



Thousands of Americans Enjoy Solar Cooked Food. WHY?



SOS Sport Featured in Gourmet Magazine

GOURMET - The Magazine of Good Living - January 2005.

Letter From The Editor, page 8

Where Are Ovens Headed, page 29

by Ruth Reichl,
Editor in Chief.

Around here, we blame it on the solar oven. When the call came asking if we'd like to try the experimental new product, we all groaned. We know the whole sad story about these New Age devices, about how they sound great but never really work. Then the thing arrived and we immediately saw that we'd been right: It was a flimsy plastic box, weighing almost nothing. How good could it possibly be?

Nevertheless, food editor Alexis Touchet dutifully took the solar oven home and tried it out. To her surprise - and ours - she loved it. For

weeks, Alexis went around buttonholing people in the

halls, extolling the oven's virtues to any of us willing to listen. It was light, it was easy to use, and it worked perfectly. And, by the way, had she mentioned that the

people who manufacture the oven have made thousands of them available to developing countries with limited fuel? (She had.)

Hooked on the solar oven, we began to investigate other forward-looking products.



Okay. We know that the need for solar ovens in America isn't up there with underwear, deodorant or toothbrushes. Some of you may not have even heard of solar ovens.

Before Weber grills came on the market in 1954, not many people had heard of portable grills either. Now, practically everyone with a backyard has a barbeque grill of one kind or another.

Solar ovens are the next wave of outdoor cookers. The reasons are as varied as the people who own them:

- **Gardeners** - Fix fare while you pare.
- **Fishermen** - Cook while you hook.
- **Swimmers** - Bake at the beach.

• **Campers** - No fire ban when solar cooking.

• **Environmentalists** - Save a tree. No air pollution.

• **Boaters** - Bake on the boat! No fire worries.

• **Housewives** - Keep the kitchen cool.

• **Hunters** - Cook the game.

Whatever the reason, we invite you to catch the wave with us.

The food tastes good. Free energy. Conversation starter. Zero pollution. Kids and grandkids can use it. No smoke.

You win - tender, flavorful food cooked with the free clean energy of the sun.

We win - cleaner air for all of us.

Dow Chemical Contributes to Solar Oven Society

A generous financial gift from Dow Chemical has helped the Solar Oven Society turn up the heat in our efforts to spread the joys of solar cooking around the globe," says Mike Port, Executive Director of Solar Oven Society.

Dow Chemical, a Fortune 500 company with over 43,000 employees, serves customers in 175 countries. Their products are vital to the food, transportation, health, home care and building industries.

Port said, "SOS appreciates

Dow's commitment to the principles of sustainable development. Besides their financial support, the Dow Chemical staff has been helpful in helping SOS find new ways to improve our Sport solar oven in the future.

"Dow's generosity will spur other leading companies to partner with us as we seek to help families and the environment - one meal at a time!"

For more information on how you and/or your company can support solar ovens, call 612.623.4700 or email: sos@solarovens.org.

INSIDE

What Others Are Saying	Page 2
Help Millions of Children	Page 3
Benefits of Solar Cooking	Page 7
E-mail 'Round The World	Page 8
Order Solar Oven	Page 8

What Others Are Saying About Us . . .

Fishermen . . .

SOUTHWINDS - News & Views for Southern Sailors - November 2004. *Cooking Fish With a Solar Cooker On Board, page 42,*
by William Potts.

We began fishing about an hour before dark, still in green water, with a plethora of 25-35 pound amberjacks in a feeding-frenzy. . . By the time the sky began to lighten, all six in our party had landed a 50-80 pound yellow-fin plus numerous smaller black-fin tunas, and everyone had pleasantly had enough fishing!

When the sun was up, we rigged for billfish trolling, and this easier fishing made it possible to think of other ‘yummy’ things. Needless to say, during the 12 - 14 hours we were catching fish, nobody stopped to prepare hot food! So I fetched my SPORT solar oven from the cabin. We filleted an 8-pound black-fin into four, one-and-a-half inch thick, 1 pound fillets, placing two in each pot, topping each with butter, lemon juice, chopped flat parsley (curly is unacceptable!), and salt and pepper mixture. At 8:45 a.m., I put the fish in the oven, faced it

toward the sun and relaxed. One hour later, the fish was perfectly done, pink-white in color and aromatically infused with hints of the parsley, lemon and butter. Typical of this oven, it was exceptionally moist and flaky. The SPORT solar oven cooks almost all foods, and an argument might be made that it may be a near perfect way to bake fish!

The Solar Oven Society offers its revolutionary SPORT solar oven for safe, fireless cooking of extraordinarily tasty and nutritious foods on boats of all types. The SPORT won’t rust. It is easy to stow and handle because it only weighs 11 pounds (with two pots), and most important, it does not have to be continually tended and refocused on the sun to cook. Just point it to the sun and in 2 - 4 hours almost any food is cooked! For boaters we recommend securing the oven with bungee cords in an out-of-the way spot when cooking while under way.

Hunters . . .

Blackpowder Guns & Hunting - Winter 2004. *New Products. page 74,*
SOS Sport Solar Oven.

Hunters can safely cook tender, flavorful duck, pheasant, venison, elk and more with sunshine while away from camp. Food put in the SOS Sport can cook unattended because of the Sport’s special design features. It is safe... because it is fireless, does not require frequent re-aiming at the sun, and does not burn food. It is easy to handle because the oven weighs only ten pounds, is compact and is made of materials that tolerate all weather condition, including moisture, freezing, dust, sunlight and heat. Finally, because it can be equipped with optional reflectors for cold-weather cooking, the Sport can be used all year with good sun.



Solar Spotlight, Special Edition - Page 2

Sailors . . .

GOOD OLD BOAT - The Sailing Magazine for the Rest of Us - March/April 2005. *“Does That Thing Really Work?”*, they all ask. pages 50 - 54, by Heather Ilse.

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. . .

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.

...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.” ...Then I explain that typical cooking temps are around 220 degrees f. “What can you cook in there?” Just about anything . . . 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. . .

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.

Boaters . . .

Boating World - December 2004. *Shop Till You Dock: 50 Great Gift Ideas. page 83,*
Solar Oven.

Make the most of the sun on board with the Sport Solar Oven by the Solar Oven Society. This versatile oven roasts or bakes all kinds of meat and fish, steams any vegetable, bakes breads, cakes and cookies, and cooks rice, beans and lentils. Its gentle cooking temperature and all around heat produce flavorful meals with maximum nutrients.

The boat-friendly oven can withstand moisture, heat and ambient conditions, and is stable in wind and on slopes.

Backyard Enthusiasts . . .

By Byron Sugden -
Veterinarian, Bigfork, MN.

Saturday night, it was 42 below zero F. Yesterday, the high was 14 below zero F. But it was clear and sunny.

I set my SOS Sport with reflectors outside using the 60 degree angle (winter time angle). With reflectors, the temperature climbed over 360 degrees F.

The solar cooked squash was great!

If this thing works this close to the Canadian border, it should work anywhere else in the USA. The day will come when a majority of rural people will own a solar oven.



Outfitters . . .

Cabela’s Outfitter Journal - November/December 2004. *Field Test Reports. page 160,*
‘Solar Oven Society’.

The SPORT Solar Oven is a family-sized solar oven that is a great complement to recreational activities such as camping, boating, picnicking and patio and RV cooking. Very versatile, it roasts or bakes all kinds of meat and fish, steams any vegetable, bakes breads, cakes and cookies, and cooks rice, beans and lentils. The SPORT’s gentle cooking temperature and all-around heat produce wonderfully flavorful and extra nutritious dishes with minimal leaching of nutrients inherent in traditional cooking methods. Purchasing the SPORT also supports distribution of the SPORT in developing countries where cooking over wood fires has led to deforestation and lung disease.

The SPORT solar oven weighs only 10 pounds. It can be left to cook without tending, and it won’t burn food.



SOLAR SPOTLIGHT

is a publication of the Solar Oven Society -
a project of Persons Helping People,
a 501 (c) (3) tax-exempt non-profit organization.

The SOLAR SPOTLIGHT is dedicated to educating people about the joys of solar cooking by providing news and sharing information, ideas and opinions on how we can partner with over two billion people in sun-rich areas adversely affected by the cooking fuel crisis.

Letters or articles on issues and concerns are accepted and encouraged. All submissions must be signed with name and address to be considered for printing. Submissions may not be returned, and if published, all materials are subject to editing for brevity, libel and taste.

The intent and purpose of this publication is to share information; therefore, reproduction and redistribution of any material contained herein is encouraged and welcomed. Please indicate the SOLAR SPOTLIGHT as the source of the material. Letters and other material may be submitted in person or by mail, fax or e-mail. Please recycle this publication by leaving it where others may read it.

David O. Van Ness, Editor
SOLAR SPOTLIGHT
3225 East Hennepin Avenue, Suite 200
Minneapolis, Minnesota 55413
Telephone: 612.623.4700 Fax: 612.623.3311
Website: www.solarovens.org

Can You Imagine Walking Seven Hours A Day To Scavenge For Firewood?

Rural women in the country of Kenya are doing just that - six or seven days a week. Why? Because there is no firewood nearby. They start out at 5 a.m. and do not return until noon searching for firewood to cook their family's meals.

The hours are long! The sun is hot! It is dirty work! And, as pictured for the lady from Burkina Faso at the right, the weight is heavy!

INCREDIBLE!

But now on sunny days, because of solar ovens, **UNNECESSARY!**

Imagine, for a moment, what your neighborhood would look like in several

years - if, starting today, you no longer had access to cheap electricity or natural gas for operating all of your household appliances, including your cookstove.

It would not take long for you and your neighbors to knock down a majority of the trees close to your home. Then, as the trees begin disappearing, you have to walk further and further to find enough firewood for your cooking.

This is the type of scene that millions of people across the world face. The UN estimates that more than

(Continued - See Scavenging Firewood, page 4)



In many developing countries women work hard gathering firewood to cook their family meals. Trees struggle to survive. Forests disappear with little effort made to reforest the countryside.

5 Million Children Die Each Year From Drinking Contaminated Water



The World Health Organization estimates that up to 80% of all sickness and disease in the developing world is caused by the poor quality of drinking water and sanitation. Thousands of people die every day from unsafe water; millions more suffer from the effects of it.

This situation can change. Research conducted by Marshall Logvin and David Ciochetti at California State University in Sacramento, under the direction of Robert Metcalf, Ph.D., revealed some encouraging results. These men considered the studies of Louis Pasteur over a century ago. Dr. Pasteur, you may

recall, discovered that heat would kill disease-causing microbes in milk. They determined that the disease-causing microbes in water do not have any unusual heat resistance and should be killed at temperatures similar to those used in milk pasteurization.

This means people using the solar oven, can heat water to 149 degrees Fahrenheit (or 65 degrees Centigrade) for 10 minutes to kill all known waterborne bacteria and parasites.

A simple-to-use WAPI (water pasteurization indicator)

(Continued - See Contaminated Water, page 4)

Thousands of Women Develop Lung Disease From The Smoke of Cooking Fires . . . As If They Smoked Ten Packs A Day . . . Simply To Feed Their Families

The UN estimates that women who cook in cooking huts inhale daily an amount of smoke equal to 10 to 20 packs of cigarettes.

We were privileged to visit the home of the lady on the right in Guatemala. The smoke in her cooking hut was so thick we were able to last only 1.5 to 2 minutes before we needed to move outdoors to get fresh air.

Lung and eye disease are prominent among women in developing countries due to the smoke of cooking fires.

The small baby on her back and many others like him will suffer a smoker's cough by the time they are

two years of age.

Dr. Ponce, a surgeon from Honduras, saw this picture and another picture of the outside of her cooking hut. The hut featured the use of bamboo on the top half of her hut to encourage ventilation. The bamboo was charred coal black from the smoke.

Dr. Ponce commented the most frequent surgery he does is on the lungs of women. When he cuts them

open they should be a nice rosy pink on the inside. Because of the smoke of cooking fires, their lungs are as black on the inside as the charred bamboo.

Proper chimneys and ventilation would help immensely. We wouldn't dispute this.

However, using solar ovens can reduce the need for cooking fires and amount of trees cut for fuel.



Six Critical Ways Solar Ovens Impact Worldwide Disease, Hunger, Water Contamination, and the Environment

1. Safe Drinking Water

The United Nations Food and Agriculture Organization reports that up to one billion children each year suffer from diarrhea caused by drinking contaminated water. Of those children, 5 million die. Solar ovens can pasteurize water, giving children a chance at life.

2. Reduces Eye Disease, Lung Disease, and Burns

Solar ovens will reduce the amount of smoke inhaled by family members. This will mean less eye disease, blindness, and lung disease.

In addition, there will be less burns from children not falling into open fires. Fewer women will experience burns from their clothing catching on fire or small stoves exploding.

3. Environmentally Friendly

The forests of the world are disappearing, causing erosion, less oxygen and droughts as well as reducing food supplies. Sunshine is nonpolluting and inexhaustible. Cooking with a solar oven means less deforestation, less soil depletion, and less pollution. This encourages more trees, more abundant crops, and cleaner air. Dried animal dung gathered for

fuel could be better used being put back into the soil for fertilizer.

In addition, the SOS Sport utilizes the equivalent of sixty eight 20-ounce post-consumer plastic beverage bottles.

4. Nutritious Food

Food cooked in the SOS Sport is actually more nutritious than food cooked by many other methods. Meats are cooked without adding any additional oil. Vegetables and fruits are cooked without adding water. When water that vegetables and fruits have been cooked in is poured off, some of the vitamins and minerals are poured off also. With solar cooking, the nutritional value stays

right in the food. Because of the slow method of cooking, the food is more tender and therefore more easily digested by seniors and small children.

In addition, foods do not burn or easily overcook and need not be stirred or watched. You can even bake bread in a solar oven.

5. Time Saver

In many parts of the world, the search for cooking fuel takes up to seven hours each day. This time and energy could be better applied in increasing time spent with family members, improving health conditions, and increasing food supplies. A solar oven can be used year-round in the tropics

and six to eight months of the year in many areas of the world.

6. Budget Helper

The majority of families in developing countries are both paying for fuel and gathering fuel. Smaller numbers do just one or the other.

In many developing countries families spend one US dollar a day for fuel - whether it is firewood, charcoal, propane, kerosene, or (more expensive) electricity.

The solar oven can help reduce the 13 to 18 million deaths each year due to hunger and malnutrition world wide. Fuel savings will help to feed families better.

Illustrated at the right is a WAPI. If water is held at 150°F for 10 minutes or more, all health threatening organisms are destroyed and the water is safe to drink. The SOS Sport comes with a device called the WAPI (Water Pasteurization Indicator) that indicates when water is pasteurized and is safe to drink.

Graphic by
Tim Van Ness

Contaminated Water

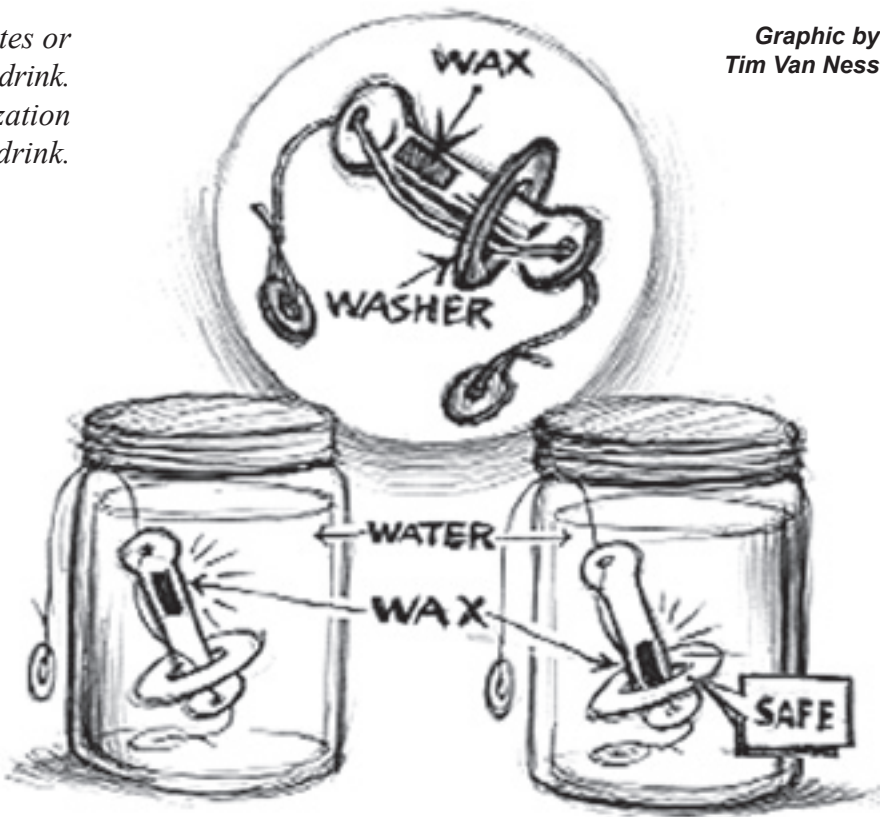
(Continued from -
page 3)

has been developed by Solar Cookers International. The WAPI is a special purpose thermometer with a memory that can be used over and over. This WAPI is a sure test of successful water pasteurization. The Solar Oven Society includes a WAPI with each SOS Sport solar oven.

Please imagine for a moment, what the impact of safe water for drinking and personal use would have on a family and a village.

- ◆ Less sickness.
- ◆ More healthy people able to tend

- gardens or family business.
 - ◆ More children who will grow into adulthood and be able to care for aging parents.
- As we all learn about the capabilities of solar ovens and ways to improve them, we help each other.
- Please join the Solar Oven Society in the effort to make solar ovens available to provide safe drinking water and make use of free cooking fuel to hard working people in sun-rich lands.
- Your support of solar cooking right in your community will ultimately help families in other countries. And, you will be blessed!



WAPI (WATER Pasteurization Indicator)

Scavenging For Firewood

Continued from -
page 3

50% of the trees cut globally, are used for cooking fires. Not for houses, furniture, or paper, but for cooking food. More than 50%!

Most of the countries that are fuel-poor are sun-rich. It is possible to cook an entire meal in a solar oven with 2-4 hours of sunshine. The food cooks while the women go about other daily tasks. In the process, trees are saved, lungs and eyes stay healthier, and the air remains cleaner. A win-win-win situation.

But, the women who need an oven the most, can afford it the least. That is

where we need your help. We need you to consider sponsoring a solar oven(s) for a family.

Our organization does not encourage giving away solar ovens. People deserve the dignity and pride of ownership.

If they are not able to purchase a solar oven outright, they will be asked to pay something and work at a community project for the balance. In the end, they will appreciate their solar oven more.

If you would like to help out, it is easy. Turn to page 8 for ideas. Together we will help families - one meal at a time!

Safe Drinking Water

The United Nations Food and Agriculture Organization reports that each year up to one billion children suffer from diarrhea caused by drinking contaminated water. Of these children, five million die. The Solar Oven can be used to pasteurize water, giving children a chance at life. The WAPI indicates when water is safe.

Solar Ovens Assembled Without Electricity Or Large Machinery

The Solar Oven Society projects are specifically designed for assembly of solar ovens to occur in developing countries.

On site assembly of solar ovens in developing countries presented some particular problems.

One of the major challenges is the lack of available and consistent electricity. What better way to address it than to proceed without depending on electricity.

Thanks to some dedicated volunteers - William Butler, Robert Nepper, John Roche, Bill Stevenson, Louis Stumpf, Tom Viker and Douglas Youel - we are reporting that our assembly does not depend on electricity or large machinery.

In total, nine jigs are used for cutting insulation pieces, five jigs for cutting and folding the aluminum liner, one jig for adding polyester film to the acrylic lid,

and one jig for assembling the final oven cavity.

Another benefit of this assembly method is providing employment to local people. Unemployment levels are considerably higher in developing countries. Many people need and want a job. They appreciate the opportunity to earn a respectable wage. By not automating, we provide employment for more people.

Automation also means more complex machinery and higher cost to produce and duplicate the machinery. This would only make the cost of the oven more. We wanted our solar oven to be low-cost, durable, effective and attractive.

The SOS Sport meets these goals and its assembly will go forward even when the electricity is not available for certain hours or certain days.



Martha Port demonstrates cutting 4' x 8' pieces of insulation as 3M Retirees look on. (L-R) Bill Stevenson, John Roche (Persons Helping People Board Member), Bob Nepper and Dick Lund. These volunteers have made valuable contributions to the mission of the Solar Oven Society. The jig pictured above is the largest jig required for assembling the SOS Sport solar oven.



Ask Sunny . . .

1. What percentage of trees cut around the globe are used for cooking fires? (not for lumber, paper, furniture, etc.)

2. How long does it take for energy from the sun to travel 93 million miles to earth?

3. How many 20-ounce recycled pop bottles are used to make one SOS

Sport solar oven?

4. If you could harness the sunlight that hits the continental USA during an average day, how much energy would you have?

Answers:
1. 52%
2. It takes only eight minutes for sunlight to travel 93 million miles from the sun to earth.
3. Sixty-eight 20-ounce post-consumer recycled pop bottles make one SOS Sport solar oven.
4. The equivalent of all the energy consumed by the USA (coal, oil, gas, nuclear, hydro, wind, solar, etc.) for one year.

Wood Smoke May Be Worse Than Originally Thought

Collectively, cooking fires add staggering amounts of carbon dioxide and other greenhouse gasses to the atmosphere each year. The Kyoto Treaty, the controversial attempt to reduce the emission of greenhouse gas does not, in our estimation, address the cooking fire situation. Why is this?

The only explanation that we have heard for this omission is that some scientists feel that because the process of burning wood is similar to that of decaying wood. Thus, it shouldn't be considered in the totals.

When the amount of wood being burned was less or equal to the amount of wood that decayed naturally, this might have been a logical deduction.

Today, however, with the rapidly escalating use of wood for fuel versus the lack of planting replacements, we feel that it is necessary to include cooking fire statistics in the overall mix used in any future treaty. And, in the process, we are prepared to significantly help reduce the cooking fire greenhouse

gasses by providing millions of solar ovens for use.

Following are some excerpts from a speech by Dr. Daniel M. Kammen, Department of Physics at Harvard University, at the World Conference on Solar Cooking in 1992. We obtained this from the Solar Cooking Archive (at www.solarcooking.org) maintained by Solar Cookers International.

Solar Box Journal: Dr. Kammen, what is it that you have discovered about the smoke from traditional cooking fires?

Daniel Kammen: While everyone knows that carbon dioxide produced from burning wood contributes to the greenhouse effect, ...we discovered that other gasses -- carbon monoxide, methane, sulfur dioxide, nitrogen dioxide, etc. -- are produced in much greater quantities than previously thought.

SBJ: What does this mean?

DK: When you calculate the contribution that these gasses make to global warm-

ing, they rival or exceed the greenhouse effect produced by carbon dioxide alone.

The typical kilogram of wood is roughly 50% carbon. When it is burned under ideal conditions, the smoke consists mostly of water and carbon dioxide. But in traditional cooking practices, where there is not enough oxygen, those 500 grams of carbon produce 50 to 60 grams of carbon monoxide, 20 to 30 grams of methane, and 30 to 40 grams of other nasty stuff.

Each of these non-CO₂ products of combustion have a larger greenhouse effect, molecule per molecule, than carbon dioxide. Carbon monoxide's effect is five times greater, methane is 23 times greater, and nitrogen dioxide is 280 times more serious as a greenhouse gas.

When you multiply the amount of emissions by the global warming potential for each gas, and add it up, you find that the non-CO₂ gasses produce a CO₂ equivalent of 460 grams. The amount of CO₂ directly released by burning one kilogram of

wood is about 440 grams, since oxygen from the air is added.

SBJ: So in essence we have twice the greenhouse effect?

DK: That's right. Now the key item is, how long do these gasses stay in the atmosphere? The half-life of each gas is not known precisely, but half the CO₂ released today will still be in the atmosphere 150 to 200 years from now. In another 150 to 200 years after that, only a quarter of it will still be up there. Methane has a half life of about 7 years.

SBJ: It seems fortunate that the more powerful greenhouse gasses have shorter half lives.

DK: Yes, but remember, these gasses don't suddenly vanish. When a molecule of methane stops being methane, it becomes CO₂. It is still a bad thing. Now, if you multiply how much of each gas is in the atmosphere by how reactive it is, then subtract what is decaying due to its half life, you find that

over the first 20 years the non-CO₂ gasses have had the biggest effect.

SBJ: And this is not generally known?

DK: The atmospheric chemistry has been known for quite a while. The big surprise is that small-scale burning produces more non-CO₂ gasses than originally thought. Scientists just had not looked that closely at inefficient, smoldering cookfires. . .

SBJ: So, could you sum up the ramifications of all this for solar cooking?

DK: The contribution cooking fires make to the global "greenhouse budget" has been underestimated. The potential contribution solar cooking can make is bigger than we'd thought. The scary thing is this: even if by the year 2000 we wise up and do all the right things, we still have a long time to live with what we have done already. That is why it is so important that we get moving right away!

If you lived in Afghanistan . . .

What Would You Do For Fuel To Cook Your Meals? Spend Half Your Income . . . ? Risk Land Mines . . . ? Or, Use A Solar Oven If You Could Get One . . . ?



In Afghanistan, the most common cooking fuel is firewood. Much of the firewood sold is imported from Russia. Where sticks or bushes can be collected from the fields, there is a good chance of being injured by landmines. Families spend \$10 - \$17 a month to buy firewood. Among the many unemployed or those who earn around \$30/month, firewood is a major outlay.

Parts for 400 SOS Sport solar ovens were sent to the Global Hope Network (GHN) in Afghanistan. The local assembly, cooking demonstrations, and training were subsidized by GHN, and the ovens were sold for \$US15 to those who truly wanted one.

The pilot project demonstrated that the SOS solar oven is very suited for the people of Afghanistan. Many were amazed that such a lightweight, easy-to-operate oven could cook such delicious food in only 2 or 3 hours. Most families with solar ovens reduced their

fuel bills by 50%. We could easily have sold many more if we had them. With an average of 300 solar cooking days per year, solar ovens can have a major impact in Afghanistan.

Photos and story - Gordon Magney, Project Director



Editor's Note:
Please consider asking your church, mosque, synagogue or service club to participate in sending container loads of ovens to Afghanistan.

What About Cooking On Cloudy Or Rainy Days?

Because the Solar Oven Society is headquartered in Minnesota, we are familiar with clouds and the problems they present for solar cooking. Plus, solar ovens don't work at night. And, while we're talking about other needs, how about being able to cook more than two pots of food at a time?

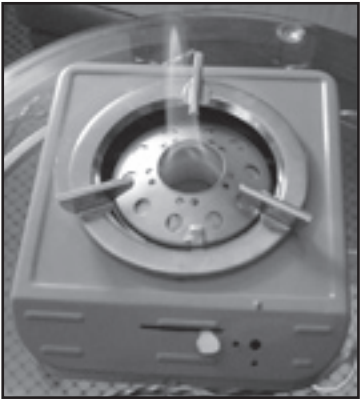
In order to overcome the challenges of clouds, cooking at night and greater quantities of food, there are companion technologies. Three other proven solutions include: 1) the "Little Fire Stove", a highly efficient wood stove, 2) a well insulated "Fireless Oven", and 3) Gel Fuel Stoves.

The Little Fire Stove is an improved 'rocket stove'. It utilizes kiln fired bricks arranged to allow heat generated by burning twigs and smaller branches to travel upward to the underside of

the cooking pot.

A metal sleeve or skirt around the outside of the cooking pot then directs the heat up the sides of the pot. The combination of focused heat on the bottom and sides of the pot produces a vastly improved cooking performance compared to the traditional three stone fires.

In a growing number of countries, another renewable energy called gel fuel can be used for cooking food on



Gel Fuel Stove

non-solar days. Gel fuel is made from a mixture of denatured ethanol (made from locally available sugar or starch sources such as sugar cane), a thickening agent (cellulose), and water through a very simple technical process.

The gel fuel is thus renewable and can be produced in most countries. Improvements in production, packaging and formula have resulted in a 50% price reduction in the last several years.

Once food has been heated

to cooking temperatures by solar, gel, wood, or any energy source, the pot can be moved to the Fireless Oven.

The Fireless Oven is a well insulated box made from locally available material. It continues to cook for hours the food that was brought to boiling temperatures by solar ovens, gel stoves, or Little Fire Stoves

and then moved to the Fireless Oven. Food continues to cook in the Fireless Oven



Cardboard Model of Fireless Oven

from the hot temperature of the food (greater than 180°F). Additional food can then be cooked in the

solar oven or on the Little Fire Stove.

Diligent use of these

appliances can cut firewood use by up to 90%, an amount that would help retain current remaining forests, improve success of current reforestation programs, improve health, and reduce smoke pollution.

We have named this system the "Complete Outdoor Renewable Kitchen", or CORK. You will be able to read more about it in future issues of the Solar Spotlight.

These additions will improve the way people cook - one meal at a time! Families will be able to cook night and day, fry selected foods, and maximize their solar ovens, while reducing use of fossil fuels and preserving forests.

HELP US GIVE SOOT THE BOOT

Q: What is small, produced by or for everyone on the planet, causes up to one quarter of all global warming and was glossed over by the Kyoto Treaty people?

A: Soot, of course.

Soot is a blackened material formed mainly from carbon particles that are, along with salts and dust, by products of burning fossil fuels and vegetation.

The main source of soot in developed nations is diesel fuel. In developing countries, cooking fires powered by wood, dung and biomass produce serious quantities of soot.

According to several recent years studies, soot

contributes to global warming by reducing the ability of ice and snow to reflect sunlight.

James Hansen, a NASA scientist, wrote that soot is twice as potent as carbon dioxide in changing global surface air temperatures in the Arctic and the Northern Hemisphere. In an AP story, Hansen told a reporter that, "The soot effect is equivalent to putting a one watt miniature Christmas tree bulb over every two square yards in the Northern Hemisphere."

The end result is the melt of ice and snow at alarming rates. For example, some scientists predict that, at current rates, the snows of Kili-

manjaro will all be melted within several decades.

That's the bad news. The good news is that if we drastically reduce soot emissions by using solar ovens, the positive results will be dramatic in 5 - 10 years of time. On the other hand, it will take 100 - 150 years to see dramatic results from reductions of CO₂.

We need to reduce both. Everyone will benefit including our great grandchildren. But, we need to start today.

Please consider sponsoring a solar oven for a family in a developing country. Buy one and use it here in the USA! Reduce soot where you can and ask others to do the same.

www.solarovens.org



Efficient Little Fire Stove

Benefits of the SPORT

Foods are Tastier and Healthier

The SPORT cooks almost every type of food: bakes/stews all meats, poultry and fish; steams vegetables; bakes breads, cakes and cookies; cooks rice, beans, lentils, and pasta. It is specially designed to maintain steady, moderate (210-260°F) cooking temperatures that produce tastier and healthier foods without burning.



The SPORT is like a “solar crock pot.” Because no extra water is added, the flavors and vitamins in the food are not leached out or diluted and flavors blend deliciously.

Also, because food doesn’t burn, “advanced-glycation end products” (AGEs), are not produced and cancer risks are reduced.

Easy-to-Use

The SPORT is easy to use. These five, easy-to-use features of the SPORT free the cook to work or play:

1. Complete Kit

The SPORT comes with all the accessories needed to cook, except the food and sunshine! These include:

- 2 - 3.4Qt. (3.0 L) black, enameled pots with lids
- 1 thermometer with F & C scales
- An instruction manual that includes recipes
- 1 WAPI (Water Pasteurization Indicator) that confirms when water is safe to drink.

Optional reflectors are available to order. They will double the amount of energy going into the solar oven and are an advantage for less desirable solar conditions and winter months with low angle sun.

2. Portable

The SPORT is easy to transport and store. It weighs just 11 pounds (including accessories) and is only 12 ¼” high by 27 ¼” long by 17” deep.

3. Minimal Re-Aiming

The SPORT can be pointed south and left unattended for the full cooking duration. Re-aiming (as illustrated below) is beneficial, but not necessary. Actual cooking time depends on your location within your time zone, and the season. In the winter, and when the sun is at a low angle (for example, in the morning or late afternoon), re-aiming is particularly advantageous and we also recommend using our optional reflectors described below.

4. No Burnt Food

Cooking temperatures in the SPORT are often 210-260°F for locations in the in United States, and max out at 300°F in the equatorial regions. The SPORT is designed to get hot enough to cook, but not so hot that food will burn.

5. Wind & Moisture Resistant

The SPORT is engineered to withstand the elements. All materials used in construction of the SPORT are impervious to moisture. The broad base of the SPORT helps keep it stable in wind.

Saves Energy and Reduces Pollution

No electricity, wood or fossil fuel is required when cooking with the SPORT. This helps save the environment and reduces pollution. More than 50% of trees cut globally are used for cooking fires. One family cooking with wood produces approximately 7.6 tons per year of CO2 and damaging smoke particulates. The SPORT eliminates smoke pollution from cooking.

Environmentally Friendly and Safe

The plastic portions of the SPORT are produced from post-consumer PET or recycled pop bottles using a special process developed exclusively for the Solar Oven Society. It takes 68 20-ounce recycled pop bottles to make one oven. The SPORT is one of the first products, and the largest injection molded part, made from post-consumer PET.

www.solarovens.org

From Dreams To Reality - One Couple's Journey

Story by
Mike Port

In the Fall of 1988, my wife Martha and I prayed for a project that we could work on together.

In December the answer to our prayer was found in a newspaper article that outlined the problems that over 2 BILLION people face just to cook their food.

The details included:

- Deforestation caused by cutting down trees for fuelwood (over 50% of the trees cut globally)
- Women breathing smoke equivalent to 10 -20 packs of cigarettes a day
- Eye disease
- Burns
- 2-4 hours spent gathering scarce wood (now up to 7 hours daily)
- Bacteria in drinking water
- Expensive fuel - charcoal, propane, electricity

The article then reviewed the positive impact that solar ovens could make for a family in a sun-rich, fuel-poor country. After reading the article, I realized that this was what I wanted to work on the rest of my life. Martha agreed. The journey began.

We learned how to make solar ovens out of cardboard boxes, aluminum foil and glass. After rain showers in Haiti began spoiling the cardboard ovens, we made plywood solar ovens in

Jamaica. Beautiful to look at. Heavy to carry. Expensive materials that are imported to many developing countries. The wind ripped the screws for the reflector flap from the plywood.

We knew that some day we wanted a lightweight, durable, attractive and affordable oven made out



of plastic. About this time, we were introduced to a Minneapolis based 501 (c) (3) non-profit organization, Persons Helping People. They were a trust fund looking for a project. We were a project looking for a trust fund. Perfect!

After trying various other designs and materials, we settled on the current design. It features recycled plastic soda bottles. The housing of our solar oven is currently the largest injection molded post consumer PET part in the world that we are aware of. Coca-Cola and the State of Minnesota helped finance the main injection mold (\$110,000).

Volunteer engineers and

others helped with designs, materials and assembly jigs. Individuals, corporations and family foundations helped with funding.

We decided before we started this journey that we would never be independently wealthy, but we could be independently happy.

Sometimes our non-profit has been more non-profit than we would like.

But, we have emerged from the exploration, research and development stages and are now shipping solar ovens around the globe. As people from various

cultures, denominations, and agencies hear about our solar ovens, our network grows.

My father took a canoe trip from Minneapolis, Minnesota to Hudson Bay in 1930 with his classmate Eric Sevaraid. You can read about it in *Canoeing With The Cree*. Dad and I used to talk about his adventure. How did he accomplish it? One stroke at a time.

I knew at an early age that I, too, needed to journey into uncharted waters. Distributing the solar ovens are that journey - one at a time.

Martha and I are on that journey now. We have lots of extra room. Perhaps you would like to join us. We welcome your participation.

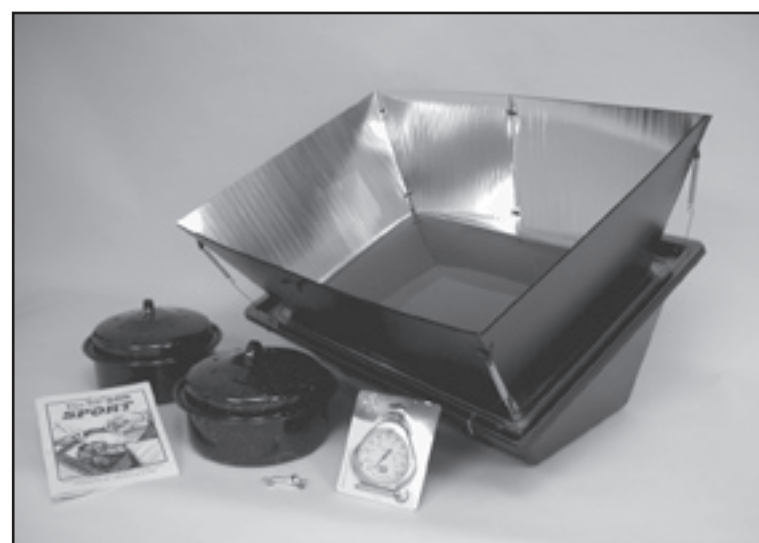
Optional Reflectors

The SOS Sport solar oven was designed for tropical regions (between the Tropic of Cancer and the Tropic of Capricorn).

Those of us who live outside the tropics, need all of the help we can get in order to solar cook year around.

Thanks to our faithful retired engineers, John Roche and Bob Nepper, the Solar Oven Society is now blessed with efficient and attractive optional reflectors.

Our reflectors double the Sport’s capture of sunlight from 100 watts of energy to 200 watts (both numbers assume good quality, direct overhead sunlight). We recommend using the reflector for winter months, early morning, and late afternoon (low angle of sun). They can also be used in less desirable



solar conditions, such as a hazy day and/or periodic cloud cover.

Spring loaded links attach to the small holes in the

corners of the lid and mount the set of reflectors over the domed center of the lid. The reflectors can be used in winds up to 35 mph.

The mission of the Solar Oven Society is to provide low-cost, effective, durable, attractive solar ovens, education, and training to help families in sun-rich, fuel-poor countries improve their environmental, health, nutrition, time and financial resources.

The E-mail Read ‘Round The World

Click On www.solarovens.org and Help Spread It

“Free cooking fuel is no longer available to many Afghan families since most of the forests have been destroyed by war, goats eating the trees, and years of drought. Even where sticks, branches or bushes can be collected from the fields, the chance of being injured by landmines when gathering them is high.” - Gordon Magney, Afghanistan

I am legally blind with some other physical challenges and live on a fixed income. These conditions have limited my ability of using a regular oven and stove. The user friendly Sport has opened up a whole new world for me.
- Marganit, Sacramento

In 1775, “the shot heard round the world,” marked the beginning of the revolution that brought freedom from colonial rule for the United States.

With your help, the following message will become the compassionate “e-mail read round the world”, that signals the beginning of a mass movement to bring freedom to rural women in sun-rich, fuel-poor countries who currently:

- Spend up to seven hours a day gathering firewood.
- Spend 1/3 or more of their family income on cooking fuel.
- Suffer horrendous lung and eye disease from breathing cooking fire smoke.

“I love my solar oven! Now I have time to go down to the river and do my laundry. Now I don’t have to breathe all the smoke.”
- Maria Therese, Nicaragua

- Watch 5 million of their children die each year after drinking contaminated water.

What has worked for thousands of years, cooking with wood, is becoming next to impossible in many areas of the world, because the wood is almost all gone. Can you imagine leaving your home at 5 a.m. and not coming home until noon, day after day, just to gather firewood? And then, inhaling smoke equivalent to 10-20 packs of cigarettes per day as you hover over a smoldering fire (without an open flame - trying to preserve as much firewood as possible) stirring and stirring so your food won’t scorch or burn.

With your help, we - the Solar Oven Society (SOS) - can provide relief for these women and their families. Using the free energy of the sun and our durable, effective, attractive, low-cost solar oven - families can

slow cook meats, vegetables, staples, bake bread and cakes, as well as pasteurize water.

The parts of the solar oven are made in the USA. They can be assembled without electricity or large machinery in the country of use. Solar ovens will help save toil, trees, time and funds. No more smoke. Good drinking water. Nutritious food. Combining the SOS sport solar oven with a highly efficient wood or gel fuel stove for nights and rainy days allows a family to cut their wood use up to 90%.

Thanks to churches, individuals, several foundations and corporations such as Coca-Cola and Dow Chemical, we now have ovens in 31 countries. We are in the process of connecting with the World Bank, USAID and larger foundations. These relationships take some time to develop.

In the meantime, the poor women and their families need our help NOW. Their need does not wait for the major funding.

Won’t you send us \$1, \$5, \$10, \$25, \$50 or ? today? No amount is too small or too big. Every \$4 will prevent a ton of CO₂ from pollut-

ing the atmosphere - not just where they live but also help prevent it from drifting around the globe to where you live.

Join us as we partner with in-country organizations to establish major projects in Afghanistan, Cambodia Ethiopia, Haiti, Nicaragua, Nigeria, Tanzania, and Uganda.

And, while you are at it, why not forward this message to a friend or relative. Tell them of your choice to help provide solar ovens for families around the world. The more supporters we have, the greater the impact will be where it is needed most. Please visit our website at www.solarovens.org and click on “E-mail Read Round The World”.

I don’t know why I was born in the USA. My mother worked hard when I was growing up. It sure would have been a lot worse if she had to spend 4-7 hours a day gathering wood, in addition

“The villagers like the taste of the solar cooked food and saving time. As a forester, I like thinking about growing our forests once again.”
- Sepheaktra, Cambodia

to fetching water, gardening, grinding grain, cooking . . . My mother is gone now, but I think of her every time we place a solar oven in the hands of another person’s mother.

Please join me and others with your contributions and prayers in creating outbursts of love and good deeds. You’ll be glad you did!

Sincerely,
Michael D. Port
Executive Director
Solar Oven Society

“Think of ways to encourage one another to outbursts of love and good deeds.”
Hebrews 10:24,
New Living Translation

“When I was growing up, the forests had apes, hyenas and a variety of other wild animals. Now, both the trees and the animals are gone. Trees need to be planted for the future and solar ovens need to be used now!”
- Mekonnen,
US Immigrant from Ethiopia

“I made the most wonderful lamb in my solar oven. It was so tender and just falling off the bone. I am ‘preaching’ about the benefits of solar cooking everywhere I go.” - Lisa, Cameroon

Solar Oven Society

(a project of Persons Helping People)
a 501 (c) (3) Non-Profit Organization
Donations are tax deductible

Become a Solar Oven Partner Donate

☐ Yes Enclosed is my donation to help spread the joy of Solar Ovens
Amount: ☐ \$30 ☐ \$50 ☐ \$100 ☐ \$500 ☐ Other _____

Sponsor

☐ Yes I want to sponsor Solar Ovens to be sent to needy areas in the world. Complete solar oven parts with pots, WAPI, oven thermometer, instructions and training, will be sent to the destination country, where they will be assembled, providing employment for some. I will sponsor _____ Solar Ovens at \$60.00 each.

Fund Raising / Income Opportunities

☐ Yes - I or my organization would like to help market the SOS Sport solar oven in my community.

SOS Sport - Orders

(USA sales only)

The SOS Sport Set comes complete with solar oven, 2 pots, oven thermometer, WAPI (see "5 Million Children...", page 3), and manual.

SOS Sport Set - \$124.97 each	Quantity _____	\$ _____
Optional Reflectors - \$22.97	Quantity _____	\$ _____
S&H - \$22.97 w/ or w/o reflectors (\$9.97 Refl Only)	Quantity _____	\$ _____
7% Tax - Purchases and S&H (MN residents only)		\$ _____
(Tax: One Sport + Reflector + S&H = \$11.96, One Sport + S&H = \$10.36)		
Total		\$ _____

Your Information

Payment method:

- ☐ VISA # _____ / _____ / _____ / _____ Exp Date _____ / _____
☐ MasterCard
☐ Discover NO Cash By Mail!
☐ American Express Make checks or money orders payable to:
☐ Money Order **Solar Oven Society**
☐ Check Sales Rep ID: _____ name or number

Billing Address:

Name (please print) _____
Address _____
City _____ State _____ Zip _____

Ship To: No PO Boxes - UPS cannot deliver to PO Boxes.

Name (please print) _____
Address _____
City _____ State _____ Zip _____

E-mail (for shipping notification) _____
Typical delivery 2 weeks. Please allow up to 6 weeks for delivery.

Send payment to:

Solar Oven Society
3225 East Hennepin Avenue, Suite 200
Minneapolis, MN 55413

sos@solarovens.org
Telephone: 612.623.4700

www.solarovens.org
Fax: 612.623.3311