

Shop Heating Choices

Winter is on the way.
Is your workspace
ready?

BY KEN TEXTOR



Clouds of breath vapor sometimes obscured my cutting line but never seriously bothered me. Nor did 20 years of wearing long Johns and two pair of wool socks significantly slow down productivity in my Maine-based woodworking shop. But the day I picked up some #6 steel screws and they stuck fast to my ungloved fingers, building some sort of heated shop space moved way up on my priority list.

Of course, Yankee frugality was what got me into tundra woodworking in the first place. That wasn't about to change, so I

quickly dismissed grandiose plans for a T-shirt-and-jeans-style megashop. Experience had taught me that you can cut, plane and sand wood just as well at 20°F as at 60°F. But you can't glue, finish and do intricate woodwork in arctic conditions. Right off the bat, I decided to heat only enough space to allow me to do these warmth-dependent operations, regardless of January's nastiness.

How much shop to heat?

An unwilling student of the energy crises of the 1970s, I knew that choosing a heat-

ing source is a secondary question in the winter-warmth game. Minimizing the amount of heat needed was my top priority. With that in mind, the first question was, how big an area do I really need to heat? To generate some actual dimensions, I started with the assumption that the largest project I would build, and therefore need to maneuver in my new heated shop space, would be something like a custom door. To work comfortably on projects of this scale, I determined that I'd need roughly 160 sq. ft., a relatively modest space.

Because my existing, to-remain-unheat-

More than one way to heat a shop

Most of us have a choice about how to heat our workshop, and for those of us in colder climes, the choice can be critical. Three of the four woodworkers whose shop-heating choices are featured here hail from chilly Maine, and the fourth lives so far up a dirt road in Connecticut's rural Litchfield County that he might just as well be from that northeastern-most state.

KEROSENE HEATER

Down the road from L.L. Bean in Freeport, Maine, Tom McDermott crafts wooden signs in a shop heated with his pride and joy, a Monitor kerosene-fueled, direct-vented heater from Monitor Products, Inc. (800-524-1102; www.monitorproducts.com). No bigger than a typical radiator, the 40,000-Btu unit heats the 1,500-sq.-ft. shop,

high ceilings and all, for \$700 a year.

McDermott swears by the Monitor, which has garnered a loyal following in Maine (up the coast in Tenants Harbor, woodworker and FWW author John McAlevey is almost reverential about

the Monitors that heat his shop and home). Like the Empire propane heater Ken Textor writes about in the accompanying article, the Monitor has a flame that's sealed from inside air; its combustion air is brought in from the outside and expelled outside as well. McDermott's unit (its current incarnation, the Monitor 441, costs about \$1,500) is fed by gravity from a 250-gal. tank situated outside on a hill above the shop, but in many situations,



ed shop already occupied the best solar area, with a southerly exposure and lots of glass for solar gain, I opted for the next-best solar space: the second floor. Because warm air rises, of course, a second-floor location takes advantage of solar gains generated below *and* avoids the lion's share of dust created on the first floor.

With the second floor ready for insulation, I got a timely and invaluable tip from a delivery-truck driver who had converted his garage into a heated shop. "Don't use fiberglass insulation," he warned. Evidently, the local mouse population had moved into his spun-fiberglass insulation during the first winter. He recommended solid-foam insulation. The 2-in.-thick, 4-ft. by 8-ft. sheets took longer to install than spun-fiberglass batting and cost about \$200 more, but I've yet to hear the patter of little feet in my shop walls.

Fuels for thought

To decide which heating option would be best for me, I began with some thoughts about safety, economy and simplicity. Immediately, I dismissed wood heat. Although I know woodworkers whose shops have been heated for generations with wood, safety and insurance considerations steered me away from it.

All woodstoves burn with an open fire. In the heating business, an open fire is any combusting fuel that has direct access to air in the space being heated. An open fire spells danger in a woodshop. Even with a so-called airtight woodstove, every time

you open the door to feed the fire, the flames have direct access to shop dust and volatile vapors from finishes,

Regardless of the fuel type I chose, I decided that the heating unit's flame had to be completely segregated from the air in the shop.

To my delight, I found that every dealer of every major type of heating fuel was more than willing to pay me a visit and answer all my questions. The cheapest and easiest way to heat a shop, they all agreed,

was simply to extend the home's heating capabilities. Many existing oil- or gas-fired home furnaces have enough capacity to heat an additional modest shop space. Baseboard heat is preferable, though, because forced hot air would stir up too much dust. The shop should also be zoned separately from the home, with its own thermostat and an independent draining system. But because my shop was in a building well away from my house, extending my home system wasn't feasible.



Monitors can be fed kerosene by an electric lifter pump (as McAlevy can attest).

WOOD-BURNING STOVE

In nearly 20 years of heating his New Gloucester, Maine, shop with a wood-fired stove, FWW Contributing Editor Chris Becksvoort has heard all the arguments against an open flame. Still, he has found that for his shop, a wood-burning stove makes sense. Becksvoort's small Tempwood heats the 24-ft. by 40-ft. shop without driving him out into the snow, as a larger stove might. Scrap provides about 20% of the firewood. What Becksvoort likes best about his woodstove is the dry heat it throws off, perfect for drying chair parts. Becksvoort feels that so long as he keeps a tidy shop, he need not worry about safety beyond what is reasonable. He of course exercises a good deal of common sense: keeping the stove



clean, running a dust-collection system that empties into a separate shed and not keeping a fire burning when he leaves the shop,

RADIANT FLOOR SYSTEM

Although there are commercially manufactured radiant floor systems for most types of new or existing construction, from wood to concrete, Joe Tracy chose to engineer his own system for his new 2,000-sq.-ft. shop on Maine's Mt. Desert Island. His latest system is a variation on the one mentioned in FWW #129, p. 61. He could hardly have come up with a more elegant homemade design in terms of simplicity, cost, adaptability, ease of installation and ease of use: 2-in. rigid insulation on grade, a 4-in. concrete slab, 2x6s on edge (to make room for his electrical and dust-extraction systems) and 1½-in. particleboard as a finished floor, with inexpensive ½-in. polyethylene pipe run-





Warmth where it's needed most. Rather than heat his whole shop, the author insulated an area on the second floor just large enough for heat-dependent activities like gluing, finishing and intricate woodworking. A wall-mounted, direct-vent propane unit does the trick. A propane tank and the small vent hood (by the window) are all you see from the outside.

floor of my barn, a gravity-fed system was out of the question.

Electricity held some appeal because electric heating units lack a flame and are therefore very safe. Baseboard electricity is an especially safe, easy and inexpensive means of installing a heating system in a shop. But in many cases, mine included, the local cost of electricity is prohibitive.

Why I chose propane

For me, propane was the least-expensive and most-convenient option. The local sales representative was accustomed to writing up orders for home heaters, however, not for heaters intended for shop use. The first unit he recommended had a flame that we soon discovered was not fully segregated from the indoor air supply. He had to call several heater manufacturers before he could find one that would guarantee the safety of the unit in my proposed shop area. I eventually chose the DV-215-SG Direct Vent Wall Furnace made by Empire Comfort Systems (800-851-3153; www.empirecomfort.com).

We also had to adjust Btu requirements. The home specifications didn't account for a shop space in which much of the heated air would immediately be vented right back out of the room. (Removing the shop's warm air is necessary when I use some types of finishes. The fumes are too flammable and toxic to be allowed to dissipate on their own.) Although a 10,000-Btu heater would otherwise have been adequate for my small, well-insulated space,

figuring on increased ventilation, I opted for a 15,000-Btu unit. The larger-output unit cost a little more (\$727 fully installed), but it has been well worth the investment.

In the first winter of operation, I kept the thermostat at 50°F when not using the shop space and at 65°F to 70°F when in residence. By the time Mother Nature's spring warmth took over the heating job, I had spent a mere \$135 for fuel.

Although there are books filled with specifications for ventilating areas like my heated shop, experience has taught me that there's no substitute for a good respirator. Without exception, I put my mask on every time I open a paint or varnish can. So while I knew I'd have to ventilate my new space to some extent, I also decided I was not going to try to make the air as clean as a June day under the maple tree. I opted for a blend of mechanical ventilation from a 125-cu.-ft.-per-minute (cfm) fan and natural ventilation from my barn's cupola.

Good ventilation has earned my heated workshop a new nickname: The Men's Room. In the depths of winter, when my cigar-smoking buddies and I need a place to indulge ourselves, my new heated shop fills the bill. A couple of old easy chairs promotes no end of future woodworking ideas. But more important, the heated shop has allowed me to do some of the best and most enjoyable finishing and intricate woodworking I've done in years. □

Ken Textor writes, builds furniture and messes about in boats in Arrowsic, Maine.

Instead, I considered a number of stand-alone heating units.

Kerosene was at the top of my list because I had heard that the new generation of heaters for this highly refined oil does indeed keep the flame independent of the indoor air. (Older kerosene heaters don't.) New kerosene heaters are also very efficient. But they have one big shortcoming. Most use a fuel-delivery system that depends on gravity. Because I would be building my heated shop on the second

ning on the slab. To heat the water that runs through the pipe and, in turn, heats the shop, Tracy relies on a standard oil-fired water heater. Tracy was wise enough to consult an in-floor heating specialist for help with details. The system is quick to heat up, and if Tracy turns it off at four in the afternoon, it keeps heating until six. "It's real simple," Tracy says, "real effective."

RADIANT CEILING PANELS

The electric radiant-heat panels in the finish room above Franklin Nichols' shop in Washington Depot, Conn., are as simple to install and operate as the lights that share the ceiling. After trying every imaginable heating system and finding them all discomforting in the finish room for safety reasons, Nichols hit upon Enerjoy Peopleheaters, manufactured by SSHC, Inc. (800-544-5182; www.sshcinc.com). Nichols figures he pays a little more for electricity, but he has nothing but praise for the five, 1-in.-thick, 4-ft. by 8-ft. panels that heat his cavernous upstairs. Like Tracy's

radiant floor, the panels warm people and objects first, keeping materials at a constant working temperature and allowing the air itself to be cooler without a loss of comfort. The electric panels are noncombustible, which gives Nichols peace of mind. The radiant panels heat up quickly, they don't take up floor or wall space, and they're light enough to be lowered closer to you or your work. Peopleheaters are available in panels as small as 1 ft. by 2 ft. The standard bearer, a 2-ft. by 4-ft. panel, costs about \$200, Nichols' five much larger panels together cost less than \$1,500, a steep discount from full price because they're cosmetic seconds, ideal for a shop and available from SSHC.

Marc Vassallo is an associate editor of Fine Woodworking.

