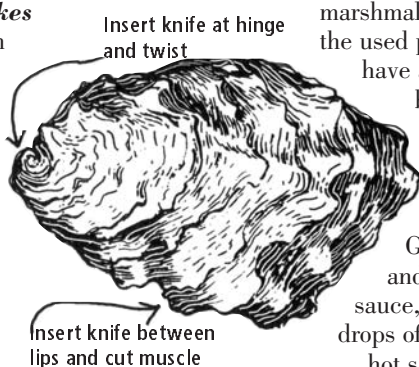
steam from seaweed enhances the flavor of the food. Clean, wet burlap sacks are placed on top of the seaweed to close the pit and contain the steam and heat.

Allow at least three hours for steaming. Resist the temptation to peek. As soon as the pit is opened and the food removed, turn the seaweed back, sweep the coals over all and throw on more wood. You will need heat to toast those

marshmallows and to burn the used plates. Be sure to have a big pot of melted butter, coleslaw, and lots of cold drinks on hand.

Oysters

Grill oysters, open, and squirt in chili sauce, salsa, or a few drops of lemon, butter, and hot sauce. Use grilled oysters in other recipes such as Oysters Rockefeller.



Opening an oyster

Opening oysters: Scrub the shell briskly with a brush. Position the oyster with the rounded side down on a chopping block so as much juice (called liquor) as possible will be retained. Use a cloth or oven mitt to protect your hand. Use an oyster knife that has a little diamond-shaped blade. The point does the initial opening job. You can also use a small, good-quality screwdriver. Insert the point into the hinge of the shell and twist until the hinge separates. Slip a thin knife into the shell, and cut the single abductor muscle, toward the front of the shell.

If it's not possible to open the oyster in this fashion, break off a piece of the oyster's shell at the lips big enough for the entry of a thin knife. Wash away the broken shell fragments. Slip in the knife, pressing toward the top of the flat shell and cut the single muscle that holds the oyster together. Remove the flat shell and cut the muscle where it is attached to the lower shell. Be careful not to lose too much of the liquor. Examine the meat for debris caused by your forced entry.

Fried Oysters

Pat oysters dry, double dip them in egg and bread crumbs, and fry a minute or two in hot oil. Pat dry.

Oysters Rockefeller

Oysters Rockefeller are traditionally made by first grilling (or steaming) the oysters open. The meat is then lifted, and a bed of hot spinach is slipped beneath. The oyster is then breaded and grilled. You can also make this dish by using jarred fresh oysters and making the dish in an oven casserole.

12 oysters

1 package frozen spinach or 2 pounds fresh spinach, thoroughly washed

¼ cup butter

½ cup bread crumbs

½ cup slivered almonds

½ lemon juice

1 cup sour cream

3 tablespoons horseradish

salt and pepper

To prepare: Steam oysters open and reserve. Boil a large pot of water and parboil fresh spinach for one minute. Drain, chop, squeeze, and reserve. If using frozen spinach, defrost, drain, and warm. Sauté almonds in butter until golden, add almonds to spinach; add a sprinkle of lemon, salt, and pepper. Make a bed of spinach and slip on oysters.

Brush oysters with butter. Grill until oysters are just sizzling, but do not let edges curl. Sprinkle on bread crumbs and brown. The object is to slightly dry and toughen the oyster, but not much.

The sauce: Mix horseradish, lemon juice, sour cream, salt, pepper, and warm. Just warm. Pour sauce over all and serve.

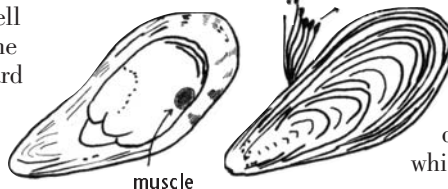
Mussels

Some mussel bodies are white, some are orange. Both are perfectly edible. Mussels are very tender and full of flavor. They are excellent just steamed open and dipped in butter or sauce. Mussel soup and stews are also a delight, and the fine meat is a good addition to seafood

Newburg.

Mussels can be eaten on the half shell with a little lemon juice. A knife is easily slipped between the lips and drawn toward the muscle, which is approximately opposite the beard.

byssus (pull forward to remove)



Opening a mussel

Cleaning mussels

Mussels should be bearded by pulling the beard toward the front of the shell. The beard is a web of fine golden-brown threads called byssus, which they secrete to anchor themselves to the surrounding rocks and other mussels. This golden thread is remarkably tough. The shell should be scrubbed with a brush.

Sea snails

Conch

There are a number of different varieties of conch (pronounced “konk”). This is a huge, snail-like mollusk, most of which are found in the warm Atlantic and Pacific waters and in the Indian Ocean. All are edible *except the huge horse conch, really a giant whelk*, which may exceed 18 inches in length (*refer to illustration on Page 54*). Conch are slow-moving bottom feeders that live in shallow water on sand or grass. Their huge shells are easily spotted when snorkeling, and there is no trick to finding them. Where there is one, there are a million. Where there are none, you may not see them for days.

Most conch are timid and retreat into their shells when handled. But there are several small (three- to four-inch) varieties called fighting conch that don't know this and will attack you aggressively when you pick them up. You may well wonder how an overgrown snail can move to the attack. It's best we tell you before you find out the hard way.

All conch have a horny covering on their foot, called an operculum. It is pointed at one end, rather sharp, and covered with mucus. The conch will take one look at your hand and spear you with its operculum so severely (though fortunately not with lightning speed) that you will immediately forget all about conch fritters and begin thinking about first aid. The best defense is to hold the creature in its shell by placing your thumb over the flat part of the operculum.

Your next problem is getting the darned thing out of its shell — no easy task for the uninitiated. There is no way to pull the conch from its shell. It is a far better puller than you are and always wins this game. Breaking the shell with a rock is also a loser's game unless you don't mind dropping a boulder on your dinner and picking the pieces of shell from the mess.

There is, in fact, only one reasonable way to separate the conch from his home: grab the operculum and attach a pair of Vise-Grips to it. This will prevent the conch from pulling far back into its shell and make removal from the shell much easier. Hold the shell in the left hand, with the opening downward and the spiral toward you. It is better to work somewhere other than on the boat, as the shell and slime tends to fly everywhere. Using the claw of a hammer, make a slit in the shell between the third and fourth spiral. Rinse the slit. Using a small knife with a narrow blade, cut the tendon which holds the conch in its shell. The tendon is beneath the meat. It is a broad flat sheet that lies against the pink center column, extending several inches into the shell. Slip a knife into the slit beneath the meat and cut the tendon completely. The conch can be removed from the shell with a slight pull. If it will not come out, the tendon is not completely cut. Resist the temptation to force the conch free by pulling with the Vise-Grips. The operculum is brittle and easily broken.

Kill the conch with a scooping cut which removes the eye stalks and snout. Do not delay as

About shellfish

Selection

Shellfish sold in developed countries are usually cultured (grown commercially) and are therefore safe to eat. Wild shellfish are traditionally eaten raw during the cold months, although there is no particular time of year when a mollusk becomes poisonous. Shellfish poisoning (caused by warm-water shellfish ingesting organisms during warm months that are harmless to the shellfish but toxic to humans) is a rare phenomenon.

Since shellfish obtain their food by filtering debris from water, they should only be taken from areas where the water is clean. When shellfish are taken close to populated areas, there is some risk of infection from cholera during the summer and from hepatitis. Cholera is killed by cooking. Hepatitis infection from shellfish is exceedingly rare but the virus is killed only by pressure cooking. Some people eviscerate mollusks and wash away their dark intestinal material, which is the location of harmful bacteria if any are present.

Bivalves that “clam up” should be purchased closed, or they should close quickly when handled. Those that do not close are dead. Do not let the fishmonger tell you they are “breathing.” I assure you they have breathed their last. Fresh shellfish should be bursting with juice. Tap one against the other and reject any that sound hollow. Avoid any that have big cracks or broken shells.

Cleaning

All bivalves should be scrubbed and made as clean as possible with a stiff brush prior to cooking.

Degritting

All bivalves taste better if they're allowed to sit six hours (or preferably overnight) in a generous amount of sea water onto which has been sprinkled a half a cup of corn meal. The mollusks will consume the cornmeal and eject their intestinal grit. This is important when preparing surf clams, quahogs, and steamers because their intestines are particularly gritty. If you don't have the time to feed them corn meal, the soft stomach portion of larger mollusks can be cut open and the grit washed away.

Storage

Live bivalves will last a long time if placed in a bucket and hung in the sea. Do not put them in a cloth or mesh sack and hang the sack over the side, since shellfish-eating rays and sharks will make short work of them.

Shellfish can be kept refrigerated at about 50°F. Do not store mollusks in a closed plastic bag; they will smother. Storage on ice kills them. They do best stored, lips-up, in an open tray covered by a towel soaked in salt water.

Refrigerated mollusk meat

Fresh, shelled mollusks (such as oysters) also come in refrigerator cans or jars. These may be stored directly on the ice or in a refrigerator at 35° to 40°F for about four days. No more. The important thing to remember is that you store the meat in its own liquor or, in any event, never rinse them until you are ready to use them. Regarding the danger of spoilage, let your nose be the guide. If they smell rank, don't eat them.

Regardless of how the mollusk is prepared, whether it is tough or delicate, the liquor inside its shell is tasty and should not be discarded. It can be used to make fish sauces.

Canned shellfish

Smoked shellfish such as oysters and mussels packed in oil are the pinnacle of canned cuisine, if there is such a thing. They are loaded with flavor and have a quite acceptable consistency. They do wonderfully as hors d'oeuvres and can also be scrambled into eggs, or tossed on a pizza. Get some.

Shellfish packed in natural juice suffer from the cooking necessary to sterilize them. They are already wounded in flavor, so treat them gently. Never wash canned shellfish since this reduces the flavor. They are used most successfully in recipes where they do not have to be cooked at all or where they can be introduced once the food has been cooked. A little lemon juice often will improve their flavor. Canned or bottled clam juice holds up well and can be added without hesitation wherever clam juice is called for.

the conch is now thoroughly irritated and can secrete an amazing amount of slime. Cut away the guts and the colorful orange-yellow mantle. Feel the mantle for conch pearls before discarding it. Some people save the mantle for fritters but eating it raw is an acquired taste. The clear rubbery "style," of unknown function, looking like a piece of spaghetti, may be eaten raw but doesn't have much flavor. A short digestive tract runs from the snout to the center of the body. Cut it open and wash the meat.

The dark, tough skin must now be removed, a slimy and difficult job. Absorb the slime with corn meal. Make a series of slits through the skin radiating away from the operculum. Pull the skin off with a butter knife or pliers. Conch meat is extremely tough, but tasty. You will have to either beat it with a tenderizing hammer or grind it. Put the meat into a plastic bag so it won't spatter, and pound it with a meat hammer until it begs for mercy. Wash the meat and your tools in vinegar. The conch is now ready for use.

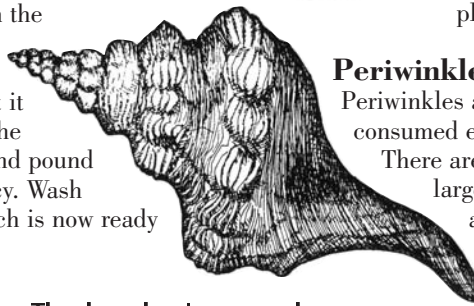
Storing live conch: Live conch will last a day out of water if kept cool and wet. Islanders collect bunches of conch, tapping a hole in the lip of each shell, tying them together, and throwing them over the side at night. The conch all try to go in different directions (like some sailors we know) and, therefore, go nowhere.



Cracked Conch

This popular Bahamian recipe is the West Indies' answer to the hamburger. When one fried conch is served on a hamburger bun, it is called a conchburger. When two fried conchs are served on a plate they are called "cracked conch." Call it what you like, the taste is great.

To prepare: Thoroughly pound a cleaned conch until tender. Rinse in salt water and sprinkle all over with lemon juice. Dust thoroughly with flour. Pan fry in a half-inch of vegetable oil until golden. Serve as hamburger with some garnishes or on a plate with a side dish of potato salad.



Periwinkles and turban shells

Periwinkles are not popular in the U.S., but are eagerly consumed elsewhere (see illustration on Page 56).

There are about a dozen varieties of winkles, the largest two inches long, about twice the bulk of a land snail. These are very tasty but tough little devils and need some cooking to arrive at the chewy but pleasant consistency needed for eating. Since they are usually free for the taking along any rocky shore, the price is certainly right.

To prepare: Rinse and simmer winkles in their shells for 20 minutes in salted water (about two tablespoons per quart with a generous pinch of bouquet garni). The salt helps shrivel the meat to improve texture and facilitate its removal from the shell. Remove and trim away the gut end.

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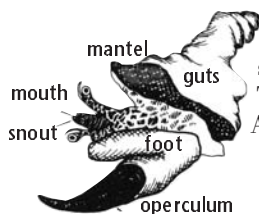
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Pressure-cook the winks in a little ($\frac{1}{2}$ cup) simmering broth for 20 minutes. Sprinkle in a little finely chopped green onion, carrot shavings, and a shot of sherry. Strain the solids and reserve. Thicken the broth. Serve over rice with the winks.



Anatomy of a conch

Land snails

French vineyard snails pay for their gluttony when they become the dinner rather than the diner in the fall during the grape harvest. In France, wild snails are seasonal. Traditionally, wild snails are first starved for a few days to rid them of plant material that is harmless to them but toxic to people. The snails operculate or “clam up” by withdrawing into their shells and sealing themselves in with a mucus that dries into a translucent membrane. This sealed state indicates that they are safe to eat. The snails are ready to eat just about the time the Beaujolais Nouveau is ready to drink. Snail eating is therefore associated with the harvest.

No one, certainly not those gastropod lovers, the French, would be satisfied to eat snails just once a year. Farm-raised snails are available year-round. Farm snails are fed lettuce and vegetables, then fresh herbs. Next they are whisked off to market. They're sold in mesh sacks that allow them to breathe and be hosed down. These are lively little devils. Do not give a bag of them a chance to get away. You will find all of them, but you'll find the last few by smell. Be sure the lively snails you buy really are farm fed and not “just out of the woods.” Ask.

Sea snails do not operculate but should be withdrawn into their shells and withdraw even further when handled. Snails that hang out of their shells and do not withdraw vigorously when handled should be avoided.

To prepare: Wash in lukewarm water and soak them for several hours in salty water with vinegar and a pinch of flour. Then blanch them for five minutes in heavily salted water. Allow them to cool and remove them from their shells. Simmer in a saucepan containing enough white wine and stock to cover them. Add a big bouquet garni, several cloves of garlic, some carrots, and onions. Add one teaspoon salt. Simmer three hours or pressure-cook 18 minutes. Slow cooking is better. Allow to cool. Remove the black end of the guts.

In the classic recipe, the shells are cleaned and herb butter is pushed in, followed by the snails. This is a huge pain in the transom. They can also be served very elegantly on toast.

Snails on toast

4 slices bread
3 tablespoons oil
3 tablespoons anchovies mashed in 3 tablespoons olive oil, plus a clove of garlic
4 tablespoons butter
 $\frac{1}{4}$ pound grated cheese
a garnish — any combination: roasted peppers, asparagus, sliced olives, artichoke caps, etc.
3 cups cooked snails
1 small onion, finely chopped
1 egg
1 cup cream garlic to taste

To prepare: Lightly fry the toast in a little oil and butter. Scrape on a light layer of anchovy paste. Add a light layer of grated cheese, like Parmesan, and melt. Add toppings. Sauté in snail pot (without snails) 10 minutes with butter, finely

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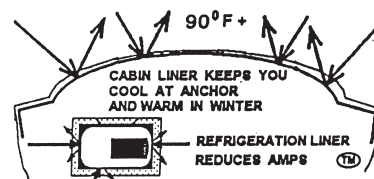
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chopped onion, oregano, pepper, and as much garlic as you dare. Add snails. Turn down heat and add one egg mixed in $\frac{1}{2}$ cup of cream and a little lemon juice. Stir furiously, until thick. Serve over toast. Sprinkle sherry over all.

Octopus

The octopus found at fish shops inhabits shallow water and never exceeds a few feet from tentacle to tentacle. Sailors' fables tell about huge monsters of the deep that attack whole ships, grappling them with their vicious tentacles, and pulling them down to Davy Jones' locker. The famous giant-octopus episode in Jules Verne's *Twenty Thousand Leagues Under the Sea* makes even the most sensible of us wonder if the sea harbors these fantastic creatures.



Turban shell

Late one night, alone on deck, I heard a commotion in the sea nearby. I switched on our powerful cockpit light to see what was about. Suddenly the water just astern seemed to boil, a huge octopus rose from the sea and seemed to float just above the waves; its arms splayed wildly. It glared balefully into the beam of light. Then, with a splash, it was gone. My hair stood right up on my head as I reached down the companionway for a pistol, but by then there was only the moonlight, the gentle swell, and the sparkle of the sea. In the morning I realized that the monster I had seen was certainly a deepwater octopus, surely not more than four to six feet from tentacle to tentacle, not big enough to suck even a dinghy under.

Incidentally, a small, blue-speckled Pacific octopus usually found around the coasts of Australia is venomous and very deadly but not poisonous to eat.

Killing, cleaning: Most fisherman pick these beasts up by their tentacles. Be careful not to get close to the beak (which is sharp and often venomous but usually not deadly). Beat it a few times on the gunwale or hit it with a hammer between the eyes. Do not let an octopus linger on the spear or in the dinghy; it may escape and, in any event, get very tough if allowed to live wounded.

To prepare: When the octopus is dead, slit the hood, remove the viscera, and pop off the beak. Chill, cut the tentacles into very thin rounds, and beat each one lightly. If not beaten, the octopus provides the toughest meat you have ever tasted. The meat can be further tenderized by marinating for a few hours in an acid marinade.

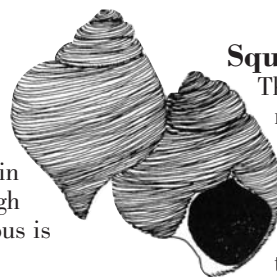
After tenderizing, but before cooking, trim away the tough skin and tentacles. Poach the octopus for 2 or 3 minutes in $\frac{1}{2}$ cup of vinegar and enough water to cover it. The octopus is now ready for use. You can also boil the whole tentacle for 20 minutes, cool, chill, and slice paper thin. These wafers may be served with a horseradish sauce.

Uses of octopus

Octopus is mollusk-like in flavor and when ground (raw) may be substituted for tender mollusks in any recipe, including chowder, fritters, Newburgs, or casseroles.

Octoburgers

Cut oblique one-inch slices of the tentacle near its base. Beat with a meat hammer until the thickness is reduced by half. Soak in wine and vinegar and garlic for an hour. Pat dry. Flour or batter and fry. You can also fry them in butter and oil over low heat.



Periwinkles

Squid

The mysterious squid is a mollusk that carries its vestigial shell in the shape of a small spear-shaped plate inside its body. One species, called a "cuttlefish," has a thick, pronounced plate but is otherwise just as tasty as other varieties.

Squid are usually not encountered by the individual in sufficient numbers to make their capture worthwhile; they are usually netted by trawlers. Once, however, in the mid-Atlantic, we heard a huge rain squall approaching, yet the sky was clear. Suddenly, with a dull roar, the water churned all around us and hundreds of tiny shapes shot into the air. Some even hit the sail. We found, to our astonishment, that they were little squid, so intensely engrossed in mating that they did not resist even when picked up and slipped into a bucket of water.

Becalm'd one evening in the middle of a transatlantic passage, I sat in the cockpit watching the stars, occasionally disturbed by an elusive noise which I finally realized was the occasional click of my fishing reel. I had neglected to reel in the trolling line — the lure was hanging several hundred feet beneath the glowing stern light.

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The line had some sort of dead weight on it. It offered no struggle as I reeled it in, making me think I had hooked a big plastic bag. To my amazement, out of the water came an unusual squid, a brilliant, angry red in color, perhaps three feet long, thicker than a man's leg and weighing perhaps 30 pounds.

As I attempted to pull it over the transom by the leader, it took one look at me with enormous eyes and squirted me in the face and chest with a powerful acid, and quick as lightning wrapped a tentacle around my hand and pulled with amazing force, nearly taking me over the side. I screamed in pain from the acid, struggled free, and rushed to the sink to wash my face. By the time the pain was gone, my woolen sweater had burned away where the acid had hit it. I returned to the deck and cut the line. That squid was the winner, not the dinner!

Squid, in our opinion, ranks right up at the top of the list of fine seafoods, and it is usually the cheapest; it is easy to prepare, is pure protein, and is worthy of consideration by any cruising gourmet. The Europeans, who treat squid with much reverence, have a variety of fancy recipes, including cooking the squid in its own ink. In Thai cooking, squid is first scored with a sharp knife. Scoring makes the squid roll up when cooked. The scored meat is then cut into pieces an inch long, poached and served in a spicy sauce. The rolled pieces tend to hold the sauce. We love squid and clams poached in a pan with the squid thrown on top of the clams. The squid and the clams still in their shells are mixed with a white sauce made with their juice or spicy marinara and tossed onto pasta. Squid is also excellent dipped in milk, then cracker crumbs, and deep-fried.

Cleaning squid: Pull off the semi-transparent membrane that serves as the skin. Separate the head and legs from the body. Separate the legs from the head by cutting just below the eyes. Pop off the

beak at the center of the tentacles and save the tentacles. Squeeze out the intestines. Pull out the cuttle bone and rinse everything. If the squid is bigger than 12 inches, it should be beaten to make it tender.

Fried Squid (Calimari Frite)

To prepare:

Slice the hood-like body into rings. Pat dry and shake rings and tentacles in a bag with seasoned flour. Sauté in vegetable oil for about five minutes or until golden. Do not overcook as it toughens the meat.

Seafood fritters

Go heavy on seafood and light on the batter. The batter is simply used to bind the pieces of fish together and to cover them with a pleasing, crispy coat.

To prepare: Make two to three cups of prepared seafood into 16 little mounds. The mounds must cling together; a small amount of flour may be dusted over seafood to assist in this process. Immerse seafood in batter, coating thoroughly. Transfer coated seafood to small skillet containing one half-inch of very hot vegetable oil. Fry until golden brown, turning occasionally.




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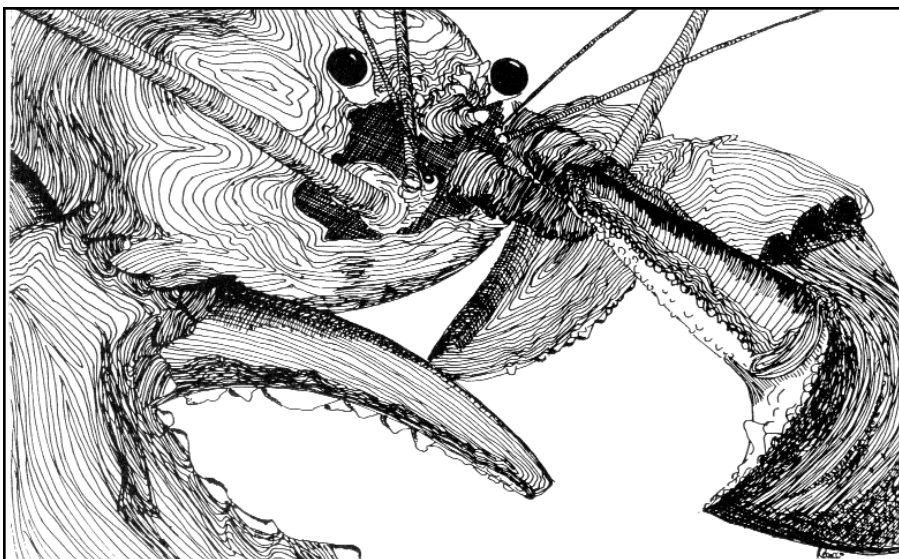
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More from the cruising chef

The culinary delights of shrimp, crab, and lobster

Michael Greenwald told us how to collect and cook clams, mussels, and other delights in the November 2001 issue. **Can the man cook?** He's a Paris-trained chef. **Does he sail?** He's earned his USCG 100-ton master's license (power and sail) and has sailed 55,000 miles, some of which included solo crossings of the Atlantic and Pacific. He is currently out there cruising. **What more?** Michael was a combat medic in the U.S. Army and U.S. Army Reserves. And he's written two books, *The Cruising Chef Cookbook* and *Survivor*. "Renaissance man" has been an overused term in recent years, perhaps, but we've got to call Michael "well rounded" at the very least. Once again, from *The Cruising Chef Cookbook*, published by Paradise Cay, Michael offers everything you ever wanted to know about shrimp, crab, and lobster but were afraid to ask.

About shrimp

Shrimp abound in coastal areas near brackish estuaries or mangrove swamps. Where there is one shrimp, there are millions — and a well-developed commercial fleet to harvest them. Shrimp have become a commodity, like oil or auto parts. There is a world price for them, which varies little from place to place, and bargains should be considered suspect. The local shrimpper with his handmade net is getting hard to

find and so are fresh local shrimp, which are the pinnacle of fine cuisine. When you find them, buy them.

Fresh or recently defrosted shrimp should be heavy, firm, and translucent; freshly caught shrimp are about as translucent as ice. Their shells are shiny. Old frozen and defrosted shrimp are limp and opaque, the shells are dry, and their tails do not retract.

Selection

Shrimp can be purchased green (whole), headless, or peeled. The head segment contains the guts, which are full of flavor and used in sauces. The head is also the most perishable part of the creature. Try to avoid buying peeled shrimp; they lose moisture in the shelling process.

Buy shrimp that are still frozen, rather than those that have been defrosted, since defrosting results in loss of juice. Cook shrimp directly from the

frozen state if possible. If a recipe requires them to be peeled before cooking, just dip them in hot water for a few seconds to thaw the shell, which can then be removed.

Prawns are freshwater shrimp and are less flavorful than ocean shrimp. Wild or river prawns are delicious but

more delicate in flavor than ocean shrimp. Cultured or pond-raised prawns are downright bland. Buy them at a really good price or not at all and dominate them with a spicy sauce.

The bigger the size, the higher the cost. Do not buy big, expensive shrimp

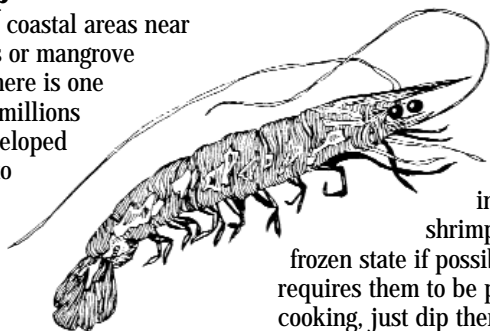
if your recipe calls for cut-up or cleaned shrimp in a sauce. Buy the

cheaper, smaller variety and save, save, save. Big shrimp should be served whole as the centerpiece of your meal. You can also buy just one or two giant shrimp per person as a centerpiece and complete the entrée with smaller shrimp.

Cultured, farm, or pond-raised shrimp

Wild shrimp eat plankton that flavors their flesh with that strong "shrimpy" taste. Farmed shrimp eat commercial "shrimp chow," which results in their indifferent flavor. They aren't worth the price. The most common farmed shrimp is the tiger, with black bands and spots, grown in the Philippines, Ecuador, and Thailand. Shrimp from these countries are usually cultured. Other countries are developing this industry and culturing other varieties. Alas, once these critters have been removed from the package, there is no way to tell what you are getting until you taste them.

The cleaning operation reduces the weight of the shrimp by half. One pound uncleaned (green), yields a half-pound of meat. Shelling shrimp reduces their



Shrimp and potato lasagna
You can use a mixture of crab, scallops, or other seafood in this simple, delicious dish.

Ingredients:

3 large potatoes, peeled, thinly sliced lengthwise
2½ cups raw seafood, chopped
1 cup onions, finely chopped, sautéed
½ cup scallion ends, chopped
Salt and pepper

1½ cups white cheese, grated
½ cup butter or oil
1 cup heavy cream
2 egg yolks

The sauce

1½ cups Bearnaise sauce
¾ cup dried mushrooms, reconstituted

Layer a buttered and oiled baking dish with potatoes. Add a layer of seafood and sprinkle with cheese and onions. Repeat. Mix eggs and cream, pinch of salt and pepper. Pour mixture over all. Use a fork and also shake the pan to get some of the mixture down into the potatoes. Bake at 375° F until bubbling. Cut into squares and serve with Bearnaise sauce over all. Garnish with scallions.

weight by about a third. Six to eight medium cooked shrimp per person are a main-course portion.

Cleaning

To clean shrimp, twist off heads, pull off legs, then remove the shell, prying from the underside with your fingers. Larger shrimp are sometimes shelled by cutting the shell on the dorsal side and slipping it and the legs off in one piece.

We usually devein only jumbo shrimp, but if yours have a pronounced dark gut, slit them along the top with a sharp knife and rinse.

For butterfly shrimp, make a deep dorsal cut from head to tail, leaving a bit of meat to keep the halves together. Press between plates to flatten.

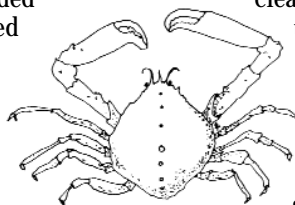
Canned shrimp require no cooking, but should be lightly rinsed in cold water to reduce saltiness. Soaking will reduce their flavor and make them soggy.

Boiled shrimp: Shrimp are delicate little beasts, and great care must be exercised not to overcook them. Use plenty of water, stock, or shrimp boil (water with prepared spices) to prevent a significant drop in water temperature when shrimp are added. Bring water to a rolling boil; add shrimp, bring to a rolling boil again and remove from the heat. Let stand for a few minutes, drain, and allow to cool to room temperature.

Braised shrimp: Breaded fried shrimp can be dropped into a pan of simmering sauce, such as soy, beer, garlic, or a BBQ sauce and tossed for a few minutes until the sauce bonds with the breading.

Sautéed shrimp: This means simmering very gently in a sauce. The cooking time for shrimp should be very brief, not more than 10 minutes. Finish the sauce and have it simmering when the shrimp are added. Outstanding sautéing sauces include marinara, curry, butter, and a roux.

Shrimp stock is usually made from the shells, particularly the heads,



Spider crab

garni and vegetables in a small pot. Drain and reduce by simmering. Use in sauces, thicken into a roux, or cool and add to fresh mayonnaise.

About crabs

Every crab I ever met I "et," and it was delicious! Whether it is a crab from land or from the sea, the fine textured flesh and delicate flavor made it an esteemed culinary delicacy. In my opinion, every crab is delicious, the only question is whether they are large enough to be worth the trouble of cooking and cleaning.

Generally speaking, when it comes to saltwater crabs, the colder and deeper the water, the larger the crab. The huge **Alaskan king crab**, which may exceed eight feet from leg tip to leg tip, is typically taken at the 100- to 150-fathom line. **Blue crabs**, which weigh less than a pound, inhabit shallow bays.

Tiny crabs may be too small to clean but they can be chopped up and cooked with vegetables in a little wine and water. Bring the liquid to a boil and allow to cool. Pour into a narrow bottle and give it a good shake. Loose crab meat will swirl up into the liquid, and the shells will fall to the bottom. Quickly pour off the liquid. The resulting rich broth can be thickened and used as a soup.

Buying crab

Except for "softies," crabs should be purchased either cooked or alive and not merely "breathing." They should start moving as soon as you pick them up or be too dangerous to pick up by hand. If not, they are "dead crab," not a good sign. Dead crabs spoil very quickly.

Crabs cooked alive often break off their own legs and claws as the temperature rises, so kill them before cooking. The easiest way to kill crabs is to force a screwdriver between their eyes and "pith" them by wiggling the screwdriver around, destroying the brain. Crabs may be steamed for 15 minutes in a large covered pot with a half-inch of sea water, or they may be put in cold sea water brought to a boil for 5 to 10 minutes depending on size. After cooking, drain and let the crab cool.

One pound of king crab legs will

Pickled shrimp with onions

This is one of the most delightful shrimp appetizers I've ever tasted. It's so good that it brings pangs of sweet remembrance, even as I write these words. The shrimp should be cooked in the shells. Squid, scallops, octopus, and other shellfish may be added. You can add flavor to this dish by including the shrimp shells with the shrimp boil.

Ingredients:

1 pound small or medium shrimp, peeled and in the shell
1 onion, chopped
2 cups rice vinegar
2 cloves garlic, finely chopped

1 cup celery, chopped
1 cup corn oil
1½ ounces of crab and shrimp boil
1 teaspoon salt
½ teaspoon celery seed

Wrap shrimp boil mixture in two pieces of cloth to confine it in the pot. Boil one pack for 20 minutes in one cup vinegar plus enough water to cover. Add shrimp. Remove from flame; drain and let stand for 20 minutes covered. Remove boil spices; shell shrimp, drain; place shrimp shells in a gauze and add to the mixture. Add other ingredients and remaining pack of shrimp boil. Place in Ziploc bag, refrigerate, and let stand for at least one day before eating. Longer marinating is better. Toss occasionally. Serve with crackers. Pickled shrimp keep in the refrigerator for about a week. They will last longer but taste deteriorates.

Cooking techniques

Baked shrimp: Shellfish are usually baked with thinly sliced or precooked ingredients that reduce oven time and prevent the shrimp from overcooking.

which are full of flavor. Simmer them for a half-hour in white wine with a bouquet

feed two. A two-pound whole **Dungeness crab** or a pound of Dungeness crab legs or two cups of cleaned crab meat will serve two.

Some crabs have considerable body meat. Other species have most of their meat in the legs and claws. Even these crabs have a large lump of meat where the leg joins the body. Do not break the legs away from the body. The only way to get the meat is:

1. Remove the upper shell. If you pry the shell forward from the rear, it will lift like the hood of a sports car. Don't be discouraged by your first glimpse of the insides; remember, it's well worth the

Wokked shrimp

This is a true gourmet one-pot main course that can be served over rice. Like most wok recipes, this dish moves right along, so have everything ready for instant use.

Ingredients:

12 shrimp, thinly sliced lengthwise
1 cup dried mushrooms, reconstituted
3 tablespoons butter
2 carrots, sliced thin and long
1 cup vegetable of opportunity
1 onion (or 3 shallots), julienned
¼ cup oil

1 chicken bouillon cube
1 tablespoon miso (optional)
2 hot peppers, thinly sliced
6 garlic cloves, crushed
¼ cup cilantro, chopped
¼ cup soy sauce
corn starch
1 cup beer

Make a mixture of beer, soy sauce, and a chicken bouillon cube. Use miso instead of soy if desired. You will use only part of this mixture to thicken. Get oil very hot in a wok and add the onion and carrots. Stir fry until carrots get soft. Add butter and additional vegetable, fry one minute. Add beer in dribbles to make steam. Stir frequently until done. Skim vegetables onto a bed of hot rice. Add oil, hot peppers, and garlic to wok. Stir fry over high heat for 2 minutes. Add shrimp and stir fry for 2 minutes. Add mushrooms and stir fry until everything is bubbling. Add corn starch thickener dissolved in water a little at a time and allow to thicken. Do not boil. Pour over vegetables.

Fried shrimp

The secret of tasty fried shrimp is to plunge them into oil that is almost smoking hot. Fried shrimp are usually battered or dipped in a milk/egg mixture and then bread crumbs. A batter can be made lighter and more crispy by adding a bit of soda water or shaved ice. The gas in the soda and the vaporized water from the ice virtually explode in the oil, making the batter crisp and fluffy.

Ingredients:

1 pound raw shrimp, shelled
1 tablespoon cognac
3 teaspoons Worcestershire sauce
½ cup seasoned flour

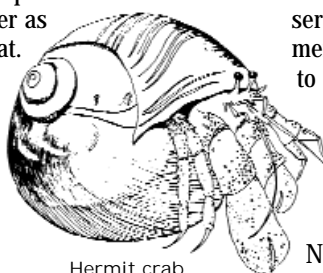
2 eggs, beaten
2 tablespoons butter, melted
½ cup beer

Toss shrimp in cognac and Worcestershire or soy sauce. Combine remaining ingredients to make a thick and sticky batter. Move along quickly as the bubbles in the beer burst upon contact with the hot oil, making the crust fluffy and crisp. Dip shrimp in batter; deep fry in a generous amount of hot peanut oil. Get the oil as hot as possible to start with. Cook until batter browns (two to three minutes). Drain and blot. Serve with sweet-and-sour sauce.

trouble for that superb flavor.

2. Scrape the crab butter from inside the shell. Crab butter is a yellow paste that adheres to the upper shell inside the "points." It is delicious and may be made into all kinds of pâtés or sauces. Some people mix the fat with butter as a dip for the meat. Delicious.

3. Tear off the "tail" and remove internal spongy material. This includes the thin cover tissue, the gills, and all viscera.



Hermit crab

4. Most crabs sold commercially are males. If the crab is a female with eggs under the tail, carefully snip off the tail and save; crab roe is delicious raw or steamed. Pickling the eggs in salt for a few days, then rinsing, improves their texture.

5. Break the crab in half along its midline.

6. Separate by breaking the body and legs into sections. The legs and claws may be cracked

with a lobster cracker. Meat can be freed from the body segment by tapping it sharply against a bowl.

This is a messy job. If you are serving cooked crab legs, we recommend that only good friends be invited to the orgy as shells fly everywhere.

Put a roll of paper towels on the table. Cover the table with newspaper. Cleaned crab meat may also be used in all mixed seafood recipes, Newburg dishes, fritters, devil sauces, or just chilled and eaten with cocktail sauce.

Canned crab meat

Fresh crab in cans must be kept refrigerated.

The meat has been cooked but not sterilized. There is usually a refrigeration warning on the lid. Canned crab that requires refrigeration may be used the same as fresh crab; it is quite delicious.

Crab in unrefrigerated tins has been cooked until sterile and is immortal. The texture of the meat is damaged, but some good flavor remains. Treat canned crab with great love and tenderness. Use it in recipes where other ingredients dominate the flavor or where other fresh seafood is added. Always add the crab at the last minute to prevent further flavor loss.

Hermit crabs

Marine hermit crabs often grow to great size and inhabit conch or other large shells. These large crabs are extremely delicious and taste more like lobster than crab. They may be steamed in the shell with the opening toward the top of the pot. As the heat penetrates the shell the beast will usually

Crab delight on toast

As is true with most of our crab recipes, fresh, precooked shrimp, lobster, or fish may be added either to expand the crab, or to create a mixed seafood delight. In this recipe, all ingredients are either precooked or don't need cooking, so the object is to just thicken and heat.

Ingredients:

½ pound crab meat, fresh or frozen; or 2 cans (approximately 6 ounces each) crab
2 teaspoons butter
2 tablespoons flour
1 cup milk
2 slices stale bread, cubed

1 cup mushrooms, sliced
½ teaspoon crushed celery seed or celery salt
1 teaspoon lemon juice
½ cup dry white wine
½ cup Gruyere or Swiss cheese, grated
Paprika, salt, pepper

Make a béchamel sauce (a roux, thinned with milk). Add all other ingredients except crab, cheese, and paprika. Simmer 5 minutes over low heat, stirring frequently. Do not boil. Reduce heat until liquid just steams. Add crab; stir, sprinkle with cheese, then paprika. Warm until cheese melts. Serve on toast spread with anchovy butter (anchovy paste and butter).

Spicy crab cakes

We use about a half-cup of jerk sauce in this recipe, which is a Jamaican spice. You can use chili-pepper paste, hot sauce, pepper sauce, or whatever you like. Add to mixture slowly until you get what you want.

Ingredients:

¾ pound crab, cleaned and cooked
1 cup bread or cracker crumbs
1 tablespoon baking powder
juice of 1 lime
2 tablespoons honey
1 teaspoon salt

2 eggs, beaten
1 large onion, grated, thoroughly squeezed
1 cup red or green pepper, finely chopped
½ cup Jamaican jerk sauce,
or 2 teaspoons chili paste

Combine ingredients, which should be almost as thick as hamburger. Make into balls about 1½ inches in diameter. Flatten into cakes in the pan. Sauté over medium heat in a little olive oil or butter. Remove when browned and blot. Serve with cocktail sauce, tartar sauce, or mustard and honey.

abandon it. If the crab remains inside the shell, pull it out gently as the meat is in the tail. Large hermit crabs (in their shell) should be steamed in a small amount of water for about 15 minutes. The cooking time varies depending on the size of the shell, but it is better to undercook the crab initially. It can then be removed from its shell and steamed to completion.

Sauce choices

1. Canned cream of tomato soup with a dash of sherry and lemon juice.
2. A sauce béchamel blenderized with a roasted red pepper, Parmesan cheese, lemon juice, thinned with milk.
3. A soy sauce, garlic, ginger, mustard powder, and beer thickened with a little corn starch and garnished with scallion ends.

The noble lobster

Lobster species differ greatly in appearance and may not be closely related to one another, but they all taste great! The so-called **American lobster** has claws. It varies in color from green to dark blue. A meaner, more voracious critter is hard to find. They fight each other to the death for territory, and the winner usually consumes the loser!

They eat their own young and give no quarter. They would probably be glad to eat you if they could. In the Northeast, American lobsters are hatchery-raised until they are about three quarters of an inch long, then released. Large numbers of male lobsters are caught during the summer months and stored in ponds for sale during the winter.

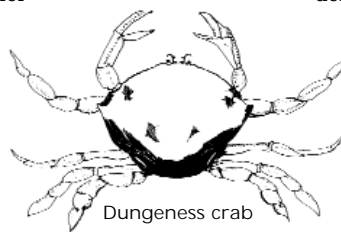
The **mole lobster**, a clawless relative of the American lobster, looks more like a crab with a fat abdomen. It is a cold-water species found on or around weed beds, usually near isolated islands. Many are found in the Azores, while some have been netted off the Shetlands, Greenland, and

Iceland. Mole lobsters

seem almost as broad as they are long since up to 60 percent of the creature's weight is a huge hunk of tail meat.

There are several species of clawless, warm-water **spiny or rock lobsters**, also called **crayfish**. Do not confuse **crawfish** with **crayfish** (sometimes called **crawdads**), which are a smaller, less delicious freshwater species. Another freshwater river shrimp, which may run up to eight ounces, is called a **langoustine**. It is also tasty but more bland in flavor than saltwater shrimp.

Unlike the aggressive American lobster, spiny lobsters are usually timid. During the breeding season they lose their instinctive fear, often crossing shallow grass beds in great numbers — boldly advancing en masse, antennae waving. Spiny lobsters grow about the same size as American lobsters. They can be found in tropical seas all over the world. Fresh spiny lobsters are just as delicious as fresh American lobsters.



Dungeness crab

The Mediterranean Sea and the Indian Ocean are home to several species of clawed, shrimp-like crustaceans. Their size, however, never exceeds one-half pound; normally they are only four to six ounces. Their claws are long, thin and of equal size. They are tasty like shrimp but do not share the absolute gastronomic pinnacle with American and spiny lobster.

Selecting fresh lobster

A fresh lobster must be alive and still have a little fight left in him, otherwise he is what the fishmonger calls "still breathing." If the fishmonger sees you looking at a lobster for signs of life, he will give it a shake, knowing its primitive nervous system will still react, even though the lobster is dead. Dead is unacceptable because it begs the next question: how long dead?

Female lobsters are more succulent than the males and may contain delicious roe. The females are at their peak just before the egg-laying season when they contain roe. Lobster connoisseurs know this and often ask for females when they dine out. As a result,

most of the females go to the better restaurants. It is rare indeed to find a female lobster for sale, but lobster aficionados always search for them. Lobsters may be sexed by examining their swimmerets, small finlike appendages on the underside of the tail. The males have narrow swimmerets.

Crab wonton

A wonton is a thin wheat-flour noodle. Wontons are usually "stuffed," two wontons are glued together around something tasty using flour and water as a paste. Frequently the "something" is fried pork in a spicy sauce. In this case the something is a delightful combination of crab, sautéed vegetables, and cheese. Makes eight wontons, serves two. Each wonton requires only one tablespoon of stuffing.

Ingredients:

16 wonton shells, about 4 inches
1 cup cooked crab meat
½ red pepper, peeled, julienned
1 small onion, julienned
2 Serano chilis, finely julienned
8 cloves garlic, blenderized

½ cup white wine
4 tablespoons oil or butter
2 tablespoons sherry
¼ pound sharp cheddar cheese, grated
Capers
Salt and pepper

Sauté the vegetables in butter and oil for a few minutes. Add the wine and simmer five minutes. Pour into a mixing bowl. Add the crab, capers, and cheese. Toss lightly. Place about one heaping tablespoon of mixture in center of a wonton. Brush wonton edges with flour paste. Cover with another wonton and press closed. Boil in salted water until wonton becomes translucent and floats.

American lobsters reach the market with pegs in their claws to prevent mayhem in the fish shop and to keep them from destroying each other. Should you meet an unplugged lobster, grab and close the claws. They close easily. Wrap a rubber band around them. Keep in mind that the thin claw is for feeding and the fat claw is for crushing. You really, really don't want to find out how hard the fat claw can crush. Lobsters sold with one claw missing are called "shorts," not to be confused with illegal, under-sized lobsters, which are also called "shorts." You can get real bargains by purchasing shorts with just one claw.

We are of the general opinion that when it comes to buying lobster, bigger is better. You get more meat proportionally because the meat in the legs becomes accessible. The meat in a large lobster is just as tender and delicious as in small ones.

Selecting precooked lobster

Make sure the meat has the briny odor of the sea. Pull the tails back; they should recurve when released. If they do not, the critter was dead when it was cooked, not a good sign.

Frozen spiny lobsters are sometimes tough and often have an iodine taste if the tail is over 10 ounces. It's expensive and has little of its distinctive fresh flavor. Who needs it? Especially when frozen shrimp taste better and are cheaper.

The American lobster, most commonly found commercially in the ¾- to 2½-pound range, makes a fine meal. A 1-pound lobster feeds one person, and a 2½-pound lobster feeds three — or it can feed one. While these sizes are typical market weights, it is not unusual to find 15- or 20-pound monsters on occasion. The largest spiny crawfish I ever caught weighed 14 pounds, and it was delicious!

Live lobsters will keep for a day if refrigerated at 45° F to 50° F. Placing them in a thick sack surrounded by ice

has similar effect. American lobsters may be kept alive indefinitely in a mesh sack or pen if stored in their native water.

Killing and cooking

Lobsters are usually cooked whole without any preparation. The most humane way to kill a lobster is to pierce it between the eyes with an ice

7 minutes, checking frequently and basting with more butter to prevent drying.

Deep-fried tail: We disdained this Caribbean specialty until we tried it. However, it requires close to a quart of very hot oil. Kill the lobster and sever tail nerve by slipping a small knife between body and tail joint. The tail should relax. Slip a butter knife up inside the body

cavity against shell and separate the tail meat. Remove tail. Dip exposed meat into a fritter batter. Drop in very hot oil. Watch out for spatters. The oil does not penetrate the lobster because the steam from inside the shell blocks its entry. Fry half-pound lobster tails for 4 minutes.

Gutting

After cooking, a 4- to 6-inch piece of antenna is usually broken off, and the broken end is slipped into the anal vent.

With a good jerk, the antenna is pulled out, effectively eviscerating the beast.

Opening

1. Work should be done in the sink. Use a heavy scissors or a pair of cooking shears. Work with a towel and be careful of hot splatters.

2. Cut the underside of the shell from the anal vent to the tip of the head. Just cut through the shell.

3. Lay in the sink, let drain.

4. Now cut the lobster from the end of its tail along the top to its head.

5. Finally, cut through the front of the head, giving you two body halves.

6. Separate.

7. Crack the claws and joints.

8. Allow to drain.

9. Remove the head sack. Be careful to retain the green liver, which is delicious. If there is any black, gooey material inside, remove it.

10. Twist off the claws at body.

11. Crack each arm segment with a cracker.

12. Lever the lower part of the claw from side to side, not up and down, and pull it free.

13. Break legs the same way and pull each segment free, taking the cartilage with it.

14. Discard the spongy gills and suck free the meat in the body cavity. Serve with hot melted butter.

Seafood au gratin

Seafood au gratin is traditionally baked and served in individual crocks, but it can be quickly cooked in a pan over low heat and served over toast. Goes well with lobster, shrimp, crab, and scallops.

Ingredients:

¼ cup butter

1 pound cooked seafood, shelled

2 tablespoons flour

½ cup white wine

1 cup cream or condensed milk

2 tablespoons sherry

1 cup mild cheese, grated

Salt, pepper, paprika

To prepare: Melt butter in large pan; stir in flour. Let flour bubble for a minute; stir constantly to remove lumps. Add cream and wine; stir over medium heat until thickened. Add seafood and cheese; cook over low heat; stir constantly until cheese melts. Serve on toast; sprinkle with salt, pepper, and paprika.

Lobster thermidor

Ingredients:

Meat from 1 lobster

2 tablespoons butter

¾ cup white wine

1 teaspoon dry mustard
¾ cup cream

Kill lobster and remove as much meat as possible. Thinly slice the meat and sauté for a few minutes and reserve. Add other ingredients and simmer over low heat to reduce until thick. Place cooked lobster on herb toast and pour sauce over all.

pick or
screwdriver. You can also add

an inch of seawater to a large pot, add the lobster, and bring slowly to a boil. The lobster just keels over. Plunging them into boiling water causes a violent reaction.

A common practice, when a spiny lobster is too big for the pot, is to twist off the tail. Kill the lobster first by pithing between the eyes or just chop the body in half lengthwise if you are broiling. Once the lobster is dead, the tail muscle relaxes and can be pulled free with the help of a spoon inserted to free the muscle. If the lobster exceeds about 1¾ pounds, meat can be found at the base of the antennae and the legs. These joints may be twisted off and cooked with the tail. Larger lobsters have edible meat in the legs.

Steamed lobster: Add about ¾ inch seawater to a large pot. Add lobster. Cover; bring water to fast boil. When steam begins escaping from under lid, reduce flame and cook for 15 minutes. No more. Boiled lobster are similarly cooked but in boiling water.

Broiled lobster: Split lobster in half from head to tail; discard the dark stomach, a hard sack near the head. Squeeze lemon all over, and dot with butter; let stand for a few minutes. Brush with melted butter; slip under broiler for



Go fish!

by Michael Greenwald

Part Three from the cruising chef with a focus on catching and preparing finned treasures of the sea

I AM NOT WHAT COULD BE CALLED A sport fisherman. Whereas sport fishermen envision their catch leaping above a sparkling sea, I picture mine surrounded by onions and carrots. When the fish leaps, I begin to salivate. I may not be a sportsman, but I know how to put fish on the table.

My idea of a fishing rod is a 12-ton sloop with a large two-speed ocean reel hose-clamped to the stern rail. My idea of light line is 60-pound monofilament with a heavy leader. I haul fish in and make them into fillets.

If a fish is too big to reel in I turn on the engine and tow it for a few miles until it drowns. I learned this useful technique one morning while single-handing across the Atlantic. As is my habit when single-handing, I slept at dawn and awoke to a gorgeous day with a very light wind and no swell and the dark outline of Flores, the westernmost island of the Azores, in sight. I kept getting the feeling that something was amiss. At last I discovered that the fishing line was bar tight and that something very, very large was towing me back toward the United States at a slow but steady pace.

Normally I would just cut the line, but I was close to land and had visions of giving away the fillets of whatever was out there to my friends. It was time for the engine. After towing whatever was on the line for about an hour, resistance ceased. I reeled in a monster tuna, weighing perhaps 300 pounds. Its eye was as big around as a teacup.

There was no chance of hauling it aboard by brute force. I gaffed it, tied the gaff to a halyard, and threw the halyard on a winch. I was lifting the fish, but the small, cheap gaff was at its limit. I could also hear the block at the masthead squealing in protest. Something was going to give. I ran a line through its gills, secured the line to a shroud and got to work with a machete and saw. I eventually ended up with about 135 pounds of very fresh tuna, which might not have

been the lion's share, but it was nevertheless a very good piece.

I am always on the lookout for circling or diving birds, weed patches, or jumping fish. If these areas are not too far off course, I like to troll around them. In areas of current such as the Gulf Stream, a big swirl of debris often indicates an eddy whose edges are packed with fish.

The secret of being a good trolling fisherman is hauling in your lure and checking it frequently. Every hour is not too much. The more often you do so, the more fish you will catch. Otherwise seaweed and debris get caught on the lure, rendering it ineffective.

Trolling lures fall into two categories for a sailor: lures for a speed of five knots or more and lures for lower speed. When a boat is moving above five knots, the lure goes by the fish like a shot, and only the creature's instinct causes a reaction. Feather and plastic lures looking only slightly like fish do well. If the lure goes slower, the fish are able to swim up to it and have a better look. When they see a feather jig going three knots, they seem to say, "What is *that*?" In this case, the lure needs to look more authentic and have much more action, like a big freshwater bass lure.

Kinds of lures

I've used feather jigs, squid jigs, yarn jigs, can lids, spoons, coins, and long-shank hooks wound with rag and wrapped with Christmas tree tinsel. Light-colored lures with a flash of red, blue, or green work well on bright, sunny days. Darker lures do

better on an overcast day.

I prefer a #7 Owner hook with a five-foot 175-pound wire leader. This short-shanked, extremely sharp hook is of the highest quality. Expensive hooks such as this should not be stored in your tackle box, mixed in a rich stew of dissimilar metals and sea salt. They are better off living with your sewing needles. I also use #9 stainless double hooks on a wire leader attached to a heavy swivel. These hooks are not as good as the Owners and can straighten out, but they don't rust. So they outlast the Owners.

I maintain a supply of 6-inch feather

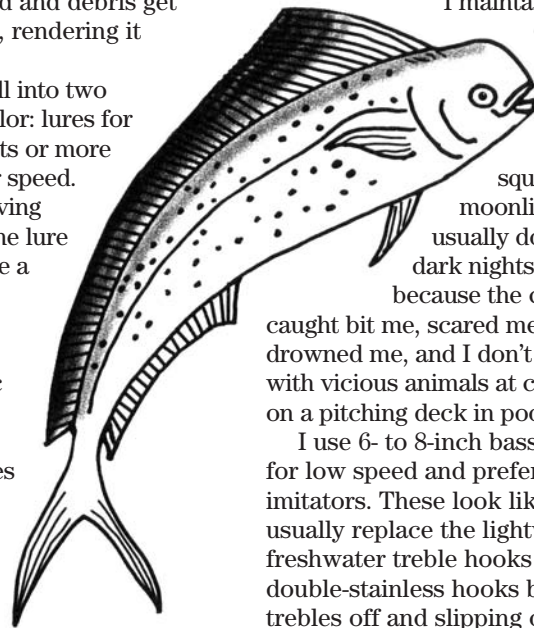
jigs in a variety of colors and eight plastic squids for

moonlit nights. I usually do not troll on dark nights, however, because the critters I have

caught bit me, scared me, and nearly drowned me, and I don't like messing with vicious animals at close quarters on a pitching deck in poor light.

I use 6- to 8-inch bass-type lures for low speed and prefer mackerel imitators. These look like little fish. I usually replace the lightweight freshwater treble hooks with larger double-stainless hooks by cutting the trebles off and slipping on the doubles, which are then moused with stainless wire. As the boat speeds up, you can tell it's time to change to a feather jig when the bass lure begins jumping clear of the water.

The best way to land a bluewater fish is to grab the wire leader at the swivel with a gloved hand and fling the fish aboard. Gaffing is OK, but requires skill. The fish sees the gaff and struggles. The gaff can miss, driving the fish into a frenzy. Many fish are lost this way, but once the gaff goes in, the fish stiffens and is easy to land.



Male dorado

The force of tossing a fish through the air onto the deck will temporarily stun it, allowing you time to slip it into a plastic garbage bag. The bag calms the fish and contains the blood and mess that follows. Send sensitive crew below. Beat the critter on the head with a winch handle three or four times. Don't be shy. Meaner is kinder. If you are just too kind to be so brutal, toss a shot of rum into the critter's gills. This kills it instantly — and what better way to enter the Pearly Gates than stoned on rum?

Immediately take a chisel, screwdriver, or short, heavy knife and sever its spine just behind the head. Once the spine is cut, the fish stops jumping around. Work right through the garbage bag. Use a hammer if necessary. Work a knife around in the wound to make the fish bleed. Close the bag. Allow the fish to bleed a few minutes.

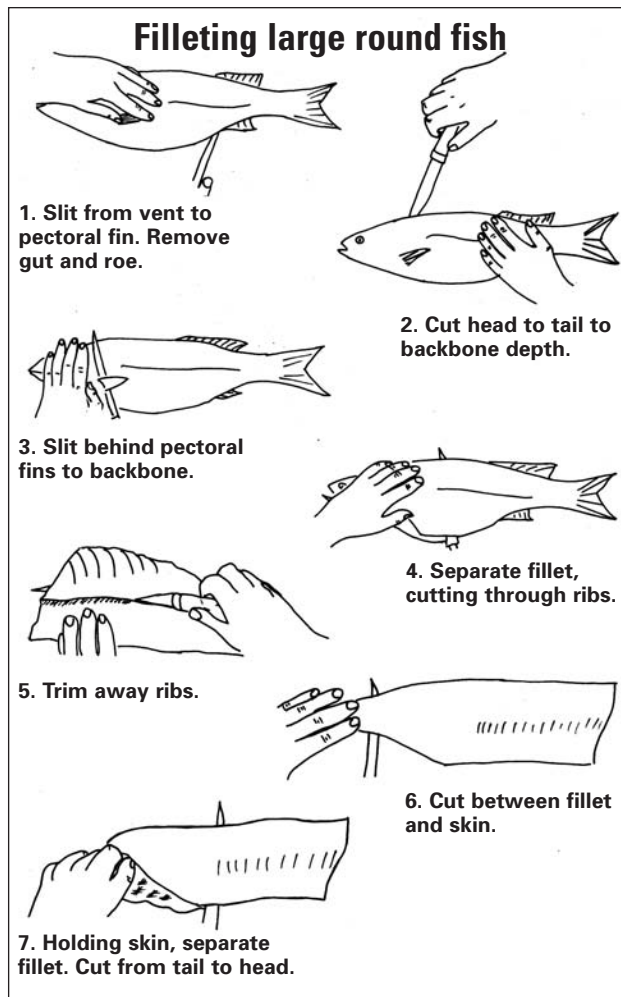
Ninety percent of the fish I have taken by trolling in deep water were tuna and dorado (called mahi-mahi in the west or dolphin fish in the east), with an occasional wahoo thrown in. Closer inshore, I often get bonito and mackerel, which I am not fond of eating. If I keep a mackerel, it will probably become bait.

Bottom fishing

At anchor I use cod sets which consist of a dozen or more baited round hooks on 2-foot leads set at 4-foot intervals with a 3-ounce sinker at the end. I keep a bag of wine corks handy and push the hooks into the corks as I bring them aboard. I usually bait with pieces of small fish.

I drop the set after dark, preferably into water deeper than 30 feet. If the set is to be dropped near the boat, I frequently chum by grinding up whole baitfish and periodically tossing the mess over the side. This brings small fish, and they bring the big fish.

If the set is not attached to the boat, it should be attached to something heavy like a small anchor (with a float) so the fish don't swim off with the set. Pick up the set at dawn because the hooked fish are vulnerable



to sharks. You get rock cod, sea bass, and ugly fish like sculpins, which are very tasty. You also get the occasional ray or skate whose wings are very, very tasty. I also love to use collapsible crab pots, but it's getting harder and harder to find clean waters to fish for crabs, and you don't want to eat crabs taken from a harbor unless you like the taste of oil.

Cleaning flat fish

Members of the very tasty halibut family begin life like other fish with an eye on each side of the head, but as they develop the eye on one side migrates to the other side so that the fish, instead of having a right and left side has an up and a down side.

1. With a sharp knife trim away the fins that run around the edge of the fish.

2. Slip a small sharp knife under the skin at the tail and cut through both sides from tail to head.

3. Connect the cuts.

4. Pull the skin free by pulling it off from tail to head. Keep your hand close to the body so that you pull forward, not upward. Use a small

sharp knife to assist.

5. Cut away the guts and run your finger along the backbone to remove any dark red clots.

Scaling round fish

This is easier when the fish is wet. It's helpful to have someone stand by with a bucket of seawater to assist you. Scaling should be done before gutting, filleting, or steaking the fish because the guts fill out the abdominal cavity and make the job easier. Hold the fish down by its tail and slide the knife or scaler in short strokes toward the head. A scaler works much better than a knife. Be sure to get the base of the tail, around the fins, and under the head. Wash thoroughly in seawater. Feel all over to be sure all the scales are removed.

Tuna and swordfish have short, heavy bones and are often steaked:

1. Scrape to remove excess tiny scales and slime.

2. Gut the fish and trim away the fatty belly strip.

3. Wipe the skin with a paper towel.

4. Chop the rear section of the fish free, at the anal vent. This portion will be filleted.

5. Place the fish on a cutting board and slice it like a salami, creating steaks about ¾-inch thick.

Filleting large round fish

A round fish, such as dorado (mahi-mahi) and wahoo, is the kind that has all of its parts in the usual places. The best place to dress the fish is on the cockpit seat so you can kneel in the cockpit. Make bold, decisive cuts so you don't have many ragged edges and flaps of meat (*see illustration above*).

1. Cut from anal vent to pelvic fins. Gut the fish and save the roe. Male mahi-mahi have a bold, blunt head. The "roe" they produce is milt and is not tasty.

2. Make a deep cut to the backbone from head to tail, bumping the knife point along the backbone.

3. Make a deep cut behind pectoral fins to connect dorsal and ventral cuts.

4. Separate the fillet from the body, cutting through the ribs.

5. Trim away the ribs.

6. Skinning. Rinse the fillet and pat dry. Place it on some newspaper spread on the cockpit seat. Place the fillet next to the edge of the seat so that the knife handle (and your hand) will be clear of the seat. Hold the tail end of the fillet and slip your knife between the skin and flesh. A large carving knife is better than a filleting knife for this purpose. Hold the tail end of the fillet and make a cut between meat and skin large enough to grab the skin.

7. Grab the skin and saw forward with the knife, angling it slightly downward. A helper can assist by slightly lifting the fillet as you work so that you can see what you are doing.

8. Soak the fillets in several changes of seawater to remove the blood.

Lateral lines

Some fish, including mahi-mahi and tuna, have lateral lines the color of dark, raw beef, which run the length of the fillet. This is unpleasant and strong tasting. Trim it away. This usually leaves you with four long fillets.

Preparing small fish

The recommended way to cook small fish such as pilchards or smelts is to roughly gut and spit them, make two oblique cuts through the skin on each side and toss them on the grill over very high heat or open flame for a few minutes. This cooks them and scorches off the scales.

Gut small fish by slipping a very sharp knife into the anal vent, then sliding the blade toward the head until it is stopped by the pelvic (fin) bones. Cut the pelvic fin bones away by sliding the knife under them. Tear the guts from the abdominal cavity with a quick pull. The fish is then simultaneously

gutted and decapitated by bending the head back and twisting it off after the backbone snaps. Remove any clinging viscera, and be sure to remove the blood lines under the backbone by gouging them out with a fingernail. Rinse.

Cooking your fish

Marinating: Soaking fish in various mixtures of wine, garlic, vinegar, and onions for a few hours prior to cooking accomplishes several goals. It helps reduce the fishy odor and taste of dark-fleshed species such as mackerel. If you're using lemon juice and salt as the marinade, you can make a delicately fleshed fish firmer, reducing its tendency to disintegrate. A good marinade also imparts some of its flavor to the fish.

When is it done?

Fish cooks much faster than meat or fowl. Fish is most effectively tested with a finger poke or a spoon. For poached, baked, or grilled fish, slip a spoon between segments and give a slight twist. The segments should separate easily, and the interior should steam. The flesh should be opaque, not translucent. If fluid wells up when the fish is opened, it needs a little more cooking. Fish is done when it is white to the center but still moist. If a fish falls apart when lifted with a spatula, it is overcooked. Firm-fleshed fish, such as swordfish and tuna, never

become as tender as snapper or sea bass.

Poaching

This is an excellent cooking method for fish. It leaves the fish succulent and moist and is very forgiving of overcooking.

Sherry sweat-poached salmon or mahi-mahi

Ingredients:

1 cup sherry

1 cup fish fumet or chicken stock

3 stalks celery

3 carrots, quartered lengthwise

bouquet garni

4 fish steaks, with skin

1/2 cup mild cheese, grated

1/4 cup parsley, chopped

To prepare:

Lay the vegetables in a crisscross pattern in a skillet to make a platform for the steaks and add herbs. Bring to a simmer, reduce to steaming, and add fish. Cook about 15 minutes, until done. Remove fish and keep warm. Strain liquid and simmer to reduce by 50 percent.

Make a roux (gravy-like thickener), then pour in about a cup of the liquid, whisking furiously. As an alternative, mix one tablespoon of arrowroot with a little white wine, simmer some of the sauce in a sauce pan and add the thickener. This makes a clearer sauce. Pour sauce on plate. Place fish in center, sprinkle with a mild cheese and parsley.

When poaching, be sure the fish is not too thick. Poached fish is usually not turned over because it will fall apart. If the portions are more than 3/4-inch thick, it is better to divide the fish to make it thinner. Fish can be poached in plain water, but a combination of herbs, onions, leeks, and wine is preferable. The liquid should simmer but never boil while the fish is in it. The poaching liquid may be thickened into a fumet (concentrated broth) or thickened with a roux (thickener like gravy).

Another approach is to remove the fish, then mix a bit of the poaching liquid with a big dollop of mayonnaise. Heat and stir for a few minutes. Pour back over the fish and vegetables.

Poached fish is never completely covered by the poaching liquid. A good description of how much liquid to use comes straight from the nautical chart: "uncovers and is awash at low tide." We almost always use a slope-sided frying pan with a lid for poaching. Pour the liquid off, and slide the fish onto a plate.

Poaching technique

Butter the bottom of a large frying pan. Add poaching liquid and boil. Add fish, reduce heat. Simmer until done. Cook 5 to 12 minutes depending on thickness.

Poaching in sauce

Fish may be poached in any sauce, such as tomato sauce, which does not break when simmered. Fish marinara is hard to beat. Seafood can be poached in a delicious curry sauce. But poaching in a sauce that has been thickened breaks the sauce.

Foil baked grouper – Marsh Harbor Conch Inn

Serves two per pound of fish.

Ingredients:

1-1/2 pounds grouper fillets,
approx. 3 x 3 x 1/2 inches

juice of 3 lemons

1/2 cup milk

2 eggs

salt and pepper

cracker crumbs

hot peppers, finely chopped,

mixed with milk

butter/oil

To prepare:

Soak fillets in lemon juice for one hour. Pat dry; dip in milk and egg, hot pepper, then in cracker crumbs. Fry in butter and oil over high heat until slightly browned on both sides, about 2 minutes each side.

Wrap in buttered aluminum foil, bake for 10 minutes at 325° F or pan bake, covered, for seven minutes over low heat. Fantastic!

Pan frying in oil and butter

Butter burns at low temperature and is therefore a poor choice as a frying liquid. Fry fish in peanut oil and add a little butter for flavor. Always use fresh oil. To test the temperature of the oil, drop a pinch of flour into the pan. If it skips on the surface and sizzles, the oil is ready. Add fish and brown quickly on one side, turn and reduce heat.

Size of pieces

If the fish or fillet is more than two inches thick, it must be cut up, steaked, or in some way made thinner. Thick, meaty fish may also be partially pan fried on both sides until slightly brown, then baked in a 350° F oven for five minutes per pound.

Breading and coating

Fish to be fried may be first dusted with flour, cornmeal, cornflakes, or matzo meal before cooking. Pat a fish dry, dip it in egg and milk, and then shake in a plastic bag with flour or breading mix.

Fried fish croquettes

Ingredients:

1 cup leftover fish
1 cup boiled potatoes,
same amount as fish
2 tablespoons butter
1/2 onion, grated, squeezed dry

pinch each: nutmeg, salt, pepper
cream to thin
1 egg yolk
flour
oil

To prepare:

Mash fish and potatoes together. Add remaining ingredients. Roll into cakes, flour and fry in oil until browned.

Breading mixes for fried fish

These combos can also be coated with melted butter and poured over a fish that is to be baked:

Oriental: Three cups chow mein noodles, crushed.

Almond: one cup cracker crumbs, one-half cup blenderized almonds.

Potato chip: one bag (4 ounces) potato chips, one cup crushed cornflakes.

Tortilla chip: one cup spicy tortilla chips, one cup cracker crumbs, chopped hot pepper to taste.

Fried fish roe

Fresh roe is one of my favorites. I love its gluey taste, and I am delighted to see big roe sacks in a fish I've caught. Fry the roe, slice it thinly lengthwise, and slip it inside an omelet. The well-known gourmet James Beard said that the only way to cook roe is simmered in butter for

seven minutes on each side.

Braising

Braising fish involves frying in a breading or batter until golden, then adding a little sauce and sautéing. The sauce bonds to the breading. You could just sprinkle on a little beer, soy, parsley, and garlic.

Broiling

Fish is usually broiled by just brushing it with a little oil and placing it under the broiler. Sauces or coatings are usually added at the last minute; otherwise they burn. If you want to oven-cook a fish with a sauce

or coating, it is usually baked, then broiled for a minute to give the top some color.

Extremely delicate, thin fillets can be coated with a breading

mix and cooked using

this technique.

Baked or roasted fish

Oven-baking fish is a great cooking

Fish cakes

Ingredients:

1-1/2 pounds fish, chopped
2 eggs, beaten

1/2 cup evaporated milk or cream
1 1/2 cups bread crumbs

1/2 teaspoon paprika

1 small onion, grated

and squeezed dry

To prepare:

Combine all the ingredients and shape into balls, squeezing out excess liquid. Pan fry in oil, crushing balls into patties as they cook. Serve with horseradish mayonnaise sauce.

1/4 cup scallion ends, chopped
juice of 1/2 lemon
pinch celery salt or celery seed
several dashes hot sauce
1 teaspoon baking powder
2 tablespoons flour

technique

but it heats up the boat. Baking or roasting on a grill eliminates this problem. Fish can be roasted on the grill but must be kept moist by placing them in an oily liquid and basting them frequently. Bake in a 400° F oven until opaque. Use the spoon to test for doneness. Bake about 10 minutes for every inch of thickness, measured at the thickest spot.

If you don't have an oven, these recipes can be cooked in a heavy casserole dish on a burner flame diffuser at medium heat for the same period of time. A fork should be frequently slipped around and beneath the fish, covering the bottom of the pan with liquid to prevent burning.

Sharks and other exotic fish

Sharks, even small ones, don't like being caught and have difficulty with the concept of being dead. A blow on the top of their head kills them but does not eliminate the possibility that a dead shark won't suddenly lunge out and ruin your day. Their incredibly durable nervous system

Broiled fish fillets almonidine

Dover sole is often served this way as the grand entrée of fine restaurants; yet the recipe is quite simple, and any fine-flavored fish fillet may be used. The classic technique uses a simple trick — first the pan is covered with oil/butter and broiled until extremely hot. The floured fish is slipped onto the hot pan, and the top is grilled while the bottom sautés.

Ingredients:

1 cup milk

1/2 cup seasoned flour
or breading mix

1/2 stick butter or butter/oil mixture
1/2 cup slivered almonds

To prepare:

Dip fillets in milk. Dust with seasoned flour. Pan-fry both sides until golden brown in oil/butter. Remove fish and reserve. Add butter. When butter is melted, add almonds. Sauté over low heat until light brown, occasionally rubbing bottom of pan with a spatula. The nuts should take just a few minutes, not enough time for the fish to cool off. Pour butter and nuts over fish, sprinkle with lemon juice.

Baked fish in caper sauce

Ingredients:

3 pounds fish
4 tablespoons butter
1-1/2 teaspoons celery seed,
crushed
1 cup fish stock or chicken
consommé or wine

4 tablespoons butter
2 teaspoons each: capers,
lemon juice, chopped chives
or green onion ends
salt and pepper
salsa

To prepare:

Brush seasoned butter over both sides and body cavity. Place fish on platter; add liquid, cover with mixture of butter, celery seed, capers, and lemon juice. Bake until done, brushing with liquid once or twice. Sprinkle with more lemon juice. Add chives, salt, and pepper. Serve with a salsa.

makes them dangerous for a long time. Ram an oar down their throats so they can't bite you.

Preparation

Makoes, threshers, and leopards are the most commonly consumed species and dogfish are usually the ingredient in fish 'n chips. Shark meat is always skinned, as the skin shrinks during cooking and breaks the meat.

Use of a marinade

Shark meat is very lean and contains ammonia. It should be soaked in an oily acid marinade. It grills well, like swordfish, and can be coated with red pepper marinade while cooking, but not soy-based marinades, which are too salty. Serve with mayo, pesto, white sauces, hollandaise, cheese sauce, mushrooms in butter, marinara, or salsa.

Rays and skates

The cruising yachtsman has the advantage of frequently finding these creatures on sand and grass flats, especially at night. They offer an easy target for a spear fisherman as they lie on the bottom, half covered with sand. Once you have eaten them, you will want more.

Danger

Rays, once landed, should be killed with a blow between the eyes. This is more than just a humane act; rays have a sharp spine in the base, not the end, of their tails, which should be broken off immediately with a pair of pliers. Although the spine is not poisonous, it is covered with a mucous membrane that causes great pain and infection. The ray's sting is much worse than its bite since rays have no teeth. Skates have neither teeth nor sting.

Cleaning

The edible portion of skates and rays

is in the wings, which should be cut away close to the body. The wings may be skinned and used as any fine-

flavored fish, but they are also quite delicious as a substitute for scallops. They may, therefore, be cut into bite-sized pieces and used in any scallop recipes. Finally, rays are excellent for stretching a thin supply of crab, shrimp, or lobster meat in recipes where the flaked meat is mixed together, such as fritters and pates.

The puffer, the world's deadliest delight

The puffer is a blowfish which, when inflated, looks like a grapefruit with fins. They discourage predators by looking much larger when inflated than their original size. The spines also stand out menacingly when the body is inflated.

Catching blowfish is definitely not the angler's idea of high drama. Considering their tiny fins and comical vestige of a tail, it's easy to understand why they don't put up much of a fight. I sometimes wonder how they manage to swim at all. The blowfish's idea of resistance is to take water or air into its body until it looks just like a balloon. When inflated, they offer about as much sport as hauling in a soggy tennis ball. But more frequently than not, they get so excited when hooked, they forget to inflate until they are landed. Then they are more comical than ever, puffing away, getting larger and larger in your hand.

Anglers hate blowfish. They have tiny mouths that nibble away the bait. This tactic drives most sportsmen away, but if they knew how delicious blowfish are, they might decide to stay. Since they have tiny mouths, blowfish require a very small hook with appropriately sized bait. They bite with vigor, and you can pull them

in one after another since they seem to travel in schools. Blowfish will take any bait, but seem to enjoy shrimp tails or tiny beach crabs most of all.

The Pacific puffer, in addition to inflating itself, further discourages its enemies by poisoning them. The gall bladder of some Pacific varieties contain a toxin 25 times more deadly than curare, enough to poison 40 to 50 people! The Pacific puffer is so poisonous that the Japanese government licenses puffer chefs to prevent mass poisoning. Nevertheless, many a puffer gourmet has died, fork in hand.

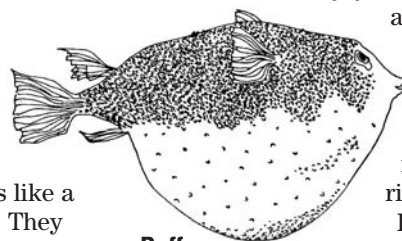
One might logically ask why a fish so deadly is consumed with so much delight by so many. The answer is simple: the puffer is exceedingly delicious. Served raw in thin, translucent strips as sushi, it is sweet, gelatinous, and delicately flavored. Steamed, it melts in the mouth. It is a

joy in any stew and a cut above poached pompano, which is a fish not to be sniffed at. Perhaps the puffer's flavor is further enhanced by the risk one takes.

Fortunately the North Atlantic puffer is not poisonous and is commonly sold in markets as "sea squab." The fish is nearly boneless, and the drumstick-like fillets contain only the backbone. They may be cooked like any delicate white fish. A more delicious critter is hard to find.

Fresh tuna and swordfish

Fresh tuna and swordfish have very firm flesh and cook similarly. Fresh tuna and swordfish taste similar




Puffer

Tuna or swordfish with two sauces

Grill or poach a fillet, brushing with a little oil to prevent scorching. Allow to cool. Chill. Pour steak sauce on a plate and make a little pool. Place the fish in it and cover with a sour-cream dill sauce.

to lean veal and can be treated as such. These fish beg to be marinated and grilled. They can be braised or roasted with tomatoes, onion, and paprika; served in a stew with potatoes, carrots, and chicken stock; or pan fried in butter and served with a white sauce.

The firm flesh resists the spoon test, so when you use the spoon, look for liquid welling up in the separation. This indicates the fish is not quite done. 



Solving *the* meat problem

Home canning is the answer for fridge-less cruisers

by Bonnie Dahl

ON LAKE SUPERIOR'S NORTH SHORE one brilliant sunny day we met a lovely young couple who informed us that, in spite of having 10 days left for their holiday, they had to cut their cruise short and go into town (40 miles away) for supplies. It wasn't lettuce, tomatoes, potatoes, and other produce they needed. They were out of fresh meat.

This wasn't the first time we had heard of cruises being cut short because of the limiting time/distance factor of keeping fresh meat. Next to fuel, keeping fresh food, primarily meat, has been one of the biggest limiting factors in many cruises, particularly into wilderness areas. For those going on long passages or cruising in areas where fresh meat is not readily available (such as in some Caribbean ports), it's even more of a problem.

Many boats have iceboxes but when the ice is gone, the ability to keep food fresh quickly follows. Some sailors have solved part of the problem by adding refrigeration to their boats. While this certainly extends the life of fresh produce, unless you also have a separate freezer, keeping meat is still limited. With most refrigeration units there is only a small area next to the cold plate to keep small amounts of frozen meat and then only for a short time as they slowly thaw. Many sailors start out with seven or eight days of frozen meat and then turn to commercially canned meat. Those who have

followed this path know there is only a limited amount of canned tuna fish, hams, and Dinty Moore Stew that one can take. Certainly, freeze-dried foods help, but there's nothing like a tasty hot meal made with basic meat recipes, especially after a day of vigorous sailing or exploring in the wilderness. There is, however, an alternative, one we have used for more than 30 years, even with refrigeration and a freezer. We cruise with home-canned meat.

“When beef or hogs were slaughtered in the old days, the meat was preserved by smoking, drying, and putting it up in jars.”

Preserved in jars

It's an old idea. When beef or hogs were slaughtered in the old days, the meat was preserved by smoking, drying, and putting it up in jars.

The theory behind pressure canning is that the temperature of boiling water goes up with pressure: at 5 pounds pressure it is 228°F; 10 pounds pressure, 240°F; 15 pounds pressure, 250°F. Canning at 10 pounds pressure at lower altitudes (0 to 1,000 feet) and at 15 pounds pressure at higher altitudes (1,000 feet and above) is sufficient to destroy potentially harmful bacterial spores. In fact, the U.S. Department of Agriculture recommends pressure canning as the only safe method for canning low-acid foods

such as meat, poultry, and vegetables. When the jars are removed from heat a vacuum seal is formed with a rubber compound on the underside of their lids as they cool. This prevents any new microorganisms from entering and spoiling the food.

The process for canning your own meat is simple: pack it in glass canning jars and cook it at 10 or 15 pounds of pressure, depending upon your altitude, for 90 minutes.

Most kinds of meat can be home-canned. We have successfully canned chicken, meatballs, roast beef, pork

roast, round steak, pork chops, ground beef, ground turkey, and a basic ground beef/tomato paste mixture that can be used

for making chili or spaghetti sauce. It is also possible to can seafood: various kinds of fish, clams, and crabmeat. An added benefit of canning meat is that you don't have to use expensive cuts because the canning process tenderizes the meat. It also enhances the flavor, especially when spices are added in the canning process.

Basic tools

You need a large pressure canner. We use one that can hold seven quart jars. It is possible to can in pints by stacking a second layer of jars, staggered on the top of the bottom jars. Using quarts is more economical, giving four servings to the jar, whereas it is tight getting two servings from a pint jar.

“With good seals, we have used meat up to three years from the canning date.”

The glass canning jars used in home canning are commonly called Mason or Ball jars. They can be used over and over, and you can get replacement packages of additional rings and lids. Jar mouths come in two sizes: wide and regular.

Get wide-mouth jars for easier packing. Two brands of jars, lids, and rings in common use today are Kerr and Ball. They can be found in large grocery stores with the food storage bags and systems. You also need tongs and hot pads for handling the hot jars, a pitcher for pouring hot liquid, a number of clean cloths and towels, and any cooking utensils you will need for preparing the meat.

Basic canning steps

Thoroughly clean and rinse glass jars, rings, and lids. Check to make sure the rims of the jars are free of nicks and cracks. Discard inferior jars. Fill the jars with hot water to keep them warm until the meat is added. Remove the water just before adding the meat you will be canning.

Pack each jar with meat to within 1 inch of the top of the glass rim. Salt or other spices may be added. When using salt, it is better to use pure can-

ning salt since table salt contains a filler that may cause cloudiness on the bottom of the jar.

Add enough water to bring the liquid level to within one inch of the top of the rim. Don't overfill because the liquid will boil up in the canning process. If fat and little pieces of meat cling to the rim during the boiling process, the lid won't be able to seal. This is the primary cause of lids not sealing.

Slide a rubber spatula down the sides inside the jar and throughout the meat to break up any air spaces and get them to fill with liquid. You may have to add more liquid as the air spaces fill up. This is a very important step because the expansion of air under heat is many times greater than liquids and this may cause overflow of the liquid, impeding the sealing process of the lid.

With a clean cloth or damp paper towel, wipe all grease and bits of meat from the top and both sides of the glass rim. This is another trick to ensure that the lids will seal during the

vacuum process. Add the lids and tighten the rings. To get a good snug fit, moderately tighten the ring until it will go no more and then back off a half turn.

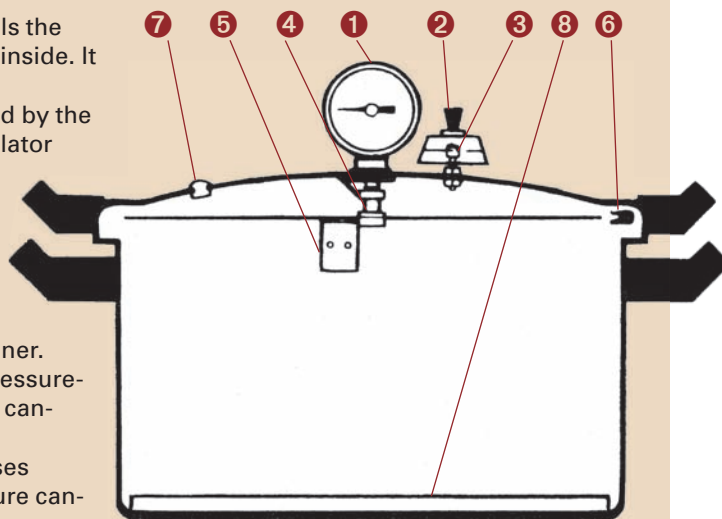
Place the canning/cooking rack that comes with the canner on the bottom of the canner. It is important to do this because jars standing directly on the bottom of the canner may break. Add 3 quarts of boiling water. **Trick:** if you add a couple of tablespoons of salt and white vinegar to the water, it will keep water stains from forming on the jars. Place the jars evenly in the canner without the sides touching, if possible.

Check sealing ring

Before placing the lid on the pressure canner, check that its rubber sealing ring is snug and in place. Always look through the vent pipe to make sure it is absolutely clean and free from any food or debris from previous canning runs. A good secondary measure is to clean the vent pipe with a pipe cleaner. It is also a good idea to move the air vent/cover lock up and down to make sure it moves freely. Place the lid on top of the canner and turn clockwise until it is in the sealed position. Most canners will

Parts of the pressure canner

- 1 The **pressure dial gauge** registers pressure in pounds per square inch (psi). The pointer moves on the dial indicating pressure in the canner.
- 2 The **pressure regulator** fits over the vent pipe and controls the amount of steam escaping, causing pressure to build up inside. It will jiggle in place when canning pressure is achieved.
- 3 Pressure is released through the **vent pipe**. When covered by the pressure regulator, excess steam escapes when the regulator jiggles.
- 4 The **air vent/cover lock** automatically “vents” or exhausts air from the canner. It acts as a visual indication of pressure in the canner.
- 5 The **locking bracket** on the inside of the canner body locks with the air vent/cover lock, preventing the cover from being opened while there is still pressure in the canner.
- 6 The **sealing ring** fits into the canner cover and forms a pressure-tight seal between the cover and canner body during the canning process.
- 7 The **overpressure plug** pops out automatically and releases steam in case the vent pipe becomes clogged and pressure cannot be released normally.
- 8 The **canning/cooking rack** is placed on the canner bottom to hold the jars off the bottom while canning. This prevents jars from breaking.



have some kind of markers on the lid and canner, which need to be lined up to get the two parts into a locked position. Another good indication of the lid being in the locked position is that both the handles on the lid and canner line up directly over each other.

The next step is to evacuate all the air in the system. To do this, turn the stove heat on fairly high. Soon you will hear water boiling inside and see steam rushing out through the vent pipe. It is important to let this steam continue escaping for 10 minutes to make sure all the air from inside the canner is evacuated.

Place the small pressure regulator on the vent pipe. You will see the pressure quickly rise on the pressure dial gauge if your canner has one. Note that the pressure regulator doesn't begin to rock or jiggle until it has reached canning pressure.

Canning pressure is achieved when the dial on the gauge reads 10 or 15 pounds, depending upon your altitude. It is only now that you begin timing your 90 minutes. The heat source on your stove may vary slightly over time, so it is important to keep checking the pressure gauge every 10 minutes or so and adjusting the heat accordingly to keep the pressure at 10 or 15 pounds or a little higher. Note that beyond the 15-pound pressure mark there is also a danger zone on the dial on some canners. If the pressure begins to register in this zone it is important to reduce the heat quickly, but not so much that the pressure falls below your goal of 10 or 15 pounds.

Let canner cool

After 90 minutes of pressure canning, turn off the heat. Allow the canner to cool on its own. Do not try to speed this part of the process up, as the jars could break. As the pressure drops in the canner, you may hear snapping or clicking sounds. These are the lids sealing as the vacuum forms.

Do not use the pressure gauge dial to determine when the pressure is reduced. Inside pressure is completely reduced only when both the air vent/cover lock and overpressure plug have dropped and no steam escapes when the pressure regulator is nudged. As a safety precaution always remove the pressure regulator first and let the canner continue cooling for another 10

Canning jars ready to process, at right. The finished jars, below. Note that a layer of fat has risen to the top with some meats.

minutes before removing the lid. Then open up the lid away from you to allow any residual steam or heat to escape.

You can now remove the canning jars with an oven mitt or special tongs. Put the hot jars on a clean towel on a counter. The liquid in the jars will continue to bubble, and the remainder of the lids will snap. When the jars are cool to the touch, check them to make sure all the lids have sealed.

There is a three-way test for this. The first is the click you hear as the lids snap into the vacuum. The second is that you can actually see a concave shape on a lid that has been slightly sucked in by the vacuum. But the most important test is to tap each lid with a fingernail. A sealed lid will give a clear metallic ring; an unsealed lid will give a dull thud. There is quite a distinction between the two sounds.

Jars with unsealed lids can be reprocessed. Simply remove the ring and defective lid, wipe down the glass neck and rim of the jar to remove any grease and meat, add more water up to the 1-inch mark, put on a new lid, (however, old rings can be reused) and pressure can these jars with the next batch.

If you cannot immediately re-can the meat, it should be refrigerated and eaten soon. Do not let it sit out at room temperature. It is also important to check each jar and throw away any cracked jars and all their contents. This is uncommon. Usually what happens with broken jars is that the bottoms fall out as you try to lift the jar out of the canner. Do not try to save any part of the meat as small pieces of glass may be embedded.

Before storing, rinse off the jars with hot soapy water and dry them. Jars can be stored with or without the rings left on since the lids are sealed. If you choose to leave the rings on, tighten them down. It is important to date and label each jar on the lid. Jars can be stored in the original divided cardboard boxes they came in. However, many sailors prefer not to have cardboard on their boats. We have used the open latticed plastic milk crates, which pack nine quarts nicely. If you



use this storage method, you need some way to protect the glass jars. We have used the plastic mesh sleeves made for protecting wine bottles. We have also used rubber mesh shelf liners cut to size and held in place with rubber bands. The tops of heavy socks also work well, and bubble wrap (with small bubbles) can be used.

With good seals, we have used meat up to three years from the canning date.

Canning specific meats

There are two ways of preparing meat for pressure canning: *raw pack* and *hot pack*. Raw pack is just what the name implies: you pack moderate-sized pieces of uncooked meat directly into the canning jar. One advantage to this method is that, because the meat is soft and pliable, you can pack more into a jar. However, it is important to resist the temptation to pack it in too tightly as this can cause jar breakage. Another advantage of this method is that it leaves fewer air spaces between the pieces of meat. Examples of meats



which lend themselves to raw packing are chicken, roast pork, and beef roasts.

For appearance (such as browning) and adding certain recipe ingredients, use the hot-pack method. Examples here are meatballs, pork chops, round steak, ground meats, and a mixture of ground beef and tomato. Adding seasonings, such as salt and pepper, is optional, however the flavors blend better when added in the canning process than when added during meal preparation. It doesn't make much sense to use up valuable jar space with bone, fat, and parts of the meat you don't eat. So regardless of which

Troubleshooting

Food spoilage is caused by: jars not sealing, incomplete sterilization, and failure to follow recipes and exact timetables.

Jars not sealing is caused by: not leaving one-inch headroom between the liquid and top of the jar rim, using jars that are nicked or cracked or have sharp sealing edges, failure to wipe the jar rim clean before putting the lid on the jar, grease and food bits that have become lodged between the lid and jar, not screwing down the metal ring tightly enough, and turning the jars upside down while cooling.

Liquid loss from jars is caused by: packing the food too tightly into the jars; filling the jars too full with meat or liquid; processing at too-high a temperature or pressure; sudden variations or lowering of temperature in the canner — make sure the pressure has been completely reduced (air vent/lock has dropped, pressure released from vent pipe) before opening the canner; and lids that are incorrectly tightened before canning.

Jar breakage is caused by: using generic glass jars that are not made specifically for canning, overfilling or packing the jar too tightly, jars touching the bottom of the canner, using cracked or weakened jars, and lids that are incorrectly tightened.

method you use, remove these space wasters.

Chicken and turkey: We have been successfully using the raw-pack method for years. It is possible to can most parts of the chicken, but since many contain bone and skin, it seems to work best to can skinless, de-boned chicken breasts which, when raw-packed, fit nicely into the jar. Add water to within one inch of the top and one teaspoon of canning salt. Remove hidden air spaces with a rubber spatula. In the same way, cooked leftover turkey can be hot-packed with water, broth, or gravy.

Roasts — beef or pork: Any grade of meat can be used since tougher cuts of meat are tenderized in the canning process. Remove all bone and excess fat. Cut the meat into serving pieces that will easily fit through the mouth of the jar. If the contents of the jar will be used for stew or beef stroganoff, cut the meat into smaller pieces, which will also pack more meat into the jar. You may prefer larger pieces for making other beef or pork recipes. Raw pack adding a couple of bay leaves, one teaspoon of canning salt, and water to within one inch of the top rim of the jar. Some canning manuals indicate that it is not necessary to add water, but we have always added water with good results. We like the tasty broth it produces in the canning process. The broth can be useful in preparing many recipes.

Meatballs: Make up your favorite meatball recipe. Browning meatballs beforehand adds to their appearance and helps them hold together in the canning process. If you are making a large number of meatballs, brown them on large cooking pans in a 350°F oven, turning them once. Keeping the meatballs small, no bigger than one inch in diameter, will allow many more to be packed into the canning jar. Hot pack, adding water to within one inch of the top rim.

Pork chops: Pork chops are hot-packed primarily for appearance. Although any grade of pork chop or pork steak can be used, we prefer those that are a half-inch thick and have as little bone as possible. Butterfly pork chops work especially well as they are just about the right round shape to fit

nicely in layers in the jars and, when cut in half, can be used to fill up spaces. Remove all bone and excess fat, and brown them on both sides, adding salt and pepper to taste. Hot pack the chops into the canning jar. For extra flavor, add water to the browning residue in the pan and scrape up the bits and pieces to use when adding liquid to within one inch of the top of the jar rim. Use a rubber spatula to get rid of air pockets.

Round steak: This can be either raw- or hot-packed. Browning first really adds to the appearance of the meat, however. Cut it into strips or bite-sized pieces for pepper steak or stroganoff and brown with salt and pepper. Hot pack. Use water to retrieve the browning residue and flavor from the browning pan. Add this to your jars to within one inch of the rim.

Ground meats: These are browned and hot-packed mainly for appearance. Cooking beforehand also helps draw off any excess fat, which may be discarded before putting the meat into the



Finished and waiting for a mealtime possibly months into the future: a ground beef and tomato mixture, at the left, and layers of pork chops, to the right. In bottom photo, these are wrapped in protective mesh sleeves and are ready to be packed in crates.

canning jar. The meat can be seasoned if you like. This allows the seasonings to blend during the canning process. Hot pack the meat into jars, adding water to within one inch of the top of

the rim. It adds a lot of flavor to first add the water to the browning pan to retrieve leftover bits and pieces of meat and the browning residue. Ground meats that work well are beef,

turkey, and sausage. A canned mixture of ground beef and sausage bakes up nicely into breakfast egg casseroles. It takes about one and one half pounds

Cooking with canned meat

The following recipes are made with quart jars of meat

Barbecued pork chops and potatoes

Remove fat from the top of a jar of home-canned pork chops. Put one layer of meat on the bottom of a pressure cooker. (A pressure cooker is different from a pressure canner. See note below.) Add one layer of potatoes, scrubbed and cut into quarter-inch slices, and a layer of sliced onion. Cover with a layer of barbecue sauce. Repeat layers: meat, potatoes, onion, and barbecue sauce until meat is gone. Add water to canning liquid to make one cup and pour over the contents. Cook under pressure for 10 minutes. Let the cooker cool slowly. Serve with the sauce poured over meat and potatoes. Yield: 4 servings.

Note: add one can of Bean With Bacon soup and one can of water to leftovers for a tasty soup with zip.

“Oven-baked” chops with scalloped potatoes

Remove fat from the top of a jar of home-canned pork chops. Boil the meat and canning liquid 10 to 15 minutes. Layer the meat on the bottom of a 9 x 9-inch cake pan. Empty the package and seasonings from a box of scalloped potatoes. Use canning liquid to make up the water and milk portions specified in the box directions and pour this over the potatoes. Bake at 350°F for 30 minutes. The flavors of this one are absolutely delicious. Yield: 3 to 4 servings.

Beef stew

Remove the fat from a jar of home-canned beef. In a large pot, add meat, scrubbed and sliced potatoes, two large onions cut into large pieces, a package of baby carrots, and a couple of cut stalks of celery if you have it. Sprinkle on the seasonings from a package of beef-stew mix and water according to package directions, using the canning liquid to make up part of the water portion. Boil 10 to 15 minutes. Cover, reduce heat, and simmer for another 30 minutes to allow the flavors to blend. Yield: at least 4 servings. This varies, depending on the quantity of vegetables added.

Beef in wine sauce

Slice two onions and brown them in some of the fat from the top of the canning jar of roast beef in a small skillet. Discard the rest of the fat; boil the canned roast beef and canning liquid with water (to equal 1½ cups) 10 to 15 minutes in a separate saucepan. Lower the saucepan heat and add the onion, a couple of bay leaves, and ¼ teaspoon each of thyme, marjoram, and oregano. Simmer 30 minutes, adding a little more water if the meat becomes too dry. Add 1 can of sliced mushrooms, or stems and pieces, and 1½ cups of red wine, and sim-

mer another 30 minutes. The trick to this recipe is the long simmering times that allow the flavors to blend. If you wish to thicken the sauce, add a blended mixture of equal parts of flour and margarine, one teaspoon at a time until desired thickness is achieved. Serve over rice or wild rice. Yield: 4 servings.

Meatballs and gravy

Boil meat and canning liquid 10 to 15 minutes. Keep the fat if you wish to add a flour/water mixture to make gravy after boiling. A really easy and tasty way to make a gravy sauce is to discard the fat before boiling and add one can of cream of mushroom soup after boiling. Simmer 10 minutes and serve with noodles or rice. Yield: 4 servings.

Spaghetti sauce

Adapt your own spaghetti-sauce recipe or brown two sliced onions and three crushed garlic cloves in some of the fat from the top of a jar of canned ground-beef-and-tomato mixture. Discard the rest of the fat from the canning jar and add the meat-and-tomato mixture to the onions and garlic. Add one cup of water and boil 10 to 15 minutes. Add one 4-ounce can of tomato sauce and one heaping teaspoon each of oregano, Italian seasoning, basil, parsley, and sugar. Simmer for 30 minutes, adding additional water if desired, and serve over cooked spaghetti. Yield: 4 servings.

Chili

Remove some of the fat from the top of a jar of canned ground-beef-and-tomato mixture and brown two sliced onions in it. Discard the rest of the fat from the canning jar and add the onions to the meat-and-tomato mixture along with one cup of water. Boil 10 to 15 minutes. Add two cans of stewed tomatoes, two cans of red kidney beans, and chili powder to taste. There is a lot of variation in the amount of stewed tomatoes and kidney beans that can be added, according to individual taste. Simmer for at least 30 minutes, adding more water if necessary. Yield: 4 to 6 servings.

Optional: when serving, top with sour cream or grated cheddar cheese.

Note: A pressure cooker is different from a pressure canner. A pressure cooker is used to cook foods quickly — three times faster than on the stovetop using a normal cooking pot. Five minutes of pressure cooking equals 15 minutes of regular cooking. Common sizes of pressure cookers are four- and six-quart cookers.



of ground meat to fill a canning jar.

Basic ground beef and tomato

mixture: This preparation is like the above except that after browning and seasoning with salt and pepper, approximately one 8-ounce can of concentrated tomato paste is added to the mixture for each canning jar. It is then hot-packed into canning jars to within one inch of the rim. No additional water is needed. Because minimal seasonings are used, this mixture can be used in many different recipes: hot dishes/casseroles, chili, and spaghetti sauce (see the sidebar on Page 39 for specific recipes).

Chicken, beef, or pork mixture: Be creative. If you have leftovers when canning, brown strips of chicken, beef, or pork. Hot-pack them with water and pressure can them. The mixture can be used with packaged seasonings for fajitas or rice dishes.

Use the canning liquid instead of the water called for on the seasoning packet directions.

Using canned meat

When using canned meat, check the jar for any possibility of spoilage. The lid should snap off nicely, releasing a little pressure. If it doesn't, if there is any indication of mold, or if there is a bad smell, discard it immediately. As a precaution if you are unsure, boil the liquid-meat mixture 10 to 15 minutes. This brings out odors not apparent in the cold meat. After boiling, if it does not smell or look right, don't taste it to make sure it is bad; just throw it out.


In the canning process, any fat left with the meat will rise to the top, producing a barrier between the meat and the vacuum at the top of the jar. This fat can be discarded or used in making sauces and gravies.

With a little adjustment, most of your favorite recipes will lend themselves nicely to use with canned meat. The important thing to remember is to always boil the canned meat and

liquid for 10 to 15 minutes somewhere in the recipe preparation.

When provisioning a boat for short-term or long-distance cruising, it becomes important to use all available resources. Adding home-canned meat to your ship's stores increases the variety of possibilities in meal planning. For those with limited refrigeration or on long-distance cruises in remote areas, it also provides an important part of the diet that may not otherwise be available.

When we were on an extended cruise in the Eastern Caribbean and Venezuela, there were many times when meat was not available or, if freshly butchered in the open market, it was somewhat less than desirable. Because we were going to be gone for many years, we took along 70 quarts of home-canned meat, which gave us more than 140 meals.

In the final analysis, what we really like about having canned meat on board is that it brings us one step closer to achieving the independence we cherish in the cruising life. 

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Here's how to preserve your own meats and fish

Here's how to preserve your own meats and fish



by Janet Groene

CENTURIES AGO, SCIENTISTS DISCOVERED that sterilized foods in a sterile vacuum-sealed container do not spoil. Since then, frozen, freeze-dried, and irradiated foods have come into the marketplace, but it's still hard to beat the simplicity, low cost, safety, and reliability of canned foods for cruising — the canning process creates its own vacuum. Home-canned meats have always been on our provisioning list, yet I continue to meet people who are amazed that beef, poultry, pork, lamb, and even organ meats can be canned for the

long haul. Yes, meats can be canned much like tomatoes or peaches (with some caveats) and, no, you don't need salt, pickling spices, or saltpeter.

In fact, that's the beauty of it. I fill jars with nothing but meat — no fat, skin, gristle, bones, salt, or chemicals and none of the heaven-knows-what else that is found in commercially canned meat products. Later, I can add herbs, sauces, gravies, and vegetables to create whatever dish suits a chef's whim.

Best of all, canning jars are reusable. We've arrived back from a cruise with a supply of mahimahi canned in the same jars that were filled with meat when we left months before. In 10 years of full-time, liveaboard cruising, I never had a glass jar break or a jar of meat go bad.

To can your own meats, you need a large pressure cooker or pressure canner. As a liveaboard without enough space to carry a canner, I used the same, four-quart pressure cooker that was also my galley saucepan, stovetop oven, stewpot, and rice cooker. It

holds four pint jars, or the equivalent of four pounds of meat at a time. If you have a home base with plenty of space, invest in a 22-quart canner large enough to can large

batches of quart, pint, or half-pint jars. Forget the water-bath canning kettles (1) that grandmother used unless you'll be canning tomatoes or making jelly and pickles. Water-bath canning is no longer considered safe for canning meat and fish.

No substitutes

You'll also need a supply of canning jars (2) and two-part lids (3). No substitutes. Ordinary jars can break from the high temperatures involved; new lids are essential to getting a good seal. You also need a tool called a jar lifter (4) because it's difficult and dangerous to handle hot, wet jars with oven mitts. I also have a wide-mouth canning funnel (5) for easier, cleaner filling and tongs (6) for handling hot, sterilized lids.

Buy boneless, skinless, well-trimmed meats, such as chicken or turkey breast or thighs, rump roast, lean ground meats, stew beef or lamb, and pork chunks. If you like them, liver and heart meats can also be canned. So can venison, elk, or moose from the hunt, as well as fish and other fruits of the sea. Don't can corned beef or ham. These are available from commercial canners. And steer away from expensive cuts of meat, which will



Kuhn-Rikon

A good can opener is essential to the galley cook. One type leaves a smooth edge on the lid; conventional openers leave a smooth edge on the can.

be reduced to mush in the canning process.

Yes, you can buy cheaper cuts and whole chickens, but you'll end up spending a lot of stove fuel and time to stew, de-bone, de-fat, and otherwise strip out the pure meat for canning. In this case, it pays to buy cuts that are cheap (because they are tenderized in the long canning process) but also lean and boneless. I recommend against canning whole chickens, bone-in chicken breasts, or drumsticks because tiny bones are almost impos-

sible to fish out after the chicken is canned, and they pose a choking hazard. (Small fish bones, by contrast, dissolve in the canning process.)

Now it's a simple matter of stuffing raw meat into hot jars that have been washed, then heated in the oven for 30 minutes at 250°F. Neither salt nor water has to be added, although you could add salt and a little water or broth if you like. Don't add herbs; it's better to add them to the final dish. Leave an inch of "head" space for expansion, top with a flat lid that has a rubber seal, then screw on the ring. (The flat lids and rings should also be sterilized by boiling 10 minutes; leave them in the hot water until used).

Bring to boil

Place the filled jars on a rack in a pressure canner or cooker with hot water as directed by the canner manufacturer.

Lock on the lid and bring to a full boil, allowing steam to escape for 10 minutes. This assures that no air remains in the cooker. Then put on the gauge or weight, let pressure rise to 10 pounds, and start counting the canning time. For meats, it is 75 minutes for pints and 90 minutes for quarts. Cook fish for 90 minutes for either pints or quarts.

When the time is up, turn off the heat and let the pressure cooker normalize on its own. Then open the lid very

Canning in tin

EVEN LESS FAMILIAR TO AMERICAN KITCHENS THAN CANNING IN JARS IS CANNING IN tin, but it's still possible to buy cans, lids, and can sealers. The process is somewhat different. Meats are put into clean cans, where they are cooked, or "exhausted," before they are sealed with a special tool, then processed in a pressure cooker. The process takes much longer than canning in glass.

On the plus side, cans can be exhausted in the oven, where meat develops more of a roasted flavor. Cans can take more punishment than glass, so they can also be used to seal up non-food items that you want to protect. The downside is that cans and the lid sealer are expensive, and cans can't be reused for canning (although they make good disposable baking tins for bread and small cakes). Empty cans are bulky to buy and store. They rust easily at sea and, unlike jars that have screw-on lids, they can't be used for grains, nuts, and other foods you often need access to, but also want to keep safe from vermin.

Can sealers, cans, and lids are available from Nitro-Pak, <<http://www.nitro-pak.com>> or 800-866-4876. Or check with your county home extension home economist. In some areas, do-it-yourself canneries are also available. Cans and processing are supplied.

carefully to avoid steam burns and, using the jar lifter, place jars on the counter on a folded towel (to avoid shock to the glass jars), assuring good air circulation around them. Tighten the rings if you like, but don't strain yourself. In the old days of zinc lids and rubber rings, more torque was needed; new canning lids don't rely on a powerful grip. Let the jars cool undisturbed.

You'll soon hear the "pop" as the seals seat in. Boiling inside the jars may continue for up to an hour; don't be concerned. Your meat is now in a vacuum and the lower the pressure, the lower the temperature at which water boils. When the jars cool, you'll see a slight cupping in the lid, indicating a vacuum. Sealed jars also sound different when tapped with a fingernail. Try it. You'll soon recognize the difference.

Rings can be removed after the jars cool — lids are held in place by the vacuum — but I leave them in place for added protection against the jostling they receive in the boat.

Your meat supply will now keep

"One of the pluses of having a supply of canned meat on hand is that it's already cooked, so dinner is only a few minutes away."

for a year or more. Label and date the jars and stow them carefully (to avoid breakage) in a cool, dry spot away from engine heat or direct sunlight. Wetting, especially with salt water, should be avoided because corrosion could eat away enough metal to break the seal. If lids swell or fall off, you know gases have formed in the jar and the meat must be discarded.

Boil it again

When jars are opened, you'll hear a reassuring pop. If the meat looks or smells bad, discard it without tasting. If it looks and smells good, it is additional insurance to boil it for 10 minutes. Botulism, which is tasteless,

is extremely rare in properly canned meats but it is killed by heat.

One of the pluses of having a supply of canned meat on hand is that it's already cooked, so dinner is only a few minutes away. If you have fresh foods, just add them to complete the dish. If not, add a can of spaghetti sauce to a jar of ground beef, and you have a meaty "homemade" sauce. Add fresh and canned vegetables plus seasonings to beef cubes, and you have beef ragout. Add canned carrots, a can of potatoes, a jar of gravy, and a jar of boiled onions to lamb chunks, and you have Irish stew. Make soup, lasagna, hot roast-beef sandwiches, chicken and dumplings, and much more. Add eggs, minced onion, and bread crumbs to canned fish and make into patties to fry to a crusty brown.

The possibilities are positively uncanny. 

For liveaboards, the best compromise is a pressure cooker small enough to use as an everyday saucepan but large enough to can four pint jars.



Some canny tips

- Unless you have a home garden with a surplus of free food, don't can foods that are available commercially such as fruits, vegetables, pickles, jams, and relishes. Commercial canners whisk foods straight from the harvest to the cannery. It costs less and is more nutritious. Read labels if you're cutting down on sugar and salt or have allergies. Know what you're getting.
- Most canning failures are immediately apparent when the lid doesn't seat-in with a thunk. At this point, the meat must either be reprocessed, eaten right away, or frozen. The chief cause of seal failure is a tiny bit of meat on the jar rim, so don't overfill jars, and be sure to wipe rims clean before adding lids.
- Long-distance cruisers who rely on freezers are in double jeopardy because everything can be lost if the freezer mechanism fails or its energy source (engine, batteries, propane tank) packs up. Carry empty canning jars, lids, and a pressure cooker for backup.
- Pressure canners are often found at yard sales. Stick to familiar brands and styles because gaskets and other spare parts may not be available for orphans. It's a plus if the original book is with the canner. Each model has its own quirks.
- It's safer, more space-efficient, and resulting meals taste better when you can 100-percent meat rather than combinations such as soup or stew. These meats can be combined later with whatever canned, fresh, or frozen ingredients and seasonings you have on hand.
- Don't can processed meats such as hot dogs, bacon, or sausage. The texture will be lost, and spices in the meats can develop an off-flavor.
- Although canned whole chicken is available commercially, it isn't recommended for home canning because of all the small bones, which are hard to remove and can be a choking hazard. Fish bones, by contrast, dissolve in the canning process and add calcium to the finished dish.
- Handle hot jars gingerly, avoiding temperature shocks, because they break more easily when hot. Always use the rack; don't set jars on the floor of the pressure cooker.
- Start saving worn-out crew socks and cut off the ribbed top. It's the perfect size to slip over a canning jar, adding extra cushioning when jars are stowed in the boat.

"Long-distance cruisers who rely on freezers are in double jeopardy because everything can be lost if the freezer mechanism fails or its energy source packs up."



Gordon Groene

Use a jar lifter. It's safer for the jars and for the cook.

- For long-distance cruising, carry an extra supply of lids. Jars can be reused indefinitely, and rings can be used several times before they rust and should be discarded.
- A pint jar holds a pound of meat, which is enough for four servings and even more if you add enough stretchers. A quart jar holds two pounds, or eight servings of four ounces each.
- Canned meat and fish have been cooked for a very long time, so they're ideal for making soup, chowder, stew, sloppy Joes, fish cakes, casseroles, and chicken salad. They are not, however, a substitute for a grilled steak or chop.
- The Internet is a good source of canning advice. See <<http://www.ball.com>>. Reliable help is also available from your county home extension home economist, who will know the best way to can local foods (salmon, trout, bear, pheasant, sunchokes, pecans) that aren't usually found in general canning cookbooks. Get a good, general cookbook, and follow the directions that came with your pressure cooker or pressure canner. ↗

Long-distance cheeses

Secrets of a cheese lover revealed at last

by Lin Pardey

WHETHER YOU DECIDE ON COCKTAIL nibbles, late-night snacks, a sandwich filler, or a main course spice, cheese is one of the most versatile ingredients in a cruiser's galley. The addition of tasty chunks of spiced feta can change a boring salad into a gourmet treat. A hefty spread of toasty melted mature cheddar on top of simple onion soup can turn the grayest passage day five shades brighter. But buying, preparing, and keeping a variety of cheeses afloat and edible for long periods take planning.

If you enjoy the flavor and texture of long-life processed cheese products, such as Kraft cheddar, you'll have little problem finding them worldwide. I was surprised to see three brands of boxed, processed cheese in the most isolated African villages, clad in the same packaging I'd seen in Aden and the Tuamotus. These processed cheeses last up to two years with no refrigeration as long as they're kept in their sealed containers. I've cut them into half-inch cubes and skewered them with pickled onions or green olives for a cocktail snack at a cruisers' picnic. Not wondrous... but definitely edible. Grated, processed cheese adds variety to salads. But this manufactured milk product is no substitute for unprocessed cheese in cooking because it does not melt or brown and can cause some cheese-dependent recipes to fail.

Grated Parmesan cheese also keeps well afloat with no care other than protection from moisture. I find it is best to avoid cardboard tubes of Parmesan because the humidity afloat will cause the cardboard to soften and the cheese to mildew. I buy sealed plastic pouches instead.

If you have been at sea long enough to use up your fresh cheese, a good

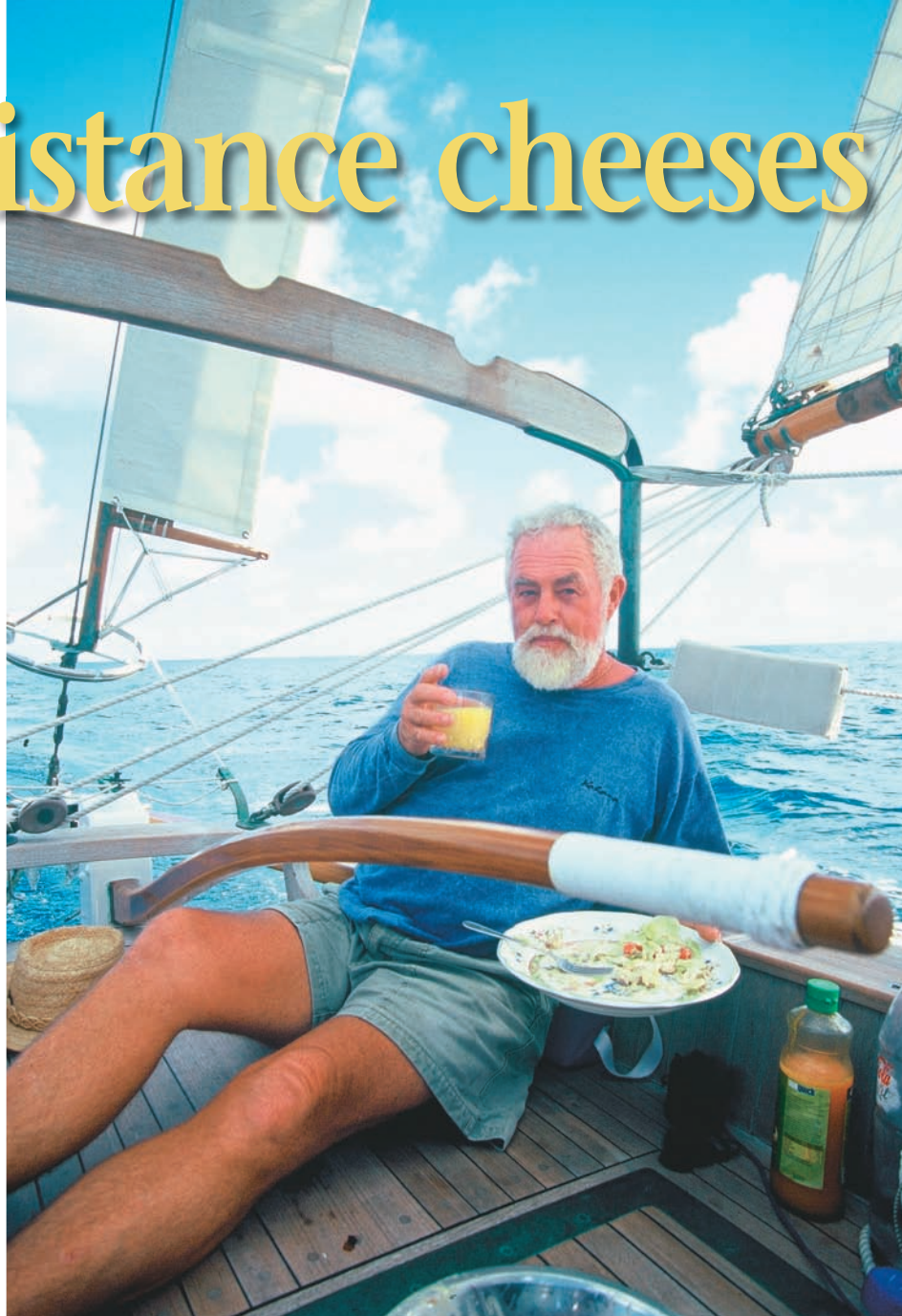
quick-browning cheese topping for casseroles can be made by mixing half mayonnaise (regular or light style) with half grated Parmesan cheese, plus a few drops of vinegar, and then grilling or baking. This same mix works for cocktail treats. Put a dill pickle slice on a small round of toast, top it with a mound of Parmesan-mayo mix, and grill until browned.

The cheeses we depended on during passages on 24-foot *Seraffyn* were canned Brie and Camembert. We try to buy the Danish brands that are not stored in the refrigeration section of the market. If we could find only cans (usually packed inside small, flat, square cardboard boxes) marked "keep refrigerated" or "keep cool," I

still bought a dozen for each passage. In our experience these will last up to six months if stored low in the boat where the temperatures are the same as the outside water temperature. In tropical waters I would only count on two months.

These cheeses definitely age in their cans. Most of them are marked with a "use by" date. I look for cheeses nearing expiration because I have found that we like the texture and flavor of longer-aged Brie and Camembert.

At sea, when fresh provisions tend to run short, Lin Pardey relies on cheeses for quick lunch solutions. A contented Larry Pardey, above, goes along with the plan.





Cheese makes a perfect snack when you find yourself in the midst of an impromptu get together. Lin made up a batch of grilled cheese sandwiches, at left, cut them into tiny squares, and served them to new friends in Mar del Plata, Argentina. The cheese shop on facing page is on a farm near Palma, Mallorca. Shopkeepers in cheese markets around the world expect you to ask for a sample before choosing which cheese you'll buy, Lin notes.

weeks (the majority of passages we make fall within this time limit). If you can get small waxed cheeses and store them so the wax stays intact, they will keep perfectly for up to two months at temperatures below 55° F.

The vinegar caper

Unwaxed cheese should be wiped lightly with vinegar and then wrapped in plastic wrap and stored where it will not be bumped around too much. If any mold forms, it should be cut off and the cheese wiped with vinegar again. If you prefer using plastic cheese boxes rather than wrapping each cheese separately, wipe the inside of the box with vinegar once a week to discourage mold formation. Since mold does not penetrate more than a fraction of an inch below the surface of a hard cheese, it's most economical to buy one large chunk rather than several smaller ones. Once a week or so, cut off the cheese you plan to use for the next meals, remove any mold from the main supply, and wipe it down with vinegar. By doing this simple step, your loss due to mold will be reduced by up to 50 percent. When I have room in my ice chest for 2-kilo blocks of cheddar such as sold by many ship chandlers, I find that I lose about 8 to 10 percent of the cheese to mold during a month's cruise.

Cheese submerged in olive oil

Water-packed feta will last for two months under refrigeration or on ice. But when we were provisioning *Taleisin* in Fremantle, Australia, the proprietor of the Mouse Trap Cheese Shop taught me an even better way to preserve and improve the flavor of feta with no refrigeration at all. Simply submerge the feta in pure olive oil in a

Preservation ideas

To enjoy a wider variety of cheese — such as cheddar, Edam, or feta — here are several preservation ideas. If you have a freezer, try sealing cheddar cheese in plastic containers and storing them in the upper area of the chest. The cheese will be more crumbly when it's defrosted, so it is wise to select younger cheddars for preservation by freezing. If the cheese is well

sealed, the flavor will change very little. Water-packed cheese, such as feta, will freeze well as long as there is some space inside the container to allow for expansion of the liquid. However, I've never been satisfied with the flavor or texture of Edam or Colby cheese kept this way.

Simple refrigeration or icebox storage in sealed containers works well for cruises that last less than three

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sealed container. (I use the oil straight from its container; I do not preheat it in any way.) Our feta stored in olive oil in a clean glass pickle jar lasted for more than a year in the bilge during a cruise through the Indian Ocean. There was no change in flavor.

The same cheese specialist taught me a wonderful way to create what can only be called “gourmet feta.” I clean a 1-gallon pickle jar and fill it loosely with 2-inch cubes of feta. I then pour 3 tablespoons of green peppercorns on top of the feta and shove about 10 inches of fresh rosemary into the jar before I fill it to within an inch of the top with fresh olive oil. If you do not like things that are hot to the tongue, you can use as a substitute 1 tablespoon of black peppercorns plus several bay leaves or green and red sweet pepper flakes.

After three months, the feta jar will be at its prime. You can add fresh feta to the oil at any time. Be sure to dry the cheese well by letting the water it was packed in by the manufacturer drain off for at least 10 minutes. Then pat it dry and shove it into your oil-based mixture. I like to wait until I have used enough of the original cheese so I can place the fresh supply below the more-spiced cubes without making a mess with the olive oil.

To serve this oiled feta in salads, I use it as it comes from the jar and even use some of the spiced oil as a dressing. For hors d'oeuvres I drain the feta on a paper towel before slicing it onto biscuits or toast. The texture of the cheese becomes creamier as it ages. After six months I find the feta packed in green or black pepper becomes a bit stronger than I like, so I transfer any that is left to plain olive oil. The plain oil can be reused for up to three years. The spiced oil can be used two or three times, but after 18 months I have found that mine becomes cloudy and less-appetizing, so I discard it and start again with fresh oil.

Hard cheddar cheese can also be kept this way. I put up 5 kilos into plain olive oil before we left Fremantle, and it didn't change flavor or texture for three months. After that I detected a slight flavor change, which was noticeable if we used the cheddar as it came from the jar. But mixed with other ingredients and cooked in any way, the cheese tasted just fine.




Olive oil will leak out of everything! So I store my big cheese jars inside a bucket in the bilge. I line the bucket with old newspapers to soak up any leakage. A bit of trouble, yes, but what a treat that spiced cheese is when all your other fresh food is a memory.

Dorothy Skeates, who cruised extensively for several years on *Wylo II* (a boat with Spartan accommodations) before working as charter cook along the Great Barrier Reef, still waxes her own cheeses. Dorothy chooses firm cheese and cuts it up to the size she'll use in one week. She then wipes each chunk with vinegar and wraps it in three layers of muslin that's been soaked in a solution of half boiled water and half boiled vinegar and sun-dried. Dorothy then paints each cheese with melted candle wax (called paraffin wax in the U.S.). She coats each cheese three times to be sure it's perfectly sealed. The cheeses are then stored below the waterline, well wrapped in newspaper to prevent the wax from breaking. This method is more labor-intensive than the others I've listed, but the waxed cheese takes less space than jars filled with oil, so waxing is a good choice for non-spiced cheese on smaller cruising boats. The cheese will last up to six months with this system.

Ye Olde England

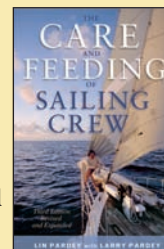
The final cheese preservation method that I have learned in our years of exploring is a famous British Yuletide treat — expensive, but wonderful anytime, anywhere. Purchase a 7-pound whole, relatively young, round of Stilton or blue cheese. Find an airtight crockery or glass container to

fit closely around the cheese (within ½ inch on all sides). Scoop a hole approximately half the size of a teacup into the top center of the cheese. (Eat this center scoop with fresh grapes or a slice of apple.) Pour fine port wine of your preference into the depression. Set the cheese in a locker low in the boat where it will keep relatively cool and the motion will not be too violent, so the wine can seep slowly through the holes and permeate the cheese. Top up with port once a week. Taste the cheese two or three months later. If it withstands your sampling, it will last for up to a year.

In England this is called “drunken Stilton,” traditionally eaten by spooning it on top of crispy toast as you sip your after-dinner wine in front of a holly-bedecked fireplace. But it is equally good as a reminder of your friends and family up north when you are finishing a meal of fresh lobster and enjoying a dessert of fine sweet pineapple to celebrate Christmas — or any special occasion — at anchor beside a coral atoll. 

For further reading ...

This article was excerpted from the Pardeys' book, *The Care and Feeding of Sailing Crew*, which has just been updated and released as a third edition. It is available from the Good Old Bookshelf <<http://www.goodoldboat.com/bookshelf.html>> or by calling 763-420-8923.





Cheese Chart

Cheese Chart

Cheese	Goes With	Used For	Flavor, Texture
<i>Bel Paese</i> (Italy)	Fresh fruit French bread	Dessert Snack	Spongy, mild, creamy yellow interior
<i>Bleu</i> (France)	Fresh fruit Bland crackers	Dessert Dips, Salads	Marbled, blue-veined, semisoft, piquant
<i>Brie</i> (France)	Fresh fruit	Dessert Snack	Soft, edible crust, creamy
<i>Brick</i> (U.S.)	Crackers Bread	Sandwiches Snack	Semisoft, mild, cream- colored to orange
<i>Camembert</i> (France)	Apples	Dessert Snack	Mild to pungent, edible crust, yellow
<i>Cheddar</i> (England)	Fresh fruit Crackers	Dessert Cook, Snack	Mild to sharp, cream colored to orange
<i>Cottage</i> (U.S.)	Canned or Fresh fruit	Fruit salads Cooking	Soft, moist, mild, white
<i>Cream</i> (U.S.)	Crackers and Jelly	Dessert, Cook, Sandwiches	Soft, smooth, mild, white
<i>Edam</i> (Holland)	Fresh fruit	Dessert Snack	Firm, mild, red wax coating
<i>Feta</i> (Greece)	Greek salad	Salad Cooking	Salty, crumbly, white
<i>Gorgonzola</i> (Italy)	Fresh fruit Italian bread	Dessert Snack	Semisoft, blue-veined, piquant
<i>Gouda</i> (Holland)	Fresh fruit Crackers	Dessert Snack	Softer than Edam, mild, nutty



The Cruising K.I.S.S. Cookbook

Cheese Chart

Cheese	Goes With	Used For	Flavor, Texture
<i>Gruyère</i> (Switzerland)	Fresh fruit	Dessert Fondue	Nutty, bland, firm, tiny holes
<i>Liederkranz</i> (Germany)	Onion slices Dark bread	Dessert Snack	Edible light orange crust, robust, soft
<i>Limburger</i> (Belgium)	Dark bread Bland crackers	Dessert	Soft, smooth, white, robust, aromatic
<i>Mozzarella</i> (Italy)	Italian foods	Cooking Pizza	Semisoft, delicate, mild, white
<i>Muenster</i> (Germany)	Crackers Bread	Sandwiches Snack	Semisoft, mild to mellow
<i>Parmesan</i> (Italy)	Italian foods	Cooking	Hard, brittle, sharp, light yellow
<i>Port Salut</i> (France)	Fresh fruit Crackers	Dessert Snack	Buttery, semisoft
<i>Provolone</i> (Italy)	Italian foods	Cooking Dessert	Salty, smoky, mild to sharp, hard
<i>Ricotta</i> (Italy)	Italian foods	Cooking Fillings	Soft, creamy, bland, white
<i>Roquefort</i> (France)	Bland crackers Fresh fruit	Dips, Salads Dessert	Semisoft, sharp, blue-veined, crumbly
<i>Stilton</i> (England)	Fresh fruit Bland crackers	Dips, Salads Dessert	Semisoft, sharp, blue-veined
<i>Swiss</i> (Switzerland)	Fresh fruit French bread	Cook, Snack Sandwiches	Sweetish, nutty holes, pale yellow



Greenery Chart

Green, Greener, Greenest

<i>Belgian Endive</i>	White, yellow-edged crunchy leaves with bitter bite.
<i>Bibb Lettuce</i>	Small heads, pale-to-medium green tender leaves that have a sweet, subtle taste.
<i>Boston Lettuce</i>	A loose head with soft, pale green leaves that have a buttery flavor.
<i>Cabbage, green Chinese</i>	Pale green, crisp leaves with a bite. Very light green, crinkly leaves on an elongated head.
<i>Chicory</i>	Curly and crisp green leaves with pale (curly endive) center.
<i>Escarole</i>	Green leaves with a pale heart; the crisp, light-colored leaves are best for salads. The dark leaves are good to cook.
<i>Frisée</i>	The sweetest in the chicory family, with pale green to almost white curly leaves; mildly bitter.
<i>Iceberg</i>	Crisp, cool leaves; very mild flavor.
<i>Arugula/Rocket</i>	Dark greens with a peppery taste; small leaves are mildest.
<i>Dandelion</i>	For salads, pale young leaves are best, while the larger, darker, more pungent leaves are good cooked.



Green, Greener, Greenest, cont.

<i>Loose-leaf Lettuce</i>	Young, soft red or green leaves are sweetest.
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<i>Mâche</i>	Sweet-nutty taste; best when young. (Also know as lamb's lettuce, corn salad, field lettuce).
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<i>Mesclun</i>	Mixture of very young tender greens; may include arugula, chervil, dandelion, mâche, nasturtium, oakleaf lettuce, and herbs.
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<i>Romaine</i>	Long, crisp, succulent medium green or red leaves, sweet, nutty flavor.
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<i>Red Cabbage</i>	Crisp, purple leaves.
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<i>Cress</i>	Hot, peppery taste.
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<i>Kale</i>	Dark red or green robust leaaves; young and small are good for salads, others can be braised.
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<i>Radicchio</i>	Brilliant, ruby-colored leaves with a cabbagelike tender head; slightly bitter, peppery taste.
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<i>Spinach</i>	Long, heart-shaped smooth leaves with a spicy taste.
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<i>Watercress</i>	Tiny round, dark green, glossy leaves; spicy, peppery taste.
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<i>Yuca</i>	The white petals of the yucca or century plant have the texture of Belgian endive but milder taste.
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Kathy's basil thrives in the sunshine of the Barkley Sound anchorage on the west side of Vancouver Island.

The greenhouse effect

Fresh produce from a cruising ketch's deck

by Kathy Conlan Phillips

HEADING NORTH FROM NANAIMO TO begin our circumnavigation of Vancouver Island on Canada's west coast, we passed another sailboat heading south, returning to the United States. As our sterns were side by side the skipper pointed and asked, "What is *that*?"

"That" was our summer garden. Resting on the cabintop, secured with a bungee cord, was our pot of herbs and lettuce protected by a greenhouse. Sometimes it's the little things that make a voyage memorable.

Our 41-foot pilothouse ketch, *Sea-Sund*, made by SeaFinn in Finland, has lots of creature comforts designed for coastal cruising. But having aboard a bounty of fresh-picked lettuce leaves, parsley garnishes, and the tang of cilantro in a catch-of-the-day sevice gives us a welcome treat for the long weeks without provisioning opportunities for fresh greens.

Why a greenhouse? The summer before, cruising the Inside Passage to Alaska, I'd tried growing a pot of herbs without benefit of protection. My abject failure began with a litany of weather onslaughts. Consider that it rains about 335 days a year in south-

east Alaska. So I was always trying to dry out the pot in our steaming cabin filled with wet slickers and dripping condensation. The unfriendly wind stripped budding leaves from scraggly plants that had been deprived of sunshine and warmth. Add poisonous salt spray. It doesn't take a horticultural specialist to predict the outcome.

In spite of nursing the sickly pot of parsley, rosemary, basil, and cilantro for more than a month, nothing was growing. Generous dollops of fertilizer

garage. The table saw was buzzing and sawdust flying when I came out to investigate. Ken was grinning. "I'm making you a present for your birthday," he announced and showed me the drawing he created for his latest woodworking project. I'm used to his overbuilding/engineering tendencies. But even I was skeptical that a greenhouse could withstand the punishment outside on deck all summer. He was so pleased with his idea, I didn't have the heart to express my doubts. Good thing too.

“Resting on our cabintop...was our pot of herbs and lettuce...Sometimes it's the little things that make a voyage memorable.”

did not help. Talking to the plants to coax them to grow didn't help either. Finally my husband, Ken, in hushed funeral tones, asked if we could please put it out of its misery and conduct a burial at sea. I couldn't watch as the pot of herbs hit the briny deep. It was like giving up on a friend.

Sawdust flying

The following winter, Mr. Handyman was whistling while he worked in the

As I saw it take shape I marveled at his ingenuity. It was roomy, with spacious headroom for growing and an acrylic cover to warm and protect the tender starts. It fit on top of our pilothouse without interfering with the lines, sails, or companionway slide.

Spring planting time came, and I was excited. Gourmet lettuce planted, herbs tucked among the greens, the saucer-shaped pot filled to capacity,

Building the greenhouse

What you need

- **Materials:** boards; 1 x 1s; piano hinges; screws; wood glue; acrylic sheets; varnish stain to seal the wood.
- **Tools:** table saw; drill; screwdriver; paintbrush for stain.

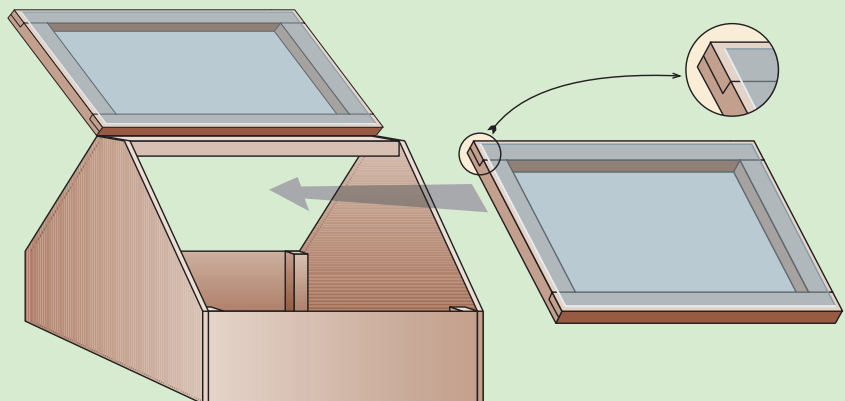
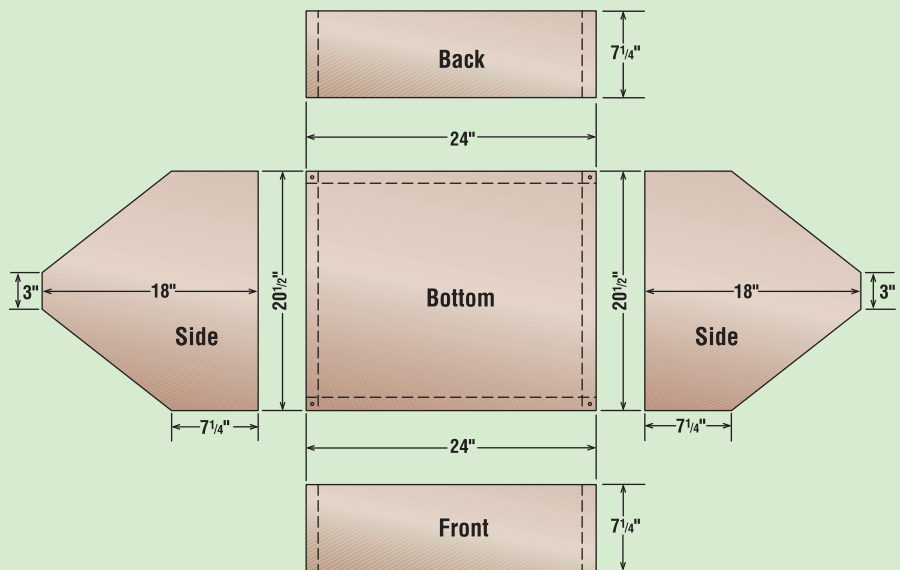
Description

Our greenhouse was built to accommodate the main saucer pot, which is 16 inches across and 3 inches deep. Ken designed the greenhouse to be 20½ x 24 inches, with a height at the top of 18 inches. Build your greenhouse to a size that comfortably fits a space on your boat where you can leave it outside while cruising. The container of dirt, water, and plants is too heavy to move inside via the companionway ladder.

Ken has added sticks attached to the two rectangular sides with a screw. These swing down inside the greenhouse and out of the way when the acrylic top is closed, but will swing up into position to prop the acrylic doors open when needed. When we want the top fully open for airflow or to allow the rain to water the plants, we attach a length of fishing line tied around one screw holding the acrylic in place and then looped around the opposite screw on the other side.

Construction

- Cut all pieces to size and stain before assembly.
- To the bottom floor, attach 1 x 1s along each side as an attachment frame.
- Attach 1 x 1s to the vertical sides of the two rectangular sidepieces.
- Attach these two sidepieces to the floor frame.
- Attach the two peaked sides.
- Fit top crossbar in place.
- Build frame for two top roof sides by using glued lap joints or rabbet joints and square it up.
- Using two piano hinges, attach two roof sections to top crossbar.
- Attach acrylic pieces to roof sections.



Planting hints

My planting pot is round and the greenhouse is square. The first year, I planted all the herbs and lettuce in the main pot, with other gourmet lettuce starts in smaller pots at each corner. Unruly growth by the parsley, chives, rosemary, and cilantro, even with pruning, blocked the light and space for the slower-growing basil. A better solution is to plant these weed-like herbs in their own pots to contain their robust growth.

Plant the slower-growing basil, oregano, and thyme with the lettuce in the main pot. The lettuce grows best in the middle of the pot, enjoying the full height of the greenhouse. We picked lettuce leaves individually, until the plants sprouted seeds. At that point, the pot was too overgrown with my gleeful planting, so I just cut off the tops of the lettuce and left the roots. Removing the roots would have dug up too many other roots that had intertwined by the mid-summer growing season.

Plants that thrive during long summer days include: parsley, cilantro, rosemary, basil, oregano, chives, thyme, and many varieties of lettuce, including romaine, green- and red-leaf, and gourmet blends.

After planting, slip the pot into the greenhouse. Once your greens get growing, the full pot is too difficult to maneuver through the opening. Water the plants well at first, fertilize each week, and then thin and harvest as needed for space. You'll know your lettuce needs more water when it droops and is limp to the touch. Wash it well before making a salad. How those green garden spiders find us at sea, I'll never know.

While underway, keep the greenhouse roof that faces forward closed to protect the plants from wind and salt spray. You can leave the aft roof open for air circulation. Open both sides at anchor when weather permits.



we were ready to install it aboard. You might imagine the stares and questions from our dock neighbors. As we prepared for departure day with a flotilla of 11 other sailboats on our voyage around Vancouver Island, you might also imagine envious looks from other provisioning spouses.

When we rounded notorious Cape Scott in heavy winds, the greenhouse was secured with just a bungee cord. The stretch in the line had the wooden structure sliding and slamming from wave to wave, the greenhouse “catching air.” We augmented the design by adding a sturdy line.

No fresh produce

We finally landed at Winter Harbour, expecting to replenish supplies. There, a small store serves the three year-round residents and the summer fishing boats. Skippers and spouses left the dock to find the boardwalk, charging hopefully into the walk-in produce cooler. The only fresh provisions left

were one onion and a bag of potatoes. Unluckily for us, 20 raceboats, competing in a race around Vancouver Island, had been docked there the night before. They'd wiped out all fresh supplies. The next delivery wasn't due for a few weeks. Now our fellow cruisers were sending *very* envious and longing looks toward my greenhouse. Unfortunately, we didn't have enough lettuce to share.

The following summer, sailing by ourselves, we skipped the marinas dotting the Inside Passage and stayed strictly on the outside, greenhouse aboard. We took our time exploring the wild west coast of Vancouver Island, and we made improvements in our spring planting. This time we had lettuce to share when we met other boaters. The greenhouse was also a great conversation starter in every anchorage and dock. Many cruisers had heard of the sailboat with the greenhouse and were eager to see it themselves. 



Kathy at the helm on the west coast of Vancouver Island, above. Ken snags a 25-pound lingcod to enjoy with fresh herbs from the garden, at left.

Drying food on board

Supplement your galley stores with delicious dried produce

SNACKING ON DRIED APPLE RINGS, zucchini chips, or salmon jerky brings thoughts of sailing to mind. Dried foods are a wonderful addition to a boat's larder. With 80 to 90 percent of the moisture removed, dried foods take up less space and weigh much less than hydrated foods. Dried foods are not dependent on any power to keep them from spoiling. Plus, there is no loss of food if containers break. The only drawback to having dried foods on board is the requirement of additional liquids either for re-hydrating the foods or for drinking.

Drying foods on a boat can be accomplished through open-air (sun) drying or oven drying. On land, where unlimited AC power is available, dehydrators can be used. Speaking of dehydrators, they don't actually *dehydrate* foods. Dehydration means eliminating 96 to 98 percent of the water in foods. This can only

be done commercially. Home/boat drying can only accomplish an 80- to 90-percent reduction in moisture.

Sun drying requires hot sunny days with low humidity in a pollution-free environment. Successful drying can occur on a boat while at anchor with a breeze to help whisk that moisture away or at a dock in a dry climate such as the Baja Peninsula of Mexico.

Oven-drying on a boat can be successful if your oven has a very low setting or pilot light that will keep the temperature between 140 and 150°F.

The best foods for drying are fruits and vegetables, but meat and fish can also be dried in an oven. Food preservation specialists do not recommend drying meats in the open air because of the danger of bacterial contamination and incubation during the drying process.

Why drying works

Properly dried foods do not support the growth of spoilage organisms. Molds, bacteria, and yeasts are only capable of surviving on or in foods that contain a certain amount of moisture. Highly acidic foods, such as most fruits, are successfully preserved when 80 percent of their water is removed. Low-acid foods like vegetables and meats require 90 percent of their water to be removed. This reduction of water creates a hostile environment for bacteria, yeasts, and molds.

Sometimes salt is used in the drying process, as in the case of jerky and fish. The salt helps by drawing the water from the cells of the food, which shrinks the cells and hastens drying. The salt that remains after the drying is completed protects the food by creating a hostile environment for unwanted organisms.

Bacteria, molds, and yeasts are not the only factors in food deterioration, though. Enzyme action in some foods can result in undesirable flavors, colors, and textures. Because of this, some foods require pre-treatment before drying to destroy or slow down these enzymatic actions.

Drying inside the cabin

Some open-air drying can be done inside your cabin. Chili peppers are easily dried by stringing them by their stems and hanging them between handholds in the cabin of your boat. Apple rings can also be dried this way.

Fresh herbs are best dried in your cabin by tying their stems into a bundle and placing them upside down in a clean brown paper bag. Close the bag around the stems and tie tightly. Hang



Drying apples in the Food PANtrie aboard Lindsay Christine.

this bundle in an out-of-the-way corner. The bag will catch the leaves that fall as they dry. Since herbs should be dried in the dark to retain their flavors and aromas, the bag also provides that protection. In a few weeks, when the herbs are dry, shake the bag to dislodge any remaining leaves. Store them away from the heat of the stove in small glass jars.

Preparation of foods

The first step in preparing food to be dried is in the selection. It should be as fresh as possible and at the peak of ripeness. It also should be as clean as possible. Scrub it under running water. If produce is bought in a third-world country, soak it for 5 minutes in a bucket of lightly bleached water (1 capful of bleach for 5 gallons). Then rinse in clean water.

After a thorough wash, inspect your produce for soft spots or signs of spoilage. Cut these areas out. Leaving bruises or soft spots will increase the chances of your produce spoiling during the drying process. Next cut away all tough areas like cores, stems, and seeds. Some foods, such as winter squash, should have their skins removed as well.

Foods are then cut into slices appropriate for drying. Depending on the type of produce, the thickness of

by Theresa Fort



Dried food is a perfect pick-me-up for coastal cruisers and bluewater sailors alike.

the slices may range from $\frac{1}{8}$ inch to $\frac{3}{4}$ inch. Fruits can generally be left in larger pieces than vegetables since less water needs to be removed. Cut all produce into uniform pieces so the time required to dry each type of food will be the same.

After cutting foods into their proper size for drying, perform any pre-treatments that are necessary. Some produce will need to be blanched. Some fruits will need to be soaked in an acidic fruit juice or salt solution. Some, however, are ready to dry right after slicing. See the table on Page 43 for procedures.

To blanch or not to blanch

After produce is washed, inspected, and cut, it is blanched if necessary. When an enzyme action can cause bad flavors, odors, or colors, blanching is necessary. During the blanching, the cell is killed. This makes the cell walls more permeable, allowing water to escape. Blanched foods are easier to re-hydrate also. However, the main benefit of blanching is stopping unwanted enzyme processes. In some cases enzymes are needed to help *create* desirable flavors and odors. This is true with garlic, onions, and horseradish.

Most of the vitamin and mineral loss during drying occurs during the blanching process. Vitamin C, in particular, is destroyed by high heat. So *only* blanch food when necessary. (Dried foods have much more nutritional value than canned foods since the canning process is much longer and uses such high temperatures.)

There are two ways to blanch produce: with boiling water or with steam.

Water blanching

In a large pot, bring to a boil enough water to cover a double layer of produce. Quick removal is essential if you are to retain the nutritive value of the food. Produce which is simply dropped into boiling water is difficult to remove without some pieces getting overcooked, so it is advisable to use a colander or steam basket to keep the pieces together. Or you can use netting or cheesecloth to hold the produce tied as a bundle.

Immerse your produce in the boiling water and begin timing immediately. The water may not return to boiling before your time is over. This is OK. For specific times for water blanching fruits and vegetables, see the table.

Steam blanching

Blanching produce with steam takes a bit longer because the steam must penetrate all pieces. But steam blanching retains more nutritive value since the produce does not sit in water, allowing vitamins and minerals to leach out.

In a large pot, bring an inch or so of water to an active boil with a good amount of steam. Use a steaming basket to keep your produce out of the water or suspend your bundle of produce in a large piece of netting or cheesecloth just above the water. Another way to steam produce is to use an aluminum pie pan with holes punctured in the bottom. The edge of the pie pan should rest on the pot's edge to hold the produce out of the water. Specific times for steam blanching fruits and vegetables are given in the table.

After blanching (with water or steam), plunge the food immediately into cold water for the same amount of time as the blanching. This stops the produce from cooking any further. Produce is then taken out and spread on toweling to dry for a few minutes.

Now your produce is ready to be arranged in a single layer on your drying trays so that no pieces overlap or touch. It is best to put pieces of uniform size together on the drying trays.

Pre-treating some fruits

Fruit that is to be dried with the skin still on and not blanched should have the skin pricked with a sharp-tined fork before being sliced into pieces. Pricking the skin helps with moisture loss, thus hastening drying.

Unpleasant color changes that occur in some fruits can be slowed or avoided by a soaking the fruit in an

acidic fruit juice like lemon juice, unsweetened pineapple juice, or in a salt solution (4 to 6 tablespoons of salt for each gallon of water). By slicing the fruit right into a bowl of juice or a salt solution, it gets immediate protection from browning. Let these pieces soak for 10 to 15 minutes. After soaking, spread the pieces on toweling to dry for a few minutes. Now your fruit is ready to be laid on drying trays. Arrange them in single layers with no pieces touching or overlapping.

What to dry in open air

Authorities warn against drying protein products such as eggs, yogurt, and meats in the sun. Staphylococcus and salmonella bacteria thrive on these foods. There is no way to test the safety of the food.

Fruits are generally easier to dry in the open air than vegetables. The following guide may help:

Fruits easier to dry – Apples, apricots, cherries, coconut, dates, figs, guavas, nectarines, peaches, pears, plums, prunes.

Fruits harder to dry – Blackberries, bananas, breadfruit, grapes.

Vegetables easier to dry – Chili peppers, sweet corn, sweet potatoes, onion pieces.

Vegetables harder to dry – Asparagus, beets, broccoli, carrots, celery, greens, green beans, sweet peppers, squash, tomatoes.

Open-air (sun) drying

Arrange food on your drying trays. The trays need to be kept off the deck an inch or two to allow for air circulation but low enough to allow the deck's light color to radiate the sun's rays back to the food. To protect the food from bugs and other contaminants, cover the trays with cheesecloth or netting so that it doesn't touch the



Zucchini before drying, at left, and ready for storage, at right.

Drying produce

Produce	Preparation	Blanching/Pretreatment		Drying		
		Method	Time	Method	Time	Done when
Green beans	Wash thoroughly. Cut in short pieces or lengthwise.	steam water	4-5 min. 3.5-4.5 min.	oven sun	3-6 hrs. 8 hrs.	brittle
Carrots	Use only tender and crisp carrots. Cut off roots and tops, wash. Cut into slices or strips.	steam water	3-3.5 min. 3.5 min.	oven sun	3.5-5 hrs. 8 hrs.	tough to brittle
Corn, cut	Husk and trim while on the cob. Wash. Cut kernels from cob after blanching.	steam water	2-2.5 min. 1.5 min.	oven sun	2-3 hrs. 6 hrs.	brittle
Mushrooms (Edible types only. Drying does <i>not</i> destroy toxins.)	Pick young un-bruised mushrooms only. Scrub thoroughly. Discard all tough stalks. Cut tender stalks close to the top. Slice thinly.	none		oven sun	3-5 hrs. 6-8 hrs.	leathery to brittle
Peppers	Wash thoroughly. Stem, core, and remove partitions. Cut into strips.	none		oven sun	2.5-5 hrs. 6-8 hrs.	leathery to brittle
Hot peppers	Pick only blemish-free peppers with stems firmly attached. Wash thoroughly.	none		Thread string through stems and tie a knot at each.	several days in open air	leathery
Tomatoes for stewing	Wash. Steam or dip in boiling water for time period. Then chill in cold water to loosen skins. Peel. Cut.	steam water	2.5-3 min. 1 min.	oven sun	6-8 hrs. 8-10 hrs.	leathery
Sun-dried tomatoes	Use paste-type tomatoes (plum). Wash. Slice in half lengthwise or into thirds.	none		Place cut side up on screens.	1-2 days	leathery but pliable
Summer squash	Wash. Cut stem off and slice thinly.	steam water	4 min. 3 min.	oven sun	6-8 hrs. 8-10 hrs.	brittle
Onions	Wash. Remove outer papery layers and cut off tops, root end.	none		oven sun	3-6 hrs. 8-11 hrs.	brittle
Peas	Shell peas and rinse well.	steam water	3 min. 2 min.	oven sun	3 hrs. 6-8 hrs.	wrinkled and brittle
Apples	Wash. Peel or leave unpeeled. Core. Cut into slices.	steam water soak in acidic juice or salted water	5 min. 3-4 min. 10-15 min.	oven sun	6-12 hrs. 3-4 days	soft and pliable, no moist areas when cut into
Apricots	Wash. Pit or halve for steam blanching or acidic juice soaking. Leave whole for water blanch then cut in half.	steam water soak in acidic juice	3-4 min. 4-5 min. 10-15 min.	oven sun	24-36 hrs. 2-3 days	same as apples (to shorten time, cut smaller pieces)
Nectarines and peaches	Wash. Blanch if you want to remove skin. Cut in half. If you want to leave skin on, cut in half and soak in acidic juice.	steam water soak in acidic juice	8 min. 8 min. 10-15 min.	oven sun	36-48 hrs. 3-5 days	same as apples (to shorten time, cut smaller pieces)
Pears	Wash. Cut in half. Peel if desired.	steam water soak in acidic juice	6 min. none 10-15 min.	oven sun	24-36 hrs. 5 days	same as apples (to shorten time, cut smaller pieces)
Grapes	Wash. Leave whole.	none		oven sun	12-20 hrs. 3-5 days	texture like a raisin, no moisture in center when cut
Herbs	Rinse quickly under running water. Pat dry with paper towels.	none		oven sun paper bag inside cabin	11-13 hrs. 6-8 hrs. up to 2 wks.	dry and crumbly
Seaweed	Wash in fresh water to get rid of any rocks or tiny creatures.	none		oven sun	2.5-3.5 hrs. 6-8 hrs.	brittle

Resources

For more information about drying foods, call your local county extension agent. I've found these books to be useful: **Stocking Up**, by Carol Huppung and the staff of the Rodale Food Center. (Rodale Press)

Putting Food By, by Ruth Hertzberg, Beatrice Vaughan, and Janet Green. (Stephen Green Press)
Food Drying: How to Dehydrate, Store, and Use Vegetables, Fruits, and Herbs, by Phyllis Hobson. (Garden Way)

Food PANtrie
 Product Source International
 1101 Main Street, #104-500
 Evanston, WY 82930
 307-789-1285, 801-556-1966;
<http://www.domehabitat.com/pantrie.htm>

food. Check the food periodically and turn the pieces a few times a day. To avoid evening dew, bring the trays in each night at sundown and out again as soon as the sun begins to warm the deck. Timing only takes place when food is outside. On the second day of drying, begin to check the foods for doneness. The table tells you what each food should be like when done drying. Drying times are approximations.

If the sun is too intense for your foods, you will need to move them into the shade of an awning so the outsides of the food do not cook. It is a good idea to bring the trays into the shade when the food is about three-quarters dry anyway. You will get a tastier and better product.

On board *Lindsay Christine* we carry a portable hanging food dryer called a Food PANtrie. By sewing a loop on the two opposite bottom edges, it hangs easily in the rigging by its top hook. It can be controlled in light winds by tying it by the two bottom loops to handrails. The black netting around the four trays protects the food from contamination and increases the temperature inside the drier, allowing us to dry foods in less than hot conditions. When not in use, it folds up into its top plastic cover with a plastic bottom that we bungee on. It is small enough to stow under our settee. The trays are made of food-grade plastic and are easily removed for washing. This handy dryer has a double duty as a sprouter when we aren't drying food.

Pasteurization

If there is any chance that bugs or airborne microorganisms contaminated your food while it was drying,

pasteurize it before storing. Preheat your oven to 175°F. Spread the food loosely on trays or netting, using no more than two trays at one time. Place the food in the oven. Small pieces should be heated for 10 minutes; larger pieces for 15 minutes. Remove the pieces from the oven and spread them out on clean toweling. When it is thoroughly cool, package up your food.

Drying trays

Drying trays can be made with netting and unfinished 1 x 2s or stretcher bars (pieces of wood used to stretch painting canvases as a framework, found in arts and craft stores). Do not use metal screening for the bottom. Aluminum discolors food, copper destroys vitamin C, and galvanized screen is treated with zinc and cadmium, which would be dangerous near food to be consumed. If you have no choice other than to use metal screening, protect your food by placing clean muslin over the screen before arranging the food. This will reduce the air circulation around the food, but it will give you a safer product.

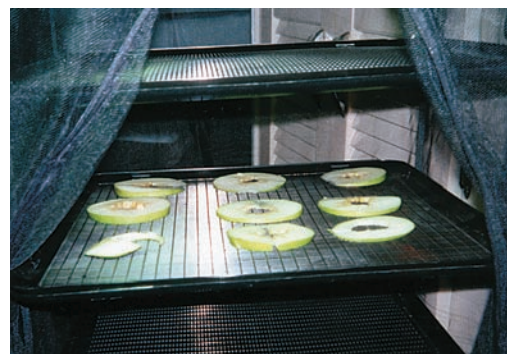
Even fiberglass, with its tiny splinters, can be hazardous to use as a bottom. If you use vinyl-coated screen, make sure it is food grade and will handle temperatures up to 140 to 150°F for oven drying.

Cloth netting is the best choice for tray bottoms as long as the mesh is no bigger than 1/2-inch. Mosquito netting will work unless it is made of a plastic that can't take 140°F. Cheesecloth can also be used if doubled over for extra strength, but it is difficult to clean for reuse.

With unfinished stretcher bars, make a rectangular or square frame. If you will be using the trays in the oven, the size depends on the size of your oven. The frames should be at least 1 1/2 inches smaller all around than your oven interior to allow proper heat and air circulation.

Cut the netting to overlap the frame by 2 inches all around and double it over before stapling or tacking the edges to the frame. If you need more support, string lines diagonally under the frame.

A light coating of vegetable oil spray applied before food is arranged can prevent foods from sticking to the netting.



Oven-drying apples.

Drying meats

We often saw fish drying on tin roofs in cities on the Mexican Pacific coast when we were cruising that area in 1995 and 1996. And being from the Pacific Northwest where salmon is commonly dried and smoked, I am used to the idea of drying fish in the open air or over a smoky fire. But it is not believed to be safe to dry your own meat outside these days. At least that is what the USDA and extension food specialists say. Why? With the rise in occurrences of e. coli, salmonella, and other bacteria showing up on meats sold in the United States, food preservation specialists have become cautious in their guidelines. And with good reason. Raw meat can incubate bacteria easily and quickly, even when we sanitize our preparation area and wash our hands well.

Because there is no known way to tell if the meat you dried outside is safe, those making the guidelines are hoping people will stay on the safe side, using the guidelines explained below. In fact, these days the authorities are only giving directions for drying meats as jerky. As for that huge fish you just caught while reading this, it is up to you how to preserve it. I know of many who swear they can dry fish by hanging it in the rigging. If you choose to be counted as one of those, remember that the cleaner the area is where you process your raw meat, and the quicker it dries, the safer your product will be.

Dry only very lean meats since fat will eventually become rancid. If you wish to dry wild game or pork, freeze the meat for several weeks to kill any of the tiny worms that cause trichinosis.

Making jerky

Jerky is a popular snack. You can make your own jerky by following a



The Food PANtrie, collapsed and ready for storing.

few simple procedures:

- Freeze your jerky meat to make it easier to slice. Jerky can be made from any type of low-fat meat such as beef, poultry, pork or wild game (remember to freeze this meat for several weeks first), or even fish.
- Slice partially thawed meat into ¼-inch thick slices, across the grain for tender jerky or with the grain for tougher jerky.
- Prepare a marinade made from soy sauce with a little pepper, garlic powder, and onion powder or whatever spices you've got on hand.
- Bring the marinade to a full boil and add a few slices at a time making sure that the marinade covers the slices.
- Bring this back to a full boil then remove the jerky slices with tongs. Drain the slices on paper toweling then transfer them to your oven to dry at temperatures between 140 and 150°F. Line the bottom of your stove with aluminum foil to catch any drips.

Jerky is done when a cool slice will crack but not break when bent. There should be no moist spots on any slice. When done, refrigerate or cool it overnight in a plastic bag. If there is any moisture in the bag, dry it further. Store jerky in a cool, dry place away from sunlight.

Food preservation specialists have begun advocating precooking your meat slices before drying due to an outbreak of food poisoning after several people ate homemade jerky that had been dried in a home dehydrator. They found that home dehydrators do not bring the temperature of the meat high enough to kill all possible bacteria.

Nor is presoaking in a marinade overnight advised since bacteria can spread throughout the galley when the slices are drained. To keep the jerky from having a cooked flavor and to maintain safety, add un-marinated strips directly to the boiling marinade. So pre-cook your meat and do your marinating in a boiling marinade.

What to dry in the oven

Meats and fish are easier and safer to dry in the oven since the temperature can be controlled better and is better for retarding spoilage. Because oven drying is twice as fast as open-air drying, it makes a better product. I prefer oven drying for the harder-to-dry fruits and vegetables as well as any fish or meat jerky.

Oven drying

When oven drying, you need not have drying trays. Just stretch netting tightly around the oven racks and pin or temporarily stitch in place. Preheat your oven to 140°F before placing food inside. Line the bottom of your oven with aluminum foil to catch drips. Place food in the oven so air can circulate around it. Leave the oven door slightly cracked to allow moisture to escape if you are using a gas oven. Stir or turn the food halfway through drying to help keep the drying even. Times given in the table on Page 44 depend on your oven temperature, the humidity level, and the level of moisture in the food. It helps to have good air circulation so letting a fan run nearby can hasten the time. *Never dry foods overnight when using a gas oven due to the danger of asphyxiation.*


Storing dried foods

It is important to store your dried food in containers that will protect them from moisture and bugs. Storing dried foods in small quantities will limit the amount of food lost if spoilage occurs. Glass jars or double-bagged resealable plastic bags work well to keep dried foods on board. Plastic freezer bags inside glass jars protect your food even further. Protect glass jars with padding or by placing each inside a sock. Store dried foods in the coolest, darkest place on board. Dried foods stored at cool temperatures tend to retain more of their vitamin content than those stored in hot conditions. Nutritive value depends on the length of the storage time, so if you are in a very hot climate, eat your dried foods in a timely manner. That's not hard to do anyway!

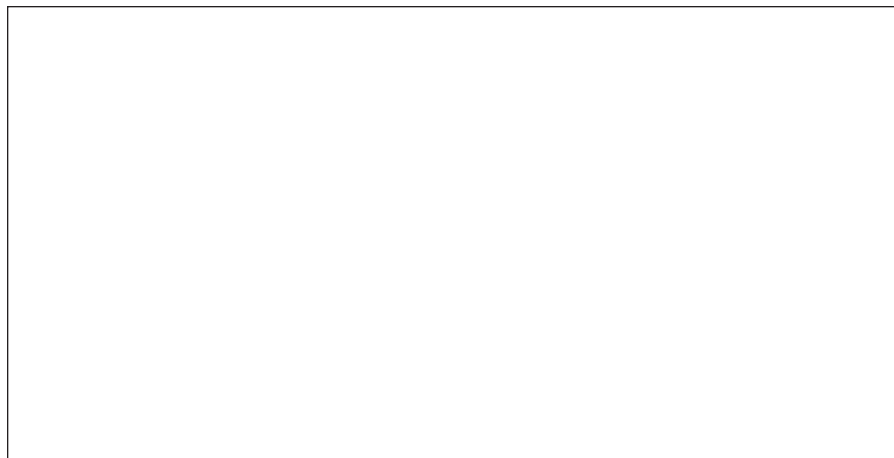
In the first week or so after drying your food, check it daily for signs of moisture. If there is moisture on the food or in the container, finish the drying in

the oven at 140°F. Later, check your dried foods weekly to make sure they have not become damp, contaminated, or moldy. If dried vegetables show any signs of mold, throw them out! Some molds on vegetables produce aflatoxin food poisoning.

In optimum conditions (40 to 60°F in a dark, dry environment), dried fruits and vegetables can be stored for up to a year while maintaining taste and nutritive value. Meat and fish can be stored for three to six months theoretically. But boats rarely provide such optimum storage conditions. Cabin temperatures can fluctuate sharply. So, it is important to check your dried foods periodically. Temperature fluctuations can cause condensation to form inside storage containers.

Dried foods add another dimension to eating on board. They are wonderful to add to cooking when fresh fruits and veggies have been consumed. And, they are great to snack on during night watches or on the first part of a passage when you need to eat lightly. Weighing less, saving space, longer storage . . . hmmm . . . that sounds pretty great! I wonder what else I could dry around here? 

In another life long, long ago and far away, Theresa Fort was a home economist with a specialization in consumer education. After receiving her BA in home economics at the University of Montana, she went on to become a master food preserver with the co-operative extension office in Montana. Theresa and family live and cruise aboard Lindsay Christine, a Mercator Offshore 30.

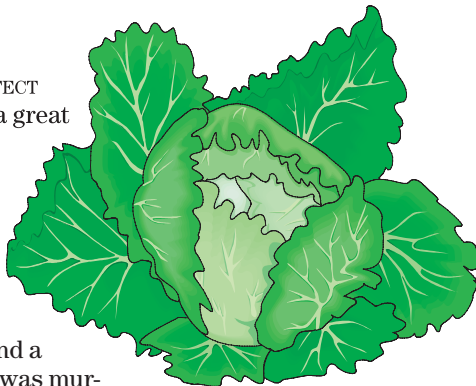


When the lettuce is gone

A gourmet cruiser's tasty substitutes for fresh produce

by Bonnie Dahl

IT WAS THE END OF A PERFECT day. Earlier, we'd had a great spinnaker run along Lake Superior's Ontario wilderness shoreline into a pristine anchorage. Now we were enjoying a meal of freshly caught lake trout grilled on the barbecue with wild rice and a tossed-lettuce salad. Ron was murmuring something about the great meal and the good life, to which I replied, "Well, enjoy it now because that's the last of the lettuce."



With 10 days to go to our next port, we both knew what that meant. It brought back memories of cruising in the eastern Caribbean: in many of those smaller ports, lettuce in any form was non-existent. We had learned to make do with salad substitutes, often just made from cans.

Even with special care, lettuce is one of the first things to deteriorate in the fresh-produce department of any ship's stores. Drying it before storage and allowing it to breathe seems to help. Compact-head lettuce, such as iceberg or Boston lettuce, lasts longer than its leafy counterparts such as Romaine lettuce or even spinach. Yet, even with refrigeration, the shelf life of head lettuce is a little more than two weeks.

Lettuce substitutes

One of the easiest substitutes for lettuce in sandwiches is thinly sliced dill pickles layered on a piece of bread or bun before adding the main sandwich ingredients. The extra

crunch and flavor make a nice addition to most sandwiches.

Cabbage is a great substitute for the fresh crunch of a lettuce salad, as it can last up to four weeks without refrigeration. It is grown in many of the remote areas of the Bahamas and Caribbean and is more readily available. In fact, coleslaw is almost a staple in many islands. It seems that everyone has a favorite coleslaw recipe.

Coleslaw consists mainly of shredded cabbage and thinly diced onion with any of the following options: shredded carrots, chopped green pepper, or celery. Some even add raisins for a little extra flavor or peanuts for an added crunch.

There are two basic types of coleslaw: one made with a creamy dressing, the other with a vinegar-and-oil dressing. The following dressing recipes are used with half a head of shredded cabbage and one small onion thinly diced, along with any of the above options thrown in.

Creamy coleslaw dressing

- ¼ cup mayonnaise
- 2 Tbsp. milk, or mixed powdered buttermilk, or sour cream*
- 2 Tbsp. white vinegar
- 1 Tbsp. sugar
- ½ tsp. celery seed
- ¼ tsp. salt
- ⅛ tsp. pepper

*Jury-rigged sour cream can be made by adding 2 tsp. lemon juice to 1 cup of milk and chilling while it clots, adding a little more lemon if necessary.

Mix the ingredients and add them to the shredded cabbage, onion, and any of the other veggie options. A handful of raisins or peanuts goes especially well with this one. If possible, chill for a couple of hours before serving.

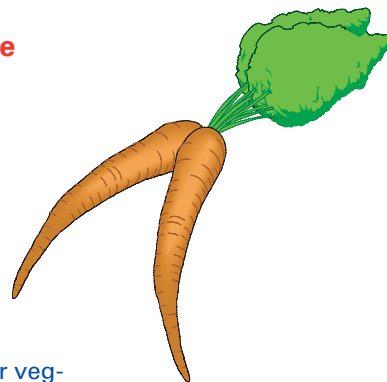
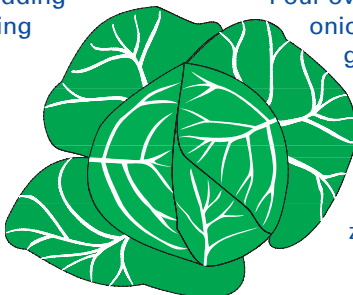
Coleslaw vinaigrette

- 3 Tbsp. white vinegar
- 2 Tbsp. vegetable oil
- 1 Tbsp. sugar
- ½ tsp. celery seed
- ¼ tsp. salt
- ⅛ tsp. pepper

Combine the ingredients and beat well.

Pour over cabbage, onion, and other veggies, mixing evenly. If possible, refrigerate a couple of hours before serving.

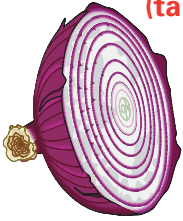
With either recipe, a tablespoon of spicy brown mustard will add a lot of zip to the salad.



Salads from cans

As good as coleslaw and other cabbage salads are, there comes a time when the cabbage is gone, too, or you're looking for some variety. That's when we turn to our can lockers, and creativity takes on new proportions as we put together salads made primarily from canned veggies. Like coleslaw, another favorite with sailors is three-bean salad and its variations.

Three-bean, four-bean, five-bean salad (take your pick)



- 1 can (16 oz.) green beans
- 1 can (16 oz.) yellow wax beans
- 1 can (16 oz.) red kidney beans
- 1 can (16 oz.) garbanzo beans (optional)
- 1 can (16 oz.) baby lima beans (optional)
- 1 medium onion, thinly sliced

Marinade:

- ½ cup white, cider, or wine vinegar
- ½ cup vegetable oil
- ½ cup sugar
- ½ tsp. salt (optional)

Drain beans and combine them with the onion in a large bowl. Mix the marinade ingredients in a separate bowl and add this to the bean mixture. Cover and chill at least two hours, the longer the better for flavors to blend. With refrigeration, this salad will keep a long time. If you are going to make the five-bean version, it's a lot of salad, especially for two people. In that case, this is one recipe you might want to reserve for taking to potluck dinners.

There is another bean salad we have used throughout the years, especially when we were cruising in the eastern Caribbean. It is amazing in its simplicity and quite tasty with slivered water chestnuts adding a decided crunch.

Green bean and mushroom salad

- 1 can (14.5 oz.) French-style green beans
- 1 can (4 oz.) mushrooms stems and pieces
- 1 can (8 oz.) water chestnuts

Drain all cans, cut water chestnuts into slivers, and mix. We particularly like to add a vinaigrette dressing, either from a bottle or made from seasoning packets. In a pinch we have used diluted soy sauce with this one.



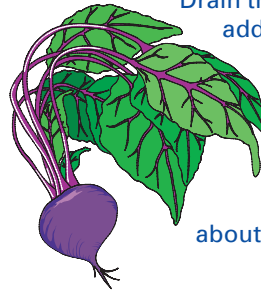
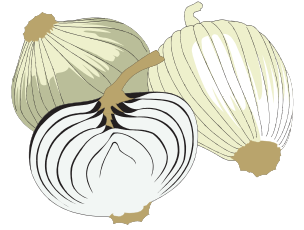
Another salad that is incredibly simple is one made from canned beets and onion and then marinated in vinegar and oil.

Marinated beet and onion salad

- 1 can (15 oz.) sliced beets
- 1 small onion, cut in thin slices

Marinade:

- ¼ cup white or wine vinegar
- 2 tsp. sugar
- 1 Tbsp. cooking oil



Drain the beets, cut into thin slivers, and add the onion. In a separate bowl, dissolve sugar in vinegar and oil before adding to the beet and onion mixture. Note that this recipe doesn't have to be chilled before serving, but it should be allowed to sit for about an hour for the flavors to blend.

In the earlier years of sailing exploration (1700s), sauerkraut was sometimes added to a sailor's diet in an attempt to stave off scurvy, a disease caused by a vitamin C deficiency. Since cabbage was known to be a good source of vitamin C, it was thought that sauerkraut (fermented cabbage, which didn't readily spoil) was the answer.

Modern-day sailors needn't worry about scurvy, yet canned sauerkraut still finds a useful spot in the galley, particularly in making delicious salads. Although there are many variations of sauerkraut salad, this is one we have adapted from a number of recipes.

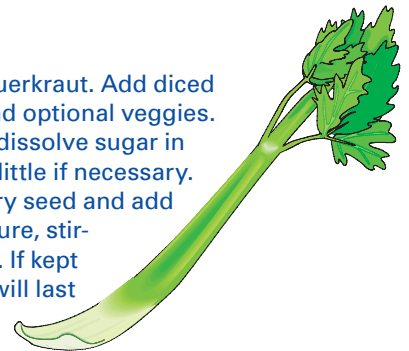
Sauerkraut salad

- 1 large can (27 oz.) sauerkraut
- 1 jar (2 oz.) pimentos, diced
- 1 medium onion, diced
- 1 cup diced green pepper or celery if you have it

Marinade:

- ⅔ cup white or cider vinegar
- 1 cup sugar
- ⅓ cup cooking oil
- 1 tsp. celery seed

Drain and rinse sauerkraut. Add diced pimento, onion, and optional veggies. In a separate pan, dissolve sugar in vinegar, heating a little if necessary. Mix in oil and celery seed and add to sauerkraut mixture, stirring to coat evenly. If kept chilled, this salad will last indefinitely.



There may come a point when you want a fancy salad to serve to guests but all you have are cans. The following concoction, from a number of recipes, may serve. With the added red color of the pimentos, it looks quite festive. This is another good recipe for a potluck dinner.

Marinated artichoke and hearts of palm

1 can (14 oz.) artichoke hearts
1 can (14 oz.) hearts of palm
1 can (4 oz.) mushroom stems and pieces
1 jar (2 oz.) canned pimentos, diced

Marinade:

¾ cup vegetable oil
½ cup lemon juice
1 Tbsp. sugar
1 tsp. dry mustard
½ tsp. each: salt, garlic powder, basil
Dash of black pepper

Drain all cans and pimento jar. In a large bowl, break artichoke hearts and hearts of palm into smaller pieces with a fork. Add mushrooms and diced pimento. Mix marinade in a separate bowl until well blended. Pour over veggies and mix thoroughly. Chill in marinade for at least 4 hours.

Note: If you don't want to make the marinade, a nice substitute is Italian-seasoned vinaigrette dressing from a bottle.



75°F. Cooler temperatures are good for storage once the sprouts are grown, but during the growing process cooler temperatures will slow the growth. In extremely hot temperatures the sprouts will wilt and die. These temperatures can be controlled somewhat with the temperature of the rinse water used. When sailing in cooler climates use warm water; in warmer climates use cool water.

There are some secondary conditions to consider. One is space. Because the seeds are so small, it is tempting to put a larger number than necessary in a sprouting jar. When tempted, remember they will increase to 20 times their volume. As they grow and fill the jar, their growth will actually be retarded if there is not enough space for expansion. Another consideration is that although sprouts don't need light for initial growth, if you want them to "green up" they will need some light toward the end of their growth period. However, avoid direct sunlight. A few hours a day in indirect light toward the end of sprouting should do the trick.

Types of seeds to use. Any kind of seed or bean can be sprouted, but some are better than others for eating. Some of the most common for eating raw are: alfalfa, cabbage, clover (red), lentils, mung bean, radish, and sunflower. A nice alternative to sprouting single seeds is to get a sprout mix. It is important to avoid using seeds from plants that may have poisonous parts. Do not eat potato or tomato sprouts; they are poisonous. Avoid seeds that are produced for planting. Make sure that any seeds you'll be eating have not been previously treated with chemicals. To be on the safe side, it is prudent to purchase seeds packaged for sprouting. Certified organic seeds have been grown and processed to minimize all types of contamination. Health-food stores and cooperatives are a good source for sprouting seeds.

There have been a few news stories relating to salmonella

Bean sprouts are easy, nutritious, and fun to grow. From the seed stage, top photo, the sprouts grow in 3 to 5 days to the eating stage, bottom photo. You can almost watch them grow. Bean sprouts are a welcome addition in any kind of salad and many sandwiches.



Growing sprouts

More variety? You're looking for that extra crunch of something crisp? For many sailors, sprout gardens provide the answer. Sprouting is simply taking seeds and giving them enough water so they pop open and grow. Nutritionally, sprouts are higher in proteins, enzymes, minerals, and vitamins than the mature plant. They are an excellent source of vitamin C and many of the good B vitamins. Eaten raw, they are deliciously fresh and add texture and color to many recipes.

There are a number of reasons why growing sprouts is so adaptable on a boat. One is that the seeds take up little space. With sprouting, many seeds increase 20 times or more in volume. The cost of growing sprouts is relatively inexpensive when compared to buying the mature plants. A couple of tablespoons of seeds will fill a quart jar with sprouts. But the main reasons sprouting works so well on boats are that it is so easy, takes up little space, and can be done without sunlight.

Sprouts have three requirements for growth.

- **Air.** Sprouts need to breathe or they will mold and start to rot. They shouldn't be put into sealed containers.
- **Water.** Initially, sprouts need a good soaking for at least eight hours or overnight. Then they need to have a good rinse with fresh water at least twice a day. If you miss a rinsing in the first few days, they will be permanently set back. If they dry too much, they will die. On the other hand they need good drainage. It is important that they don't get too much water or they will drown.
- **Temperature control.** Although there is some leeway in the temperature range for germination and growth, the best temperature for sprouting seeds is between 70°F and

“The concept of ‘jury-rig’ is one that definitely has its origins in shipboard existence. Yet this doesn’t necessarily imply hardship.”

contamination in sprouts. It appears that these seeds had been

contaminated with animal waste and were intended to be used as a farm crop. To be on the safe side, use designated organic sprouting seeds. It also is important to refrigerate harvested sprouts until used.

Tools for sprouting. To grow sprouts, you need a container to hold them as they grow and a means for draining off the liquid. Any container, such as plastic bottles and glass jars, can be used. Even a cottage cheese container will work. Some people will use a paper plate with a wet paper towel over the seeds and sprouts. Serious sprout growers often use large trays. Some even use hemp or linen drip bags. In the small confines of a boat, however, jars seem to work best. Sprouting jars should have a wide mouth for rinsing the sprouts and getting them out when grown. A glass jar allows you to watch the progress of the sprouts.

You also need to provide some means of draining water from the sprouts. A piece of cheesecloth or muslin held over the mouth of the jar with a rubber band is all that is needed. We have also used a fresh disposable washcloth. You can buy manufactured lids with holes of varying sizes. We particularly like using glass quart canning jars as the screw-on rings hold the drainage cloth in place. After rinsing, tilt the jar in a bowl to allow for complete drainage.

Steps in sprouting. There are three basic steps in sprouting seeds.

- **Soak** organic seeds in water for eight hours or overnight in a warm dark place. For a quart jar, use 2 tablespoons alfalfa, cabbage, clover, radish, or ½ cup of mung beans or lentils. During this time the seeds will absorb 2 to 3 times their dry volume in water, so be sure to add enough water to keep them covered.
- **Rinse and drain twice a day.** Fill the jar with water, swirl, and drain. Some sprouting advocates suggest rinsing 3 or 4 times a day. Particularly if you are cruising in salt water and rationing the ship’s fresh water, rinsing twice a day is sufficient. The important thing is to keep the sprouts moist without soaking. After a few days of growth, loosely separate the tangled mess, airing the sprouts in the center.

After draining, invert the jar at an angle in a bowl to allow for additional drainage. Seeds allowed to sit in residual water will rot. However, do not mistake the fuzzy white root hairs of radishes and some other sprouts for mold. Return the jar to the dark warm place. In the last few days of sprouting leave the jar out in indirect light for a few hours to promote “greening-up.”

- **Harvest your sprouts.** When they are between 1 and 2 inches long, your sprouts are ready to eat. This varies according to the type of sprouts but usually in 3 to 5 days. Not all sprouts will mature at the same time. It may be necessary to remove just the ripe sprouts and let the less-developed ones continue growing. This promotes a continuing harvest. Sprouts left too long before harvesting will have a strong bitter taste. Although the hulls can be

eaten, some sprouts taste better if they are removed.

To do this, just swish a handful of sprouts in water to loosen and remove the hulls before storage. Drain any excess water and store in a closed container, such as a plastic bag, in the icebox or fridge. Sprouts should keep up to a week, but they must be rinsed and drained every three days.

Using sprouts. One of the biggest advantages in growing sprouts is their versatility in the galley. They are a welcome addition in any kind of salad, especially those made from cans, as they contribute color and a fresh crunch. Sprouts can also be used as the main component of a salad, as seen in the following recipe.

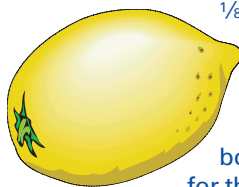
Marinated sprout salad

2 cups of mixed sprouts (alfalfa and mung work well, or a commercially prepared mix)
1 can (8 oz.) water chestnuts cut into slivers

Marinade:

3 Tbsp. white vinegar
1 Tbsp. lemon juice
2 Tbsp. sugar


⅛ tsp. each salt, pepper, basil, and thyme



Mix sprouts and slivered water chestnuts in a bowl. In a separate bowl mix thoroughly all ingredients for the marinade. Pour over sprouts and water chestnuts, coating evenly. A bottled vinaigrette is just as good, if you don’t want to make your own marinade. A half-cup of peanuts can be substituted for the water chestnuts.

Sprouts also substitute well for lettuce. Use sprouts instead of lettuce in sandwiches. They are especially good with tuna or ham salad sandwiches. Sprouts work well in pocket bread and sub sandwiches. Even grilled cheese sandwiches get an extra kick with sprouts. For a main course, chilled chicken salad over a bed of sprouts is delicious. We have used sprouts in place of lettuce in tacos and California hamburgers as well.

Most sprouts that can be eaten raw are equally good cooked. They are a natural component in stir-fry meals. They are good when added to soups. Adding a handful of alfalfa sprouts to omelets just before folding adds an interesting flavor and crunch. Some people even add sprouts to yeast breads, as they seem to help the yeast in producing a higher-rising loaf.

One of the challenges of long-term cruising is making do without. The concept of “jury-rig” is one that definitely has its origins in shipboard existence. Yet this doesn’t necessarily imply hardship. Often our substitutions are as good as, or better than, the original because they add variety. 



Baking aboard

Delicious fresh bread on a Cape Dory 36

by Kim Ode

Follow these tips for making bread somewhat less dusty (measure ahead) and somewhat faster to bake (omit the bread pan), and the resulting loaves will be welcome additions on any cruise.

THE SAILOR IN ME ACCEPTED LONG ago that certain foods remain on the hard. When we back out of our slip, we leave behind ice cream, French fries, lemon meringue pies — any food too chancy to keep, too messy to cook, or too delicate to withstand a beam reach.

That's fine. It's good to leave the land behind.

But there's one food I've never stopped missing: fresh-baked bread. I bake a lot of bread at home. I even built a brick oven in our backyard to make better bread. So it was a drag to leave both the task and the taste behind, especially on extended sails. Last summer, I decided to tackle the issue.

Issues, actually. Chief among the many questions was whether our alcohol oven was up to the task. Was there a way to boost the heat? Would conditions on the water affect how the bread rises? How much extra gear and ingredients would be required? Could I make dough and not cause the Coast Guard to wonder about the nature of this fine white dust that covered everything?

I'm happy to report that baking fresh bread aboard is possible (and irresistible). All that was required were a few adjustments to my procedure, my oven, and my expectations.

For starters, I put aside thoughts of a traditional loaf. A loaf pan would be yet another item to store, and the baking time was too long. I shifted my vision to smaller, meal-sized versions of flatbreads, plump little rounds just

right for one supper, and breadsticks that I could vary from soft batons to long, pencil-thin grissini.

No messiness

I also developed a streamlined mixing method that sidestepped messiness, a means of kneading that minimized the usual grand slapping about, and a way to make the most of the less-than-fiery heat created by our boat oven.

As with most things marine, the key is to plan ahead, or in this case, measure ahead. I choose my recipes while still at home, then measure out the dry ingredients — flour, salt, and yeast — in Ziploc bags. That saves me from bringing a bag of flour and a jar of yeast. I also use instant yeast, often called rapid-rising or bread-machine yeast, because it doesn't need to be dissolved in water.

Once on board, I mix the dry ingredients with water in my largest bowl. That way, I can do much of the kneading inside the bowl before resorting to a floured board. Then I employ a baker's secret weapon: autolyse.

Autolyse is the practice of letting the dough rest for about 10 minutes. Turn the still somewhat sticky blob of dough onto a floured surface — I use our cutting board — and cover it with the upside-down bowl. This resting period lets the flour fully absorb all the water and helps the dough relax and become easier to handle.

While the dough is resting, you'll notice your doughy hands. Resist the urge to wash them and send the



floury bits down the drain. Instead, go on deck and briskly rub your hands together over the leeward rail. Most of the dough will rub off, leaving only a quick rinse to make you presentable.

Quicker kneading


Ten minutes later, the dough will be firmer and less sticky, so the remaining kneading won't take long. Put the dough in a clean bowl coated with a thin sheen of oil, cover with plastic wrap, and set it in a warm place. Keep it out of direct sun and wind — my favorite spot is under the dodger — until it doubles, in about an hour or so.

Now it's time to talk about heat. Our alcohol stove never seems to get

as hot as the stove at home, no matter what the temperature gauge says. So I give the heat a boost by placing a small pizza stone on the bottom rack. This helps retain the heat, but more important, it lets me place the dough directly on a hot surface, making the most of every degree. You can also lay clay tiles to fit on the bottom rack. The key thing is to give the stone plenty of time to preheat — at least 30 minutes before you want to bake and longer if you can.

Warming the cabin is one advantage of baking on a cool day, of course, but hot days work too. On one of the days I baked last summer, it was an unusual 90 degrees in the Apostle Islands, so the cabin could hardly feel any warmer, oven or no. It was good to sit on deck while the bread was baking, the better to answer those who glided by and wondered about the wonderful aroma.

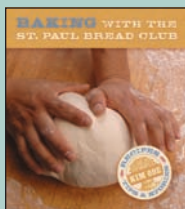
Flatbreads work the best because they're small and bake relatively quickly, as do soft chubby breadsticks. If you're really ambitious, you can make another half-batch of dough, add some dried herbs, and roll skinny grissini — pencil-thin breadsticks — to put in the oven after you remove your loaves. They benefit from a long session in low temps, so you can turn off the oven and let them bake in the waning heat until they're crisp.

The accompanying recipe will provide fresh bread for an evening meal, and the leftovers will make a tasty French toast the next morning. Still have some left? Toast or grill slices for the afternoon's hors d'oeuvres of bruschetta. 

For further reading ...

Kim Ode has a thing about bread. She first built a backyard brick oven in which to bake masterpieces. Then she wrote a book about it: *Baking with the*

St. Paul Bread Club: Recipes, Tips & Stories. This book can be ordered from the Minnesota Historical Society Press. To order, visit Kim's homepage at <http://www.kim-ode.com/>. It's also available in many bookstores.



Barbari flatbread

Adapted from *The Art of Bread*
(Cooking Club of America)

2 tsp. instant yeast, also known as bread-machine yeast
3 cups unbleached bread flour
½ cup whole wheat or soy flour
1½ tsp. salt
1 tsp. honey or sugar
¼ cups lukewarm water
2 tbsp. olive oil

Topping: sesame seeds, fresh or dried herbs, seasoned salt, fennel seeds — whatever strikes your fancy



At home, combine the yeast, flours, and salt in a plastic bag and seal well.

On the boat, pour the dry ingredients into a large bowl and make a well in the center. Pour one cup of the water, honey, and olive oil into the well and stir, slowly bringing in flour from the sides until the dough forms a shaggy mass. Mix in additional water as needed to make a firm, moist dough.

Knead in bowl

Knead as much as possible inside the bowl until you've incorporated almost all of the floury bits. Now place the dough on a lightly floured surface and invert the bowl over it, letting it rest for about 10 minutes. Afterward continue kneading a few minutes more until the dough is smooth and satiny.



Clean the mixing bowl and lightly coat it with oil. Put the dough in the bowl, flipping it so the top side is oiled, cover with plastic wrap, and place in a warm, draft-free place until the dough doubles in size, about an hour or so.

Shape in balls

Turn the dough onto a lightly floured surface and divide into four pieces. Gently shape into balls, then cover with a dish towel and let rest for 10 minutes. Shape each piece into a flattened round about 5 inches across, placing each on a separate piece of parchment paper (available in grocery stores near the waxed paper). Cover with a dish towel until doubled, about 45 minutes or so. At the same time, start preheating the oven. (The recipe says 375° F, but our oven never gets above 325° F, so I just increase the baking time.)

When the breads have risen, press your fingertips into the dough to form dimples, then brush with olive oil and sprinkle with toppings. Slide the breads onto a pizza stone or baking sheet. Bake 20 to 25 minutes or until the flatbreads are golden brown and sound hollow when tapped on the bottom.



Baking aboard

No oven! *Now* what do I do? When my husband, Dan, came back to our boat, *Catherine L*, with a two-burner kerosene stovetop to replace the original, but inefficient, alcohol stove/oven, I had to experiment with baking things we love to eat on top of the stove.

Kerosene burns hotter than alcohol, is harder to regulate, and requires the use of a heat diffuser. This flat metal utensil spreads the heat over the bottom of a pan or skillet and allows for slower, more even heat. Cakes, breads, and pizza can be made in a skillet with a lid. The heat diffuser is sold in kitchen-supply stores and will be needed on propane stovetops also. (*We had never heard of this device but were able to get one at the first kitchen supply store we*

*Bake delicious cake, bread, pizza —
on your boat's stovetop
in a skillet or pressure cooker*

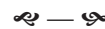
tried. It appears to be just the thing for simmering on a gas stove in the home also. -eds.)



A family favorite is a **Pineapple Upside Down Cake** that I cook in a deep nine-inch skillet, because it rises so high. I also use this heavy skillet for baking bread. A pressure cooker could be substituted.

1 8-ounce can pineapple slices, halved
2 tablespoons butter
4 maraschino cherries, halved
1/2 cup packed brown sugar
1 1/2 cups flour
1/4 teaspoon salt
2 1/2 teaspoons baking powder
3/4 cup white sugar
1/3 cup shortening
1 egg
1 1/2 teaspoons vanilla

Drain pineapple slices and reserve liquid. Melt butter in the skillet. Stir in brown sugar and 1 tablespoon pineapple liquid. Add water to remaining juice to make 2/3 cup; set aside. Arrange pineapple and cherries in skillet. Combine flour, baking powder, and salt. Beat shortening about 30 seconds. Add granulated sugar; beat until well combined. Add egg and vanilla; beat 1 minute. Add dry ingredients and the 2/3 cup liquid alternately to the mixture, beating after each addition. Spread in pan. Bake for 30 to 40 minutes, using heat diffuser and a cover on the skillet. Cool 5 minutes; invert onto a plate or serve in the skillet without turning. Serve warm. Serves 8.



Many Caribbean islands — such as Georgetown, Bahamas; Salinas, Puerto Rico; Dewey, Culebra; and Cruz Bay, St. John's, U.S. Virgins — have wonderful bakeries, but for times when we are not near a bakery or store, I

Flame tamer shown here in the Good Old Boat “test kitchens.”



without an oven

make **Pressure Cooker Bread**. No kneading is necessary.

1½ cups lukewarm, non-chlorinated water (or one cup fresh water and ½ cup clean sea water)
1 tablespoon dry yeast
2 tablespoons sugar
2 teaspoons salt (only if using all fresh water)
4 cups flour
2 tablespoons cornmeal

In a bowl, combine water, yeast, salt, and sugar. Let stand 15 minutes. Stir in flour and let rise in a warm place for 90 minutes or until double in bulk. Stir down and let rise again. Grease the pressure cooker thoroughly; add the corn meal and shake to coat the sides and bottom evenly. Place dough in pressure cooker and let rise again. Cook over low heat for 45 minutes

using the heat diffuser. Lock on the lid, but don't use the regulator valve.

Steam will escape through the vent. Do **not** remove the lid during cooking. Remove from heat and let sit a few minutes. The bread will be white on top, but the sides and bottom will be a rich, crusty brown because of the cornmeal. So, serve upside down.



Our daughter, nine-year-old Mara, loves to prepare this **Yeastless Pizza Dough**. It makes two 9-inch skillet pizzas.

1 cup whole wheat flour (or 1 ¾ cup white flour)
¾ cup white flour in addition to above flour
¾ tablespoons baking powder
⅔ cup milk
¼ cup oil

Sift and stir dry ingredients together and add the liquids. Stir with a fork. Knead 10 times in the bowl without adding additional flour. Divide the dough into two equal parts. Pat the

dough out and up about an inch in the skillet bottoms. Top each with (as desired):

2 ounces tomato sauce
½ teaspoon dried oregano
onions, finely chopped
green peppers, finely chopped
mushrooms
pepperoni
cheese

Cover and bake, using the heat diffuser, for 20 minutes. We bake one pizza and eat it as the second one bakes.



For chocolate addicts, these **Chewy Brownies** bake well in a skillet:

¾ cup granulated sugar
5 tablespoons melted margarine
1 tablespoon water
1 egg

1 teaspoon vanilla
⅔ cup all-purpose flour
5 tablespoons baking cocoa

¼ teaspoon baking powder
a pinch of salt
(optional: ¼ cup chopped nuts)

In a large bowl, stir sugar, melted margarine, and water together. Stir in the egg and vanilla. Combine dry ingredients and stir into the sugar mixture. Spread in a greased skillet and cover. Bake, using a heat diffuser, for 18 to 20 minutes. Cool in the pan. Makes about one dozen.



This moist **Cornbread** was a hit at a potluck supper in Salinas, Puerto Rico. But it may have had something to do with the number of liveaboards from Texas!

1 cup yellow cornmeal
1 cup sifted all-purpose flour
4 teaspoons baking powder
1 tablespoon sugar
1 teaspoon salt
2 eggs

1 cup milk
¼ cup cooking oil

Grease the skillet. Put cornmeal, flour, baking powder, sugar, and salt in a large bowl and stir to combine. Beat egg, milk, and oil together. Pour all at once into cornmeal mixture and stir vigorously until thoroughly combined. Spread evenly in skillet. Cover and bake on the stovetop, using a heat diffuser, for 20 minutes or until the top springs back lightly when touched. Serves 8.



Without refrigeration, we tend to stay well stocked with fresh produce. Occasionally the carrots get limp, but they are great in this delicious **Carrot Cake** I've adapted for stovetop baking.

1 cup all-purpose flour
1 cup sugar
½ teaspoon baking powder
½ teaspoon baking soda
½ teaspoon salt
¼ teaspoon cinnamon
¼ teaspoon nutmeg
1½ cups shredded carrot
½ cup cooking oil
2 eggs

Mix dry ingredients together in a large bowl. Mix eggs and oil together. Add carrots, eggs, and oil to the dry ingredients. Beat for two minutes. Pour into a skillet that has been greased and floured. Bake, covered, for 20 minutes using a heat diffuser. The cake can be sprinkled with powdered sugar or frosted when cool. Serves 6.

Cathy Haupt started sailing with her husband, Dan, on Lake Superior. Before long, they bought an Ericson 35 and took it to the Caribbean, where they sail during the winter months. Cathy is pictured here with daughter, Mara, because Mara's just too cute to cut out of the shot.



The art of Welsh

Every place has its Cape Horn. At port Cardigan, on the west coast of Wales, where I am an auxiliary harbormaster, it is the estuary bar. The channel shifts in storms and is seldom buoyed. Admiralty charts are outdated as soon as they are printed. Now a sleepy little market town, back in the days of sail, Cardigan was a thriving seaport the tonnage of which competed keenly with Liverpool, Bristol, and Cardiff.

The bar was a dangerous place then, too, and it has left us its legacy of bones . . . the bones of ships and men under the mud and sand. At night when I stand outside my isolated cottage and hear the mournful sound of the seals calling to each other, it is easy to slip into thoughts of ghosts. The local church has only one bell. It should have had two, but the other was lost when the ship carrying it went down on the bar.

Few yachts visit, and those that do risk grounding. I recall a couple of years ago a little carvel-built cutter sailed in, cut a corner too fine, and touched on the bar. She was a centerboarder, and her crew quickly lifted her board. For a while it looked like they might make it, but they were hard on a lee shore, and with the board up they could not claw off. The Royal National Lifeboat Institution launched the inshore rescue boat, but it was too late. The yacht would be there until the next tide.

There was no harm done. Fortune had served up calm conditions, but her position was not to be envied. As the tide receded, she was surrounded by the better part of a mile of sand. Knowing her crew would be feeling vulnerable, perhaps shocked and cold, I bagged some cakes I had just baked, pulled on my boots, and trudged out to see what I might do. A young married couple and their baby were aboard. They were grateful for the warm cakes.

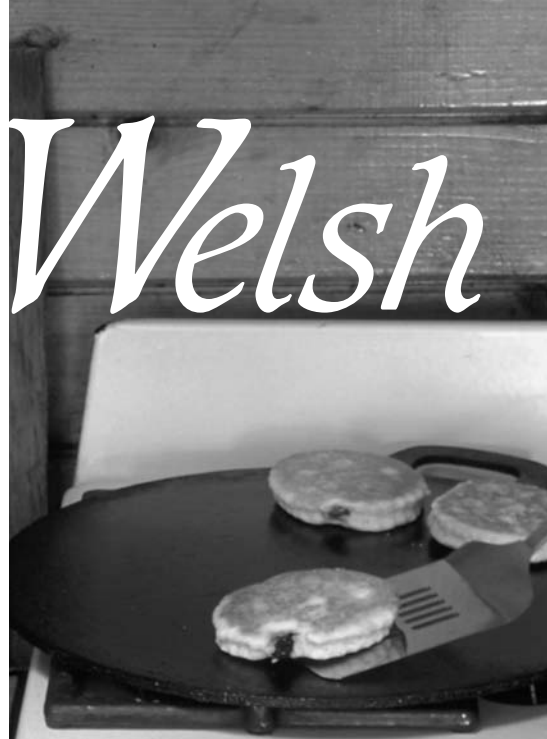
The yacht was likely to refloat during the night, but that place is notorious for rapidly changing conditions, so we made a plan. I helped them lay out some anchors and suggested the wife and baby stay with us at the cottage for the evening while a couple of young lifeboat crewmembers would help the skipper

bring the yacht in to my mooring, with the RNLI boat standing by.

Happily, all went without incident and we still receive Christmas cards from that family. They learned two important things on that visit . . . to distrust the chart and to carry a griddle aboard to cook Welsh cakes.

First, the griddle

Welsh cakes are an economical and simple dish to prepare quickly and easily on a single flame, provided one has the tool for the job. In Welsh it is known as a *maen* (which should be pronounced “mine” but is, colloquially in some regions, pronounced “marn”). In the north it is called “*planc*” (pronounced “plank”). *Maen* is Welsh for “stone” and I would guess derives from the ancient use of a hot bakestone for cooking. I use



made in a metal workshop. It is a simple plate of steel or iron, a disk of up to about 12 inches in diameter, usually somewhat less, and 3/16 inch to 1/4 inch thick. Conventionally, it is shaped to include an integral handle guaranteed to burn the fingers or, rarely, a wooden handle like that of a frying pan, which is

*While they may not save the day,
they certainly help brighten it*



by Geoffrey Toye

Stovetop baking at its best: Welsh cakes and the traditional bakestone called a maen (shown on stove above).

my grandmother's, which may well have been inherited by her and could easily date from the 19th century.

You can sometimes buy these griddles in country hardware shops, or one can be

much better. Properly cared for, it will temper and improve with age with a polished surface; indeed, you can try these cakes in an old-fashioned iron frying pan, if you like.



Cakes

Next, the recipe

Recipes for Welsh cakes vary, but mine is more or less as follows. I am vague because you can experiment with the ingredients; it is the method that is critical.

Sift 12 to 16 ounces (1 1/2 to 2 cups) of white self-rising flour into a mixing bowl. Add ground cinnamon to taste; I like it a lot and use a heaped teaspoon. Mix it in thoroughly, a job done well with a wire "balloon" whisk.

Add some light brown sugar. I use about 3 ounces and mix well. Traditional recipes would give half fat to flour but, with modern light margarines/spreads, that can be halved, so I use about 4 ounces and rub it well through the mix. This is not a job to undertake after handling the anchor chain. One well-known British chef back in the 1950s used to warn that hands should be meticulously scrubbed because, if they

were not clean before mixing pastry, they would be spotless afterward!

Back to the galley. The mix will be very dry and crumbly. Beat up an egg and with it a vital ingredient that is recommended on good authority . . . I happened to be in a local hardware shop buying a maen for a friend, an ex-patriot Welshman living in London and pining for the old Welsh cakes back home. As I examined the device in question, an elderly lady of small but fearsome demeanor approached and bade me listen carefully.

"The secret," said she, getting my attention by prodding me painfully in the chest with a bony finger, "is to add a spoonful of syrup and, you just listen carefully now, good boy," (*I have turned 50, by the way*), "BEAT (prod) IT (prod) INTO (prod) the EGG! (superprod)."

By this time, my back was against a wall, I could retreat no further, but I would clasp that expert advice to my bosom long after my shattered ribs came out of plaster.

Now, without fail, I beat in a good teaspoon of golden syrup until it is dissolved into the egg. This ensures the cakes will be as they should: moist and chewy. (*Golden syrup is available in the U.S. We've also substituted maple syrup and Karo syrup. Either one will do. -ed.*)

Add it to the cake mix — proper recipes would say fold it in — and add a little milk, if necessary, to make a firm, moist dough. Reconstituted dried milk is fine, and you will be unlikely to need more than a couple or three dessertspoons (teaspoons), depending on the size of the egg.

At this point add some chopped mixed peel of the type used in fruit cakes, and some sultanas. Quantities vary with taste, but the received wisdom is not to be overly generous with the fruit . . . say a couple of dessertspoons of

sultanas and one of mixed peel, or there will be too much fruit to permit cutting into individual cakes, which is what happens next. (*Sultanas are a yellow seedless raisin. Any raisin will work. We've used grated orange peel for the chopped peel -ed.*)

Skill plays a role

Roll out to about a quarter of an inch thick and cut (cookie-cutter style) into rounds 2 1/2 inches to 3 inches in diameter. Place to one side. Now the real test of skill begins: put the

griddle on the flame and move it around to warm it uniformly at first. When the whole griddle is warm, draw it off to one side slightly so half of the griddle gets hot, while the other half remains warm. Put a drop of cooking oil on the hot part and use a kitchen towel to wipe the oil all over the surface in a very thin layer.

Drop a couple of rounds on the hot part. They should hiss just audibly as they go on. After about half a minute, flip them over to cook the other side, repeating if necessary until they are lightly browned. They are still not cooked through, so now transfer them to the other side of the griddle, the warm side. Drop another two onto the hot part and repeat the operation, working down the other side of the griddle like the figures on a clock. Drop on a third pair. As the fourth pair go on to the hot part, it will be time for the very first two you cooked to come off. They will have risen. Put them to cool on a sheet of paper, and let the fourth pair take their place. If they have developed a hard crust, you've left them on too long.

This process continues methodically, first browning the cakes on the hot side, then placing them on the warm side to finish cooking and rise. You get into a rhythm. The aroma is such that the temptation to eat the cakes hot is almost irresistible, but if you weaken you may pay with indigestion. (*We admit to impatience: we ate them warm. -ed.*)

When they are cool, store them in a tin. They can be eaten plain with preserves and are good with fresh fruit, particularly apples. They do not need to be buttered. They are excellent in heavy weather or on a long night watch.

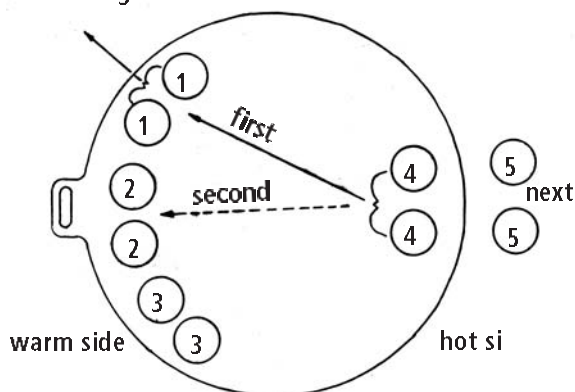
The technology is simple, the tradition long, the results well worth the pleasant interlude cooking, perhaps helping to pass a stormy afternoon in harbor. The maen, as well as being a piece of Celtic folklore, is an easily stowed (well away from the compass) and highly practical tool in the galley, even more so if there is no oven. It is good for flapjacks and pancakes; there is even a traditional bread that can be cooked on it. So often, simple is good.



Geoffrey lives in a beach house near Cardigan on the west coast of Wales. He's been involved with small craft for more than 40 years. A writer and journalist, he just finished his second novel.



for cooling



First pair is removed from bakestone and fourth pair moves to the warm side. Fifth pair is added to hot side. You get into a rhythm . . .

One-pot wonders *from the galley hatch*

The last thing most of us want to do when cruising is to spend much of the day standing over a hot stove.

At first, my solution was a picnic cooler filled with bologna sandwiches and potato chips. But on longer cruises I began to notice a marked discontent among the rest of the crew. I suggested that each of us take turns with the cooking chores. Nice try, but in no time we were back to bologna. It was time to hit the books . . . cook-books. And there it was, the one-pot answer to my prayers: good old-fashioned stew.

Stews are staple fare in every country around the globe, testimony to their great taste and convenience. These days, for



shipboard cuisine I choose stews made with simple ingredients that take little preparation and cooking time. The final requirement is flexibility. These dishes can be made with fresh, frozen, or canned ingredients

and still taste great. My galley pantry is lean. I have dried spices and herbs and canned vegetables. On longer trips canned meats, such as chicken, are staples. And I always have beef, chicken, and vegetable bouillon to make quick, flavorful stock. Whenever luck allows, I use fresh ingredients. The best finishing touch for these “tummy fillers” is good crusty bread if you have it, but regular sliced bread will do in a pinch.

Stews should be made in non-reactive stainless-steel cookware. Using iron or aluminum pots or skillets with acidic foods, such as tomatoes, vinegar, or wine, will cause discoloration and affect the flavor of the dish.

Sailor's Stew

No shipboard recipe collection would be complete without “Sailor's Stew.” Serves 8.

Ingredients:

2 cups canned Italian plum tomatoes

Recipes for cruise stews, quick and easy tummy fillers

1 tablespoon flour
1½ cups sliced onion rings
1 teaspoon salt
½ teaspoon ground pepper
2 tablespoons chopped parsley
⅓ teaspoon oregano
½ teaspoon dry mustard
½ teaspoon ground allspice
1 slice fresh ginger or 1 teaspoon ground ginger
2 pounds cod or monkfish steak, diced*
2 tablespoons butter
2 eggs lightly beaten (optional)
2 tablespoons lime juice

*Fresh or canned chicken can be substituted for the fish.

To prepare:

In a large skillet, break up the tomatoes with a fork. Add the flour and stir until all the lumps disappear. Add the onion rings, salt, pepper, parsley, oregano, mustard, allspice, and ginger. Cook covered for 15 minutes.

Add the fish and cook for 5 to 10 more minutes, until flaky. Remove from heat. Stir in the beaten eggs, if you are using them, and the lime juice. Return to heat for 2 or 3 minutes. Serve hot.

Maine Chicken Stew

This is real Downeast comfort food, great for chilly days. Serves 4.

Ingredients:

3½-pound package of chicken, cut up*
3 potatoes
2 onions
cold water
2 tablespoons butter or margarine
1 cup milk, half-and-half, or evaporated milk
salt and pepper
minced parsley
4 to 6 saltines

*Or canned chicken.

To prepare:

In a large pot, place alternate layers of chicken, slices of potato, and thinly sliced onion. Cover with cold water. Simmer until chicken is tender. Add butter in small bits and half of the half-and-half or milk. Season with salt, pepper, and parsley. Split crackers and moisten in the remaining half-and-half or milk. Add to stew and heat thoroughly.

Potato and Rice Soup

This is a traditional Italian recipe for a hearty dinner soup.

Serves 4.

Ingredients:

1/2 tablespoon tomato paste diluted in 6 cups water
2 slices of bacon chopped (or prosciutto)
1/2 clove garlic, chopped
1 teaspoon minced parsley
4 medium potatoes, pared and diced
1 cup rice
1/2 teaspoon salt
1/2 teaspoon pepper
Parmesan cheese

To prepare:

Place the bacon, garlic, and parsley in soup pan and brown well. Add tomato paste, diluted in water, and salt. Bring to a boil. When water is boiling rapidly, add potatoes and rice. Cook 20 minutes. Serve hot, sprinkled with Parmesan cheese.



Stew Roman Style

The original recipe calls for beef, but like all of these recipes, can be made with fresh or canned chicken. This meal takes slightly longer to cook, but it is worth every minute. Serves 4.

Ingredients:

1 tablespoon olive or vegetable oil
1 onion, chopped
2 slices of bacon or prosciutto, chopped
2 pounds of stew beef or chicken (if canned chicken, use two cans)
salt and pepper
1/8 teaspoon marjoram or oregano
1 cup red wine (white wine for chicken)
1 small can whole tomatoes or 3 large fresh tomatoes, peeled and sliced

To prepare:

Place the olive oil, chopped onion, bacon, and garlic in a stewpot and brown slightly; add meat, salt, pepper, and marjoram or oregano. Let the meat brown. When the meat is well browned, pour the wine over it and continue cooking until the wine is absorbed. Add the tomatoes and enough water to cover the meat. Cover the pan and cook until the meat is tender — no more than 2 hours. If the gravy is too thick, it can be thinned with water. The gravy will be dark and very tasty. This can be served with steamed rice or bread.

Vegetable Soup with Pistou

One day I hope to sail around the Mediterranean, but until then I will content myself by eating this wonderful soup as I sail along the coast of New England. The vegetables in this recipe can be replaced with canned or frozen vegetables, but I recommend leaving out the zucchini in that case. Serves 8.

Ingredients:

2 tablespoons olive oil
1/2 cup chopped onions
3 garlic cloves thinly sliced, or 2 tablespoons garlic powder

1 1/2 cup chopped canned tomatoes
1 cup cooked cannellini beans (white kidney beans)
1 medium carrot halved and thinly sliced
2 teaspoons salt
10 cups water
1 cup cut green beans
1 medium zucchini thinly sliced
1/2 cup uncooked macaroni

Pistou:

3 garlic cloves or 1 teaspoon garlic powder
1/2 teaspoon salt
1/2 cup fresh basil (or dried basil soaked in warm water for 15 minutes)
1/3 cup Parmesan cheese
3 tablespoons olive oil

To prepare:

Heat the oil in a soup pot. Add the onion and cook, stirring occasionally until the onion is soft. Add the garlic and cook for two minutes. Add the tomatoes, cannellini, carrots, salt, and water. Heat to boiling, reduce heat and simmer 30 minutes. Add the green beans, zucchini, and macaroni. Simmer 15 minutes. Meanwhile, prepare the pistou by combining all the ingredients in a mortar or small bowl and mashing them together. To serve, remove the soup from the heat and stir in the pistou.



Pasta and Cannellini Soup

This is based on the traditional Italian favorite, Pasta e Fagioli. Once again, those sunny Mediterranean flavors shine through. Serves 6.

Ingredients:

1/2 cup olive oil
4 large garlic cloves, minced, or 2 tablespoons garlic powder
2 teaspoons dried rosemary
1 1/2 cups drained, canned, whole tomatoes, chopped
Salt and pepper
7 cups water and vegetable bouillon
6 ounces elbow macaroni

To prepare:

Heat the olive oil in a large soup pot. Add rosemary and garlic and heat over medium heat. Add tomatoes, salt, and pepper. Simmer three or four minutes. Add vegetable bouillon and water and simmer five minutes. Add the pasta and simmer seven minutes. Add the cooked

beans and simmer three minutes to heat and blend flavors. Adjust seasonings. Serve hot with crusty bread.

Happy sailing!



Barbara grew up in Connecticut, where she learned to love ships and the ocean. She taught high school and worked as a professional singer and musician performing in some of the best jazz joints in the country. She now lives and sails in Colorado.





Appetizers

Seafood Cheddar Quiche

Serves 8-10

cooking spray
2 cups cooked shrimp or crabmeat
4 ounces cream cheese, cut in small cubes
1 cup cheddar cheese, shredded
2 cups milk
1 cup Bisquick
3 eggs
¼ teaspoon nutmeg

- Lightly spray quiche or deep pie pan, set aside. Preheat oven to 350 degrees.
- Spread evenly seafood of your choice, then cheese on top.
- Mix together remaining ingredients, in a medium mixing bowl.
- Pour liquid mixture on top of seafood.
- Bake 40 minutes or until lightly brown.
- Let cool 5 minutes, before cutting.

➤ *Quick and simple;* Cajun Popcorn, Cajun seasoning mix, Sprinkle mixture over freshly popped popcorn, tossing until evenly coated.



Appetizers

Zucchini Quiche Triangles

Yield 4 dozen

3 cups, unpeeled zucchini, thinly sliced
1 cup Bisquick
½ cup onion, chopped
½ cup Parmesan cheese, grated
2 tablespoons fresh parsley
½ teaspoon sea salt
½ teaspoon seasoned salt
½ teaspoon dried marjoram
1 teaspoon hot pepper sauce
Dash of ground black pepper
2 cloves of garlic, finely minced
½ cup vegetable oil
4 eggs, slightly beaten

- Lightly grease 9 x 13 baking pan, set aside
- Preheat oven to 350 degrees.
- Mix all ingredients gently spread evenly in pan.
- Bake 25 minutes, remove from oven.
- Cool 5 minutes, cut into squares, then triangles.

➤ *For dips and spreads:* substitute, part-skim ricotta cheese, low-calorie Neufchatel or low-fat farmer's cheese for cream cheese and regular mayonnaise.



Appetizers

Oven-fried Quesadillas

Yield: 32 wedges

2½ cups (10 oz.) Monterey jack cheese, shredded
1 (6 oz.) jar marinated artichokes hearts, drained and chopped
½ cup green stuffed olives, thinly sliced
⅔ cup picante sauce
½ cup toasted almonds, chopped
¼ cup fresh cilantro, chopped
8 flour tortillas
3 tablespoons butter, melted

- Combine cheese, artichokes, olives, picante sauce, almonds and cilantro, mix well, set aside.
- Preheat oven to 350 degrees.
- Brush lightly one side of 4 tortillas with butter, place buttered side down tortilla on baking sheet.
- Spread 1 cup cheese mixture onto each tortilla to within ¾ inch of edge.
- Top with remaining tortillas, pressing firmly around edges
- Brush tops of tortillas with remaining butter.
- Bake 10 minutes or until tops are lightly browned.
- Remove from oven, let cool 5 minutes.
- Cut each tortilla into 8 wedges.

➤ *Goat cheese easy pita pizza.* Crumble 8 oz. goat cheese onto 4 (split) rounds of pita bread, sprinkle with salt free herbs mixture, Heat in a 325 degrees oven about 10 minutes, or until cheese melts. Serves 4.



Appetizers

Black Bean and Salmon Spread

Yield: 2½ cups

1 (7 oz.) can pink salmon, drain, discarding bones and skin.
1²/₃ cups (16oz.) can black beans, drained and rinsed.
½ teaspoon grated lime rind
¼ cup fresh lime juice
2 tablespoons olive oil
¼ cup fresh parsley, chopped
1 tablespoon onion, minced
1 tablespoon celery, minced
2 teaspoons garlic, minced
¾ teaspoon cumin
¼ teaspoon hot red pepper flakes
¼ teaspoon pepper

- Flake the salmon with a fork, lightly in a medium bowl.
- Add remaining ingredients, combine well.
- Chill, serve with crackers or tortilla chips..

➤ *Note:* For tomato juice lovers, your own source of concentrate, why buy and carry water? Purchase the super market brand of tomato paste, the generic kind that has no salt added, read the labels. Tomato paste is really just concentrate tomatoes. Use your empty plastic adult beverage bottles to reconstitute your tomato paste into tomato juice or tomato sauce as needed. Flavor to suit your taste. (add just a touch of Tabasco or your favorite red hot sauce)



Appetizers

Smokey Vegetable Dip

Serves 12

1 (16 oz.) carton sour cream
1 package dried green pea soup mix
1 cup sharp Cheddar cheese, grated
Dashes of hickory smoke liquid to taste

- Combine all ingredients in a medium bowl.
- Chill until serving time
- Serve with crackers or assorted raw vegetables.

Artichoke Hot Spread

Yield: 3 cups

1 cup mayonnaise
1 cup grated Parmesan cheese
1 (6 oz.) jar artichoke hearts, drained and chopped
1 (7 oz.) can chopped green chiles
1 small can mushrooms, drained and chopped

- Combine all ingredients in a medium mixing bowl.
- Preheat oven 350 degrees
- Spoon into a 8-inch baking dish.
- Bake 20-25 minutes or until bubbly.
- Serve hot with whole wheat crackers or tortilla chips.



Appetizers

Smoked Oyster Dip

Yield: 2 cups

1 (8 oz.) package cream cheese, softened
1 (4 oz.) can black olives, drained and chopped
1 (3¾ oz.) can smoked oysters, drained and chopped
½ cup sour cream
½ cup mayonnaise
6 dashes of hot pepper sauce
1 tablespoon fresh lemon juice

- Combine all ingredients in a medium bowl, mix well.
- Chill until serving time.
- Serve with crisp firm cracker.

Ezy-Patè

Yield: ½ cup

1 small can Liverwurst
1 small onion, grated
1 teaspoon, Brandy

- Combine all ingredients in a medium bowl, blend well.
- Serve on whole wheat cracker or rounds of toasted bread.



Appetizers

Salmon Ball

Yield: 2 cups

1 (15 oz.) can salmon, drain, discarding skin and bones
1 (8 oz.) package cream cheese, softened
 $\frac{3}{4}$ teaspoon dillweed
 $\frac{1}{2}$ teaspoon liquid smoke
1 tablespoon fresh lemon juice
 $\frac{1}{2}$ cup pecans, chopped
 $\frac{1}{4}$ cup fresh parsley, chopped
Garlic Salt and black pepper to taste

- Combine cream cheese, dillweed, liquid smoke, garlic salt, pepper and lemon juice in a large mixing bowl.
- Add salmon and blend well.
- Shape into ball or log on a piece of wax paper.
- Mix pecans and parsley together.
- Coat salmon well.
- Chill until serving time.

➤ *Quick and easy;* Celery ribs filled with peanut butter make a quick and easy appetizer.



Appetizers

Sardine Spread

Yield: 2 cups

1 (3 ¾ oz.) can water-packed sardines with bones, drained
2 tablespoons plain nonfat yogurt
2 tablespoons grated Parmesan cheese
1 tablespoon scallion, chopped
1 ½ teaspoons Dijon-style mustard
1 teaspoon grated lemon rind
3 teaspoons fresh lemon juice
Ground pepper, to taste
dash cayenne, to taste
1 teaspoon sesame seeds toasted

- Combine all ingredients except sardines and sesame seeds in a medium bowl.
- Add sardines and blend well. Place the mixture in a serving bowl. Sprinkle with sesame seeds. Chill until serving time.
- Serve with crackers, or stuff some celery ribs.

➤ Easy: Thin slices of prosciutto around melon slices for an elegant appetizer.



Appetizers

String Bean Patè

Yield: 3 cups

½ lb. string beans, washed
3 hard-boiled eggs,
3 cups onions, sliced
1 tablespoon vegetable oil
1 cup walnut pieces
½ teaspoon salt
½ teaspoon black pepper

- Saute' onions in a nonstick skillet with oil until they are well browned.
- Place string beans, egg whites (save yolks use as a garnish), onions, and remaining ingredients in a hand food chopper, chop until a patè like consistency is reach.
- At serving time garnish with mashed egg yolks.
- Serve with small rounds of black bread or pita crisps.

➤ *Note:* Preparations tips on roasted peppers: Using the oven broiler. Place peppers on a rack as close to the flame as possible. Keep the oven door open, and turn the peppers often until the skins are charred on all sides. Place the charred peppers in a brown paper bag and close. After 45 minutes, remove the cooled peppers from the bag. Peel and de-seed them. (By placing the peppers in a paper bag once they are charred allows moisture to develop between the flesh and skin, which makes peeling them so much easier. Use you stove top smokeless grill for roasting pepper as well.)



Appetizers

Tofu Guacamole

Yield: 1½ cups

1 large ripe avocado
2 cakes (½ lb.) medium-soft tofu
½ teaspoon salt
dash black pepper
dash cayenne
2 cloves of garlic, crushed
¼ teaspoon cumin
3 tablespoons fresh lemon juice
1 tablespoon fresh parsley, chopped

- Place all ingredients except parsley in a medium bowl. Mash well with a potato masher. Sprinkle with parsley, chill slightly.
- Serve with party rye or rye crackers.

➤ *Hint:* If you are not serving guacamole instantly, place pit in center of bowl to prevent darkening, remove when ready to serve.

➤ *Keep a variety of food in small jars on hand.* Such as pimento, water chestnuts, gherkin or dill pickles and olives, chutney, corn relish, pickled onions and mushrooms, artichoke hearts and chilies, stuffed olives with anchovies or capers. Cut cubes of cheese and alternate on a toothpick with one or more of these toppings for a quick and easy hors'doeuvre.



Appetizers

Feta Cheese Patè

Yields: 2¾ cups

1 cup feta cheese, drained and crumbled
2 tablespoons extra virgin olive oil
1/3 cup milk
1 cup walnuts, chopped
1 teaspoon paprika
dash of cayenne pepper

- Combine in hand food chopper, oil, 3 tablespoons milk, 1/3 cup feta cheese, 1/3 cup walnuts. Blend for 6 seconds.
- Add remaining ingredients, blend till almost a smooth paste.
- Chill until serving.

➤ *Note:* Hand food chopper see tools index.

Herb Goat Cheese

Yield: 1/3 cup

3 ounces semisoft goat cheese
2 teaspoons fresh basil, chopped or
1/2 teaspoon dried basil and
1/4 teaspoon onion powder
Dash pepper

- In a small bowl combine goat cheese, basil, onion powder and pepper. Blend thoroughly, if dry stir in a little milk 2 or 3 teaspoons or drizzle in some extra-virgin olive oil.
- Cover with plastic wrap, chill until ready to serve.
- Spread on toast or firm cracker.



Appetizers

Chutney Spread

Yield: 2/3 cup

8 ounces cream cheese, cut in half lengthwise
4 tablespoons walnuts, chopped
4 tablespoons chutney,

- Place one half cream cheese on serving plate.
- Spread gently 2 tablespoons chutney. Sprinkle with 2 tablespoons nuts.
- Place second half cream cheese on top, repeat procedure of chutney and nuts.
- Serve with crackers or stuff celery ribs.

Chili Peanut Dip

Yield: 2/3 cup

1/3 cup peanut butter (smooth or crunch)
3 tablespoons water
2 tablespoons soy sauce
2 tablespoons lemon juice
2 teaspoons honey
3 cloves garlic, minced
1 tablespoon chili powder
Dash of crushed dried red pepper flakes

- Stir peanut butter and water into a paste.
- Add remaining ingredients and blend well. Add more water if peanut butter is too firm.
- Serve with carrot and celery sticks.



Appetizers

Yogurt Hummus

Serves 6-8

1 (16 oz.) can chickpeas, drained
¼ cup yogurt
2 cloves garlic, minced
¼ cup tahini
⅓ cup fresh lemon juice
2 tablespoons chopped parsley
½ teaspoon salt
½ teaspoon olive oil

- Puree all ingredients except olive oil and parsley in a hand food chopper or blender. The dip should be about the consistency of guacamole, additional lemon juice or yogurt can be added to thin it.
- Spread dip in a flat serving dish, using a spoon to spread out. Drizzle with olive oil, and sprinkle with chopped parsley.
- Serve with triangles of pita bread.



Appetizers

Crescent Crab Rolls

Serves 4-6

Non-stick cooking spray.

1½ cups (6½ oz.) can crab meat, drained and shredded

1 cup broccoli, cooked and diced

¼ cup mayonnaise

½ cup Swiss cheese, grated

1 large container of refrigerator crescent rolls

¼ cup red pimento, diced

- Lightly spray baking sheet, set aside. Preheat oven 375 degrees.
- Combine broccoli, crab meat, mayonnaise and cheese.
- Separate crescent rolls, spread crab mixture on each roll out, roll up starting at wide edge. Place roll ups on baking sheet.
- Bake 20 minutes or until golden brown, serve hot.

Hot Imitation Crabmeat Dip

Yield: 1½ cups

½ lb. imitation crabmeat, chopped

½ cup mayonnaise

2 teaspoons Old Bay Seasoning

½ cup grated Parmesan cheese

- Blend mayonnaise and seasonings well. Pour into baking dish, top with cheese. Preheat oven at 375 degrees.
- Bake 10-15 minutes or until heated through. Serve hot.



Appetizers

Ham'N Cheese Nut Log

Serves 4-6

1 cup ham, chopped
1 cup (4 oz.) cheddar cheese, shredded
1 (3 oz.) package cream cheese, softened
1 tablespoon white horseradish
½ cup pecans, chopped

- Combine ham, cheeses, horseradish and blend thoroughly.
- On a piece of wax paper form into a roll. Roll in chopped nuts. Chill until ready to serve.
- Serve on nutty cracker or Triscuit.

Anchovy Spread

Yield: 1¼ cups

1 cup cottage cheese
½ cup butter, softened
4 anchovies, finely chopped
1 tablespoon capers, chopped
1 tablespoon chives, chopped
1 tablespoon caraway seeds
1 tablespoon dry mustard
1 tablespoon Hungarian paprika
½ teaspoon celery salt.

- Mash all the ingredients in a medium bowl, sprinkle with extra paprika on top. Chill until ready to serve.
- Serve with black or rye bread.



Appetizers

Cheesy Vegetable Spread

Yield: 1½ cups

1 cup (4 oz.) farmer cheese
3 tablespoons plain yogurt
1 teaspoon lemon juice
1 teaspoon soy sauce
¼ cup apple, pared, cored and chopped
¼ cup carrot, chopped
2 tablespoons celery, chopped
2 tablespoons pecans, chopped
2 tablespoons currants
1 tablespoon toasted wheat germ
½ teaspoon curry or more to taste

- Place cheese, yogurt, lemon juice and soy sauce in hand food chopper fitted with a steel blade. Blend until smooth.
- Combine remaining ingredients in a medium bowl, stir in yogurt cheese mixture and blend well.

➤ *Note:* When serving spreads, use party slice breads, small pita pockets, variety of assorted crackers.



Appetizers

Pizza Cold & Sassy Squares

Serves 6-8

1 package crescent rolls
½ cup green pepper, diced
½ cup carrots, diced
½ cup tomato, diced
1 (8 oz.) package cream cheese, softened
2 teaspoons garlic powder
2 tablespoons mayonnaise
dash of salt and pepper to taste

- Open biscuits, place on cookie sheet making a large square, press edges softly together. Preheat oven at 350 degrees.
- Bake until golden brown, remove and let cool completely.
- Combine cream cheese, mayonnaise, garlic powder, salt and pepper, blend well. Spread cheese mixture evenly on baked cooled crust.
- Combine remaining vegetables in a medium bowl, and sprinkle on cheese mixture. Cut into squares and serve immediately.



Appetizers

Spicy Tuna Spread

Yield: 2 cups

1 (12½ oz.) can tuna, drained
1½ to 2 jalapeño chiles, seeded
1 small onion, cut in quarters
1 rib of celery, cut in chunks
¼ cup mayonnaise
1 to 2 shakes Worcestershire sauce
1 teaspoon curry powder
Salt and pepper to taste
⅛ teaspoon cilantro

- Chop tuna, jalapeños, onion and celery in hand food chopper. Add remaining ingredients, blend.
- Add additional mayonnaise if you want a real smooth spread.
- Place in serving bowl, chill until ready to serve.

➤ *Easy:* Cut a small section of each garlic bulb you will use, wrap it in aluminum foil and place garlic on rack in pressure cooker, pour in water up to rack. Bring up pressure for 2 minutes. Let pressure drop of own accord. Remove garlic, pinch out each clove. Proceed with recipe. Next time you are roasting a chicken, place foil wrapped garlic bulbs in cavity of chicken and roast away. Peel roasted garlic and spread on rounds of bread or mashed into a dish of mashed potatoes..



Appetizers

Guacamole Dip

Serves 4

1 ripe avocado, peeled, seeded and mashed
1 tomato, peeled and finely chopped
1 small onion, finely diced
1 cup plain low-fat yogurt
½ teaspoon dried dill
¼ teaspoon black pepper
2 tablespoons red wine vinegar

- Combine all ingredients in a medium bowl, mix well. Chill until ready to serve.

Bacon-Guacamole Dip

Yield: 2½ cups

4 slices of bacon, cooked and crumbled, set aside
2 medium rip avocados, peeled seeded and mashed
⅓ cup mayonnaise
¼ cup pimento-stuffed olives, diced
2 tablespoons lemon juice
1 tablespoon onion, grated
¼ teaspoon chili powder
Dash of cayenne

- Combine all ingredients except bacon. Mix well.
- Add ½ of bacon, combine well. Place in serving bowl, top with remaining bacon.



Appetizers

Spicy Conch Fritters

Yield: 50 fritters

2 lbs. conch, finely chopped
1 cup lime or lemon juice
¼ cup olive oil
1 large green bell pepper, finely chopped
1 large red bell pepper, finely chopped
1 large onion, finely chopped
4 eggs, beaten
2 cups all-purpose flour
1 teaspoon sea salt
1 teaspoon Cajun seasoning
6 dashes hot red sauce
3 teaspoons baking powder
5 tablespoons butter, melted
Canola oil for frying

- Marinate conch in lime or lemon juice, and olive oil for 30 minutes, drain and pat dry.
- Place chopped conch in large mixing bowl. Add remaining ingredients, blend well.
- Pour about 1 inch of oil into wok or deep skillet. Heat oil, place one tablespoon of conch mixture into hot oil at a time. As soon as one sets add another tablespoon do not crowd, turn once. When golden brown, remove fritters and place on paper plate to drain well. Add oil as needed to complete frying.



Appetizers

Carrots Cayenne

Serves 6-8

1 lb. carrots, peeled and cut in quarters
water to cover
3 tablespoons olive oil
1 tablespoon vinegar or lemon juice
Coarse salt and freshly ground pepper to taste
½ teaspoon cumin seed
1 teaspoon cayenne
2 tablespoons fresh chopped parsley for garnish

- Simmer the carrots in water until fork tender. Remove, drain and place in medium bowl, coat with olive oil and vinegar.
- Season with remaining ingredients. Serve cool or chill.
- Garnish with parsley before serving with pita bread halves.

Scallop Seviche

Serves 4

1 lb. raw bay scallops, cut in quarters
1 cup lime juice
1 small onion, chopped
2 jalapeno chilies, chopped
2 tablespoons chopped parsley
½ cup virgin olive oil
salt and ground black pepper to taste

- Place scallops and lime juice in large bowl. Marinate 2 hours.
- Add remaining ingredients, blend well, serve



Appetizers

Tacos Stuffed with your choice of fillings

- Cheese Tacos: slices of Monterey Jack, diced jalapeño chili's, chopped tomatoes, salt and pepper.
- Ham Tacos: diced cooked ham, diced onion, cream cheese, chopped jalapeño chilies.
- Sweet Pepper Tacos: Chopped bell peppers, onions diced, chopped tomatoes, sour cream, dash of ground black pepper.
- Bean Tacos: Refried beans, shredded cheddar cheese, lettuce, diced jalapeño chilies.
- Peccadillo Tacos: Shredded cooked beef, diced onions, jalapeño chilies, sour cream.
- Chicken Tacos: Diced cooked chicken, onion, tomatoes, shredded lettuce, sour cream, and diced jalapeño.
- Steak Tacos: Sliced cooked steak, picante sauce, sour cream, shredded lettuce and cheddar cheese.

➤ *Note: Tacos are tortillas corn or flour, usually fried and then stuffed with one of the following fillings. Lightly mashed or toss one of the fillings then stuff tacos and eat away.*



Appetizers

Eggplant Caponata

Yield: 6 cups

1½ lbs. or 3-4 cups unpeeled eggplant, wash and cut into ¾-inch cubes.
1 tablespoon coarse (kosher) salt
½ cup olive oil
⅓ cup green bell pepper, cut into small squares
1 cup coarsely diced onion
1 cup coarsely diced celery
3 cloves of garlic, crushed
½ cup mushrooms, chopped
1 can tomato paste, plus 2 cans water or 2 cups tomato puree
2 tablespoons red wine vinegar or more to taste
¼ cup Spanish olives, sliced
¼ cup pitted sliced oil-cured black olives
½ teaspoons sugar
2-3 tablespoons capers with juice
salt and ground black pepper to taste

- In large skillet, sauté the onion, peppers, celery in olive oil, over medium heat for 5 minutes, stirring often.
 - Add the eggplant, garlic, mushrooms, and stir for 5 minutes.
 - Add remaining ingredients except capers and olives, stir for 5 minutes, cover and cook for 20 minutes or until eggplant is fork tender. Stir occasionally.
 - Add olives and capers, cook for 5 minutes, stir in good.
- Remove from heat, cool, store in airtight container, Will keep for two weeks in the refrigerator.
- Serve at room temperature with crackers.



Appetizers

Cucumbers and Radish Yogurt Dip

Serves 6

½ cup low fat yogurt, well drained
½ cup sour cream
¾ teaspoon ground cumin
¾ teaspoon ground coriander
Salt and ground black pepper, to taste.
½ tablespoons fresh mint, finely chopped
2 cucumbers, unpeeled, scored and cut into ¼ inch slices
10-12 radishes, washed and trimmed

- In a medium mixing bowl, combine the yogurt, sour cream, cumin, coriander, salt and pepper, mint and until well blended.
- Chill, serve with cucumber sticks and whole radishes.

Artichoke Dip

Yield: 1½ cups

1 (12 oz.) can artichokes, drained
1 cup mayonnaise
1 cup grated Parmesan cheese

- In a hand food chopper place artichokes, chop fine.
- Place chopped artichokes in medium bowl, stir in mayonnaise and Parmesan cheese. Spoon mixture into casserole dish, bake 350 degrees for 20 minutes or until bubbly and heated through. Garnish with bacon bits.



Appetizers

Bollos

Yield: 24

1 lb. black eye peas soaked in water overnight, or 2(1 lb.) cans rinsed and drained.

3 cloves of garlic, minced

Dash of sea salt, ground red pepper flakes

water as needed

- In a hand food chopper, grind all ingredients except water. Slowly add water to get the consistency of a thick cake batter.
- In a nonstick skillet and drop batter from a teaspoon into deep medium hot fat and brown. Keep turning so they will brown evenly. If batter begins to thicken hard, add a small amount of water.

Ricotta & Blue Cheese Spread

Yields $\frac{3}{4}$ cup

2 ounces blue cheese

$\frac{1}{2}$ cup ricotta cheese

2 tablespoons non-fat plain yogurt

2 tablespoons chopped fresh dill or

1 teaspoon dried dill

- In hand food chopper, combine all ingredients until creamy and smooth.
- Serve with assorted crackers or stuff into celery ribs.



Appetizers

Sandpipers Onion Tart

Serves 4-6

Shell: 1 cup flour

1 cup sharp cheddar cheese, grated

½ cup melted butter

Filling: 3 large or 4 medium onions, chopped

¼ cup butter

¼ cup flour

1 cup milk

1 egg, beaten

¼ cup sharp cheddar cheese, grated

Dashes sea salt, pepper and paprika

- Preheat oven at 350 degrees, use large pie plate or quiche dish.
- Mix shell ingredients to form a soft dough and press into pie plate or quiche pan.
- In a nonstick skillet, sauté onions in butter till translucent, sprinkle with flour to give a coated look. Add a little milk to the beaten egg, then the remaining milk to the onions. Slowly cook to make a white sauce, stir often.
- Add egg and milk mixture to onions and cook for 1 minute on low heat. Add cheese, salt, pepper and mix well.
- Remove from heat and pour into prepared pie shell. Sprinkle with paprika, bake for 30 minutes. Serve warm.

➤ *Optional:* add a topping of one of the following; ½ cup broccoli florets chopped or cauliflower just before baking.



Appetizers

Zucchini Squares

Serves 4-6

3 cups zucchini, thinly sliced
½ cup onion, chopped
2 cloves garlic, minced
2 tablespoon fresh parsley, chopped
½ teaspoon sea salt
4 eggs, slightly beaten
1½ cups Bisquick
½ cup Parmesan cheese, grated
½ teaspoon oregano or basil
dash of ground black pepper
½ cup Canola oil

- Combine all ingredients well, spread in 9x13 baking pan. Preheat oven at 350 degrees.
- Bake 25 minutes or until golden brown. Cool slightly and cut into squares.



Appetizers

Spicy Refried Beans

Yield: 2 cups

1 cup canned refried beans
1/3 cup minced red onion
1/3 cup finely diced sweet red peppers
3 cloves garlic, minced
2 teaspoon chili powder
2 tablespoon chopped fresh parsley
2 tablespoon non-fat plain yogurt
2 teaspoon lemon juice
3 tablespoon crushed wheat bran breakfast cereal
*chopped parsley for garnish (optional)

- In a large bowl combine all ingredients, stir until well blended.
- Place in serving bowl, garnish with fresh parsley sprigs.
- Serve with crackers, assorted fresh vegetables or pita bread.



Appetizers

Garlic Bagel Thins

Serves 6

2 bagels, slice each bagel into 6 very thin rounds

1 tablespoon butter, melted

2 cloves garlic, minced

½ teaspoon grated Parmesan cheese

1 tablespoon chopped fresh parsley

- Combine butter, garlic, cheese and parsley until well mixed. Brush over bagel rounds. Preheat oven at 350 degrees.
- Place bagel thins on baking sheet, bake 10-14 minutes, or until bagel chips are well browned.



Appetizers

Ezy-Clam Dip

Yield: 2 cups

1 (8 oz.) package cream cheese
1 (6½ oz.) can minced clams, drain slightly
1 tablespoon minced onion
1 teaspoon chopped parsley
1 teaspoon Worcestershire sauce
1 tablespoon mayonnaise
½ teaspoon brown mustard

- Blend cheese with mayonnaise and Worcestershire sauce. Add remaining ingredients blend well. Chill until serving time.
- Serve with assorted crackers or carrot and celery sticks.

Shrimp Dip

Serves 8

16 ounces cream cheese, softened
1 (6 oz.) can small shrimp, minced
2 tablespoons grated onion
1 tablespoon lemon juice
¼ teaspoon salt

- Blend cream cheese and shrimp in medium bowl.
- Add remaining ingredients, mix well.
- Serve with assorted crackers.

Available fuel choices for cruising sailboats

by Don Launer

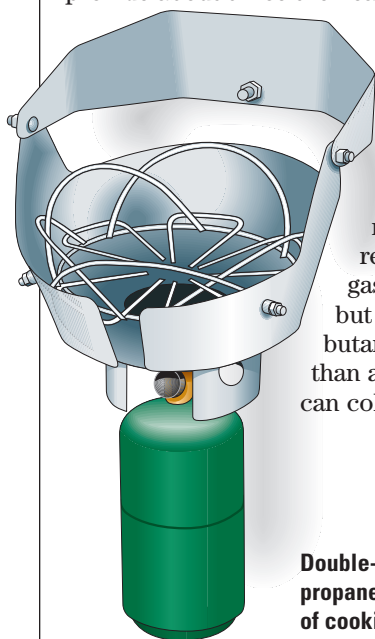
THE SELECTION OF THE BEST GALLEY STOVE FOR USE aboard your sailboat depends on the size of the boat, the layout of the galley, and the type and amount of cooking you plan to do. Your selection will also depend on your budget as galley stoves run from \$40 to \$4,000.

There is a wide variety of galley stoves and fuels: non-pressurized alcohol, pressurized alcohol, small liquefied propane or butane canisters, liquefied propane using large pressure tanks, compressed natural gas, kerosene, diesel, electric, ceramic-glass electric, and microwave. Galley stoves are also available as combinations, such as an alcohol/electric combo or an electric burner/microwave-oven combination.

These stoves come as a simple single-burner or as multi-burners with ovens. A galley stove that is gimbaled has a distinct advantage and is usually mounted facing athwartships so level cooking can occur when the sailboat is heeled. Gimbaled stoves should also have a method for preventing the stove from gimbaling — usually a barrel-bolt. The pivots for a gimbaled stove should be at the level of the bottom of the cooking pan. Fiddles around the edge of the stove-top with adjustable arms that encircle the pots should be high enough to prevent pots from moving. Galley stoves should be corrosion-resistant, preferably made of stainless steel.

Liquefied petroleum gas (LPG)

Most boatowners select LPG for their galley stoves, since these stoves operate much like home stoves and provide about twice the heat of alcohol. LPG can be butane, propane, or a mixture of the two. These gases become liquid under pressure and must be contained in specially designed tanks, with aluminum the preferred tank material. When pressure is released, the liquid becomes a gas that burns hot and clean but is very explosive. Both butane and propane are heavier than air, which means that the gas can collect in the bilge, so the strict



Double-gimbaled single-burner propane stoves provide 3½ hours of cooking time.

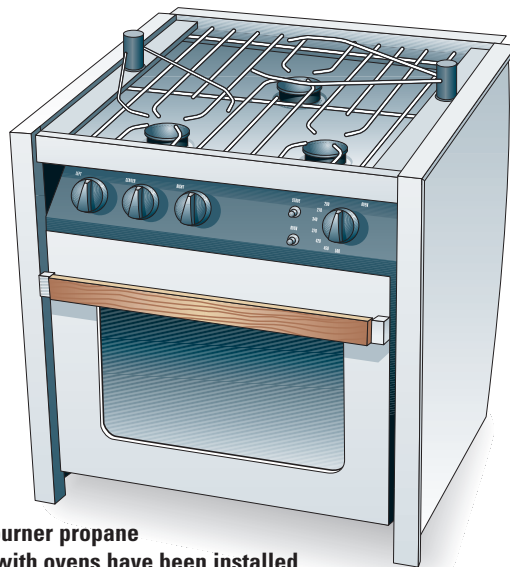
safety protocols established by the American Boat and Yacht Council (ABYC) must be observed in the installation and operation of an LPG stove. Gas detectors, or “sniffers,” should be part of the installation. LPG is available worldwide, however outside the United States metric adapter fittings are necessary to refill a tank that has American threads. Small camping-style LPG stoves use canisters that are discarded after use. These canisters are usually available in hardware or camping stores. They should be treated like large tanks used for LPG. When not in use, they must not be stored belowdecks.

Alcohol

Other than the small, camping-stove-type canister LPG stoves, alcohol stoves are the most inexpensive type of galley stove available, but their heat output is less than compressed natural gas and only about half that of propane and butane. Alcohol vapor is heavier than air, so alcohol — which was once proclaimed the safest of fuels — is now also considered dangerous when improperly or casually used.

Non-pressurized alcohol stoves — those containing a material saturated with alcohol and operating much like a Sterno stove — are much safer than pressurized alcohol models. These non-pressurized stoves require no preheating, which can sometimes be a hazardous operation.

The pressure for pressurized alcohol stoves comes from a tank that has to be pumped up with air. Alcohol is expensive in the United States and very expensive and difficult to obtain elsewhere in the world.



Three-burner propane stoves with ovens have been installed in most medium to large sailboats in recent years.

Compressed natural gas (CNG)

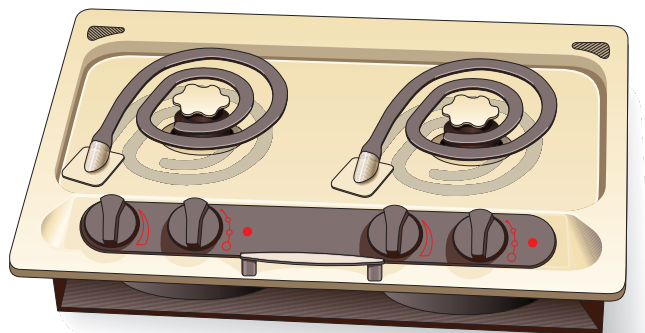
The main advantage of CNG fuel (primarily methane) is safety since this fuel is lighter than air and will not accumulate in the bilge. Nevertheless, one should apply the safety standards of LPG to CNG. The tanks should not be stored in the cabin, although many installations ignore this admonition. As with LPG, ABYC recommendations should be followed in the installation. These tanks are leased, not purchased. When refueling, the empty tank is exchanged for a full one. CNG is more difficult to obtain than LPG and has a higher cost, mostly due to a more limited distribution infrastructure. CNG has lower Btu-per-pound than LPG. In any installation, a CNG tank cannot be substituted for LPG or vice versa.

Kerosene

Though kerosene is universally available and relatively inexpensive, kerosene galley stoves are seldom seen, except aboard some older boats. Pressurized kerosene stoves burn kerosene vapor and have a blue flame similar to an LPG stove. However, just as with pressurized alcohol stoves, the burners must be pre-heated with alcohol to vaporize the kerosene before use. The pressure for kerosene stoves comes from a pressure tank that has to be pumped up with air. In some cases pressure is supplied by a gravity feed.

Electricity

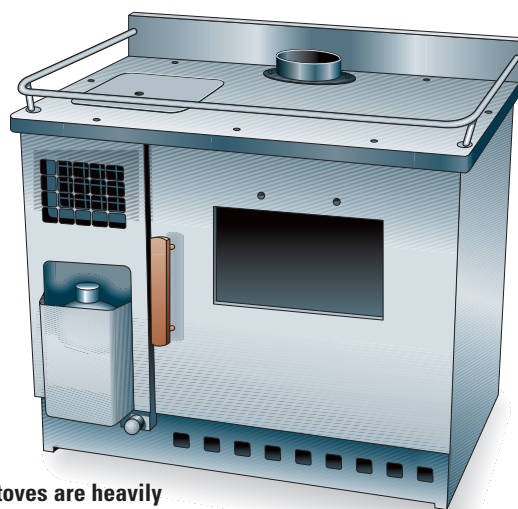
Only sailboats with very high-output generators will have enough power to operate an all-electric galley since the power needed can be in the multiple thousands of watts. On small sailboats, however, a single-burner electric hotplate can be useful in a marina when you're connected to adequate shorepower. For the ultimate in electric cooking tops, ceramic-glass electric galley stoves are also available, as well as 12-volt DC or 120-volt AC microwave ovens.



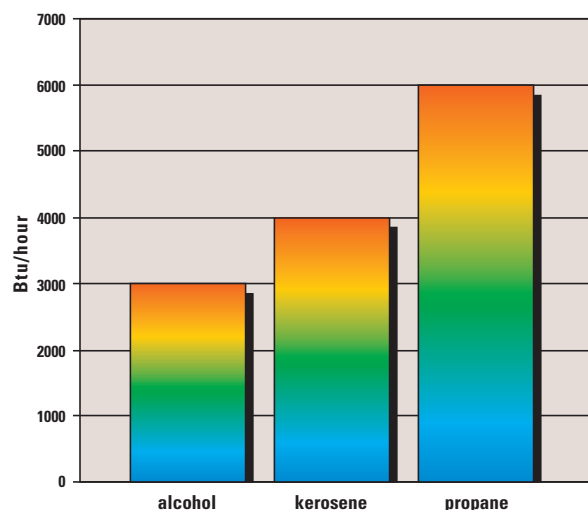
Electric countertop stoves provide dockside cooking for many small sailboats.

Diesel

Diesel stoves are seldom seen on recreational sailboats, except on large boats operating in very cold climates where the stoves double as cabin heaters. Diesel stoves, which are usually quite heavy, provide a very hot flame. In a boat with a diesel engine, the fuel can be supplied from the engine's fuel tanks. Often the fuel is pumped from the engine's tanks into a small overhead tank, using a gravity feed from there to the stove. Pre-heating the burner is necessary, and diesel stoves must be vented through a Charlie Noble on deck.



Diesel stoves are heavily built and require a flue-pipe. They double as cabin heaters and are especially practical in cold climates.



Comparison of the potential heat available from three common galley-stove fuels.

A clean look at the “dirty” half dozen

When it comes to choosing a marine stove fuel there is rarely anyone completely happy with the choice. All fuels have a “dirty” side to them, and some sides are deadly as well. Alcohol is heating-impaired. Kerosene is maintenance-dependent, and a mess if spills occur. Diesel is *hot* and has sooting problems. Electricity is power-hungry and generator-dependent. Compressed natural gas (CNG) is explosive and expensive, as well as hard to find.

And what about liquefied petroleum gas (LPG)? The potential for a massive explosion aboard your good old boat gives LPG both a deadly and a “dirty” side.

After talking to more than 30 marine stove owners about their fuel and stove choices, I learned that, like me, almost every one of them had learned to cook and live with whatever stove and fuel came with the boat when they bought it. But, even though it was chance that decided it, most owners were happy with their stoves and fuels.

As the years go by, however, good old boats need refitting. We may need to replace our stoves. Then when it comes to fuels, choosing one of the dirty half dozen is unavoidable, and this time it won't be chance that decides. We are wrestling with this decision aboard *Lindsay Christine*, our Mercator Offshore

30. Our propane stove is more than 20 years old. And it looks it, at least what you can see of it, because most of it has rusted away. In the hopes of making the “right” decision, I did extensive research and asked many boaters about the marine stoves and fuels they use.



Pros and cons of the six main fuels for galley stoves

What follows are some pros and cons of marine stove fuels from my own research and some advice from the experts — other stove owners — to help you decide which is the best choice for you.

Heat vs. cost

The heat output of fuels is determined by test. The table on the next page shows approximate heating values — approximate because, with the exception of electricity, all of these fuels are mixtures, and their exact content varies from source to source.

One Btu, or British thermal unit, is the amount of heat energy needed to raise the temperature of 1 pound

of water 1°F, starting at 60°F. One Btu is also equivalent to 252 calories, and 1 calorie is the amount of energy needed to raise the temperature of 1 gram of water 1°C.

The Btu/lb. column in the table offers a way to compare all fuels (except

electricity) with each other. Btu/lb. would only be a significant figure of merit, however, in cases where the major consideration was the weight of the fuel load. If you are doing a serious weight comparison, you will want to include the weight of all parts of the cooking system, including the tanks, plumbing, and stove.

Most sailors will care more about the cost and availability than about the weight difference. The column showing Btu per significant unit is provided to show the heat content of the unit of measure in which the fuel is normally purchased.

The cost per 500,000 Btu shows how significant the difference is between various fuel costs. For purposes of comparison, 500,000 Btu may be taken to be (very roughly) the heat required to cook for four people for 90 days. If you live aboard your boat, multiply that figure by four for an estimate of annual cost. If you sail in a northern climate on weekends

by Theresa Fort

Average heat content of marine stove fuels

Fuel type	Btu/lb.	Btu/significant unit	Cost	Cost/5,000 Btu
Alcohol	11,935	80,919 Btu/gal.	\$9/gal.	\$55.61
CNG	23,601	1,000 Btu/ft. ³	\$.16/ft.	\$77.38
Diesel	19,557	139,400 Btu/gal.	\$1.30/gal.	\$4.66
Kerosene	19,800	134,950 Btu/gal.	\$2.07/gal.	\$7.67
LPG	21,560	21,560 Btu/lb.	\$.50/lb.	\$11.60
Electricity	—	3,412 Btu/kwh	\$.10/kwh	\$14.65

and get in a two-week vacation, your annual fuel requirement will likely be only about half of the 500,000 Btu shown.

Generally speaking, the cost difference between these fuels for weekend sailors is not significant enough to be the reason for changing fuel types, because the cost of new equipment is high relative to the cost differences between fuels. Liveaboards and long-range cruisers may find the cost differences more interesting.

Fuel availability

Here is a table showing the availability of fuels — excluding electricity, since

Availability of fuels

	Inside the U.S.	Outside the U.S.
Alcohol	Yes	Random
CNG	Random-Rare	Rare
Diesel	Yes	Yes
Kerosene	Yes	Yes
LPG	Yes	Yes

electricity is generated by using another fuel. I used the word random to describe the availability of CNG in the U.S. because, even with a long list of available stations, I had great difficulty finding a place that really did refill CNG cylinders in Florida, where I live. But I've been told it's much easier to find in other parts of the country where EPA standards have forced the use of CNG as a motor fuel and where natural gas is a common fuel for heating.

Auto-ignition temperature

The table on the next page shows the characteristics of fuels, also excluding electricity. It gives the auto-ignition temperature of each fuel. This is the temperature at which a fuel will automatically ignite without a spark or flame. The flash point, on the other hand, is the temperature at which the fuel will ignite when there is oxygen and a spark for ignition.

Stove fuels one by one

Alcohol

Alcohol fuels for stoves are generally composed of ethanol, methanol (added as a denaturing agent), methyl ethyl ketone, acetone, and water. The exact percentage of these components varies

rather widely from one supplier to another. Nigel Calder, in his book, *Boat Owner's Mechanical and Electrical Manual*, states that the best fuel for stoves is ethanol. For practical purposes, this would be a fuel like

Tru Heat, which is 92 percent ethanol, 5 percent water, and 3 percent methanol. It has only trace amounts of other compounds, such as methyl isobutyl ketone, ethyl acetate, and rubber cement. In

contrast to this fuel, Soot-Free, the fuel endorsed by Origo for use in their stoves, is not a high-ethanol-content fuel. Soot-Free contains roughly 71 percent ethanol and 20 percent methanol, as well as methyl ethyl ketone, acetone, and water.

You can also buy suitable fuel in paint and hardware stores labeled as “denatured alcohol.” Klean-Strip is one brand that notes on the container that it is suitable as a shellac thinner and as marine stove fuel.

One test Nigel suggests is to pour a sample of the fuel into a clean (ovenproof) dish and burn it. If there is any residue after the fuel is completely burned, it's unsuited for use as a stove fuel. In addition, stove-fuel vendors will send you a Material Safety Data Sheet (MSDS) for their products listing the chemicals in the fuel by percentage.

Alcohol has been advertised to be the perfect environmentally correct fuel because it is mostly produced from renewable resources (plant matter). It is a relatively safe fuel because of its low volatility. This makes it safer than other

fuels in the closed environment of a boat. Alcohol-stove owners like the fact that there is no hauling of heavy and cumbersome storage tanks, that fires can be extinguished just by adding water to the fire or fuel, and that it is a clean-burning fuel.

But it's not the perfect fuel. Some people say the sweet smell of burning alcohol makes them nauseous. It's more expensive per Btu than all the other alternatives except CNG, averaging \$9 a gallon across the U.S., and its availability is irregular outside of the U.S. and Canada. The price of alcohol outside the U.S. is also quite high.

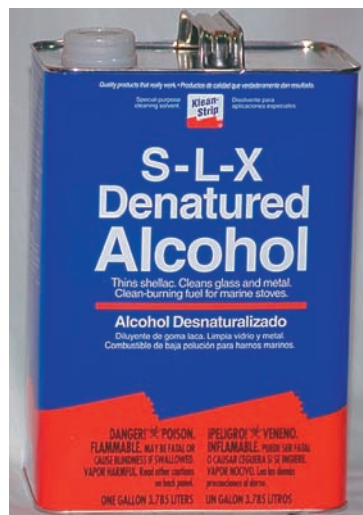
There are two basic types of marine stoves that use alcohol as a fuel, pressurized stoves and non-pressurized stoves. Each has advantages and disadvantages.

Pressurized alcohol. I chuckled as I read LaDonna Bubak's description of lighting her pressurized alcohol stove. She sails her boat out of Portland, Ore., and writes:

“(First you) have to fill a small tank, pump it up to pressurize it . . . preheat the burner by allowing a puddle of fuel to develop, light it, jump back so flames don't singe eyebrows, extinguish (any) flaming curtains, etc., then, when the puddle-flame almost dies, you turn on the burner and hope it catches.”

A lost memory flashed into my mind. It was my first and only attempt to light the pressurized alcohol stove aboard our Catalina 22. As

flames shot up above my head and within reach of the cabintop, I heard the kids approaching. They were arguing



about whose idea it was to have lunch aboard *Gypsy Rose*. Trembling, I made sure the burner was off, then nervously searched for something with which I could extinguish the flame. There was no water. *Gypsy Rose* was in our driveway. I found a pot lid that had fallen on the cabin sole in the confusion of the flare-up. The fire went out as I covered it. I took a deep breath. Amie arrived first with Alex close behind, full of spit and vinegar.

“Mommy, tell Amie that I thought of it first! Here’s the soup . . . ” Then there was silence as they both watched me pack up everything and start to close up the boat. “Mommy, are you OK?”

I vowed never to light that stove again as I replaced the tarp and walked back to the house. I had no idea that this experience was almost normal for lighting a pressurized alcohol stove until I talked to other boaters about their stoves.

A few of the boatowners I questioned were happy with their pressurized alcohol stoves, but the majority were looking to replace them. Many were not comfortable using the oven because of concerns with priming and flare-ups. A few owners commented on being bothered by the sickeningly sweet smell of the alcohol and the paleness of the

flame, which makes it almost impossible to see in bright light.

The real danger of flare-ups seems to come from failing to light the burner on the first try. After the first try, the burner may not be hot enough to sufficiently vaporize the fuel by the time all the fuel in the priming cup has been burned. So the chef opens the control knob to allow more fuel into the priming cup, and the fuel ignites sending flames sky high. While the burner was not hot enough to vaporize the fuel the first time, it was hot enough to ignite the liquid alcohol added again. If the stove is gimbaled at the time of lighting, flaming fuel can splash onto other parts of the boat and the cook. According to Optimus International, the best advice is to let the burner cool off before filling the priming cup with fuel again.

Pressurized alcohol stoves are not maintenance-free. The customer service department of Kenyon Stoves explains that severe pulsing of a burner or a glowing red cap during operation are caused by dirt and scale buildup in the filter and burner body. The burner should be stripped of all removable parts, cleaned, and rebuilt.

With Kenyon alcohol stoves, a wick in the center of the burner is lit. Pressure builds up in the burner as the available fuel heats up, causing alcohol

vapors to be released into the burner to be used. Regardless, most alcohol burners work in the same way and require the same maintenance.

One stove owner, known as “Captain Key West,” from Key West, Florida, commented that he thought the bad press about pressurized alcohol stoves comes from the fact that they need to be maintained to work well, especially after many years of use. He writes, “I think many people disenchanted with alcohol stoves may have based their opinions on only having used poorly maintained stoves. I used to be surprised how alcohol stoves got a bad rap since mine worked great for many years before it started getting ‘fussy.’ Now, I realize many users are not aware that these stove are not maintenance-free. They buy a used boat, never can get the stove to work right, then complain about how poor alcohol stoves are. They’re not listening to their stoves which are *begging* for maintenance!”

I know I never gave my pressurized alcohol stove a chance after that first lighting.

Non-pressurized alcohol. Non-pressurized alcohol stoves are quite popular. The Origo-brand stoves have helped to keep alcohol in fuel-option lists for boaters. All non-pressurized

Characteristics of the five liquid or gaseous marine stove fuels

	Alcohol		CNG	Diesel	LPG (Propane)	Kerosene
	Methanol	Ethanol				
Toxic to skin	Moderate-high	Slight	No	Moderate	No	Moderate
Toxic to lungs	Moderate	Slight	No	Moderate	No	Moderate
Specific gravity lighter or heavier than air (air=1.00)	1.11	1.59	0.55 lighter than air	>4	1.52	>4
Auto-ignition temp °F (temp. required for spontaneous ignition)	867	793	1,000	~600	850-950	410
Flash point closed cup, °F	52	55	-300	165	-100 to -150	100
Luminous flame	No	Faint	Yes	Yes	Yes	Yes
Source	Natural gas and other hydrocarbons	Grain, biomass	Natural gas	Petroleum	Natural gas, petroleum	Petroleum, coal, shale

alcohol stove owners I questioned are happy with their stoves. Some even commented that they cook faster than pressurized alcohol stoves and claimed speed close to propane. But the fuel is expensive.

These non-pressurized stoves use a wicking action to deliver fuel to the flame, instead of pressure, making them very safe, with no flare-ups. The fuel is stored in canisters under the cooktop. The canisters contain nonflammable wadding with a shield-type cover that closes over the canister to extinguish the flame, somewhat like cooking with Sterno.

These stove users/experts seem to agree that non-pressurized alcohol stoves are the way to go if you are interested in using alcohol as a marine stove fuel. In fact, two of the pressurized kerosene stove owners are switching to non-pressurized alcohol with their next refit.

Safety considerations (alcohol)

While it is true that alcohol fires can be put out with water, sometimes the water displaces the alcohol, and the fire continues to burn.

- Fill the fuel tank no more than three-quarters full to allow space for increased air pressure.
- Before lighting and throughout the burner's use, pressure in the storage tank needs to be around 7 pounds per square inch (psi).
- Once you have successfully lit the burner, run it on a low setting until the burner gets really hot; then it can be adjusted for your cooking. Turning the valve all the way open will put out the flame, because there is a cleaning needle that comes out when you turn the knob all the way counterclockwise.
- Never refill the priming cup or stove while the burner is on or even hot. The alcohol in the container may ignite.
- Clear the area above and around your stove of any flammable objects, including your eyebrows, before priming your stove.

Special hints (alcohol)

- Experienced users of alcohol stoves recommend that you use heavy cookware to reduce the scorching that can occur if the burner has a hot spot.

- On pressurized stoves, cook and bake using a strong flame to reduce chances of the flame's dwindling and being blown out.
- Most owners agree that it helps to use the stove manufacturer's fuel because it burns more cleanly.
- One owner uses a contact-solution bottle to hold alcohol for the priming process. It gives you better aim and more control over the amount released.
- Pressurized alcohol stoves can be converted to kerosene by replacing the burners. As a caution though, one stove owner commented that he was witness to one such conversion exploding aboard a friend's boat. Make sure the conversion is done correctly.
- Several owners use small bicycle pumps with pressure gauges to pressurize the fuel tank to the proper pressure. Ferenc Maté's book, *Shipshape: The Art of Sailboat Maintenance*, explains the use of a bicycle pump for pressurized alcohol and pressurized kerosene stoves. He suggests getting rid of the pump that came with the stove and finding a valve from a bicycle tube. Solder this valve into a washer and use the nut that came with the tank to thread it into place with a small rubber gasket between.
- Dan Spurr, in his book, *Upgrading the Cruising Sailboat*, recommends putting a pot on the burner when priming. It will partially contain the flames and provide a darkened area which enables you to see the flames better.

Compressed Natural Gas

There's a lot of technical merit to compressed natural gas, but its popularity has never developed. Natural gas is a mixture of hydrocarbons — mainly methane (CH₄) — and is produced from gas wells or in conjunction with crude-oil production. It's a very clean-burning fuel and burns hotter than alcohol. It also has an advantage over LPG in that it is lighter than air. So it is a much safer gas. Any leaks tend to rise to the cabintop and

escape through any point that has an opening to the outside. But vapors could still build up in areas of the cabin that have poor ventilation, so care should be taken to have good airflow aboard. I know of one boatowner who has had trouble-free use of his CNG stove for the last 16 years.

CNG's disadvantages are much the same as LPG's. It's a highly volatile gas stored under pressure, much higher

than LPG. CNG is stored at 2,250 psi, compared to LPG's 150 to 180 psi. The cylinders are heavier and more cumbersome because CNG requires a thicker-walled tank. The tanks also require recertification periodically. CNG also costs more per Btu than LPG. I found the price of a refill in



Florida to be between \$10 and \$16 for 84 cubic feet.

But the biggest drawback seems to be the lack of availability outside the U.S., as well as in some areas within the U.S. A special quick-release fitting can be bought through Corp Brothers, Inc., to allow you to fill your tanks from a utility-company or automobile-station pump, when found.

Safety considerations (CNG)

A good-quality, spark-proofed alarm and sniffer should be installed aboard any boat with a compressed natural gas stove.

- CNG cylinders should be stored away from the cabin in self-contained storage lockers that are vented overboard above the waterline, with venting at the compartment's highest level. Or they may be stored outside on deck.
- Cylinders should never be painted a dark color. In direct sunlight a cylinder could absorb enough heat to cause it to rupture.
- CNG and LPG cannot be interchanged without modification to the stove.

Marine stove fuel survey results

Fuel	Happy	Safe	Feel limited in use	High fuel price
Alcohol (pressurized)	Yes: 1 No: 3	Yes: 1 No: 3	Yes: 2 No: 2	Yes: 3 No: 1
Alcohol (non-pressurized)	Yes: 6 No: 0	Yes: 6 No: 0	Yes: 1 No: 5	Yes: 3 No: 3
CNG	Yes: 1 No: 0	Yes: 1 No: 0	Yes: 0 No: 1	Yes: 1 No: 0
Diesel	Yes: 1 No: 0	Yes: 1 No: 0	Yes: 0 No: 1	Yes: 1 No: 0
Electricity	Yes: 2 No: 0	Yes: 2 No: 0	Yes: 0 No: 2	Yes: 2 No: 0
LPG (propane)	Yes: 15 No: 0	Yes: 1 No: 14	Yes: 0 No: 15	Yes: 15 No: 0
Kerosene (pressurized only)	Yes: 2 No: 1	Yes: 3 No: 0	Yes: 0 No: 3	Yes: 3 No: 0

- CNG burned in LPG stoves will produce only about half of the designed output.

Diesel

Diesel is a high-energy fuel that is not volatile. It does not give off flammable fumes, and it is inexpensive and available worldwide, especially in areas of commercial fishing. There are pressurized and non-pressurized diesel stoves. Pressurized diesel stoves are operated much like kerosene and alcohol stoves. Non-pressurized “drip pot” diesel stoves use a metering valve to deliver fuel to a drip-pot-style combustion chamber. The burner can be fed by gravity or by a pump. The drip-pot-type stoves are quite popular on commercial fishing boats and aboard yachts in northern regions.

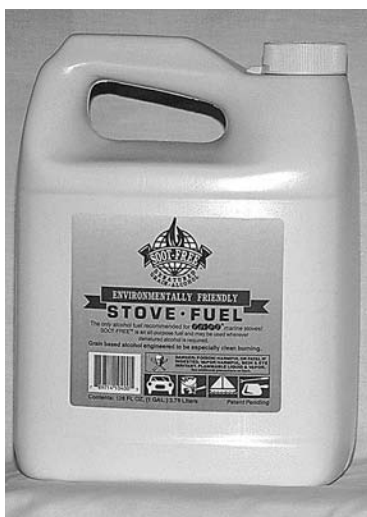
They are known for producing a dry heat because they draw in moist air from the cabin for combustion and expel it through the chimney as flue gas. For boaters living in cool climates most of the year, this means a warmer and drier boat. Drip-pot diesel stoves can also be used to produce hot water when a water coil is added to the stove. Another advantage is the fact that you will only

be using one type of fuel if your auxiliary engine is diesel.

A downside for drip-pot diesel stoves is that they tend to heat the cabin as well as the food. They are slow to warm up and cool down because they are made of heavy cast iron. With a constant oven temperature of 350°F, a cabin can get quite warm in the tropics. Sooting and down drafting can also be problems when a drip-pot diesel stove is not properly adjusted or if poor-quality fuel is burned. Installation of the drip-

pot variety can be quite difficult just because of the weight of the stove itself. And, because of their weight and the chimney required, drip-pot diesel stoves cannot be gimbaled. It would be best to install one athwartship. Since the flue removes combustion products from the cabin, the build-up of carbon monoxide gases is

not a concern as long as the stove is working properly and outside make-up air is brought into the cabin.



Special tips (diesel)

The key to being happy with your diesel stove is to learn how to operate and adjust it. Understanding how your stove works, and adjusting it properly, will save your sails (as well as the rest of your boat) from soot. Jeannie and Jack, aboard their Columbia 50, *Terri Knot*, had terrible sooting problems with their diesel stove on their trip to Alaska. After several phone calls to the manufacturer, they were finally able to adjust it properly. They are pleased with the heat it generated while cruising in the cool north. But Jeannie commented that it would have made the trip more enjoyable if they could have worked out the stove's idiosyncrasies before their trip.

- Filtering your diesel fuel with a Baja filter will increase the efficiency of your stove and reduce sooting. If you don't have a very fine filter of this type, you can also filter fuel to some extent using panty hose.
- If you are planning on cruising in tropical climates with a diesel stove, consider bringing along a small cook-top that uses an alternate fuel — such as propane, butane, or alcohol — to reduce heat in the cabin.
- Diesel stoves will burn cleanly with sufficient draft. Make sure your flue is the proper length and diameter. It is important that the flue be installed without any bends to restrict the air flow. Make-up air must be allowed into the cabin for the stove to have proper draft.

Electricity

For those boaters who have an alternating current (A/C) generator, or who find themselves close to shorepower quite often, electricity may be the answer. It is highly efficient, there are no problems about storage and fumes, and the fact that you may already have shorepower aboard your boat makes it easy to install. If your electrical cooking appliances include a microwave, it will speed up cooking times, helping you to use less energy. It will also conserve vitamins during cooking, and it will not heat up the cabin. Because electricity is a dry heat, it will also mean a drier cabin, something that helps with all boats.

But, if you will be relying on a generator to power your stove, there will be an increased need for diesel or gas, depending on your energy source. Increased use of your generator also means increased wear and maintenance, increasing the total expense of this type of fuel. The noise of having to run the generator or engine each time you use your electric appliance can also be a disadvantage.

Special tips (electricity)

- Make sure all wiring is accessible so you can check for corrosion periodically. If some of the wires are hidden or difficult to get to, it will be a tedious job to find the cause of a malfunction.
- Proper maintenance of your generator is a necessity when relying on electricity for your cooking. Consider having a small back-up stove aboard.
- If you will be running your generator in quiet anchorages, consider anchoring farther away from other boaters. It will go a long way toward improving relationships with those who are living without generators.
- Try to combine stove needs with battery charging to enable you to run the generator less frequently.

Kerosene

Kerosene, also called paraffin outside the United States, is a colorless, thin oil. It's less dense than water, and it's made of a mixture of hydrocarbons commonly obtained from the fractional distillation of petroleum. As with

alcohol, there are pressurized kerosene stoves and non-pressurized kerosene stoves. Pressurized ones function much like pressurized alcohol stoves. Kerosene burns hot — much hotter than alcohol. It is inexpensive and widely available in the U.S. as well as overseas.

Eric Freeman, who sails *Blackguard*, an old Seawolf ketch, in northern Washington state, commented that kerosene is easy to find, being available anywhere jets fly. Kerosene is not as volatile as alcohol and can be easily stored. Because kerosene — like alcohol and diesel — doesn't have to be under pressure, it is easy to be aware of

how much fuel you have left. A well-maintained and properly running stove is odorless and soot-free without any flammable fumes to worry about.

But kerosene stoves can be hard to light. These stoves require priming with alcohol, a tricky business. They can also have a sooting problem if the burners are not

adjusted properly. They can smoke liberally when firing up and smell terrible. Spills take a long time to evaporate and can be a problem because they will soak into cushions and be a fire hazard for a long time.

Non-pressurized kerosene stoves are often discussed with diesel drip-pot stoves since they are so similar. Kerosene can be burned in a diesel stove and is the cleaner of the two in that application. The advantages and disadvantages of non-pressurized kerosene stoves are the same as those for diesel stoves. Like diesel stoves, kerosene drip-pot stoves cannot be gimbaled and are usually made of heavy cast iron with a flue.

Special tips (kerosene)

- It's important to buy the best-quality kerosene possible to reduce the chances of clogged burners. Good-quality kerosene is colorless and as clear as good drinking water.
- You can check the quality by burning a small puddle in an ovenproof dish. Any gooey remainders mean a poor-quality fuel for your stove.



- Filter your kerosene through a Baja filter to eliminate particulates.
- Keep a small spray or squirt bottle of alcohol (like a contact solution bottle) close by to use when priming the burner.

Liquefied Petroleum Gas

LPG is a gaseous paraffin hydrocarbon, extracted from crude petroleum or natural gas, containing propane and butane. Most LPG produced and sold in the U.S. is primarily propane. It seems to be the fuel choice for a large number of marine-stove owners, especially international cruisers. They seem drawn to it because it is cheap, burns hot and clean, and has world-wide availability. I found the average price to fill a 20-pound cylinder was \$10, which lasts our family of four an average of three months while traveling. But, it has some major drawbacks that can make it a very dangerous fuel to have aboard.

LPG is highly explosive and heavier than air. Any leaks in the system can go undetected, sinking into bilges and creating a very dangerous situation. And, on stoves without thermocouples, it is too easy to leave a burner on accidentally after the flame goes out, leaving an explosion waiting to happen when the cook goes to re-light a burner.

Thermocouple-controlled solenoid valves control the flow of gas on some stoves. When heated, the dissimilar metals in the thermocouple generate electrical current that causes the solenoid valve to open. When the thermocouple cools, it does not generate the electrical current and thus the valve closes, cutting the supply to the burner. This is why, upon lighting your burner, you need to hold the valve open for at least 30 seconds to allow the metals to become warm enough to generate the electrical current which will hold the solenoid valve open.

LPG (as well as CNG) requires constant vigilance in its use and storage on board. All crewmembers should check and re-check to make sure all switches and shut-off valves are in the proper position.

LPG's high volatility also creates a transportation problem. Transporting cylinders to be re-filled can be difficult. The thick-walled cylinders are heavy and cumbersome. These cylinders, like CNG cylinders, have to be re-certified after several years. The date of the next re-certification should be stamped on the cylinder. Due to safety concerns, many buses and taxis will not allow

them aboard. Plus, LPG companies are usually outside of town in order to reduce loss of life and property should there be an explosion. This makes them difficult for cruisers to reach without transport.

Though propane and butane are usually lumped together and called LPG for simplicity, they have a few differences.

Butane. This gas liquefies at higher temperatures than propane does. At extremely low temperatures, butane's evaporation rate will be so low that the stove will not operate. But butane can be stored in a propane container.

Propane. In extremely cold conditions, propane can be used when butane would fail to evaporate. Propane can be used interchangeably with butane. But propane cannot be stored in butane cylinders because it has a higher cylinder pressure.

Safety considerations (LPG)

For excellent instructions on the proper installation of an LPG system, read Chapter 14 of Nigel Calder's *Boat-owner's Mechanical and Electrical Manual*.

- It is a good idea to install a good quality sniffer that will sound an alarm when vapors are detected. But be sure it is spark-proofed so that turning it on will not ignite any vapors already present.
- LPG cylinders should be stored away from the cabin in self-contained storage lockers that are vented overboard above the waterline, with venting at the compartment's *lowest* level. Or they may be stored outside on deck.
- Cylinders should never be painted a dark color. In direct sunlight, a cylinder could absorb enough heat to cause it to rupture.
- Install a lighted manual switch at the stove with a solenoid valve to shut off the gas at the tank when the stove isn't in use.
- LPG cannot be interchanged with CNG (compressed natural gas) without modifications to the stove. Propane burned in a CNG stove will produce extremely high flames and dangerous overheating of the appliance.
- When re-filling cylinders outside the U.S., make sure the LPG has a smell to it. It is not safe to have LPG (or CNG) aboard if it is odorless.

- Be careful not to have your cylinders filled beyond 80 percent capacity. There should be two weights stamped into your cylinder, the empty weight, called tare weight, and its net fill weight, the safe weight of LPG that can be added. Upon weighing your filled tank, it should not weigh more than your tare weight plus your net fill weight. If it has been overfilled, some of the gas will need to be vented carefully away from flames and sparks. An overfilled cylinder is a terrible danger aboard your boat. Increases in the ambient temperature could cause a rupture of the cylinder or could cause liquid LPG to be pushed into the low-pressure lines, a very dangerous situation that would ruin, at the least, an oven's thermostat.

Special tips (LPG)

Having an easy shutoff valve close to the storage cylinder helps reduce dangers. Aboard *Rhiannon*, Debbie Lyons, of Seattle, stores her propane cylinder on deck near an opening portlight over her sink. She only has to open the portlight to shut off the propane *right* at the tank. She shuts off the propane at the cylinder as her cooking is completed and when the flame dies, signaling that all the propane has been used in the lines, she turns off the burner. Before lighting, as a double check, she makes sure that all burners are turned off first. (Make sure the portlight will not allow LPG to drain into the cabin if there is a leak at the cylinder.)

Hunting for leaks is required maintenance for propane stove owners. It is a good idea to periodically apply soapy water to all tubing connections in your installation. Bubbling signals a leak that should be immediately fixed. Also use your nose for finding leaks. As with CNG, an odor has been added to LPG. *Never use a flame to test for leaks.*

To check the level of your propane tank, boil a cup or so of water and pour it on the outside of your propane tank. Right afterward, feel for the level of much cooler propane in the cylinder.

Propane and CNG are serious materials to have aboard a boat. The ABYC (a voluntary boat construction standards organization) recommends that the following label be placed near LPG fuel tanks:

Caution

(1) This system is designed for use with liquefied petroleum gas (LPG) only. Do



Debbie Lyons, reaches through the portlight to shut the propane off at the tank aboard *Rhiannon*.

not connect compressed natural gas (CNG) to this system.

(2) Keep cylinder valves and solenoid valves closed when boat is unattended.

Close them immediately in any emergency. When on board, cylinder valves or solenoid valves shall be closed when appliances are not in use. Keep empty cylinder valves tightly closed.

(3) Close appliance valves before opening cylinder valves.

(4) Test for system leakage each time the cylinder supply valve is opened for appliance use. Close all appliance valves. Open, then close, cylinder supply valve.

Observe pressure gauge at the regulating valve and see that it remains constant for not less than three minutes before any appliance is used. If any leakage is evidenced by a pressure drop, check system with a leak detection fluid or detergent solution which does not contain ammonia and repair before operating the system.

(5) Never use flame to check for leaks.

At the end of the ABYC standard on LPG systems is the following note:

(1) Never use flame to check for leaks!

(2) Never use solutions containing ammonia. Ammonia, which is present in soaps and detergent, attacks brass fittings. Undetectable at first, in a matter months these fittings may develop cracks and leaks.

Ammonia which is present in some soaps also attacks copper tubing in the same way. In fact, it is the copper in the brass that is attacked by the ammonia.

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Watch out for CO

With electricity as the exception, it's important to make sure that the galley has sufficient oxygen to keep the stove working properly. A deficiency of oxygen causes any fuel to burn improperly, resulting in an output of carbon monoxide, rather than carbon dioxide.


For this reason, a carbon-monoxide detector is a worthwhile investment. We have one aboard our boat that saved our lives in Alaska. One night after having hot cocoa before bed, we accidentally left the pilot light in our oven on. Even with a cracked hatch, there was not enough oxygen inside the cabin. We were slowly awakened when our CO detector went off, releasing a mind-boggling blare of noise that just barely woke my husband, Chuck, and me. The kids were sound asleep with the detector right above their heads. We were able to get the kids and ourselves out of our cabin in time, with only headaches to complain about. The fresh air never felt better. Now we make sure the CO detector always has a good battery.

Decisions, decisions

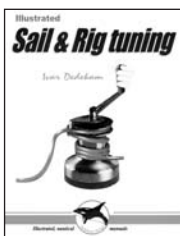
In Jimmy Cornell's book, *World Cruising Survey*, the most popular cooking fuel was LPG. In fact, 138 boaters chose LPG with the other fuels barely showing up: 17 others chose kerosene; two chose diesel; one chose alcohol; and two chose electricity. LPG was the most popular choice among the people I talked to, as well. But I found many more owners who chose alcohol than Jimmy did. This is probably because I talked to coastal cruisers and weekend boaters. I also talked to only 32 stove owners. For what it's worth, refer to the chart of my findings on Page 53.

Which to choose?

After weighing the pros and cons of the dirty half-dozen, I still haven't made up my mind about which to choose. But our plans for cruising outside the U.S. have ruled out CNG and alcohol. And electricity won't work aboard our boat without a generator. LPG is at the top of our list, but I hesitate because of memories of singed arms, flames in my face lighting our oven, and waking up to our carbon monoxide detector blaring. All these are memories from forgotten pilot lights and burners not turned off completely. It makes me gun-shy. I know the safety mechanisms on the new LPG stoves, as well as a proper installation, will take care of those problems. But should I choose to have our family depend on that?

Then there's kerosene and diesel to consider. Decisions, decisions. Maybe we could buy a new good old boat with a stove already installed so I could leave this decision to chance. Maybe I'll make Chuck decide. 

Theresa and family have lived and cruised aboard Lindsay Christine, a Mercator Offshore 30, since 1995. In another life long, long ago and far away, Theresa was a home economist with a specialization in consumer education. After receiving her BA in home economics at the University of Montana, she went on to become a master food preserver with the co-operative extension office in Montana.



Check out Ivar Dedekam's *Sail & Rig Tuning*, a concise reference on trimming sails and adjusting standing rigging. The best we've seen! To order, send a check for \$22 plus \$2 for shipping and handling for each book ordered. (Orders from Minn. addresses pay an additional \$1.43 sales tax for each book.)

GOOD OLD BOOKSHELF

7340 Niagara Lane North
Maple Grove, MN 55311



The colorful bulgur with greens and cheese (see recipe on Page 54), shown at left and on Page 54, cooks on the bow of *Isle of Skye*, an Islander 30 owned by Heather and Jeff Ilse.

Solar cooking

WHILE DOCKSIDE, I SUSPECT THAT sailors get a fair share of peepers: dockwalkers fascinated by the curiosities inherent in sailboats. One of my favorite pastimes while down below is eavesdropping as others stop to comment on the features of my boat. When the sailing bug bit us three years ago most folks marveled at the size of our 1969 Columbia Challenger (the tiniest boat in the marina), especially when they learned two adults and an infant spent every summer weekend and more anchored out on it in the Apostle Islands wilderness.

Since then we have graduated to a 1974 Islander 30 with a bit more living space. These days, the feature that attracts the most attention is not part of the boat at all, but rather our solar cooker. This being one of my most beloved boat gadgets, I'm usually inclined to pop through the companionway and develop a conversation with commenting visitors.

Some of these conversations become more animated and involved than others, but they usually begin with, "Does that thing really work?" pointing at the trapezoidal black box. "It sure does," I respond, glancing at the thermometer. "See, it's up to 200 now." Degrees Fahrenheit, that is. Then I explain that typical cooking temps are around 220°F. "What can you cook in there?" Just about anything, though I find the cooker is best suited to grain-based casseroles. Anything you might prepare in a slow cooker or pressure cooker would be a good candidate for a solar meal, and we have even enjoyed such delicacies as solar pizza and solar s'mores. Solar-cooked food is more nutritious

and naturally flavorful because the slow and gentle process retains more vitamins and minerals, and the tender result is easier to digest.

Mission work

Sometimes, the visitors' stories are more interesting than ours. We ran into a friendly National Park Service volunteer who had used the same cooker model while doing mission work in South America. A dockwalker shared a tale of how Roman soldiers used parabolic lenses to cook their food because they couldn't carry enough fuel for the gigantic military's culinary requirements. Usually, though, it is I who blather on about my adoration of the cooker and, if my audience is held captive long enough, I might offer a smell or a taste as I check on my concoction.

Sailors are already familiar with the concept of harnessing free energy for their own benefit. To them, using solar energy to cook food ought to be a no-brainer, and it explains why fellow sailors are drawn to the black box atop our deck. I became aware of commercial solar cookers long before I became a sailor, and I have friends in southerly areas of the United States who use them regularly.

*"Does that thing really work?"
they all ask*

by Heather Ilse

I dreamed of experimenting with solar cooking at my Minnesota home. Ever the DIY wannabe, I was determined to construct my own solar cooker based on Joseph Radabaugh's design described in his book *Heaven's Flame*. But life (and sailing) got in the way, and my solar cooker never materialized.

I met the folks from the Solar Oven

Society in 1999 at a renewable energy fair. I saw their simple, low-cost cooker on display and learned about their mission to spread solar cooking to developing countries where the use of cooking fires has led to deforestation and contributes

to health problems. But it wasn't until I began spending a good portion of every summer weekend hunched over a flame in my tiny humid galley that I connected the dots. One quick trip to the Solar Oven Society's office and about \$100 later, I was the owner of a lightweight, durable SOS Sport. Cooking on the boat never felt so good.

When the dockwalkers ask how it works, I tell them it's simple: put the food into the black pot, set the pot in-

*"One quick trip to the
Solar Oven Society's
office and about \$100
later, I was the owner of
a lightweight, durable
SOS Sport. Cooking on the
boat never felt so good."*

side the cooker, clip the lid, and point it at the sun. The principle is the same with any solar “box-style” cooker design. The sunlight that is transferred through the clear lid and absorbed by the black interior and dark pots is converted to heat energy. The longer heat rays are unable to pass back through the clear lid, and insulation in the box walls increases retention of heat in the oven. Think about your car on a sunny day in an asphalt parking lot.

Benefits

Here are some benefits of the SOS Sport design:

Weather resistance. The SOS Sport is more suitable for boating than the cardboard cooker I once considered building. The lightweight plastic housing, made from post-consumer recycled soft-drink bottles, stands up to a beating that would turn a home-made cooker to mush. I have left the cooker out in the rain and, since the closed-cell foam insulation does not absorb moisture, all it takes is a few minutes turned on its side to drain. Before our cooker became a permanent fixture on the boat, we carted it back and forth between Lake Superior and Minneapolis, tied to our roof rack. Although stowage could be a bit cumbersome if you are short on space, we have a locker that perfectly contains the cooker. I sewed a quilted, elasticized cover to protect the lid from scratches.

Freedom for the chef. Unlike most other commercially manufactured solar cookers, the SOS Sport does not use reflectors (shiny trapezoidal attachments that focus more of the sun’s energy into the box). This design ensures the temperature will remain low enough to avoid burning and scorching. It also allows for leeway in cooker orientation. If you set the cooker out in the morning and point it in the direction of noonday sun, you can return in the evening without having to make any adjustments. (Baked goods are an exception. Baking is best done in the middle of the day in a preheated oven. Breads, cakes, and cookies can dry out more than desired if left too long.)

Convenience. The Sport comes ready to use, equipped with two black enamelware pots, an oven thermometer, a water pasteurization indicator, and an informative cookbooklet to get you started.

“Anything you might prepare in a slow cooker or pressure cooker would be a good candidate for a solar meal, and we have even enjoyed such delicacies as solar pizza and solar s’mores.”

Cooking guidelines

The novice solar chef should adhere to the modern adage to “just do it.” Get some food into the sunshine and see what happens. After a meal or two, you’ll be hooked. If you don’t already have a favorite grain-based casserole recipe, start with a single grain or small pasta. Some of the fluffiest, most tender rice that ever graced my buds came from my solar cooker with almost zero effort or attention.

Pre-cooked rice can be used as a base for fried rice or topped with stir-fried or sautéed vegetables that have been cooked over a flame. Small pastas like couscous or orzo can be stirred into salads. If nothing else, fill a pot with water and pre-heat it for soup or pasta. Anything you can do to reduce the amount of cooking heat in your cabin on a hot day will make for happier campers. (Although you could cook larger pastas in the solar box, the inattentive solar chef faces the risk of passing through al dente into the realm of bloated-noodleland.)

Use dark pots and tight-fitting lids. Black, green, brown, and blue absorb more energy. Food-safe flat black grill paint can be used if your pot or jar is not already black. Pots that have been blackened over a campfire may be a good choice. Lids should fit securely to contain moisture. Water vapor that escapes the pot may condense on the clear lid of the cooker, reducing the amount of solar radiation that can be transferred into the cooker.

Incidentally, add less water. Plain vegetables, fruits, and meats do not need additional water. They already contain plenty of moisture for the gentle cooking of a solar oven. Less water is needed for cooking beans or grains than the typical stovetop method. When converting a conventional soup or stew recipe, try using about 20 percent less liquid. For plain (pre-soaked) beans, start with just enough water

to cover them, and add more later if necessary. For plain grains, I generally have good results using pressure-cooker guidelines recommended by Lorna Sass. She includes handy reference charts in her cookbook, *Great Vegetarian Cooking Under Pressure*.

Mornings are better

Start early in the day. Unless you are in an arid or semi-arid climate, the morning hours are generally better cooking hours than afternoon hours. Dew and humidity evaporation throughout the morning often result in afternoon clouds. Also, during the morning hours the cooker will be exposed to increasing energy as the sun rises in the sky, as opposed to decreasing energy as the sun sets.

I find it is advantageous to prepare the day’s meals in the morning, when my energy is high and my crew (a moody toddler) is generally in good spirits. After an exhausting day of sailing or playing on the beach, it is a relief to pop the lid off the cooker and enjoy a warm meal with minimal effort.

Keep an eye on the sky and the thermometer. When sailing, if the wind isn’t blowing, you either start the motor or drift. When cooking, if the sun isn’t shining, you should finish off with a flame or risk bacterial contamination. If weather conditions allow the oven to cool off below 150°F, there is the danger of bacterial growth, and food may not be safe to eat. This is true for all methods of food preparation and is not unique to solar cooking. Food left in this temperature range for two hours or longer can incubate bacteria. But don’t let safety concerns scare you

Another Ilse family favorite, solar pizza, shown below. Foods that work well for a slow cooker or pressure cooker are perfect for a solar cooker.





away. Sailors, who weigh many risks while under way, are capable of solar cooking. If the food has cooled off to unsafe temperatures, reheat the food over a flame to kill off any bacterial contamination.

Played loosely

I admit to having played these rules quite loosely. Where we sail, a morning that makes a partly cloudy appearance often turns out to be an overall sunny day. I have learned that *not* putting the cooker out in the face of a cloudy morning means risking a lost solar dinner opportunity. At the edges of the Great Lakes sailing season, when nighttime temperatures dip to near 40°F, there have been stretches when

Heather notes that cooking at anchor is a bit more challenging than at the dock. Her SOS Sport, shown here, weighs only 11 pounds with a 17 x 28-inch footprint.

I left an unfinished dish on deck in the cooker overnight and through the next cloudy day before I gave up and simmered it on the flame. Since we follow a macrobiotic diet free of most animal products, I don't need to worry quite as much about contamination. If meat, fish, or eggs were on the menu, I would adjust my practices. Use your common sense and concern for the safety of the people you feed to judge your solar-cooking choices. One trick to take advantage of even the slightest possibility of sunshine is to set the cooker out with a pot of water. If the sun appears and the cooker heats up, you can add the remaining soup/stew ingredients later, or you can use the pre-heated water for a stovetop version or make coffee, tea, or cocoa instead.

Cooking in port

Cooking at the dock or marina is

much the same as cooking at home in the yard. However, at the edge of a dock, the wind may play a more significant role in cooking time. Wind carries heat away from the cooker, diminishing performance. It is important to handle the lid carefully and remember to clip it on — whether at dock, at anchor, or under way — as the wind can easily lift it off the housing. When you're checking food, the lightweight lid has enough windage to be torn from your hands and blown overboard in high winds. Curious or hungry wildlife may be another reason for keeping the lid clipped on. If we are in an area where bear-safe practices are encouraged, I never leave the cooker unattended. Keep sunglasses, hotpads, stirrers, and extra seasonings handy near the cooker. The more time you spend with the lid off and the pot uncovered, the more time your meal will need to cook.

Cooking under way

"Stay on the boat" is our first rule of crew safety, and it applies to the solar cooker as well. We keep the cooker on

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the boat by securing it with bungees. We have considered installing a grill mount and constructing some sort of table to which we could attach and rotate the cooker. This would keep it off the deck and out of the way. But we have found that having it on deck is not an imposition, and the flexibility of the bungee system allows us to follow the second rule of solar cooking under way.

The second rule is, "Keep the cooker in the sun." We can move the cooker about the deck as necessary and almost always find a toerail or something to which the bungee will connect. Typically we strap the cooker forward or to either side of the companionway hatch, switching sides as we tack if the sun is forward or abeam. If tacking is frequent and the sky is clear, the cooker often retains enough heat on the shady tack to avoid moving it at all.

The third rule is, "Keep the contents in the pot." The heeling motion of a sailboat offers a unique challenge to solar chefs. If the pot leans enough to leak, the moisture will condense on

Resources for solar cooking


TO PURCHASE AN SOS SPORT OR TO LEARN MORE ABOUT THE WORK OF THE SOLAR OVEN Society, visit <<http://www.solarovens.org>> or call 612-623-4700. The cook-booklet that comes with the Sport serves as a handy guide to getting started.

The Solar Cooking Archive, sponsored by Solar Cookers International, provides a wealth of information on solar cooker designs and solar cooking. It also offers an email discussion board, <<http://www.solarcooking.org>>.

Golden Sun Living, home of solar-cooking guru Greg Lynch, offers classes and workshops on solar cooking and self-sufficiency. Visit <<http://www.goldensunliving.com>> or call Greg at 763-785-1938.

Home Power, the landlubber's equivalent of *Good Old Boat*, has many solar cooker articles in its archives. Kathleen Jarschke-Schultze's "Home and Heart" column frequently discusses solar cooking. Their store carries *Heaven's Flame* (the book referred to on Page 50), <<http://www.homepower.com>>.

A few solar cookbooks are available. *The Morning Hill Solar Cookery Book* by Jennifer Stein Barker is one favorite I referred to frequently as a beginner. In addition to tasty recipes and helpful hints, it also has some delightful essays. Ordering information is available at <<http://www.highdesertnet.com/morninghill/solarcook.htm>>. I've found that the pressure-cooker recipes from two of my favorite cookbook authors make excellent one-pot solar meals. Check out *Cooking the Whole Foods Way* by Christina Pirello as well as *Great Vegetarian Cooking under Pressure* and *Recipes from an Ecological Kitchen* by Lorna Sass. I encourage you to find your own way by pulling something tried and true from your recipe files and experimenting with it a few times, adjusting the liquid to find the right balance.

May the wind fill your sails, and may the sun shine on your cooker! 

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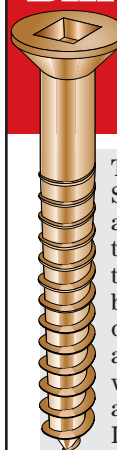
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and fog up the clear lid. This will reduce the amount of solar radiation that can reach the interior of the cooker. I have toyed with the idea of fabricating some sort of clamp for the Sport's enamelware pots, similar to what you see on the glass jars that hold fancy scented candles. I have also considered painting a couple of old pressure-cooker pots black, as they have gasketed lids that close securely. But for now, we crisscross two tiny bungee cords over the lid, and it usually works just fine, coupled with a little supervision when the boat is severely heeled.

Cooking at anchor

Swinging on the rode provides the greatest challenge to the nautical solar chef. If conditions are such that the boat follows a wide arc, it can be difficult to orient the cooker so it faces the sun more than 50 percent of the time. You might have better luck if you can stabilize the boat with a riding sail, but that won't help in the case of a wind shift. Solar cooking at anchor requires a more attentive chef. Unfortunately, the anchorage is where chefs are more likely to be absent, participating in adventures ashore. It's best to plan for quick-cooking meals that can be easily finished at the stovetop if necessary. 

Approximate cooking times

Easy to cook (2 hours or less): Eggs, rice, fruit, vegetables (above ground), fish, and chicken.

Medium (3-4 hours): Potatoes, root vegetables, lentils and some other beans, most meat, and bread.

Hard to cook (5-8 hours): Large roasts, soups and stews, and most dried beans.

Three solar recipes

Solar-cooked Chicken Breasts with Tomatoes, Olives, and Capers

This dish showcases how a solar oven infuses the flavors of the ingredients with the meat. It cooks quickly in 45 minutes to 75 minutes in good sun.

Ingredients:

- 4 boneless, skinless chicken breasts, about 2 pounds, packed in oil. Wash and dry the breasts on paper towels. Rub each piece with olive oil.

Sauce:

- 1 sprig fresh basil, chopped
- 4 ounces pitted, sliced kalamata olives
- 2 ounces capers, drained
- salt and fresh-ground pepper to taste
- 14 ounces fresh or petite diced canned tomatoes, minced
- 8 tablespoons olive oil

Preparation:

Place 2 tablespoons of olive oil in the bottoms of each of the two cookpots and coat the bottoms. Add 2 breasts to each pot, divide the sauce ingredients between them, and add salt and pepper to taste. Pour 2 more tablespoons of olive oil over the ingredients in each pot. Mix the contents of each pot well. Cover the pots and place in solar oven. Clip the clear oven cover in place, face the oven toward the sun with the shadow directly behind the oven. Do not open the oven until 45 minutes have passed. This dish will be done in 45 minutes to 1 hour and 15 minutes, depending on the sun strength. Serve at once. Serves 4.

Bulgur with Greens and Cheese

(From *Morning Hill Solar Cookery Book*, by Jennifer Stein Barker.)

Author's note: *Bulgur is a cooked and coarsely ground wheat. Since eliminating animal products from our diet, I stopped adding the cheese to this dish. We have found it to be just as tasty without. Alternatively, Melissa's brand Soy Shred can be added, though I find it melts less easily and yields better results if added before the greens, possibly with a bit more time in the sun. Tender green veggies should always be added at the end of cooking or they will turn brown. Any tender greens work well; I have used spinach, kale, and beet greens interchangeably.*

Ingredients:

- 1½ cups bulgur, washed
- ¾ cups water
- 3 cloves garlic, minced
- ½ teaspoon minced ginger root
- 1 medium carrot, grated coarsely
- 1½ tablespoons tamari soy sauce
- 2 cups loosely packed tender greens, shredded, or ¼ cup chopped fresh herbs (basil, oregano)
- 3 ounces jack cheese, diced ¼-inch (optional)

Preparation:

In a 2-liter or larger casserole, combine the bulgur, water, garlic, gingerroot, tamari, and carrot. Bake, covered, in solar cooker until the water is absorbed. Remove from the cooker, stir in the shredded greens or herbs and replace the cover until the greens are wilted (do not put back in the sun). Stir in the diced cheese immediately before serving. Serves 2 to 3.

Rice Pilaf

(Adapted from *Cooking the Whole Foods Way*, by Christina Pirello.)

Author's note: *I consider it optional to pre-cook the almonds and veggies in oil. To eliminate this step, just layer the veggies in the pot before adding the grains.*

Ingredients:

- 1 teaspoon light sesame oil (optional)
- 1 onion, diced
- sea salt
- 2 tablespoons slivered almonds
- 1 cup thinly sliced button mushrooms, brushed clean
- 1 cup fresh corn kernels
- 1 carrot, diced
- 1 cup long-grain brown rice
- ¼ cup wild rice
- 2 cups spring or filtered water
- parsley sprigs, for garnish

Preparation:

In a 3-quart pot, heat the oil over a medium flame. Add the onion and a pinch of salt and cook until fragrant, 2 to 3 minutes. Add the almonds and cook, stirring, until coated with oil. Stir in the mushrooms, corn, carrot, and a pinch of salt and cook 1 to 2 minutes more. Spread the vegetables evenly over the bottom of the pot and top with the rice. Gently add the water and 1 or 2 pinches of salt. Bake, covered, in solar cooker until the water is absorbed. Remove from the cooker and stir well. Garnish with parsley. Serves 4 to 5.



Cooking under pressure

Long, long ago in another lifetime far, far away — well, 17 years ago in Montana when sailing hadn't infected our lives — we received a 6-quart pressure cooker as a wedding present. I remember staring at it and wondering if it would become an enemy or a friend. Memories of steaming pork chops, potatoes, and sauerkraut fresh from my mother's pressure cooker gave me hope.

My mother had a friendly pressure cooker. She used it weekly to speed-cook dinners for our large family. In fact, when microwaves first came onto the market, she didn't see any reason to get one. "Why microwave when I can pressure cook?" she'd say.

Now that I had my own, everything seemed different. I listened to my friends' stories of boiling hot soup splattered on the ceiling and steam burns. Were some pressure cookers enemies to humankind? I went to my mother for help and learned that pressure cookers are safe and easy to use as long as you follow a few basic rules.

Mom's safety rules

- Always check the vent for debris before using and while cleaning after use. Hold the lid up to the light and look through the vent tube to be sure there are no clogs.

by Theresa Fort

- Always check your gasket to assure that it is pliable and free of any cuts or degradation. If it takes a long time to reach pressure or if steam escapes during pressure cooking, you need to replace your gasket.

- Never interrupt the pressure cooker while it cools and releases pressure on its own. It is cheating and

dangerous to jiggle the jiggle-top to speed up release. (*But, if no one sees you jiggle it a tiny bit, does that count?*)

- Always open the top away from your face. No matter how badly you want to see your creation, you have to wait for the remaining steam to escape.
- Never overfill your pressure cooker. When cooking rice and dried vegetables, fill only to the half-full mark. With stews, soups, and other dishes, fill only $\frac{2}{3}$ -full. Overfilling a pressure cooker can cause food to clog the vent tube when the food

*It bakes bread, makes hearty
soups, distills water,
and holds the kids' "critters."
Who could ask for more?*

expands or boils, especially with beans.

- Do not pressure cook cranberries, lima beans, applesauce, cereals, or noodles in jiggle-top pressure cookers. These foods tend to foam, and sputter which could clog the vent pipe.

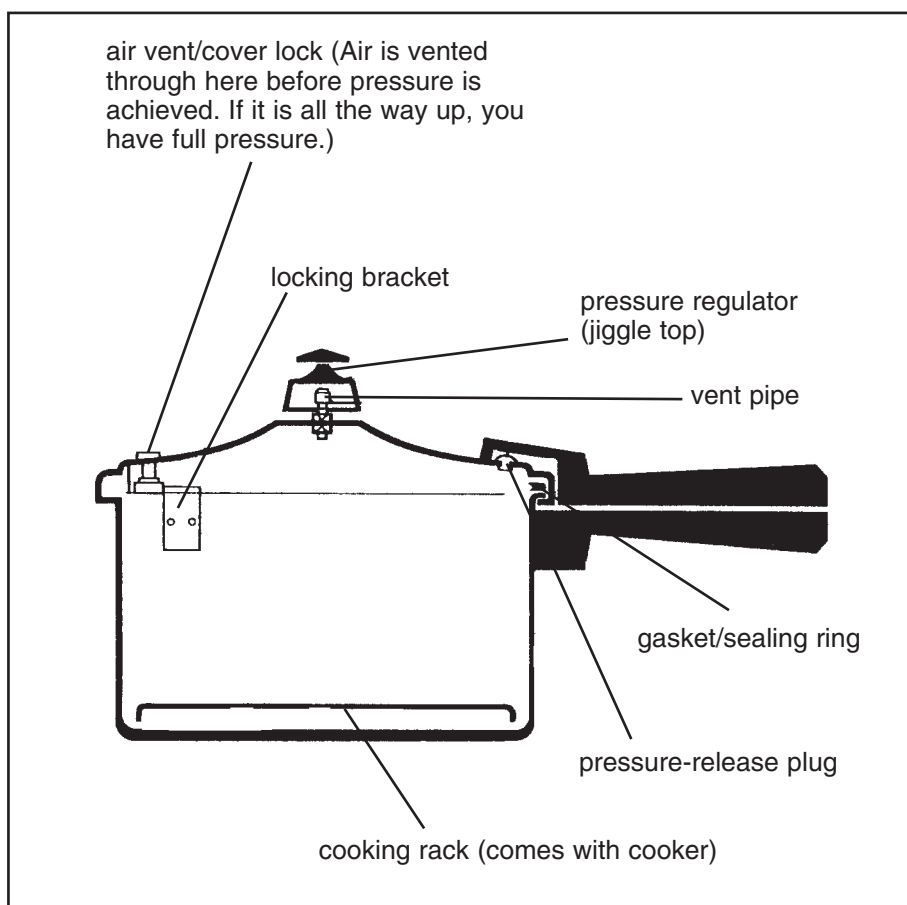
Her guidelines were straightforward and simple. But my pressure cooker and I didn't develop a very strong relationship. In fact, for years I hesitated to use it. I only grudgingly brought it from the cupboard when my husband, Chuck, requested a favorite pressure-cooked dinner. "Why pressure cook when I can microwave?" I said.

Then sailing came into our lives. The microwave wouldn't work aboard our new (to us) 30-foot sailboat. We spent weekends sailing, fishing, and crabbing in the Puget Sound area. Now with two kids who were starving after a full day of fresh air and boating, we needed hearty meals fast. My pressure cooker got dusted off and brought aboard to live. That's when the friendship began. Slowly I began to understand my pressure cooker's versatility.

When we set off to cruise, this new friend became a necessity. Its locking lid prevented any boiling hot food from splattering when we were cooking under way in a roly sea. In the tropics, it baked bread with less energy than our oven would have used. In Alaska, it made quick hearty soups in less than a half hour that tasted as though they had cooked all day.

It cleans up easily after being used as a bucket for holding critters the kids have caught. Set up as a distiller, it has the potential to save our lives if we need it to make drinkable water at sea. Top that with the fact that it requires only a little maintenance, and that makes it a great addition to our crew list.

Hold the lid to the light to see if you can see through the vent pipe. If not, use a pipe cleaner, twist tie, toothpick, or other thin object to clear it.



Maintenance tips

When bringing your pressure cooker up to pressure, instead of using high heat, turn the burner to between high and medium high. This prevents warping the bottom. It may take a little longer for it to reach the proper pressure, but it will extend the life of your pressure cooker.

Store your pressure cooker with the lid nestled upside down and over the top of the pot. Keep the gasket out of the lid to prolong its life by letting air get to all edges. Storing it this way will prevent warping of the gasket, release odors that may linger, and allow air to get to all parts. To save room, you may be able to nest spare bowls or bottles

inside along with your rack and pressure regulator.

While gaskets don't need to be replaced very often, it is a good idea to carry a replacement gasket and pressure-release plug on extended trips. We have experimented with different gasket materials from auto supply stores but have been unable to find any satisfactory materials. (*Note: not all gasket materials are safe for foods.*) If you decide to experiment with other types of gasket material, test your experimental gasket with a few cups of water inside your pressure cooker. Bring your cooker up to pressure and maintain it for 15 minutes before you try cooking a dinner. Needless to say, you'd have a





Theresa uses a medium-sized stainless steel bowl as a heatproof dish which fits inside the pressure cooker and is called for by some recipes. A ceramic soufflé dish also works for recipes of this nature. (See example recipes on Page 41.)

big mess if the gasket didn't work with dinner inside.

Don't forget to check your pressure release plug whenever you check your gasket for wear. This is the plug that will release steam and built-up pressure if your vent pipe becomes clogged. It is usually made of the same rubber as your gasket and may need to be replaced at the same time. Ours is located on the inside of the lid near the handle.

A little vegetable oil occasionally on your gasket will keep it pliable and soft longer. But be careful: too much oil will actually reduce the gasket's ability to form a good seal.

(Note: check the owner's manual for your cooker, some discourage the use of oil on gaskets.)

Check your pressure cooker for screws that will rust in a marine environment and replace them with stainless screws before bringing it aboard. Our pressure cooker had two screws in the main handle and one on the helper handle that needed replacing with stainless screws. If your pressure cooker is aluminum, consider putting a barrier of silicone or other material between the stainless screws and the aluminum of the pot to reduce the corrosion that can occur when these two metals join in marine conditions.

How it works

The concept behind pressure cookers is simple. When liquids come to a boil, they give off steam. Because a pressure cooker has a locking lid, that steam builds up and creates a higher pressure inside the pot. With the pressure regulator jiggling atop your cooker, it releases small amounts of steam to maintain the proper amount of pressure for the system. That amount is usually 15 pounds of pressure for most brands and models — others have adjustable pressure regulators, and some use lower pressure. With that higher pressure, a higher temperature can be realized.

“I listened to my friends’ stories of boiling-hot soup splattered on the ceiling and steam burns. Were some pressure cookers enemies to humankind? I went to my mother for help and learned that pressure cookers are safe and easy to use as long as you follow a few basic rules.”

Under normal sealevel conditions, the water in food can only reach boiling point temperature to cook — that's 212°F. At 15 pounds of pressure, that same water can reach and maintain temperatures of 250°F. Thus, food cooks faster.

Inside the pressure cooker, there is also an almost airless environment. The quickness in cooking combined with that environment allows food to maintain its nutrition value without

water-soluble vitamins and minerals boiling away. It also allows for stronger flavors to develop, allowing cooks to use smaller amounts of salt and spices.

The rack

Most pressure cookers come with a rack that can be very helpful when cooking rice, vegetables, meats, breads, puddings, or even cheesecakes. Its job is to keep food off the bottom of the pan and away from the intensity of the flame. This is especially helpful during steaming and baking. Vegetables and rice can be quickly steamed in a separate heatproof dish that will fit inside your pressure cooker set atop the rack. The rack is also helpful when baking breads or puddings in a separate dish. And it helps prevent scorching when cooking roasts and other larger pieces of meats that can sit directly on the rack.

Considerations when buying

Deep-pressure pans can be used both for water-bath and pressure canning. It's good to have a large pot aboard for cooking large amounts of food without pressure as well. Heavier models with thick bottoms will scorch food less easily and serve better as ovens. Two handles are a necessity when it comes to carrying a full pot of steaming hot food.

Aluminum is lighter in weight

and conducts heat better than stainless steel, but some people may want to limit their exposure to aluminum due to possible links to Alzheimer's

disease. If this concerns you, you may want to do your own research on the subject.

A new generation of pressure cookers has come on the market in the last few years that may be safer for boaters though more expensive (some brands are in the \$150-\$200 range). Instead of the weighted jiggle-top regulator, they use a spring valve that allows for more precise timing and pressurization. The new non-



Daughter, Amie, gives the family dog a bath in the pressure cooker.

jiggle-top cookers also have a way to release pressure without any need to carry them to a sink or bucket of cold water to reduce pressure (though this feature cannot be used with any foods that foam). Also, since they have a spring valve that is self-cleaning and nearly impossible to get clogged, it is safe to cook the forbidden foods like cranberries, applesauce, lima beans, and cereals.

Great emergency rescues

As any good friend would, your pressure cooker is able to help out in any number of “emergencies.”

- **Saving your food when the fridge dies** — A pressure cooker can become a water-bath canner or pressure canner if food is in danger of spoiling. We like to bring along

pint canning jars with lids whenever we leave on an extended trip. Our 6-quart cooker can hold three regular-sized pint jars for water bath canning and pressure canning. Even though we have no fridge, we have the ability to can extra fish and produce, and to make jams or pickles if we arrive in an area rich in produce. To turn your cooker into a canner, experiment with different sizes of canning jars. For water-bath canning, the water level needs to be an inch above the jars while boiling to insure proper immersion.

Water-bath canning is used for most fruits and all types of pickles. Pressure is not used for this type of canning. There are many books available that have excellent canning recipes. One I would recommend is *Putting Food By* by Janet Groene.

Pressure canning is used for all non-acidic foods. It can be done easily with your pressure cooker, but you are limited to only one pressure setting. For this reason you will need to refer to your owner’s manual for recipes, times, and proper procedures. Other recipe books may not have the proper times for the amount of pressure that you would be using.

- **Storing leftovers** — You have just finished a wonderful dinner of soup or stew, but there are leftovers. What do you do with those leftovers if you have no fridge? Well, when we have leftovers from our pressure cooking, I bring the food back up to pressure in my cooker and heat at full pressure for two minutes. Then I set the cooker aside with its regulator undisturbed and lid locked. I leave it for

tomorrow’s lunch or dinner. Many times we have kept leftovers for up to 24 hours this way.

I use my pressure cooker for any leftover meat as well. That same evening, I simply bring out my pressure cooker and make a quick soup of the meat with any vegetables I have around. After the soup cooks under pressure, I set it aside on my stovetop and leave it for tomorrow’s lunch or dinner.

In both cases, I let the pressure cooker cool on its own. I do not break the seal by opening the lid or removing the regulator. And, it is always served within 24 hours. The only drawback to this method is that you cannot use it for dishes that have tomatoes as one of the ingredients. These rules are very important to the safety and healthfulness of the leftover food.

- **Turning your pressure cooker into a distiller for emergency drinking water** — See sidebar at right for more information on distillation using a pressure cooker.
- **When running low on stove fuel** — With a pressure cooker’s locking lid, it can become an ideal fire-less cooking pot. Fire-less cooking is a method of slow cooking that has been around long before slow-cookers were invented. All sorts of one-pot dishes like stews, chili, soups, even rice and noodle dishes can be made with only a little amount of heating and some blankets and pillows. Here are some basic instructions:
In the morning, bring your dinner up to pressure and heat for five minutes at full pressure. Take from heat and wrap your pot, upright, in a blanket or sleeping bag, being careful not to burn yourself or disrupt the jiggle-top or pressure safety valve. I place my hand on the regulator as I put the first wrap on the cooker to make sure I do not disrupt it. Pile



Son, Alex, uses the pressure cooker as an occasional aquarium.



pillows all around the pot (including underneath), and then wrap any other blankets or sleeping bags you may have aboard around your cooker. Try to insulate your cooker so that minimal heat is released. Wedge this huge bundle somewhere safe while you are sailing. In 8-10 hours you'll have a steaming dinner all ready for eating. Aboard *Lindsay Christine* we use two sleeping bags and all four of our family pillows. One of the kids' berths, depending on the tack, is the ideal wedging place for our fire-less cooking bundle.

By the way, using this method with dried vegetables such as beans still requires a pre-soak before preparation, which would have to be done the night before.

- **A weapon** — As a safe weapon aboard a boat, pressure cookers are second only to a large cast iron frying pan. It will never be confiscated when entering a new country, you don't have to reload, and even a child can use it.
- **An extra bucket** — Buckets are usually stored outside near the cockpit of most boats. But, when stored inside the galley of your boat, a pressure cooker may be closer at hand if water enters your cabin while you are below. A pressure cooker is a perfect bailer with two handles for carrying heavy loads of water.

- **During a medical emergency** — While pressure cookers are nowhere near as effective as an autoclave in a hospital or lab, they do work to sterilize items in the same general way providing a higher temperature with an increase in pressure. And they could be your only solution for sterilizing supplies when a medical emergency at sea occurs.

Pressure cookers attain 15 pounds of pressure and 250°F, the very minimum requirement to sterilize medical equipment, water, and bandages or cloths. If a medical emergency were to occur, you could sterilize your supplies by putting them into a heatproof dish fitted inside the pressure cooker with 2 cups of water in the bottom and the rack in place. Water could be sterilized inside canning jars filled with 1 inch of air space remaining and sealed with lid and ring. The minimum amount of time at full pressure (I would have the jiggle-top regulator rocking at a consistent speed because I wouldn't be worried about overcooking anything) would be 20 minutes. But this is not a guaranteed procedure. There is no way to assure that everything received enough steam and heat under pressure to say that all supplies are sterile. However, as an alternative to boiling supplies in water, it is a superior method because everything reaches a higher temperature. This is in no way condoning the use of a pressure cooker as a substitute

autoclave on a regular basis. But it is a possible alternative in an emergency situation when someone is far away from medical services.

Aboard *Lindsay Christine*, we try to make most of our items aboard have a dual purpose. Our pressure cooker has more than satisfied that requirement. Here's a list of the ways we have used ours: pressure cooker, non-pressurized cooking pot, distiller, slow cooker, steamer, oven, canner, bucket, weapon, temporary leftover storage unit, temporary critter home, weight training equipment, sterilizer.

Could a microwave do that? I doubt it. These days I agree with my mom more and more. I say, "Why microwave when I can pressure cook?"



In another life long, long ago and far away, Theresa was a home economist with a specialization in consumer education.

After receiving her BA in home economics at the University of Montana, she went on to become a master food preserver with the co-operative extension office in Montana. Still, it took life aboard a sailboat to convince her to use her own pressure cooker. Theresa and family have lived and cruised aboard Lindsay Christine, a Mercator Offshore 30, since 1995.



Chicken and Mushrooms

This one-pot dish requires few ingredients.

- 2 chicken breasts, skinned, boned, and cut into large chunks
- 1 cup thickly sliced mushrooms
- 1/2 onion, sliced
- 1 bell pepper, cut into chunks
- 1/4 cup low-sodium soy sauce
- 1 cup water
- 1 tablespoon brown sugar
- 1/2 teaspoon garlic powder
- 1 cup rice (I use a mixture of 1/2 long-grain white and 1/2 brown rice)
- 1 1/2 cups water (pressure cookers use less water than would be normal with conventional cooking)

Place first eight ingredients in cooker. Place rice and water in a heatproof dish that fits loosely inside your pressure cooker. Place dish in pressure cooker with chicken mixture surrounding it. The dish should stick up a few inches above the level of the chicken mixture. No food or containers should be over 2/3 full. Close securely. Place pressure regulator on vent pipe and cook 10 minutes with pressure regulator rocking slowly. Let pressure drop. Lift out rice bowl, and let sit 5 minutes. Thicken chicken dish, if desired, with cornstarch mixed with a little water. Serve over cooked rice. Serves 4.

Rice can be cooked separately in the pressure cooker by combining 1 cup rice and 1 1/2 cups water in a heatproof dish. Place dish inside the pressure cooker with 1 cup water in the bottom. Pressure cook 10 minutes if using 1/2 white and 1/2 brown rice, 5 minutes if using white rice only. Let pressure drop. Open lid and let rice sit 5 minutes. Fluff with fork.

Sun-dried Tomato/Herb Bread

This bread is an example of steam-baking in the pressure cooker. It is done under pressure. The amount of time for steam-baking is a bit shorter than when using an oven, and you save fuel by heating only the pressure cooker.

Pre-heat the pressure cooker on medium heat five minutes before putting in your food to be baked, covered with aluminum foil to retain heat. Turn your burner down very low. A consistent low flame will produce a moderate oven temperature. Cakes and other sweets seem to take a little longer than breads this way.

We love this bread sliced and toasted under the broiler with cheese melted on top. The crust is chewy and not browned on top. You can make plain bread this way by leaving out the seasonings. I like to use 1/2 whole

wheat to hide the fact that the bread is not browned on top.

- 1 cup warm water (110-115° F)
- 1 1/2 teaspoons active dry yeast
- 1/2 teaspoon salt
- 2 tablespoons olive oil
- About 3 1/2 cups unbleached bread flour
- 1 cup fresh basil, chopped finely
- 4 cloves garlic, minced
- 6 reconstituted dry-packed sun-dried tomatoes, chopped

1/2 cup shredded Parmesan cheese
Dissolve yeast and sugar in small bowl with 1/4 cup of the warm water. Add remaining water to large mixing bowl. Add salt and oil and allow to cool while yeast is dissolving. Add yeast mixture and 3 cups of flour along with basil, garlic, dried tomatoes, and cheese. Turn out on floured counter and knead for 10 minutes or until smooth and elastic, adding flour as needed. Place dough in a greased 2-quart oven-safe casserole dish or bowl that will fit in your pressure cooker. Let rise until doubled in volume in a warm draft-free place 40 minutes to 1 hour. When doubled, punch down, turn out onto counter, and knead a few times. Place dough back in dish and let rise a second time for 1/2 hour.

Pour 2 cups fresh or salt water into pressure cooker with rack. Place container of dough in the pressure cooker and seal with lid. Bring up to 15 pounds pressure. Turn heat down to maintain pressure, and cook 40 minutes. Cool cooker immediately by placing in a pan of cold water or letting cold water run over cooker. Open lid carefully and remove bread. Cool in baking container for 10 minutes, then invert and take out of dish. Cool 15 minutes before slicing. Makes 1 loaf.

Mercator Brownies

This is an example of baking with a pressure cooker. To bake in the pressure cooker, remove the gasket, leave the pressure regulator off the top, and use the cooking rack and a separate heatproof dish that fits inside the cooker for the food. Doubling the recipe and baking it in an oven will produce a 13x9 pan of brownies. It is a scaled-down recipe tailored to using my medium stainless steel bowl (that holds 6 cups) as a baking pan. A soufflé dish would work well as a heatproof dish.

- 2 ounces unsweetened baking chocolate
- 3 tablespoons butter
- 3/4 cup brown sugar
- 1 egg

- 3/4 teaspoon vanilla extract
- 1/2 cup unbleached flour
- 1/2 cup nuts (optional)

Pre-heat pressure cooker over a medium flame with rack inside and top locked on but without a gasket or the pressure regulator. Do not put liquid inside. Lightly grease the heatproof dish that will fit inside your pressure cooker for the batter.

In a pot over very low heat, melt chocolate and butter, stirring constantly. As soon as it's melted and smooth, remove from heat and add sugar. Stir until well blended. Add egg and vanilla; mix well. Add flour and nuts, if desired. Stir mixture well. Pour into heatproof bowl. Cover with aluminum foil. Open your pressure cooker and place dish inside on rack. Turn heat down to low and bake 45 minutes or until a wooden toothpick inserted in the center comes out clean. Remove from pressure cooker and cool. Enjoy!

To cook dried vegetables

The pressure cooker is ideal for cooked dried beans, peas, and lentils.

Remember to fill the cooker only halfway.

Pre-soaking dried vegetables:

- 2 cups dried vegetables
- 2 teaspoons salt
- 1/4 cup cooking oil

Water to cover vegetables

Place dried vegetables in cooker. Add remaining ingredients and soak 8 hours. I start soaking beans in the morning in our cooker, keeping it secured with fiddles on the stovetop.

Cooking pre-soaked vegetables:

Pour off and discard water from soaking. (This water could cause indigestion.) Place vegetables in cooker, adding enough water to cover well. Add seasonings and any other additions you desire. Adding 1 tablespoon cooking oil will decrease the foaming action of the vegetables. **Do not fill the cooker over half-full.** Close cover securely. Place pressure regulator on vent pipe and cook under pressure according to the following timetable. Let pressure drop.

Dried vegetable	Cooking time
Pinto beans	25 minutes
Black beans	35 minutes
Great northern beans	20 minutes
Kidney beans	25 minutes
Navy beans	30 minutes
Pink beans	30 minutes
Black-eyed peas	20 minutes



MICROWAVING

Microwaving means to cook, heat or defrost foods with microwave energy. Microwave cooking is moist cooking, liquids do not evaporate or thicken. Reduce liquids in recipes by one-quarter, except when cooking rice or pasta which require established amounts of liquid for rehydration. Just like any other type of cooking it has its own characteristics. Study your microwave manual handbook .

Microwave Tips:

- Always use microwave-safe utensils, plastic or glass.
- Choose the minimum cooking time. Food continues to cook after it is removed from the microwave.
- Foods that are going to be cooked for more than 5 minutes should not be covered with plastic wrap because it melts. Cover foods with a paper towel or waxed paper to allow steam to escape and to prevent popping of natural juices that soil the oven.
- Use white paper plates as lids to prevent spattering.
- When using plastic wrap, keep one corner of cover open, or make some small slits in the wrap.
- Keep your microwave clean. Built-up grease or food spatters in the microwave can slow cooking times.
- Do not use metal dishes or aluminum foil except as specifically recommended by the manufacturer of your microwave.
- If your microwave does not have a turn table. You can purchase a portable table in a kitchen supply store.
- Cover saucy main dishes, saucy appetizers and dips with plastic wrap. Cover other main dishes and meats with waxed paper.
- Do not cover bakery foods, griddle foods (pancakes, etc.) or beverages.
- Freshen chips and crackers by microwaving on high 15-30 seconds. Let stand for 2 to 3 minutes.



- Cereal; Use large enough container to avoid spill over. Start with hottest tap water to shorten cooking time. Stir half-way through cooking time. Do not cover.
- Do not cover watery vegetables which need no water added for steaming. Rinse foods and place directly in bowl.
- When doing corn on the cob remove all but the last two layers of husks, rinse under fresh water. Place in microwave and cook, the husks become a built in wrapper..
- Use your microwave oven to soften cream cheese and to soften or melt butter.
- Roast shelled nuts for 6-10 minutes, stirring frequently.
- Peel fruit or tomatoes by placing in 1 cup hot water. Microwave on high for 30-45 seconds; remove skins easily.
- Melt chocolate right in its paper wrapper. You have nothing to clean up and there is no danger of scorching or overcooking. Make sure it is not foil wrapped.
- Cheese; soften processed cheese, cheese dips, cream cheese or cheese spreads at low for 1 to 2 minutes. Remove cheese from jar or wrapper, place in bowl or plate before microwaving.
- Stirring; when microwaving you stir cooked portions from the outside to the center.
- Prick foods to release pressure. Steam builds up in pressure in foods which are tightly covered by a skin or membrane. Prick potatoes, eggplants, egg yolks and chicken livers to prevent bursting. Baked potato microwaves fluffy, moist and tender. Use a micro-wave potato holder its a nice tool
- Precook barbecued ribs or chicken in the microwave until almost done, then place on the grill to sear.
- Soften brown sugar by placing it in a dish with a slice of bread or apple and microwaving for 15-20 seconds, stirring once.
- Dry bread for crumbs or croutons. Place cubed or crumbled bread on paper plates. Microwave for 6 to 7 minutes, stirring occasionally.
- Drying fresh herbs; wash, dry and remove leaves from stems. May be layered between paper towels, and dried in the microwave on HIGH for 1 ½ to 2 minutes or until they feel



Microwaving

dry. Cool and store in airtight containers.

- Ripen an avocado by microwaving on LOW for 2 to 4 minutes.
- Refresh salty snacks pretzels, popcorn, and potato chips a few seconds on High. Let stand a few minutes to crisp.
- Leftover casserole dishes make a perfect filler for tortillas. Spoon on top of a tortilla. Add grated or thinly sliced cheese and roll up. Roll in a paper towel and microwave on high 20-30 seconds.
- Heat condensed canned soups that are diluted with water on high. Use the medium setting for soups made with milk.
- Don't sprinkle salt on vegetables before microwaving. It can leave freckled-looking burn spots. Wait until vegetables are done, then season.

Basic Pastry Shell

Yield: 1, 9-inch pastry shell

1 cup unsifted all-purpose flour
1 teaspoon sea salt
6 tablespoons shortening
2 tablespoons cold water

- In a small bowl place flour and salt. Cut in shortening, until mixture resembles the size of small peas. Sprinkle water over flour-shortening mixture. Stir with fork to form ball.
- Roll out on floured pastry cloth with rolling pin to $\frac{1}{8}$ -inch thickness. Line 9-inch pie plate shaping pastry to the edge of pie plate. Prick pastry with fork. Microwave at high 6-7 min.



Quiche Pastry Shell

Yield: 1,9-inch quiche pastry

1 cup unsifted all-purpose flour
½ teaspoon sea salt
3 tablespoons shortening
3 tablespoons cold butter
2½ tablespoons cold water
1 egg yolk
1 teaspoon Worcestershire sauce

- In small mixing bowl stir together flour and salt. Cut in shortening until it has the appearance of cornmeal. Cut in butter until particles form the size of peas.
- Sprinkle mixture with cold water. Blend lightly with fingers until dough holds together and can be formed into ball. Roll out to fit 9-inch quiche dish. Brush pastry with mixture of egg yolk and Worcestershire sauce. Microwave at high 5-7 min.

Spanish Rice Plus

Serves 2

1 (16oz.) can chopped tomatoes, undrained
1 (16oz.) can zucchini, undrained
1 (4½oz.) Envelope Spanish rice and sauce mix
½lb. cubed lean pork
1 small green pepper, cut into strips

- Combine tomatoes, zucchini, rice mix, and pork in a 1½-quart microwave-safe casserole. Cover with lid and microwave on high 12-14 minutes or until liquid is absorbed, stirring once. Fluff with fork, garnish with pepper strips. Let stand covered about 5 minutes before serving.

Note: You can substitute pork for cooked cubed chicken or pork, add about 1½ cups.



Microwaving

Granola Chews

Yield: 24 bars

3 cups old-fashioned oats
1 cup toasted sliced almonds
1 cup wheat germ
¼ cup sesame seed
¾ cup brown sugar, packed
½ cup unsalted butter
¼ cup honey
¼ cup lukewarm water
1 teaspoon sea salt
1 cup chopped dried apricots
½ cup raisins

- Combine brown sugar, butter, honey, water and salt in a 3-quart glass bowl or casserole dish. Microwave on high 4 min.; stir, microwave 4 minutes more.
- Stir in oats, almonds, wheat germ and sesame seed; microwave on medium 3 min. Stir, microwave 9 min. more or until oats are lightly toasted, stirring after every 2 minutes.
- Stir in apricots and raisins; pour mixture into 15½ x 10½ x 1-inch jelly roll pan, spreading to edges of pan. Press mixture down slightly, using a spatula. Let stand 30 minutes. Cut into bars.

NACHOS

Serves 2

Begin with large corn chips in a circle on a paper plate or small micro-plate. Dot with Jalapeño bean dip or refried bean mixture on tortilla corn chips, top with slices of hot pepper cheese. Cover with plastic wrap, leaving center space open. Microwave at High ¼ to ½ minute, or until cheese is melted. Top with salsa and sour cream.



Herb-Coated Fish

Serves 4

4 (7oz.) skinless grouper fillets, about $\frac{3}{4}$ inch thick

$\frac{1}{2}$ cup crushed corn flakes

$\frac{1}{2}$ cup grated Parmesan cheese

? cup minced fresh parsley

$\frac{1}{2}$ teaspoon garlic powder

$\frac{1}{2}$ teaspoon paprika

$\frac{1}{4}$ teaspoon sea salt

$\frac{1}{4}$ teaspoon ground black pepper

2 egg whites, lightly beaten

- Wash and pat fish dry. Combine next 7 ingredients in a shallow dish, mixing well. Dip fillets in egg white, then in crumb mixture, coating well. Arrange in a shallow 2-quart baking dish, with thickest portions to outside of dish.
- Cover with paper towels, and microwave at High for 8-10 minutes or until fish flakes easily when tested with a fork.

Microwave Chocolate Clusters

Yield: 2 dozen

1 package (8 squares) semi-sweet chocolate

3 tablespoons peanut butter

$1\frac{1}{2}$ to 2 cups cornflakes or raisin bran cereal or

$1\frac{1}{2}$ to 2 cups whole or coarsely chopped nuts or raisins or

2 to $2\frac{1}{2}$ cups popped popcorn or

2 cups miniature marshmallows

- Melt chocolate and peanut butter in a $1\frac{1}{2}$ quart microwave-safe bowl on high (100 percent) power for 2 min. Stir, microwave 30 seconds.
- Add cereal, or nuts and raisins, or popped popcorn, or miniature marshmallows and mix lightly until completely coated. Drop mixture from a teaspoon onto waxed paper. Chill until chocolate is firm.



Microwaving

Crunchy Italian-Style Party Mix

Yield: 10 cups

½ cup unsalted butter
1 tablespoon Worcestershire sauce
1 teaspoon dried Italian seasoning
½ teaspoon garlic powder
2½ cups small pretzels or pretzel sticks
2 cups round toasted oat cereal
2 cups bite-size wheat or bran square cereal
2 cups bite-size rice or corn square cereal or bite-size shredded wheat biscuits
1½ cups mixed nuts
¼ cup grated Parmesan cheese

- In a 2 cup glass measure, place butter, Worcestershire sauce, Italian seasoning and garlic powder. Microwave, uncovered on high for 1½ to 2 min. or until butter melts, stirring once.
- In a 3-quart microwave-safe casserole dish combine pretzels, cereals and nuts. Drizzle the butter mixture over the cereal mixture, tossing to coat evenly. Microwave, uncovered on high for 5 min. or until hot, stirring three times. Toss with Parmesan cheese. Spread on foil, mix will become crisp while cooling.

Chili Con Queso Dip

Yield: 3 cups

1lb. Block processed cheese, diced in 1½-in. pieces
1 can (1lb.) chili with beans

- In 1½ quart casserole stir together diced cheese and chili. Microwave on high 8-11 minutes. Let stand a few minutes, serve with large tortilla chips.



Micro-Nachos

Serves 4-6

¾ cup Cheddar cheese or Monterey Jack cheese, shredded
Tortilla chips to fill pie plate

1 cup Picante sauce or Chunky salsa at room temperature
Garnish with one or more; sliced black olives, shredded crab
meat or chopped cooked shrimp

- Cover a 9-inch plate with tortilla chips. Sprinkle with cheese evenly over the chips; microwave at high 30-60 seconds or just until cheese is melted.
- Top with Picante sauce or chunky salsa. garnish with any or all of the following: sliced black olives, shredded crabmeat or chopped cooked shrimp, sour cream.

Swordfish with Tomato Basil

Serves 4

1 large tomato, thinly sliced
6 large fresh basil leaves
1½ lbs. swordfish steaks (1-inch thick)
1 teaspoon olive oil
1 teaspoon fresh lemon juice
Dash sea salt, ground black pepper

- Place sliced tomato in a 11x 8½x2-inch glass dish. Add basil leaves on top. Center swordfish over tomatoes; add remaining ingredients.
- Cover tightly with microwave plastic wrap; microwave on high for 5 min. Remove, pierce plastic with tip of a sharp knife, let stand, covered for 2 min.



Parmesan Grouper Fillets

Serves 4

4 (6oz.) skinless grouper fillets, about $\frac{3}{4}$ inch thick)
1 tablespoon lemon juice
 $\frac{1}{2}$ cup grated Parmesan cheese
3 tablespoons chopped green onion
1 (2oz.) jar chopped pimento, drained
2 tablespoons butter, softened
1 tablespoon mayonnaise
 $\frac{1}{4}$ teaspoon sea salt
 $\frac{1}{8}$ teaspoon hot red sauce

- Arrange fish in a shallow 2-quart casserole with thickest portions to outside of dish. Brush fillets with lemon juice; cover, microwave at high for 4 min.
- Combine remaining ingredients mix well, spread over fillets. Microwave uncovered, at high for 4-6 min. or until fish flakes easily when tested with a fork. Let stand 1 minute before serving.

Creamy Chicken Almonds

Serves 4

$\frac{1}{2}$ cup thinly sliced celery
 $\frac{1}{4}$ cup chopped onion
1 (10 $\frac{3}{4}$ oz.) can cream of celery soup
 $\frac{1}{4}$ cup milk
 $\frac{1}{2}$ cup sliced almonds
1 cup cubed cooked chicken
 $\frac{1}{4}$ teaspoon Worcestershire sauce

- Combine celery and onion in 1 $\frac{1}{2}$ -qt. casserole dish. Cover, microwave 2 min. on high.
- Add remaining ingredients; mix well, cover, microwave on high 4-5 min. stirring after 2 min. Serve over cooked rice.



Beef Meatballs

Yield: 12 meatballs

1lb. ground beef
1 egg
½ cup fine bread crumbs
1 teaspoon sea salt
¼ teaspoon paprika
1/8 teaspoon ground black pepper

- In a medium bowl, mix all ingredients well. Shape into 12 balls, arrange in a circle in 9-inch pie plate. Cover with wax paper; microwave on high for 9-12 min. or until done.

Note: Add one of the VARIATIONS for a great flavor combination to the above basic recipe.

- 1 tbsp. Worcestershire sauce and ¼ cup chopped onion
- 1 tbsp. steak sauce and 1 clove minced garlic or ½ tsp. garlic powder
- 1 tbsp. salsa and ¼ cup finely chopped green pepper
- 2 tbsp. red wine and 1 tsp. oregano

Curried Meat Balls

Yield: 4 dozen

½ cup crushed herb seasoned stuffing mix
1/3 cup evaporated milk
¼ teaspoon sea salt
1½ to 2 teaspoons curry powder
1lb. ground chuck beef

- In a large bowl, combine all ingredients, shape meat mixture into 48 1-inch balls. In a 8-inch square dish place about 24 balls, cover with wax paper.
- Microwave at high 4-5 minutes. Repeat with other half of meat balls.



Microwaving

Microwave Rhubarb Crisp

Yield: Serves 8

2 cups of rhubarb cut into ½-inch pieces

2 tablespoons lemon juice

½ cup sugar

½ teaspoon grated lemon peel

1 cup brown sugar

¾ cup all-purpose flour

¼ cup rolled oats

½ cup unsalted butter, softened

- Combine rhubarb, lemon juice and sugar in a 9-inch square microwave-safe dish. Spread mixture evenly in dish. Sprinkle lemon peel on top.
- In a large bowl, combine brown sugar, flour, rolled oats and butter. Sprinkle evenly over the top of the rhubarb mixture.
- Bake, uncovered in the microwave oven for 15 minutes, turning the dish three times so that all sides are evenly cooked.



Vegetable Microwave Chart

<i>Vegetable</i>	<i>Quantity</i>	<i>Preparation</i>
Artichokes	1	Wash, cut tops of each leaf.
3½-inch diam.	2	
Asparagus spears and pieces	1lb.	Wash, cut off hard ends.
Green beans	1lb.	Wash, cut ends off, snap or leave whole.
Beets	4 medium	Wash, leave 1-inch of beet top.
Broccoli; whole chopped	1-2½lbs. 1-2½lbs.	Remove outer leaves and split stalks.
Brussel Sprouts	1lb.	Wash, remove outside leaves and stems.
Cabbage	½ med. head, grated 1 med. head, wedged	Remove outside leaves.
Carrots	4 sliced 6 sliced 8 sliced	Peel and cut tops off.
Cauliflower	1 med., florets 1 med., whole	Wash, cut into florets, remove core.
Celery	2½ cups 1-inch slices	Wash and slice.
Corn on Cob	1 ear 2 ears 3 ears 4 ears	Husk and cook no more than four at a time.
Eggplant	1 med., sliced 1 med., whole	Wash, peel, cut into slices. Pierce skin several times.



Microwaving

Vegetable Microwave Chart

<i>Vegetable</i>	<i>Quantity</i>	<i>Preparation</i>
Mushrooms	½lb. sliced	Wash, slice, add butter.
Okra	½lb.	Wash, trim stems. Leave whole or cut.
Onions	1lb. tiny, whole 1lb. med. to lg.	Peel, add butter. Peel, quarter, add butter.
Parsnips	4 med.,quartered	Peel and quarter.
Green Peas	1lb.	Shell and rinse.
Sweet Potatoes Put	1 2 4	Wash, pierce with fork. on paper towel in circle 1-inch apart.
White Potatoes Put	1 2 3 4	Wash, pierce with fork. on paper towel in circle 1-inch apart.
Boiled Potatoes	3	Peel, cut in quarters.
Spinach	1lb.	Wash, remove tough stems, drain.
Squash: Put Acorn or Butternut	1-1½lbs. whole	Wash, pierce with fork. on paper towel in circle 1-inch apart.
Spaghetti Squash	2-3lbs	Wash, pierce with fork. Place on a paper towel.
Turnips	4 cups cubed	Peel and cube.
Zucchini	3 cups sliced	Peel and slice.



Vegetable Microwave Chart

(Artichokes - Eggplant)

Time: Microwave on High	Amount of Water	Time Standing In Water	Hints
7-8 mins 11-12 mins.	¼ cup ½ cup	2-3 mins. 2-3 min.	When done, leaves peel off easily.
2-3 mins.	¼ cup	None	Stir once during cooking.
12-14 mins.	¼ cup	2-3 mins.	Stir once during cooking.
16-18 mins.	¼ cup	None	Peel after cooking.
9-10 mins.	¼ cup	3 mins.	Stir during cooking.
8-9 mins.	¼ cup	2-3 mins.	Stir once during cooking.
5-6 mins.	¼ cup	2-3 mins.	Stir once during cooking.
13-15 mins.	¼ cup	2-3 mins.	Stir after 7 mins.
7-9 mins. 9-10 mins. 10-11 mins.	1tbsp. 2tbsp. 3tbsp.	2-3 mins. 2-3 mins. 2-3 mins.	Stir once during cooking.
7-8 mins.	¼ cup	2-3 mins.	Stir after 5 min.
8-9 mins.	½ cup	3 mins.	Stir once during cooking.
8-9 mins.	¼ cup	2 mins.	Stir once during cooking.
3-4 mins. 6-7 mins. 9-10 mins. 11-12 mins.	¼ cup ¼ cup ¼ cup ¼ cup	2 mins. 2 mins. 2 mins. 2 mins.	Cook in a covered 6- dish. Rotate once during cooking.
5-6 mins.	2tbsp.	3 mins.	Rotate once during cooking.
6-7 mins.	None	None	Place on micro proof rack.



Microwaving

Vegetable Microwave Chart

(Mushrooms - Zucchini)

Time Microwave On High	Amount of Water	Time Standing In Water	Hints
2-4 mins.	None	2 mins.	Stir once during cooking.
3-5 mins.	¼ cup	2 mins.	
6-7 mins.	None	3 mins.	Stir once during cooking.
7-9 mins.	None	3 mins.	
8-9 mins.	¼ cup	2 mins.	Stir once during cooking.
7-8 mins.	¼ cup	2 mins.	Stir once during cooking.
8-9 mins.	½ cup	2-3 mins.	
4-5 mins.	None	3 mins.	Rotate once during cooking.
6-7 mins.	None	3 mins.	
8-10 mins.	None	3 mins.	
4-6 mins.	None	3 mins.	Rotate once during cooking.
6-8 mins.	None	3 mins.	
8-12 mins.	None	3 mins.	
12-16 mins.	None	3 mins.	
12-16 mins.	1 cup	None	Stir once during cooking.
6-7 mins.	None	2 mins.	Stir once during cooking.
10-12 mins.	None	2 mins.	Slice in half, remove seeds.
6 mins. Per pd.	None	5 mins.	Serve with butter, Parmesan cheese or spaghetti sauce.
9-11 mins.	¼ cup	3 mins.	Stir after 5 mins.
7-8 mins.	¼ cup	2 mins.	Stir after 4 mins.

A

Anchovy spread, *Appetizers*
Artichoke dip, *Appetizers*
Artichoke hot spread, *Appetizers*
Artichoke, marinated with hearts of palm, *When the lettuce is gone*

B

Bacon-guacamole dip, *Appetizers*
Bagel thins, garlic, *Appetizers*
Barbari flatbread, *Baking aboard*
Barbecued pork chops and potatoes, *Solving the meat problem*
Beans, spicy refried, *Appetizers*
Beef in wine sauce, *Solving the meat problem*
Beef pie, *The trailersailer's galley*
Beef stew, *Solving the meat problem*
Bollos, *Appetizers*
Bread, *Honey, I tossed out the cooler*
Bread, pressure cooker, *Baking aboard without an oven*
Bread, sun-dried tomato/herb, *Cooking under pressure*
Brownies, chewy, *Baking aboard without an oven*
Brownies, mercator, *Cooking under pressure*
Bulgar with greens and cheese, *Solar cooking*

C

Cake, carrot, *Baking aboard without an oven*
Cake, pineapple upside down, *Baking aboard without an oven*
Carrots cayenne, *Appetizers*
Cheesy vegetable spread, *Appetizers*
Chicken almonds, creamy, *Microwaving*
Chicken and mushrooms, *Cooking under pressure*
Chicken and rice, *The trailersailer's galley*
Chicken breasts, solar-cooked, *Solar cooking*
Chicken stew, Maine, *One-pot wonders*
Chili, *Solving the meat problem*
Chili, white, *Gastronavigation*
Chili con queso dip, *Microwaving*
Chili peanut dip, *Appetizers*
Chocolate clusters, microwave, *Microwaving*
Chutney spread, *Appetizers*
Clam pancakes, Mrs. Kelly's, *Harvesting the bounty of the seas*
Clams, cooking, *Harvesting the bounty of the seas*
Coleslaw vinaigrette, *When the lettuce is gone*
Conch fritters, spicy, *Appetizers*
Conch, cooking, *Harvesting the bounty of the seas*
Cornbread, *Baking aboard without an oven*

Crab cakes, spicy, *More from the cruising chef*
Crab delight on toast, *More from the cruising chef*
Crab wonton, *More from the cruising chef*
Crabmeat dip, hot imitation, *Appetizers*
Crabs, cooking, *More from the cruising chef*
Crescent crab rolls, *Appetizers*
Cucumbers and radish yogurt dip, *Appetizers*

D

Dressing, creamy coleslaw, *When the lettuce is gone*

E

Eggplant caponata, *Appetizers*
Ezy-Clam dip, *Appetizers*
Ezy-pate, *Appetizers*

F

Feta cheese pate, *Appetizers*
Fish cakes, *Go fish!*
Fish roe, fried, *Go fish!*
Fish, baked in caper sauce, *Go fish!*
Fish, brooding for, *Go fish!*
Fish, broiled fillets almonidine, *Go fish!*
Fish, cooking, *Go fish!*
Fish, fried croquettes, *Go fish!*
Fish, herb-coated, *Microwaving*
Fish, poached, *The trailersailer's galley*

G

Goat cheese, herb, *Appetizers*
Granola chews, *Microwaving*
Grouper fillets, parmesan, *Microwaving*
Grouper, foil baked, *Go fish!*
Guacamole Dip, *Appetizers*
Guacamole, tofu, *Appetizers*

H

Ham 'n cheese nut log, *Appetizers*
Hash browns with ham and mushrooms, *Gastronavigation*
Hummus, yogurt, *Appetizers*

I

Italian-style party mix, crunchy, *Microwaving*

L

Lobster thermador, *More from the cruising chef*
Lobster, cooking, *More from the cruising chef*

M

Macaroni and cheese with tuna, *Gastronavigation*
Meatballs and gravy, *Solving the meat problem*
Meatballs, beef, *Microwaving*
Meatballs, curried, *Microwaving*

N

Nachos, *Microwaving*
Nachos, micro-, *Microwaving*

O

Octoburgers, *Harvesting the bounty of the seas*
Octopus, cooking, *Harvesting the bounty of the seas*
Onion tart, sandpipers, *Appetizers*
Oven-baked chops with scalloped potatoes, *Solving the meat problem*
Oyster dip, smoked, *Appetizers*
Oysters Rockefeller, *Harvesting the bounty of the seas*
Oysters, fried, *Harvesting the bounty of the seas*

P

Pastry shell, basic, *Microwaving*
Pate, string bean, *Appetizers*
Periwinkles and turban shells, *Harvesting the bounty of the seas*
Pickled shrimp with onions, *More from the cruising chef*
Pizza dough, yeastless, *Baking aboard without an oven*
Pizza, cold & sassy squares, *Appetizers*

Q

Quesadillas, oven-fried, *Appetizers*
Quiche pastry shell, *Microwaving*
Quiche, seafood cheddar, *Appetizers*

R

Rhubarb crisp, microwave, *Microwaving*
Rice, dirty with chicken, *Gastronavigation*
Rice pilaf, *Solar cooking*
Ricotta & blue cheese spread, *Appetizers*

S

Salad, bean, *When the lettuce is gone*
Salad, beet and onion, *When the lettuce is gone*

Salad, green bean and mushroom, *When the lettuce is gone*
Salad, marinated sprout, *When the lettuce is gone*
Salad, sauerkraut, *When the lettuce is gone*
Salmon ball, *Appetizers*
Salmon, sherry sweat-poached, *Go fish!*
Sardine spread, *Appetizers*
Scallop sevicehe, *Appetizers*
Seafood au gratin, *More from the cruising chef*
Seafood fritters, *Harvesting the bounty of the seas*
Shark, cooking, *Go fish!*
Shrimp and potato lasagna, *More from the cruising chef*
Shrimp dip, *Appetizers*
Shrimp, cooking, *More from the cruising chef*
Shrimp, fried, *More from the cruising chef*
Shrimp, wokked, *More from the cruising chef*
Snails on toast, *Harvesting the bounty of the seas*
Soup, pasta and cannellini, *One-pot wonders*
Soup, potato and rice, *One-pot wonders*
Spaghetti sauce, *Solving the meat problem*
Spanish rice plus, *Microwaving*
Spread, black bean and salmon, *Appetizers*
Sprouts, *When the lettuce is gone*
Squid, fried, *Harvesting the bounty of the seas*
Stew, sailor's, *One-pot wonders*
Stew, Roman style, *one pot wonders*
Swordfish with tomato basil, *Microwaving*

T

Tacos stuffed with your choice of fillings, *Appetizers*
Tuna spread, spicy, *Appetizers*

V

Vegetable dip, smokey, *Appetizers*
Vegetables, cooking dried, *Cooking under pressure*
Vegetables, microwave chart, *Microwaving*

W

Welsh cakes, *The art of Welsh cakes*

Y

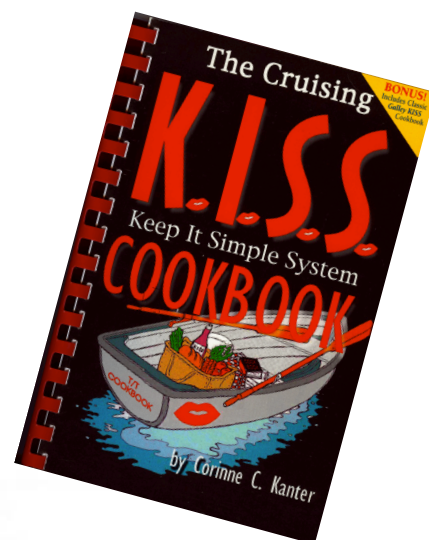
Yogurt, *Honey, I tossed out the cooler*

Z

Zucchini quiche triangles, *Appetizers*
Zucchini squares, *Appetizers*

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