



# the +heat IS ON

BY MARCUS WOOLF

Hot competition in the stove market *sparks* great innovation.

*if* the original MSR Whisperlite stove were a car, it would be considered an antique. Remarkably, the Whisperlite still competes in the outdoor market, despite its 25-year-old design. We certainly applaud the stove's staying power, but its ability to hang around also demonstrates that stoves haven't progressed at the rapid rate we've seen with other gear. Look around your store—how many leading products tout technology dating back a quarter century? Certainly, stoves have improved gradually over the years, but for a long time the market merely simmered, with true innovation flaring up infrequently. In the last four years, however, stove designers have been on fire, and intense competition has quickened the pace of product development.

"Definitely, within the last few years, there's been a lot more activity and more visibility in a market that was somewhat stagnant," said James Christian of Coleman. "I don't know if the resurgence of technology is being pushed by consumer demand or by manufacturers, but it's great." According to stove manufacturers, Jetboil deserves much of the credit for moving things forward.

### STOVES BEGIN TO BOIL

In 2004, Jetboil launched its cooking system (MSRP \$90), which included a burner and cup-like pot that featured an integrated heat exchanger, which transfers heat from the burner to the cup efficiently. Also in 2004,

PHOTOGRAPHY BY DAVID ECKELS/COURTESY OF JETBOIL



Paris.  
Milan.  
New York.  
Des Moines.

Is Iowa the new fashion mecca? It's possible, now that DuPont has created a renewably sourced polymer for fabric with corn, DuPont™ Sorona®. It's exactly what manufacturers, designers and buyers look for in a premiere fabric. Rich, vibrant colors. True blacks and whites. Comfort stretch and recovery. Fade resistance. Easy care. It also has something unexpected—it's smart for the environment. That's because it's the only high-performance polymer made with a renewable resource. So not only will Sorona® make consumers feel good in their activewear, swimwear or even lingerie, they'll feel great about your brand. **Be the first in your field to be glamorously green.** Visit [sorona.dupont.com](http://sorona.dupont.com) or call 1-866-4-SORONA.



*The miracles of science™*





Jetboil received Time Magazine's Most Amazing Invention award, and competitors immediately recognized the product's potential impact.

"Jetboil was a revolution in the market," said Drew Keegan, MSR product line manager for stoves, cookware and fuel.

The Jetboil proved an instant success for several reasons: First, it used canister fuel; stoves utilizing canisters had been gaining popularity because most backpackers found them easier to use than liquid-fuel stoves, which required priming. But the team at Jetboil took the canister-stove concept to a new level.

Most notable was its heat exchanger, which helped the stove boil water in about two minutes. The stove also proved extremely convenient and easy-to-use, allowing a person to cook, eat and drink from a single vessel that fit in the palm of a person's hand. If a person packed a Jetboil stove, he or she could travel without extra pots, which fit the growing trend toward packing light. Also, the Jetboil's components fit into the cup, so the whole shebang took up little space in a backpack. As outdoor magazines heaped praise upon Jetboil, a couple of competitors were likely kicking themselves for not launching this type of stove first.

Actually, Jetboil was not the first company to experiment with a heat exchanger. Primus looked at the concept 10 years ago, said John Smithbaker, president and CEO of North American Gear, which acquired U.S. distribution for Primus in 2006. He told GearTrends® that even though Primus had worked on heat exchangers, it didn't think the concept had any market value a decade ago. "Primus made a misstep," said

Smithbaker. OK, maybe the company was ahead of its time, but this wasn't a misstep, it was a face-plant.

Of course, Primus wasn't the only company to throw water on the heat exchanger idea. "We actually worked on that concept six years ago," said Keegan of MSR. "We didn't get super far down the line, but we got it to a point, and the marketing department didn't think there was a market for it." He said people in the company believed that consumers didn't want to be forced to buy an integrated pot and stove. Rather, the conventional thinking was that campers wanted the flexibility to mix and match stoves with pots they already owned, or use stoves with a variety of pots from various manufacturers. Even more remarkable was the fact that MSR had long offered a heat exchanger as an accessory, but this product was not integrated well into a stove system, so many consumers ignored it.

Despite their initial hesitations, MSR and Primus responded to Jetboil in 2006 with new stoves that boast their own new concepts that are generating plenty of interest.

### STRONG REACTION

As this magazine went to print, retailers were eagerly awaiting delivery of MSR's new Reactor stove (MSRP \$150), but the industry has already hailed it as a major achievement in stove design. Developed over the course of two and a half years, the Reactor not only boils water lickity split, but it also maintains consistent performance throughout the life of a canister and is pretty much impervious to wind.

Like the Jetboil stove, the Reactor features a burner with an integrated heat exchanger, which takes the heat produced by the burner flame and transfers it to a pot. However, the Reactor also uses radiant heat for added oomph. Inside the burner unit there is a piece of metallic foam (borrowed from the fuel cell industry) that absorbs and radiates heat, which combines with convective heat for a powerful one-two punch.

The Reactor also addresses performance problems associated with canisters. The drawback to a canister is that its internal pressure decreases as the fuel empties, decreasing its performance. As a result, many canister stoves work really well when a canister is fresh, but suffer longer boil times as the fuel runs low. MSR dealt with the challenge by outfitting the Reactor with an internal pressure regulator that is cali-



» Brunton's Vapor AF

brated to ensure that the stove draws consistent pressure throughout the life of a canister.

To further increase the Reactor's effectiveness, it uses something the lab wizards call "100 percent primary air." Most stoves that use convective heat rely on hot air simply rising from the burner. But with the Reactor, outside air enters an enclosed chamber (through holes) and is forced into the burner system. This system not only harnesses the maximum amount of air possible, but it also moves heat more quickly, so this forced convection is more efficient than standard convection. As an added plus, the enclosed burner is not susceptible to wind. Our editors placed the stove 6 inches from a floor fan set on high, and the Reactor suffered no ill effects.

Combine all of these technologies and you get a stove that boils water in about three minutes and burns so efficiently that you have to use an anodized pot with it to avoid scorching the pot metal. For this very reason, the top of the Reactor burner is rounded to discourage people from using inappropriate pots with the stove. But you could argue that this is a drawback for those who want to use pots from other brands that they already have in their gear collection.

Primus took a different tack with its new EtaPower stove system (MSRP \$110). It has a heat exchanger attached to a 2.1-liter pot, rather than the burner, so a person could use this pot with any other stove and cook more efficiently. (Primus also sells separately a 1.7-liter pot with a heat exchanger.) Also, you could place any standard pot on the burner of the EtaPower, which comes with a removable windscreen.

"We wanted people to have the ultimate flexibility," Smithbaker said. "You can take off the windscreen and use larger cooking pots. And we wanted the system to be usable with existing stoves on the market to make them more efficient."

If there was any knock on the original Jetboil, it's that the integrated, compact cooking system wasn't very flexible. It was well-suited for individuals but not couples

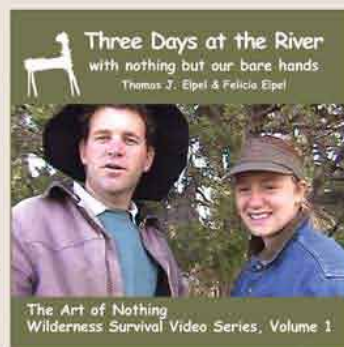


» Jetboil's GCS

# Sometimes the best gear is **NO GEAR AT ALL**

## *Three Days at the River with nothing but our bare hands*

*No knife. No matches. No food, sleeping bags or other gear. Join Thomas J. Elpel and daughter Felicia for this fun and extraordinary primitive camping experience in Montana. Starting with nothing but their bare hands, they make stone tools, build a fire with a bow & drill, sleep in a grass sleeping bag, hunt porcupine and do a stir fry.*

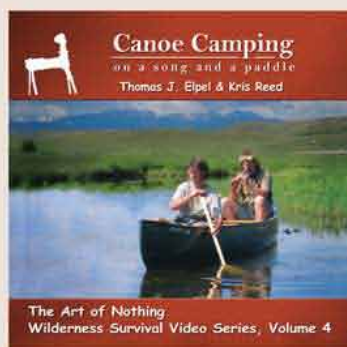
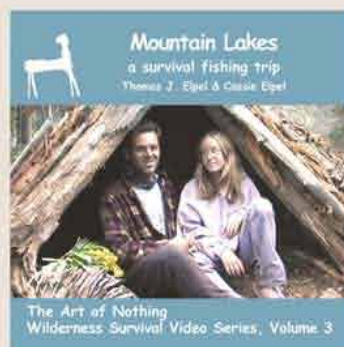


## **Mountain Meadows** *camping with almost nothing but the dog*

*With stone knives and the dog, Thomas J. Elpel and cousin Melvin Beattie venture into the Rocky Mountains to survive with whatever they can find and improvise. Amid wildflowers, wildlife and scenic meadows, they make tools, build a debris shelter, harvest wild edible plants, hunt ground squirrels, and cook with hot rocks.*

## **Mountain Lakes** *a survival fishing trip*

*With a flint & steel kit and a copper drinking cup, Thomas J. Elpel and daughter Cassie trek five miles into the mountains for a few days of fishing, fun, and survival living. They build an open faced lean-to, manufacture knives from found nails and tin can lids, harvest wild plants, catch fish, and cook on hot coals and in a stone oven.*



## **Canoe Camping** *on a song and a paddle*

*With two water bottles and a flute, Thomas J. Elpel and friend Kris Reed go canoe camping at the lake. Surrounded by wildlife, waterfowl and wild weather, they convert their canoe into a warm shelter, make sun visors from cattail leaves, start a fire with a soda bottle lens, make traps and fishing poles, harvest wild plants and mushrooms, and demo gourmet cooking.*

# The Art of Nothing Wilderness Survival Video Series

<http://www.hollowtop.com>

[http://www.hopspress.com/special\\_discount.htm](http://www.hopspress.com/special_discount.htm)



HOPS Press, LLC



# » » INVERSION LAYER » » »

## TURNING THE STOVE MARKET UPSIDE DOWN «

It's an old trick you may have seen people use in cold weather. When a fuel canister runs low, a person turns it upside down, which produces a stronger burner flame that lasts until every ounce of fuel is used. So, what's going on here?

Inside a canister, the fuel (a blend of propane and butane) is in a liquid state. As a liquid, the fuel keeps an optimum ratio of propane and butane to burn consistently. But at the very top of the canister is an area where the fuel exists as a vapor. As an upright canister is used, the propane vapor burns off more quickly than the butane, leaving a greater amount of butane, which does not perform as well in cold weather. When you invert the canister, the propane/butane mix remains in liquid form as it leaves the canister, so the ratio doesn't change and it performs consistently throughout the life of the canister.

While inverting canisters has long been an impromptu maneuver, a couple of manufacturers have introduced stoves that standardize this technique. Snowpeak's Metal Crab LI stove (MSRP \$160) includes a plastic cradle to hold an inverted canister, and its liquid injection system optimizes fuel performance. "We're now formalizing (canister inversion) because we saw a benefit that you have constant power output until fuel is completely out," said Nate Borne, Snowpeak's sales and marketing manager.

Coleman's Fyrestorm stove also accommodates an inverted canister and withdraws the fuel as a liquid. "We wanted to find a way to give the more common canister stoves the advantages of liquid withdrawal," said James Christian of Coleman. He cautioned that problems could arise if you invert a canister when using a stove not designed for it. "There's the possibility of a flare-up," he said. "We not only inverted the canister, but built in features to keep it burning consistently and safely."



system controls the air and fuel ratio, which needs to change between the time a burner ignites and when the stove is operating fully. That's pretty handy when you consider that the old-school method of priming and lighting can be a messy, hair-burning affair. Heck, lighting a Whisperlite could be its own little adventure, and getting singed during your first flare-up was almost a rite of passage. But, compared to the early days of the outdoor industry, today's consumers aren't as tolerant of gear that requires experience and attention. Ease of use and operational convenience are now considered essential to a stove's success—and singed hair is no longer considered acceptable.

Last year, Brunton introduced an all-fuel stove that's less complicated than models of the past. The new Vapor AF (MSRP \$149) burns butane as well as all liquid fuels—including white gas, diesel, auto fuel, jet fuel and others—without requiring a user to switch out jets. You simply twist a cup located on the burner to adjust the airflow to burn either butane or liquid fuel. The system is not only convenient, but requires a person to carry fewer parts that could get lost on the trail.

While the Vapor AF is clever, it could one day pale in comparison to the things that Brunton is dreaming up.



» Coleman's Fyrestorm

or groups. "We surveyed people and learned the typical numbers of people cooking," said Jetboil founder Perry Dowst. "Often, it was two people, so we expanded the functionality of what was essentially an efficient water boiler into something you can use for gourmet cooking." Jetboil responded by introducing a 1.5-liter pot (MSRP \$55) and an 8-inch fry pan (MSRP \$50), each with an attached heat exchanger.

The latest stoves are not only notable for their flexibility and efficiency, but they can also reduce fuel waste. Because the Reactor functions consistently, people are more likely to use their fuel completely before moving to a fresh canister. Keegan pointed out that over time people had grown accustomed to

the idea that a full canister would function better than a used one. As a result, they would take a new, full canister on every trip—even short excursions—and wind up with a garage full of half-full canisters. Though canister fuel isn't as environmentally friendly as liquid fuel, at least this takes a positive step in conserving resources.

Because canister stoves command much of the backpacking market, they've received the most attention lately. But manufacturers have improved liquid fuel stoves as well.

### LIQUID MARKET

Almost two years ago, Coleman introduced the Fyrestorm (MSRP \$150) with Reflex technology, which eliminates priming. The Reflex



» MSR's Reactor



» Primus' **EtaPower**


## POWER TO THE PEOPLE

"We're looking at alternatives to traditional fuels," said Jason Kintzler, senior communication manager for Brunton. "What if you could take our Portable Power and use it to run a stove? That's where we see stove design headed," he told GearTrends®, causing us to sit straight up in our chairs. For years, Brunton has produced a line of solar chargers for electronics, but no outdoor company has produced a portable solar charger for stoves. The concept is exciting, especially when you consider how renewable energy creates headlines these days.

While you chew on that, also be aware that MSR may re-launch its CFV stove, which it demonstrated at the 2004 Outdoor Retailer Summer Market show, but never brought to market. It featured the capillary force vaporizer (CFV), a ceramic disc the size of a button that generated a jet vapor from liquid fuel that was not pressurized. It basically did away with the need for a pressurized bottle, pump and most other traditional mechanical components. Unfortunately, the company that owned the disc technology decided it could make more money in the medical market, so MSR lost access to the discs. However, MSR has once again acquired a license for CFV and it's working on products for the military. Keegan said that MSR might eventually bring a CFV stove back to the outdoor market.

As for Jetboil, we couldn't get a handle on what the company is cooking up, despite our best attempts at arm-twisting. Dowst would only reveal that he's "interested in looking at a wide range of fuels."

We asked Dowst how he feels about the fact that his invention has generated serious competition as of late. He replied calmly that he's not really feeling the heat.

"We're pretty enthusiastic about the competition," he said. "People have woken up a bit, and this was such an underdeveloped category. I don't think the rate of innovation will slow down, and our most significant advancements are yet to come." 

» To see the latest SNEWS® product reviews, go to [www.snewsnet.com/reviews](http://www.snewsnet.com/reviews).

INTRODUCING  
NEW FOR 2008

# The Paradise Collection of Shelters

**UTOPIA SERIES**  
(1, 2+, 4 PERSON)

**XANADU SERIES**  
(1, 2+, 4 PERSON)

**SHANGRI-LA SERIES**  
(1, 2, 3, 4+, 6+, 8+ PERSON)

**VALHALLA SERIES**  
(2+, 4 PERSON)

GOLITE®  
BOULDER, COLORADO

GOLITE'S ALL-NEW **PARADISE COLLECTION** OF TECHNICAL 4-SEASON SHELTERS, INCLUDING FREE-STANDING TENTS AND THE WORLD'S FIRST FREE-STANDING BACKCOUNTRY TARPS, DELIVER SERIOUS WEATHER PROTECTION, DURABILITY, COMFORT, FUNCTIONALITY, VERSATILITY, PACKABILITY, AND LIVABLE SPACE, ALL AT INCREDIBLY LOW WEIGHTS. JOIN US IN PARADISE.

Come see us at  
**Booth #23015**

# Slumberjack®

**COMPACT  
VERSATILE  
PROFITABLE**

Go Light, Go Fast, Go Small  
Point of Purchase Display

Ultimate 20',  
Solera 15', and  
Tour Lite 40'