



Pathfinder Honour:

Trainer's Notes

Camp Oven (ie Dutch Oven)



Instructions to Trainers / Instructors of this Honour

Thankyou for being involved with this Honour. These notes have been developed to assist in teaching / instructing this honour. We recognise that there is much more information available and we are grateful that you should share your expertise.

Please remember that Honours are designed to develop our Pathfinders in many ways; their interests, their knowledge and their relationship with their Saviour and Creator. Your enthusiasm and creativity will have a huge impact on those doing the honour.

To complete an Honour, the following (where applicable) must be completed satisfactorily:

- Physical and Practical Requirements.
- Honour Workbook.
- Honour Assessment Sheet. (*On SPD Honour Website but Leader's level access is required*)

Additional Reference Material

International Dutch Oven Society: <http://www.idos.com/>

CAMP OVEN COOKING IN AUSTRALIA (COCIA) <http://www.aussiecampovencook.com/>

Acknowledgements

Please refer to following text, but be aware that, although the internet sources (ie Wikibooks) have useful information, their contents are beyond the control of the SPD.

Camp Oven (Dutch Oven) Honour

REQUIREMENT 1: Earn the Cooking 1 Honour or the Fire Building & Camp Cooking honour.

**REQUIREMENT 2: Briefly describe what constitutes a camp oven (ie Dutch oven).
Use the following headings:**

a. Physical description (shapes, materials used, sizes)

Based on: http://en.wikipedia.org/wiki/Dutch_oven

A camp oven is a thick-walled cooking pot with a tight-fitting lid. It is robust enough to withstand the stresses imposed when placed directly on red-hot coals. Camp ovens are usually cylindrical, however oblong ones are available

Cast iron is by far the most commonly used material. Mild steel, spun into shape (see the Bedourie Oven below) is also used. Cast aluminium is used for light duty applications.

‘Camp oven’ is a term used widely in Australia and we will be using this term throughout these notes. In North America, it is commonly referred to as a 'Dutch oven'. It is called a ‘cocotte’ in French, a 'casserole dish' in British English, and is similar to both the Japanese ‘tetsunabe’ and the ‘sac’, a traditional Balkan cast-iron oven. In South Africa it is a ‘potjie’, directly translated "small pot" from Afrikaans or Dutch. It is traditionally a round, cast iron, three-legged pot. It is usually black. It is mostly used to cook over an open fire. Among the South African indigenous tribes these pots also became known as ‘phutu’ pots.

The Bedourie Oven is an Australian adaptation of the camp oven. Drovers working on Bedourie Station, in western Queensland, found that the cast iron camp ovens they used for cooking would often fall from their pack horses and sometimes break when they hit the ground. The idea for the Bedourie Oven was born from the frustration of the drovers missing out on a cooked camp meal, so one made from mild steel was made. Being made from pressed mild steel would mean it could be handled a lot rougher and if dropped would not break.

Approximate sizes and capacities of typical Camp Ovens are as follows:

Imperial		Metric	
Diameter (Inches)	Capacity (Quarts)	Diameter (Cm)	Capacity (Litres)
8	2	20	2
10	4	25	4
12	6	30	5.5
14	8	35	7.5
16	12	40	11

b. Principles of operation

It is well worthwhile understanding the basic principles of how a camp oven works. This knowledge can then be applied to help create a perfect camp oven culinary masterpiece.

When the lid is in position, the food inside of the camp oven is in an enclosed container.

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Conduction When the camp oven is placed on hot coals, heat ‘travels’ through the metal of the camp oven and ‘into’ anything touching the sides. Anything touching the base will be hottest. We call this ‘conduction’.

Convection. Any fluid (this could be air or a liquid such as a stew) in contact with the metal of the camp oven heats up and expands. This makes it lighter than the rest of the fluid and it rises. This creates what is called convection currents inside the camp oven.

Radiation. The warmth we receive from the sun is radiation heat. Inside the camp oven, heat is radiated for the metal onto the food. When hot coals are placed on the lid of a camp oven, heat is radiated downwards. It’s a great way to cook a pizza’s. Yum!

c. Different ways a camp oven may be used for cooking

A camp oven can be used for frying, deep frying, baking, boiling, stewing, and roasting.

REQUIREMENT 3: Give a brief history of camp ovens and their role (if applicable) in the history of your country.

The following is based on: http://en.wikipedia.org/wiki/Dutch_oven

During the late 1600s the Dutch system of producing these cast metal cooking vessels was more advanced than the English system. The Dutch used a special, dry sand to make their moulds, giving their pots a smoother surface. Consequently, metal cooking vessels produced in the Netherlands were imported into Britain.

In 1704, an Englishman named Abraham Darby decided to go to the Netherlands to observe the Dutch system for making these cooking vessels. Four years later, back in England, Darby patented a casting procedure similar to the Dutch process and began to produce cast metal cooking vessels for Britain and her new American Colonies.

It is possible that, because Darby’s patent was based upon his research into the Dutch foundry system, that the cooking vessels he produced came to be referred to as “Dutch” ovens. Other researchers believe that this term may have come from the itinerant Dutch traders who sold cooking vessels out of their wagons as they travelled from town to town and door to door. Maybe both accounts are true. In any event, the term “Dutch oven” has endured for over 300 years, particularly in the United States.

North America

The cast-iron cookware was loved by American colonists and settlers because of its versatility and durability. It could be used for boiling, baking, stews, frying, roasting, and just about any other use. The ovens were so valuable that wills in the 18th and 19th centuries frequently spelled out the desired inheritor of the cast iron cookware.

When the young American country began to spread westward across the North American continent, so did the Dutch oven. A Dutch oven was among the gear that Lewis and Clark carried when they explored the great American Northwest in 1804-1806. The pioneers who settled the American West also took along their Dutch ovens. In fact, a statue raised to honour the Mormon handcart companies who entered Utah’s Salt Lake Valley in the 1850s proudly displays a Dutch oven hanging from the front of the handcart. The Dutch oven is also the official state cooking pot of Utah.

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Australia

The camp oven played an important role in the culinary activities of early European Australia. The camp oven was a cooking pot with a removable lid, a handle to either side and typically three short legs, which allowed the embers to be pushed right in beneath it. It was not an Australian invention. Robert Gouger reported in 1836 that *'Cast-iron three-legged pots are much used in out-of-doors cookery in these colonies'*

Source: <http://www.mileslewis.net/australian-building/pdf/services/services-heatingq.pdf>

Another example of camp oven use is John Egge, the Chinese businessman of River Murray fame. He started in a very small way - he baked pies and pasties in a camp oven and sold them door-to-door from a basket. By 1861, he could afford a proper oven and a shop to house it. He opened a bakery. His business prospered with real estate ventures and river-trading vessels. Egge employed as crew some of the people he had formerly served as a cook and steward. Based on: <http://www.murrayriver.com.au/paddleboats/john-egge/>

Camp ovens also received a mention in the debates associated with the women of South Australia winning the right to vote. Quoting the S.A. Register 11 July 1894 p3 of Parliament Adult Suffrage Bill, Second reading:

'Mr. S said women had not the capacity to vote properly, but as a matter of fact the ability of women was rapidly forcing them into commercial life, and they would more and more enter into competition with men. Was a test of physical power to decide whether women should have a vote? Was education to then decide? If so how would some men fare under an educational test? There was talk of a pedestal. Members would drag women who had property off that pedestal to vote; but why should they drag some women off the pedestal and leave others on it? Mr. B said women should remain in the home and in the kitchen, in which case he supposed the camp oven was the pedestal. (Laughter.) If home duties disqualified women from voting, then the man who got up at 2 a.m. to walk the floor with the baby should be disqualified. (Laughter.)'

It seems that political correctness had yet to be invented!

In Australia, wherever an open fire was used for cooking, the camp oven was generally in use.

Nowadays, camp ovens play an important role in recreational activities such as camping and the great outdoors.

Pictured is a camp oven which was used extensively on the cattle and sheep stations of western Queensland. It is still giving great service today. Note the wrought iron lifting tongs and the trivet sitting in the bottom of the camp oven.



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REQUIREMENT 4: Know and demonstrate fire and camp oven safety and the proper use of equipment.

Always remember that:

- * Camp oven cooking is often a social event. Concentrate on what you should be doing. Don't be distracted by the chatter swirling around you.
- * Camp ovens and associated utensils can be very hot. Take necessary precautions to prevent burning yourself, others or the cooking bench
- * In creating food that is safe for people to eat, the same rules for hygiene and food preparation for all forms of cooking apply.

Planning

- * Plan carefully what you intend to achieve
- * Don't forget to have a place ready to place the hot camp oven when cooking is complete.
- * Don't place hot camp ovens on surfaces that can melt or otherwise be damaged by heat.

Heat source

- * If using an open fire, make sure you comply with all legal and fire safety requirements.
- * For easier temperature control when baking, it is preferable to remove hot coals from the open fire, make a separate bed of coals on which to place the camp oven and add extra coals on top of the lid.
- * For baking, camp oven temperature is more even (and hotter) when hot coals are placed on the lid.
- * Comply with all the requirements for heating gases (viz. LPG, CNG, Butane, Propane etc)
- * Ensure that that all combustible materials in and around the cooking area are not in any danger of catching fire
- * Keep those not involved, especially small children, away from the heat source.

Lifting and moving the camp oven.

A camp oven loaded with food is quite heavy. Make sure that:

- * It is stable at all time
- * Use correct lifting procedures (viz straight back etc etc) when lifting the camp oven.
- * It is preferable to use a lifting hook with handle to lift camp oven or lid

Personal Protection Equipment (PPE)

- * Use proper PPE (ie well maintained and made to government approved standards). For example: footwear, gloves, aprons etc.

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REQUIREMENT 5: Demonstrate how to properly:

a. Season a new camp oven.

Follow the manufacturer's instructions. If they are not available, the following notes describe what to do with cast iron camp ovens. Based on:

http://en.wikibooks.org/wiki/Adventist_Youth_Honors_Answer_Book/Recreation/Dutch_Oven_Cooking

and: <http://www.aussiecampovencook.com/campovencooking.htm>

New camp ovens are usually coated with wax by the manufacturer to prevent rusting. This is likely to have absorbed manufacturing debris and other foreign matter which must be removed otherwise it will contaminate whatever has to be cooked. YUK!

1. Wash and scrub the camp oven (and the lid) using hot soapy water inside and out. Rinse it thoroughly, also in hot water. Dry the oven with a towel.
2. Wipe the entire oven with cooking oil or shortening. A high quality cooking oil such as first-press virgin olive oil is preferred. Be sure to coat all surfaces of the oven, inside and out, including the lid and the legs.
3. Bake your camp oven upside-down for an hour at about 175°C (350°F) minimum temperature. Put the lid on top of the camp oven when doing this. A regular kitchen oven can be used, but be warned - this will fill your house with smoke! A barbecue with an enclosed hood is very useful.
4. After an hour, let the camp oven cool down at its own pace. Don't hurry it up by using water. Repeat steps 2 and 3. A well seasoned cast iron camp oven will have a nice glossy non-stick black finish
5. When it cools, it is ready to use. Do not cook any acidic foods (such as tomatoes) for the first two or three times after seasoning the oven, as this may break down the baked-on oil coating.

b. Clean a camp oven after use.

To clean the cast iron camp oven, simply wipe it down with a clean cloth or paper towel. If food is stuck to the oven, bring one or two cups of water to a boil in the oven and scrape the food off with a rubber or wooden spatula. Do not use soap, metal scouring pads, or metal utensils on a cast-iron camp oven or you will have to re-season it.

c. Transport a camp oven.

It is best to transport a camp oven in a cardboard box, a wooden crate, or in a carrying case to protect it from damage. Note that a cast-iron camp oven can break if dropped.

d. Store a camp oven for a short term and long term.

1. Clean the entire camp oven as outlined above and ensure it is fully dry. A gentle heat is useful.
2. Using a paper towel, lightly coat it inside and outside with cooking oil. Don't forget to coat the lid.
3. Place the lid on the oven, ensuring that there is an air gap between the lid and the rest of the camp oven. This can be achieved by placing a folded paper towel between the lid and oven parts. This allows air to circulate inside the oven and prevents the oil coating inside the oven from becoming rancid. If the coating does become rancid, it must be removed and the entire camp oven seasoned again.
4. Do not store the camp oven in a damp area and try to keep it vermin proof.

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REQUIREMENT 6: In relation to camp oven cooking:

a. What types of fuels are used?

- * Wood
- * Heat beads / charcoal briquettes
- * Natural gas (ie CNG)
- * Propane (ie LPG)
- * Electricity

b. What are the advantages of heat beads / charcoal briquettes over wood as fuel?

Heat beads / charcoal briquettes are uniform in size and heat at a consistent rate. Once the number and placement has been determined (this may take some experimentation) one knows exactly how to achieve a 'perfect' result. Heat beads / charcoal briquettes, although they are convenient, do cost money.

Wood on the other hand, comes in non-uniform sizes (unless one wants to do some work). It often consists of more than one species. As a result, it does not heat as evenly as charcoal does. Wood also tends to create more smoke. The redeeming factor is that wood is often free!

c. How is temperature controlled?

There are many other variables that can affect the temperature inside a camp oven. These include the outside temperature, whether the oven is in the sun or shade, the amount of wind, the size and shape of the camp oven and amount of metal the oven is made from and the amount of room for air to circulate within the camp oven.

One needs to experiment to master temperature control for the various recipes: how much heat to apply below the oven and how much heat to the lid.

Heat bead / charcoal briquette suppliers often supply information

Inexpensive oven thermometers are available from camping stores and kitchen accessory stores. A piece of white paper inside the oven gives a rough indication:

<u>Paper colour</u>	<u>Approx temperature (°C)</u>	<u>Description</u>
Crust	120 - 160	Slow oven
Yellow	160 - 190	Moderate oven
Light brown	190 - 220	Hot oven
Dark brown	250	Very hot oven
Black & on fire	Too hot, unless you like to eat charcoal!	

Check out: <http://www.aussiecampovencook.com/charcoalheatchart.htm>

This site has an online calculator for cast iron camp ovens using charcoal briquettes (ie heat beads). It takes into account oven size, cooking style and temperature.

d. What do ashes do to the efficiency of the coals?

Ash decreases the efficiency of the coals because it acts as an insulator.

e. If using wood, what types are best for cooking in your area?

In general, use dry aged hardwoods which create good coals; for example Iron Bark or Mulga in Australia. Softwoods such as pine are least preferred. They tend to burn quickly and produce great heat, but then they are no more (ie. do not produce coals). Softwoods are more likely to leave a residue on the oven.

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REQUIREMENT 7: Cook at least one of each category using camp ovens:

- a. **Soup / Stew**
- b. **Casserole / Savoury**
- c. **Vegetables**
- d. **Bread**
- e. **Dessert**

Please see our Camp Oven Recipe Book (*Camp Oven Recipe Book.doc*). We have used the above headings. You will notice that we have supplied some spare camp oven Recipe Templates on the final page. You are most welcome to contribute. Please remember that we can only accept vegetarian recipes.

Useful heating and cooking tips

Seasoned practitioners of camp oven cooking offer the following tips relating to the distribution of heat when cooking with a camp oven.

- * If using hot coals, it is useful to make a bed of hot coals removed from the fire on which to place the camp oven. Place coals on the camp oven lid as required. Replace cooled coals with hot coals as required.
- * Aluminium foil (particularly the shiny side) reflects heat. If heating from the bottom, a sheet aluminium foil placed under the lid reflects heat downward.
- * Stews, soups and other liquid dishes require more heat on the bottom than the top.
- * Potatoes, vegetables etc require even distribution of heat on top and bottom.
- * Bread, damper, cakes, pizzas etc. require most of the heat on the top and little heat on the bottom.

Some tips on the camp oven cooking process

The following illustrations demonstrate some hints associated with camp oven cooking. Thanks to Mr Ian Norris of Pine Rivers Church, South Queensland Conference, SPD. Ian demonstrated the use of camp oven cooking to create a 'Camp Oven Quiche'. See *Camp Oven Recipe Book, Casseroles & Savouries* section

Heat beads are being 'fired up'. The aluminium disc was rescued from a scrap heap and legs were added. The tin is a 4 litre drink container. Holes provide air circulation.



The heat beads are ready.

This old steel frying pan was also rescued from the scrap heap. The camp oven sits on top of the three metal lugs which raises the camp oven above the heat beads.



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We've bypassed a couple of steps. Hunger rules!

On the right of the picture, the heat beads can be seen on top of the camp oven lid. Note that, for a quiche, more beads are needed on the lid than below the camp oven. The beads are very hot as is the rest of the camp oven.

Just peeping below the camp oven lid is the Camp Oven Quiche. An oven thermometer can be seen on the left.



Here it is!

The camp oven lid is being raised using a lifting tool. The air gap between the quiche container and camp oven is clearly visible. Also, the container is well away from the base of the camp oven



The final illustration depicts Pathfinder ingenuity at its best.

The drum is a 20 litre drum – the lid is not shown here. Holes around the circumference near the base allow the drum to be used as a shield in windy conditions.

Of interest is the lifting hook with its coiled-spring handle to provide some insulation from heat.

When cooking is complete, all parts are cleaned and oiled as necessary and stored in the drum. All is ready for the next culinary adventure.



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REQUIREMENT 8: Cook with a camp oven lid turned upside down and used as a griddle.

A griddle is a flat iron plate that is used for cooking. It is heated beneath it.

The camp oven lid can be used as a griddle if it is turned upside-down and placed on a heat source. The advantage of this technique is that the lid is slightly bowl-shaped, so even if it is not perfectly level, whatever you are cooking will not run out.