

Special Collector's Issue

Vol. 24 No. 5 September/October 2001 The Journal of the American Homebrewers Association

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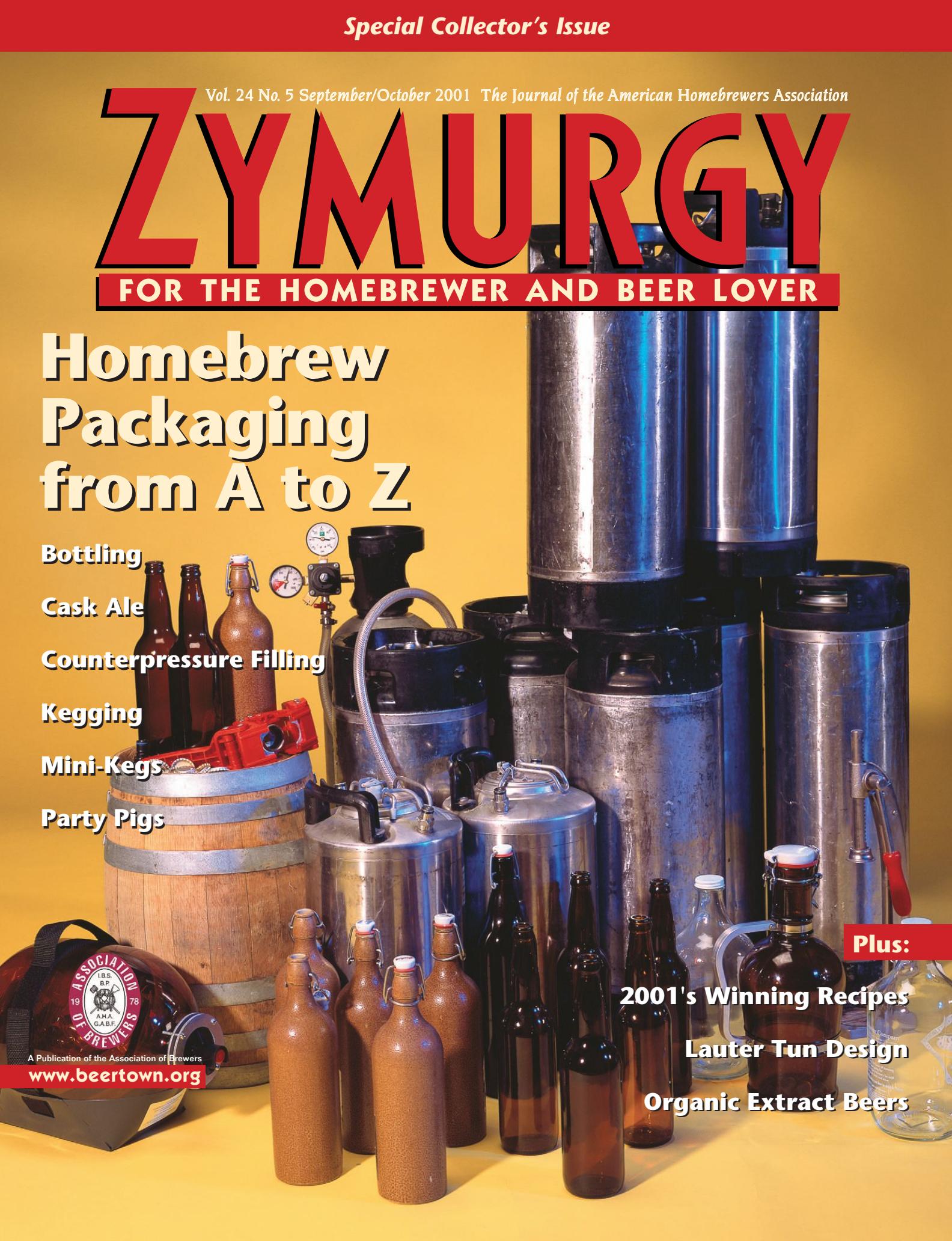
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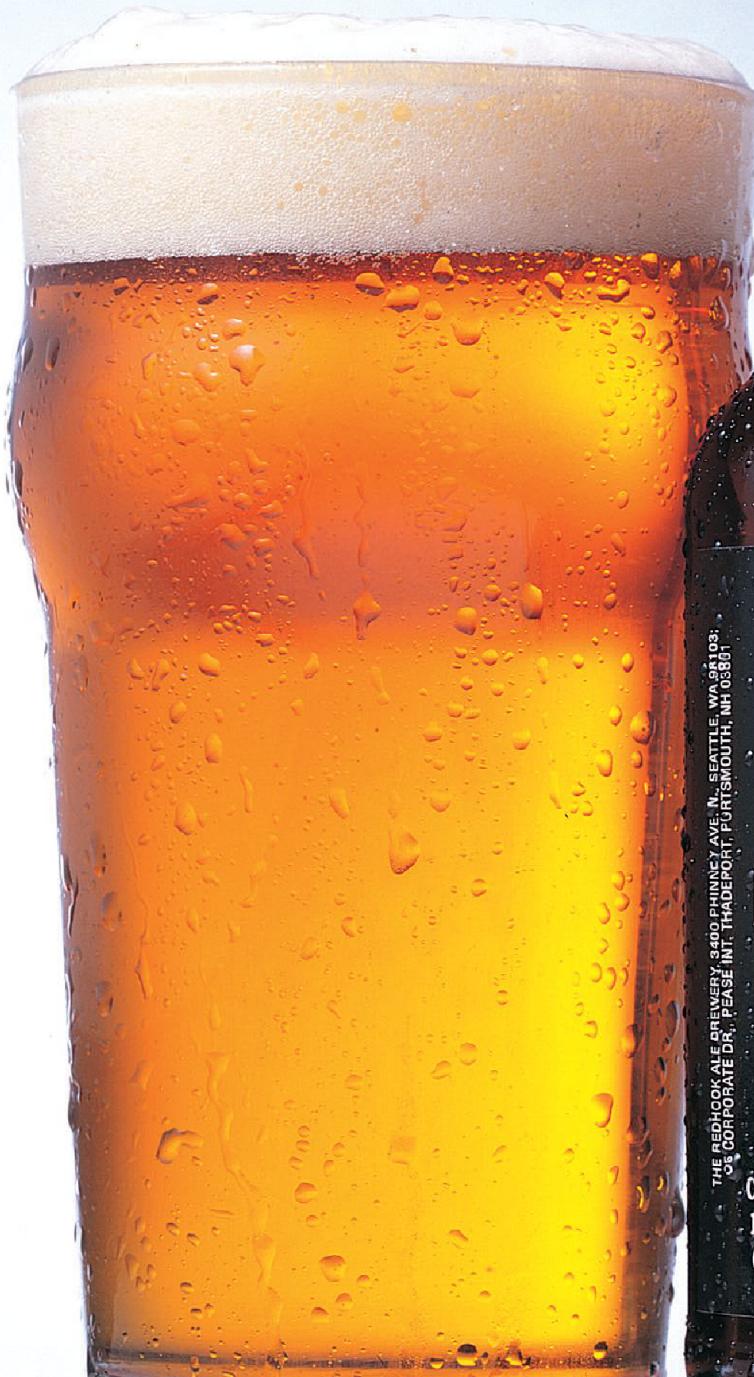
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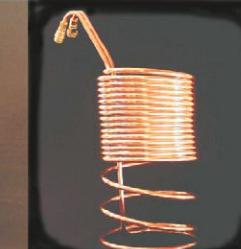
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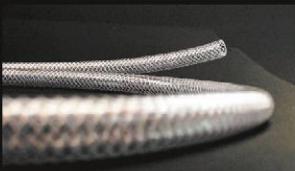
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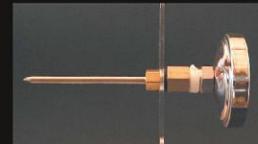


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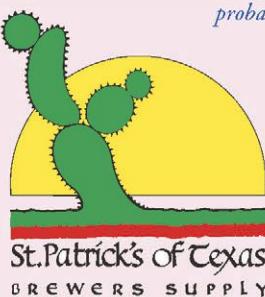
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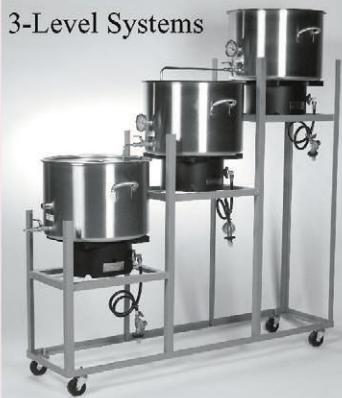


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The American Homebrewers Association® Mission Statement

To promote public awareness and appreciation of the quality and variety of beer through education, research and the collection and dissemination of information; to serve as a forum for the technological and cross-cultural aspects of the art of brewing; and to encourage responsible use of beer as an alcohol-containing beverage.

Association of Brewers Inc.

The Association of Brewers Inc. is a Colorado not-for-profit corporation for literary and educational purposes to benefit brewers of beer and all those interested in the art of brewing. The Association of Brewers is a not-for-profit trade Association under Section 501(c)(6) of the Internal Revenue Code. The Association of Brewers has four divisions—American Homebrewers Association®, Institute for Brewing Studies, Brewers Publications and Brewing Matters.

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ZYMURGY®

Zymurgy \ zī'mər jē \ n: the art and science of fermentation, as in brewing.

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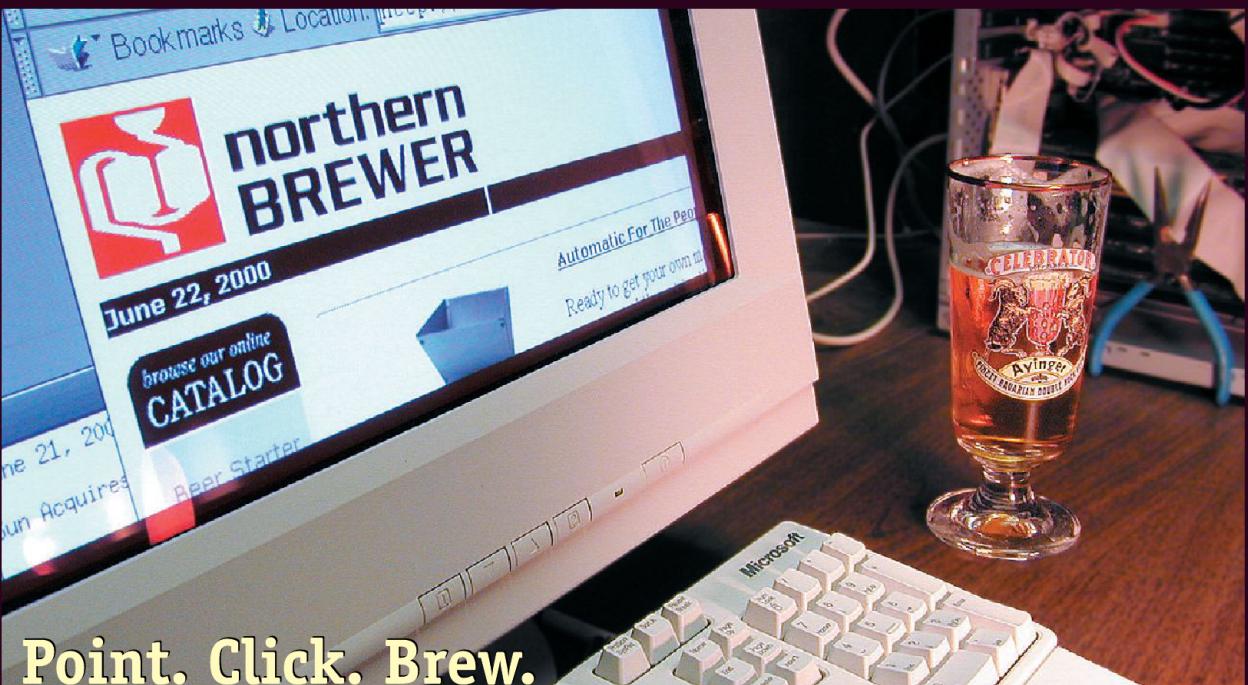
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BY PAUL GATZA

The Zymurgy You Won't Get in the Mail

The American Homebrewers Association has two main functions—our members organize and conduct programs for current homebrewers and our members conduct activities that promote the hobby of homebrewing to the uninitiated and unknowing. One idea that AHA staff and the AHA Board of Advisors has been kicking around for some time is a one-time issue of *Zymurgy* aimed directly at beginning brewers. The issue is being produced in a manner that will be timeless in scope and information. If the issue, dubbed *Zymurgy for Beginners* is successful, it will be reprinted over and over as long as it achieves the goal of helping new brewers.

Zymurgy for Beginners will take the beginning brewer by the hand through her or his first three batches as a homebrewer. The issue will give basic instructions, dis-



cuss common questions that nearly all new brewers have, give some simple recipes, introduce the reader to the format of *Zymurgy* as a brewer's resource, introduce the reader to some of the advertisers who are

well known and established by long-term brewers, but not by new brewers and invite the brewer to become an AHA member to facilitate deeper, longer-term involvement in the hobby. The most important concept is that it is a support mechanism for the new brewer that may encourage her or him to stay in the hobby through this crucial developmental stage.

Zymurgy for Beginners will not be sold at stores or on news stands and it won't be mailed to existing members. After all, if you subscribe to *Zymurgy*, you already know how to brew! *Zymurgy for Beginners* will be given free to retail supply shops and/or wholesalers for distribution with the purchase of each new beginning equipment kit. *Zymurgy for Beginners* will also be available to all brewing teachers who register a site for Teach a Friend to Homebrew Day.

New Member Development

The secondary goal of the project is to develop new AHA members. Naturally the more members we have, the more funds we have to promote the hobby in projects such as this one and coordinate programs for existing brewers. With new members coming in, we keep fresh ideas circulating in the AHA and remain vital as an association. AHA Membership Coordinator Gary Glass will also be leading a project to encourage long-time brewers who may have let their membership lapse, or who have never been members, to sign up through our liaison program of representatives around the country who are able to sign up new members. For more information on how to get involved in the liaison program, please contact Gary at 888-Ucan-Brew or gary@aob.org. Gary reports that AHA membership liaisons brought in over 50 new members during the Wyeast-sponsored



AHA Financials for 2000

Revenues	Actual	Budget	Expenses	Actual	Budget
Membership	290,790.00	305,000.00	Marketing	31,887.30	61,771.00
Zymurgy Advertising	85,955.53	81,500.00	Zymurgy	208,327.28	212,715.00
Magazine Listing	21,711.54	19,000.00	Conference	28,611.98	29,287.00
Magazine Sales	22,952.75	28,500.00	NHC	25,014.95	25,552.00
Conference	35,308.00	31,000.00	Programs & Overhead	59,143.49	64,685.00
NHC	33,460.80	26,500.00			
Sponsorship	0.00	1,300.00	TOTAL	352,985.42	394,010.00
Other	5,477.68	5,700.00	SURPLUS	142,670.88	104,490.00
TOTAL	495,656.30	498,500.00			

Programs and Overhead includes salaries not attributed to *Zymurgy*, the conference and the competition for divisional, advertising and events staff. Overhead does not include rent, utilities, maintenance, administrative and information and membership services salaries, some capital expenses and reserve expenses. Those items come out of the Association of Brewers budget, part of which comes out of the AHA surplus. Sponsorship of the NHC and the conference are included as program revenue. Charge backs by Ingram distributing for unsold *Zymurgy* copies have been deducted out of magazine sales.

AHA Big Brew in May, so this project is off to a good start.

Teach a Friend to Homebrew Day

We are back with Teach a Friend to Homebrew Day on the first Saturday of November. This year that day is November 2nd (six months in either direction from the AHA Big Brew). Teach a Friend to Homebrew Day is a day of service to the hobby and fun at your kettle, where homebrewers seek out a non-brewer who may be interested in learning the hobby for an educational demonstration. The idea is that we show initiates how simple and fun the hobby is and encourage them to get started or ask for a kit during the holiday gift-giving season. Please visit www.beertown.org to register your site for Teach a Friend to Homebrew Day. Our plan is for all learners on this day to be provided with a copy of *Zymurgy for Beginners*.

Great American Beer Festival

Here's a quick reminder to make your plans for the Great American Beer Festival's 20th anniversary in Denver the weekend of

September 27 to 29 at the Colorado Convention Center. The GABF is always fun and there are always way more beers than you can possibly taste. My favorite sessions are the Thursday evening session and the connoisseur's tasting on Saturday afternoon. Thursday is opening night, the enthusiasm is a mile high and brewers are easy to find behind their booths; Saturday afternoon is populated mostly by members of the AHA and the Institute for Brewing Studies—with no lines—who can attend the annual GABF Awards Ceremony to find out first what the best beers in the country are.

AHA National Homebrewers Conference and AHA National Homebrew Competition

As I write this column a few days after the conclusion of the AHA conference and second round judging and awards of the National Homebrew Competition I think of how much fun I had and the good people from all over the country that I met or renewed friendships with. The Four Points and AHA member and hotel GM Phil Baxter was a fab-

ulous host for all of the members and clubs and craft brewers who participated. Here's a thanks to all of the clubs, Stevie Ray Casselman and Maribeth Raines-Casselman, Christy Elshof, Drew Beechum, Rick Adams and the rest of the committee. It was a truly outstanding time. I can't wait for next June 19-22 in Irving, Texas, where everything is big, especially the beer. Thanks also go out to our presenting sponsor Rogue Ales and our other sponsors Wyeast, the National Honey Board, the University of California at Davis and BJ's Pizza Grill and Brewery.

On the competition side, our sponsors are listed in our annual big section of the Winners Circle. The competition was exceptionally run by our volunteers around the country, and I thank them for their involvement. The beers and meads that I judged were all of a very high quality, as the standard for homebrew continues to improve.

That brings me to the end of my milk stout and the end of the column. See you next issue.

Homebrewer and former homebrew shop owner Paul Gatza is the director of the AHA. ☺

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BY RAY DANIELS

The Future of Beer Packaging

On brew day we create. During fermentation we nurture. But during packaging we struggle to preserve.

Packaging is the bane of all brewers. It is the time when the brewer's hard work can be quickly destroyed via infection, oxidation or improper carbonation. In addition to that, it is tedious and time consuming. In short, it is a chore.

If it were possible, I would definitely drink all my beer directly from the fermenter. I actually bought a long straw for this purpose, but things didn't quite work out as I had planned. For starters, you get funny looks at parties when you show up carrying a five-gallon carboy—and just one straw to go in it. Also, I found that in most homes it is hard to find a counter or table that positions the carboy so that the straw is at just the right height for casual sipping. For a while, I used a modified baby sling to balance the thing on my hip, but eventually I threw my back out when someone proposed a toast at a large party and I had to "clink" glasses with everyone there. Ouch.

Of course there's no pressure on a carboy, but I managed to get some carbonation in my brews by drinking them while they were still fermenting a bit. Still, five gallons was a lot for one session and the leftovers didn't keep very well. Let's not even talk about the backwash issue.

So I returned to the traditional beer packaging methods that we have all come to know and despise. As I think of the "stupid brewer" tricks I've heard, I realize that many of them involve packaging in one way or another. Probably my favorite was the guy who tried using carefully measured chunks of dry ice to carbonate his beer. First, he filled the bottles and lined them up with sanitized caps ready to go. Then he started dropping dry ice into each bottle and



quickly capping it. He was on about the fourth or fifth bottle when the first one exploded followed shortly thereafter by the others. Seems that the carbon dioxide wouldn't dissolve into the beer fast enough so the pressure inside was zooming up to extremely high levels.

Another one that I've heard about, but not seen, is the "hammer" capper. This is an inexpensive bottle capper that consists of little more than a cap-sized steel cup with a handle on it. You place the inverted cup over the cap and bottle and then tap on it with a hammer to crimp the cap down onto the bottle. The only problem is that it takes a deft hand to cinch the cap without breaking the bottle. One guy I corresponded with a few years ago could only bat about 0.500 on this and wound up with one broken bottle and 12 ounces of wasted beer for every one that he was able to get capped. Yikes.

I once lost a gallon of beer (soaked into the wall-to-wall carpeting no less) because I assumed that no beer would flow from the bottling wand unless I was pushing down on it. Just so you know, a small trickle can escape from that wand when it is just sitting

in a bottle. If ignored for long enough, that trickle can add up and you may not be happy with where it goes when it leaves the bottle!

A couple of issues we didn't get to address include canning and plastic bottles. With regard to the former, I have heard that some homebrewers have developed a technique for canning their wares. Unfortunately the one person I could find with some knowledge of this subject was unable to write about it due to stipulations placed on him by his employer. On the Internet, I did find a small-scale canning machine that is being sold to brew-on-premises shops in Canada. Apparently it works pretty well, but it looked like the cost was more than \$5,000—too steep even for most well-financed clubs or shops.

The subject of plastic bottles deserves some attention from brewers of all stripes these days. Amber plastics and oxygen-barrier coatings have been developed to eliminate the fatal flaws once associated with putting beer in PET containers.

While no one expects plastic to replace glass as the container of choice for beer anytime soon, they do expect that the big guys will all start using them as a "special venue" package. This means you'll see them at pools, beaches, stadiums and golf courses—in short, the very places where glass has always been a no-no. Wider use by the big guys will be delayed because of cost: glass is still the cheaper way to go. But once the containers are widely distributed, I suspect that homebrewers will flock to them like bacteria to spilled wort. So just remember this one word: "plastics."

In the process of editing this issue, I have to admit that I started to daydream a bit. Packaging is varied and interesting, but hardly perfect. Thus I began to think about what kinds of packaging and serving options might be offered to us in the future.

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Now, we've all seen the hoopla over "born on" dates and similar well-meaning quality-control programs from the nation's commercial brewers. But let's face it, those little dates don't really tell you a lot. I mean is a beer that's four months old too old to enjoy? Is it OK if it has been in the refrigerator most of the time? What about that hour it sat in the hot car last month? Gets confusing, doesn't it?

What we really need is something similar to those little charge indicator strips that come on a lot of AA batteries these days. Ideally these strips would determine not only age, but also the storage conditions that the beer had been subjected to. They would then convert the combined age and temperature data into a user-understandable message about the status of the beer. At various stages you would get different messages, like "Brewery Fresh" when it was still within site of its home and "Too Far Gone to Even Cook With" when it had been badly abused.

As time and temperature took their toll, you can imagine the sequence of messages that might be presented as going something like this:

First month: "Brewery Fresh"

31-90 days: "Still Great"

91-120 days: "Good with Food"

121-150 days: "Perfect with, uh, Anything Spicy."

151-180 days: "Should Have Been in the Fridge Months Ago."

181-210 days: "Nice Marinade"

211-270 days: "Well, We Wouldn't Drink it . . ."

> 270 days: "Hazardous Waste"

Alas, I fear that such a device may never be invented—and if it is, the owners probably won't have the intelligence to include such common sense indicators of beer quality. So for the time being, you'll have to rely on the old tried and true method of quality assessment using your own mouth as a guinea pig. You should feel free, however, to use the scale of quality indicators that I have proposed above.

Cheers!

Ray Daniels packages his beer in a basement in Chicago.

Cara-Correction

Dear *Zymurgy*,

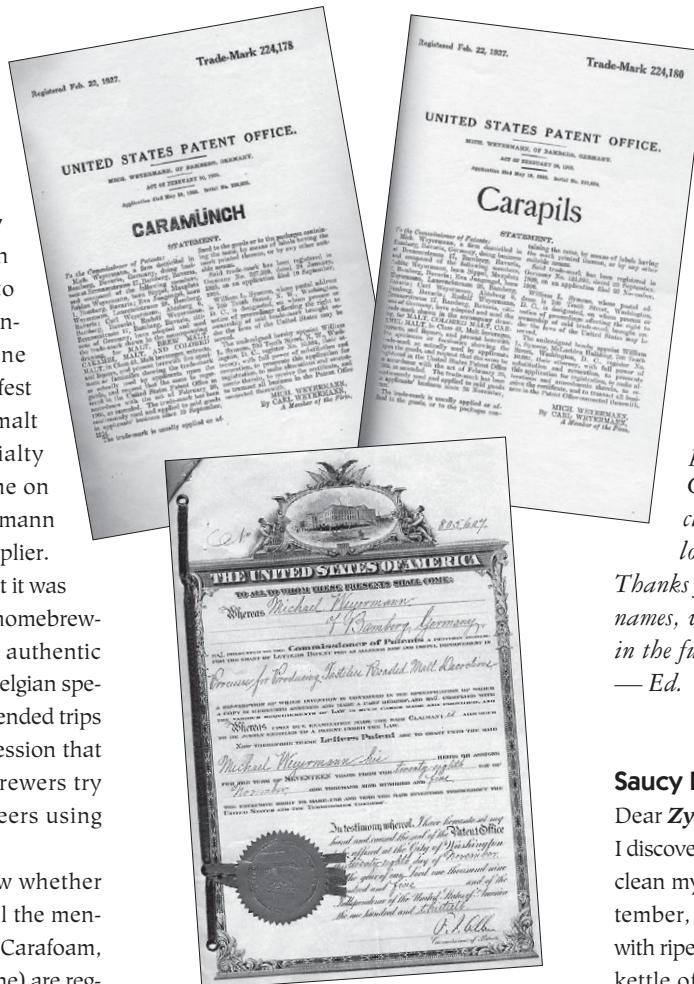
As always, I enjoyed reading the latest issue of *Zymurgy*! My attention was especially drawn to an article explaining how to brew an authentic Munich Paulaner Oktoberfest beer (May-June 2001, pg 49). Paulaner Oktoberfest beer is brewed with the finest malt available—Weyermann Specialty Malts. Ever since this beer came on the market in the 1920s, Weyermann Malt has been the approved supplier.

Reading your article, I thought it was quite funny that you tell a huge homebrewing community how to brew an authentic Munich Oktoberfest beer using Belgian specialty malts!... From various extended trips to the US I always got the impression that American brewers and homebrewers try very hard to brew authentic beers using the appropriate malts!

We are also curious to know whether you are aware of the fact that all the mentioned Caramel malts (Carapils, Carafoam, Carahell, Caramunich, Caravienne) are registered trademarks of the Weyermann Malt Company, and have been since the beginning of the 20th century!

In accordance with the highest quality standards, all Weyermann Caramel malts are produced exclusively in roasting drums and not in a kiln! This means they are completely caramelized from the inside out and not only browned on the surface! Over the years European brewers, mostly experienced German brewers, have referred to caramel malts simply using the common Weyermann brand names.

Maybe you are interested in taking a look at the attached certificates dating back to the early part of the 20th century. If you are interested just give me a call or send me



an email, I will be happy to [share] the whole story with you!

Cheers!

Sabina Weyermann
President, Weyermann Malting Company

Dear Sabina,

Thank you for sending the copies of the US Patent Office trademark certificates. We were unaware of these facts and will be happy to share the information with our readers.

We agree that most brewers would approach the brewing of an Oktoberfest through the use of German malts such as those supplied by Weyermann, but Mr. Turczyn's approach provided an interesting alternative for those who wish to experiment and compare. In any case, such experiments will not be possible for long as the DeWolf-Cosyns maltings are soon to be closed and the malts he used will no longer be available here in the US.

Thanks for setting us straight on the brand names, we'll try to use them appropriately in the future.

—Ed.

Saucy Little Cleaner

Dear *Zymurgy*,

I discovered, quite by accident, a great way to clean my stainless steel brew kettle. In September, when my garden was overflowing with ripe tomatoes, I decided to make a large kettle of spaghetti sauce and freeze it for future use. The only vessel I had that was large enough to cook six gallons of sauce was my ten gallon stainless steel brew kettle. It performed flawlessly, distributing the heat of two burners so evenly that there was no scorching whatsoever. When I finished rinsing my kettle, I was astonished to see that the acidic sauce had cleaned all traces of stain from the kettle, leaving it sparkling like new.

Sauce Delicious

Oh sauce delicious, dark red and nutritious,

*Basil, garlic, celery, tomah-to,
Pepper, sausage, and cheese Romano,*

Aroma enticing, (continued on page 74)

HURL Organic Extract Experiment

When the call went out for participants in *Zymurgy's* Extract Experiment series of articles, members of the Washington, DC-based *Homebrewers Unified Revolutionary League* (HURL) quickly volunteered. The club's interest in the positive ecological benefits of small scale brewing led to the idea of conducting an all-organic-ingredients experiment.

As with the other articles in the series, the purpose of our extract experiment was to show off the versatility of the base ingredient and the ingenuity of the brewers by building five different beers on the same foundation.

For the extract, we selected Briess Brewers Gold Organic Concentrated Brewers Wort (CBW). This core component of the program was generously donated by Briess Malting Company (www.briess.com). Briess has been in the malt business since the company's founder Ignatius Briess started malting barley in 1876 in Czechoslovakia. The Wisconsin-based company has been supplying malted grains to the "new world" since the 1950s under its own name.

Briess Organic CBW is equivalent in all respects to their standard Brewers Gold CBW, with one essential difference: it's made from certified organic barley and on certified organic equipment. Explains Mary Anne Gruber of Briess, "Briess has actually been certified organic for 20 years, but it wasn't until eight years ago or so that someone called us up and asked if we had any organic malt extract for brewing." Briess also produces grains, extracts and other food products for use in food industries such as baking, and originally got their organic certification for this side of the business. It is from the extract production for baking that Briess Organic CBW is pulled, meeting all brewers specifications with regard to flavor, fermentability and yeast nutrients. Made from a two-row base malt



Pictured clockwise from upper left are:
Eric Brown, Eric Hesse, Rob Hanson, Chris O'Brien, Subashini Ganesan and Paul Kensler

and six-row specialties, this extract provides a color of 6-10° L in the finished wort (assuming wort of 1.046 SG [11.5°P], boiled one hour with no scorching).

Seven Bridges Cooperative Microbrewery (www.breworganic.com) in Santa Cruz, CA, donated the other organic brewing ingredients for the experiment. Seven Bridges was founded in 1996 to produce organic beer and mead. While the brewery is still in the planning stages, Seven Bridges has been in the organic homebrew supply business since 1997.

To help compensate for HURL brewers' potential "cellar blindness," we recruited several BJCP certified judges from a local, long-established homebrew club to evaluate the finished beers. The Brewers United for Real Potables, or B.U.R.P., is celebrating its twentieth anniversary this year, and currently boasts 52 BJCP certified judges among its members. We were fortunate to have six of them (BJCP Certified and National rankings) provide feedback on the beers. The HURL brewers gathered separately for our own tasting, and both sets of

evaluations follow the recipes and procedures for the organic beers we made.

Please note: For those who do not require an organic beer, all of these recipes can be made successfully using regular Briess Brewers Gold Concentrated Brewers Wort instead of the organic product cited below.

Rob Hanson's Organic Pale Ale (basic recipe)

Recipe for Five Gallons (19 L)

- 6 lb (2.72 kg) Briess Organic Brewers Gold CBW Malt Extract
- 1 tsp(5 ml) gypsum
- 1 oz (28 gm) British organic Target hops 10.3% aa (boiled 60 minutes)
- 0.25 oz (7 gm) German organic Perle hops 8.3% aa (boiled 15 minutes)
- 1 oz (28 gm) New Zealand organic Hallertau hops 8% aa (boiled 5 minutes)
- 1 tsp (5 ml) Irish Moss
- White Labs WLP051 California V ale yeast
- 0.66 cup (159 ml) organic cane juice sugar (bottling)

Brewing Procedure: Rob brought three gallons filtered water to a boil, then removed the pot from heat. He added gypsum, malt extract syrup and brought the wort back to a boil. He then added the British organic Target hops, and boiled for 45 minutes. He then added the German organic Perle hops and Irish Moss (rehydrated in one pint water), then boiled 10 more minutes. He then added the New Zealand organic Hallertau hops, and boiled five more minutes. Rob chilled the wort and siphoned it into his fermenter. He then topped up with 2.5 gallons filtered water to make five gallons and aerated with an airstone for 45

minutes, then pitched a two pint yeast starter of White Labs California V ale yeast.

Fermentation: Six days at 68° F (20° C) in primary; nine days at 65° F (18° C) in secondary, bottled with organic cane juice sugar boiled in two cups water.

OG: 1.040 (9.98° P)

FG: 1.010 (2.56° P)

HURL Brewers Evaluation: The aim of this basic beer was to show off the qualities of the malt extract, but the team felt that the hopping schedule and the medium level of carbonation masked some of the character of the malt. The team noted a lack of complexity, and felt that a more complex grain bill might help boost the body of the beer. The team otherwise found the beer true to style and light enough for session drinking, praising the clarity, creamy head, and aroma of the beer.

BURP BJCP Judges Evaluation: "Very clean and pleasant tasting. Nothing stands out with distinction. Malt profile is light and would be a little chewy if higher gravity...Well attenuated." "Peachy apricot fruit aroma...hops dominate a thin bodied beer...A beer that lacks flaws as well as character." "Perhaps should have been stronger—add another can!" "Mini-mashing with Carapils or dextrose malt will give the body you need."

Eric Brown's Revolutionary Belgian White

Recipe for Five Gallons (19 L)

- 3 lb (1.36 kg) Weyermann organic pale wheat malt
- 4.4 lb (2.02 kg) Briess organic Brewers Gold CBW malt extract
- 1 oz (28 gm) New Zealand organic Hallertau hops 8.2% aa (boiled 60 minutes)
- 1.5 oz (42 gm) New Zealand organic Hallertau hops 8.2% aa (boiled 15 minutes)
- 2 tsp (10 ml) organic coriander, cracked (boiled 5 minutes)
- Zest of 3/4 organic lemon (boiled 5 minutes)
- 1.5 oz (42 gm) New Zealand organic Hallertau hops 9.2% aa (dry addition)
- 0.5 tsp (2.5 ml) organic coriander, cracked (dry addition)

White Labs WLP400 Belgian Wit ale yeast

Brewing Procedure: Eric mashed the wheat malt in 1.5 gallons (5.67 L) water at 150° F (66° C) for one hour, sparging grains with one gallon (3.8 L) 170° F (77° C) water. He then brought the water to a boil, removed it from heat, and added the malt extract. Eric brought the wort back to a boil, and added the New Zealand organic Hallertau hops for the bittering addition and boiled for 40 minutes. He then added the New Zealand organic Hallertau hops in the aroma addition and boiled 10 more minutes. With five minutes left in the boil, Eric added the cracked organic coriander and zest of organic lemon. He then removed the wort from heat and chilled it. Eric topped up his fermenter with 2.5 gallons (9.5 L) cold, filtered water. He then pitched the White Labs Belgian Wit yeast.

Fermentation: Six days in primary, 18 days in secondary with dry hops and coriander. OG: 1.039 (9.5° P); FG: 1.007 (1.8° P)

HURL Brewers' Evaluation: We found this beer tart and refreshing, and true to style. Turbid and displaying a good amount of carbonation, the only improvements we could have suggested were use of traditional Curaçao orange in place of the lemon zest, and perhaps a full-volume wort boil to minimize darkening.

BURP BJCP Judges Evaluation: "Malt flavor (neutrality) lends itself well to this style. Low alpha acid hops would be more appropriate. Lemon zest detracts more than it helps." "Light and refreshing—finishes dry." "It could use more body, more orange (not lemon) and definitely more coriander." "Dark straw with small head and light bead. Light and fresh. Expected more spice presence and yeast contributions."

Rob Hanson and Subashini Ganesan's Organic "Well isn't that special" Bitter

Recipe for Five Gallons (19 L)

- 1 lb (454 gm) Briess organic pale two-row malt
- 0.5 lb (227 gm) Briess organic 60°L caramel malt
- 0.25 lb (113 gm) Briess organic Munich malt

6 lb (2.72 kg) Briess organic Brewers Gold CBW malt extract

1 tsp (5 ml) gypsum

0.25 lb (113 gm) LD Carlson MaltoDextrin powder

1.5 oz (42 gm) German organic Tettnanger hops 5.8% aa (boiled 60 minutes)

0.5 oz (14 gm) German organic Tettnanger hops 5.8% aa (boiled 15 minutes)

0.5 oz (14 gm) German organic Hallertau Mittelfrueh hops, 5.2% aa (boiled 5 minutes)

0.5 oz (14 gm) German organic Hallertau Mittelfrueh 5.2% aa (dry addition)

1 tsp (5 ml) Irish Moss

White Labs WLP028 Edinburgh ale yeast

2/3 cup (159 ml) organic cane juice sugar (bottling)

Brewing Procedure: Rob mashed pale two-row and specialty grains in one gallon (3.8 L) water at 150° F (66° C) for 45 minutes, then sparged with one gallon (3.8 L) 170° F (77° C) water. He then brought it to a boil, and removed from heat. Rob added

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the malt extract, gypsum, and malto-dextrin powder. After bringing it back to a boil, Rob added the organic Tettnanger hops and boiled them for 45 minutes before adding the second addition of Tettnanger hops and Irish Moss. Rob boiled the wort for an additional 10 minutes and added the organic Hallertau Mittelfrueh hops, and completed the boil after an additional five minutes. He then chilled the wort, siphoned to his fermenter and topped up to five gallons (19 L) with 2.5 gallons (9.5 L) cold, filtered water. Rob aerated 60 minutes with an air stone. Rob then pitched a two pint (1 L) starter of White Labs Edinburgh ale yeast.

Fermentation: Six days at 68° F (20° C) primary, nine days at 62° F (17° C) secondary with German organic Hallertau Mittelfrueh dry hops. Bottled with organic cane juice sugar boiled in two cups (473 ml) water. OG: 1.042 (10.46 P); FG: 1.015 (3.82 P)

HURL Brewers' Evaluation: The team agreed that this was a more malty and complex beer than the basic pale ale, though the carbonation may have been a bit high for the style, which the team put down to the higher specific gravity of the bottling sugar relative to the usual corn sugar. The brewers enjoyed biscuity and crackery notes in the aroma as well as a fruity flavor from the crystal malt. The team agreed that the hops could have had more emphasis for the style.

BURP BJCP Judges Evaluation: "German Hallertau Mittelfrueh comes through...Not too bitter—good balance. Use British hops to brew this style." "Yeast choice good—a less attenuative (and flavorful) strain adds a lot. The mini-mash seems to have given much more body, mouthfeel, and even flavor to the beer...appropriate for style." "Low malt flavor and light color lends itself more to mild styles. Bitterness is more in the ordinary range"

Eric Hesse's Eric's Brown Ale (Not Eric Brown's Ale)

Recipe for Five Gallons (19 L)

- 6 lb (2.72 kg) Briess Organic Brewer's Gold CBW malt extract
- 0.5 lb (227 gm) Briess organic 60°L caramel malt
- 0.25 lb (113 gm) Briess organic chocolate malt

- 1 oz (28 gm) New Zealand organic Hallertau hops 8% AA (boiled 60 minutes)
- 1 oz (28 gm) New Zealand organic Perle pellet hops 8% AA (boiled 15 minutes)
- 1 oz (28 gm) New Zealand organic Perle pellet hops 8% AA (boiled 5 minutes)
- 1 tsp (5 ml) Irish moss
- 1 oz (28 gm) Cascade hops
White Labs WLP028 California V ale yeast
- 0.66 cup (159 ml) cane juice sugar (bottling)

Brewing Procedure: Eric steeped specialty grains in 2.5 gallons (9.5 L) filtered water at 160° F (71° C) for 40 minutes. Eric brought the liquid to a boil and added the malt extract. He then added the bittering addition of New Zealand Hallertau hops and boiled for 45 minutes, then added the flavor addition of hops and Irish moss and boiled for 10 minutes. To complete the boil, Eric added the aroma addition of hops and boiled for five minutes, then turned off the heat and chilled. He brought up the volume in his fermenter to 5.5 gallons (21 L) and cooled to 75°F (24° C). He then aerated for 45 minutes with an airstone, and pitched the White Labs California V ale yeast in a one pint (473 ml) starter.

Fermentation: Five days at 65° F (18° C) in primary, seven days at 65° F (18° C) with Cascade dry hops. OG: 1.032 (8.04° P); FG: 1.010 (2.56° P)

HURL Brewers' Evaluation: The team enjoyed the roast and chocolate character from the malt and the citrus imparted by the hops in the aroma, as well as the deep amber color. With the American character of the hops, and the amber color, this beer was a nice mix between an English nut brown and an American brown ale. If Eric were to make this again, the team agreed it could benefit by several more points of gravity and a bit more chocolate malt for a darker color.

BURP BJCP Judges' Evaluation: "Perhaps a few more ounces of crystal malt and another ounce of chocolate malt." "Seemed too small for an American brown—hops were almost there, but body seemed too light. Perhaps more of an English brown." "Nicely made beer. The chocolate malt adds interest to the beer while the caramel malt adds some malt complexity." "A nice interpretation of the style. OG seems a bit low."

Paul Kensler's Ballpark Brown Porter

Recipe for Five Gallons (19 L)

- 5.25 lb (2.38 kg) Briess Organic Brewer's Gold CBW malt extract

(continued on page 75)

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Purple Passions

Dear Professor,

I am about to bottle an awesome batch of imperial stout a la "Unspoken Passion" from Charlie Papazian's Homebrewer's Companion and wonder if the eight ounce clear bottles I have are good to use for this purpose (I previously had a sparkling mead in them and it seemed to work fine for that purpose.) Also, I purchased oxygen absorbing crowns and understand that boiling them ruins their ability to absorb oxygen...do I sanitize them, and if so, how?

Thanks for the help...

Michael Lombardo

Yo Michael,

You could put your Imperial Stout in Royal Purple glass bottles and it would work perfectly. You see you aren't brewing this stuff commercially nor are you distributing it for sale. What I'm getting at is a fundamental truth for all homebrewers. That's that you have complete control of where and how your bottles are stored. Clear glass is only detrimental to beer when you are exposing to specific wavelengths of light. Your beer isn't going to be stored on some grocery store shelf, exposed to fluorescent light or sunlight for extended periods. So no need to worry. I have plenty of good looking clear glass bottles I regularly put my brews in. I store them in a box in a quiet place. The only light of day my beer ever sees is when I take it out of my storage box and put it in the refrigerator, and when cold, it gets poured for immediate and enjoyable consumption. Now if you were entering your stout into a competition, the trials and tribulations of transportation and exposure to light may compromise some of the quality of your beer, but for home consumption you need not worry a bit.

Now about those oxygen absorbing crowns. You're right, boiling compromises the

ability to absorb oxygen. What I do is count out the number of caps I need and put them in a cup. Then I add about a quarter cup of grain alcohol (cheap vodka will do), cover and shake. The alcohol sanitizes the caps while you use them soon. Easy and safe all around.

Doing the vodka shake,
The Professor, Hb.D.

'Nilla in Porter

Dear Professor,

On a recent trip to Vermont I had the opportunity to enjoy a vanilla porter brewed by Magic Hat. Not normally a fan of flavored brews, I tried it because of Magic Hat's reputation and the other great ales they make. I like porters, but they're not normally a "session" type beer. Before I knew it, I had finished four 22 oz bombers (maybe that's why I can't remember the

name). It was a wonderful brew with the vanilla just taking out the burned bite you might normally associate with a porter and making it truly refreshing.

My question is, how much vanilla extract would I add to a five gallon batch? I have no way to gauge the strength. My recipe is a partial mash/extract version with an initial gravity of 1.065.

Thanks for your help.

Walt Schwarz

Walt,

Four bombers! Sounds like you found a brew you could fall in love with. Sounds like a relationship to me. About that vanilla question, well, it all depends... Everyone has their own recipe for porter and there are many strengths and balances of this great ale. What I'm going to recommend is that you brew a batch of your porter. Measure out exactly two pints. Add your source of vanilla flavoring (extracts may vary in strength) one measured drop at a time and taste the results as you add more. When you've reached the flavor threshold of enjoyment and perfect balance, take note.

Now you have to do some math. Three or four drops is not easily measurable. But what you want to do is multiply that number of drops times 20, since five gallons is 20 quarts. Now let's say that you added three drops. You need to add 60 drops to five gallons. That may be more easily measured by seeing how many milliliters or ounces 60 drops of water equals. Get the picture?

Nillaliters in your porter,
The Professor, Hb.D.

Send your homebrewing questions to "Dear Professor," PO 1679, Boulder, CO 80306-1679; FAX (303) 447-2825 or professor@aub.o via e-mail.

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Yours Brewly,

Paul Gatz

Paul Gatz
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John P. Monahan	Camp Lejeune	NC USA	Chuck Roosevelt	Englewood	CO USA	Jim Koch	Newton	MA USA
John F. O'Farrell	Welleside	FL USA	Marion Hurst	Greenwood Village	CO USA	Dr. Michael Bibbyk	Auburndale	MA USA
Lynn Seelos	Cocoa	FL USA	Convers	Greenwood Village	CO USA	Richard Papazian	Lexington	MA USA
Stephen Argilan	Ft. Lauderdale	FL USA	Andrea Weston	Boulder	CO USA	Robert Chasen	Weymouth	MA USA
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Jacob Cichocki			Bierenwolves			Bill Murphy	Brookline	MA USA
Marlene			Linda Streck	Boulder	CO USA	Leon Dudley	North Kingstown	RI USA
Charlie Matzen			Charlie Matzen	Boulder	CO USA	Robert Elmer	Portsmouth	RI USA
Marlin Busse			Marlin Busse	Boulder	CO USA	Dana B. Colwell	Warwick	RI USA
Steve Landry			Sandra Genova	Boulder	CO USA	Michael Glenn	Nashua	NH USA
Patrick Childress			Stevan Willey	Parker	CO USA	Sean Cox	Andover	NH USA
George C Connor			Chuck Roosevelt	Englewood	CO USA	Martin R. Stokes	Old Town	ME USA
Stephen Argilan			Convers	Greenwood Village	CO USA	Mike McManam	Kingfield	ME USA
John P. Monahan			Andrea Weston	Boulder	CO USA	William McManam	Burlington	VT USA
John Nickersons			Darwin Davidson	Golden	CO USA	Arthur Borden	Burlington	VT USA
David H. Hines			Brent Warren	Nederland	CO USA	Tracy Loysen	Stowe	VT USA
John P. Monahan			Earl S. Koster	Longmont	CO USA	Fred Bailey	Windsor	CT USA
John Nickersons			Bierenwolves			Richard Rosen	Andover	CT USA
David H. Hines			Loveland			Tim Hill	Idaho Falls	ID USA
John P. Monahan			LoveWell			Paul McClure	Uncasville	CT USA
John P. Monahan			Deep Brew Club	Colorado Springs	CO USA	Dennis Durham	Higganum	CT USA
John P. Monahan			Colorado			Peter Reid	Norwalk	CT USA
John P. Monahan			Deep Brew Club	Colorado Springs	CO USA	Mike Brighton	Norwalk	CT USA
John P. Monahan			Deep Brew Club	Colorado Springs	CO USA	Phil Blumer	Stamford	CT USA
John P. Monahan			Deep Brew Club	Colorado Springs	CO USA	Jill Singlet	Hoboken	NJ USA
John P. Monahan			Deep Brew Club	Colorado Springs	CO USA	Tracy Zinnerman	New York	NY USA
John P. Monahan			Deep Brew Club	Colorado Springs	CO USA	Mike McManam	New York	NY USA
John P. Monahan			Deep Brew Club	Colorado Springs	CO USA	Joseph Loiscono	New York	NY USA
John P. Monahan			Deep Brew Club	Colorado Springs	CO USA	Eric Berthold	New York	NY USA
John P. Monahan			Deep Brew Club	Colorado Springs	CO USA	John Valentine	New York	NY USA
John P. Monahan			Deep Brew Club	Colorado Springs	CO USA	Tao Porchon-Lynch	Hartsdale	NY USA
John P. Monahan			Deep Brew Club	Colorado Springs	CO USA	Jon Ross	Westbury	NY USA
John P. Monahan			Deep Brew Club	Colorado Springs	CO USA	Fred Walter	Setauket	NY USA
John P. Monahan			Deep Brew Club	Colorado Springs	CO USA	Robert J. May	Huntington	NY USA
John P. Monahan			Deep Brew Club	Colorado Springs	CO USA	Raymond Murphy	McMord	NY USA
John P. Monahan			Deep Brew Club	Colorado Springs	CO USA	Barry Sylver	Hyde Park	NY USA
John P. Monahan			Deep Brew Club	Colorado Springs	CO USA	Charles Lutz	Walden	NY USA
John P. Monahan			Deep Brew Club	Colorado Springs	CO USA			

Roger Haggott	Endicott	NY USA	John Stroh	Detroit	MI USA	Michael J. Soudant	Lafayette	CO USA	Richard Heckman	Westminster	CA USA	
Michael Schiavone	Lowville	NY USA	Dan Petersen	Bloomfield Hills	MI USA	Vicki Monsees	Lafayette	CO USA	Dan Keene Gudz	Santa Ana	CA USA	
Brownie's Plague	Buffalo	NY USA	Peter F. Wilson	Auburn Hills	MI USA	John Carlson	Louisville	CO USA	David E. Campbell	Camarillo	CA USA	
Brendan Brady	Canandaigua	NY USA	Mark D. Gelstein	White Lake	MI USA	Andy Rogowski	Louisville	CO USA	Bob Steele	Santa Barbara	CA USA	
Dave Bower Jr.	Webster	NY USA	Todd Keller	Niles	MI USA	Tim Mead	Louisville	CO USA	Brewers of the Central Coast	San Luis Obispo	CA USA	
Angel Nardone	Rochester	NY USA	Charlie Kehr	Beulah	MI USA	Bryan Jon Miller	Englewood	CO USA	T.S. Haauer	Atascadero	CA USA	
Michael Knab	Mount Wolf	PA USA	John F. Levere	Des Moines	IA USA	Chris Coslor	Littleton	CO USA	Kelly Dunham	Pacific	CA USA	
Ron Koncke	Wyoming	PA USA	Jim Majusik	Iowa City	IA USA	Andrew Lamorte	Denver	CO USA	Douglas Ash	Pleasant Hill	CA USA	
Richard M. Gleason	Crum Lynne	PA USA	James	Hendrik Huiskamp	Keokuk	IA USA	Marj Charlier	Denver	CO USA	Bill Owens	Hayward	CA USA
Paul D. Hoeprich	Wilmingtn	DE USA	Cynthia Volke	Hiawatha	WI USA	Russ Twyman	Denver	CO USA	Steve Givens	Livermore	CA USA	
John H. Hobbs	Seabrook Beach	FL USA	Chris Sulkowski	East Troy	WI USA	Stephen Boss	Denver	CO USA	Leo J. O'Brien	Fremont	CA USA	
Jennifer Hickey	Washington	DC USA	Gary Luther	Milwaukee	WI USA	Loran Richardson	Boulder	CO USA	David C. Bly	San Lorenzo	CA USA	
Ralph Busca	Huntington	MD USA	Cam Blattner	Brown Deer	WI USA	Jim Homer	Boulder	CO USA	Paul D. Marshall	San Lorenzo	CA USA	
John W. Epps	Mitchellville	MD USA	Brewtown Brewmasters	Milwaukee	WI USA	John Camy	Boulder	CO USA	David Burnor	San Rafael	CA USA	
George Thiel	Friendship	MD USA	Eric D. Steele	Milwaukee	WI USA	Lois Cany	Boulder	CO USA	Asana Tamaras	Fairfax	CA USA	
Stephen B. Newton	Chevy Chase	MD USA	Dennis Davidson	Greenfield	WI USA	Kathy McClurg	Boulder	CO USA	Brendan Moylean	Larkspur	CA USA	
Bob Farina	Rockville	MD USA	Daniel Carey	New Glarus	WI USA	Stuart Kingsberg	Boulder	CO USA	Steven Evers	Boulder Creek	CA USA	
Russell Erb	Rockville	MD USA	Chuck Goebel	Abrams	WI USA	Connie Kettler	Boulder	CO USA	Michael Riley	Capitol	CA USA	
Skid Rose	Cockeysville	MD USA	Les Goebel	Oconto	WI USA	Harris Fishbein	Boulder	CO USA	Nelson Carpenter	San Jose	CA USA	
Mike Hesson	Colo Hill	MD USA	Jeff Parks	Manitowoc	WI USA	Janet Murphy	Boulder	CO USA	Roger Gealis	Santa Rose	CA USA	
Robert P. Bauthier	Forest Hill	MD USA	Joseph Schipper	Viroqua	WI USA	Whitney Jensen	Boulder	CO USA	Mark Gealy	Stockton	CA USA	
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John E. Kollar	Baltimore	MD USA	Steven C. Nelson	Saint Paul	MIN USA	Jerry Lewis	Boulder	CO USA	Bud Wallace	Merced	CA USA	
John D. Sievers	Towson	MD USA	Ellen Lindseth	Minneapolis	MIN USA	Bob Teltschak	Boulder	CO USA	Shawn Nunley	Tracy	CA USA	
Timothy J. Artz	Oakton	VA USA	Arthur R. Eldridge	Esko	MIN USA	Steven Carnes	Boulder	CO USA	Joseph L. Owade	Sonoma	CA USA	
Paul Freedman	Arlington	VA USA	James A. Steenburgh	Rochester	MIN USA	Michael Lichter	Boulder	CO USA	Monica Kauppinen	Citrus Heights	CA USA	
Ciel Christiana	Arlington	VA USA	Mary Lynn Stallings	Longville	MIN USA	Gretchen A. Graff	Boulder	CO USA	David Funk	Citrus Heights	CA USA	
Paula Meyer	Arlington	VA USA	R. Scott Bartholomew	Wilmot	SD USA	Jeff & Karen Kinkel	Boulder	CO USA	Michael Frost	Loomis	CA USA	
Donald G. Smith	Patuxent	MD USA	Kent Woldmansey	Pine	SD USA	Finn Knudsen	Evergreen	CO USA	James M. Hogen	Sacramento	CA USA	
Robert Hallsworth	Willowbush	VA USA	Buffalo Brewers	Jamestown	ND USA	Dennis Dube	Longmont	CO USA	John M. Head	Sacramento	CA USA	
Lucy Adams	Hillsborough	NC USA	John Roswick	Bismarck	ND USA	Dick And Diane Dunn	Longmont	CO USA	Larry Anthony	Janesville	CA USA	
Tom Hildebrandt	Greensboro	NC USA	Jim Hunter	Miles City	MT USA	Jim McCalpin	Estes Park	CO USA	Tahoe homebrewers Club (THC)	South Lake Tahoe	CA USA	
Daniel Bradford	Durham	NC USA	Dennis H. Barthel	Missoula	MT USA	Aj Feldman	Fort Collins	CO USA	Douglas Faynor	Woodburn	OR USA	
Daniel Bradford	Durham	NC USA	Kevin L. Fluharty	Eldgin	IL USA	Dan Fink	Masonville	CO USA	David D. Hunter	Gaston	OR USA	
Kim Scholl	Alexia	NC USA	Steve Hambart	Chicago	IL USA	Linda Rae	Niwot	CO USA	Stuart Ramsay	Portland	OR USA	
Kevin K. Linn	Charlotte	NC USA	Tim Hambart	Chicago	IL USA	John Thorngren	Brighton	CO USA	Fred Eckhardt	Portland	OR USA	
Kinney Baumgarten	Boone	NC USA	Dean Wilnot	Peru	IL USA	Gary L. Cole	Colorado Springs	CO USA	Jack Kornfilt	Portland	OR USA	
George and Laurie Flit	Chowan	NC USA	Mike Simmons	Iuka	IL USA	Ronald Winter	Colorado Springs	CO USA	Roger Byrum	Portland	OR USA	
Mosie M. Coleman	Vidalia	GA USA	Doug Diggle	Carbondale	IL USA	Gary E. Huff	Colorado Springs	CO USA	Jim Mangin	Milwaukee	OR USA	
Steve Pechin	Brunswick	GA USA	Matthew Wright	Saint Louis	MO USA	Stan Galloway	Pueblo	CO USA	Roger Bassett	Turner	OR USA	
Sarah Bridgegroom	Tallahassee	FL USA	Sam Wammack	Ozark	MO USA	Karen Fogelquist	Fruita	CO USA	Mary Beth Millard	Turner	OR USA	
Hadden	Pompano Beach	FL USA	Robert Wilkstrom	Derby	KS USA	Dave Breitenbach	Park City	UT USA	Paul Moon	Gilda	OR USA	
John Sartwell	Ozark	AL USA	Thomas Louie	Wichita	KS USA	Joseph N. Hall	Chandler	AZ USA	Saccachromyes First	Klamath Falls	OR USA	
Ben Meisler	Daphne	AL USA	Thorsenstansen	Wichita	KS USA	Randy Dwyrka	Chandler	AZ USA	Red And Zell Burns	OR	OR USA	
Tri-Cities			Christopher C. Kryzer	Wichita	KS USA	Steve Denneysey	Chandler	AZ USA	Joe Cash	Auburn	WA USA	
HopBrew Club	Kingsport	TN USA	Geoffrey L. Kline	Ashtabula	KS USA	Brian McLean	Ukiah	CA USA	Rob Novak	Douglas	WA USA	
Donald J. Downer	Kodiak	TN USA	Marilyn Kleinmuntz	Omaha	NE USA	Roy R. Pugh	Siesta Vista	AZ USA	Stuart Harris	North Bend	WA USA	
John Yust	Knoxville	TN USA	Amos Pierce	Napoleonville	LA USA	The Desert Quenchers	Albuquerque	NM USA	Richard Lee Knights	Seattle	WA USA	
Matthew Floyd	Bandstown	KY USA	Richard Trout	Sulphur	LA USA	Art Priebe	Albuquerque	NM USA	Tom Mikolice	Shoreline	WA USA	
Alan Burkholder	Columbus	OH USA	Martin Ronis	Little Rock	AR USA	Michael Hall	Los Alamos	NM USA	Joseph D. Marleau	Seattle	WA USA	
John Hempstead	Bellefontaine	OH USA	Marc & Susan Hinck	Edmond	OK USA	Ray W. Mackie	Las Vegas	NV USA	David Bies	Seattle	WA USA	
Michael Demchak	Rocky River	OH USA	Daniel Bangs	Enid	OK USA	Eric McClary	Carson City	NV USA	Kurt Denke	Seattle	WA USA	
Carman E. Davis	Cuyahoga Falls	OH USA	John Battani/	Colleyville	TX USA	Bryce Deany	Culver City	CA USA	John Hudson	Bellingham	WA USA	
Robert N. Spalth	Miamitown	OH USA	John Battani/	Fort Worth	TX USA	Tom Edmonds	Hermosa Beach	CA USA	Charles Kasiczki	Port Angeles	WA USA	
Ed Westemeyer	New Richmond	OH USA	Karl King	Colleyville	TX USA	Douglas Wood	Sierra	CA USA	Lee Schuberg	Tacoma	WA USA	
Teri Beets	Union	OH USA	John W. Via	Fort Worth	TX USA	William J. Ellis	North Hills	CA USA	Ralph Lewin	Aberdeen	WA USA	
Jerry Black	Springfield	OH USA	Mark Powell	San Angelo	TX USA	Edward Com	Aqua Dulce	CA USA	Dale & Linda Hughes	Centralia	WA USA	
Robert C. Lietz	Wapakoneta	OH USA	Robert Polkington	Houston	TX USA	Denise Soulam	Burbank	CA USA	Jim Stofer	Yakima	WA USA	
Tim Beauchot	Albion	IN USA	Lager Rhythms	San Antonio	TX USA	South San Diego	Brewers	CA USA	Wayne Adendorf	Homer	AK USA	
D. L. Van Dame	Churubusco	IN USA	Roy Fuentes	San Antonio	TX USA	Mike Bosak	Chula Vista	CA USA				
J. Rob Ellnor	New Albany	IN USA	Igor Rowen	Round Rock	TX USA	Rich Link	Oceanside	CA USA				
Fermental Order of Renaissance	Warren	MI USA	Rick M. Albers	Austin	TX USA	William D. Clemons	Santee	CA USA				
Bill Pfeiffer	Brighton	MI USA	Scott Brown	Amarillo	TX USA	Burt Hesse	San Diego	CA USA				
Joe Gedman	Westland	MI USA	Steve Callo	Arvada	CO USA	Mike Claus	Apple Valley	CA USA				
Patrick G Babcock	Canton Township	MI USA	Designs Unique	Broomfield	CO USA		Lake Elsinore	CA USA				

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BY GARY GLASS

"And the winner is..."

Nothing compares to the excitement building up to the announcement of the AHA Homebrew Club of the Year Award at the National Homebrew Competition awards ceremony. Forgotten was the exquisite beer dinner prepared by renowned chef, Carlos Solis, that we had all enjoyed during the banquet. Everyone's focus was on what would follow those four words (even though the vision of Paul Gatz's boxer shorts that had been burned into the memory of banquet attendees earlier might have been a slight distraction).

Going into the National Homebrewers Conference and the National Homebrew Competition, two clubs clearly led the pack: The Brew Rats, an Internet-based club, and Quality Ale & Fermentation Fraternity (QUAFF) of San Diego. The Brew Rats, competing for the coveted Homebrew Club of the Year trophy for the first time, held a slim seven-point lead. The experienced QUAFF brewers proved to be more than a match for everyone however, as they walked away with thirteen medals, racking up an astounding forty points. By comparison, the next most successful club in the second round of the NHC, the defending champion Kansas City Bier Meisters, came out scoring sixteen points.

Without question, QUAFF earned the title Homebrew Club of the Year in 2001. Repeating the feat next year will no doubt prove to be a formidable task—no club has taken the trophy twice since 1995. The Brew Rats showed they are a force to be reckoned with in their debut performance in the NHC; I am sure they will be back in 2002.

Taking Aim At The Trophy

Three years ago the brewers of QUAFF set their sights on the Homebrew Club of the Year trophy. The first year, QUAFF finished

in 14th place. Two years later, they were hoisting the trophy at the NHC Awards ceremony. QUAFF's achievement at the 2001 NHC, according to club president Peter Zien, "was the result of hard work, some good fortune, and the implementation of a strategy to succeed." Peter shared with me some of that strategy, which I will pass on to the rest of you.

Setting the goal of winning Homebrew Club of the Year long before the first round of the NHC is an important first step to building excitement and encouraging participation amongst club members. Peter suggests having club members enter local homebrew competitions prior to the NHC so they can get feedback that will help them improve their recipes and enter the most suitable categories/subcategories.

Educating club members on how to brew clean beers, avoiding off flavors and aromas, was a key to QUAFF's success. But brewing clean beers is not enough. As Peter states, "a beer should be brewed within the parameters of the style guideline in order to at least be in contention for a medal." So familiarity with the style guidelines and being able to hit those styles is a big part of winning in the National Homebrew Competition. At QUAFF meetings, the focus of instructional talks presented by club members or local brewers alternate between brewing procedures and beer styles.

No matter how good their beers, a club cannot expect to win the Club of the Year trophy if the members don't enter. Figuring a lot of the club members might be

2001 AHA Club-Only Competition Styles

Month	Style or Name	Cat.#	Host
October	California Common	6C	Maltose Falcons
December	Mild Ale	10A	Brewers United for Real Potables

2001 Homebrew Club of the Year Top 20

Rank	Pts.	Club	Rank	Pts.	Club
1.	173	Quality Ale & Fermentation Fraternity (QUAFF)	11.	36	Prairie Homebrewing Companions
2.	146	Brew Rats	12.	34	Cowtown Cappers
3.	106	Urban Knaves of Grain (UKG)	13.	33	Hop Barley & The Alers
4.	78	Kansas City Bier Meisters	14.	32	Pacific Gravity
5.	53	Strange Brew	15.	31	Mountain Ale & Lager Tasters (MALT)
6.	51	Maltose Falcons	16 (T.)	24	Ale and Lager Enthusiasts of Saskatchewan
7.	46	Great Northern Brewers	16 (T.)	24	Collingwood Brewing Club
8.	43	Upstate New York Homebrewers Association	16 (T.)	24	Impaling Alers
9.	41	Edmonton Brewers Guild	19.	23	Downriver Brewers Guild
10.	40	Prime Time Brewers	20 (T.)	22	Capitol Brewers
			20 (T.)	22	Covert Hops Society

intimidated by a competition like the NHC, Peter sent motivational letters along with complete NHC entry packets to all of the QUAFF members to encourage them to enter. QUAFF also adds a prize raffled

off to the club's first round NHC entrants—this year's prize was a full conference registration for the AHA National Homebrewers Conference. Of course the more entries a club has, the better its

chances of winning, but Peter suggests that putting greater emphasis on the less popular styles can further improve a club's odds of placing in the first round.

Finally, Peter recommends that as many club members as possible are present when the Homebrew Club of the Year is announced. As Peter says, "whether you win or not, it is beneficial to witness first hand the intensity and excitement generated during the awards ceremony at the AHA National Homebrewers Conference."

Hopefully with the above information, your club will be better prepared to make a run at the Homebrew Club of the Year trophy. Many thanks to Peter Zien and QUAFF for sharing the secrets of their success!

Esteemed California Common AHA Club-Only Competition

The October AHA Club-Only Competition is Esteemed California Common. The competition is hosted by Tom Hamilton and the Maltose Falcons.

The Style for the competition is California Common, Category 6C. One entry of two bottles is accepted per AHA registered homebrew club. Entries require a \$5 check made out to AHA and an entry/recipe form and bottle ID forms. More information on the club-only competitions and forms are available at www.beertown.org/AHA/Clubs/clubcomp.htm. Please send your entry to:

California Common AHA COC
C/o The Home Beer/Wine/Cheese Making Shop
22836-2 Ventura Blvd
Woodland Hills, CA 91364

Entries are due by September 28, 2001. Judging is slated for October 13, 2001. E-mail for questions is TandL-Hamilton@earthlink.net

"Bockanalia" Competition

The AHA would like to thank Elaine Seeley and the Cincinnati Malt Infusers for hosting the Bock Club-Only Competition held May, 26 2001. This was the sixth of six competitions in the August to May 2000-2001 cycle, with points going toward the Homebrew Club of the Year trophy. Points are awarded on a six-three-one basis for the club-only competitions and the first and second rounds of the AHA National Homebrew Competition. The club whose members have amassed the most points over the year is crowned the Homebrew Club of the Year.

Thanks to the club representative brewers. There were 37 entries in the AHA "Bockanalia" Club-Only Competition.

Congratulations to the following winners:

1st Place:

Glenn Thomas of Raleigh, NC, representing Cary-Apex-Raleigh Brewers of Yore with his Doppelbock.

2nd Place:

Mike Hahn of Salt Lake City representing the Zion Zymurgists Homebrew Operative Society with his Eisbock.

3rd Place:

Dennis Overby of Fairfax, VA representing the Hard Times Wort Hogs with his Helles Bock/Maibock.

Gary Glass is the Membership Coordinator for the American Homebrewers Association. When he isn't homebrewing he can be found working on his Masters Thesis in U.S. History.



BY AMAHL TURCZYN

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Boston Beer Company Sponsors Company Home Brew Competition

Employees of the Boston Beer Company were recently challenged to test their skill at homebrewing in an effort to better understand and appreciate the art and science of brewing. The Boston Beer Company Home Brew Contest invited all employees, except for the brewers, to participate, and as an extra incentive, winners would be sent to Oktoberfest in Munich, Germany. For those who were just starting out, BBC brewmasters provided them with home brew kits and a tutorial session on brewing beer. The brewmasters also made themselves available throughout the contest as consultants, just in case any of the contestants had questions.

Winners of the contest included: Tim Cannon, Key Account Manager, TX, for "Cannonball Nut Brown Ale"; Lori Haarala, Assistant Controller, Finance Dep't, Boston, MA, for "Weizen Heimer Weiss Bier"; and Roy Milner, Territory Manager, TN, for "Beelzebub Belgian Ale."

"We want our employees to fully appreciate all aspects of beer and brewing," Boston Beer Company founder Jim Koch was quoted as saying. "This is a great way to gain knowledge of the brewing process and the challenges involved in consistently making world-class beer." Entries were judged by a panel of judges, including Jim Koch, Martin Roper, CEO of the Boston Beer Company, David Grinnell, Director of

Brewing and Quality, Kerry Byrne, beer reporter for the Boston Herald, Boston Magazine and Esquire, and Rob Kasper of the Baltimore Sun.

The Tap-A-Draft Dispense System

After three years of testing, research and development, Sturman BG, LLC has announced that it will unveil a new packaging option for homebrewers and craft brewers alike: the Tap-A-Draft beverage dispense system. This durable dispenser uses two eight-gram CO₂ cartridges to dispense beer from a 1.5 gallon (six liter) plastic bot-



tle, which is enough gas to dispense the full amount of product. The unit is fully reusable, and assembly is simple; fill the plastic bottle with carbonated beer, twist on the tap, insert the cartridges into the two housings, and twist until you hear gas flow. Then, you are ready to dispense the beer by pulling forward on the tap.

One option that might be of particular interest to stout brewers is that the Tap-A-Draft can also be used with one nitrogen and one CO₂ cartridge for "nitro" beer dispense.

A minimal number of parts also makes disassembly a snap. There are also no complicated clamps or fasteners to deal with, and no screws and washers to lose; Tap-A-Draft unseals by simply screwing off the tap with three and a half turns, like the cap of

a half-gallon growler (the fitting is actually the same thread size).

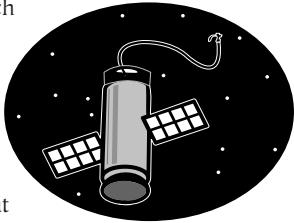
The container is now available in blue and brown bottles, to protect your beer against light damage at picnics, but the unit also fits comfortably on a refrigerator shelf. Homebrewers can either fill the Tap-A-Draft with carbonated beer from a Corny keg, or prime the beer with sugar to induce carbonation. (The cartridges aren't really designed to force-carbonate beer.) Once the primed beer has reached the proper level of conditioning, just chill down the unit and serve. A flexible plastic tube inside the bottle keeps the intake at the bottom of the reservoir, so after an initial amount of yeast from the tap, you will get clear, bright beer—just like a primed corny.

The Tap-A-Draft tap will retail for \$34.95, and bottles are \$5 each. Each bottle comes with a cap, so homebrewers can get several bottles, fill them with beer, then seal them away until they are ready to drink them. Therefore, they'd only have to buy one tap and swap it from bottle to bottle. Cartridges will go for 0.30 cents apiece for CO₂ and 0.45 cents for nitrogen. The Tap-A-Draft will be available early in 2002. Orders for the Tap-A-Draft can be placed at (719) 686-6180.

Beer In Space

In keeping with our packaging theme, this item may explain the future of beer dispensing. According to the *New Scientist*, astronauts living in the new International Space Station may still be able to put down a few cold ones in zero gravity—although the "down" part may have to change. One possible scenario for the vital exchange of fluid between beer container and human might take place with a flexible membrane in the container that is inflatable, thereby displacing the beer. Veele Sterken of Delph

University of Technology in Holland has already tested the space-age beer can. As project leader, he ran several tests on European Space Agency aircraft which simulate weightlessness by free-falling for 30 seconds at a time at high altitude. Sterken claims the device works perfectly, dispensing spherical mouthfuls of beer in zero gravity. Hmm...without gravity, which way do the bubbles go?



We Found A Lizard In This Beer, Eh

How do you become a millionaire in Zambia? Reuben Mwanza did it when he sued Zambian Breweries after finding a lizard floating in his Mosi Lager beer. After being awarded the damages, Zambians began searching their own six packs for stray critters, hoping to file similar suits. Soon after, however, the brewery won an appeal, and the Supreme Court reduced the damages owed Mr. Mwanza to only \$400.



Museum of Beer and Brewing Under Development

A group of dedicated brewers and historians noted that there is no all-encompassing organization in North America devoted to preserving the history of the brewing industry; from grain and hops, through the brewing process and packaging, to the marketing of the finished product. They believe that there is an urgent need to preserve and display historical items before they are lost forever. To these ends, they want to establish a Museum of Beer and Brewing, a not-for-profit corporation affiliated with the Wisconsin State Historical Society. The mission of the Museum of Beer and Brewing will be to preserve and display the proud history of brewing throughout the world, and particularly in

North America. To further the mission of the Museum of Beer and Brewing, the founders envision the creation of an organization that will preserve and showcase the history of beer and brewing throughout the centuries for the benefit, enjoyment and education of the public. The

Museum will strive for the support of all beer, brewing and related organizations, and the public. Currently the founders are searching for a permanent display location. Several sites are being considered, including a historic brewery building. A traveling display that can be taken to various brewing related events is being developed and a web site is under construction. The founding team includes: Gary Luther, Miller Brewing Company, retired; Karl Strauss, Pabst Brewing Company, retired, and KMS consulting; Jeff Platt, Cream City Suds newspaper; Fred Gettelman, Gettelman Brewing family; Jim Haertel, Peoplelink Professional Services Group; Jim Olen, Milwaukee Ale House; Jerry Hilton, Steiner Hops; the late Roger Briess, Briess Malting Company; Tom and Marge Volke, *The Brewer's Bulletin* and Brewer's Digest; and Jim Ryan, Stevens Point Brewing Company.

Tofu Brew

Six students from John Wood Community College in Quincy, IL walked away with third prize from a contest designed to get Illinois college students to come up with new ideas for soy products. The students split the \$2,000 prize money for the beer they called, "Soy Suds, America's Cool Bean Beer." According to advisor and chemistry professor Mark Moore, the soy beer compared favorably with Sam Adams Pale Ale. The contest was sponsored by the Illinois Soybean Association and the Illinois Soybean Checkoff Board. They offered \$5,000 for the first prize, a soy muffin produced by University of Illinois students, and soy

enhanced pork kebabs from a team at Illinois State University, who claimed the \$3,000 second prize. John Wood students Ken Obert, Jennifer Buss, John Humke, Toby Miller, Derek Mulch and Matt Stahl brewed up the soy beer with assistance from Moore, who said the team didn't realize how much work was involved. They had to start completely from scratch, which meant soaking, sprouting and drying the soybeans to make their own malt.

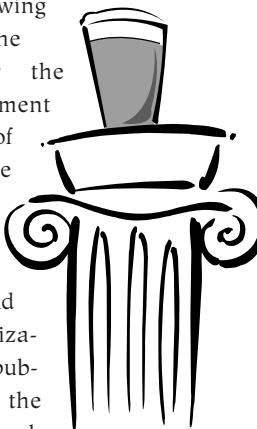
The project was not without other pitfalls. Borrowing pots and pans from the school's culinary department, the students made such a small amount of the beer that they only had a dozen 12-oz bottles of bean brew to show for their labor when the brewing was done. And the fact that only one of the students was of drinking age didn't help the cause much; especially since that one student didn't even like beer.

Fortunately, the John Woods faculty was there with plenty of moral support, and generously volunteered to sample the beer, and members of a Quincy home-brew club (the Quincy Brewmeisters) stepped in to offer advice on the brewing. The team later claimed that club members were pretty impressed with the beer, and some couldn't tell that it had been made with soybeans.

At a blind taste test in Bloomington, the Illinois bean brewers went head to head with a famous Beantown brew—but at the blind taste test, Sam Adams emerged triumphant, preferred four to three by the panelists, even though some tasters said the soy beer was "smoother."

For health reasons, soy beer may hold a lot of promise. Isoflavones, compounds in soy products that are thought to fight cancer, survive the brewing process so well, beer may deliver more of them per ounce than soy milk.

Amahl Turczyn is the associate editor of Zymurgy magazine.



CALENDAR

AMERICAN HOMEBREWERS ASSOCIATION

AUGUST

- 24** Colorado State Fair Homebrew Competition, **AHA SCP**, Pueblo, CO. Entries accepted 8/13-8/17, \$5 entry fee. Contact: Susan Dickman, 719-561-8484 x 2080, susan.csf@coyotenet.net
- 25** Great Southern Beer Festival, **AHA SCP**, Memphis, TN. Sponsored by the Bluff City Brewers. Entries accepted 8/13-8/18, \$5 each. Contact: Jay Grabowski, 662-449-0493, jgrowksi@aol.com, www.memphisbrews.com
- 26** Western Washington Fair Amateur Beer Competition, **AHA SCP**, Puyallup, WA. Entry deadline 8/18, \$4 per entry. 253-841-5017, pat@thefair.com.

SEPTEMBER

- 7** Buckeye Brewer of the Year, **AHA SCP**, Willoughby, OH, organized by Ashtabula Area Homebrewers. The winning brews will be on display at the Ashtabula County Fair, Best of Show will be brewed and served at Willoughby Brewing Co. Entries due 7/22-7/28, w/ a fee of \$13 for 4 entries. Contact: Dave Martin, 440-563-3029, mbworks@alltel.net
- 8** Sante Cruz County Fair Homebrew Competition, **AHA SCP**, Watsonville, CA. Come join the fun! This local competition is open to Santa Cruz, Monterey, Santa Clara, San Benito, and San Mateo counties. Entries due 9/22-9/26 w/ a fee of \$2. Contact: Mike VanDierendonck, 831-464-8248 info, 408-263-7704 wk, jvd mike@aol.com, www.SantaCruzCountyFair.com
- 8** 7th Annual Brewers Dream Competition, **AHA SCP**, Liberty, IL. Open homebrew competition with best of show recipe to be brewed at Mickey Finn's Restaurant and Brewery. Mead, Sake, and Cider excluded. Entry fee \$5 or \$4 for 3 or more, B.O.B. member price \$3. Contact: Roger Grum, 847-295-6000 wk, 847-234-5809 hm, roger@iconnect.net, or www.clubbob.org.

AHA SCP = American Homebrewers Association Sanctioned Competition Program. For a complete listing of events, see www.beertown.org. To list events, send information to **Zymurgy** Calendar of Events. To be listed in the July/August Issue (Vol. 24, No. 4), information should be received by May 11, 2001. Competition organizers wishing to apply for AHA Sanctioning must do so at least two months prior to the event. Contact Gary Glass at gary@aoe.org; (303) 447-0816 ext. 121; FAX (303) 447-2825; PO Box 1679, Boulder, CO 80306-1679.

- 22** Cactus Challenge, **AHA SCP**, Lubbock, TX. 4th annual Cactus Challenge in Lubbock, Texas sponsored by the Ale-ian Society homebrew club. Contact: Lubbock Homebrew Supply, 806-763-7480, lubbockhomebrew@door.net, www.door.net/homebrew/aleians.htm

- 25** Mid South Fair homebrew Competition, **AHA SCP**, Memphis, TN. 13th Annual Extravaganza sponsored by the Bluff City Brewers. No entry fee competition, with cash Best of Show prizes! Entries due 9/10-9/20. Contact: Patrick Rohrbacher, 901-458-3090, Patrohr@Bellsouth.net, www.Memphisbrews.com

- 27** Great American Beer Festival, Denver, CO. Breweries and beer enthusiasts take heart! America's oldest and largest beer tasting and competition will celebrate its 20th anniversary this year at the Denver Convention Center. Come join the fun, tickets are on sale now. Contact: Association of Brewers - Jesscia Gottlob, 303-447-0816 ext 145, jessica@aob.org, www.beertown.org/GABF/index.htm

- 29** Pacific Brewers Cup, **AHA SCP**, Long Beach, CA. Sponsored by the Long Beach Homebrewers. Entries due 9/10-9/15 w/ \$6 entry fee. All categories will be accepted. Contact: Robert Wise, 714-828-4709, nobuddrkhb@aol.com

OCTOBER

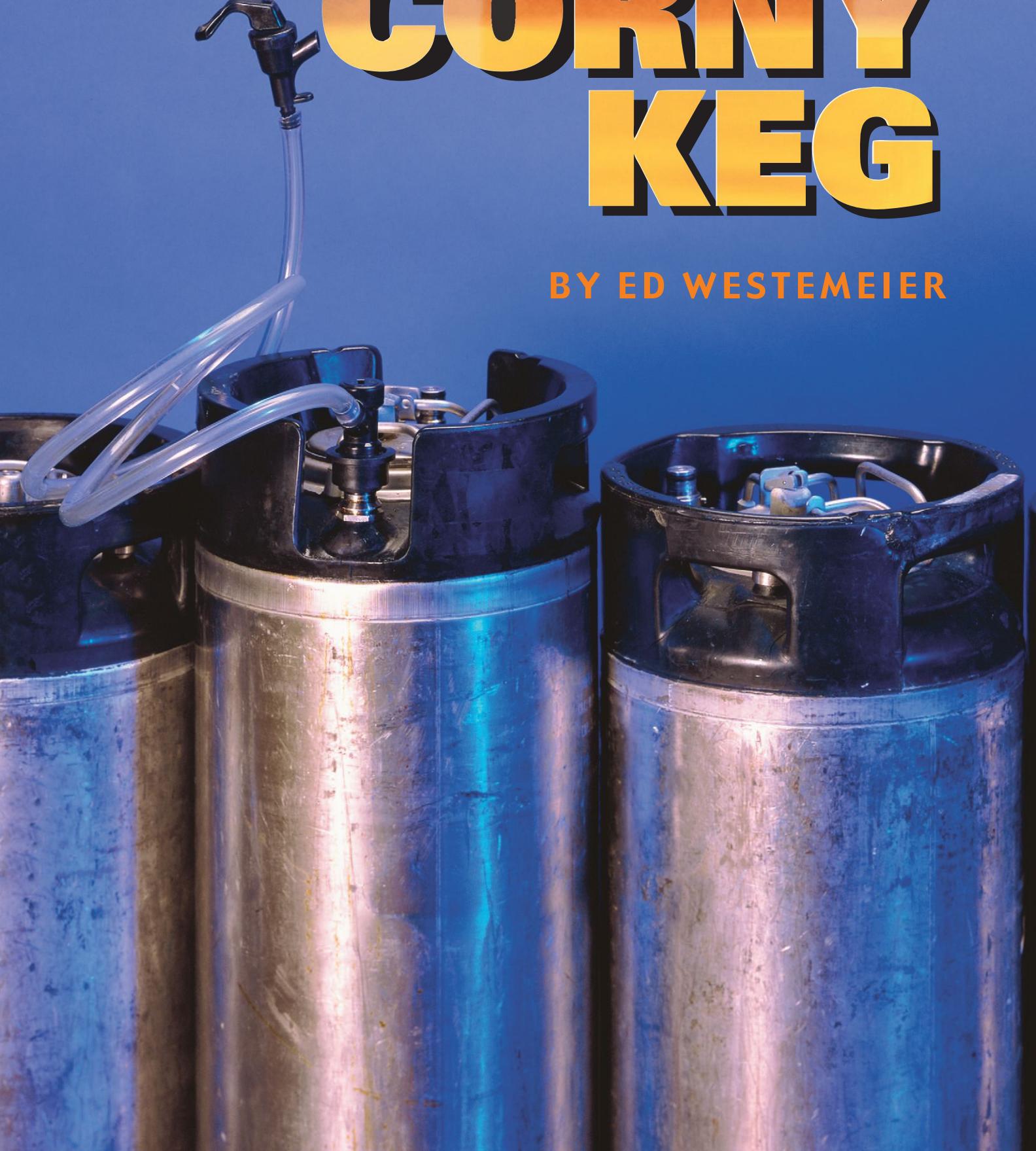
- 6** Hoppy Halloween Challenge, **AHA SCP**, Fargo, ND. Sponsored by the Prairie Homebrewing Companions and open to all homebrewers. All styles of beer, mead and cider may be entered and will be judged according to the AHA/BJCP style guidelines. Entries due 9/22-10/5 w/ \$7.50 for 1-4 entries, \$5 for add. entries. Contact: Karl Gunderson, 701-231-8445, karl.gunderson@greatplains.com, www.linkup.net/users/drautmann/phc.html

AMERICAN HOMEBREWERS ASSOCIATION
• KUDOS •
 SANCTIONED COMPETITION PROGRAM
BEST OF SHOW

<p>JULY 2000 Aviadaor County Fair, 103 entries - Steve Gerdson of Sacramento, CA</p>	<p>APRIL 2001 D.E.A. Challenge, 54 entries - Keith Klemp of Durham, NC</p>
<p>MAY 2001 5th Annual B.E.E.R. Brew-Off, 105 entries - Pete Algerio of Yaphank, NY Mt. Baldy Cup, 10 entries - Dan Humphrey of Rockford, MI 9th Annual Hains Craftbeer & Homebrew Competition, 82 entries - Steve Schmitt of Anchorage, AK Sunshine Challenge XII, 678 entries - Ron Raike of Orlando, FL Celtic Brew Off, 79 entries - Bob Young of Mayville, WS AK Elizabethan Homebrew Competition, 86 entries - Jerry Marshall of Hesperia, CA HoPS Mayfest IV, 17 entries - Jeff King of Roy, WA</p>	
<p>JUNE 2001 Mother Lode Fair Homebrew Competition, 47 entries - Jamil Zainasheff of Elk Grove, CA</p>	

- 8** Arizona State Fair - Amateur Beer & Wine Competition, **AHA SCP**, Phoenix, AZ. Arizona residents only, entry forms due 9/14, entries received 10/1-2 8am-5pm. \$7.00 entry fee. Contact: Sherry Pew, 602-252-6771 ext 304, shery@azstatefair.com, www.azsfatalefair.com
- 13** 3rd Annual Palmetto State Brewers Open, **AHA SCP**, Columbia, South Carolina. Sponsored by Palmetto State Brewers, Inc. All homebrewed AHA/BJCP styles including: meads, ciders, and a "Just Good Beer" category for non-style beers, will be judged and awarded prizes. Must enter by 10/8, fee is \$6.00 each. Contact: Gerald D. Jowers, 803-798-7914, 803-765-9620, GDJowers@aol.com, GDJowers@aol.com
- 13** Oktoberfest, Zinzinnati Homebrewers Competition, **AHA SCP**, Cincinnati, OH. Sponsored by the Cincinnati Malt Infusers, all styles except mead and historical beers may be entered. Entries due 9/24-10/5 w/ \$5 for the 1st entry, \$3 for add. entries. Contact: Michael Weaver, 513-984-9337, Oktoberfest@cinci.rr.com, www.w3.on.net/~philmac/infusers/index.html
- 20** The 18th Annual Dixie Cup - La Copia Dixie!, **AHA SCP**, Houston, TX. Speakers: Ray Daniels, Chris White, and Fred Eckhardt. MCAB Qualifying Event, 40 medal categories, including Mead and Cider. Contact: Jimmy Paige, 713-668-9440, 713-603-2512, hop5@gateway.net, http://www.cruchyfrog.net/dixiecup/
- 27** 6th Annual Music City Brewers Brew-Off, **AHA SCP**, Nashville, TN. Entries due 9/28-10/12 with \$6 entry fee. Contact: Steve Scoville, 615-460-4626, scovillesp@aol.com, www.musiccitybrewers.com
- 27** ASH Octoberfest, **AHA SCP**, Tempe, AZ. Sponsored by the Arizona Society of Homebrewers, live music will set the atmosphere for an exhibition of the best brews from club members and local (and some not-so-local) breweries. Contact: Matthew Martin, 480-775-2660, matt.martin@ieee.org, www.azbrewers.com

THE MAGIC OF THE
**CORNY
KEG**



BY ED WESTEMEIER

If it's not the perfect piece of homebrewer's equipment, it's pretty close. The Cornelius keg used by many of us as draft beer dispensers is one of our favorite tools—and it's easier to use than you might think.

These five gallon (19 liter) containers, once used universally by soft drink bottlers for premix syrups, are generally known as Cornelius, or "corny" kegs. They're made by several manufacturers, and come in two styles. There are "ball lock," where the fittings on the keg have shallow grooves where ball bearings in the hose connectors fit, and "pin lock," where protruding pins secure the connectors. Both work the same, they just use different connectors. My only observations on the differences are that pin lock kegs are a bit shorter and may fit more easily in your refrigerator, but ball locks are usually easier to find.

Homebrew suppliers often carry both new and used kegs. If you want, you can buy new five-gallon kegs typically for around \$100. In addition, you can get a whole turnkey system with everything brand new and ready to go. To reduce your initial investment, you can buy used equipment—either reconditioned or in "as is" condition. Homebrew outlets commonly sell reconditioned items. Compared to "as is" stuff, the price is higher, and shipping costs are additional, but their kegs have generally been inspected and are in better condition. If you are willing to recondition the kegs yourself, check out local scrap yards, restaurant auctions and such.

If you do purchase a used "as is" keg, you'll need to recondition it yourself and that's the first topic I'll tackle in detail. But even if you bought a new keg, this section will be useful as it deals with the maintenance and use issues common to all kegs.

Keg Reconditioning and Maintenance

Your first task with most kegs is a thorough cleaning. Kegs are almost always shipped with some pressure in them, so be certain to release all of it for safety. Lift the tab or ring attached to the safety vent. If there's no safety vent, press down on each fitting with a key or small screwdriver.



With the pressure vented, open the hatch by lifting the bail. This is a steel wireframe that is obviously meant to be lifted up. Using the bail as a handle, push the hatch cover down into the keg an inch or two. If you can't budge it, there is still pressure in the keg, so back up a step. These kegs can hold up to 130 pounds per square inch (psi) of pressure, so you could injure yourself if you try to force the lid open with pressure inside. After pushing the cover down, rotate it a little, and lift it out for cleaning.

Notice the large O-ring on the lip of the cover. After years of contact with soft drink syrup, the rubber will be thoroughly impregnated with the stuff, and I've never found an effective way to remove the aroma. You don't want soda flavor in your beer, so I recommend replacing the O-ring. Many homebrew suppliers carry them, and some even offer kits to replace all the O-rings in a keg. If you have a well-stocked hardware store, you may be able to find them, but be sure to get the exact same size. A complete set of new O-rings shouldn't cost more than a few dollars.

Using an open-end or deep socket wrench, loosen both valves on top of the keg. The most common sizes are 7/8 inch for ball lock kegs and 13/16 inch for pin locks. Once you have them loosened, they should be easy to unscrew with your fingers. Remove both fittings, and the tubes beneath them. The gas (in) fitting has a short tube, and the liquid (out) fitting has a long tube that goes to the bottom of the keg. Each has a small O-ring on the outside, and may have an even smaller O-ring around the tube. All these O-rings should be replaced as well.

Rinse everything with hot water to remove obvious syrup residue. Then fill the keg halfway with hot water and 1/8 cup (30 ml) of a cleaning agent such as trisodium phosphate, washing soda, or B-Brite. Drop



in the small parts, including the hatch cover, and let it all soak for a few hours. Shake the keg well before opening it, then drain it, making sure to catch all the parts inside. You may need to scrub the inside of the keg to remove stubborn residue.

Replace the tubes and fittings (with new O-rings) and tighten them securely. Fill the keg half full with hot water and cleaning agent again, then replace the hatch cover with its new O-ring and secure it by lowering the bail. Turn the keg upside down and let it soak again. This step cleans the top inside of the keg as well as the inside of the fittings. Drain, then rinse thoroughly with hot water several times.

Once a keg is clean, some people like to store them filled with sanitizing solution. One serious warning here: don't use chlorine bleach for this purpose. Chlorine can—and will—damage stainless steel and can ruin a keg before you know it. If the contact time is short—like less than an hour, chlorine is OK, but to be safe it is better to keep chlorine cleaners completely away from your stainless steel.

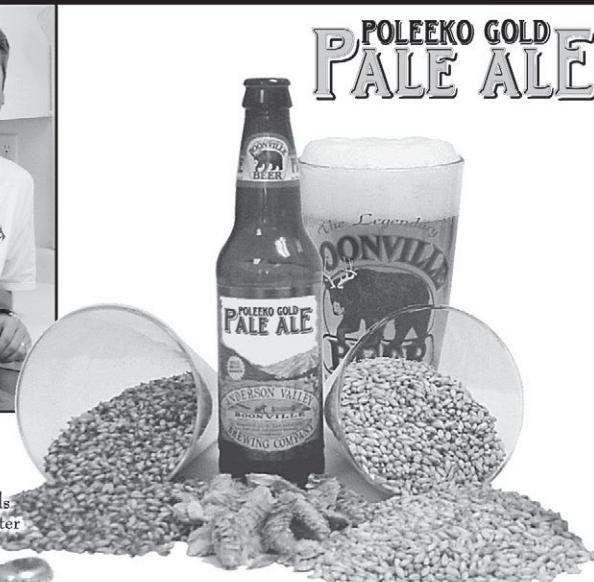
Assembling the Rest of the System

Once you have a keg, you are ready to put together the rest of your system. Your next purchase will be hose connectors. There are two kinds (gas and liquid) for each style of keg. For the pin lock style, one fitting has two

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pins, the other has three. On ball lock kegs they appear to be identical, but don't be fooled; they are slightly different and not interchangeable. Plastic connectors are cheap, but prone to crack and break from frequent use. Stainless steel connectors are more expensive, but should last a lifetime.

Connectors are available with either a hose barb to which you can clamp your tubing, or a male flare fitting. The nut that's part of a hose barb adapter screws onto the flare fitting. Of course, you'll need a carbon dioxide (CO₂) cylinder. The most common size for homebrewers is the five pound tank. It looks somewhat like a small fire extinguisher, and can be either steel or aluminum. It's a handy size when you travel with a keg, and one filling of CO₂ should be enough for up to a year's worth of typical homebrewing. They sell for up to \$100 new, half that amount if used. Check bar and restaurant suppliers, welding shops, and fire extinguisher companies for bargains.

Filling a five pound tank costs \$10-15 in my area. Industrial gas suppliers, welding supply dealers, fire extinguisher companies, and soft drink service companies are all good sources. Not all are willing to bother with such small orders, and some refuse to fill aluminum tanks.

When you buy a CO₂ tank, be sure it has a current certification. Every five years, these tanks must be tested and recertified for safety. When this is done, a date is stamped into the body of the tank. For example, mine says "5-97," so I'll have to get it recertified in May, 2002 at the place I get it filled. If it fails, they'll drill a hole in the side, and I'll have to buy a new tank. In some areas, you can lease a tank. You just exchange your empty

tank for a full one, and the supplier gets them certified. The exchange costs a little more than a fill, but it may be worth it.

The empty (tare) weight of the cylinder is also stamped on it. For example, "TW 7.50" means it weighs 7.5 pounds (3.4 kg) when empty. After filling with five pounds of CO₂, it should weigh 12.5 pounds (5.67 kg). Weigh your tank at home right after you get it filled, and you'll be able to tell how much CO₂ is left in it by weighing it again.

If your homebrew production is starting to increase, you might consider a 20 pound CO₂ tank. The advantage of a 20 pound tank is that it only costs a few dollars more to fill it than a five pounder, but holds four times as much gas. You'll reduce trips to the refill place and have less worry about running out in the middle of your next party.

A full CO₂ tank holds a pressure of 800 pounds per square inch. To handle this pressure, a regulator screws onto the tank valve, reducing the pressure to safe levels. A set screw adjusts the regulator's output pressure, and a gauge shows the working pressure coming out of it (you should never need more than 25-30 pounds). Some regulators come with two gauges, but you only need one.

The regulator may have a hose barb or a flare connector for attaching your tubing. Regulators come in many styles, and cost from \$25 to \$75 in most areas. You can generally find them where you buy CO₂ tanks. Flexible plastic tubing is used between the CO₂ tank and the keg's gas connector, and between the keg's liquid connector and the picnic tap. Your best bet is 3/16" ID (inside diameter) food grade reinforced vinyl tubing. You can probably find this at a local hardware store, but make sure it is designed for high-pressure applications. Buy at least 10 feet to start, and use five feet for each line.

Some regulators have a one-way "check valve" that makes it impossible for beer to accidentally flow back into the regulator. You can also add one later to any regulator. On the serving side, you'll have a couple of options. The simplest and most common is the "picnic tap"[or "cobra-head tap"]—the familiar black plastic gizmo with a lever that you press to start the flow of beer. You'll find them at most homebrew

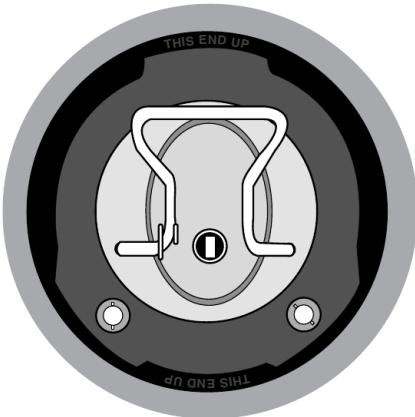


ILLUSTRATION BY DAVE HARFORD

ASK DR. WHITE



Dear Dr. White,

I'm a big fan of Barley Wines. Could you please tell me what makes a yeast appropriate for high gravity beers and which other strains might be best to use in my Barley Wines?

Tony Simmons

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Table 1: Pressure Required for Desired Carbonation

Directions: Look down the left column to find your keg temperature, and read across to the number in the column corresponding to the desired carbonation level. That number is the CO₂ pressure to apply to the beer, in psi.

Temp (°F)	Volumes of CO ₂ desired										
	2	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3
32	3.5	4.4	5.4	6.3	7.3	8.2	9.2	10.1	11.0	12.0	12.9
34	4.3	5.3	6.3	7.3	8.2	9.2	10.2	11.2	12.1	13.1	14.1
36	5.1	6.2	7.2	8.2	9.2	10.2	11.2	12.3	13.3	14.3	15.3
38	6.0	7.0	8.1	9.1	10.2	11.2	12.3	13.3	14.4	15.4	16.5
40	6.8	7.9	9.0	10.1	11.2	12.3	13.4	14.4	15.5	16.6	17.7
42	7.7	8.8	10.0	11.1	12.2	13.3	14.4	15.5	16.7	17.8	18.9
44	8.6	9.7	10.9	12.1	13.2	14.4	15.5	16.7	17.8	19.0	20.1
46	9.5	10.7	11.8	13.0	14.2	15.4	16.6	17.8	19.0	20.2	21.3
48	10.4	11.6	12.8	14.0	15.3	16.5	17.7	18.9	20.1	21.4	22.6
50	11.3	12.5	13.8	15.0	16.3	17.6	18.8	20.1	21.3	22.6	23.8
52	12.2	13.5	14.8	16.1	17.3	18.6	19.9	21.2	22.5	23.8	25.1
54	13.1	14.4	15.7	17.1	18.4	19.7	21.1	22.4	23.7	25.0	26.3
56	14.0	15.4	16.7	18.1	19.5	20.8	22.2	23.6	24.9	26.3	27.6
58	15.0	16.4	17.8	19.2	20.6	21.9	23.3	24.7	26.1	27.5	28.9
60	15.9	17.3	18.8	20.2	21.6	23.1	24.5	25.9	27.4	28.8	30.2
62	16.9	18.3	19.8	21.3	22.7	24.2	25.7	27.1	28.6	30.0	31.5
64	17.8	19.3	20.8	22.3	23.8	25.3	26.8	28.3	29.8	31.3	32.8
66	18.8	20.3	21.9	23.4	25.0	26.5	28.0	29.6	31.1	32.6	34.1
68	19.8	21.4	22.9	24.5	26.1	27.6	29.2	30.8	32.4	33.9	35.5
70	20.8	22.4	24.0	25.6	27.2	28.8	30.4	32.0	33.6	35.2	36.8
72	21.8	23.4	25.1	26.7	28.4	30.0	31.6	33.3	34.9	36.5	38.2
74	22.8	24.5	26.2	27.8	29.5	31.2	32.9	34.5	36.2	37.9	39.5
76	23.8	25.5	27.2	29.0	30.7	32.4	34.1	35.8	37.5	39.2	40.9
78	24.9	26.6	28.4	30.1	31.8	33.6	35.3	37.1	38.8	40.5	42.3
80	25.9	27.7	29.5	31.2	33.0	34.8	36.6	38.3	40.1	41.9	43.7

Table developed by Alan Edwards. Used here with permission.

suppliers, beer distributors, or bar supply dealers. It's cheap and works well, provided you have the correct pressure behind it. It may not be obvious, but the typical picnic tap easily disassembles into three pieces for cleaning and sanitizing.

Beyond the picnic tap, you can consider a wide variety of more traditional taps that mount to some sort of support. Some

folks have a cooler dedicated to their homebrew and mount taps through the wall of the cooler so that beer can be dispensed on the outside while the beer remains cool on the inside. Unfortunately, there are so many possible options here that considering them would require another whole article. I'll leave you to explore and ponder those possibilities on your own.

Using the System for Forced Carbonation

Among the advantages of kegging your homebrew is the possibility of being able to drink your beer within hours rather than weeks. To accomplish this, you use forced carbonation with CO₂. When fermentation has finished and your beer is clear, sanitize the keg thoroughly, then empty it. If you use a bleach sanitizer, do a final rinse with cheap supermarket beer or other clean liquid.

Replace the hatch cover. Connect only the gas line, set your regulator to about five pounds, and pressurize the keg with CO₂. Open the safety valve on top of the lid to let almost all the pressure out, and then pressurize it again. This replaces most of the air in the keg with carbon dioxide.

Now, release all the pressure, remove the hatch cover and rack the beer from fermenter to keg. Since CO₂ is heavier than air, it will just sit there until the incoming beer pushes it out. I like to use a sanitized siphon hose that reaches to the bottom of the keg, to eliminate splashing. As the beer level rises, CO₂ is gently pushed out. Replace the hatch cover, and use the same fill-and-vent technique again to purge any remaining air from the headspace in the keg. Now you're ready to carbonate.

First, determine how much carbonation you want. The regulator's dial gauge is calibrated in pounds per square inch (psi), but carbonation is generally measured in volumes of CO₂. For English styles like bitter, as little as two volumes is fine, while effervescent styles like weizens need three or more. For most beers, I use about 2.5 volumes.

Second, we have to adjust for the fact that more CO₂ dissolves in beer as it gets colder. Thus to hit the desired carbonation level, we need to consult Table 1. For example, if your keg is at 49° F (9° C), Table 1 shows that you will want to apply 16 psi to achieve 2.4 volumes of CO₂.

To achieve the carbonation, set the regulator for 16 psi and connect the CO₂ tank to the keg. If you have a clean "liquid" connector for your keg, you can attach this to your regulator's gas hose and then to the "out" side of the keg. This will deliver the CO₂ to the bottom of the keg and better encourage dissolution of the gas in the beer. Another option is to use the regular

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Table 2: Pressure Drop in $\frac{3}{16}$ Inch Plastic Tubing

Feet	3/16" Vinyl	3/16" Poly	1/4" Vinyl	1/4" Poly
1	3	2.2	0.85	0.5
2	6	4.4	1.7	1
3	9	6.6	2.55	1.5
4	12	8.8	3.4	2
5	15	11	4.25	2.5
6	18	13.2	5.1	3

gas connector, but turn the keg upside down once it has been initially pressurized.

Unfortunately, pressure alone won't dissolve enough gas in the beer to achieve proper carbonation. This is where the "force" part of the process comes in. Once you attach the gas, listen to the flow. The initial flow will slow down and stop in a few minutes. Now you need to agitate the keg to get more CO₂ into solution. Shaking the keg works well and when you do so, you'll hear gas start to flow again. To make this process more efficient, I lay the keg on its side, and roll it back and forth on the floor with my foot. The more vigorously I agitate the keg, the more gas flows. Eventually, it stops flowing no matter how much I shake the keg, and the beer is fully carbonated. Expect this to take 15 to 20 minutes, with faster results at lower temperatures. When carbonation is complete, I know the beer will be foamy because of all the agitation, so I set the keg back upright and disconnect it. After a few hours, the beer settles and is ready to serve.

If you put the keg back in the cooler, put a few more pounds of pressure on it first. The gas in the keg's headspace may dissolve and it's possible the O-ring seal on an old keg will leak. If the seal isn't tight (from the internal pressure of the keg) all the gas can come back out of solution and escape through the leaky O-ring. I like to lightly coat the O-ring with a food grade silicone lubricant to avoid this problem.

Of course you can also use yeast to carbonate beer in a keg just as if it were a giant bottle. When you do this, use only 0.5 cup (118 ml) of corn sugar to prime it. If you are going to use this technique routinely, you can avoid picking up the yeast sediment on the bottom during serving by cutting off the bottom 0.5 inch (13 mm) of the liquid down tube.

Whichever method you use, you'll notice that the carbonation quality improves with time. After a few days, the bubbles will seem finer and the head on your beer will probably be longer lasting. After a week, the carbonation will be so perfect you may never go back to bottling.

Dispensing Your Beer

Learning to dispense properly takes a little practice, but here are some guidelines to get you started. First, consider the carbonation level of your beer. Next, determine the dispensing pressure to apply to the keg. You want just enough pressure to push the beer up the tube, through the tubing and picnic tap, and into your glass, while maintaining the carbonation level of the beer remaining in the keg. That means using about one or two pounds more than the pressure on the keg.

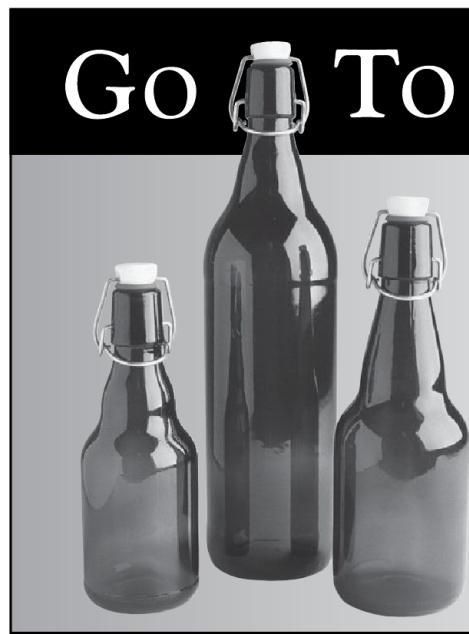
Sounds simple, but if your keg has 16 pounds of pressure, and you push it out with 17 pounds, you can wind up with nothing but foam if you're not careful. Some keggers compensate by applying less pressure to the keg. That reduces the foam, but the dissolved CO₂ in the beer has to come out of solution to equalize the pressure. By the time you reach the bottom of the keg, the beer is almost flat.

There's a better way. Apply the correct pressure to the keg, but compensate by using a longer, smaller diameter piece of tubing between the keg and tap. The friction through this tubing drops the pressure back down to a perfect level. Experiment with different types and lengths of tubing to find the right combination.

Table 2 shows that 3/16 inch (5 mm) vinyl tubing drops the pressure three pounds per foot. So a five foot length should drop your 17 psi by 15 (5 times 3) and there's another drop of about 1.5 psi from lifting the beer out of the keg and up to the level of the tap. That's a total of 16.5 psi, for a tap pressure of 0.5 pound, just about right. If it's too much, just lift the tap a foot or two and the extra height will drop the pressure some more. For more pressure, hold the tap lower.

Ed Westemeier (hopfen@malz.com) is a Master Beer Judge who lives in New Richmond, Ohio. He writes about beer, computers, and other things, and has been a homebrewer since 1987.

Go To THE TOP





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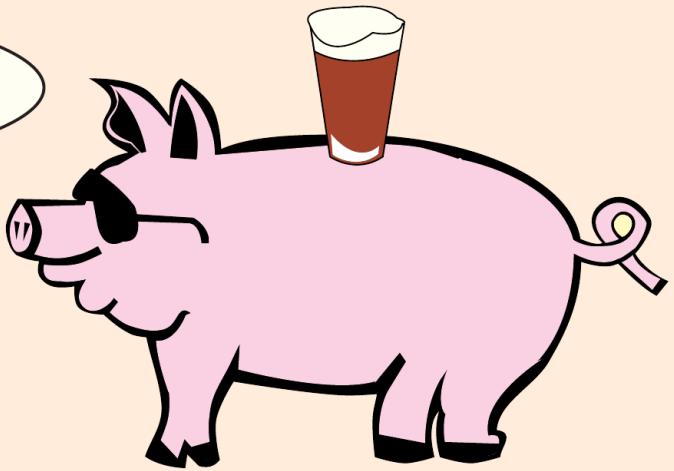
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Packaging in a



Party Pig

By Ed Westemeier



Some brewers don't like the time and effort of bottling; others just prefer the taste of draft beer. Unfortunately, the advantages of a draft system have to be balanced against its drawbacks. The weight and bulk of a keg system and the small size of a five liter mini-keg are two problems that can cause second thoughts.

One of the more interesting attempts to develop a compromise between the pros and cons of other draft systems is the Party Pig® from Quoin Industrial of Golden, Colorado.

The "Pig" is essentially a large plastic (PET) bottle, that is designed to fit on the top shelf of a normal refrigerator. It's intended to hold 2.25 gallons (8.5 liters), and is about 9 inches (23 cm) in diameter and 15 inches (38 cm) long.

The major issue with typical draft systems is the need for a constant supply of carbon dioxide to dispense the beer. The Party Pig does away with that requirement in an ingenious way. You simply prime and carbonate your beer in the Pig, dropping in a patented pressure pack that expands as you serve the beer. The pressure supplied by the expanding pack eliminates the need

for an outside CO₂ source. This can be very handy for anyone who has ever lugged a tank of carbon dioxide to a party—or even out to the soda distributor for re-filling.

Here's how it works: you fill the Pig directly from your final fermenter, adding priming sugar as needed to carbonate the beer. The Pig has a large opening for this purpose. The next step is to remove the protective packaging from the pressure pouch and drop the pre-sterilized and pre-folded pouch directly into the Pig with the beer. Then you cap the Pig with a dispensing valve and gasket, and secure it with the attaching ring and screws. Finally, apply some pressure to the Pig using a small hand pump. This activates the pressure pouch (similar to the way you activate some liquid yeast packs). Bleed off the air pressure you applied, and wait for your beer to carbonate naturally.

Now, what's going on inside? The pressure pack contains two food grade chemicals: citric acid and bicarbonate of soda. When the pack is activated by outside pressure, the chemicals mix, creating carbon dioxide gas inside the pack. As the gas is produced, the pack expands, applying (continued on page 76)

10 Tips



By Dana Johnson

for Easier Bottling



Bottling homebrew has fallen out of favor these days for many experienced homebrewers who feel that it takes too much time and is too labor intensive. A lot of folks in the homebrew club that I belong to have switched from bottling to using kegs instead. They lug their carbon dioxide (CO₂) cylinders and five-gallon Corny kegs to the meetings and parties. OK, so racking homebrew into kegs isn't as labor intensive as bottling, but kegs are definitely not easy to transport and take up a lot of space.

As for me, I'm still bottling all of my homebrew. I haven't switched to kegs for a lot of reasons. For one, I like the portability of bottles. When taking homebrew to meetings or parties, I snag a few bottles of homebrew, put them in a six-pack holder and away I go. Another reason I like bottling is that it is easy to age many different beers over longer periods of time without having to stumble over a bunch of kegs in the meantime.

Bottling homebrew doesn't have to be as time consuming and difficult as a lot of homebrewers make it out to be. New sanitizers and equipment available at homebrew supply shops can drastically reduce the amount of time, hassle, drudgery, and headaches normally encountered with bottling homebrew. What follows are some tricks I've learned from bottling over 100 batches plus some that my fellow KROC members were kind enough to share with me. Hopefully, this information will assist you, too.

1. CHECK, CHECK, CHECK...

A few days before you plan to bottle, it's a really good idea to take inventory of the supplies and equipment that you will need. Are there enough empty bottles? Are they in good condition? Assuming you are bottle conditioning, do

you have enough corn sugar, malt extract, honey, or gyle for priming? Do you have enough bottle caps? Is the equipment in good shape? If you label, are there enough labels?

There's nothing worse than getting ready to bottle and realizing that you are out of something or the equipment is not working. Having a checklist and taking inventory before you bottle eliminates the, "Oh, NO! I'm out of...." syndrome. I inevitably end up bottling after the homebrew supply shops in my area are closed, so the checklist avoids the problem of running out of things and having to wait until the shop reopens to bottle.

2. HELP, I NEED SOMEBODY!

Probably the only thing more tedious in homebrewing than bottling is cleaning. Generally speaking, the quicker you finish bottling, the better off you are. I like to enlist help when it comes to bottling, ideally one of my neighbors, but I will even settle for one of my kids, assuming I can tear them away from their "busy" schedule. I typically operate the siphon while the other person puts the caps on or seals the bottles and puts them in the case. Having someone to help me at bottling takes about half the time of trying to do it all by myself.

If you are teaching someone to brew, that also creates a perfect opportunity to show him or her the ropes of bottling as well. The person (or persons) you teach to brew will usually be eager to participate in bottling as well, especially if you promise to reward them with some of the finished product after-

ward. I like to hold off on imbibing during bottling, however, until the bottling is finished. Waiting until I'm done seems to cut down on mistakes and spillage. After bottling and cleanup is finished is the perfect time to relax and have a celebratory homebrew. If it is your first batch, a commercially brewed example will suffice nicely. Taking Charlie Papazian's advice, I like to toast the batch that was just bottled with a brew from a previous batch. It has almost become a ritual.

3. A HUNDRED BOTTLES OF BEER ON THE WALL...

A real key to making bottling go quickly and easily is to make sure that you have an ample supply of clean and inspected beer bottles before hand. If you have a free standing or mounted (rather than a handheld) bottle-capper, it is nice to have similarly sized bottles. I've found that for a five-gallon batch, one case of 12-ounce bottles plus one case (and a few extra) 22-ounce bottles works well. It seems to me that because of their smaller size, 12-ounce bottles usually carbonate faster than 22-ounce "bomber" bottles.

Although the larger bottles tend to take slightly longer to carbonate, they also seem to age better if you want to store the beer for a longer period of time. Several years ago, my neighbor's father gave me some old quart bottles he had been saving since he stopped homebrewing about thirty years before. He said he was waiting to find a good home for them; I use them to hold the beer the longest.

4. IF CLEANLINESS IS NEXT TO GODLINESS, WHAT IS SANITIZING NEXT TO?

We've come to one of the big reasons a lot of people disdain bottling, which is sanitizing the bottles beforehand. As I mentioned in my "Principles of Cleaning and Sanitizing" (March/April 2001 issue of *Zymurgy*) article this year, no-rinse sanitizing is very effective and cuts down on the amount of time and water required to get equipment ready for use. Nowhere is this truer than in bottling. If you are strictly using 12-ounce bottles, you are going to have to individually clean and sanitize at

least 48 bottles (two cases) for the five-gallon batch at bottling. (Another good reason to use larger bottles: there are fewer of them to sanitize.)

I used to use household bleach for sanitizing my bottles, but no more. By switching to an appropriate no-rinse sanitizer and using it at the prescribed concentration, bottles simply need only to be drained prior to filling them with beer. Not having to triple-rinse bottles cuts down immensely on the amount of time and water that is a must when using bleach. Sure, bleach is cheap. My time isn't. I've got better things to do than triple-rinse bottles!

If you don't want to chemically sanitize the bottles, heat sanitizing is an option. For homebrewers, heat sanitizing is typically done one of two ways, either by putting the bottles in the oven, or by putting them in the automatic dishwasher and using the heat dry cycle. I'd like to offer a couple notes of caution here. If heat sanitizing in the oven, heat and cool bottles slowly to avoid breakage. Some automatic dishwashers have a rinse additive cycle. The same chemical used as the rinse aid that gives you spot-free glassware can also destroy the head on the beer. The high-heat cycle for drying in the automatic dishwasher seems to work for many homebrewers to sanitize the bottles. Allow the bottles to cool to room temperature before filling with beer.

5. RACK IT UP TO SUCCESS

A good means of racking and siphoning is crucial to first transferring homebrew, then bottling it. There are many devices available to homebrewers that can start



and stop a siphon. Using your mouth to start a siphon is a real no-no. I've been using the same racking cane for over 10 years now. I found that by leaving the cane filled with sterile water or dilute sanitizer solution, the siphon starts easily and I don't have to use any gadgets to start the siphon. There is a new item at homebrew

“Using your mouth to start a siphon is a real no-no.”

supply shops called the Auto-Siphon, which looks interesting. It works like a huge syringe. To start the siphon, you simply pull out the plunger. The suction of pulling on the plunger fills the tube with beer and the siphon can begin. The Auto-Siphon is plastic, can be easily cleaned and sanitized, and costs less than \$20, retail. There are many types of siphon starting devices available, however, so check out what your favorite supplier recommends.

6. PRIME TIME!

Using the proper amount of priming corn sugar, malt extract, or gyle is critical to obtaining just the right amount of carbon dioxide (CO_2) in the finished product. (See article on carbonation problems on page 38). The old, prohibition-style method of adding a small amount of sugar to each bottle for priming is not only inconsistent, it can be dangerous.

The tried and true method that I've always used is 0.75 to one cup (177-237 mL) of corn sugar per five gallons (19 liters) of homebrew. I boil the corn sugar for five minutes in about 8-16 fluid ounces (237-474 mL) of water. I then add the priming solution to the bucket that the homebrew is going to be siphoned into from the fermenter. The corn sugar mixture cools quickly once it is put in the bottling bucket. I then siphon the beer into the bucket and the corn sugar mixture and swirling beer combine to create a homogenous mix-

ture and every bottle carbonates uniformly! After my bottle-conditioned brew has sufficiently carbonated at room temperature, I put them in the spare refrigerator in the basement for as long as it takes to finish off the batch. (For some reason, some batches disappear more quickly than others.).

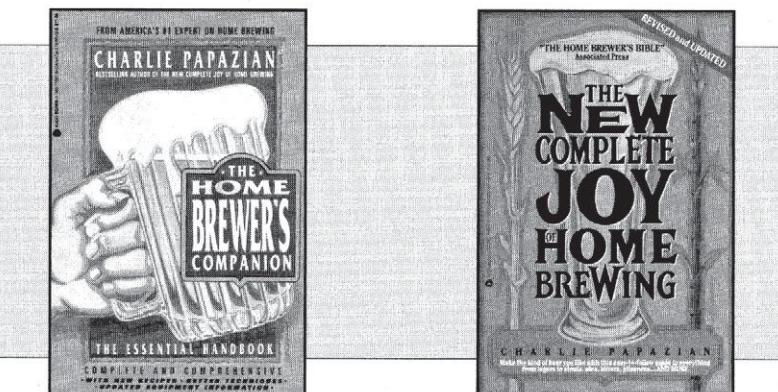
7. FILL IT UP, MACK

Filling bottles with homebrew is the other big reason a lot of homebrewers have gotten away from bottling. Unlike the high-

speed packaging lines of modern breweries, bottling in the home tends to be somewhat slow, tedious and depending on skill level, messy. For most homebrewers, the speed of siphoning determines how fast the beer flows into the bottles. Since you don't want to aerate the beer too much at this point in the game, it is actually better to fill the bottles rather slowly. Obtaining consistent fill levels can be challenging in the home environment. I bottle in my basement with less than ideal (continued on page 79)

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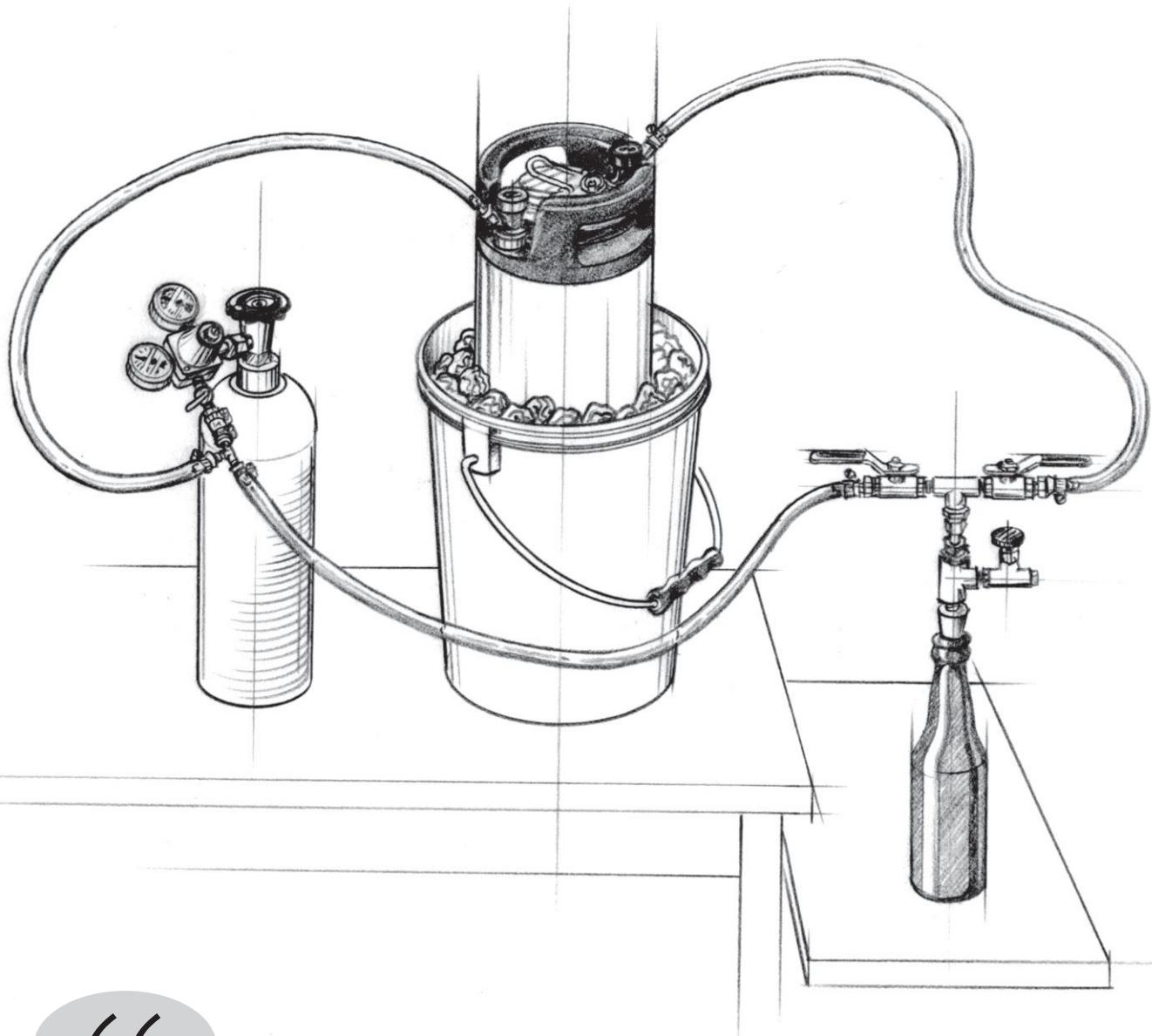
modestly elaborate

PROCESS

for

counterpressure Bottling

by
Edward W. Wolfe



“COUNTERPRESSURE bottling is the process of filling bottles with carbonated beer from a keg. That is, you carbonate the beer in a pressurized keg, transfer the beer from the keg into a beer bottle inside a pressurized system, and then cap the bottle. The purpose of this article is to describe the equipment and process involved in counterpressure bottling. A word of warning—I describe a somewhat ideal bottling system (I've been blessed with a wife who loves homebrew and has a master's degree in food science). You can certainly do a good job of counterpressure bottling with less expensive equipment, although the higher-end equipment makes for easier work.”



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There are both advantages and disadvantages to counterpressure bottling. One wedding, two kids, and three jobs ago, I brewed once or twice per month and bottled every ounce of each batch. As my free time became more precious, I turned to kegging my beer. This investment greatly simplified my life as a brewer, but it also introduced a dilemma—how could I give bottles of beer as gifts or enter my kegged beer in homebrew competitions? To remedy these issues, I invested in a counterpressure bottling system. Counterpressure bottling has rewarded me with the simplicity of kegging—significantly less time and work required to put my beer into storage and less space required for storing hundreds of bottles. In addition, I soon found that beer from counterpressured bottles is more visually appealing because there is little or no sediment in the bottle. Also, I've found that my counterpressure filled bottles have a longer shelf life because there is less exposure to contaminants and oxygen during bottling. The disadvantages of counterpressure bottling

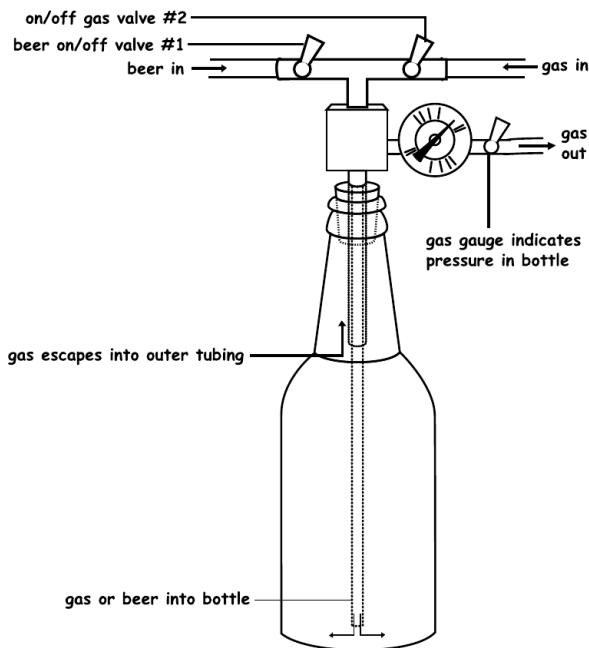
include: (a) cost (in addition to a kegging system, you need a good counterpressure bottle filler), (b) new challenges in sanitization (there are lots of tubes that need to be cleaned in a counterpressure bottling system), and (c) the risk of unreliable carbonation levels (more on this later).

Equipment

Before we get into the details, let me briefly explain the theory of counterpressure filling. The basic idea is to get beer from the keg to the bottle while retaining its carbonation. In order to do this, we have to maintain a nearly constant carbon dioxide pressure on the beer. This is achieved using a setup that allows you to first equalize the pressure in the bottle and the keg. Once this is done, a beer line running from the keg to the bottle is opened—but of course, no beer flows because the pressure in the two containers is the same. Only when the pressure in the bottle is reduced slightly will the beer begin to flow.

The counterpressure filler is a device that allows you to establish and control this process. There are many options available, ranging from homemade models that will cost you only a few dollars (Dawson, 1996; Schwarz, 1997) to the Vinoteque and Zahm & Nagel systems for \$300 to \$400. Ruggiero, Spillane, and Snyder (1995) provide a terrific review of the systems that were commercially available six years ago. Having built my own low-cost filler, and purchased a Foxx filler, a Phil's filler, and a Vinoteque filler, I highly recommend spending the extra money for one of the more expensive fillers if you can afford it. These systems are extremely easy to use and tend to outperform the less expensive fillers in maintaining carbonation during bottle filling.

The fillers vary in construction, but generally include several common elements.



All have a filling tube that goes down inside the bottle. At the top of this tube is a stopper that will lodge in the top of the bottle in order to seal the bottle during pressurization and filling. Above this stopper, the plumbing varies considerably, but generally includes three critical elements: a gas inlet, a beer inlet and a pressure vent. Each of these three ports will be controlled by a valve. Some of the valves are controlled by twisting a handle—something like a garden hose spigot. This type can be adjusted to a specific setting that will remain constant until the valve is adjusted again. Other valves have spring-loaded squeeze levers that require continuous hand pressure to remain open. These squeeze valves commonly appear on the pressure vent and gas inlet ports.

Since the pressure vent valve controls the flow of gas and beer in the bottle, many brewers like to have the squeeze-type valve on this port. Others find it tedious to have to continuously monitor and regulate the pressure applied to this lever and prefer the twist-type valve. The choice is up to the individual brewer.

In addition to the filler itself, you'll need a kegging system—a clean keg of sufficient size to hold a batch of beer and a CO₂ tank

**“The basic idea
is to get
beer from
the keg
to the bottle
while retaining
its carbonation.”**

with a regulator (about \$150-\$200—see Fink, 1992b; Palmer, 1997; Turczyn, 1999; and Westemeier, 1995 for the details of putting together a kegging system). I've found it necessary to have a good thermometer for my refrigerator so that I can precisely control carbonation levels.

Finally, you will also need enough room in a refrigerator to store the keg while it carbonates (or, minimally, to chill it for a couple of days prior to bottling) and (optionally) some extra room in your freezer for chilling bottles prior to bottling. Of course, you'll need clean bottles and bottle caps. I use oxygen-absorbing caps, although you probably don't need them when counter-pressure bottling, due to the fact that the system replaces the air in the headspace of the bottle with carbon dioxide. I also recommend a bench capper or an assistant because your hands will be occupied with the counterpressure filler and you'll want to get the cap on the bottle as quickly as possible to avoid loss of carbonation. I also recommend having some sanitized aluminum foil for temporarily capping sanitized bottles while they cool in the freezer (more on that in the next section).

Process

The process that I use when counter-pressure filling involves three steps: carbonating the beer, cleaning the system and bottles, and filling and capping the bottles. My

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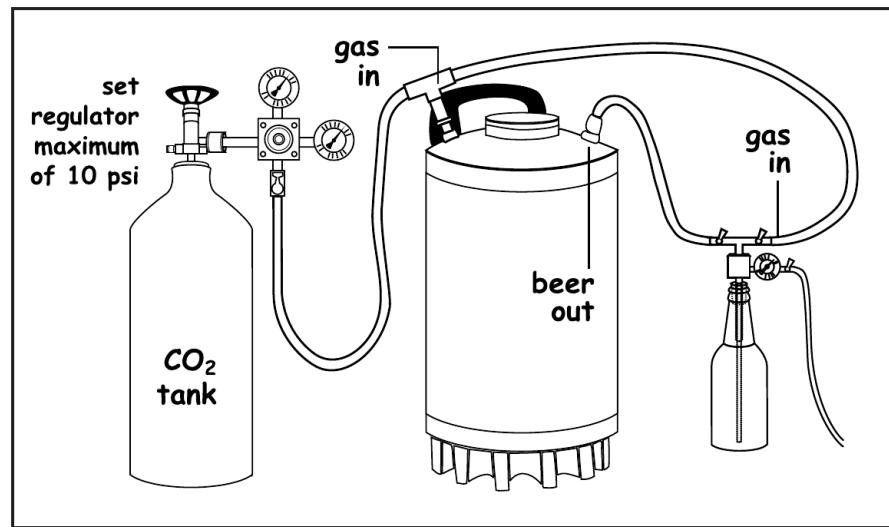
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carbonation step begins before I transfer the beer into the keg. During the final days of fermentation, I add a fining agent to the beer and transfer the fermenter to a refrigerator to encourage sedimentation prior to transferring the beer to a keg. I've found that if I give sufficient time for settling, my counterpressure filled bottles contain virtually no sediment. After I've racked the beer into the keg, I attach my CO₂ tank and adjust the pressure to achieve the desired level of carbonation based on the temperature of the refrigerator. I keep my refrigerator just above freezing (this helps speed up carbonation and reduces foaming during bottling and dispensing), and I typically shoot for the high end of the carbonation level of the style I'm

brewing in order to compensate for the small amount of carbonation that is lost during bottling. The volumes of CO₂ that I target are about 2.4 volumes for British ales, 2.6 volumes for German lagers, 2.8 volumes for US lagers, and 4 to 5 volumes for German wheat beers and Belgian sparkling ales (Fix & Fix, 1997). I've tried speeding up the carbonation process by removing the gas and shaking the keg or rolling it across the floor and then reattaching the gas. These efforts do speed up the dissolving of carbon dioxide into the beer, but I've found that I still need to allow the beer to sit in the refrigerator for a couple of weeks with the CO₂ tank attached in order to obtain accurate and consistent carbonation levels. (continued on page 78)





Putting the in Your Beer

by Ray Daniels



“Why Didn’t It Carbonate?”

This is probably the question most frequently faced by homebrewers of all stripes. Indeed, if one judges by the questions that appear on discussion forums and by those asked of homebrew experts, it is far and away the number one problem facing the average brewer. And while there is little mystery about the possible causes, sorting one from another can cause confusion in the field. Let’s start at the beginning and discuss the various facets of this issue.

Is it Carbonated?

Carbonation can be kind of subjective. Often people who talk about the carbonation in their beers are really observing the amount of head or foam that is produced. The two are related, but it is possible—and common—to have decent carbonation with poor head.

Beer foam is one of the most complicated subjects in brewing chemistry and many a brewing career has been devoted to research and understanding of this subject. Good carbonation of the beer does not ensure that you will have a sturdy foam cap on the top of it once you pour it in the glass.

So how do we assess carbonation to begin with? It starts when we pop the cap off of the bottle. Do you hear a satisfying “pfft” of gas escaping? If so, you definitely have some carbonation in the bottle. Without it, you would be greeted with a deathly silence when you pop the top.

Now pour the beer in your glass. If you’ve been dissatisfied with the foam produced in previous attempts, don’t be particularly gentle: pour the beer right down the center of the glass and let it foam for all it is worth. If the beer produces foam with

such a pouring, it has at least some carbonation. If the foam quickly fades and disappears, then we are most likely back to the subject of foam rather than carbonation.

Once the beer is in the glass, take a good look at it. A carbonated beer will nearly always produce bubbles inside the glass. Some will adhere to the sides of the glass while others will break loose and float to the top. If you’ve achieved some carbonation in your beer, inspection will most likely reveal some of these telltale bubbles.

Finally, drink the beer. Flat beer is completely dead and lifeless. It produces no prickle on the palate, no tickle on the tongue. If you aren’t sure what your tongue is feeling, compare the beer to a glass of cold water. If they feel about the same, you probably don’t have much carbonation in the beer.

These simple steps can help you to sort out the issues of carbonation and foam. If foam is what’s lacking, you’ll have to consult other sources to solve your problems. But if you are truly missing that essential carbonation in your beer, read on!

The Four Elements

The development of carbonation in a bottle (and other containers carbonated by

Proofing Yeast

Dry yeasts work best when carefully rehydrated and reinvigorated before use. Begin by sprinkling the yeast on 0.5 to 1 cup (118-237 mL) of warm (about 95-100° F or 35-38° C) water. Allow the yeast to settle into the water for 10 to 15 minutes and then stir to mix. Now add about one tablespoon (14.8 mL) of priming sugar or malt extract and stir. In less than an hour, you should see foam forming on the top of this mixture. This indicates that the yeast is viable and actively fermenting the sugar you have added. Before using the yeast, allow the mixture to cool slowly to the temperature of the beer or wort to which it will be added.

If foam does not form on the proofed sample, the yeast is not good and should not be used.

is a simple sugar (glucose) that is easily absorbed and metabolized by the yeast. Of course other types of priming sugar can be used, but carbonation may proceed more slowly as a result. While most sugars (malt extract, brown sugar, candi sugar, invert sugar, molasses, etc.) are only moderately more complex, honey has a wide range of sugars and may result in noticeably slower carbonation.

Most modern instructions for priming beer recommend adding the sugar in bulk to the entire batch of beer before bottling. This differs from Prohibition-era practices where each bottle was dosed separately with sugar. The practice of bulk addition reduces the likelihood of a bottle being missed here and there, but it does require that the brewer remember to add the priming sugar to the bulk beer before beginning to bottle. Although it seems both simple and essential, it can be easy to forget. If you have one batch that has failed to carbonate, check your brewing records to be sure that you remembered to add the priming sugar before bottling.

The second issue with regard to priming is mixing. If you got some bottles that didn't carbonate but some that did, make sure that you gently stir the beer once the sugar solution is added to ensure even mixing.

Assuming that we have both yeast and sugar in the bottle, we have only to provide the proper temperature for the yeast and a bit of patience for ourselves.

Finishing and Storage

The temperature required for carbonation by yeast will be the same as, or warmer than, the standard temperature of an ale fermentation. Generally, you'll want to keep the newly bottled beer at temperatures between 68 and 80° F (20 and 27° C) while it conditions. Of course once the beer has become carbonated, cool or refrigerated storage is best.

The extent of the patience required from the brewer is more difficult to quantify. I generally try to give a beer four weeks to condition fully and I'm rarely disappointed with the results. But I also know that in



The development of carbonation in a bottle (and other containers carbonated by yeast) is driven by four factors: time, temperature, sugar and yeast.

most cases if I pull a bottle after two weeks for sampling, there will be ample carbonation for a satisfying sip of my latest creation. Of course these results come when corn sugar is used at priming. The use of other sugars may result in slower development of the carbonation and further patience will be required.

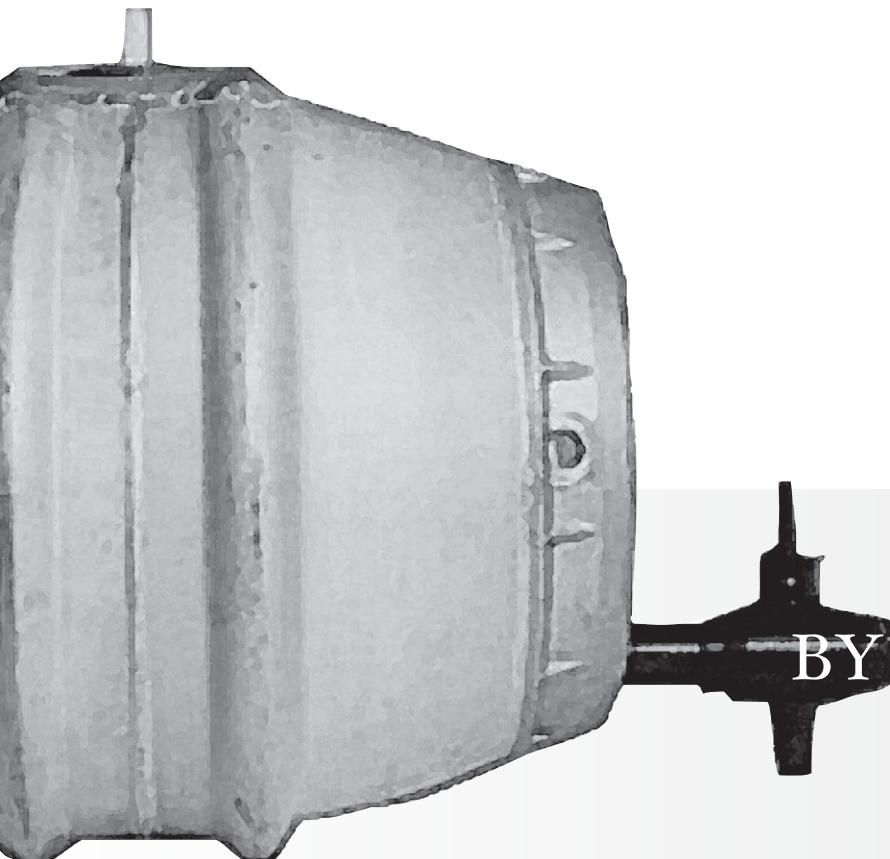
Ray Daniels is Editor-in-Chief of *Zymurgy* and the author of several books on brewing, including *Designing Great Beers*, *Smoked Beers*, *101 Ideas for Homebrew Fun* and *Brown Ales*.

REAL ALE

A M E R I C A N S T Y L E



A Relaxed Perspective on
Real Ale for the Home Brewer



BY MIKE BARDALLIS



A wealth of firkin real ale. Clockwise from top: firkins and beer engines at Chicago's Real Ale Festival, real ale being served through a beer engine and a geyser of beer sprays handlers of a well-primed firkin.



Real ale is the traditional drink of Britain and a grand one at that. A British group called the Campaign for Real Ale, or CAMRA, has worked hard to preserve this tradition and is often cited as the single most successful consumer movement ever. Needless to say, they are dead serious about their beer, and have strict guidelines regarding what is, and is not, "real ale."

Under CAMRA's rules real ale is conditioned—that is, matured and carbonated—in the vessel from which it is served. Furthermore, it must be naturally carbonated and dispensed without the use of any extraneous carbon dioxide. As a result of these rules, most homebrewed bottled ales qualify as real ale.

Many draft homebrews meet the standards for conditioning as well, but it is in the area of serving where things get dodgy. For starters, most homebrewers haven't figured out how to get much beer out of a keg without hooking a CO₂ tank up to it. Secondly, CAMRA dictates that serving temperatures should be at "cellar" temperature—generally somewhere between 50° to 60° F (10 to 16° C), with 55° F (13° C) being typical. Oh and by the way, the beer is supposed to be crystal clear as well.

In the UK, CAMRA's army of members look over every brewer's and publican's shoulder to make sure they are doing things according to the rules. Fortunately, we don't have to worry about them too

much as they are an ocean away and they are hard to understand when they talk anyway. We, being American homebrewers accustomed to doing as we like, can and do combine tradition, practicality, and a relaxed attitude within the confines of our basements with typically dandy results. Our simple goal is to end up with beer in our glasses that compares favorably with traditional British ale, while maintaining our low-impact, relaxed attitude.

Packaging Options for Real Ale

You can serve real ale from just about any container that will A) hold moderate pressure, and B) allow you to serve the beer without pressurized gas. Thus the list of "real ale" containers includes: bottles, growlers, collapsible plastic containers known as "polypins," Cornelius kegs ("corny" kegs), and of course, proper British casks. We'll concentrate on cornies and casks in this article, but most of the information can be adapted to any draft packaging setup. Throughout the article, the ever-popular Cornelius-type keg will be referred to simply as a "keg," but be aware that in Britain, "keg beer" refers to the bad stuff: filtered, pressurized mega-beer.

Corny kegs are familiar to most homebrewers and require little additional comment for now. But casks are new to many. Modern casks are made of stainless steel and occasionally aluminum with a shape similar to a barrel. They have an opening to receive a keystone on the front, or head, of the cask and a bunghole located at the midline of the curved side which is sealed with a shive. Both the keystone and shive may be made of wood or plastic, and both are scored or partially perforated to facilitate broaching when the cask is tapped.

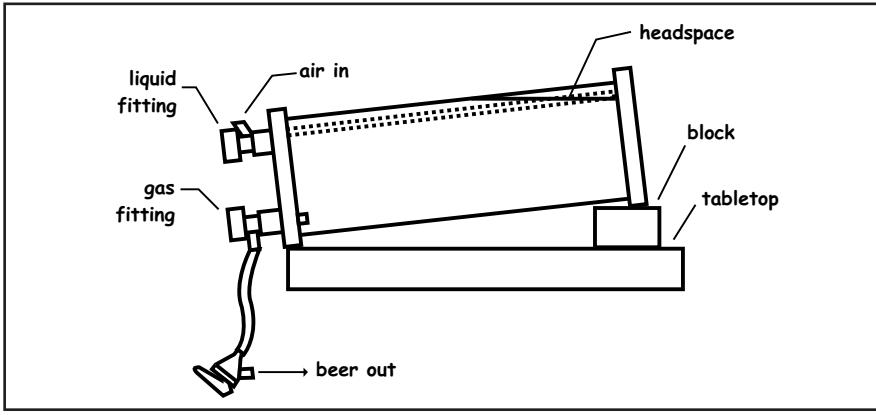


Diagram A

Casks come in various sizes, but on our side of the Atlantic the most common is the "firkin," with a capacity of nine Imperial gallons (10.8 US gallons or 40.9 liters). For homebrewers, the smallest of the casks, known as a "pin," is often best option. It holds a convenient 5.4 US gallons or 20.4 liters of beer. A full list of cask specification is given in the sidebar.

Practical Considerations

The biggest issue with putting real ale into any container is, "How are you going to get it out?"

One way is to use a container with tap at the bottom (like a common picnic water cooler) and let gravity do the job. Gravity dispense is fairly easy from a corny keg: just lay it down horizontally at a convenient height, and tilt slightly by placing a small block under the bottom end. Attach a gas fitting with a picnic tap to the "gas in" valve, and a bare liquid fitting to the "liquid out" valve. Beer is drawn off through the short gas dip tube, and air is drawn in through the long liquid dip tube. (See Diagram A)

Gravity dispense from a traditional cask is pretty simple too: the horizontally stiltaged cask is vented by driving out the center of the bung, or shive, and a tap is driven into the keystone. Open the tap, out pours beer! Obviously, the cask has to be located at a convenient height for pouring. Since the firkin also must be kept cool, making the cellar the preferred storage/stillage location, other means of dispense have supplanted gravity, such as the beer engine.

Beer engines

As many know, a beer engine (also known as a "hand pump") allows you to draw beer from a container located on the floor or in the cellar, or some other location where use of a gravity tap would be inconvenient.

Most beer engines are of the sort that can be clamped onto a horizontal surface such as a table or bar top, and deliver one-quarter or one-half UK pint with each pull of the handle.

A beer engine is somewhat expensive by homebrew standards, with reconditioned models starting at around \$250, but there are some nifty selling points. For starters, they are easy to keep clean: just disconnect from the keg or cask, throw the line into a container full of tap cleanser, and pump some through. Second, they are easy to take to parties. Third, they get you a lot of attention.

Now let's talk about some of the practical aspects of using a beer engine. First, most engines come equipped with a "sparkler:" a plastic restrictor nozzle that can be screwed onto the end of the spout. Use of this device spurs a turbulent dispense and that whips up a foamy head on the beer when it is poured. Often times when using a sparkler, one ends up with a photogenic pint that has unfortunately lost a good deal of its carbonation and pleasing hop aromatics in the pouring. It is my opinion that a properly conditioned ale will have enough carbonation to pour up a nice collar of foam if desired, without resorting to a sparkler.

Since the beer engine draws the beer out by suction, it may be most convenient to stand a keg up vertically. The engine is then connected right to the "liquid out" valve, and a bare gas fitting can be snapped onto the 'gas in' valve to admit air. For casks, you simply attach the beer engine hose to the traditional tap—although some models facilitate this by offering a hose barb rather than a smooth nozzle.

Shelf Life

One of the biggest issues with real ale served from a keg or cask is the question of how fast it will be consumed.

Traditional ale should be consumed within two or maybe three days of opening. Unless you are having a party, this will be an issue for your keg or cask of beer. Since air is admitted into the container as beer is removed, oxidation begins as soon as beer starts pouring. At the same time, you get airborne bacteria that will begin to sour the beer. Together they generally have a noticeable effect on flavor with in 36 to 48 hours. Smoke is another problem: avoid serving real ale in a room where tobacco smoke is present.

When the beer is not going to be dispensed for a period, like overnight, you should insert a "hard spile," a hard wooden peg, tightly into the vent hole in the shive. This will help to prevent the loss of further carbonation.

The serving life of real ale kegs or casks can be extended by use of a device known as a "cask breather." This is a demand valve which admits CO₂ at atmospheric pressure as beer is drawn off, thereby excluding air without forcing carbonation into the ale. Of course this device, though seemingly innocuous, violates CAMRA's rules and is viewed with disdain by real ale purists. Still it is the only way to extend the life of draft real ale. Using a breather, the serving life of a beer can reasonably be extended to a week or so, dependent upon beer OG and the temperature at which it is kept. Generally higher OGs and lower temperatures will extend the life of the beer.

Cooling

While real ale is sometimes described as "warm," it should be nothing of the kind. A

Cask Names and Volumes				
Butt	3 UK barrels	108 UK gal.	129.6 US gal.	490.6 liters
Hogshead	1.5 UK barrels	54 UK gal.	64.8 US gal.	245.5 liters
Barrel	1.0 UK barrel	36 UK gal.	43.2 US gal.	163.65 liters
Kilderkin	0.5 UK barrel	18 UK gal.	21.6 US gal.	81.8 liters
Firkin	0.25 UK barrel	9 UK gal.	10.8 US gal.	40.9 liters
Pin	1/8 UK barrel	4.5 UK gal.	5.4 US gal.	20.45 liters

beer served at proper cellar temperature (55° F, 13° C) will be pleasantly cool but not cold. Unfortunately, achieving this blissful state is anything but easy.

Beer to be consumed at a party may require little attention. If it is already cold, then keeping it out of the sun or away from the radiator about covers it. For a horizontally stillaged cask, ice blankets can be purchased or fashioned which are draped over the container. Similarly, the evaporative cooling offered by a wet towel draped over the container can help to keep your beer cool.

Production Details

Alright, I've run through the fun stuff, now let's cover the basic details that you'll need to get you to the point of actually drinking some real ale. Along with the green beer, three things generally go into the keg or cask: finings, primings and dry hops.

Finings are new to many homebrewers, but common in British brewing. They are used to ensure that the beer is clear and bright when served. A substance called isinglass is used to help remove yeast from the beer. The important thing to know is that this stuff is magic. Yeasty beer is bright within 48 hours, and how it gets that way is best left to folks with pointier heads than ours. You should use isinglass in the premixed, ready-to-add liquid or paste form. (The dried stuff is difficult to prepare.)

Finings should be added along with the primings, when the beer is racked into the keg or firkin. The first time around with a particular type or brand of finings, follow the manufacturer's recommended dosage rate, and adjust as necessary for future batches. If there is an excess of pale, feathery solids that settle quickly in the glass even after the first few pints are poured, then there may be more isinglass than necessary.

Priming rates for traditional ales are lower than comparable American or European beers, as ideally the level of dissolved CO₂ is about half as much as those counterparts. A less relaxed brewer would probably get into a discussion regarding the lower saturation level at warmer serving temps, and so on, but we will stick to the observation that the beer seems best that way. That being said, a little too much priming sugar is better than not enough, as bleeding off a little excess condition is easier than trying to boost it! For beer that is fairly well fermented out, 0.25 cup (59 mL) of sugar for a keg or 0.5 cup (118 mL) for a firkin is a pretty good starting point. I have found just about any plain sugar is acceptable; corn, cane, and beet sugar all work pretty well, despite the bad reputation granulated sugar has with American homebrewers. As with bottled homebrew, boiling the priming sugar in just enough water to dissolve it is the preferred method.

Whole hops, at the rate of 1/8 to 0.25 oz (3.5 to 7.1 g) added to the keg or cask, are a lovely finishing touch with most ales, and do much to enhance the fresh character of the beer. Higher rates are inappropriate for traditional English beer, but may be desired to give an American twist. Or maybe you just like lots of hop character. Be aware that some varieties can give a metallic character when used in large amounts as dry hops, and much past 0.25 ounce in five gallons gets to the point of diminishing returns.

When adding dry hops to a keg, it's a good idea to use a muslin "hop sock." This keeps the hop particles from clogging the dip tube, although sometimes, the hop sock itself can end up blocking the dip tube, so some brewers tie it in place halfway up on the dip tube prior to filling the keg. With casks this is less of an issue as there is a perforated strainer on the taps commonly used, so the hop sock is likely unnecessary.

At the risk of stating the obvious, all of the aforementioned goodies should be added to the vessel before you have filled it to the top with green beer.

Preparing for Dispense

Once the beer is safely sealed in its container, it should be allowed to condition at room temperature for a week or so. A few days before you are planning on serving the beer, it should be stillaged in its serving position, and cooled to serving temperature. A tap must be fitted by driving it sharply through the perforated keystone, and the cask vented and checked for proper condition. Condition primarily refers to carbonation level, but by extension includes clarity, flavor, and aroma. Pull or pour a sample into a small tasting glass. Check the clarity and aroma. Rock the glass back and forth and observe the liquid surface through the side of the glass. Profusions of bubbles will appear just below the surface as you tip the glass in a properly conditioned beer. Put some in your mouth. (Hey, now we're getting somewhere!)

If the beer is too fizzy or pours too foamy, carbonation needs to be bled off. This is where it is easier for a horizontally stillaged firkin: simply fit a "soft spile," a porous peg typically made of bamboo, tightly into the hole in the shive, and check the beer twice a day until it meets with your approval. At this point you'll want to replace the soft spile with a hard, nonporous spile until serving time. With a keg, manually vent the head pressure in the vessel periodically every few hours until proper conditions are achieved.

OK, once you have gotten through all these steps, the beer should be ready to pour. If all has gone according to plan, you can expect some wonderful beer. Oh, and of course, you can expect to be more popular than normal—at least until the beer runs out.

Mike Bardallis started brewing in 1989 and rapidly went off the deep end. Having survived dalliances with pH meters, inverted carboys, refrigerated pantries and all manner of geegars relatively unscathed and relaxed, he recently served a firkin of bitter to his friends on the occasion of his 200th batch of homebrew. Mike is an enthusiastic member of the Downriver Brewers Guild in suburban Detroit, and the inventor of the infamous Kalamazoo Beer Goggles.

Draft Beer the



By Dan Listerman

German Way: Five-Liter Mini-Kegs



Five-liter (1.33 gallon) mini-kegs are manufactured in Germany as a disposable container for the domestic consumption of a quantity of beer such as that which might be suitable for a small party. American home brewers have discovered that these kegs can be used as a handy way to avoid bottling without the need for a dedicated refrigerator which is often required by the larger kegging systems. In truth, anyone who can find the space for a gallon of milk in the domestic refrigerator can keep a five-liter can of draft beer ready to dispense.

There are many advantages to the mini-keg system. For starters, a standard five-gallon batch easily fits into four mini-kegs. This means you have just four vessels to clean and sanitize on packaging day rather than the dozens typically required for bottling. For those who appreciate a bit of variety in their consumption, the mini-kegs offer faster turn over. With a five-gallon keg, one needs to finish the last pint before moving on to the next beer. Mini-kegs multiply this opportunity by four. Thus, you can mix consumption of your various batches to avoid boredom and also discover flavor variations that arise through aging. Another alternative with mini-kegs is the ability to keg part of a batch and bottle the rest.

One of the greatest features of the mini-kegs is their portability, making them easy to take along for parties, brew club meetings and the like. A full mini-keg and its tapping system weighs less than 12 pounds (5.4 kg) compared to the 60 pounds (27 kg) of a full corny keg and its CO₂ system.

Putting Homebrew in a Mini-Keg

Standard mini-kegs can be purchased new from most homebrew shops or you can buy one full of beer, usually German, for about twice the cost of a new keg and recycle it after the beer is consumed.

All mini-kegs use a two-piece bung to close the keg. The outer portion is made of soft rubber while the inner core is hard plastic. Removal of the bungs from commercially canned German breweries can be difficult because they are not intended for reuse. Care must be taken to not scratch the mouth of the mini-keg. Frequently the bung will be destroyed in the process. The homebrew bungs are a bit easier: first remove the rubber outer part of the bung and then shake the bung's inner core out or rinse it out as you begin the cleaning process.

Of course it is very important to clean the kegs carefully after they are emptied. Rinse and empty until the rinse water runs clear. It may take more than three rinsing cycles to accomplish this. To reduce the chances of contamination during storage, the kegs need to be drained as much as possible. The nature of the opening makes this difficult. Inverted shaking will remove the bulk of the water. A strip of paper towel inserted into the mouth and pushed against the inner surface of the mouth while the keg is inverted will wick out most of the difficult water. If more drying is desired, a rolled up paper towel, inserted into the mouth and shaken violently, can be used. It is best to store the bung disassembled until it is thoroughly dry or some contamination can develop between the pieces.

When you are ready to fill a keg, it should be cleaned and sanitized. Any of a number of proprietary cleaners are fine. Fill the mini-kegs to the brim and allow them to soak for 20 minutes. Then invert the kegs on an almost flat surface

so that they slowly drain while sanitizing the top of the inside of the keg. Kegs can last many uses over years of time if kept clean. I have had some mini-kegs in almost continuous service for five years.

The bung will have to be reassembled before reuse. Note that the bung can be mistakenly assembled backwards which will allow the core to pop out when the beer is carbonated. Make sure that the flange portion of the inner core is on the inside of the bung assembly, not on its top. Also, mini-keg bungs tend to lose their suppleness after a few uses and become difficult to insert. If a tiny bit of keg lube is smeared around the cone of the bung before insertion, they will last indefinitely. Most homebrew shops carry keg lube and one container will last for many years.

Mini-kegs can be filled pretty much the same way that you would fill a bottle. Usually the beer will be carbonated in the container, but if you have a corny keg system, you can counter-pressure fill mini-kegs just as you would a bottle.

For conditioning in the mini-keg, you can prime in the bottling bucket or directly in the mini-keg. For bottling bucket filling, the mini-kegs only require about half the priming sugar that is usually required for filling bottles. This means that only 0.33 to 0.5 cup (75 to 120 ml) of corn sugar needs to be mixed in with a five-gallon (19 L) batch. Since there are only four mini-kegs to deal with, direct priming is a safe option. Simply add 1.5 tablespoons (22 mL) of corn sugar to each mini-keg before filling directly from the fermenter. In my opinion, there is no real need to boil the sugar.

Primed mini-kegs can be treated just like bottles for conditioning and storage purposes. Like any bottle-conditioned beer, the mini-keg will need to be kept in a warm place for about a week after filling to achieve proper carbonation. They do not necessarily need refrigeration. A five-gallon batch can be evenly distributed among four mini-kegs by filling to between 0.75 and one inch (1.9 to 2.5 cm) of the top of the keg.

Mini-kegs can also be counter pressure filled from corny kegs. This method allows for immediate consumption of the mini-keg beer and reduces sediment. To do this, you'll need to replace your counter pressure filler's stopper with a number three drilled stopper.

Forced carbonation in the mini-keg itself, while technically possible, is not very practical. To deliver the carbonation, you need to have a CO₂ tap attached to the keg. Thus, you'll need to have multiple taps or be satisfied with carbonating just one keg at a time. In addition, it takes a lot of CO₂ cylinders to get the job done, creating both logistical and expense issues.

A major difficulty encountered by mini-keg users is a tendency for the keg to unexpectedly bulge from over-pressurization. This can be caused by over-priming, premature filling and wild yeast infections. When this happens, the keg is often destroyed. This is a problem my company has addressed with the production of "Phil's Relieph Bung" to prevent this problem. This bung vents excessive pressure at about half what is required to bulge the keg and does so until the pressure drops to a third of the "bulge" pressure.

Tapping Your Beer

There are a number of taps produced for mini-kegs. The manufacturer of the kegs themselves, Fass Frisch, produces three taps, including the "Multi Tap," the "Party Star" and the "Beer King." Let's review how each one works.

The first of the three is the Multi Tap. It is hand pumped with air and should only be used if the entire container of beer is to be consumed within 24 hours or the beer will oxidize and go stale. It is an inexpensive tap that is fine for parties.

The remaining two taps, the Beer King and the Party Star are very similar. The Beer King has a plastic body while the Party Star has a metal body. Both are powered by either 16 or 8 g CO₂ cartridges, if an adapter is used. Expect a 16g cartridge to last about two kegs and an 8g, one keg. Excess carbon dioxide can be transferred to the next keg along with the tap. They both have plastic dip tubes, which are prone to breakage if the tap is dropped. This is particularly important in the case of the "Beer King" since the plastic body

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can be irreparably damaged along with the dip tube.

The Beer King's valve is a simple design near the outside edge of the keg that drains well. The Party Star's is built into the metal core at the center of the keg's top. It has a long narrow spout that can retain beer between uses. This is a potential source of contamination and tends to drip a bit.

Both of these taps must be operated with the mini-keg standing up in a vertical position. It takes about 14 inches (36 cm) of height to store the keg and tap assembly in the refrigerator. Both also come equipped with built in pressure regulators operated by a knob. This is handy at parties because the pressure is maintained automatically. For long term consumption, the regulator is better used as an on/off valve because there is a tendency for the pressure to be too high and the CO₂ will simply dissolve into the beer wasting gas and creating foamy beer. When the beer pour rate slows, a quick twist of the knob will dispense enough pressure to restore the proper flow.

Changing cartridges is as simple as unscrewing the cartridge housing, removing the spent cartridge and replacing it with a fresh one before screwing the housing back on. The tip of the cartridge must seat and seal against a hard plastic seat that contains the piercing spear. A leak frequently develops at this point. Dipping the tip of the cartridge in keg lube helps keep this seal tight. A little keg lube on the threads of the cartridge housing also makes a tight seal easier.

If you already own a carbon dioxide tank, you can adapt these taps for use with your existing regulator equipped with ball lock fittings. All that is needed is a "Carbonator" two-liter bottle cap from Liquid Bread and a pierced rubber washer to fit the Carbonator. Screw this assembly on to the regulator where the cartridge housing normally goes. The ball lock disconnect can now be used to charge the keg.

Other Taps

You will also find another tap, the "Flexi-Tap," which is similar to the Fass Frisch taps except that an 8g CO₂ cartridge or an air pump can power it, and the air pump is included. When the CO₂ is exhausted, the keg can be finished off with air. This may not be a problem from a beer quality viewpoint since there is little beer left in the keg and it should be emptied quickly. Changing from the regulator to the air pump is a simple matter of pulling the regulator off the tap and pushing the air pump on. An adapter for using a CO₂ cylinder and regulator is also available.

On the Flexi-Tap, a tapered wedge-like device controls the pressure regulator. Pushing it down increases the pressure and rocking it back provides a burst of CO₂. The Flexi-Tap has restrictions in its dip tube to provide backpressure so beer does not over foam.

Finally, my company makes the "Philtap," a very compact design largely made of chrome-plated metal. Its unique design feature is that it can be operated vertically or horizontally by way of a curved dip tube. The Philtap faucet is a common picnic faucet frequently seen on corny kegs. It is attached with a 12 inch hose. The Philtap can be connected to a through-the-door faucet just like any other kegging system. This allows the keg to reside inside a cooler with the tap on the outside for easy access.

The Philtap has a small-bore internal dip tube to provide backpressure for smooth delivery. Operated vertically, it requires only 10.5 inches of clearance. Horizontally, with the wooden prop, it needs only 8 inches of clearance so it can be used on a lower shelf of a refrigerator.

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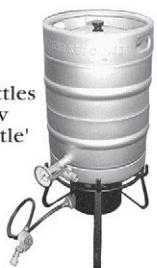
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On the Philtap, the CO₂ dispenser is manually operated. When the flow of the beer starts to slow, a short pull of the dispenser's trigger will restore the flow. A pressure relief valve prevents over pressuring. The dispenser uses 12g CO₂ cartridges. One cartridge will usually empty a full keg. The cartridge stays with the tap and can be transferred to a subsequent keg if not empty. With the Philtap, a common bicycle pump can replace the CO₂ dispenser for kegs meant to be used quickly or to finish off a mostly empty keg. A CO₂ cylinder and reg-

ulator can also be connected to the tap by merely removing the valve stem and clamping a hose to where the CO₂ dispenser normally connects.

A new design of mini-keg has recently come on to the market which incorporates a built-in tap. The tap is near the bottom of the keg and is operated by pulling out and pushing in. This system allows the keg to be tapped without CO₂. The bung must be pushed in to vent the keg. Obviously, if the keg is tapped in this manner, the beer will have to be consumed quickly or it will go flat

and oxidize. This is another area where my company is producing a product to help out. We are now producing a CO₂ dispensing system that will allow the carbonation of these new mini-kegs to be maintained while also eliminating oxidation of the beer.

Tap Care and Cleaning

With any taps that have plastic dip tubes it is important to always hold the dip tube when breaching the bung. They can easily buckle and break during this operation without proper support. Note too that it is possible for the bung core to become jammed under the dip tube so that the tap will not seat properly. If this is suspected, merely wiggle the tube in the keg to dislodge the bung core. One trick that can be useful is that a dab of keg lube on the threads of the dip tube helps to prevent leakage.

When changing CO₂ cartridges it is very important to be sure that the cartridge is empty or the cartridge housing can fly off quickly. Another concern is that cartridges, when vented in an uncontrolled way, can produce intense cooling potentially resulting in frost bite on any skin touching the cartridge. To be sure that the cartridge is empty, operate the pressure-controlling device before attempting to change the cartridge.

Finally, cleaning the taps is usually a matter of running hot water through the dip tube and valve system. Disassembly of the dip tube, spout and valve can be done for a more complete cleaning as necessary.

Mini-kegs have had their problems in the past, but with the many equipment options now available to homebrewers for equipping and managing these systems, they can be a reliable and enjoyable way to dispense homebrew. Given their convenient size and portability, I expect that they will enjoy widespread acceptance in the home brewing world.

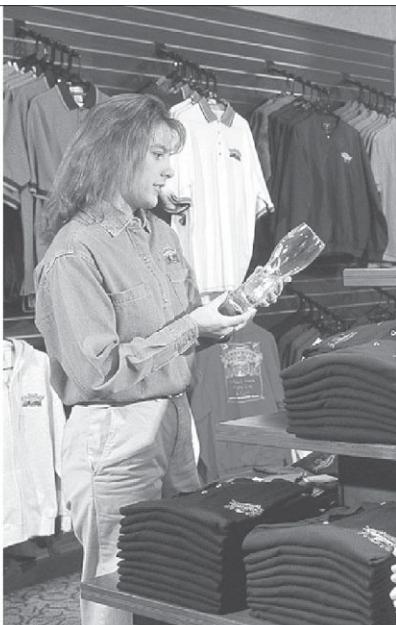
Dan Listermann's college brewing was a total failure, but he still gave it another shot 13 years later and it changed his life. Two years after he began brewing he was manufacturing an improved bottle filler and three years later he quit his day job as a Manufacturing / Quality Engineer to make brewing equipment full time. In 1995, he founded a homebrew shop and he is now working toward a brewpub at the store's site.



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Lauter Dynamics, Part 2: Design Priorities Based on Fluid Flow Studies

By John Palmer and Brian Kern

In the last issue of *Zymurgy* we described our observations of dye flow through a simulated grain bed and concluded that false bottoms offer more uniform flow characteristics than pipe manifolds. We also concluded that pipe spacing and configuration had a significant effect on the uniformity of flow in a tun equipped with a pipe manifold. While useful, these conclusions do not quantify the differences between various designs. In this article, we set out to achieve such quantification so that homebrewers can select a system that best suits their desires.

In order to obtain quantitative measures to compare different lauter tun designs, we turn to the science of fluid mechanics, and mathematically model the fluid flow in a large number of different designs. There is a simple set of equations that governs fluid flow in porous media, such as a grain bed. We solve these equations for each lauter tun design and determine the flow velocity at every point in the grain bed (see Figure 1).

Knowledge of the flow velocity at every point tells us where the fluid flows in the system, and thus how much of the grain bed is over- or under-sparged. Flow non-uniformities definitely have an effect on the amount of sugar actually extracted from the grain bed. Once we know this effect, we can then determine the impact

of lauter design on the brewing efficiency. In our analysis, all the flow rates within the grain bed are compared against the rate of "optimal" flow for that system. We define the optimal flow to be the flow of a perfect system, where the flow is the same everywhere in the grain bed, all of the available sugar is extracted, and none of the grain is over-sparged—this would be the flow of a system with a "perfect" false bottom. This optimal flow may be different for each lauter tun design.

Lauter Tun Designs Modeled

We ran a large number of numerical models to examine the performance of different pipe manifold designs in rectangular lauter tuns. The models explored a wide range of design parameters:

- tun width (6, 8, 10 and 12 inches; 15.2, 20.3, 25.4 and 30.5 cm)
- grain bed depth (4, 6, 8, 10, and 12 inches; 10.2, 15.2, 20.3, 25.4 and 30.5 cm)
- the number of pipes used (1, 2, 3, 4, 5, and 6)
- the pipe spacing configuration ("edge," "even," and "balanced," See Figure 2)
- the pipe diameter (3/8, 1/2, and 3/4 inch; 0.95, 1.27 and 1.9 cm)
- the pipe slot orientation (up or down)
- the distance between the pipes and the floor (0, 1/8 and 1/4 inch; 0, 0.31 and 0.64 cm)

These parameters combined to produce 6,480 different configurations, each of which was analyzed in terms of the fraction of sugar extracted and uniformity of their fluid flow. For comparison, we also computed the fluid flow for a false bottom design.

The tun length (i.e. the long dimension, the direction that the pipes run) is omitted because it does not affect the flow. As long as the pipe manifold runs the entire length of the tun, and slots are cut everywhere along the length of the pipe, any slice along the length will have the same flow characteristics as any other slice. The tun width is the inside width of the tun. Also, the grain bed depth is only the depth of the grain bed, without regard to the amount of free water above the grains.

Analysis of Model Results

For every combination of parameters we tested we reduced all of the fluid flow infor-



Are You A Geek Too? *Zymurgy* is looking for contributions for the "For Geeks Only" section. If you have studied a particular area of brewing science using in-depth library research or experimental data and would like to see the results published here, let us know by contacting Ray Daniels at ray@aob.org or via the mail address listed in the masthead on page 2.

Table 1: Effect of Major Design Factors

Extracted Fraction	+/- Extr. Fraction	Over-sparged	+/- Oversp.	Variation from Baseline parameters
96.2%		10.7%		Baseline (See details below)
91.7%	-4.5%	22.8%	+12.1%	1 pipe instead of 2
97.8%	+1.6%	5.5%	-5.2%	3.3-inch pipe spacing (3 pipes instead of 2)
98.6%	+2.4%	4.5%	-6.2%	2.5-inch pipe spacing (3 pipes instead of 2)
98.9%	+2.7%	4.3%	-6.4%	2-inch pipe spacing (3 pipes instead of 2)
92.0%	-4.2%	22.7%	+12.0%	Edge pipe spacing configuration instead of balanced
94.5%	-1.7%	19.3%	+8.6%	Even pipe spacing configuration instead of balanced
97.0%	+0.8%	8.6%	-2.1%	10-inch bed depth instead of 8-inch

Table 2: Effect of Minor Design Factors

Extracted Fraction	+/- Extr. Fraction	Over-sparged	+/- Oversp.	Variation from Baseline parameters
96.2%		10.7%		Baseline (See details below)
95.2%	-1.0%	11.0%	+0.3%	Slots up instead of down
96.7%	+0.5%	8.4%	-2.3%	3/4-inch pipe instead of 1/2-inch
96.2%	+0.0%	10.9%	+0.2%	Pipes 1/4-inch off floor, instead of flush

The baseline tun is 10 inches [25.4 cm] wide, eight inches [20.3 cm] deep, and has two pipes of 1/2-inch [1.27 cm] diameter placed flush against the floor of the tun, slots facing down, in a balanced configuration (i.e. pipe-to-pipe spacing of five inches [21.7 cm]).

mation into four quantities: the extracted fraction, under-sparged volume, uniformly sparged volume, and over-sparged volume. (See www.beertown.org/magazines.htm for full definitions and calculation details). Because the extracted fraction and under-sparging measures are related, we generally only look at the extracted fraction and over-sparged quantities of each configuration as we seek to optimize performance.

By analyzing all the models in terms of these measurements, we were able to prioritize the design parameters. In descending order of importance, the major factors effecting lautering performance are:

- pipe-to-pipe spacing (less distance between pipes is better)
- wall-to-pipe spacing (the "balanced" configuration we define performs best)
- grain bed depth (deeper is better)

To illustrate these priorities, we list the effects of these parameters on the extract-

ed fraction and over-sparging for a "baseline" tun, in Table 1. An increase in extracted fraction and a decrease in over-sparged volume are performance improvements.

For a given tun width, increasing the number of pipes across the width of the tun decreases the pipe-to-pipe spacing. Interestingly, analysis of the models (see Figure 4) shows a nearly linear relationship between pipe spacing and extracted fraction, which peaks at a pipe-to-pipe spacing of about four times the pipe diameter. This relationship does not depend on the total width of the tun, only on the pipe-to-pipe spacing—in other words, a 12-inch (30.5 cm) wide tun with three balanced pipes shows the same performance as an 8-inch (20.3 cm) wide tun with two balanced pipes (both have a pipe-to-pipe spacing of four inches).

The other parameters had a minor influence on the performance of the tun design. The influence of these factors is given in

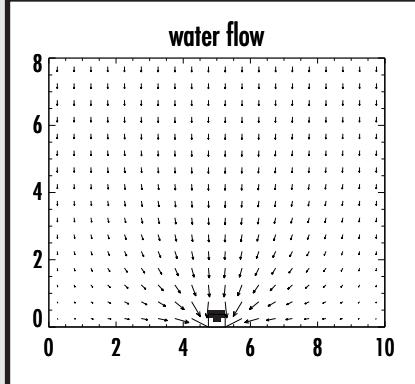
Table 2. In descending order of importance, the minor factors are:

- pipe slot orientation (slots facing down is better than facing up)
- pipe diameter (larger is better)
- distance from pipes to floor (smaller is better)

But What Do All These Numbers Really Mean?

When building a lauter tun, every brewer assigns different priorities to cost, complexity, and performance. Since the complexity grows with the number of pipes, it is ultimately up to the brewer to decide how good is good enough.

There are two general approaches a brewer might take when looking at all this data. One approach is to make the simplest mash tun and accept the resulting performance. For instance, for a 10-inch (25.4 cm) (wide x eight-inch [20.3 cm] deep tun with a single half-inch (1.27 cm) diameter pipe with slots pointing down, flush against the tun floor, we calculate a 92 percent extracted fraction, with 23 percent of the grain being over-sparged. The other approach is to build a more complicated tun for improved performance. One could choose a 10-inch (25.4 cm) wide by eight-inch (20.3 cm) deep tun with five balanced half-inch (1.27 cm) diameter pipes, giving an extracted fraction of 99

Figure 1

Vector plot of fluid flow in a 2-D slice of a 1-pipe manifold. One of every 16 points computed is plotted. The pipe is colored black, the slot in the pipe colored white.

Figure 2: Pipe spacing configurations

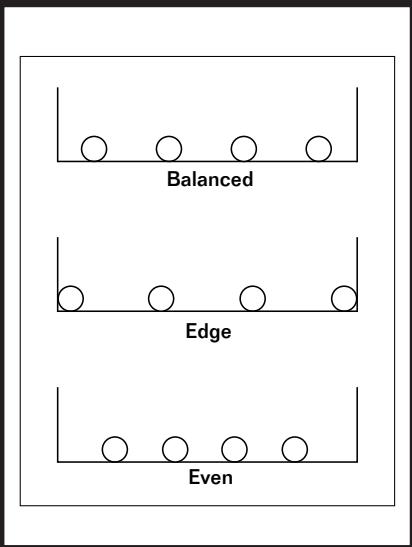
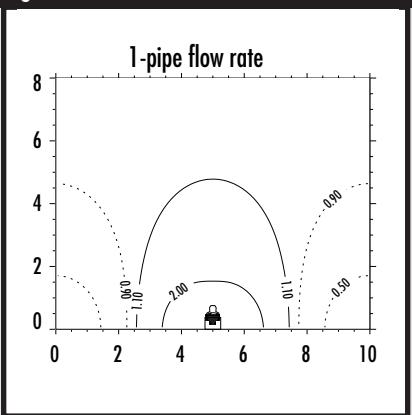


Figure 3



Contour plot of flow rates in a 2-D slice of a 1-pipe manifold, relative to optimal flow rate. Contours are at 0.50, 0.90, 1.10, and 2.00 x optimal flow rate. The region under the 1.10 contour is the over-sparged region—23 percent of the volume in this case.

percent, with only four percent of the grain over-sparged. In between these extremes, the baseline tun we described above has just two pipes, and gives a 96 percent extracted fraction with 11 percent of the grain over-sparged.

Summary

If one is in pursuit of the best performance from a pipe manifold lautering

Interestingly, analysis of the models shows a nearly linear relationship between pipe spacing and extracted fraction, which peaks at a pipe-to-pipe spacing of about four times the pipe diameter.

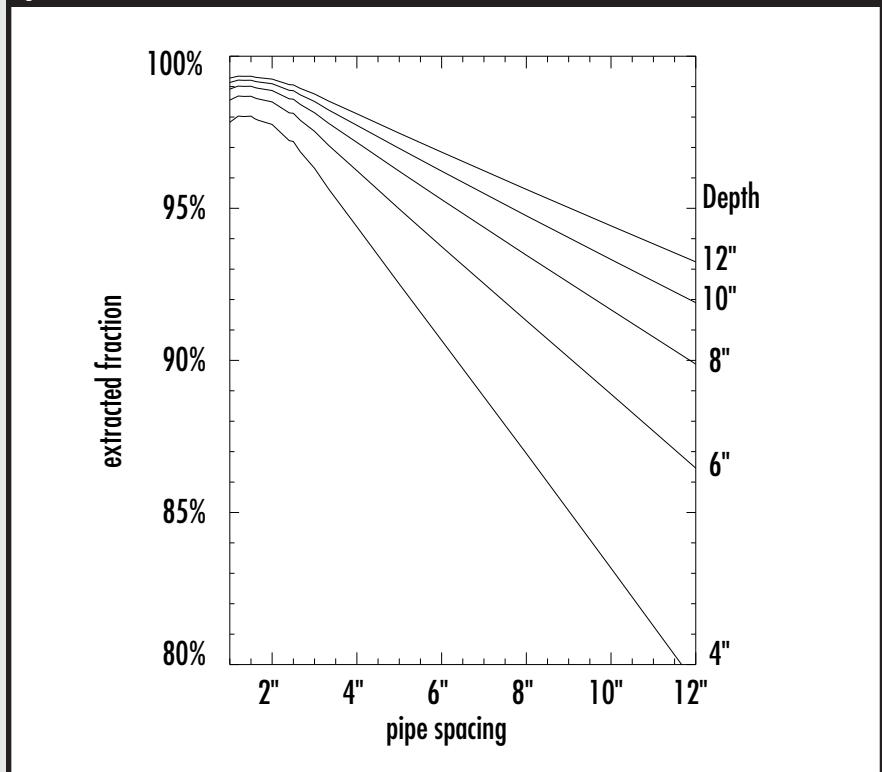
design, we can recommend a few simple rules to live by.

- Use enough pipes to have a pipe-to-pipe spacing of two to three inches, closer to two inches being better.
- Use a balanced spacing configuration to get the best results with the fewest pipes.
- Choose a tun that will give a good grain bed depth for your typical batch. We recommend eight to 12 inches (20.3 to 30.5 cm).
- Point your slots down, and lay your pipes as close to the tun floor as possible.

John Palmer is a metallurgical and welding engineer currently employed by 3M Corporation. He has been brewing for nine years and has written an online book for new homebrewers titled, *How to Brew*. It is located at www.howtobrew.com. John lives in Monrovia, CA.

Brian Kern is a member of L.A.'s Maltose Falcons homebrew club and a graduate student in astrophysics at Caltech. Brian only recently discovered that his tinkering and mathematical modeling skills would find a happy home in the world of homebrewing (at least in the geeky part)

Figure 4



Plot of extracted fraction versus pipe-to-pipe spacing. This plot incorporates the results from 120 models, with widths of 6, 8, 10, or 12 inches (15.2, 20.3, 25.4 and 30.5 cm), depths of 4, 6, 8, 10, or 12 inches (10.2, 15.2, 20.3, 25.4 and 30.5 cm), and 1-6 pipes. These models all used a balanced configuration, half-inch (1.27 cm) diameter pipes, with slots pointing down, flush against the tun floor.

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BY CHARLIE PAPAZIAN

Football and Beer

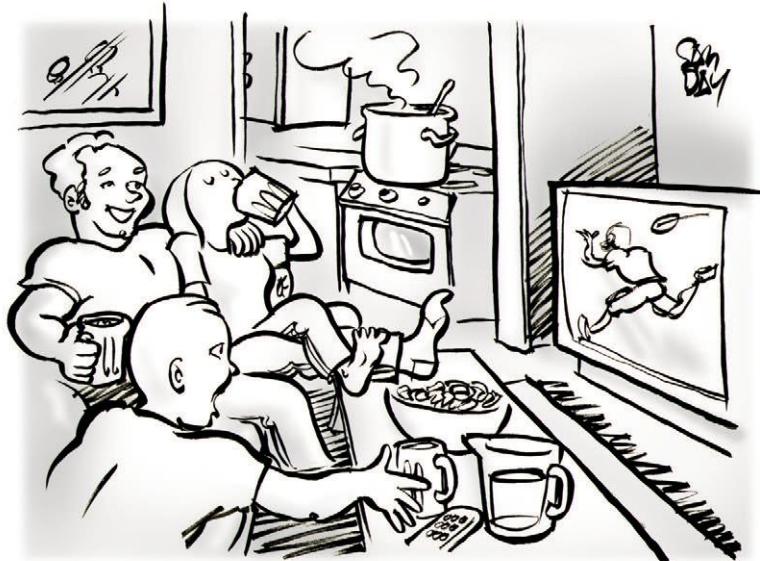
Okay, some of those commercials are pretty entertaining. Most of you know what I'm talking about: Football and beer commercials. Right? Ever been caught with a glass of beer watching football with your friends on a Sunday afternoon? Well, I won't speak for most of you, but I will speak for myself—Yep, you'll find me watching football, watching those beer commercials, chuckling to myself once when I see a good one. But I'll confide in you that after one viewing, the mute button gets hit during the commercials and I go and pour myself and my friends another homebrew. I get a great deal of satisfaction enjoying my homebrew during all those televised NFL football games.

And sometimes you'll find me orchestrating a batch of homebrew during the game. Damn the beer commercials—I got better things to do with my time. Like making homebrew.

Brewing beer during a three hour football game is quite easy. And you won't find yourself missing anything but the beer commercials. What a pity, eh?

Invite your friends over. Teach them how to make homebrew, have fun, relax and have a homebrew. Your home team will always score—I guarantee it. So how would one manage this? Here's a scenario to try, and try again, and then continue to refine. And by the time you've refined it, you've brewed a five gallon batch of beer once every two weeks—what's that—16 weeks of football and eight batches of beer. Okay, so go ahead and do me better. Brew every Sunday game day.

Your friends who have never brewed before bring the snacks. They arrive 10 to 15 minutes before kickoff. First things first. Have a homebrew and relax. You have all of your ingredients out in the brewing area—let's imagine the kitchen. The pot, the malt extract, the hops. (During the pre-game show and before your friends arrived,



you sanitized your fermenter.) You're ready for kickoff.

You watch the first quarter, just getting relaxed and into the mood. The first quarter ends and you add water to your brewpot. And turn on the heat. If you are using malt extract syrups you immerse the cans into a sink full of hot water. The second quarter begins. Have another beer and watch your team.

When the first beer commercial comes on during the second quarter, go into the kitchen and add the malt extract and hops. Now every two minutes or so you'll need to watch over the pot so it doesn't boil over.

It's halftime and your wort is boiling. Take the 15-minute break to savor the wonderful aroma of wort boiling. And enjoy the secret satisfaction of missing all those beer commercials. Hah.

This is a really simple recipe. Set your timer for 60 minutes of boil time. Keep the lid off your pot and adjust the heat to a rolling simmer. Get yourself a beer and go back to the second half kickoff. This is where it gets really difficult. Sometime late in the third quarter or early fourth quarter

the timer goes off. Someone needs to tear themselves from the game, put the lid on the pot and turn off the heat.

Enjoy the rest of the game. The beer is okay. Don't worry.

The fourth quarter is over and the game seems to be done, but the homebrew team is about to score in overtime. Pour a couple of gallons of cold water into the fermenter. Pour the hot wort through a strainer and into your fermenter. Add cold water to bring the volume to recipe specifications. Secure the top of the fermenter. Clean up. Everyone takes a timeout for five minutes and cleans the kitchen to better than its original state, thus establishing some good domestic ambiance for next week's batch. Done? Not quite. Your friends watch you add the yeast (which, if dried yeast, you began to rehydrate at the two minute warning). And off they go in anticipation of enjoying this batch of beer later in the season.

What about bottling or kegging? If you need help, then you'll begin to appreciate why halftime was really established. Have your beer racked and primed before game

HOMEBREW BITTERING UNITS (HBU_s)

are a measure of the total amount of bitterness in a given volume of beer. Homebrew Bittering Units can easily be calculated by multiplying the percent of alpha acid in the hops by the number of ounces. For example, if 2 ounces of Northern Brewer hops (9 percent alpha acid) and 3 ounces of Cascade hops (5 percent alpha acid) were used in a 10-gallon batch, the total amount of bittering units would be 33: $(2 \times 9) + (3 \times 5) = 18 + 15$. Bittering units per gallon would be 3.3 in a 10-gallon batch or 6.6 in a five-gallon batch, so it is important to note volumes whenever expressing bittering units.

INTERNATIONAL BITTERNESS UNITS (IBU_s)

are a measure of the bitterness of a beer in parts per million (ppm), or milligrams per liter (mg/L) of alpha acids. You can estimate the IBUs in your beer by using the following formula:

$$\text{IBU} = \frac{\text{ounces of hops} \times \% \text{ alpha acid of hop} \times \% \text{ utilization}}{\text{gallons of wort} \times 1.34}$$

Percent utilization varies because of wort gravity, boiling time, wort volume and other factors. Homebrewers get about 25 percent utilization for a full one-hour boil, about 15 percent for a 30-minute boil and about 5 percent for a 15-minute boil. As an example, 1 ounce of 6 percent alpha acid hops in five gallons of wort boiled for one hour would produce a beer with 22 IBUs:

$$\text{IBU} = \frac{1 \times 6 \times 25}{5 \times 1.34} = 22 \text{ IBUs.}$$

METRIC BITTERNESS UNITS (MBU_s) are equal to the number of grams of hops multiplied by the percent alpha acid.

time and it shouldn't take but a few beer commercials to bottle five gallons with a few friends.

What to brew? Let's keep it really high quality, let's keep it fun, let's keep it simple and once again, LET'S KEEP IT FUN. After all, you are going to inspire a few friends to homebrew themselves (It won't be long until they start bringing their own homebrew to the games. By the way, that's what the every other week is for—homebrew tastings during the beer commercials!

Here are four simple recipes to get you through the first half of the NFL football season of Sundays, starting the first Sunday in September and through October.

Touchdown Ale (Week 1-2)

An easy drinking, smooth ale that's in shape and ready to drink by week four.

Ingredients and recipe for 3.5 U.S. gallons (13 L)

- 1 4 lb can (1.8 kg) can of Muntons Yorkshire Bitter
 - 0.5 oz (14 g) English or American grown Golding hops (5 minute boiling)
 - 0.3 oz (8 g) Crystal, Goldings or Cascade hop pellets for dry hopping
 - 0.5 cup (120 ml measure) corn sugar (priming)
 - Dried yeast that comes with the malt product or your favorite ale yeast
- Original gravity: 1.038-1.042 (9.5-11.5° P)
 - Final gravity: 1.008-1.012 (2-4° P)
 - Approximate color: dark amber

Add the can of hopped malt extract to 1.5 gallons (5.7 L) of boiling water. Simmer at a slow rolling boil for 30 to 50 minutes. Add the half ounce of Golding hops during the final five minutes of boiling. Pour the boiled wort through a strainer into your sanitized fermenter, to which you've added 1.5 gallons (5.7 L) of ice cold water. Top off with more cold water to make 3.5 gallons (13 L) total volume. Add yeast when wort temperatures are between 65 and 75° F (18.5 to 24° C) according to your knowledge or per instructions. If using dried yeast rehydrate in one cup (250 ml) of 100° F (37.5° C) water for only ten minutes before adding to cooled wort.

After the first week of fermentation siphon off into a secondary fermenter. Add the 0.3 oz of dry hops. Let secondary for one more week before bottling with priming sugar. Age one week at room temperatures above 65° F (18.5° C) and begin to enjoy.

Gridiron Tripel (Weeks 3-4)

Okay, so this Belgian style strong ale is not quite up to the potency standards of a true Belgian Tripel, but hey, remember, you're wanting to drink this ale, watch football and brew beer for three hours. Better get brewing now so that when early November comes around you'll be ready for mid season excitement.

Ingredients and recipe for 4 U.S. gallons (15 L)

- 2 4 lb cans (3 kg) cans of Brewferm Tripel Ale malt extract kit
 - 0.5 lb (0.45 kg) dried light malt extract
 - 1 oz (28 g) Styrian Goldings, Mt Hood or Santiam hops (60 minute boiling)
 - 0.5 cup (120 ml measure) corn sugar (priming)
 - Dried yeast that comes with the malt product or your favorite Belgian strong ale yeast
- Original gravity: 1.058-1.064 (14.5-16° P)
 - Final gravity: 1.016-1.022 (4-5.5° P)
 - Approximate color: light amber

Add the dry malt extract, canned hopped malt extract and hops to 1.5 gallons (5.7 L) of boiling water. Simmer at a slow rolling boil for 30 to 60 minutes. Pour the boiled wort through a strainer into your sanitized fermenter to which you've added 1.5 gallons (5.7 L) of ice cold water. Top off with more cold water to make four gallons (15 L) total volume. Add yeast when wort temperatures are between 65 and 75° F (18.5 to 24° C) according to your knowledge or per instructions. If using dried yeast rehydrate in one cup (250 ml) of 100° F (37.5° C) water for only ten minutes before adding to cooled wort.

After the first week of fermentation, siphon off into a secondary fermenter. Continue to ferment in the secondary fermenter at room temperatures above 70° F (21.5° C) until fermentation activity has stopped and beer appears to be clearing. Bottle with priming sugar. Age one week at room temperatures above 70° F (18.5° C) before storing at cooler temperatures. Enjoy when clear and effervescent.

Time Out Nut Brown Ale (Weeks 5-6)

Let's take a breather from any the strong stuff and brew up a simply satisfying nut brown ale using a kit from down under in Australia where passed footballs spiral the other direction. A smooth brown ale with drinkability that would certainly go into overtime if necessary.

November 3 and 4 is National Teach A Friend to Homebrew Day

November 3 and 4 is National Teach A Friend to Homebrew Day. Be sure to plan a batch for Sunday November 4 and teach some friends to brew during the game. My team will be beating the Oakland Raiders on Monday Night, November 5. I'm planning on brewing some Mile High Monday Night Ale. What will you be brewing? A Cleveland Brown, a Giants Barley Wine, Red-Skinned Lager or a Viking Mead?

Ingredients and recipe for 3 U.S. gallons (11.5 L)

- 3.75 lb (1.7 kg) can of Coopers Nut Brown Ale malt extract kit
- 0.5 oz (14 g) American Cascade hops (30 minute boiling)
- 0.4 cup (100 ml measure) corn sugar (priming)
Dried yeast that comes with the malt product or your favorite English or American type ale yeast
- Original gravity 1.042-1.048 (10.5-12° P)
- Final gravity 1.010-1.016 (2.5-4° P)
- Approximate color: nut brown, of course

Add the can of hopped malt extract to one gallon (4 L) of boiling water. Simmer at a slow rolling boil for 30 minutes. Then add the hops and continue to boil for another 30 minutes. Pour the boiled wort through a strainer into your sanitized fermenter, to which you've added 1.5 gallons (5.7 L) of ice cold water. Top off with more cold water to make three gallons (11.5 L) total volume. Add yeast when wort temperatures are between 65 and 75° F (18.5 to 24° C) according to your knowledge or per instructions. If using dried yeast rehydrate in one cup (250 ml) of 100° F (37.5° C) water for only ten minutes before adding to cooled wort.

After the first week of fermentation, siphon off into a secondary fermenter. Let secondary for one more week before bottling with priming sugar. Age one week at room temperatures above 70° F (21.5° C). Chill on Saturday before the game and begin to enjoy during pregame warmups.

Mid Season Irish Style Stout (Weeks 7-8)

The Irish don't play football (with all due respect to Notre Dame) but you will need some of their luck if your team has any chance to get to the playoffs. The second half of the season is only a week or two away and you'll need some warm luck and good drinkability.

Ingredients and recipe for 3 U.S. gallons (11.5 L)

- 3.75 lb (1.7 kg) can of John Bull Stout Kit malt extract kit
- 0.5 oz (14 g) American Cascade hops (after all, this is American football we're watching) (30 minute boiling)
- 0.3 oz (8 g) Crystal, Goldings or Fuggles hop pellets for dry hopping.
- 0.4 cup (100 ml measure) corn sugar (priming bottles)
Dried yeast that comes with the malt product or your favorite English or American type ale yeast
 - Original gravity: 1.042-1.048 (10.5-12° P)
 - Final gravity 1.010-1.016 (2.5-4° P)
 - Approximate color: stout black

Add the can of hopped malt extract to one gallon (4 L) of boiling water. Simmer at a slow rolling boil for 30 minutes. Then add the hops and continue to boil for another 30

minutes. Pour the boiled wort through a strainer into your sanitized fermenter to which you've added 1.5 gallons (5.7 L) of ice cold water. Top off with more cold water to make three gallons (11.5 L) total volume. Add yeast when wort temperatures are between 65 and 75° F (18.5 to 24° C) according to your knowledge or per instructions. If using dried yeast, rehydrate in one cup (250 ml) of 100° F (37.5° C) water for only ten minutes before adding to cooled wort.

After the first week of fermentation siphon off into a secondary fermenter. Add the 0.3 oz of "dry hops." Let secondary for one more week before bottling with priming sugar. Age one week at room temperatures above 70° F (21.5° C). Chill on Saturday before the game and begin to enjoy with guacamole and chips and perhaps a dozen raw oysters or cold shrimps

p.s.: This isn't a heavy beer—anticipate a very drinkable, full flavored brew that you'll be glad to huddle around and plan for the second half of the season.

World traveler Charlie Papazian is the founding president of the Association of Brewers and the author of numerous best-selling books on homebrewing. His most recent books are *Home Brewers Gold* (Avon, 1997), a collection of prize-winning recipes from the 1996 World Beer Cup Competition, and *The Best of Zymurgy* (Avon, 1998) a collection of the best articles and advice from 20 years of *Zymurgy*.

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BY AMAHL TURCZYN

Here are the gold-medal recipes of the 2001 AHA National Homebrew Competition. There were 2,674 entries judged this year. The AHA sponsored first-round judging sites in Honeoye Falls, NY; Red Hook, NY (cider only); Austin, TX; Portland, OR; San Diego, CA; Shawnee, KS; Chicago, IL; and Toronto, Ontario, Canada. We could not have pulled off the competition without the help of the many volunteers. Special recognition goes to site directors Kevin Mudd, Gloria Franconi, Steve Wesstrom, Lynne O'Connor, Mike Rasmussen, Mark Wilson, Tyce Heldenbrand, Alberta Rager, Jeff Sparrow and Dennis Kinvig, John Tyler, Carl Townsend and Ron Cooper. Thanks also to the participating members of the BJCP for judge support, other judges, stewards and sorting.

The Homebrewer of the Year award, sponsored by Muntons p.l.c., goes to the brewer of the best beer in the NHC. The Homebrewer of the Year for 2001 is Steve Jones of the State of Franklin Homebrewers from Johnson City, TN. The Ninkasi Award goes to the brewer with the most second round points (6 for a gold, 3 for a silver, 1 for a bronze). The winner was Brian Cole of M.A.L.T., Black Mountain, NC. The generous sponsor of this award is the Boston Beer Company, which is AHA's biggest business supporter through sponsorships and advertising. The Meadmaker of the Year award, sponsored by White Winter Winery, once again went to Byron Burch of Santa Rosa, CA. The winner of Cidermaker of the Year was Jeff Carlson of the Prime Time Brewers of Grand Rapids, Michigan for the second year in a row. The Homebrew Club of the Year traveling trophy went to Q.U.A.F.F. of San Diego, CA. Sponsored by Cooper's Brew Products, this award goes to the homebrew club whose members accumulate the most points in the first and second rounds of the NHC and in the six annual AHA club-only competitions. Congratulations to all the winners.

American Lager



GOLD MEDAL

AHA 2001
NATIONAL
HOMEBREW
COMPETITION

RANDALL BARNES OF THE QUALITY ALE & FERMENTATION FRATERNITY (QUAFF), LA MESA, CA "JOHN BAXTER"
LIGHT/STANDARD/PREMIUM LAGER

Ingredients for 5 U.S. gal (19 L)

- 13.5 lb domestic six-row pale malt (6.13 kg)
 - 2 lb rice syrup (0.91 kg)
 - 0.5 lb 10°L crystal malt (0.23 kg)
 - 1 oz Tettnanger whole hops, 4.9% alpha acid (28 g) (60 min.)
 - 1 oz Saaz whole hops, 4.0% alpha acid (28 g) (60 min.)
 - 0.5 oz Saaz pellet hops, 4.0% alpha acid (14 g) (10 min.)
 - 1 cup White Labs South German lager yeast slurry (237 mL)
 - 4 Primetab tablets to prime
- Original specific gravity: 1.046
 - Final specific gravity: 1.008
 - Boiling time: 60 min.
 - Primary fermentation: 14 days at 50° F (10° C) in plastic
 - Secondary fermentation: one month at 36° F (2° C) in steel

Brewer's Specifics

Mash in grains at 122° F (50° C) for 15 minutes as a protein rest. Raise temperature to 158° F (70° C) gradually over the course of 45 minutes, then hold at that temperature for another 45 minutes. Sparge with 170° F (77° C) water.

Judges' Comments

"Very nice job! Just needs to be a little more dry. The bitterness is not enough to compensate for dry. Thanks."

"Very good, clean beer. But the bitterness level is too high—approaches a German or Dutch lager."

Runners-Up

Silver Medal: Richard Scott of the Down-river Brewers Guild, Dearborn, MI

Bronze Medal: Paul Guaracini, Keith McPhail, and Tom Blake of the Upstate New York Homebrewers Association, Fairport, NY

European Pale Lager



GOLD MEDAL

AHA 2001
NATIONAL
HOMEBREW
COMPETITION

Category award sponsored by St. Patrick's of Texas Brewer's Supply

DEAN FIKAR OF THE COWTOWN CAPPERS, FORT WORTH, TX "MADELINE'S DORTMUNDER" DORTMUNDER EXPORT

Ingredients for 6.75 U.S. gal (25.5 L)

- 13.5 lb Budvar undermodified malt (6.12 kg)
- 2.5 lb Belgian Munich malt (1.13 kg)
- 1 lb dextrin malt
- 0.7 oz Tettnanger whole hops, 7.5% alpha acid (19.8 g) (60 min.)
- 0.9 oz Hallertauer Mittelfruh whole hops, 4.2% alpha acid (25.5 g) (30 min.)
- 0.5 oz Tettnanger whole hops, 7.5% alpha acid (14 g) (5 min.)

0.5 oz Hallertauer Mittelfruh whole hops, 4.2% alpha acid (14 g) (2 min.)
Wyeast No. 2206 Bavarian lager yeast
Forced CO₂ to carbonate

- Original specific gravity: 1.058
- Final specific gravity: 1.013
- Boiling time: 90 min.
- Primary fermentation: 25 days at 48° F (9° C) in steel
- Secondary fermentation: 52 days at 32° F (0° C) in steel

Brewer's Specifics

Employ a decoction mash with rests at 134° F (57° C) for 10 minutes, 152° F (67° C) for 35 minutes, and 172° F (78° C) for 10 minutes.

Judges' Comments

"Very well made and well-balanced. Very close to style; I can't think of any improvements."

"Very nice, very drinkable beer. Good job—very refreshing."

Runners-Up

Silver Medal: Rick Georgette, West Bloomfield, MI

Bronze Medal: Rick Georgette, West Bloomfield, MI

Light Ale



GOLD MEDAL
AHA 2001
NATIONAL
HOMEBREW
COMPETITION

Category award sponsored by
Redhook Ale Brewery

VIRGIL WASKO OF THE DUNEDIN BREWERS GUILD, LARGO, FL [UNTITLED]
BLONDE ALE

Ingredients for 12 U.S. gal (45.4 L)

18 lb Pilsner malt (8.16 kg)	3.5 lb Saaz pellet hops, (71 g) (75 min.)
1 lb Munich malt (0.45 kg)	2 oz Saaz pellet hops, (57 g) (35 min.)
2 lb wheat malt (0.91 kg)	2.5 oz Saaz pellet hops, (71 g) (20 min.)
0.5 lb German dextrin malt (0.23 kg)	3 oz Saaz pellet hops, (85 g) (5 min.)

Wyeast No. 2278 Czech Pils lager yeast Forced CO ₂ to carbonate	• Original specific gravity: 1.051
• Final specific gravity: Unknown	• Boiling time: 75 min.
• Primary fermentation: 3 weeks at 55° F (13° C) in plastic	• Secondary fermentation: 2 months at 55° F (13° C) in plastic

Brewer's Specifics

Mash grains for 60 minutes at 155° F (68° C).

Judges' Comments

"A great beer. No flaws and right on style."
"Very well-balanced ale. Clean and pleasant, interesting enough to keep drinking."

Runners-Up

Silver Medal: Richard Nelson, Dover, MA

Bronze Medal: Paul Guaracini of the Upstate New York Homebrewers Association, Fairport, NY

Bitter and English Pale Ale



GOLD MEDAL
AHA 2001
NATIONAL
HOMEBREW
COMPETITION

Category award sponsored by
Anderson Valley Brewing

JOHN GREER, NEWARK, DE
"DR. SMART'S 007 ESB"
ENGLISH PALE ALE

Ingredients for 20 U.S. gal (75.7 L)

37 lb British two-row pale malt (16.78 kg)	3.5 lb British 60L crystal malt (1.59 kg)
3.5 lb demerara sugar (1.59 kg)	

4 oz English Fuggle pellet hops, 5% alpha acid (113 g) (90 min.)	0.5 lb black malt (0.23 kg)
4 oz English Fuggle pellet hops, 4.5% alpha acid (135 g) (90 min.)	4 oz English East Kent Goldings whole hops, 5.8% alpha acid (113 g) (15 min.)
15 oz demerara sugar (425 g) to prime	15 oz demerara sugar (425 g) to prime
White Labs WLP002 English ale yeast	White Labs WLP002 English ale yeast
• Original specific gravity: 1.058	• Original specific gravity: 1.058
• Final specific gravity: 1.015	• Final specific gravity: 1.015
• Boiling time: 90 min.	• Boiling time: 90 min.
• Primary fermentation: 8 days at 68° F (20° C) in glass	• Primary fermentation: 8 days at 68° F (20° C) in glass
• Secondary fermentation: 80 days at 68° F (20° C) in steel	• Secondary fermentation: 80 days at 68° F (20° C) in steel

Brewer's Specifics

Mash grains using a step-infusion mash schedule with rests at 108° F (42° C), 140° F (60° C), 158° F (70° C) and 170° F (77° C). Dissolve sugar in wort before beginning of boil.

Judges' Comments

"Excellent beer. Very drinkable."
"Very drinkable, good balance."

Runners-Up

Silver Medal: Jack Sykes of the Kansas City Bier Meisters, Overland Park, KS

Bronze Medal: Joe Buchan of the Quality Ale & Fermentation Fraternity (QUAFF), San Diego, CA

Scottish Ale



GOLD MEDAL
AHA 2001
NATIONAL
HOMEBREW
COMPETITION

Category award sponsored by
Brewers Resource

ROB BECK OF THE KANSAS CITY BIER MEISTERS KANSAS CITY BIER MEISTERS, KANSAS CITY, MO
"YES DEAR REDEAUX"
EXPORT 80/-

Ingredients for 5 U.S. gal (19 L)

11.5 lb Muntons Maris Otter pale malt (5.22 kg)
2 lb DWC aromatic malt (0.91 kg)
1 lb DWC 30° L caramel malt (0.45 kg)
1 lb DWC 60° L caramel malt (0.45 kg)
2 oz DWC chocolate malt (57 g)
1 oz roast barley (28 g)
1 oz Weyermann Rauch malt (28 g)
1 oz East Kent Goldings whole hops, 5.3% alpha acid (28 g) (48 min.)
Wyeast No. 1728 Scottish ale yeast
Forced CO₂ to carbonate

- Original specific gravity: 1.075
- Final specific gravity: 1.030
- Boiling time: 100 minutes
- Primary fermentation: 14 days at 59° F (13.9° C) in glass
- Secondary fermentation: 15 days at 61° F (16° C) in glass
- Tertiary fermentation: 37 days at 30° F (-1° C) in glass

Brewer's Specifics

Mash grains for 10 minutes at 140° F (60° C). Raise to 158° F (70° C) and hold for 90 minutes. Mash out at 176°F (80° C) for 10 minutes. Remove two quarts (1.89 L) first runnings and boil until reduced by one half, then proceed with sparge and boil.

Judges' Comments

"Good clean beer. Good example of style. Needs a slight amount more bitterness to balance sweetness.."

"Nice and malty with a toffee finish, but a little too sweet. (More hops?) Tasty brew."

Runners-Up

Silver Medal: Pete and Aimee Devaris of the Great Northern Brewers, Juneau, AK
Bronze Medal: Ken Johnson of the Kearney Area Brewers, Boring, OR

American Pale Ale



GOLD MEDAL

AHA 2001
NATIONAL
HOMEBREW
COMPETITION

Category award sponsored by

BJ's Pizza Grill and Brewery

**STEVE BAGLEY AND MILAN MCVAY,
MEDINA, OH**
"CENTENNIAL PALE ALE"
AMERICAN PALE ALE

Ingredients for 5 U.S. gal (19 L)

7 lb. Maris Otter pale malt (3.18 kg)
2 lb DWC Munich malt (0.91 kg)
0.5 lb Durst wheat malt (0.23 kg)
1.5 oz Crystal pellet hops, 5.5% alpha acid (43 g) (60 min.)
0.5 oz Crystal pellet hops, 5.5% alpha acid (14 g) (15 min.)
1 oz Crystal pellet hops, 5.5% alpha acid (28 g) (2 min.)
0.33 oz Centennial pellet hops, 11% alpha acid (85 g) (dry)
Wyeast No. 1056 American ale yeast
0.75 cup corn sugar (177 mL) (to prime)

- Original specific gravity: 1.053
- Final specific gravity: 1.014
- Boiling time: 60 minutes
- Primary fermentation: 7 days at 67° F (19° C) in glass
- Secondary fermentation: 21 days at 67° F (19° C) in glass

Brewer's Specifics

Mash grains at 150° F (66° C) for 90 minutes.

Judges' Comments

"Good hop presence with a grapefruit hint (I like this.) A good example of APA!"

"Great beer! Good job expressing American hops. Very close to SNPA. Keep it up!"

Runners-Up

Silver Medal: Bill Wright, Juneau, AK
Bronze Medal: Mickey & Vi Walker, Prairie Homebrewing Companions, Fargo, ND

India Pale Ale



GOLD MEDAL

NINKASI AWARD
WINNER

AHA 2001
NATIONAL
HOMEBREW
COMPETITION

Category award sponsored by

Pyramid Breweries, Inc.

**BRIAN COLE OF THE MOUNTAIN ALE & LAGER TASTERS (MALT),
BLACK MOUNTAIN, NC**
"HOWLIN' WOLF IPA"
INDIA PALE ALE

Ingredients for 7 U.S. gal (26.5 L)

76 % Schrier two-row pale malt
5 % DWC Munich malt
5 % melanoidin malt
5 % 30° L crystal malt
5 % Schrier wheat malt
2 % flaked barley
2 % Victory malt
1 oz Chinook pellet hops, 13.2% alpha acid (28 g) (110 min.)
2 oz Columbus pellet hops, 14% alpha acid (57 g) (10 min.)
2 oz Centennial pellet hops, 10.6% alpha acid (57 g) (10 min.)
1.5 oz Centennial pellet hops, 10.6% alpha acid (43 g) (10 min.)
1.5 oz Cascade pellet hops, 5.6% alpha acid (43 g) (10 min.)
Wyeast WLP002 English ale yeast
Forced CO₂ to carbonate

- Original specific gravity: 1.074
- Final specific gravity: 1.024
- Boiling time: 110 minutes
- Primary fermentation: 14 days at 65° F (18° C) in glass
- Secondary fermentation: 30 days at 45° F (7° C) in steel

Brewer's Specifics

[Grain bill is divided into percentages because Cole does parti-gyle mashes.] Mash grains at 154° F (68° C) for 80 minutes.

Judges' Comments

"A strong hoppy beer with a good nose and good taste. Could use a little more malt in the flavor. Perhaps a tad more bit-

terness. Nevertheless a very pleasurable beer to drink."

"Excellent beer. Good balance and good use of hops. I'd like a touch of caramel to balance, but no complaints."

Runners-Up

Silver Medal: Antoinette Hodges of the Quality Ale & Fermentation Fraternity (QUAFF), Carlsbad, CA

Bronze Medal: Ken Zuzack of the Summer Hill Brewers, Rising Sun, MD

Kolsch and Altbier



GOLD MEDAL

NINKASI AWARD WINNER

AHA 2001
NATIONAL
HOMEBREW
COMPETITION

Category award sponsored by Northwestern Extract

BRIAN COLE OF THE MOUNTAIN ALE & LAGER TASTERS (MALT), BLACK MOUNTAIN, NC
"OH DE COLOGNE"
KOLSCH

Ingredients for 7.5 U.S. gal (28.39 L)

88 % DWC Pilsner malt
7 % Schreier Munich malt
5 % Schreier wheat malt
1.75 oz Mt. Hood pellet hops, 4.4% alpha acid (50 g) (60 min.)
0.5 oz Liberty pellet hops, 3.7% alpha acid (14 g) (5 min.)
White Labs WLP029 German Ale/Kolsch yeast
forced CO₂ to carbonate

- Original specific gravity: 1.048
- Final specific gravity: 1.014
- Boiling time: 90 minutes
- Primary fermentation: 5 days at 66° F (19° C) in glass
- Secondary fermentation: 30 days at 45° F (7° C) in steel

Brewer's Specifics

[Grain bill is divided into percentages because Cole does parti-gyle mashes.] Mash grains at 150° F (66° C) for 60 minutes.

Judges' Comments

"Nice impression of style. I like the bitterness, but it lingers a bit long to be truly refreshing."

"Good beer. The hop bitterness is the only real problem. Not a serious problem, but kept it from being 'spot on.'"

Runners-Up

Silver Medal: Michael McNally, Webster City, IA

Bronze Medal: Al Schichler of the Upstate New York Homebrewers Association

- Tertiary fermentation: 9 months at 33° F (1° C) in steel

Brewer's Specifics

Mash in at 127° F (53° C) for 25 minutes. Raise mash temperature to 155° F (68° C) and hold for 60 minutes. Raise mash temperature to 168° F (76° C) and hold for five minutes.

Judges' Comments

"OK beer. Try more Vienna in the grist, use O₂ absorbing caps and avoid air in bottling. Also avoid quick drops in fermentation temperature-use a diacetyl rest."

"A well-made example."

Runners-Up

Silver Medal: Jack Kephart of the Brew Rats, Akron, OH

Bronze Medal: Shane Mock, Fort Wayne, IN

Brown Ale

GOLD MEDAL

AHA 2001
NATIONAL HOMEBRE
COMPETITION

Category award sponsored by Alternative Beverage

STEVE BAGLEY, MEDINA, OH
"STEVE'S WICKED ALE"
AMERICAN BROWN ALE

Ingredients for 5 U.S. gal (19 L)

6 lb Maris Otter pale malt (2.72 kg)
1 lb DWC Munich malt (0.45 kg)
2 lb DWC 30(L caramel malt (0.91 kg)
1 lb DWC 60(L caramel malt (0.45 kg)
0.25 lb Durst wheat malt (0.11 kg)
1 oz Horizon pellet hops, 11% alpha acid, (28 g) (60 min.)
1 oz Cascade hops, 5.5% alpha acid, (28 g) (15 min.)
1 oz Centennial hops, 11% alpha acid, (28 g) (2 min.)
1 oz Centennial hops, 11% alpha acid, (28 g) (dry)

Wyeast No. 1056 American ale yeast	6.6% alpha acid (28 g) (0 min.)	22 lb Belgian Pilsner malt (10 kg)
0.75 c. corn sugar (177 mL) to prime	Wyeast No. 1084 Irish ale yeast	1 lb German 75° L crystal malt (0.45 kg)
<ul style="list-style-type: none"> Original specific gravity: 1.058 Final specific gravity: 1.018 Boiling time: 90 minutes Primary fermentation: 7 days at 65° F (18° C) in glass Secondary fermentation: 21 days at 65° F (18° C) in glass 	Forced CO ₂ to carbonate	1 lb Scottish 40°L crystal malt (0.11 kg)
	<ul style="list-style-type: none"> Original specific gravity: 1.118 Final specific gravity: 1.038 Boiling time: 6 hours Primary fermentation: 14 days at 62° F (17° C) in glass Secondary fermentation: 30 days at 60° F (16° C) in glass Tertiary fermentation: 1+ years at 50-70° F (10-21° C) in glass 	0.25 lb Special B malt (2.27 kg)
		1 oz Chinook pellet hops, 11.14% alpha acid (28 g) (90 min.)
		1.25 oz Centennial pellet hops, 10.5% alpha acid (35g) (90 min.)
		2 oz Centennial plug hops, 10.5% alpha acid (57 g) (60 min.)
		1 oz Cascade plug hops, 6% alpha acid (28 g) (60 min.)
		0.5 oz East Kent Goldings plug hops, 5% alpha acid (14 g) (60 min.)
		0.5 oz Phoenix pellet hops, 9% alpha acid (14 g) (60 min.)
		0.5 oz Phoenix pellet hops, 9% alpha acid (14 g) (steep)
		Wyeast No. 1056 American ale yeast
		Forced CO ₂ to carbonate

Brewer's Specifics

Mash grains at 155° F (68° C) for 60 minutes.

Judges' Comments

"Nice example-hops definitely stick out, but with just a hint of malt for contrast. I thought the finish could be just a touch drier for style, but I liked it as it is."

"A good beer, no doubt a good recipe."

Runners-Up

Silver Medal: Ken Celski Downriver Brewers Guild, Temperance, MI

Bronze Medal: Ray Lewis Upstate New York Homebrewers Association , Livonia, NY

English and Scottish Strong Ale



GOLD MEDAL

HOMEBREWER OF THE YEAR

AHA 2001
NATIONAL
HOMEBREW
COMPETITION

**STEVE JONES OF THE
STATE OF FRANKLIN HOMEBREWERS,
JOHNSON CITY, TN
"HUNTER'S MOON OLD ALE"
OLD ALE**

Ingredients for 5.5 U.S. gal (20.82 L)

- 25 lb Beeston Maris Otter pale malt (11.34 kg)
- 1 lb 55(L crystal malt (0.45 kg)
- 4 oz East Kent Goldings whole hops, 6.6% alpha acid (113 g) (60 min.)
- 2 oz East Kent Goldings whole hops, 6.6% alpha acid (28 g) (15 min.)
- 2 oz East Kent Goldings whole hops,

Brewer's Specifics

Mash grains for 90 minutes. at 150° F (66° C). Raise to 168° F (76° C) and hold for 10 minutes. Sparge to collect 10 gallons (37.85 L), boil until reduced to 6.5 gallons (24.6 L).

Judges' Comments

"A very big and delicious English-style Old Ale. The intense malty sweetness needs a little more bitterness to balance. This beer should continue to improve as it ages. A beer to be proud of!"

"Excellent Old Ale. I'd like to sip it by a fire on a cold evening."

Runners-Up

Silver Medal: Mark Densel of the Quality Ale & Fermentation Fraternity (QUAFF), Ocean-side, CA

Bronze Medal: Philip Leonard and Pamela Klifar of the Kansas City Bier Meisters, Overland Park, KS

Barley Wine and Imperial Stout



GOLD MEDAL

AHA 2001
NATIONAL
HOMEBREW
COMPETITION

*Category award sponsored by
Anchor Brewing Co.*

**TOM WOLF OF THE MALTOSSE FALCONS
HOMEBREWING SOCIETY, VALENCIA, CA
"OLD SMOKEY"
AMERICAN BARLEY WINE**

Ingredients for 6 U.S. gal (22.71 L)

- Original specific gravity: 1.099
- Final specific gravity: 1.020
- Boiling time: 2 hrs.
- Primary fermentation: 2 weeks at 65° F (18° C) in glass
- Secondary fermentation: 2 months at 65° F (18° C) in glass

Brewer's Specifics

Mash grains for 30 min. at 104° F (40° C). Raise temperature to 132° F (56° C) and hold for 30 minutes. Raise to 151° F (66° C) and hold for 30 minutes.

Judges' Comments

"Very nice beer-good balance. Personally, I like more hop aggressiveness in this style."

"Could use some hop aroma for this style."

Runners-Up

Silver Medal: Ken Johnson of the Kearney Area Brewers, Boring, OR

Bronze Medal: John Tyler of the East Enders

European Dark Lager



GOLD MEDAL

AHA 2001
NATIONAL
HOMEBREW
COMPETITION

*Category award sponsored by
Briess Malting Company*

**GREG & LIZ LORTON OF QUALITY ALE &
FERMENTATION FRATERNITY (QUAFF),
CARLSBAD, CA
"SCHWARZBIER"
SCHWARZBIER**

Ingredients for 3 U.S. gal (11.36 L)

6 lb German Pilsner malt (2.72 kg)

8 oz chocolate malt (227 g)

4 oz black malt (113 g)

2 oz flaked oats (57 g)

1 oz Tettnanger pellet hops, 4.9%
alpha acid (28 g) (50 min.)

White Labs German lager yeast

0.5 c. corn sugar (117 mL) to prime

- Original specific gravity: 1.054
- Final specific gravity: 1.016
- Boiling time: 70 minutes
- Primary fermentation: 6 days at 60° F (16° C) in glass
- Secondary fermentation: 23 days at 55° F (13° C) in glass

Brewer's Specifics

Mash grains at 150° F (66° C) for 60 minutes.

Judges' Comments

"Very good job. All key style characteristics are represented."

Runners-Up

Silver Medal: Tom Miklinevich and John Watson, West Redding, CT

Bronze Medal: Ray Krystofik of Sultans of Swig, West Seneca, NY

Bock



GOLD MEDAL

AHA 2001
NATIONAL
HOMEBREW
COMPETITION

*Category award sponsored by
Washington Hop Commission*

**ROB BECK OF THE KANSAS CITY BIER
MEISTERS, KANSAS CITY, MO
"FESTBOCK"
MAIBOCK**

Ingredients for 5 U.S. gal (19 L)

9.5 lb DWC Pilsner malt (4.31 kg)

4 lb Vienna malt (1.81 kg)

1 lb Weyermann Cara-foam malt
(0.45 kg)

1 lb DWC wheat malt (0.45 kg)

0.5 lb flaked barley (0.34 kg)

0.75 oz N. Brewer whole hops, 8.5%
alpha acid (21 g) (60)

0.5 oz Hallertau Hersbrucker plug
hops, 3% alpha acid (14 g) (30
min.)

0.5 oz Hallertau Hersbrucker plug
hops, 3% alpha acid (14 g) (10
min.)

Wyeast No. 2206 Bavarian lager
yeast

forced CO₂ to carbonate

- Original specific gravity: 1.070
- Final specific gravity: 1.019
- Boiling time: 75 minutes
- Primary fermentation: 15 days at 49° F (9° C)
- Secondary fermentation: 8 days at 53-33° F (12-1° C)
- Tertiary fermentation: 58 days at 33° F (1° C)

Judges' Comments

"A great beer, but with some grainy roughness. If you didn't use a good Pils malt, do so. Also, knock the bittering hops down a bit. Good malt profile otherwise."

"Very pleasant beer, but hops a bit too prominent in the finish for style. I've tasted hoppiest maibocks, but this is more like an Oktoberfest."

Runners-Up

Silver Medal: Jerome LeMahieu of the Trubmeisters, Port Washington, WI

Bronze Medal: Steven Olson, Kyle Loos, Bob Packwood, and Keith Akstulewicz of the Urban Knaves of Grain (UKG), Menasha, WI



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Porter



GOLD MEDAL

AHA 2001
NATIONAL
HOMEBREW
COMPETITION

Category award sponsored by Deschutes Brewery, Inc.

**MIKE RIDDLE AND JONATHON DEEDS,
NAPA, CA**
**"PORTERUS ROBUSTUS"
ROBUST PORTER**

Ingredients for 10 U.S. gal (37.8 L)

- 16 lb British two-row pale malt (7.26 kg)
- 2.5 lb crystal malt (1.13 kg)
- 2 lb chocolate malt (0.91 kg)
- 1.25 lb black patent malt (0.57 kg)
- 0.5 lb roast barley (0.23 kg)
- 1 lb wheat malt (0.45 kg)
- 1 lb dextrin malt (0.45 kg)
- 2 oz N. Brewer whole hops, 7.4% alpha acid (57 g) (60 min.)
- 2 oz N. Brewer whole hops, 7.4% alpha acid (57 g) (30 min.)
- 1.5 oz Goldings whole hops, 5.3% alpha acid (43 g) (15 min.)
- 1 oz Goldings whole hops, 5.3% alpha acid (28 g) (3 min.)
- Wyeast No. 1056 American ale yeast
- 8.2 oz corn sugar (232 g) to prime
 - Original specific gravity: 1.071
 - Final specific gravity: 1.021
 - Boiling time: 90 minutes
 - Primary fermentation: 14 days at 67° F (19° C) in glass
 - Secondary fermentation: 8 days at 67° F (19° C) in glass

Brewer's Specifics

Mash grains at 154° F (68° C) for 90 minutes.

Judges' Comments

"Only major flaw in this beer is subtle nose and excessive carbonation-nice job."

"Nice beer. No major flaws. Could be more complex."

Runners-Up

Silver Medal: Bob Thompson of the Temecula Valley Homebrewers Association, Murrieta, CA

Bronze Medal: Bob Kauffman of Hop Barley & the Alers, Lafayette, CO

Stout



GOLD MEDAL

AHA 2001
NATIONAL
HOMEBREW
COMPETITION

Category award sponsored by Brew & Grow

**JOHN TIERNEY, PRIME TIME BREWERS,
ROCKFORD, MI**
**"JERI'S STOUT"
FOREIGN EXTRA STOUT**

Ingredients for 5 U.S. gal (19 L)

- 4 lb Muntons dark dry malt extract (1.81 kg)
- 3 lb Muntons light dry malt extract (1.36 kg)
- 0.5 lb 40° L crystal malt (0.23 kg)
- 0.5 lb roasted barley (0.23 kg)
- 0.5 lb black malt (0.23 kg)
- 0.25 lb chocolate malt (0.11 kg)
- 2.5 oz Kent Goldings pellet hops (71 g) (60 min.)
- 0.5 tsp Fermax yeast nutrient (2.5 mL)
- Wyeast No. 1084 Irish ale yeast
- 0.75 c. corn sugar (177 mL) to prime
 - Original specific gravity: 1.064
 - Final specific gravity: [unknown]
 - Boiling time: 60 minutes
 - Primary fermentation: 14 days at 68° F (20° C) in glass
 - Secondary fermentation: 25 days at 68° F (20° C) in glass

Brewer's Specifics

Steep grains in 2 gal. (7.57 L) 155° F (68° C) for minutes. Remove grains and sparge with .75 gal. (2.8 L) water. Bring wort to boil and add dry malt extract and brown sugar.

Judges' Comments

"Overall an excellent effort. You might play with the hops a little on this one. Try

Magnum for bittering if you haven't already. I'd drink this one all day."

"Very pleasant dark, strong, malty beer. Balanc could be improved with extra hop bitterness, but very drinkable as it is."

Runners-Up

Silver Medal: Richard McLaughlin Quality Ale & Fermentation Fraternity (QUAFF), San Diego, CA

Bronze Medal: Marc Hayden of Strange Brew, Sherwood, OR

Wheat Beer



GOLD MEDAL

AHA 2001
NATIONAL
HOMEBREW
COMPETITION

Category award sponsored by Wieckse Witte/Fischer Beverages

**MARC HAYDEN OF STRANGE BREW,
SHERWOOD, OR**
**"BIG WHEATIE"
WEIZENBOCK**

Ingredients for 10 U.S. gal (37.85 L)

- 18 lb wheat malt (8.16 kg)
- 6 lb pale malt (2.72 kg)
- 1 lb 60° L caramel malt
- 0.25 lb roasted wheat malt
- 0.25 chocolate malt
- 0.5 oz Hallertauer whole hops (14 g) (60 min.)
- 1 oz Tettnanger whole hops (28 g) (60 min.)
- 0.5 oz Hallertauer whole hops (14 g) (45 min.)
- 0.5 oz Tettnanger whole hops (14 g) (45 min.)
- Wyeast No. 3068 Weihenstephan Wheat ale yeast
- Forced CO₂ to carbonate

- Original specific gravity: Unknown
- Final specific gravity: Unknown
- Boiling time: 60 minutes
- Primary fermentation: 12 days at 62° F (17° C) in glass
- Secondary fermentation: 21 days at 62° F (17° C) in glass

Brewer's Specifics

Employ a two-hour decoction mash with a saccharification rest at 152° F (67° C).

Judges' Comments

"Very nice Weizenbock-original gravity may be high as alcohol overwhelms rather than enhances."

"This is a very nice beer. Well made and aged appropriately. If the CO₂ was a little higher and a little yeast remained, it would improve the overall flavor."

Runners-Up

Silver Medal: Dean Fikar of the Cowtown Cappers, Fort Worth, TX

Bronze Medal: Cas Koralewski, Toledo, OH

Strong Belgian Ale



GOLD MEDAL
AHA 2001
NATIONAL
HOMEBREW
COMPETITION

Category award sponsored by
New Belgium Brewing Co.

TOM MIKLINEVICH AND LLOYD GIARDINO, WEST REDDING, CT
"STILL DREAM BELIEVER"
STRONG DARK BELGIAN ALE

Ingredients for 5 U.S. gal (19 L)

15 lb Golden Promise two-row pale malt (6.81 kg)
0.25 lb roasted barley (0.11 kg)
0.5 lb German wheat malt (0.23 kg)
1 lb German Munich malt (0.45)
0.25 lb Special B malt (0.11 kg)
0.25 Belgian biscuit malt (0.11 kg)
6 oz Belgian aromatic malt
3 lb amber dry malt extract (1.36 kg)
0.75 oz Saaz whole hops, 3.1% alpha acid, (21 g) (90 min.)
0.625 oz Perle whole hops, 8% alpha acid, (17.7 g) (90 min.)
1.5 oz New Zealand Hallertau whole hops, 6.9% alpha acid, (43 g) (60 min.)
Wyeast No. 3787 Trappist High Gravity ale yeast
Forced CO₂ to carbonate

- Original specific gravity: 1.093
- Final specific gravity: 1.027
- Boiling time: 90 minutes
- Primary fermentation: 15 days at 68° F (20° C) in glass
- Secondary fermentation: 30 months at 68° F (20° C) in glass

Brewer's Specifics

Mash grains at 150° F (66° C) for 120 minutes.

Judges' Comments

"Just a beautiful example of the style. Extremely complex. Like the great Trappist ales, it changes in the glass. If anything, I'd like more Belgian yeast character. I would keep entering this beer unless you drink it first."

"Kudos! Wonderful recipe/beer. I feel the Belgian characteristics have been lost, but not really a flaw."

Runners-Up

Silver Medal: Noel Blake of the Oregon Brew Crew, Portland, OR

Bronze Medal: Marc Kullberg of Urban Knaves of Grain, Lisle, IL

Belgian and French Ale



GOLD MEDAL
AHA 2001
NATIONAL
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COMPETITION

Category award sponsored by
Manneken-Brussels Imports, Inc.

CARL MELISSAS OF COVERT HOPS SOCIETY, WOODSTOCK, GA
"GAWAIN'S GRAND CRU"
SPICED BELGIAN SPECIALTY ALE

Ingredients for 5 U.S. gal (19 L)

10 lb DWC Pilsner malt (4.54 kg)
1 lb wheat malt (0.45 kg)
4 oz aromatic malt (113 g)
4 oz 30L caramel malt (113 g)
20 oz clear candi sugar (567 g) (45 min.)
8 oz orange blossom honey (43 g) (60 min.) (1 min.)

- Original specific gravity: 1.093
- Final specific gravity: 1.027
- Boiling time: 90 minutes
- Primary fermentation: 15 days at 68° F (20° C) in glass
- Secondary fermentation: 30 months at 68° F (20° C) in glass
- Tertiary fermentation: 45 days at 50° F (22° C) in glass
- Original specific gravity: 1.080
- Final specific gravity: 1.013
- Boiling time: 90 minutes
- Primary fermentation: 5 days at 70° F (22° C) in glass
- Secondary fermentation: 45 days at 70° F (22° C) in glass
- Tertiary fermentation: 45 days at 50° F (22° C) in glass

Brewer's Specifics

"Use only spring water. Step mash in at 135° F, 15 min. at 145° F and 60 min. at 152° F. After knock-out, steep for 10 min., chill, oxygenate and pitch at least a 1 qt. starter of primary yeast. For dry hopping, only use whole hops at the lowest alpha acid possible. Don't bother opening bottles until at least four months—with the spices and dry hopping it needs time to mellow out."

Judges' Comments

"Excellent beer. Nice complexity. I enjoyed this a lot. The sweet and sour finish with the balanced spicing was delish."

"Well done! Complex—reminds me almost of a Saison & Orval mixed. Keep up the good work."

Runners-Up

Silver Medal: Scott Douglas of the Impaling Alers, Black Diamond, WA
Bronze Medal: Jim Post, Newtown, CT

Lambic & Belgian Sour Ale



GOLD MEDAL

AHA 2001
NATIONAL
HOMEBREW
COMPETITION

*Category Sponsored by
The Beverage People*

**HARRISON GIBBS OF PACIFIC GRAVITY,
WILLIAMSBURG, VA**
"BRUGELS LAMBIC"
UNBLENDDED STRAIGHT LAMBIC

Ingredients for 10 U.S. gal (37.91 L)

- 14 lb Belgian two-row pale malt (6.35 kg)
 - 6 lb German wheat malt (2.72 kg)
 - 6 oz aged UK Kent Goldings whole hops (170 g) (90 min.)
 - Wyeast No. 1056 American ale yeast
 - Wyeast Lambic blend
 - Brewers Resource Brettanomyces
 - Brewers Resource Pediococcus
 - corn sugar (to prime)
 - 2 c. corn sugar (473 mL) to prime
- Original specific gravity: 1.052
 - Final specific gravity: 1.005
 - Boiling time: 90 minutes
 - Primary fermentation: 3 months at 75° F (24° C) in plastic
 - Secondary fermentation: 10 months at 50-65° F (10-18° C) in glass

Brewer's Specifics

Mash at 120° F (49° C) and hold for 20 minutes. Raise to 145° F (63° C) and hold for 90 minutes.

Judges' Comments

"Just a beautiful example of the style. Extremely complex. Like the great Trappist ales, it changes in the glass. If anything, I'd like more Belgian yeast character. I would keep entering this beer unless you drink it first."

"Kudos! Wonderful recipe/beer. I feel

the Belgian characteristics have been lost, but not really a flaw."

Runners-Up

Silver Medal: Noel Blake of the Oregon Brew Crew, Portland, OR
Bronze Medal: Marc Kullberg of Urban Knaves of Grain, Lisle, IL

Fruit Beer

GOLD MEDAL

AHA 2001
NATIONAL HOMEBREW
COMPETITION

Category Sponsored by Steinbart Wholesale

**JOHN ADKISSON AND CHARLES SCOTT
OF THE RILLITO CREEK BREW CLUB,
TUCSON, AZ**
"KOTBUSSER"
WHEAT BEER WITH PEACHES

Ingredients for 17.5 U.S. gal (66.24 L)

- 15 lb German Pilsner malt (6.8 kg)
- 8 lb German wheat malt (3.63 kg)
- 3.25 lb flaked oats (1.47 kg)
- 12 lb 60/40 wheat malt extract (5.44 kg)
- 10 oz Lyle's Golden Syrup (283 g)
- 8 oz honey (227 g)
- 10 lb peaches (4.54 kg) per 5 gallon batch, in secondary
- 4 oz Tettnanger pellet hops, 4.4% alpha acid (113 g) (60 min.)
- 2 oz Tettnanger pellet hops, 4.4% alpha acid (57 g) (30 min.)
- 4 oz Tettnanger pellet hops, 4.4% alpha acid (113 g) (5 min.)
- 2 oz Saaz pellet hops, 3.7% alpha acid (57 g) (5 min.)
- White Labs German Ale/Kolsch yeast
- Forced CO₂ to carbonate

- Original specific gravity: 1.052
- Final specific gravity: 1.005
- Boiling time: 90 minutes
- Primary fermentation: 3 months at 75° F (24° C) in plastic
- Secondary fermentation: 10 months at 50-65° F (10-18° C) in glass

Brewer's Specifics

Mash grains at 152° F (67° C) for 60 minutes. Sparge, dissolve sugars and extract in

wort, and commence boil. Peel and pit peaches, freeze them, then add to secondary fermenter and run fermented beer onto pulp.

Judges' Comments

"Apricot comes out well, but finishing astringency really detracts-did you put skins or pits in the fermenter? Also it may just have been on the pulp too long."

"Very drinkable, thirst quenching beer. Carbonation level detracts, and acid seems high at first, but I could drink a pint of this beer."

Runners-Up

Silver Medal: Brian Ignatin of Pacific Gravity, Playa Del Ray, CA
Bronze Medal: Steve McKenna of the Urban Knaves of Grain (UKG), Naperville, IL

Herb/Spice/Vegetable Beer



GOLD MEDAL

AHA 2001
NATIONAL
HOMEBREW
COMPETITION

*Category award sponsored by
Marin Brewing Co.*

JOHN WATSON, SOUTHBURY, CT
[UNTITLED]
BELGIAN ARTISAN ALE WITH WOODRUFF

Ingredients for 5 U.S. gal (19 L)

- 10 lb Belgian 2-row pale malt (4.54 kg)
- 3 lb wheat malt (1.36 kg)
- 2 lb flaked wheat (0.91 kg)
- 0.5 lb dextrin malt (0.23 kg)
- 0.75 lb rice hulls (0.34) to aid sparge
- 1 oz Goldings whole hops, 6.1% alpha acid (28 g) (75 min.)
- 0.5 oz Styrian Goldings whole hops, 5% alpha acid (14 g) (30 min.)
- 0.5 oz whole fresh woodruff (14 g) (10 min.)
- 1 oz Styrian Goldings whole hops (28 g) (steep)
- Wyeast No. 3944 Belgian Wit ale yeast
- 1 c. candi sugar (237 mL) to prime

- Original specific gravity: 1.062
- Final specific gravity: 1.010
- Boiling time: 75 minutes
- Primary fermentation: 7 days at 68° F (20° C) in glass
- Secondary fermentation: 40 days at 68° F (20° C) in glass

0.625 oz Centennial whole hops, (17.7 g) (80 min.)
 0.625 oz Centennial whole hops, (17.7 g) (10 min.)
 Wyeast No. 2124 Bohemian lager yeast
 Forced CO₂ to carbonate

Brewer's Specifics

Mash grains for 90 minutes at 152° F (67° C).

Judges' Comments

"Nice warming effect, very drinkable in front of a nice fire."

"Interesting beer. It is almost like a witbier without the coriander."

"Enjoyable to drink."

Runners-Up

Silver Medal: Peter Zien and Harold Gulbransen of Quality Ale & Fermentation Fraternity (QUAFF), San Diego, CA

Bronze Medal: Dan Kasen of the Chicago Beer Society, Chicago, IL

Smoke Flavored Beer



GOLD MEDAL

AHA 2001
 NATIONAL
 HOMEBREW
 COMPETITION

*Category award sponsored by
 Alaskan Brewing Co.*

**R. MICHAEL HANNON,
 COLUMBIA FALLS, MT**
"RAUCHBIER"
CLASSIC RAUCHBIER

Ingredients for 5 U.S. gal (19 L)

- 15 lb Moravian Pilsner malt (6.8 kg)
- 3 lb 8° L Moravian Munich malt (1.36 kg)
- 1 lb smoked Hugh Baird carastan malt (0.45 kg)
- 0.66 lb British 55° L crystal malt (0.3 kg)
- 0.33 lb Briess 30° L crystal malt (0.15 kg)

- Original specific gravity: 1.060
- Final specific gravity: [unknown]
- Boiling time: 80 minutes
- Primary fermentation: 12 days at 50° F (10° C) in glass
- Secondary fermentation: 60 days at 40° F (4° C) in glass

Brewer's Specifics

Mash grains at 100° F (38° C) for 30 minutes. Raise temperature to 140° F (60° C) and hold for 30 minutes. Raise temperature to 155° F (68° C) and hold for 30 minutes.

Judges' Comments

"Very nice-tops good brew."

"Very nice Rauchbier. A little more Rauch malt would put it closer to Schlenkerla (which is also a much darker beer). But very nice."

Runners-Up

Silver Medal: Steve Schmitt of the Great Northern Brewers , Anchorage, AK

Bronze Medal: Peter Zien of Quality Ale & Fermentation Fraternity (QUAFF), San Diego, CA

Specialty, Experimental and Historical Beer



GOLD MEDAL

AHA 2001
 NATIONAL
 HOMEBREW
 COMPETITION

*Category award sponsored by
 National Honey Board*

RICHARD DOBSON OF THE RED RIVER BREWERS, GAINESVILLE, TX
"HAM & SWISS ON THIS"
RYE AND WHEAT BEER WITH CARAWAY
 Ingredients for 5 U.S. gal (19 L)

\$119 US
(shipping/handling)



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- 5 lb German malted malt (2.27 kg)
- 4 lb US six-row malt (1.81 kg)
- 1 lb malted rye (0.45 kg)
- 0.25 oz caraway seeds (7 g), boil 15 min.
- 0.25 oz caraway seeds (7 g), dry, in secondary
- 2 oz Willamette whole hops, 5.0% alpha acid (57 g) (45 min.)
- 1 oz Mt. Hood whole hops, 4.9% alpha acid (28 g) (2 min.)
- Wyeast No. 1056 American ale yeast
- Forced CO₂ to carbonate

- Original specific gravity: 1.050
- Final specific gravity: 1.014
- Boiling time: 90 minutes
- Primary fermentation: 7 days at 60° F (16° C) in glass
- Secondary fermentation: 10 days at 45° F (7° C) in glass

Brewer's Specifics

Mash grains at 122° F (50° C) for 30 minutes. Raise temperature to 151° F (66° C) and hold for 60 minutes. Mash out at 168° F (74° C) for 15 minutes.

Judges' Comments

"The rye and hops really go together well. In fact, the hops take the sweet edge off the rye. Could be a little bigger."

"The beer reflects bready notes from the yeast. Overall, the beer is very drinkable, but it lacks a balance of flavors. Otherwise, very nice job."

Runners-Up

Silver Medal: Tyce Heldenbrand of Quality Ale & Fermentation Fraternity (QUAFF), San Diego, CA

Bronze Medal: Tony Kuligowski, Evergreen Park, IL

Traditional Mead



GOLD MEDAL

AHA 2001
NATIONAL HOMEBREW
COMPETITION

Category award sponsored by Martin's Honey Farm and Meadery

GREG & LIZ LORTON OF QUALITY ALE & FERMENTATION FRATERNITY (QUAFF), CARLSBAD, CA
"ORANGE BLOSSOM MEAD (STILL)" SWEET VARIETAL HONEY MEAD

Ingredients for 3 U.S. gal (11.36 L)

12 lb orange blossom honey (5.44 kg)
2 tsp citric acid (9.9 mL)
2 packs Lalvin Champagne yeast

- Original specific gravity: 1.148
- Final specific gravity: 1.037
- Boiling time: 15 minutes
- Primary fermentation: 53 days at 65° F (18° C) in glass
- Secondary fermentation: 81 days at 65° F (18° C) in glass

Brewer's Specifics

Boil must for 15 minutes.

Judges' Comments

"Good effort. Very drinkable mead. Orange blossom is such a lovely variety."

"Good mead. The orange blossom character is more dominant in the aroma—should be a little more in the flavor."

Runners-Up

Silver Medal: Mark Densel of Quality Ale & Fermentation Fraternity (QUAFF), Ocean-side, CA

Bronze Medal: Bert Belote of the Summer Hill Brewers, Colora, MD

Fruit Mead

GOLD MEDAL

AHA 2001
NATIONAL HOMEBREW
COMPETITION

Category award sponsored by Bacchus & Barleycorn

IRENE & RICHARD TOMORY OF GREAT NORTHERN BREWERS, ANCHORAGE, AK
"CROWBERRY/CHOKECHERRY MEAD"
MEDIUM MELOMEL WITH CROWBERRIES AND CHOKECHERRIES

Ingredients for 6 U.S. gal (22.7 L)

2 gal crowberries (7.57 L)
1 gal chokecherries (3.79 L)
8 lb clover honey (3.63 kg)
2 tsp acid blend (9.9 mL)
Wyeast Sweet Mead yeast

- Original specific gravity: [unknown]
- Final specific gravity: [unknown]
- Boiling time: n/a
- Primary fermentation: 2 months at 68° F (20° C) in glass
- Secondary fermentation: 1 month at 70° F (21° C) in glass

Brewers' Specifics

Boil the fruit pulp to sterilize, then add honey and dilute to six gallons.

Judges' Comments

"I'm not familiar with crowberry. I think I'd back off a little on the fruit to allow some of the honey to come through."

"The tartness makes it a sipper in moderation, but extra credit for the complexity. Nutrient quality detracts (from excess berries or nutrient). More honey desired."

Runners-Up

Silver Medal: Kenneth Dodd and Tony Gonzalez of Brew Rats, Cerritos, CA

Bronze Medal: Christopher Toth of Quality Ale & Fermentation Fraternity (QUAFF), El Cajon, CA

Herb/Spice Mead & Braggot



GOLD MEDAL

MEADEMAKER OF THE YEAR

AHA 2001
NATIONAL
HOMEBREW
COMPETITION

Category sponsored by National Honey Board

BYRON BURCH, SANTA ROSA, CA, 2001 MEADEMAKER OF THE YEAR
"EPIPHANIAIC EXSPEARMINT"
MEAD WITH FRESH SPEARMINT

Ingredients for 5 U.S. gal (19 L)

18 lb clover honey (8.16 kg)
4 Tbs tartaric acid (59.1 mL)
1 Tbs malic acid (14.8 mL)
5 tsp stock Sodium Metabisulfite solution (after fermentation) (24.6 mL)
8 oz bruised spearmint leaves (227 g)
2 oz The Beverage People™ yeast nutrient for mead (57 g)
4 tsp acid blend (19.7 mL)
10 g dry Prise de Mousse wine yeast

- Original specific gravity: 26° Brix
- Final specific gravity: [unknown]
- Total Acid: 6.6.5%
- Boiling time: 5 min.

Brewer's Specifics

"Heat water until warm, turn off stove and stir in the honey until it is dissolved. Boil five minutes, skimming, and add nutrient and acid. Cool to room temperature. Sprinkle yeast on the surface, and stir in after 12 hours. Ferment two or three weeks. Place mint leaves in a mesh bag in a soda keg and rack mead on top; let stand at 15 psi for one week. Fine with Sparkaloid, add sulfites and let age four weeks."

Judges' Comments

"Beautiful presentation. Good honey expression. A tad sweet for medium and could use a touch of acid to reduce sweetness perception."

"Excellent."

Runners-Up

Silver Medal: Sue & Stu Thurmond , Kennesaw, GA

Bronze Medal: S. Zemo Holat of Urban Knaves of Grain , Batavia, IL

Cider



GOLD MEDAL

CIDERMAKER OF THE YEAR

AHA 2001
NATIONAL
HOMEBREW
COMPETITION

JEFF CARLSON
[UNTITLED]
CIDER

Ingredients for 5 U.S. gal (19 L)

5 gal. Robinette's Orchard early season fresh cider (19 L)

1 12 oz (340 g) can apple juice concentrate

1.5 c. lt. brown sugar (355 mL)

4.5 c. white cane sugar (1065 mL)

0.5 tsp grape tannin (2.5 mL)

2.5 tsp acid blend (12.3 mL)

liquid pectic enzyme

natural yeast

Forced CO₂ to carbonate

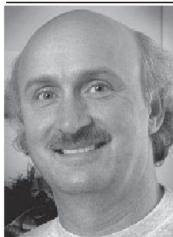
- Original specific gravity: 1.066
- Final specific gravity: 1.010
- Boiling time: n/a
- Primary fermentation: 4 weeks at 65° F (18° C) in glass
- Secondary fermentation: 5 months at 50° F (10° C) in glass

Runners-Up

Silver Medal: Marc Hayden of Strange Brew, Sherwood, OR

Bronze Medal: Wayne Beckerman of Hudson Valley HomeBrewers, Stone Ridge, NY

New Entrants



GOLD MEDAL

AHA 2001
NATIONAL
HOMEBREW
COMPETITION

*Category award sponsored by
Premier Malt Products*

**GORDON BOLAN OF BREWERS OF
SOUTH SUBURBIA (BOSS), JOLIET, IL
"MICHIGAN CHERRY MEAD"
CHERRY MELOMEL**

Ingredients for 5.5 U.S. gal (20.82 L)

16.5 lb wildflower honey (7.48 kg)

3.5 gal Swanson tart cherry juice

Lalvin 1118 Champagne yeast

(13.25 L)

- Original specific gravity: 1.178
- Final specific gravity: 1.018
- Boiling time: n/a
- Primary fermentation: 60 days at 70° F (21° C) in glass
- Secondary fermentation: 30 days at 70° F (21° C) in glass

Judges' Comments

"This is a wonderful beverage. I'd love to have some more of it."

"The fruit grows as the entry warms; a bit too sweet, almost cloying."

Runners-Up

Silver Medal: Ken Rhude of the Maltose Falcons Homebrewing Society , Castail, CA

Bronze Medal: Jeremy Appel Scioto, Olen-tangy, and Darby Zymurgists (SODZ), Gahanna, OH

Amahl Turczyn is the associate editor of Zymurgy magazine.



The advertisement features a cartoon character holding a large, coiled copper wort chiller. The text "Introducing..." is at the top, followed by "CHILLZILLA" in large letters, with "COUNTERFLOW WORT CHILLER" written below it. Three circular callouts provide product highlights: "Cools 5 Gallons in under 10 Minutes!", "Made of copper, so it won't rust!", and "Uses less water!". At the bottom, there is a black bar with white text: "For more information about CHILLZILLA™ and other unique homebrew product lines, contact GREAT FERMENTATIONS of Indiana." Below that is a large phone number "1-888-HME-BREW (463-2739)" and an email address "or e-mail us at anita@greatfermentations.com".

2001 AHA NATIONAL HOMEBREW COMPETITION WINNERS

Homebrewer of the Year

Steve Jones
Johnson City, TN

Though he has appreciated fine imports and microbrews for a long time, Steve Jones has only been homebrewing for about six years. Jones expressed an interest in it for several years before that, but not having a local supplier made it easy to put off. Then in 1995 his wife, Jeanne, brought him to an Asheville, NC homebrew supply store to pick out a birthday present. She didn't know then what a monster she had unleashed, but she does enjoy the fruits of his labor almost as much as he does.

Jones brewed using extract and specialty grains for a year and a half before advancing to all-grain. He joined the State of Franklin Homebrewers in 1996, and the camaraderie and fellowship of associating with fellow homebrewers has been most responsible for the advances in his brewing. He was elected president of the club in 1999. Jones has also been studying to become a BJCP judge, which he believes has helped him to make better beer.



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SAMUEL ADAMS®

Brian Cole started brewing in 1995 on the kitchen stove using malt extract, specialty grains and recipe kits from homebrew shops. He first tried all-grain brewing in 1998 and switched permanently to all grain in 1999. In 1998, he built three-tier gravity brewing system based on half barrel kegs. He now brews exclusively using the partigyle method, mashing 40 to 45 pounds (18 to 20.4 kg) of grain, producing two or three beers from the mash.

Cole was charter member and first President of the Mountain Ale and Lager Tasters (MALT) homebrew club in Asheville, NC. He began judging beer in 1998

Brian Cole
Black Mountain, NC

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Jones built his own brew system, as well as gadgets like a counter pressure bottling station, a temperature controlled fermentation chamber, and a recirculating keg cleaner. His favorite styles include milds, bitters, porters, and of course, old ales. He has begun brewing more lagers recently, including his first CAP during Big Brew this year.

Jones began entering the NHC in 1999 with four entries, and took a Gold Medal for a Scottish Export. Four entries in the 2000 NHC earned him a Bronze for a brown ale, and this year, with the same number of entries, he won the whole shooting match!

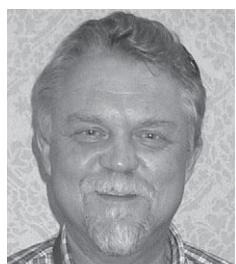
Meadmaker of the Year

Byron Burch
Santa Rosa, CA

Byron Burch is a past winner of the Association of Brewers' National Homebrew Competition, winning Homebrewer of the Year in 1986 and Meadmaker of the Year in both 1992 and 1994. For service to homebrewing, Burch was given the AHA Board of Advisors Recognition Award in 1990.

Burch is owner of a homebrewing and winemaking shop, The Beverage People, located in Santa Rosa, CA. He has taught brewing and winemaking classes at the local Junior College and sponsored National Homebrew Club of the Year Sonoma Beerocrats during their run of victory from 1986 to 1995. He has used his experience to further the hobby by helping with the Judge Certification Program, of which he is currently an honorary Master judge.

Burch's books *Quality Brewing*, 1974, and its successor; *Brewing Quality Beer*, written in 1986, helped fuel the homebrewing revolution. He has contributed clear and concise methods for both beginners and advanced brewers and been



Jeff Carlson
Grand Rapids, MI

Jeff Carlson has been making cider for about the last five years, at the rate of three or four five-gallon batches per year. A homebrewer since 1992, Carlson hadn't entered any contests since 1996, but since then has won 142 awards, including Cidermaker of the Year in 2000. His first national place was 1999 for an American brown ale, for which he won a bronze medal.

Carlson gets his juice from a local orchard called Robinette's. They change their blend from year to year, but this year's blend included a variety called

Cidermaker of the Year two years running

Tydaman Red, among others. Over the years, Carlson's recipe has changes very little; he uses the same source for the apple must, but varies the type and amount of sugar and acid. He started out making cider with wine yeasts, but for the past few years he's preferred to let the natural yeasts on the apples do the fermentation. He says the ciders come out a bit sweeter that way, but that is the way he and his friends prefer them. He has never had a problem with infections or acetic acid bacteria. He also used to use sulfites in his ciders, but stopped using them too, finding them unnecessary.

This year Carlson traveled to San Francisco for the MCAB finals, where he placed three beers, taking a first place and two seconds.



Ninkasi Award Winner of the Year

after passing the Beer Judge Certification Program (BJCP) exam, and is currently ranked as a BJCP National judge.

He has been a member of American Homebrewers' Association since 1996, and has taught many people to make and improve their beer and mead. Cole emphasizes anyone can learn to brew beer as good or better than many commercial beers. Although he makes more beer than he can drink (the surplus goes to friends and brewing competitions), Cole still buys high-quality, craft-brewed commercial beer. He has won more than 100 ribbons and medals in homebrew competitions nationwide.

According to Cole, the keys to brewing good beer are cleaning, sanitation, plenty of healthy yeast, and avoidance of oxidation. His favorite styles are hoppy and flavorful beers including IPA, any stout, American pale ale, ESB, and North German pilsner.



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WHITE WINTER Winery

rewarded by seeing a huge growth in the hobby—both in numbers of participants and in the quality of all products that are made today.

His winning mead was brewed with Clover Honey, fresh spearmint and The Beverage People's own Mead Nutrient, Prise de Mousse (EC1118) Wine Yeast and touches of tartaric and malic acid. Brewed as a traditional mead in a five gallon batch in the summer of 2000, the mead was fined and bottle conditioned early this year.

BY AMAHL TURCZYN

Anchor Liberty Ale

So what does Sam Adams have to do with Anchor Liberty? Well, if you remember your American history, you'll recall that Fritz Maytag, owner of San Francisco's Anchor Brewing Company, created Liberty Ale to commemorate an event that took place even further back in America's past: Paul Revere's ride. It was 1775, and Revere was riding from Boston to Lexington, to warn a few Revolutionary-minded types that British soldiers were coming to arrest them. He managed to avoid some of these soldiers at a roadblock along the way by doubling back; when he was sure he'd lost them, he continued North and on into Lexington, to the home of Jonas Clarke, where none other than Samuel Adams and compatriot John Hancock were staying. "The British are coming," has become a popular misnomer for Revere's warning cry; actually, he probably said something like, "The Regulars are coming," since technically, they were all still British subjects at the time. But at any rate, it was this pivotal event that Maytag chose to celebrate with his Liberty Ale, and his desire to create something distinctly American has led to a truly world-class beer.

Lately in the craft brewing sector, many people have begun to coin the phrase, "American India Pale Ale," and while the historical validity of the name is a bit confusing at best, lots of American brewers have been trying their hand at the old IPA style. Only they're using American hops and malt. There even is an American IPA category in the Great American Beer Festival. But Maytag did it first. If there ever was a beer more deserving of being called an American IPA, it's Anchor Liberty.

Pale gold in color, with the slightest hint of malt sweetness (especially as the beer warms), over six percent abv, a finely beaded, natural carbonation and acres of fresh



Cascade hop aroma, Liberty is a symphony for the beer lover's senses. So at last we arrive at the question: Is this zymurgical masterpiece unattainable for the homebrewer? Maybe, maybe not. But boy will we have fun trying to brew its equal.

Barley for the Anchor Brewery is grown in Northern California and Southern Oregon, where Anchor employees take an annual field trip to see where their raw ingredients come from. It is malted in Vancouver, Washington, just over the border from Portland, Oregon. So obtaining the same malt isn't too much of a challenge; if you can get your hands on Great Western Malting pale malt, you're off to a good start. Many cloners out there believe there is a little something else in the grain bill—dextrine, Vienna, even rye malt. Something to add just a bit more body, and round out the malt character of the beer. A light grade crystal malt would be my guess, though. Just a touch of 15 or 20L crystal malt seems to bring out a slight gold tinge and balancing mouthfeel that couldn't come from two-row alone.

Yeast character seems to come from a very clean ale strain with good attenuation even at lower temperatures. Some have guessed a British strain, but my luck has always been good with the old, reliable California ale, sometimes called "Chico ale,"

Anchor Liberty Clone

Recipe for 5 gallons (19 L)

- 10 lb Great Western two-row malt (4.54 kg)
- 8 oz 15° L crystal malt (227 g)
- 1 oz whole Northern Brewer hops, 8% alpha acid (28 g) (90 min)
- 1.5 oz whole Cascade hops, 5% alpha acid (43 g) (45 min)
- 1 oz whole Cascade hops, 5% alpha acid (28 g) (30 min)
- 1 oz whole Cascade hops, 5% alpha acid (28 g) (1 min)
- 2 oz whole Cascade hops, 5% alpha acid (57 g) (dry)
- Wyeast No. 1056 American ale yeast or White Labs California ale yeast
- 0.75 c corn sugar (180 mL), for priming

Brewer's specifics: Mash grains at 150° F (65° C) for 60 minutes. Sparge, commence boil, and add hops at indicated intervals. After a 90 minute boil, whirlpool and rack off of break material, then chill to 65° F (18.3° C), and pitch active yeast starter or slurry. Ferment at 60-62° F (16-17° C) for one week, then rack into conditioning vessel and add dry hops. Allow to remain on dry hops at 50-55° until yeast drops out. Bottle with corn sugar and allow to mature at 70° F (21° C) for an additional week or two.

Extract recipe: Steep crystal malt in 150° F (65° C) water for 20 minutes. Strain, add 7.5 lb (3.4 kg) Alexander's light malt extract, and 1.25 ounces (35 g) of Northern Brewer, then proceed with a one-hour boil. Add remaining hops at specified intervals. Finish as above.

- Boiling time: 90 minutes
- Original gravity: 1.058
- Finishing gravity: 1.013
- IBUs: 47



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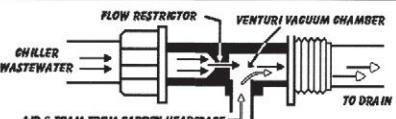
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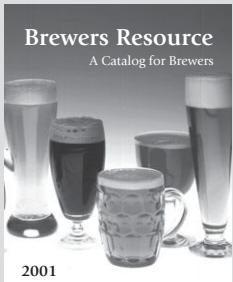
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strain. One of the reasons I'm going with the American yeast is its temperature flexibility. With an appropriate pitching rate, this strain is perfectly happy fermenting at 60-62° F (16-17° C), but if your basement or garage hasn't quite recovered from the heat of summer, and is up closer to 68° F (20° C), this yeast still won't give you too many problems in terms of esters or phenols. There are some brewers out there, believe it or not, who tend to cover up less-than-stellar beers under a big thick blanket of dry hops, but remember, the simpler and lighter the beer you brew, the more difficult it becomes to hide the flaws.

Hops are really where the artistry in this formulation come into play. Yes, Cascade hops aren't usually described in terms of their delicacy, but you still need to be discriminating in their quality. Anchor uses fresh, whole flower hops from the Yakima Valley, so there's no reason homebrewers shouldn't do the same. One could easily be convinced that Liberty is a single-variety hop beer, since it yells out Cascade in capital letters from the moment you open the bottle. But because the higher-alpha Northern Brewer hop is used in Anchor's other beers as a bittering hop, I'm of the opinion that they most likely add some of this variety early on, and let Cascade take center stage in the middle, late and dry additions.

Other than a relatively cool fermentation and a heavy-handed dry hopping, there's little reason to suspect that there are any unusual practices that come into play while brewing this beer. It's pretty straightforward. Again, keeping the malt character in the background means a fermentable wort, so lower mash temperatures are appropriate here. And you do want to go with bottle conditioning if you can help it, because the fine carbonation is really part of the elegance of the beer's presentation. Finally, this is a beer to be consumed quickly. Even with its higher alcohol and prolific hopping, three to four months is probably as long as you want to keep it around...not that that should present any sort of challenge!

Ahh, Liberty ale. Just the sort of beer that would do Sam Adams, Fritz Maytag, or any other Revolutionary proud.

Amahl Turczyn is the associate editor of Zymurgy magazine.

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—Ed.

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Extract Experiments (from page 12)

- 2 lb (907 gm) Briess organic pale two-row malt
- 0.5 lb (227 gm) Briess organic chocolate malt
- 0.5 lb (227 gm) Briess organic 60°L crystal malt
- 0.63 oz (18 gm) British organic Target hops 10.3% AA (boiled 60 minutes)
- 1 tsp (5 ml) Irish moss (boiled 15 minutes)
- Wyeast 1968 London ale yeast (XL sized pack)
- 0.66 cup (159 ml) corn sugar (boiling)

Brewing Procedure: Paul performed a mini-mash with grains in three quarts (2.8 L) water for 30 minutes in an oven at 153° F (67° C). He then drained off wort, and remashed with three quarts (2.8 L) water for 15 minutes at 153° F (67° C), then drained off wort and rinsed grains with three quarts (2.8 L) water at 170° F (77° C) collecting approximately two gallons (7.6 L) of SG 1.025 (6.3° P) wort. Paul brought the mini-mash wort to a boil, then boiled for 15 minutes, chilled and placed in a refrigerator overnight. The next day, Paul mixed the wort, extract and top-off water in the kettle for a full wort boil, and brought to a boil. He then added the hops and boiled for 45 minutes. Paul added his rehydrated Irish moss and boiled for an additional 15 minutes. After chilling with an immersion wort chiller, Paul aerated with an air stone and pitched the stepped up one liter (34 oz) starter of Wyeast London ale yeast.

Fermentation: Three days at 68° F (20° C) primary, three days at 68° F (20° C) secondary. OG: 1.047 (11.66° P); FG: 1.018 (4.58° P)

HURL Brewers' Evaluation: The team enjoyed this creamy and sweetish, roasty, chocolaty tasting beer. Ruby highlights showed through a dark but clear beer. The team found it very drinkable and on-style, with the possible suggested improvement of a bit more hops. This was the most full-bodied of the recipes the team brewed.

BURP BJCP Judges' Evaluation: "Sweet candy-fruit aroma with hint of root

beer essence. Sweet chocolaty flavor—could use more hop bitterness to balance. Flavor reminds me of Young's Double Chocolate Stout." "Nice head! Soft deep brown color. Roasty sweet malt." "This is a good recipe brewed well." "Could almost be a brown ale, but strong roast flavors bring it into style. No off-flavors, well-conditioned and well balanced."

The HURL brewers felt the experiment was successful and were pleased that they had brewed several tasty, 99 percent organic, and quite diverse beers from a base malt extract whose only drawback may have been its very versatility, which translated into neutrality in some of the recipes. The team was pleased and impressed by the wide variety of organic malts available, many of them also produced by Briess, as well as Weyermann of Germany.

One source of frustration was the relatively limited selection of organic hops available. Since so many styles of beer call for specific varieties, the team found making substitutions a challenge, and made choices mainly on alpha acid levels. It should be noted that there are several varieties of noble hops from Germany available that may have been better suited to recipes for German styles. Consensus on the team was that stronger demand is needed from homebrewers to make more varieties available in the marketplace. One positive sign is that Panorama Brewing Company founder Robert Wolaver has recently brokered a deal with a grower in Yakima Valley to grow what may be the first official source of organic hops in America.

Summing up one argument for brewing organic, BURP Judge coordinator Tom Cannon joked, "The only problem with the beer was there weren't enough chemicals in any of them."

Rob Hanson has been homebrewing for three years and is a member of the AHA, B.U.R.P., and H.U.R.L., a club he helped to found. He recently moved the Closet Brewery from Washington, DC to Cheverly, MD, where he lives with his wife, Katie. Katie is getting used to "the beer thing," and enjoys the occasional homebrewed IPA.

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Party Pig (from page 29)

enough pressure on the beer to dispense it through the push-button tap in the front of the Pig. As the volume of beer decreases, the pack continues to expand, filling the space left by the beer as it is drawn off. Neither the chemicals nor the gas they produce leave the pack, so they don't touch your beer and don't affect either its flavor or its carbonation level.

Pig Pros and Cons

There are several benefits to the Party Pig. First, it fits in most refrigerators, without removing shelves or making any modifications. That's something you can't say about a corny keg. Second, you don't need any extra apparatus. You can simply pick up the Pig and take it to a party or on a camping trip without worrying about the CO₂ tank you'd need with a corny keg or cartridges you might need with a mini-keg. Third, it's completely reusable. Just clean it out and repeat the process with a new pressure pack each time you fill it.

Of course, there are drawbacks to anything. The pressure packs cost about \$3.50 each, and the Pig only holds about 18 pints (8.5 L) of beer—about one case of bottled beer. Some users also say it tends to produce foam at the end, when the pressure pack is squeezing the beer along the sides of the Pig. The corny keg method is certainly more economical (after startup costs), but the convenience of the Pig is undeniable.

Many users own three, four, or even more Pigs. It's also in use at dozens of brewpubs, as sort of a super growler, as well as a number of Brew On Premise establishments.

When you buy the Party Pig kit, it comes with a holding tray and strap, and two pressure packs. You can also buy a hand pump to activate the pouch, an insulating blanket, and a foam cooler, along with other accessories.

Bill Riel of Victoria, BC, has been using the Pig for over two years, and is a big fan. "My only problem has been finding the pressure pouches locally," he says, "so I just order them by the case."

There also still seem to be a few areas where the Pig could be improved. "The gasket doesn't always create a perfect seal," according to Bill. He suggests using the rubber ring from a Mason jar, available in most supermarkets. "It's thicker, cheaper, the same size, and does a better job."

Removing the pouch after the Pig is empty can also be a chore, according to everyone I talked to. First, you have to puncture it, and the resulting pop can be so loud that it can really startle anyone nearby.

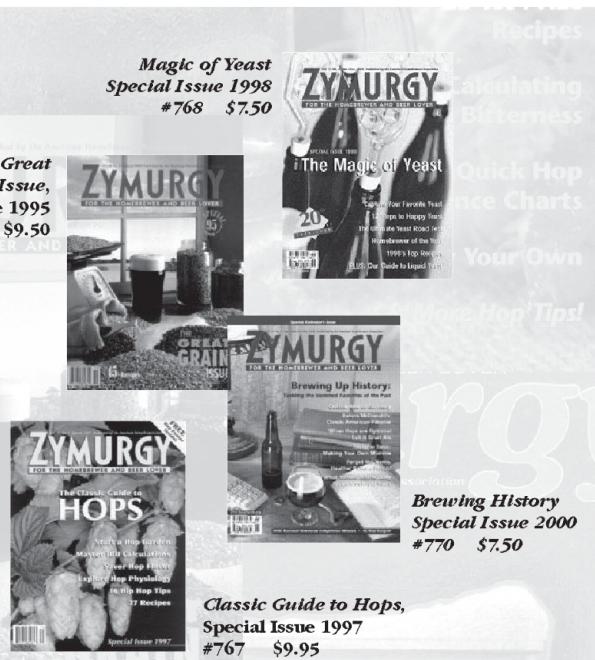
Another difficulty I heard from a few users involves activating the pressure pouch. Even using the hand pump supplied by Quoin, pumping the air pressure up in the Pig can be tricky. It's important to hold in the button on the dispensing tap very firmly in order to get the air in. Some users substitute carbon dioxide for the air. They recommend inserting a 3/8 inch diameter length of plastic tubing connected to a CO₂ tank into the valve, and applying about 20 psi of pressure until the pouch bursts.

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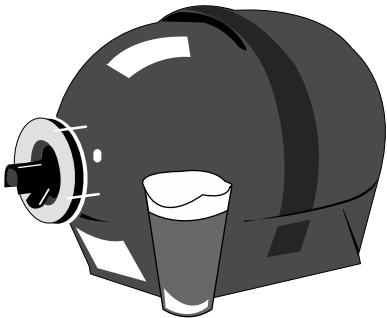
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I guess that proves the Pig's value better than any other testimonial I've seen. If people who own complete corny keg systems, complete with gas tanks, still like to use the Party Pig for its unique advantages, that speaks volumes about its worth.

On the other hand, when I asked Bill Riel if he would trade his cornies for Pigs, he answered with a resounding "No!" He loves his Pigs, and uses them all the time, but the corny keg system is "less work, cheaper, and better suited for lagers with higher carbonation levels."

Ron Morris, of Newport News, VA, is another long time Pig user, and says he has had consistent good experiences with them, although "getting the pouch out can be a pain."

One of the most interesting modifications I heard about for the Pig was from homebrew equipment manufacturer Dan Listermann. It's still under development, but he showed me a prototype that uses his PhilTap dispenser, originally designed for five liter mini-kegs, with a Party Pig. In Listermann's adaptation, the pressure pouch is replaced with a CO₂ cartridge. Dan says that this would allow the Pig to hold considerably more beer (nearly three gallons or 11.36 L). He also estimates that an entire Pig could be dispensed this way with only two eight-gram cartridges of CO₂.

For now, the bottom line is this: if the ease of storage, total portability, and completely self-contained aspects of the Party Pig appeal to you, then the associated costs are probably a minor consideration. People who use them seem to love them, and their popularity is continuing to grow.

Ed Westemeier (hopfen@malz.com) is a Master Beer Judge who lives in New Richmond, Ohio. He writes about beer, computers, and other things, and has been a homebrewer since 1987.

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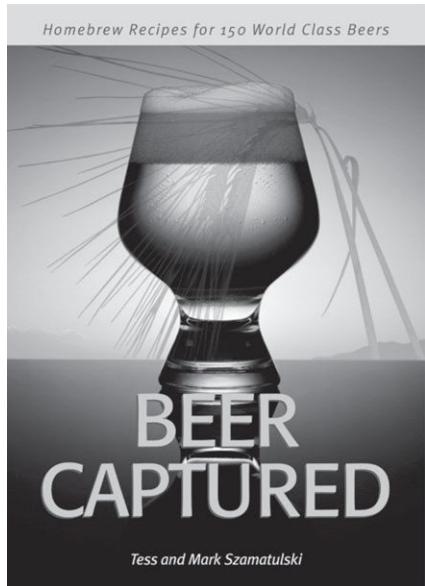
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Counterpressure (from page 37)

Once the beer is carbonated, I sanitize the number of bottles that I want to fill (plus two extras—one for covering the fill tube of the counterpressure filler between bottles and the other for drinking some of the beer while I'm bottling, a little reward for all of my hard work). After the sanitizer has dried, I wrap the top of each bottle with a small piece of sanitized aluminum foil and put the bottles in the freezer—the colder the bottle and the colder the beer, the less carbonation is lost during bottling because the solubility of CO₂ increases as the temperature decreases. I also run some disinfectant through my counterpressure filler (straight vinegar if the filler has not been used for a while, followed by an oxygen-scrubbing sanitizer, and finally some clean water to flush the system).

Finally, I fill the bottles. Here are the preliminary steps that I use. Please keep in mind that the operation may vary slightly based upon the filler that you are using.

- Connect the counterpressure filler to the CO₂ tank and to the keg of carbonated beer. Also connect the keg to the counterpressure filler. (Follow the directions of the manufacturer of the filler.)

- Close all valves (*gas in*, *gas out*, and *beverage in*) and turn on the CO₂.

- Put the fill tube inside of one of the empty, clean bottles and create a seal.

- Open the *gas in* valve to pressurize the empty bottle with CO₂.

- Slowly open the *gas out* valve so that gas begins to leave the empty bottle. This step sets the *gas out* valve at the proper aperture—open just wide enough to allow the bottle to fill but narrow enough to prevent foaming.

- Close the *gas in* valve.

I usually fill one bottle to purge any water from the filler and to test for foaming. I drink the "test" beer while bottling.

- Put the fill tube inside of an empty, clean bottle and create a seal.

- Open the *gas in* valve to purge the empty bottle with CO₂. (The *gas out* valve should still be open slightly.)

- Close the *gas in* valve.

- Open the *liquid in* valve. The beer should slowly flow into the bottle. If it begins to foam, close the *gas out* valve a lit-

tle more. If the beer does not flow into the bottle, carefully open the *gas out* valve slightly. Be patient—a slower fill results in less foaming (i.e., less of a mess) and loss of carbonation in the bottled beer—because agitation and turbulence will cause the CO₂ to escape from solution (the same reason you do not shake a beer bottle before opening it).

- When the beer level reaches about one-half inch from the lip of the bottle, close the *liquid in* valve and let the pressure slowly escape from the bottle via the *gas out* valve—one of the more expensive fillers

lot of beer on it while bottling) and running sanitizing solution through it, followed by clean water.

While the setup and operation of the counterpressure filler sound complicated when written down, they are in fact rather simple to execute. When you have put the filling equipment together and used it once, you will find that it is quick and easy to do so at anytime thereafter. Best of all, most counterpressure fillers are readily adaptable to different bottle sizes, allowing you to quickly fill a few bottles for a party, a gift or even a trip across country.

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Ed Wolfe, a National judge in the BJCP, has been homebrewing for nine years. He and his wife, Carol, have won bronze, silver and gold medals in the AHA National Homebrew Competition and a first place in the Mazer Mead Competition. When he's not homebrewing, Ed researches and teaches about the statistical analysis of ratings at Michigan State University.

“...most counterpressure fillers are readily adaptable to different bottle sizes”

with a pressure gauge comes in handy in this step. There may be slight foaming, depending on the carbonation level, temperature, and agitation of the beer.

- When the bottle is no longer pressurized, quickly but gently release the seal of the counterpressure filler on the bottle, put a clean cap on the bottle, and cap the bottle. An extra pair of hands is very handy in this step. Also, cover the fill tube with an empty bottle to prevent contamination while you are capping.

- Repeat steps one through six for each bottle.

When you are done, clean the counterpressure filler by rinsing it (you'll get a

Easier Bottling (from page 33)

lighting conditions, so it is hard to see the level in brown glass bottles.

Using filler tubes to bottle can help cut down on spillage and give more uniform fill heights. Plastic fill tubes cost less than five dollars. The stainless steel model runs about five times more, but is probably worth it in the long run, especially if you are brewing and bottling a lot of beer. There are a couple of ways to attach the filler tube. One way is to attach it to the end of the racking cane hose. The other way is to attach the filler tube to a hose that runs from a spigot in the bucket containing the beer/priming sugar mixture. Either way works fine. My friend, Frank Arrieta, uses his automatic dishwasher door as a tabletop for bottling. That way, any spills go into the dishwasher at the end and not on the floor. He says all he has to do is to lift the door up and any spilled beer flows back into the dishwasher!

8. AND TO CAP IT OFF....

Sealing the bottles after filling is the last laborious part of the bottling process. The two typical ways to bottle are with the normal



bottle cap method (sometimes called crowns). Alternatively, reusable Swing-top bottles also work well, provided the seals are in good shape. I've used both methods and I don't have a preference. The oxygen absorbing caps are worth the extra money if you plan on storing the beer for a long period of time. Otherwise, normal caps work fine if you go through the brew like I do. If I'm bottling myself, I like to set the caps on loosely, then cap them after I fill all of the bottles. I have to be careful, though. If I knock one over, it can set up a domino effect and then there is a real mess to clean up!

9. THE PERSONAL TOUCH

In addition to identifying the contents of each bottle, labeled homebrew makes a great gift for holidays and special occasions. With the label printing software programs available on personal computers these days, you are only limited by your own imagination. If you choose not to label every bottle, using a permanent felt tip marker on the lids is quick and easy way to identify the contents of the bottle. Without markings on bottles, it can become difficult to remember which batch was which, especially if the color of the beer is similar. If you plan on entering the beer in a competition, simply darken the entire lid to comply with the entry rules.

10. RELAX AND ENJOY!

As with most things in life, bottling can feel like work or you can make it fun. I choose for it to be the latter. Having the right equipment, friends, and attitude makes a world of difference.

I'd like to thank John and Beth Irwin of The Homebrew Hut in Broomfield, Colorado for their assistance with this article. I'd also like to thank Ron Lull and Frank Arrieta of the Keg Ran Out Club (KROC) in Broomfield for also giving me some tips they use in bottling.

Dana Johnson has been with BIRKO Corporation R&D since 1979 and homebrewing since 1989. He is a member of the Master Brewers Association of the Americas, (MBAA) the American Society of Brewing Chemists (ASBC) and the Keg Ran Out Club (KROC). When not brewing, bottling or attending beer-related events, he enjoys spending time with his wife and three children.

Last Drop (from page 80)

that Steinbier brewing was a predecessor to decoction mashing.) We then needed to remove the rocks from the mash before we transferred it to a separate lauter tun where we had layered hops and juniper boughs across the bottom. It was at this point that the post hole diggers came in handy. One of the guys in the overalls had a set in the back of his pickup truck. We brew in Tennessee, remember.

The first runnings were green. The beer, although it could have used a little more aging, was a hit at the World Brewers Forum. Thanks to the help and ideas from Steve Johnson, Chuck Bernard, David Williams, Steve Scoville and John Campbell, all of the Music City Brewers, we had made something special.

I left the World Brewers Forum in 1999 determined to recreate the beer for the 2000 GABF. I planned to brew the 2000 version of the Juniper Stone Beer earlier in the year to allow the juniper to both mellow and blend into the flavor profile of the beer. The spring of 2000 rolled around and I was extremely busy building the new Boscos in Memphis. I asked our new brewer who had taken my place in Nashville, Fred Scheer, to take on the project of brewing the Juniper Stone Beer. For the commercial batch, homebrewers Steve Johnson and Steve Scoville returned to the brewhouse to give Fred a hand and show him how we brew Steinbier in Tennessee. (Fred is German, you know.)

They brewed a winner.

I don't remember what year that Phil Rahn and I first homebrewed Steinbier. I do know that over a decade later, the combined talents and energies of a variety of brewers with very different backgrounds blossomed into a GABF Gold Medal. The medal is an interesting end to the story, if it is the end.

It was the journey that, for me, and I believe for the others that participated, captured the creativity and the passion that drives our new beer culture in the United States. A culture which truly is a collaboration of both home and craft brewing.

Chuck Skypeck is head brewer and partner in the Boscos brewpubs located in Memphis, Germantown and Nashville, TN.

Homebrewers Strike Gold at the GABF

I thought *Zymurgy* readers would be interested in how several homebrewers and homebrew clubs won a Gold Medal at the 2000 Great American Beer Festival (GABF). While it is true that the beer was officially brewed at the Boscos brewery in Nashville, both the development of the beer and the brewing of the winning batch involved more members of the homebrewing community than our own brewing staff. In addition, the very origins of this beer go back to my own homebrewing days. So here's the story of how this homebrewed gold medal came to be.

The beer in question is Boscos' Juniper Stone Beer which won the gold medal in the Experimental Beer category. Undoubtedly Boscos was not the first North American craft brewery to brew a Steinbier. Boscos has, however, become the brewery most people associate with the type of beer more commonly called stone beer. Not only is our Famous Flaming Stone Beer the best selling product at all three of Boscos' brewpubs, it has been featured in a variety of media ranging from *Zymurgy* to *The Late Show* with Conan O'Brien.

The original Famous Flaming Stone Beer had its roots in homebrewing. Phil Rahn, an award winning homebrewer and former member of both the St. Louis Brews and the Bluff City Brewers (Memphis, TN), had inspired me to work with him on a project homebrewing Steinbiers in the late 1980s. After experimenting with different rocks and methods of heating them, the project cumulated with a ribbon in the AHA National Homebrew Competition and two *Zymurgy* articles. ("Flaming Stone Beer-Brewing Traditional Steinbiere," *Zymurgy* (Vol. 15, No 5.) and "Traditional German Steinbier," *Zymurgy* (Special Issue 1994).

This eventually led to the commercial brewing of the beer at Boscos which—some



years later—led to an invitation from John Adams of the Keg Ran Out Club, better known as KROC, a Denver area homebrew club, for me to speak at the 1999 World Brewers Forum. This forum is an annual gathering of both professional and homebrewers held in conjunction with the GABF every fall in Denver. I accepted the invitation, but I didn't want to tell the stone beer story again. I felt like I had to come up with something different.

During research for the *Zymurgy* articles, I had come across an old Austrian brewing journal from the early part of the 1900s that documented the last existing Steinbier breweries in Germany. (The process was revived in Germany in the 1980s by the brewery Rauchenfels.) A common element in these traditional Steinbier breweries was a single step process that involved heating and boiling the entire mash with stones. (Both Rauchenfels and Boscos employed a method of adding the

hot rocks to the wort.) After the entire mash was boiled, the wort was filtered through spruce or juniper then fermented. It sounded interesting, but for a project like this, I knew I would need help.

During this time I was brewing in Boscos' Nashville location. The local homebrew club, the Music City Brewers, always seemed game for whatever I came up with, so I asked them to help me to brew a "Juniper Stone Beer for the World Brewers Forum."

Brewing in Tennessee, I always felt a certain kinship with the German Steinbier brewers. After all, they were living in the hills in southern Germany on the edge of the law. (The Austrian brewing journal had also indicated that Steinbier brewers were not that worried about the Reinheitsgebot, brewing with whatever they could get their hands on that was fermentable.) Back home, I still know a number of "moonshiners" in the hills and hollows of Tennessee. And homebrewing wasn't legal in the state until 1998. The local club members seemed to relate to this point of view. Perhaps that's why several of them showed up on brew day wearing traditional hillbilly garb: overalls without shirts on underneath. Right then I knew something special was happening.

In the tradition of Steinbier brewing, we mashed in with a variety of grains which different brewers brought with them that day. Although the grist was mostly pilsner malt, we also used oatmeal, rye and wheat. Some of these grains were malted, some not. After mashing in at protein rest temperature, we slowly raised the temperature of the mash to saccharification temperature with the addition of hot rocks. After a brief rest, we continued to add rocks until the entire mash was boiling. (I have always suspected (continued on page 79)



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Richard Neill
'Weekend Telegraph' (April 99)

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believed that a kit beer
could be so good"*

Roy Bailey - Beer Correspondent
CAMRA's 'What's Brewing' magazine (April 2000)

*"It resulted in as good a
home-made beer as I
have ever tasted"*

Maximum 5-point rating in kit review
'Bizarre' magazine (September 99)

This man is a dedicated brewer. But he also loves to play tennis.

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