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From boiling in bulk, to searing a snag,

we crank the heat on this week's episode of the Snowys Camping Show, adding fuel to the fire that is comparing camp stoves.
Outdoor experts Lauren and Ben take this steak right to the edge, exploring the brands, BTUs, and fuel types behind some of the most convenient, portable cooking units.
Get to know which burners are best for boiling, the secrets behind simmering, and the stove system best suited for your campsite cooking. Liquid fuel or gas – let's put the billy can on the boil.

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Mentioned in this Episode

Gasmate Classic 2-Burner Stove
Companion RV Stove & Grill
Coleman Hyper-Flame Series
Fire Blanket
The Ultimate Gas Cylinder Safety Guide
POL Classic Gas Fitting
Coleman 2-Burner Dual-Fuel Powerhouse Stove
Coleman HyperFlame Series

Overview and Importance of Camp Stoves

Be it for boiling, heating, or cooking, adding a camp stove to your outdoor setup is ideal – particularly during the fire ban season when campfires aren't an option. While transporting gas can be inconvenient, there are few alternatives when it comes to steaming veg, boiling tea, and sizzling a steak out bush.
Larger, heavier, and more outdated stoves offer average burner performance and measure inadequate British Thermal Units (BTUs). An example of an upgraded model is the Classic 2-Burner Stove by Gasmate. These stoves are not suitable for caravans or confined spaces, but more appropriate in open, well-ventilated spaces such as a pull-out kitchens or other outdoor areas. Stoves used within more sheltered spaces, like a house or caravan, are more specific in their design, with burners engineered differently. The Bromic brand of stoves are also manufactured to burn more efficiently, releasing different bi-products to standard burners.
Camp stoves are available in single, double, or triple burner models, where some also include grills. Gasmate's 2-Burner Deluxe Stove is a simple, straightforward model which, according to Ben's assessment of a similar product, can last decades. Whilst it's possible to add burners to the centre of your camp stove, it is suggested to first consider your stove's most frequent functions. For example, if heating a billy can or boiling a kettle is the most your trip will require, it's likely that more than two burners is unnecessary.
Stoves with a small centre burner and two large either side are designed specifically for the use of hot plates on top. This allows for a more adequate and even heat distribution when barbequing food.

Using a Grill with a Camp Stove

Is it worth it?
All points considered, Lauren's take on this frequently asked question is no, probably not. It's a common assumption that camp stove grills will work close to or just as well as a standard grill used at home. However, a camp stove's lightweight, minimally engineered structure – designed for portable, outdoor usage in windy, ambient temperatures – means it doesn't enable efficient grilling like that experienced with a more domestic-style stove.
As well as a camp stove's incompatible structural features, grilling out bush can also burn through a lot of gas. When considering a grill top for those balmy barbeque dinners, it's wise to maintain a realistic understanding of what will come of this function.

Unregulated Vs Regulated Systems: can I use my camp stove on my caravan or bayonet gas system?

Again, the short answer is no.
Where bayonet gas systems require a regulated gas supply, camping stoves require unregulated. It isn't possible to connect an unregulated gas stove into a regulated gas supply – however Coleman manufactures a regulator arm specific to their products. That said, this regulator arm cannot be bypassed, as their camp stoves require this component to function – that is, removing and swapping it for a hose to then connect to a regulated system will not

work.
In addition, it isn't possible to have a double regulated setup, i.e. a regulated stove on a regulated gas system. A bayonet gas system will only suffice if it requires a regulated gas supply and a particular inline regulator can be completely removed, swapped for an unregulated hose, and connected into the gas supply. This approach unfortunately doesn't lend itself to many products, other than some double wok burners, Bromic stoves, and the RV Stove and Grill by Companion.
Camping stoves are unregulated due to requiring a high output when battling the colder, ambient temperatures of the outdoors. In these environments, they need to burn hard and hot to meet your cooking demands. That said, regulated gas stoves can sometimes perform better. When the weather is cold the gas pressure from the unregulated side drops, while the pressure going into the stove remains the same.
In Liquefied Petroleum Gas (LPG) stoves, the burners require low pressure gas. The gas in the bottle sits at a high pressure before passing through the regulator, converting to a lower pressure through the hose, reaching the stove, and exiting through the burner. On the other hand, a standard camp stove from Gasmate connects straight to the burners, where high pressure travels directly from the gas.

British Thermal Units (BTUs)

A BTU is a measure of heat, where one BTU indicates the heat required to raise one pound (450g) of water by one degree Fahrenheit, over an hour. To clarify, a BTU doesn't consider time – simply the energy needed to raise the temperature of a volume of water, by a particular degree.
Where some camp stoves indicate a megajoule measurement as opposed to BTU, it is possible to convert between the two units.
To help understand the role of BTUs in distinguishing one camp stove from another, Lauren sought to know what degree Fahrenheit brings 450mL of water to the boil. Her findings were that half a litre of water boils at 212 degrees Fahrenheit, which therefore indicates that a stove with 212 BTUs will boil half a litre of water in an hour.
To determine the gas usage of a high BTU stove versus one with less, the process has many steps. Whilst you can't convert BTUs to grams, it's possible to instead translate millijoules to grams, following the path from there to determine how many grams of gas is burned.
The common stance on BTUs is 'the higher, the better', though this isn't always the case. Different functions require different levels of BTUs, so often it depends on the degree of heat required for your cooking purpose. Whilst a higher BTU level will mean your water boils faster, be honest with us – what's the rush when you're taking in the scenes of the summit? Ben recommends for campers to not get caught up in the quest for the perfect BTU level, but instead consider a stove that has the adequate room for the pots, pans and cans you expect to use. For example – boiling water or barbequing on a hot plate will require more BTUs for optimal results. For more varied uses however, a three-burner stove with roughly 4,000 – 8,000 BTUs is sufficient. If defrosting vacuum-sealed packs or reheating pasta sauce is likely all you'll find yourself doing on the open roads, Lauren and Ben recommend a stove with a high BTU and 2-3 burners.
Of course, a limitation of low BTUs is that windy weather can dominate and determine how

much heat is reaching the contents of your pots and pans. While some Coleman burners are well engineered, produce a hyper-flame, have a high BTU level, and offer wind breaks – the function often desired yet still so difficult to achieve is *simmering*!

Simmering on a Camp Stove

A common question for Ben and Lauren has been: which camp stoves are best for simmering? Like grilling, Lauren believes that simmering is another cooking method that is highly unlikely to meet the expectations of campers more familiar with their higher-tech, home-installed stoves. While most camp cookers don't allow efficient simmering, Zempire manufacture some with added micro-control technology, designed specifically for this function.
Still, if the desire is to boil large volumes of water for cooking pasta or rice, it's unlikely a camp stove will enable adequate simmering capabilities as well. Generally, you can't have your dinner and eat it too!

For boiling water or barbequing on a hot plate, more BTUs will allow for a more satisfactory result. Credit: Coleman

Gas Safety Checks

So the kids are buckled in, the sleeping bags are slotted snug between the boot and the back seat, and the booze is boxed in by the icebox – but how's the gas bottle looking?
Before every rural road-trip, it's recommended to check your bottle for gas leaks. Indications of potential problems are degraded or cracked hose seals, or simply the smell of gas. In setting up your gas bottle, Ben suggests checking for leaks using soapy water when connecting the attachments. If gas is escaping, the soap helps to identify this leakage by bubbling. As an additional precaution, it's not wise to position your bottle beneath your camp stove or any source of heat.
Ben's blog, 'The Ultimate Gas Cylinder Safety Guide', is helpful to read for further insight into the importance of gas safety. From this, there has been discussion of a new LCC27 gas fitting that will eventually override the classic POL. Coming soon is a blog post that will dive into the details – but for now, this fitting has been introduced as more fail-safe step forward in gas safety. While gas manufacturers are already distributing the LCC27 fitting, it will be slowly phased in over a period of time to allow for a smooth, streamlined transition from the POL. Overall, understanding how you can transport gas safely can influence which camp stove you choose.

Fire Safety

Fire can be averted within your campsite using a fire blanket or an extinguisher. Ben keeps both of these in his car, but follows the idea that prevention is far better than cure.
To prevent unwanted fires from igniting, first clear anything flammable from beneath the stove. It's also wise to set up your camp stove away from any low hanging trees or branches, ideally in a wider, more open space.

On that note, adequate ventilation also aids in preventing fire hazards. Some gas appliances will indicate that a ventilated space consists of only three walls and a roof. Despite their materials naturally allowing good ventilation, tents and enclosed gazebos are also not considered well-ventilated unless they follow this three-wall recommendation.

Liquid Fuel Stoves

While gas stoves are the more classic option, liquid fuel stoves are an alternative that can operate with both unleaded or shellite fuel. An example is the Sportster fuel stove by Coleman, or their Compact Dual Fuel stove.
A liquid fuel stove works using a pump that pressurises the fuel and a pipe that transports it to the burner sitting on top of the fuel canister. The fuel is released from one side of the canister and pushed across where the burner would sit, before travelling back down the other side. When first lit, it produces a large yellow flame that heats the tube and vaporises the fuel, released then as gas through the top of the burner.
In Ben's experience, the liquid fuel stove works in just about all conditions. Providing a visual indication of the pressure levels, the system also includes a pump to crank the pressure back up after it drops. On the contrary, high-pressure gas stoves fail to burn as efficiently when the pressure falls. This is not ideal when considering butane cannister stoves.
A dual-fuel Powerhouse stove from Coleman offers both low and high pressure, adjustable to suit your needs over time. In Ben's humble opinion, this lends them well to allowing more cooking control at your campsite.

Pros and Cons: Liquid Fuel Vs Gas Stoves

While liquid fuel systems have their benefits over gas stoves, they are also limited in their bigger, boxier shape and heavier weight. As well as this, owning a multi-fuel stove requires more maintenance than a gas stove, calling for deconstruction and thorough cleaning of each component. In that, using unleaded fuel tends to leave your liquid fuel stove dirtier still.
That said, a gas stove presents as more of a structural inconvenience, where pulling it out, setting it up, and checking the gas bottle for leaks can be a nuisance of a routine. A liquid fuel stove instead can serve as a storage container, allowing room for a litre of shellite, a fuel cannister or two burners, and additional utensils. In respects to fuel, a liquid fuel stove accepts more than one kind, leaving options open for use when quantities run low. When refilling a gas bottle however, the choices are far more limited.
Overall, while a liquid fuel stove requires an alternative approach to the more familiar gas systems – those who use them, love them!

Suggested Fuel

For a cleaner and more efficient burn, E10 fuel from a pump has been previously claimed as the more ideal option over shellite and unleaded.
Nonetheless, shellite is sold for multi-fuel stoves at various hardware stores and supermarkets.

Consumption and Further Comparison: Liquid Fuel Vs Gas Stoves

A common consideration when choosing a camp stove is their overall fuel consumption. To compare liquid fuel stoves to gas systems, Lauren and Ben refer to both the Coleman liquid fuel Powerhouse stove and the Gasmate 2-Burner LPG gas stove as examples.
The Coleman stove, weighing in at just over 6kg, takes 1.6 litres (700g-800g) of shellite or unleaded fuel, and is capable of continuously running both burners on a maximum setting for 2.3 hours.
The Gasmate stove weighs in at roughly 4kg and uses 195g of gas per hour, per burner – otherwise calculated as 400g of gas per hour, across both burners. Factoring in the weight of the gas bottle itself adds, for the sake of this example, 1.25kg (empty).
Considering all components respective to each system, both stove setups round out to be a similar weight. However, when considering ease of transportation, it's often an easier and less risky travel option to keep a litre of shellite in the car as opposed to a heftier gas bottle. An LPG gas cylinder requires a more considered travel position, highly advised to be stored upright and not in an enclosed vehicle space where potential ignition can occur.

Materials and Aesthetics

Despite being the least important factors to consider, external materials and overall appearance of your camp stove can still impact on a final purchasing decision.
For example, while the Coleman HyperFlame series with high BTU levels look like a bomb-proof suitcase, a Gasmate stove with a lower BTU range may appear as more of a shell. Be it a more robust model without the need for a protective bag, or bomb-proof steel as your preference – appearance doesn't necessarily correspond to overall performance.

Thanks for listening, tune in again for next week's episode!

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Catch you out there!