



WHITE GAS STOVE & LANTERN SCOUT PERMIT SKILLS

Stove & Lantern Safety Risks

- Burns from hot surfaces
- Explosion if you do not follow safe practices
- Poisoning from inhaling fumes or ingesting white gas
- Cuts from broken glass if the lantern chimney is broken

White Gas

- White gas or other stove fuels come in bottles, jugs or cans and must be poured into the stove fuel tank . . . must be careful not to spill the fuel.
- Although not as convenient as propane, white gas (or its equivalent) is available throughout the world.
- White gas must be pressurized by pumping and white gas stoves must be primed.
- Must check for white gas leaks before lighting stove
- Easy to start in all weather and at all altitudes
- High heat output = fast cooking speed
- Usually one burner backpacker stoves, but sometimes two burner Coleman Stoves

Stove Storage

- Coleman stoves fold up to act as their own storage device
- Backpacking stoves usually come with a storage bag
- Stoves should always be allowed to cool down before they are stored

Lantern Storage

- Hard storage cases offer the best protection for lanterns
- Soft neoprene rubber sleeves offer some light protection for lantern chimneys, but are not as good as a hard storage case
- Lanterns should always be allowed to cool down before they are stored

Stove Lighting

1. Make sure that the stove burner control knobs are in the “OFF” position
2. Carefully fill the fuel tank to the specified level, use a funnel to help avoid spilling fuel

3. Check O-Ring or gasket seal on fuel tank pump for visible damage (replace if necessary . . . see below)
4. Install fuel tank pump
5. Pressurize the fuel tank with the pump per the stove instructions
6. White gas stoves need to be primed before lighting. To prime, open the stove valve slightly to allow a small amount of the gas to collect in the burner, and then turn OFF the valve.
7. Using a match, burning splint or lighter . . . carefully apply a flame to the collected priming fuel
8. Slowly open the burner valve only enough to see the burner ignite . . . at this point the burner will likely be making a lot of noise and the flame will be quite large until the priming fuel burns off
9. Once the priming fuel has burned off the burner valve can be opened up more to the desired heat
10. Put cooking pot or pan on stove and get cooking.
11. After a while, you will see that the flame starts to die down . . . you will need to add more pressure to the fuel tank by pumping in some more pressure

Lantern Lighting

1. Make sure that the lantern control knob is in the “OFF” position
2. Carefully fill the fuel tank to the specified level, use a funnel to help avoid spilling fuel
3. Check O-Ring or gasket seal on fuel tank pump for visible damage (replace if necessary . . . see below)
4. Install fuel tank pump
5. Pressurize the fuel tank with the pump per the lantern instructions
6. White gas lanterns need to be primed before lighting. To prime, open the stove valve slightly to allow a small amount of the gas to collect in the mantle and then turn OFF the valve.
7. Using a match, burning splint or lighter . . . carefully apply a flame to the collected priming fuel in the mantel
8. Slowly open the lantern valve only enough to see the lantern ignite . . . at this point the flame will likely be making a lot of noise and the flame will be quite large until the priming fuel burns off
9. Once the priming fuel has burned off the lantern valve can be opened up more to the desired light output
1. After a while, you will see that the flame starts to die down . . . you will need to add more pressure to the fuel tank by pumping in some more pressure

Stove & Lantern Shut-Down

1. If shutting down temporarily, turn stove burner valve or lantern valve to off position

2. If shutting down at the end of the camp, you will need to allow the stove or lantern to cool completely and then bleed of the tank pressure per the manufacturers instructions
3. Carefully dismantle the stove or lantern, then place in the correct storage container
4. Empty fuel cans need to be properly disposed of . . . they should NEVER be burned in a fire

Maintenance

- White gas is a fairly is a very clean fuel, however some cleaning of white gas appliances is required . . .
- It is very important to clean all spilt, burnt and dried food from a stove prior to storage
- Any bugs burnt onto a lantern should be cleaned off prior to storage
- Damage O-rings on stoves, lanterns MUST be replaced before using the device
- Although a small hole in a lantern mantel will not prevent them from operating, mantels that show more then a very small hole should be replaced as soon as possible



KNIFE

SCOUT PERMIT SKILLS

Knife Risks

- Cuts
- Stabbing
- Wound Infection

Knife Types

- Straight Knife . . . e.g. Bowie Knife, Fish Filleting Knife or Hunting Knife
- Simple folding Pocket Knife . . . e.g. Scout Knife or Jack Knife
- Locking Knife . . . e.g. Lock Back Knife or Locking Front Knife
- Swiss Army Knife . . . e.g. Victorinox or Wegner
- Multi-Tools . . . e.g. Leathermen

Knife Materials

- Stainless steel is easiest to care for, but can rust if not cared for. Usually stainless steel is more difficult to sharpen well and unless type 303 is not good for producing sparks with a flint for fire starting
- Carbon steel can rust, but if well cared for it will develop a patina. Carbon steel is easier to sharpen and often holds a keener edge. Carbon steel is very good at producing sparks with a flint for fire starting

Knife Storage

- Belt Sheath when possible
- Pocket Knife . . . Jack Knife, Scout Knife, Locking Knife or Swiss Army Knife can be stored in a pocket, but a Belt Sheath is preferable. Never store a folding knife in the open position

Knife Use

- Never use the blade of a knife as a screwdriver or pry bar . . . it is a cutting blade and should only be used as a cutting blade
- Never use a multi-blade knife or multi-tool with more than one blade/tool or accessory extended
- Always fully open and if possible lock the blade/tool or accessory of a folding knife
- Ensure that your BLOOD CIRCLE is clear before starting
- A sharp knife is LESS DANGEROUS than a dull knife
- For general knife safety, always cut away from yourself
- Use the right tool for the job, a big knife for a big job . . . a small knife for a small job
- Most knife injuries (cuts) will be to your thumb or index finger on the hand opposite your knife hand

- Most stabbing injuries will be to the palm of the hand opposite your knife hand or to your thigh. Stabbing wounds can be serious injuries and a stabbing wound to the thigh can be life threatening

Knife Maintenance

- Make sure that a knife is clean BEFORE it is folded or put back in it's sheath
- A sharp knife is LESS DANGEROUS than a dull knife
- A knife that has lost it's keen edge can be re-honed using a fine stone or ceramic sharpener and the fine burr edge removed with a leather strop
- A dull knife will need to have a new cutting edge established before it can be honed and stropped

Knife Sharpening

- It is EXTEMELY important that the knife be held at the correct angle during the entire sharpening stroke. Failure to maintain the correct angle will cause premature wear of the knife edge and may actually erase the cutting edge . . . this might make the knife useless for future use or require the knife to be professionally re-sharpened
- Knife sharpening requires a series of steps as you create a new cutting edge by using progressively finer cutting stones
 - The first stage uses a coarse (rough) stone to take away the bulk of the metal and create a basic knife edge
 - The second stage uses a medium stone to create a better edge and at the same time remove the coarse (rough) grooves that the first stage stone made
 - The third stage uses a fine stone to create a fine cutting edge and at the same time remove the medium grooves that the second stage stone made
 - The third stage will actually create a fine metal burr or feather like edge that is difficult to see. By back stroking the blade across a piece of leather belt we can remove the burr and leave a very clean cutting edge
- Different types of sharpening stones require different types of lubricant
 - Water stones require water . . . some Japanese Water Stones are kept immersed in water at all times
 - Wet stones require a little bit of water and the stone needs to be kept wet during the entire sharpening process, then wiped dry before being put away
 - Oil stones require only a few drops of oil and should be kept oily during the entire sharpening process, then wiped dry before being put away
 - Ceramic stones are used without lubricant unless their instructions for use state otherwise



MATCH SCOUT PERMIT SKILLS

Match Risks

- Burns
- Unintentional fires when carelessly used

Match Types

- Book Match . . . the kind that are given away at bars and restaurants
- Safety Match . . . can only be lit by striking against the striker strip on the box
- Strike Anywhere Match . . . can be lit by striking the white tip against any dry, rough surface
- Waterproof Match . . . usually a Strike Anywhere Match that has been coated with a thin layer of paraffin wax
- Lighters . . . including Zippo's, Bics, BBQ Lighters and Windproof Lighters

Match Storage

- Every year people are injured by improper storage of matches and lighters. The worst place to carry matches and lighters is in a shirt pocket, because a stray spark from a fire can ignite them. Lighters have been known to explode when this happens. When possible, store your matches and lighters in your pack
- Book Matches are relatively useless in camping or Scouting situation because; they have short burn times, can be difficult to light safely and are exposed to moisture. Book matches should be considered the match of last resort . . . they are also the most dangerous of all types of matches since the balance of the book is exposed and can be ignited by a stray spark.
- Safety Matches are usually stored in their original package, since a striker strip is required to get them to light
- Strike Anywhere Matches are best stored in a Match Case
- Even though they are coated, Waterproof Matches are best stored in a Match Case
- Lighters are best stored in your pack

Match Use

- Matches and lighters are NOT toys and should never be treated as such
- Fire is NOT a toy and should never be treated as such
- Always close a match box or match case before you strike a match
- Hold the match with your thumb and index finger, supported by your middle finger
- Strike the match away from you on an appropriate striking surface

- Hold the match flame end down and wait for the flame to flare up and stabilize before applying to your candle wick, stove burner, lamp mantel or fire tinder
- If it is windy, you will need to shield your match and flame
- Extinguish your match and dispose the spent match properly . . . DO NOT throw into a garbage containing flammable material until you are absolutely certain that the match flame is out and cool

Fire Starting

- Matches and lighters are NOT toys and should never be treated as such
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PROPANE STOVE & LANTERN SCOUT PERMIT SKILLS

Stove & Lantern Safety Risks

- Burns from hot surfaces
- Explosion if you do not follow safe practices
- Frost bite from leaking propane
- Poisoning or suffocation from inhaling propane fumes
- Cuts from broken glass if the lantern chimney is broken

Propane

- Propane usually comes in disposable blue/green 1 pound cylinders or larger 20 pound beige cylinders (same as BBQ cylinder)
- Propane is very convenient and is readily available throughout North America
- No pumping or priming is required as propane is already pressurized
- Must check for propane leaks before lighting the stove or lantern
- Easy to start in warm weather . . . hard to start in the winter
- Medium heat output = medium cooking speed
- Lot's of stove choices including: BBQ's, stoves and stove/BBQ combination units
- Usually one or two burner, sometimes three or four burner
- Examples are one burner backpacking stoves, two and three burner Coleman stoves and three and four burner Texas Grills
- Some stoves have a built in sparker
- Some stoves have a short pipe with a regulator, that screws into the stove, then attaches to the propane tank
- Other stoves use a rubber hose to attach to the propane tank
- Most lanterns attach directly to a propane cylinder although an extension hose or propane-tree can also be used
- Use an accessory manifold (a.k.a. Propane-Tree) when using 20 pound cylinders to share propane with a second stove, heater or lantern from one large propane tank

Stove Storage

- Coleman stoves fold up to act as their own storage device
- Texas Grills usually come with a storage bag
- Backpacking stoves usually come with a storage bag
- Stoves should always be allowed to cool down before they are stored

Lantern Storage

- Hard storage cases offer the best protection for lanterns
- Soft neoprene rubber sleeves offer some light protection for lantern chimneys, but are not as good as a hard storage case
- Lanterns should always be allowed to cool down before they are stored

Stove Lighting

1. Make sure that the stove burner control knobs are in the “OFF” position
2. If using a large propane tank with a hand valve, make sure that it is in the “OFF” position
3. Check O-Ring inside coupling for visible damage (replace if necessary . . . see below)
4. If connecting a stove directly to the tank, carefully thread the short pipe or hose coupling onto the stove
5. Carefully thread the other end of the short pipe or hose onto the propane tank
6. If you are using a propane-tree, then attach it to the propane tank first, then attach the hose coming from the stove
7. Open the valve on the propane tank. At first you will hear the propane fill the hose, and then listen for any escaping propane from the connections. Ideally, use a soap and water solution to check for leaks by pouring a small amount of solution onto the connections and looking for bubbles forming.
8. If there are leaks, shut off valve on propane tank, then undo the connections, check for debris and reattach to the propane tank. Repeat step #7 . . . if no leaks go to step #9.
9. If using a built in sparker or hand sparker, open the burner valve on the stove and spark until the burner ignites. NOTE: If burner does not light within about 10 seconds, turn off the burner and wait 30 seconds for the excess gas to dissipate. Then repeat step #9 until successful at getting the burner to ignite.
10. If using matches or a lighter . . . light match or lighter, then open burner valve and apply flame close to the burner. Extinguish match or lighter.
11. Adjust burner to desired heat.
12. Put cooking pot or pan on stove and get cooking.

Lantern Lighting

1. Make sure that the lantern control knob is in the “OFF” position
2. If using a large propane tank with a hand valve, make sure that it is in the “OFF” position
3. Check O-Ring inside coupling for visible damage (replace if necessary . . . see below)

4. If connecting a lantern directly onto a small tank, carefully thread the lantern onto the propane tank
5. If using an extension hose, carefully thread one end onto the lantern, then the other end of the hose onto the propane tank
6. If you are using a propane-tree, attach it to the propane tank first, then attach the hose coming from the lantern
7. Open the valve on the propane tank. At first you will hear the propane fill the hose, and then listen for any escaping propane from the connections. Ideally, use a soap and water solution to check for leaks by pouring a small amount of solution onto the connections and looking for bubbles forming.
8. If there are leaks, shut off valve on propane tank, then undo the connections, check for debris and reattach to the propane tank. Repeat step #7 . . . if no leaks go to step #9.
9. If using a built in sparker (DO NOT use a hand sparker with a lantern), open the lantern valve and spark until the lantern ignites. NOTE: If lantern does not light within about 10 seconds, turn off the burner and wait 60 seconds for the excess gas to dissipate. Then repeat step #9 until successful at getting the lantern to ignite.
10. If using matches or a lighter . . . light match or lighter, then open lantern valve and apply flame close to the mantle. Extinguish match or lighter.
11. Adjust lantern to desired brightness

Stove & Lantern Shut-Down

1. If shutting down temporarily, turn stove burner valve or lantern valve to off position
2. If shutting down at the end of the camp, turn hand valve on propane tank to the off position and allow the running stove or lantern to burn off the propane remaining in the hose or propane-tree.
3. Allow the stove or lantern to cool completely before cleaning the appliance
4. Carefully place in the correct storage container
5. If propane tank is low or empty, then let your Scouter know so that they can arrange for a refill before the next camp
6. If using small disposable propane tank, please dispose of properly . . . at most provincial camps, empty disposable propane tanks do not go into the garbage, they go into a special bin for proper disposal

Maintenance

- Propane is a very clean fuel and consequently, very little cleaning of propane appliances is required, however . . .
- It is very important to clean all spilt, burnt and dried food from a stove prior to storage
- Any bugs burnt onto a lantern should be cleaned off prior to storage

- Damage O-rings on stoves, lanterns, hose or propane-trees, **MUST** be replaced before using the device
- Although a small hole in a lantern mantel will not prevent them from operating, mantels that show more than a very small hole should be replaced as soon as possible



AXE & SAW SCOUT PERMIT SKILLS

Axe Risks

- Cuts
- Stabbing
- Amputation
- Wound Infection

Axe Types

- Hatchet . . . includes all small axes (e.g. Hunters Axes, Belt Axes and Pack Axes)
- Felling Axes . . . used to chop down trees
- Limbing Axes . . . used to limb a tree
- Splitting Axes . . . used to split wood for a fire
- Splitting Mauls . . . usually a very heavy Splitting Axe, often look like a combination axe and sledge hammer

Axe Materials

- Most axes are made of carbon steel. Carbon steel can rust, but if well cared for it will develop a patina. Carbon steel is easier to sharpen and holds a keen edge. Carbon steel is very good at producing sparks with a flint for fire starting
- Very few axes are made from stainless steel. Stainless steel is easier to care for, but can still rust if not cared for. Usually stainless steel is more difficult to sharpen well and unless type 303 is not good for producing sparks with a flint for fire starting

Axe Storage

- Store axes in a sheath when possible
- NEVER carry an unsheathed knife
- Buried in a stump is permissible for a short period of time (e.g. a lunch break)
- A knife can also be stored for a short period of time (e.g. a lunch break) in a bucket of water. This can help keep the handle swelled so that the axe head does not become loose and fall off

Axe Use

- Ensure that your BLOOD CIRCLE is clear before starting
- A sharp axe is LESS DANGEROUS than a dull axe
- For general axe safety, always cut away from yourself
- Use the right tool for the job, a big axe for a big job . . . a small axe for a small job

- Most axe injuries will be to your foot or leg . . . these wounds are serious injuries and a wound to the thigh can be life threatening
- Small hatchets are often used one handed. You must be careful when holding a piece of wood with the other hand that you do not miss the wood and hit yourself with the axe

Axe Maintenance

- Make sure that a axe is clean BEFORE it is put away, back in it's sheath
- A sharp axe is LESS DANGEROUS then a dull axe
- An axe that has lost it's keen edge can be re-honed using a fine stone or ceramic sharpener and the fine burr edge removed with a leather strop
- A dull axe will need to have a new cutting edge established before it can be honed and stropped

Axe Sharpening

- It is EXTEMELY important that the sharpening stone be held at the correct angle against the axe, during the entire sharpening stroke. Failure to maintain the correct angle will cause premature wear of the axe edge and may actually erase the cutting edge . . . this might make the axe useless for future use or require the axe to be professionally re-sharpened
- Axe sharpening requires a series of steps as you create a new cutting edge by using progressively finer cutting stones
 - The first stage uses a coarse (rough) stone or a metal file is to take away the bulk of the metal and create a basic axe edge (NOTE: sharpening stones for axes look like a hockey puck with a finger groove around the edge so that you can keep your fingers away from the sharp edge)
 - The second stage uses a medium stone or a draw file technique to create a better edge and at the same time remove the coarse (rough) grooves that the first stage stone made
- Different types of sharpening stones require different types of lubricant
 - Wet stones require a little bit of water and the stone needs to be kept wet during the entire sharpening process, then wiped dry before being put away
 - Oil stones require only a few drops of oil and should be kept oily during the entire sharpening process, then wiped dry before being put away
 - Ceramic stones are used without lubricant unless their instructions for use state otherwise