Fire Starting

The “Pros” of Fire

- *It can provide warmth and comfort.*
- *It not only cooks and preserves food, it also provides warmth in the form of heated food that saves calories our body normally uses to produce body heat.*
- *You can use fire to purify water, sterilize bandages, signal for rescue, and provide protection from animals.*
- *It can be a psychological boost by providing peace of mind and companionship.*
- *You can also use fire to produce tools and weapons.*

The “Cons” of Fire

- *Fire can cause problems, as well.*
- *It can cause forest fires or destroy essential equipment.*
- *Fire can also cause burns and carbon monoxide poisoning when used in shelters.*
- *It can attract predator animals*

The Physics of Fire

- To build a fire, it helps to understand the basic principles of a fire.
- Fuel (in a nongaseous state) does not burn directly.
- When you apply heat to a fuel, it produces a gas. This gas, combined with oxygen in the air, burns.

The Fire Triangle

- Understanding the concept of the fire triangle is very important in correctly constructing and maintaining a fire.
- The three sides of the triangle represent *air, heat,* and *fuel.*
- If you remove any of these, the fire will go out. The correct ratio of these components is very important for a fire to burn at its greatest capability.

Considerations

- You will have to decide what site and arrangement to use
- Before building a fire consider
  - The area (terrain and climate) in which you are operating
  - The materials and tools available
  - Time: how much time you have
  - Need: why you need a fire
  - Security: how close are predators?

Look for a dry spot that

- Is protected from the wind
- Is suitably placed in relation to your shelter (if any)
- Will concentrate the heat in the direction you desire
- Has a supply of wood or other fuel available.

Types of fuel - from starting to maintaining the fire

- Tinder
  - Birch bark
  - Shredded inner bark
  - Fine wood shavings
  - Straw
  - Sawdust
  - Very fine pitchwood shavings
  - Dead evergreen needles
  - Rotted portions of dead trees
- Kindling
  - Small twigs
  - Small strips of wood
  - Heavy cardboard
- Fuel
  - Dry tree trunks
  - Dead branches
  - Animal dung

Fairly simple methods (if you have the materials:)

- Matches
- Binoculars, cameras, telescopic lenses or magnifying glasses
- Using a battery, attach a wire to each side of the battery and connect the two ends, aiming the sparks in the direction of tinder
- Gunpowder
- Flint and steel
- A car battery
- Car lighters

The Fire-Plow

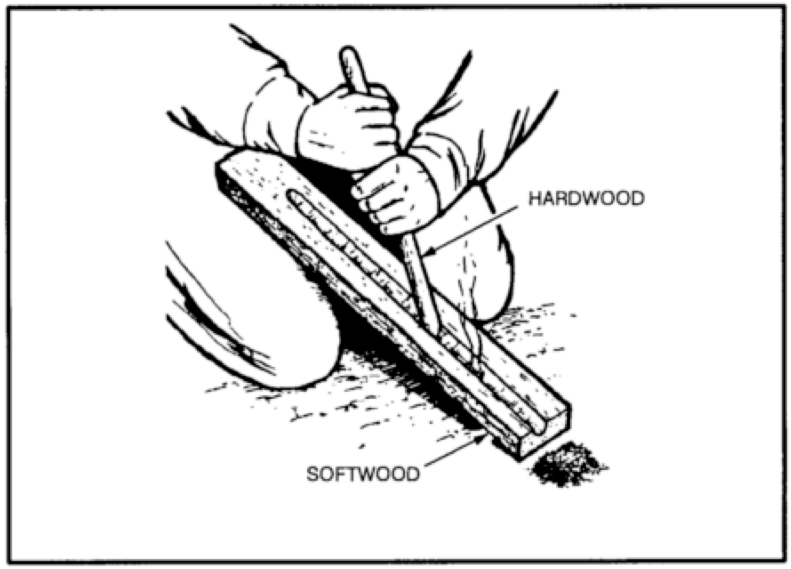

Figure 7-7. Fire-plow.

- Rub a hardwood shaft against a softer wood base
- Be sure there are particles of tinder at the edge when the softwood gets hot

Bow and Drill

- *Socket.* The socket is an easily grasped stone or piece of hardwood or bone with a slight depression in one side. Use it to hold the drill in place and to apply downward pressure
- *Drill.* The drill should be a straight, seasoned hardwood stick about 2 centimeters in diameter and 25 centimeters long. The top end is round and the low end blunt (to produce more friction).

More parts of the Bow and Drill

- *Fire board.* Its size is up to you. A seasoned softwood board about 2.5 centimeters thick and 10 centimeters wide is preferable. Cut a depression about 2 centimeters from the edge on one side of the board. On the underside, make a V-shaped cut from the edge of the board to the depression.
- *Bow.* The bow is a resilient, green stick about 2.5 centimeters in diameter and a string. The type of wood is not important. The bowstring can be any type of cordage. You tie the bowstring from one end of the bow to the other, without any slack.

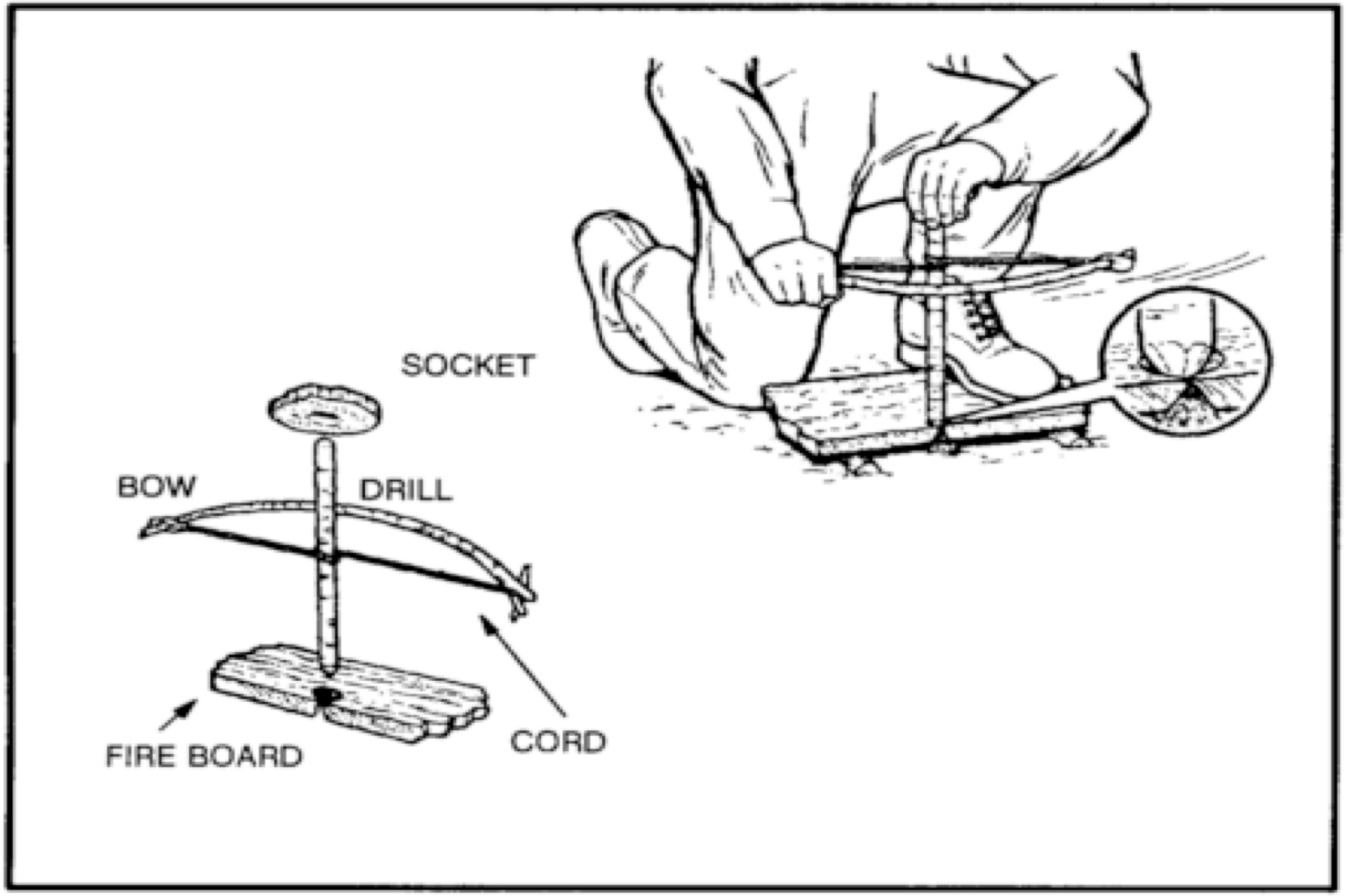

Figure 7-8. Bow and drill.

To Use the Bow and Drill

- Prepare the fire lay.
- Then place a bundle of tinder under the V-shaped cut in the fire board.
- Place one foot on the fire board. Loop the bowstring over the drill and place the drill in the precut depression on the fire board.
- Place the socket, held in one hand, on the top of the drill to hold it in position.
- Press down on the drill and saw the bow back and forth to twirl the drill.

The final step

- Once you have established a smooth motion, apply more downward pressure and work the bow faster. This action will grind hot black powder into the tinder, causing a spark to catch. Blow on the tinder until it ignites.

Bow and Drill is VERY DIFFICULT TO DO!