

on test

wood-burning stoves

Do these natty little devices provide an effective compromise between a gas stove and a camp fire? Chris Townsend finds out

pots

Wood stoves will make pots sooty so it's best to keep them in a stuffsack. Some soot can be wiped off but not all.

potgrab

Pot handles can get very hot. A potgrab is easier, cooler and safer.

pot supports

A stove should have supports that hold the pot securely above the flames.

vents/fan

Drawing air into the fire is necessary to produce a hot flame in a small contained space.

fuel

Some types of wood light easily and burn fast. Others can be hard to light and burn slowly. Learning which types of wood are easiest to use is part of the fun of using a wood stove. Tiny twigs and bits of paper can be used as tinder but there are more effective products. Hammaro Lighting Paper is a fibrous material that is highly flammable (01903 210212; www.hike-lite.co.uk). Light My Fire (023 92528711; www.light-my-fire.se) makes a firelighter from resinous pine shavings called MayaDust that lights very easily. Solid fuel tablets and candle stubs can also be used as tinder.

materials

Stainless steel is tough but heavy. Titanium and aluminium are lighter weight.

Photo: Tony West

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A person wearing a white jacket is shown from the chest down, holding a metal pot over a campfire. The person's hands are visible, and they appear to be tending to the pot. The background is a soft, out-of-focus view of the campfire and the surrounding environment.

THE romance of the camp fire lingers long. Staring into the mesmerising, flickering flames. Huddling before the warm orange glow as the night chill begins to bite. Bright sparks soaring into the black sky. Logs sputtering and spitting. Half-charred potatoes cooked in the ashes. Flour twists “baked” on the end of a stick. Somehow a fire makes a camp seem more real, more alive and more exciting.

Despite this I rarely build a camp fire in Britain. Usually because there is nowhere suitable, a lack of fuel or the weather is too wet and windy. In drier places with ample fuel and sites where a fire can leave no mark it's different. I lit enough fires on long walks in the Canadian Rockies and the Yukon to make it worth carrying a folding grill for use as a pot stand.

One problem with open fires is that below a certain size they don't put out much heat and need refuelling constantly with fairly large pieces of fuel: you can't make much of a fire with heather twigs. This is where wood-burning stoves come in. These lightweight little fireboxes contain the wood and concentrate the heat, allowing small pieces of fuel to provide enough heat to boil water. You don't need to carry heavy liquid fuel and instead can gather tiny twigs, bark, dry leaves and pine cones during the day and stuff them into your jacket or pack pockets (I carry a small stuffsack for this purpose). They don't weigh much. And except at the highest camps there is usually some dead heather or other combustible dry vegetation available around camp (though heather doesn't actually burn that well). Ultralight meths or solid fuel burners can also be used inside wood stoves, which makes them more versatile when using wood is impractical.

However wood-burning stoves do have disadvantages. Finding dry fuel in wet weather can be difficult

– though not impossible (damp fuel can be burnt in a hot fire when necessary) and the stoves should be used outside, which in pouring rain is not easy or pleasant. They can be used under a tarp or large vestibule with the door open but there needs to be ventilation so fumes can be expelled, and plenty of space between open flames and flammable tent fabric. Open flames are also hard to control and simmering over a wood stove is difficult. Allowing the fuel to burn down and just adding the occasional small piece can allow some simmering but this isn't reliable. Raising the pot above the stove is more efficient if you can rig a dingle stick or other adjustable support for it. Overall though, wood stoves are for boiling water rather than long simmering. Boiling itself can take any time from five to 15 minutes for a litre of water, depending on the type of fuel, the care taken with refuelling, the temperature and the wind.

Wind can whip the frames away from your pot and prevent water boiling and food cooking. So if a stove doesn't have a built-in windshield then a foil one is worth using.

While having a much smaller footprint than a campfire, a wood-burning stove can still damage vegetation and leave a burnt scar. Some wood stoves have a raised base on which the wood is burnt and don't scorch the ground below. However they may emit sparks so they shouldn't be used amid flammable materials like dry grass. Other stoves are simply walls that surround the fire, which is lit on the ground (though a thin piece of metal as a separate base is worthwhile to prevent scorching the ground and to make clean-up easier). Ashes from stoves should be widely scattered or buried once they are cold.

Are wood stoves practical for backpacking in the UK? Certainly, as long as you adapt your techniques,

which means camping near fuel or else collecting it during the day and being prepared to spend time tending the stove and getting your hands dirty. Foraging for fuel can be fun in itself. Indeed as you become used to spotting fuel during the day it can be hard to resist the temptation to collect far more than you need! Using a wood stove is fun too. I suspect it will probably suit those like me who enjoy the camping side of backpacking, creating a home in the wilds and tinkering with cooking. Those who regard camping as no more than an unfortunate chore on long walks and who like stoves that are fast, simple and require no thought are likely to find wood stoves too fussy and time-consuming. A wood stove is also a camp fire in miniature and can be used as such. Without a pot on top, longer pieces of wood can be used too. As with an open fire many happy hours can be spent staring into the flames and poking in pieces of wood!

TEST NOTES

Living in the Highlands I have mostly used birch and pine as fuel. Birch lights very easily but is quickly consumed. Pine is slightly harder to light but burns longer. However the resin can spit and it leaves more of a residue than birch. Big pieces of wood are not much use unless you have a saw. If it's more than three to four inches long and you can't snap it with your hands then it won't fit into the stoves. Small wide chunks are useful however as these burn longer than thin twigs.

My boil time figures vary so much that a meaningful comparison is impossible but all of these stoves should produce a litre of boiling water in under a quarter of an hour and in ideal conditions the fastest can do so in five minutes.



BUSHBUDDY

Ultra

\$120 (Canadian) inc. airmail

★★★★★

TECHNICAL SPEC

Design: double-wall firebox, vent holes, internal grate

Materials: stainless steel, handmade grate of nichrome wire

Boil time: 8-10 mins + per litre

Weight: 139g

Likes: ultralight, low bulk, efficient

Dislikes: expensive

This beautifully made little Canadian stove is the lightweight version of the original Bushbuddy (which weighs all of 45.4 grams more due to heavier materials but is otherwise identical). It has a double wall with vent holes around the base of the outer and around the top of the inner. Bushbuddy says this is to preheat secondary combustion air so that wood burns very cleanly. It's effective, as all that's left after a fire is a small amount of fine ash. There's a grate inside the firebox so the fuel sits above an air space into which air enters through the lower vents, providing a draught. A pot support, also with vent holes and a cutaway section for inserting fuel, sits on top of the firebox. This can be inverted and stored in the firebox for packing. The packed stove, which looks like a tin can with a ring of holes around one end, will fit inside my one-litre MSR Titan pot. The metal of the stove is very thin and could be crushed so it is important to store the pot carefully.

The grate and the double construction mean that the base of the stove doesn't get hot so it can be placed on flammable surfaces and even picked up and moved if necessary. I used it on a wooden picnic table and it didn't leave a mark. However the grate means that tinder needs to be quite big. I find it easiest to light the stove without the pot support in place and then put it on before the fire grows too hot. Although the firebox provides some protection from the wind, the flames can be blown sideways out of the holes in the pot support so a sheltered site or windshield is needed. I used a Trail Designs Vari-Vent Windscreen (61g) with the Bushbuddy and it worked fine. Once lit, the Bushbuddy blazes delightfully. Feeding the stove with the pot on top is quite easy as long as the wood is in very short pieces and tinder chunks.

Without a pot on top the Bushbuddy makes a good little campfire. It's fun to play with and very light and compact to carry. I think a meths burner could be used in the firebox, which would add versatility, but I haven't tried this yet. As a wood-burning stove the Bushbuddy is excellent.

Bushbuddy
www.bushbuddy.ca



CALDERA

Ti-Tri

\$110 + (US)

★★★★★

TECHNICAL SPEC

Design: cone windscreen

Materials: titanium

Boil time: none claimed

Weight: 73g for two-litre pot cone, 55g for 0.7-litre pot cone

Likes: ultralight, meths/solid fuel option

Dislikes: cones only fit one pan size

The Caldera Ti-Tri is the result of collaboration between two small specialist US lightweight backpacking companies, Titanium Goat and Trail Designs. It's a version of the latter's Caldera Cone made from titanium and designed so that it can be used with wood. The Ti-Tri also comes with alcohol burner and solid fuel stand, hence the name, plus a pot and fuel bottle and a bag and cup into which it all fits. There's an optional titanium floor. Titanium Goat sells two versions, with a 550ml pot and a 900ml pot, weighing 198g and 269g (including alcohol and solid fuel burner) and costing \$110 and \$125 respectively, while Trail Designs will make up custom sizes to fit any size of Caldera Cone. For this feature Trail Designs made me up two Ti-Tri systems with Anti-Gravity Gear 850ml and two-litre pots. Including a plastic carrying container (doubles as a mug) and optional floor but without the alcohol burner (16g), fuel bottle (22g) and solid fuel stand (7g) the two systems weigh 264.5 grams and 376 grams, which is very light.

Caldera Cones act as combined windshields and pot supports. The pot fits in the top of the cone, preventing heat exiting there, while air enters through vents in the cone. It's a very efficient system. The Ti-Tri cones are made from springy titanium and are easier to roll up than the aluminium ones. The design of the cone is the same except for four small holes near the top, which are for two titanium tent pegs that support the pot, raising it much higher than when using meths or solid fuel and allowing room for the fire. All the cones have a deep cutaway on one side. This is for inserting fuel without having to remove the pot. The fire itself can be lit on the ground but I recommend the optional two-part titanium floor, which protects the ground and makes dealing with the ashes much easier. Once a small fire is burning, the cone can be placed over it and the pot put on the top. The cone contains the fire well though flames can emerge through the air vents and the fuel opening. Wind resistance is good but the unit is so light that care needs to be taken that it doesn't blow away before the pot is placed on top. To keep the fire roaring the bottom vents should be placed into the wind so that a chimney effect is created.

While not designed primarily as a wood stove, the Ti-Tri works pretty well with a fire inside. The cone does the same windshield, chimney and pot support job as with a meths burner. The weight is very low and the cone is more flexible and easier to use than the standard version. One could say that this is the luxury Caldera Cone.

www.titaniumgoat.com
www.traildesigns.com



SIERRA STOVE
\$57 (US)



TECHNICAL SPEC

Design: double-wall firebox, battery-operated fan
Materials: stainless steel/aluminium
Boil time: four minutes for a litre
Weight: 515g
Likes: fast boil, adjustable flame
Dislikes: non-waterproof battery case, heavy

The Sierra Stove was one of the first portable wood-burning stoves and has been around for many years. It consists of a double-walled firebox and a small fan powered by a battery which sits in a housing away from the firebox and is attached by wire. The firebox has holes at the bottom of the inner walls and a large hole in the base into which the fan clips so that when switched on air is blown into the fire. The fan runs on a single AA battery, which lasts around six hours. The fan and battery pack fit inside the firebox for packing. The standard Sierra Stove, which I bought some years ago, is quite heavy but there is now a lighter titanium version weighing 284g (but costing a hefty \$129). There are small pot supports on the firebox that will support fairly big pans. The base of the fan housing is quite wide and the whole unit is stable as long as it's placed on level ground. It can be moved when lit but this is awkward as the battery pack has to be lifted as well as the stove.

The fan has three settings – Low High and Off – and these do make a difference. When lighting the fire the fan should be off or it may blow out the flames. Once the fire is established the high setting will produce a roaring blaze and boil water faster than any of the other stoves tested. On high it also consumes fuel fast, however, so unless hot water is required quickly or you are boiling large amounts the low setting is better for fuel conservation. For simmering turn the fan off. Small twigs can be pushed into the fire in the narrow gap between the pot and the firebox but for larger pieces of wood the pot has to be removed. A cross-grate (70 grams) is available that sits on top of the firebox. This allows longer sticks to be used and makes it easier to add fuel without removing the pot. It can also be used for simmering by raising the pot above the flames.

The Sierra Stove works well and having some control over the flame is an advantage. However the battery housing isn't waterproof and needs to be wrapped in plastic in rain. The wires make it more vulnerable to damage too, though of course the stove would work without the fan. The big drawback compared with alternatives is the weight. Even the titanium version is heavy compared with the Bushbuddy Ultra or Caldera Ti-Tri. But if the weight isn't significant and the control the fan gives is appealing, the Sierra Stove is a good choice.

ZZ Manufacturing
www.zzstove.com



FIRE-SPOUT MINI
£16 + £3.10 delivery



TECHNICAL SPEC

Design: single wall firebox, vent holes
Materials: stainless steel
Boil time: a few minutes
Weight: 536g
Likes: low cost
Dislikes: heavy

The only British stove tested, the Fire-Spout Mini is also the most basic, consisting of no more than four flat pieces of metal in two sizes with their ends bent over to form wings. These wings have grooves along each side that slot into each other when the stove is put together. At the end of one of the larger sheets of metal are two air holes, which should be at the bottom of the stove and placed downwind. Assembling the stove only takes a few seconds. The resulting firebox has gaps at the bottom and top on the shorter sides that act as vents and into which fuel can be pushed. The pot sits on the top edges of the longer sides. There is no floor but a thin sheet of metal such as that supplied with the Ti-Tri stove can be used to protect the ground.

The Fire-Spout Mini burns fiercely and fuel needs to be added frequently. Water takes slightly longer to boil than with the other stoves, but not significantly so. It makes a nice mini camp fire when not in use as a stove. Longer pieces of wood can be added then.

The price might seem high for such a simple device but it is far lower than for any of the other stoves tested. However it is also the heaviest stove tested. A lighter version would be nice. As it is, if weight isn't important or you fancy trying a wood stove without spending too much, it's certainly worth a look.



The romance of the camp fire lingers long

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