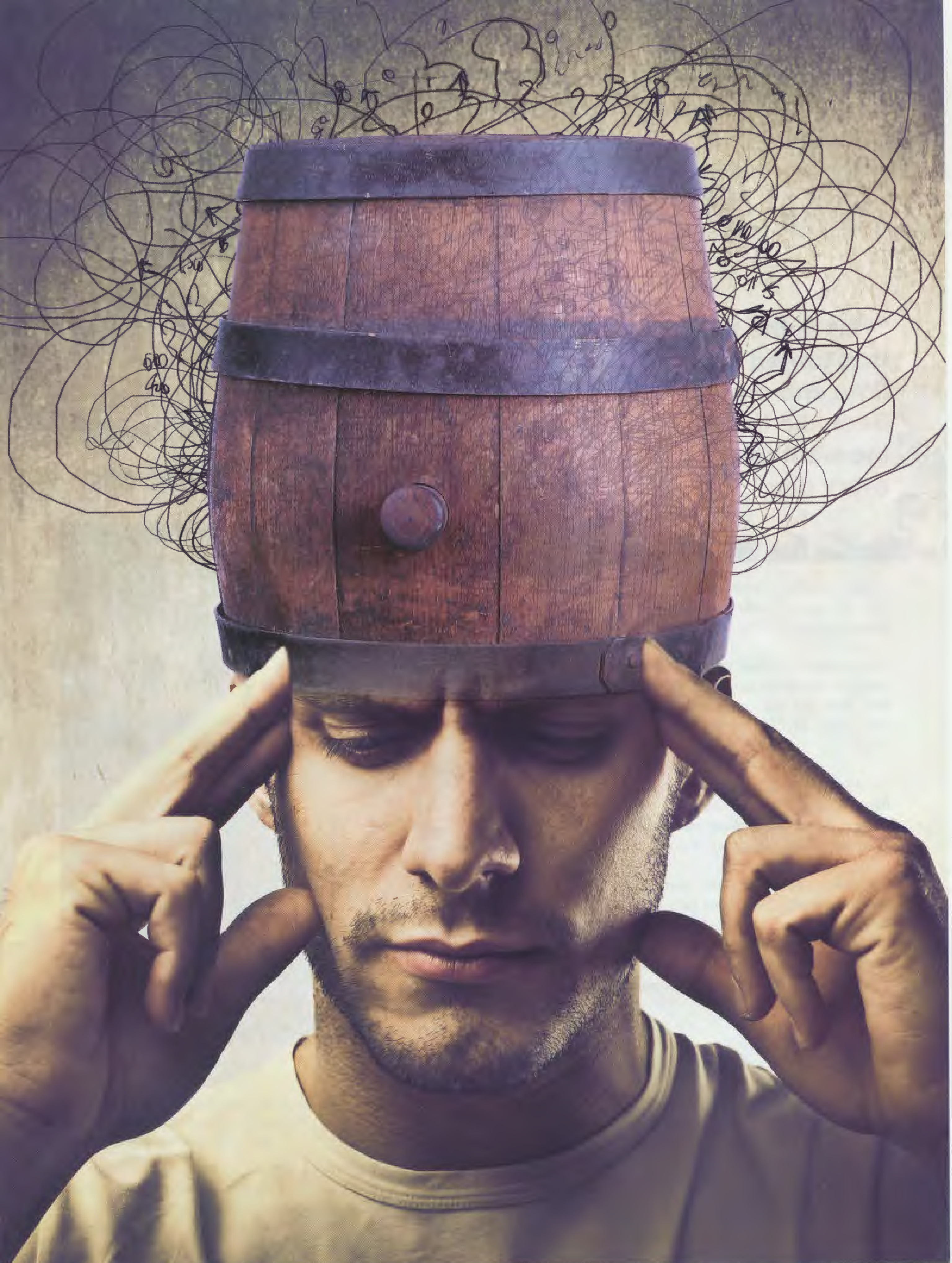


(un)real ale:
a free thinker's guide to cask conditioning
by dave carpenter

I enjoy real ale. But I don't necessarily enjoy talking about it. It's not the philosophical dilemma that bothers me (if my ale is not real, may I still drink it?), but rather the accompanying dogma. *Always* (or never) *use a sparkler! No supplemental carbon dioxide! You mustn't snicker when someone says "bung hole!"* And so on.

But cask-conditioned beer is delicious. And despite the unfamiliar equipment and esoteric terms (don't *stillage* and *bilge* sound like endocrine functions?), it is fundamentally quite simple. Fortunately, we can enjoy homebrewed real ale without subscribing to arbitrary restrictions.

In this article, I offer a heretical approach to cask-conditioning and serving your homebrew. I hope it inspires you to try it. Real ale is easy, I promise. And you don't even need to know your Kilderkin from your Butt.*

what is real ale?

The Campaign for Real Ale (CAMRA) is a UK-based organization that champions cask-conditioned ale and, through its *Good Beer Guide*, endorses pubs that serve it. CAMRA coined the term *real ale* in the early 1970s to differentiate traditional British pints from the force-carbonated, pressure-dispensed pale lagers that now enjoy worldwide ubiquity. CAMRA and the *Oxford English Dictionary* define real ale as:

A name for draught (or bottled) beer brewed from traditional ingredients, matured by secondary fermentation in the container from which it is dispensed, and served without the use of extraneous carbon dioxide.[1]

Now, definitions are helpful, but they can be misleading. By the definition above, a bottle conditioned saison qualifies. But I'm not talking about saison. So let's dispense (ha!) with textbook definitions and instead go with instinct. Here's what real ale means in my house:

- The style is British or has its roots in British brewing tradition: bitters, milds, porters, stouts, IPAs, and so on, including their American progeny.
- Fermentation in the serving vessel creates natural effervescence, the texture and appearance of which carry through to the glass.
- The carbonation is restrained—just over one volume of carbon dioxide (2 grams CO_2 per liter of ale) at serving temperature.
- The beer is served at cellar temperature (50-55° F/10-12° C).

An exhaustive discussion of real ale would also address topics concerning clarity and cellar logistics, but I won't consider those here because they're more relevant to pub managers than homebrewers. If you're interested, check out Patrick O'Neill's surprisingly captivating book, *Cellarmanship*.

If you bottle, real ale couldn't be simpler. Cut back on the priming sugar to yield just over one volume of CO_2, allow to condition for a couple of weeks, serve at 50-55° F (10-12° C), and Bob's your uncle: real ale from a bottle. No special equipment required.

But what if you keg? What if you want to bring the British pub into your own home? One could, of course, acquire a stainless steel cask and a beer engine. Such equipment is readily available to homebrewers, but a complete setup can easily approach $1,000. That figure decreases if you eschew the beer engine in favor of gravity dispensing directly from the cask. Indeed, this is now a regular feature at many breweries (usually involving some amusing play on the word *firkin*), and it's one of my favorite ways to drink really fresh ale.

But getting beer out of the cask isn't really the problem. It's dealing with what goes in. Traditional equipment lets the cask's headspace fill with air as beer is withdrawn. Tapping the cask thus begins the beer's free fall to oxidized lifelessness, giving you a day, maybe two, of fresh ale. While purists insist that oxygen exposure is part of the experience, most homebrewers I know simply won't consume 5 gallons in one or two days. I certainly haven't—at least not that I can remember.

learning from the pros

To get some ideas, I sat down with a couple of brewing professionals here in Fort Collins, Colo. Dwight Hall is head brewer at Coopersmith's Pub and Brewing, which has served real ale to the thirsty masses since 1989. Several styles are featured daily, hand drawn with classic swan-necked beer engines. Two decades ago,

parts list

LIQUID ASSEMBLY

- 1/4" MFL ball lock liquid disconnect
- 1/4" MFL swivel nut with 1/4" barb
- 3/16" beverage tubing
- 3/16" to 3/8" line splicer
- 3/8" tubing
- Valterra RP800 Chrome Rocket hand pump
- 4 stepless hose clamps (Oetiker #145)

GAS ASSEMBLY

- Polysulfone female quick disconnect with 1/4" barb
- 5/16" gas tubing
- 3/8" barb to 1/4" male NPT coupling
- Low pressure LP regulator
- 3/8" male NPT to 3/8" barb coupling
- 1/4" MFL swivel nut with 1/4" barb
- 1/4" MFL ball lock gas disconnect
- 4 stepless hose clamps (Oetiker #145)
- Teflon tape for coupling-regulator connections

instructions

1. Connect a length of 3/8" tubing to the inlet barb of the hand pump, and secure with a hose clamp.
2. Using a 3/16" to 3/8" line splicer, attach a short length of 3/16" beverage tubing to the free end of the 3/8" tubing. Secure both ends of the splicer with hose clamps.
3. Attach a ball lock (or pin lock) liquid quick disconnect to the free end of the 3/16" beverage tubing, securing with a hose clamp. Depending on your system, the tubing will either directly attach to the disconnect's hose barb, or to a 1/4" barb that attaches to the disconnect via a swivel nut. This completes the liquid side assembly.
4. Mount the liquid assembly to the stand, counter, kegerator, or novelty pedestal of your choice. Consider including a way to remove the liquid assembly for maintenance and cleaning.
5. Connect the 3/8" barb to 1/4" male NPT coupling and the 3/8" male NPT to 3/8" barb coupling to the input and outlet ends, respectively, of the low pressure liquid propane (LP) regulator. Use a couple wraps of Teflon tape to ensure airtight gas connections.
6. Connect lengths of 5/16" gas tubing to the barbs at the inlet and outlet ports of the LP regulator, securing with hose clamps.
7. Attach a ball lock (or pin lock) gas quick disconnect to the free end of the tubing connected to the regulator's outlet port, securing with a hose clamp. Depending on your system, the tubing will either directly attach to the gas disconnect's hose barb, or to a 1/4" barb that attaches to the disconnect via a swivel nut.
8. If using inline quick disconnects on the gas side, attach a polysulfone disconnect to the free end of the tubing connected to the regulator's input port, securing with a hose clamp. If not using inline gas disconnects, this end will attach directly to the output barb of a CO_2 regulator or gas distributor, depending on your system. This completes the gas side assembly.
9. Select a carbonated and conditioned keg of your finest homebrewed real ale and relieve the pressure via the valve (ball lock) or post tool (pin lock).
10. Attach the input side of the LP regulator to a CO_2 source and the output side to the keg's gas post (Note that if you do not first relieve the keg pressure, you may hear hissing as the LP regulator equalizes to its design pressure). Supply gas from the cylinder at your normal pressure: the LP regulator will reduce it down to the appropriate level for cask ale.
11. Connect the liquid assembly's quick disconnect to the keg's liquid post.
12. Draw a pint from the hand pump. This will take several strokes of the lever because the pump moves a much smaller volume than a true beer engine. Depending upon the beer, you may notice the cascading effect typically seen with stout faucets.
13. Toast and enjoy!

traditional equipment was neither affordable nor easy to find, so the brewery converted Golden Gate kegs into faux firkins. In addition to gas and liquid fittings, Golden Gates feature a bung hole (*you mustn't snicker!*), which makes filling and dry hopping a breeze. Although these kegs are hard to find these days, Coopersmith's continues to use them successfully.

Just down the street and across the Cache la Poudre River, Odell Brewing Company serves beers as varied as double IPA and fruit lambic. But its roots are firmly British, and cask-conditioned ales feature regularly on the menu. Taproom manager Jason Bowser gravity dispenses from a firkin, but he couples the beer engine (a cantankerous model brought over from Edinburgh in an overhead bin) to a good old American D-system Sankey. After the keg naturally carbonates, it is brought to serving temperature and vented prior to meeting the engine.

Notably, both brewers dispense real ale from kegs meant for top-pressure draft systems. And both unapologetically employ cask breathers. A cask breather is simply a regulator that draws CO_2 from an external source and admits it to the cask at atmospheric pressure. When a pint of beer is served, the headspace is thus topped up with CO_2 rather than air, protecting the beer from oxidation. CAMRA somewhat famously discourages cask breathers and considers their use grounds for exclusion from its *Good Beer Guide*.[2] But for me, the proof is always in the glass.

I asked Hall and Bowser why hobbyists should bother with real ale, and they overwhelmingly emphasized freshness. Hall compares cask ale to homemade

spotted charlie house bitter

all-grain recipe

This is my house bitter, named after a moody, mottled moggie who graciously permits two humans to share her space. Malt is the soul of this recipe, so it's worth seeking out quality barley. I'm crazy for floor malted Maris Otter, but Golden Promise and Optic will both produce equally fine ale, as will the freshest Maris Otter extract you can get your hands on. The small amount of chocolate malt is optional. Its flavor contribution is subtle, but I like the color it lends the beer. Experiment and make Spotted Charlie your own!

INGREDIENTS

for 5 U.S. gallons (19 liters)
at 70% efficiency

- 9.0 lb (4 kg) Warminster Floor Malted Maris Otter (4.5L)
- 8.0 oz (227 g) Baird Carastan malt (30-40L)
- 2.0 oz (56 g) Crisp chocolate malt (600-700L)
- 1.0 oz (28 g) Willamette hops, 6% a.a. (60 min)
- 1.0 oz (28 g) East Kent Golding hops, 5% a.a. (15 min)
- Wyeast 1469 West Yorkshire Ale or Fermentis Safale S-04

Original Gravity: 1.046-1.049
Final Gravity: 1.010-1.014
IBUs: 25-35

DIRECTIONS

Mash for one hour at 153° F (67° C). Sparge to 6.5 gallons (24 liters) and boil for one hour. Chill, oxygenate, and ferment at 64-68°F (18-20° C). Leave in primary for at least 10 days, then bottle or rack to a keg. Prime with enough corn sugar to achieve 1.1 volumes CO_2 at 50-55° F (10-12° C). Serve after two weeks of conditioning.

EXTRACT VERSION

Steep the Carastan and chocolate malt for 30 minutes at 155-160° F (68-71° C). Replace the Maris Otter base malt with 6 lb (2.72 kg) Maris Otter liquid malt extract. If performing a partial boil, add half the extract at the start of the boil and the remainder with the 15 minute hop addition. If boiling the full volume, all the extract may be added at the beginning of the boil.

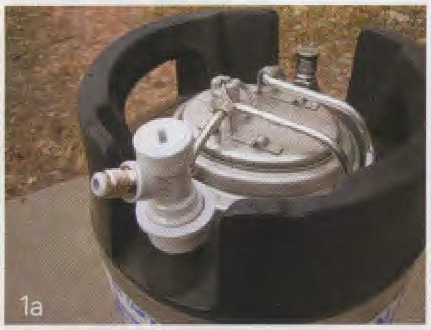
bread just out of the oven, and Bowser notes that the limited shelf life of low-gravity bitters and milds means the best examples may very well be those made at home. These pros notice an appreciable difference between natural and forced carbonation, and they encourage homebrewers to experiment, source quality ingredients, focus on the final product, and avoid worrying about perceived rules.

These brewers also taught me that cask ale is less about equipment than about attitude; less about the method than about the pint. Inspired by their use of commercial kegs, I decided to create a system built around the Cornelius keg.

real ale for the open-minded homebrewer

My first approach was simple. In a 2001 article in *Zymurgy*, Mike Bardallis described how to gravity-dispense from a corny keg by laying it on its side at a slight angle and reversing the roles of the gas and liquid dip tubes.[3] I experimented with this approach, and although it performed admirably for a few pints, the lid eventually unseated and leaked. I concluded that kegs, like homebrewers, are probably most effective when they remain upright. I needed a pump.

But not just any pump—I needed a food-grade version that would mimic a beer engine but cost dramatically less. Sal Emma made use of a marine galley pump in a 1997 article[4], but his mechanical skills clearly exceed mine, and the recommended model costs well north of $100. In 2005, Thom Cannell described how to build a beer engine from an inexpensive RV pump[5], and internet forums indicated that other homebrewers had successfully applied his approach. There we go.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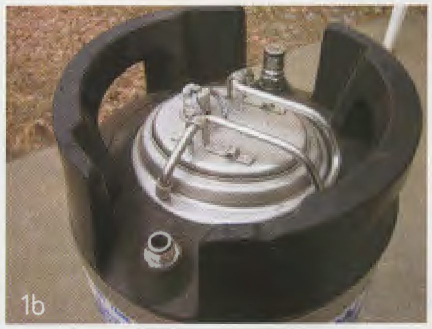
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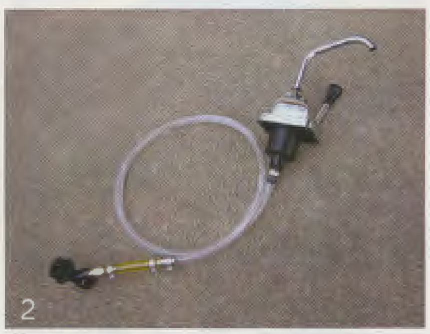
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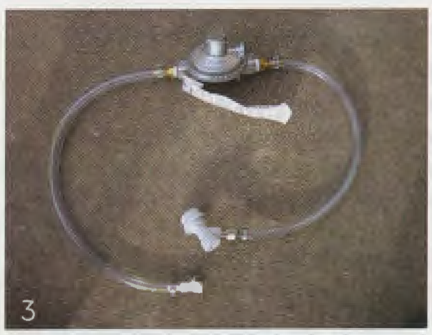
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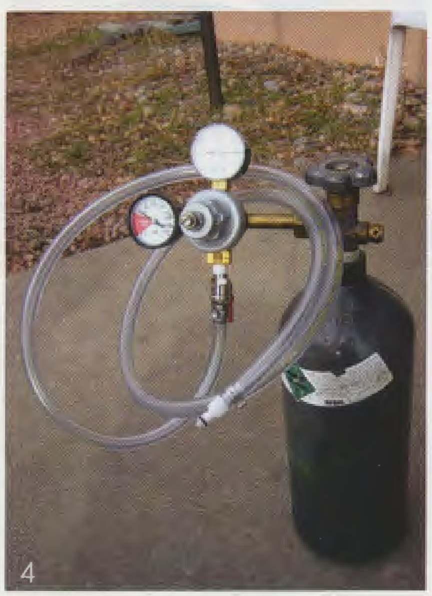
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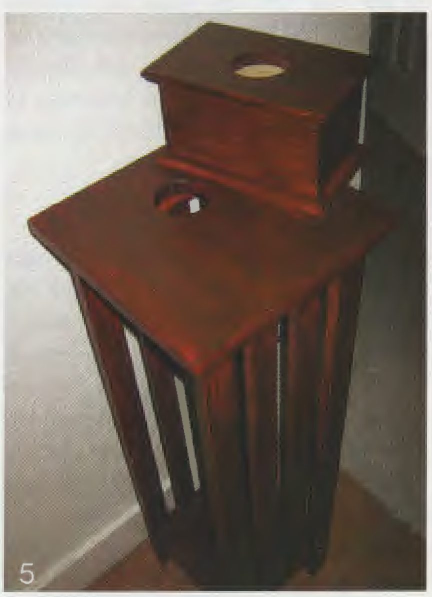
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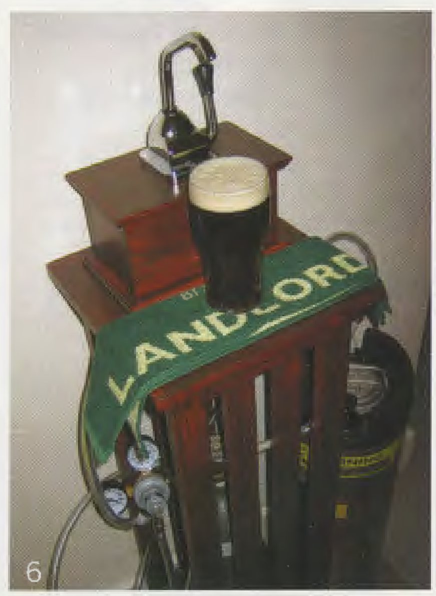
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1) Ball lock keg with (a) open quick disconnect attached and (b) and gas post removed

2) Liquid assembly

3) Gas assembly

4) Gas supply with quick disconnect

5) Plant stand and small toy chest with holes for hand pump and beverage line

6) Assembled beer engine with a freshly pulled pint of bitter

I next considered the oxidation problem. You can kick your keg old school if you do so quickly. Either attach an open disconnect to the gas post or remove the post altogether (see Photos 1a and 1b), and then invite some friends over to pump, enjoy, and repeat until the keg has given its all. But if you'd rather serve your ale over a longer period, a cask breather is essential. Purpose-built models cost around $100, but there's more than one way to skin a cask.

In a 2009 post[6], HomeBrewTalk.com user Schlenkerla references an article in which a low-pressure liquid propane regulator substitutes for a true cask breather.[7] Placed between a CO_2 source and the keg, this budget cask breather admits less than 0.5 psi—enough to preserve your beer, but not enough to carbonate it. If this seems like cheating, just pretend you live 1,000 feet lower in elevation because that's the kind of pressure difference we're dealing with.

The final piece of the puzzle was keeping the temperature in the mid-50s (12-14° C). Those of you with effective climate control may need to play with refrigerators and thermostats, but my house was built in the 1940s by someone with a sense of humor. Closing off one of the rooms in the colder months supplies a 50 to 60° F (10-16° C) space from roughly Oktoberfest to St. Patrick's Day. So my British real ales fit neatly between my Bavarian lagers and Irish stouts.

putting it all together

I built my system around self-contained liquid and gas assemblies, shown in Photos 2 and 3. The liquid assembly connects the hand pump to the liquid post of a Cornelius keg. One end of the gas assembly draws from a CO_2 cylinder, and the other attaches to the keg's gas post. Including a polysulfone quick disconnect at the supply end lets me borrow the gas cylinder for other brewing chores (the matching disconnect can be seen in Photo 4).

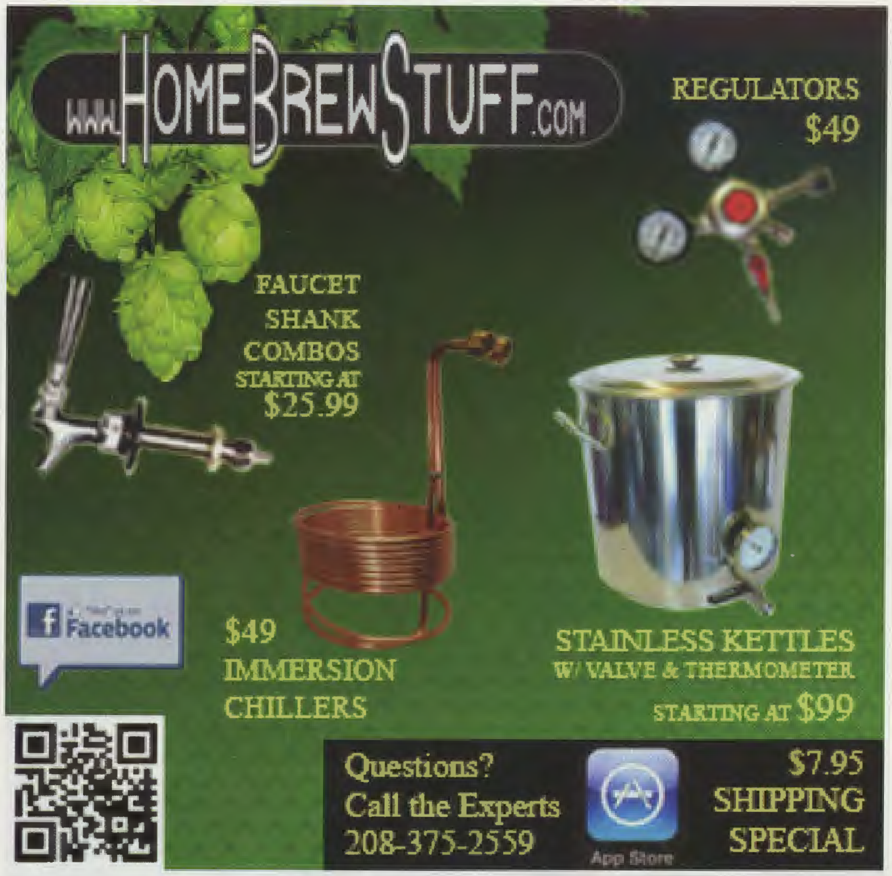
My last name doesn't accurately represent my woodworking skills, so I fashioned a rudimentary stand from ready-made components. From a plant stand, a small toy box, and the toothy end of a hole saw (Photo 5) emerged a simple but functional stand upon which to mount the hand pump. Photo 6 shows the final assembly.

That's really all it takes. I've included lists of the modest parts needed for the liquid and gas assemblies, but the stand can be whatever you fancy. I'm always impressed by the lengths to which homebrewers will go to make and serve beer, so I really hope someone reads this and then builds a beer engine from an actual engine. In which case, please send photos.

I hope I've encouraged you to try real ale at home. Follow the rules if you like, but don't be afraid to follow your own path. And when you find it, be sure to toast your efforts. And by all means, keep it real.

Dave Carpenter writes code by day and prose at other times. He lives in Fort Collins, Colo. with his fiancée and two cats. Read more at www.quaffable-quips.com.

* *1 Butt = 2 Hogsheads, or 6 Kilderkins, or 12 Firkins, or roughly 130 U.S. gallons*



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