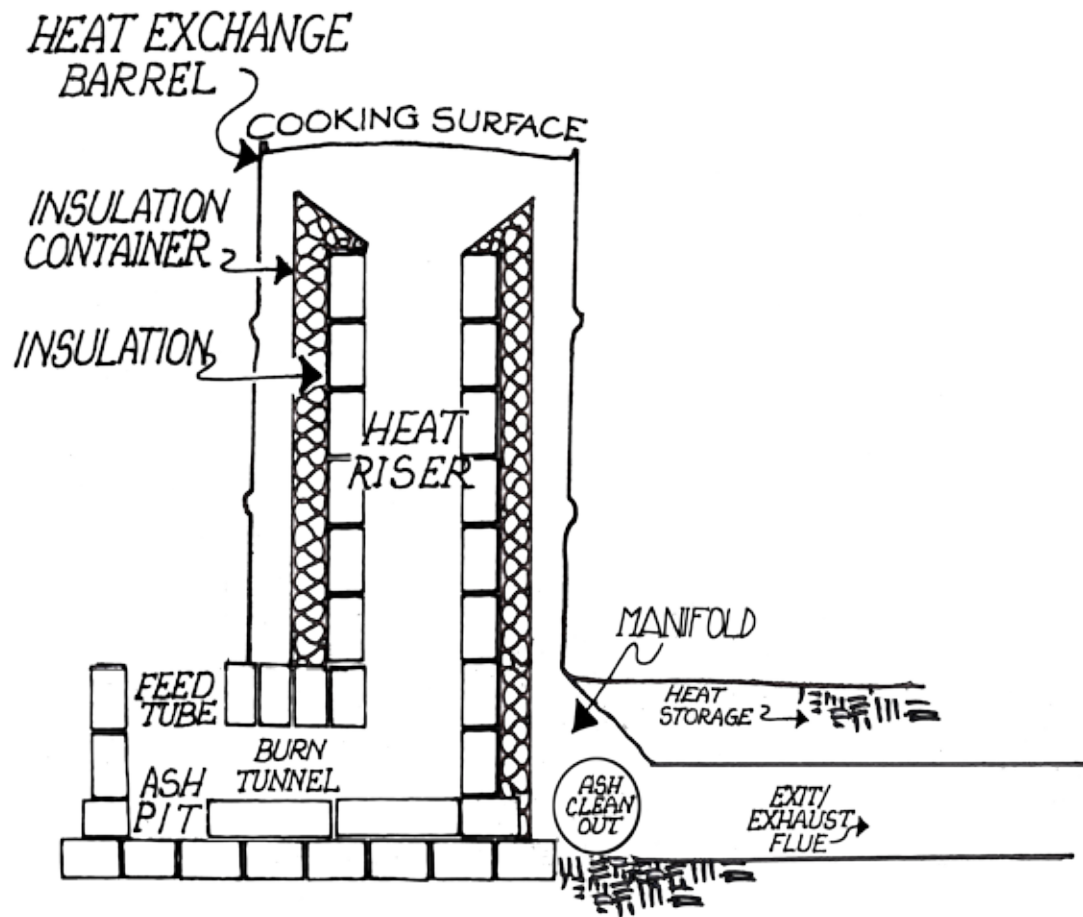


Combustion Side of a Typical Rocket Mass Heater



<== Combustion Unit Heat Storage ==>

Why Rocket Stoves?



Rocket Stoves grew out of work I did between 1976 and the late 1980s on solutions to the international firewood crisis and smoke problems in the homes of traditional people. In Guatemala in the 70s, I helped work on the Lorena Stove system, which uses a sand-clay amalgam to contain the fire, hold up the pots, and store surplus heat. It rapidly attracted worldwide attention and is now widely used in Latin America, Asia, and Africa. Later I worked in over 20 countries as part of a team that helped people create better cooking facilities. I spent much of a decade in villages, in people's homes, mostly with the women who actually do the cooking. One result of my experience as a professional pyromaniac was some work in the United States on the challenge of improving wood-fired heating stoves for cold climates.

By 1980, woodstoves had scarcely improved since Franklin. The basic format had always been a simple metal box with an attached exhaust pipe. The higher the stack temperature, the better the stove draws air through the fuel. To a point, the more heat lost out the top of the chimney, the better the combustion. Clearly, this is wildly inefficient. The sky has no interest in being heated. The stove also heats the air surrounding it, which rises to heat the ceiling, gradually circulating as it cools. To be optimally heated, you would need to be perched on the ceiling directly over the stove.

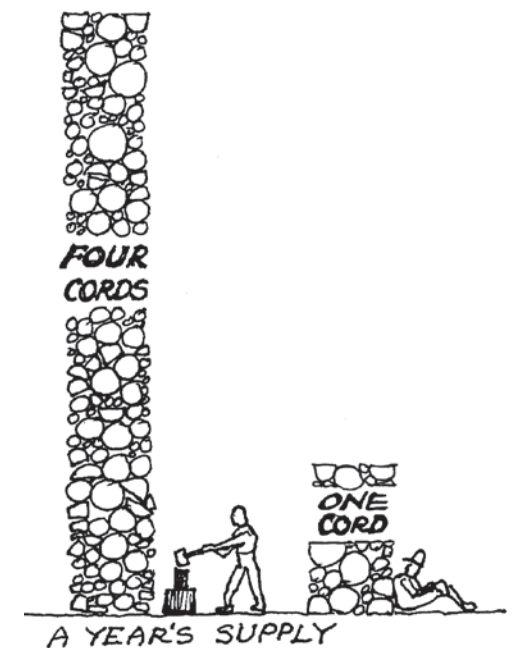
Worse, most woodstoves burn very imperfectly, that is, not all the energy available in the wood turns into heat. Much of the wood's potential heat leaves the stove as smoke: particles and unburned gases. The results include poisoning your downwind neighbors, excessive firewood use, more CO₂ heating up our planet, and personal frustration. Clean air standards imposed by the federal government in the 1980s attempted modestly to limit the amount of smoke and particles put out by commercial woodstoves, but came nowhere close to ensuring clean burning.

Our goal in developing Rocket-type stoves was to rethink completely the question of how to burn wood inside a house to improve human comfort, use less firewood, and cut pollution.

The results are impressive. In my own cottage I burn only about 1 cord of (fir and alder) firewood a year, while my neighbors average 3–5 cords—granted, their houses are much bigger than mine. You can usually tell when any of the neighbors are around by the clouds of smoke coming out of their chimneys. By contrast, we burn so clean that visitors coming into my house want to know how come it's so snug without the stove burning. Imagine their surprise when they learn that in fact, it is burning merrily.

As I write, I sit by my own Rocket Mass Heater in my little cob house in the depth of the Oregon winter. I built this stove myself in a day from recycled parts that cost less than \$50.

Since the late 1980s, Rocket Mass Heaters have been our only heat source apart from the sun. I have daily been able to evaluate these heaters that suit me better than anything else I can find.



A comparison of a year's supply of wood. The left stack is my neighbor's, the right is mine.