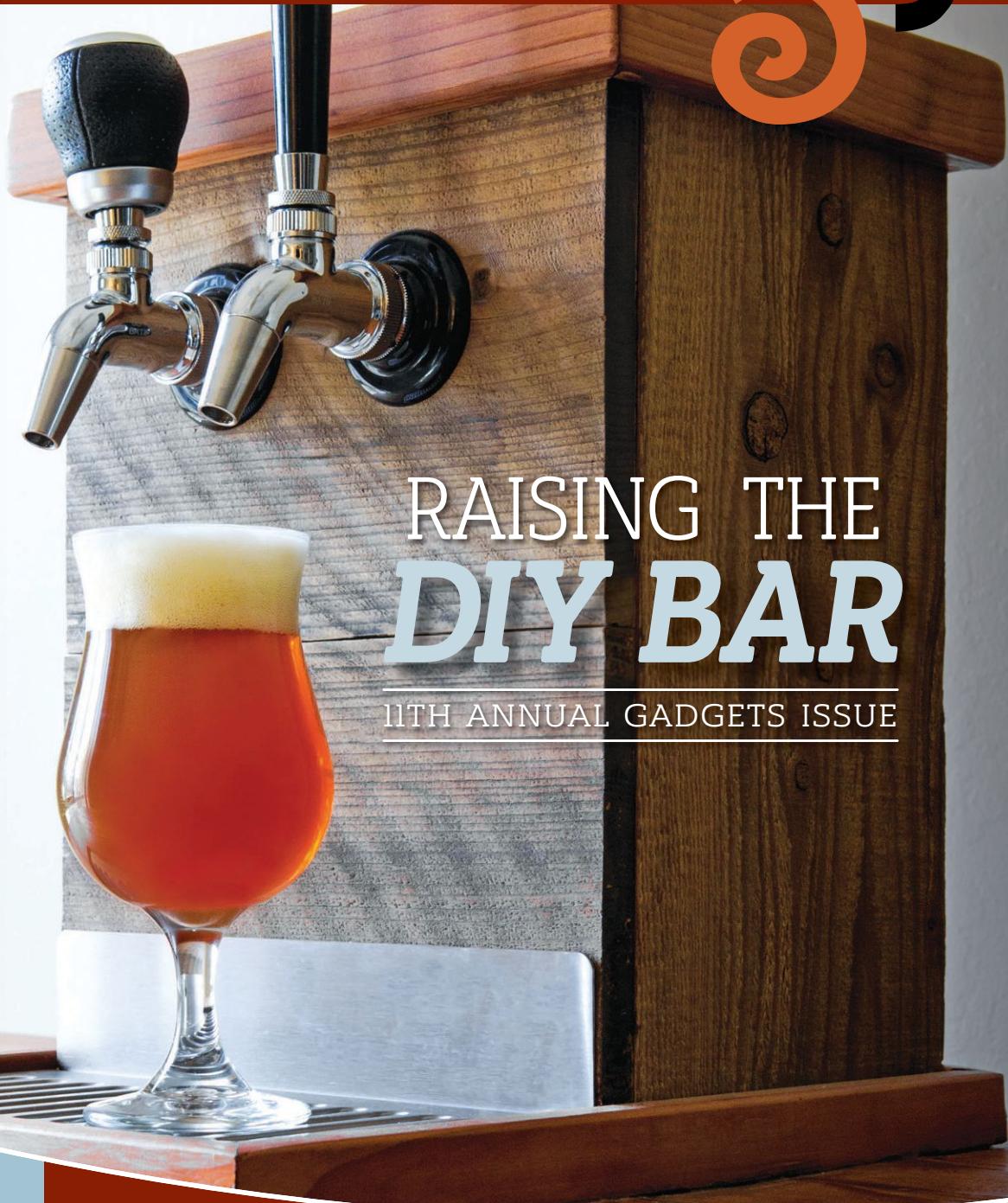


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The Journal of the American Homebrewers Association®



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 11TH ANNUAL GADGETS ISSUE
 

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# How Will You Brew This Year?

When you read this, it'll be 2017—well, 2017 or *really* late 2016. Either way, there's a whole year in front of us offering ebullience of all kinds.

What will you do for beer this year? Maybe 2017 is when you conduct your first mash. Or perhaps you'll rediscover the joy and simplicity of extract methods. Is this the year you finally brew a lager? Or will 2017 see your first homebrew competition?

The coming year will undoubtedly hold many surprises, but if you need a little predictability in your life, here are some things to look forward to from **Zymurgy** in the second Year of the Rooster of the 21st century.

The **March/April** issue will once again be devoted to ingredients. We'll examine the four big Reinheitsgebot-approved elements with new eyes and explore an unusual beer style that invites grapes into the mix. **May/June** is devoted to the beers of summer—from Kölsch to Mexican lager, we'll beat the heat homebrew style.

Our **July/August** installment will serve up the results of **Zymurgy**'s 15th annual Best Beers in America survey (voting starts February 17). We'll recognize the best homebrewers in the country with our **September/October** rundown of the National Homebrew Competition. And we'll get wild and funky in **November/December** when we say hello to our little friends, Brett and Lacto.

I'm also delighted that we will be making every issue of **Zymurgy** available to AHA members in Spanish this year. Stories and recipes from each issue will

be translated into Spanish and published at HomebrewersAssociation.org soon after the English issue drops. ¡Salud!

But we're getting ahead of ourselves. In this first issue of 2017, for the 11th year in a row, we're taking a look at some of the niftiest homebrewed gadgets to emerge from readers' kitchens, garages, and workshops. Whether you are an avid DIYer or you don't know a wrench from a spanner, you'll find plenty of inspiration for your next project.

And while we're looking forward, let's look to the future, all the way to November 4, 2017. Go ahead and mark that date on your calendar for Learn to Homebrew Day. LTHD 2016 was a smashing success, with 300 sites worldwide and 6,232 gallons (23,590 liters) of beer brewed across 1,150 batches. But, above all, it was an opportunity to introduce newcomers to homebrewing.

I had the pleasure of attending two LTHD events in Northern Colorado, hosted at Horse & Dragon Brewing Co. in Fort Collins and Verboten Brewing and Barrel Project in Loveland. It was energizing to see so many eager participants learning—and mentors demonstrating—the art and science of brewing. I encourage you make a New Year's resolution to host or attend a Learn to Homebrew Day event this year. Check out “From the Glass” on page 9 of this issue for a full list of events in the 2017 homebrew calendar.

All of us at the AHA raise a glass to you, our members, and wish you a happy and healthy new year.

**Dave Carpenter is editor-in-chief of Zymurgy.**



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By *Horst Dornbusch and Thomas Kraus-Weyermann*To read this special, members-only online feature,  
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Find more homebrewing recipes on our website @ [HomebrewersAssociation.org/homebrew-recipes](http://HomebrewersAssociation.org/homebrew-recipes)



## >> GET THERE!

### 10TH ANNUAL CINCY WINTER BEERFEST

Cincinnati is hard to spell, but enjoying craft beer there is easy. Just tell your friends to meet you in Cincy when the Duke Energy Convention Center hosts the Cincy Winter Beerfest, February 17 and 18.

Volunteers will pour more than 500 craft beers to thirsty guests over the course of one afternoon and two evening sessions, and several ticket options are available. Regular admission tickets are \$45 if purchased in advance, or \$55 the day of, and get you 25 samples over the course of three and a half hours of tasting. For \$10 more, the Early Admission ticket gets you an extra hour of tasting before doors open for the main event.

Tickets for the Connoisseur Reception are \$95 and only available online, in advance. In addition to 25 samples in the main festival, one of these tickets entitles the bearer to a separate entrance, a souvenir snifter, and access to a reception featuring VIP-only pours, appetizers, and—crucially—private restrooms. Designated driver tickets are also available to ensure you have a safe ride home.

Festival organizers also host a homebrew competition in conjunction with the Cincinnati Malt Infusers homebrew club, and ticket sales help support a good cause. Proceeds from the Cincy Winter Beerfest support the Big Joe Duskin Music Foundation, a 501(c)(3) organization dedicated to helping music programs in underfunded elementary and junior high schools.

For more information, go to [cincybeerfest.com](http://cincybeerfest.com).

#### January 5–7

#### **Big Beers, Belgians, and Barleywines Festival**

Breckenridge, CO  
[bigbeersfestival.com](http://bigbeersfestival.com)

#### January 13–22

#### **Alaska Beer Week**

Locations across Alaska  
[akbeerweek.com](http://akbeerweek.com)

#### January 19–21

#### **Cambridge Winter Ale Festival**

Cambridge, UK  
[cambridgebeerfestival.com](http://cambridgebeerfestival.com)

#### January 21

#### **Asheville Winter Warmer Beer Fest**

Asheville, NC  
[ashevillebeerfest.com](http://ashevillebeerfest.com)

#### January 27–28

#### **Denver Winter Brew Fest**

Denver, CO  
[denverbrewfest.com](http://denverbrewfest.com)

#### January 28

#### **RateBeer Best Beer Festival**

Santa Rosa, CA  
[ratebeerbest.com](http://ratebeerbest.com)

#### February 3–4

#### **Extreme Beer Fest®**

Boston, MA  
[beeradvocate.com/extreme](http://beeradvocate.com/extreme)

#### February 10–11

#### **KLCC Microbrew Festival**

Eugene, OR  
[klcc.org/post/klcc-brewfest-2017](http://klcc.org/post/klcc-brewfest-2017)

#### February 10–12

#### **Braukunst Live!**

Munich, Germany  
[braukunst-live.com](http://braukunst-live.com)

#### February 9–18

#### **Arizona Beer Week**

Locations across Arizona  
[arizonabeerweek.com](http://arizonabeerweek.com)

#### February 17–26

#### **Omaha Beer Week**

Omaha, NE  
[omahabeerweek.com](http://omahabeerweek.com)

#### February 24 to March 4

#### **NYC Beer Week**

New York, NY  
[newyorkcitybrewersguild.com](http://newyorkcitybrewersguild.com)

For more craft brewing events, go to [CraftBeer.com](http://CraftBeer.com)

## >> SHOP NEWS

### NORTHERN BREWER ACQUIRED BY AB INBEV'S ZX VENTURES

Northern Brewer and its sister company Midwest Supplies have been acquired by ZX Ventures, which is "a global disruptive growth group, incubator, and venture capital team backed by one of the largest multinational companies in the world, Anheuser-Busch InBev," according to ZX Ventures' website.

Northern Brewer founder Chris Farley released a statement on the homebrew retailer's website, which reads, in part, as follows:

*Many of you have seen the news that we've closed a deal to be acquired by ZX Ventures, the global Disruptive Growth Unit of Anheuser-Busch InBev. ... Nothing will fundamentally change as the result of this deal. Our entire leadership team will remain intact and our company will continue to be independent. Our staff of dedicated employees will continue to serve our customers and help our industry innovate. Our culture will remain as it is today: vibrant, energetic, fair and dedicated to our mission and to you. ... We are convinced that this partnership will be good for us and great for you. We share the same mission with ZX, to provide "consumers with exceptional beer experiences, anytime, anywhere."*

At press time, the terms of the deal remained undisclosed. To read Mr. Farley's full statement, go to [northernbrewer.com/learn/farleys-feature-brewing-exciting-future](http://northernbrewer.com/learn/farleys-feature-brewing-exciting-future).



## >> YOU'VE GOTTA DRINK THIS

### 3 FLOYDS WIG SPLITTER

I love coffee. I love beer. And I love beers with coffee! Wig Splitter from 3 Floyds is one of the best I have ever had. Rich aromas of dark roasted cold-brew coffee, pleasant earthiness, and hints of caramel sweetness greet the nose and invite you to drink. The smooth roasted coffee is the first taste, which fades to a mellow caramel sweetness as the viscous brew coats your tongue. Cocoa notes follow, and as you enjoy that, the hop bite fades in to remind you that this is a beer you're drinking. And then, it's time for another whiff of that fantastic aroma and another enjoyable swig of this great beer until, sadly, the bottle is gone.

Reviewed by Sean Drew from Renton, Wash.

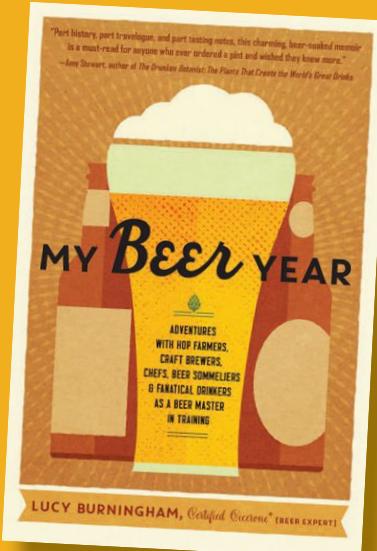
If you've had a beer you just have to tell the world about, send your description, in 150 words or fewer, to [zymurgy@brewersassociation.org](mailto:zymurgy@brewersassociation.org).



## >> BEER QUOTE

*"Suddenly I halted before a half-empty beer-palace. With no special object in view—for I was not thirsty—I went in."*

—Guy de Maupassant in  
“Waiter, a Glass of Beer!”



## >> BEER BOOK

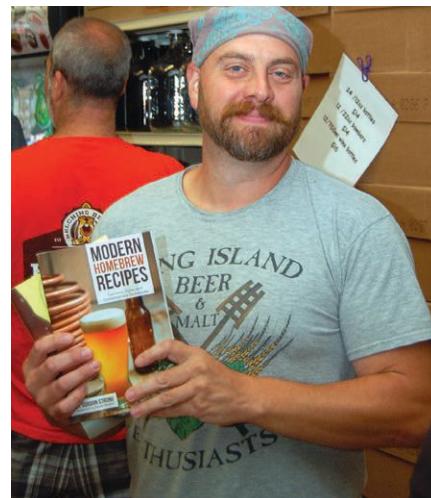
### MY BEER YEAR

by Lucy Burningham

In *My Beer Year*, author Lucy Burningham chronicles her personal journey on the path to becoming a Certified Cicerone®. Along the way, she picks hops in the Yakima Valley, visits Drie Fonteinen and Cantillon, orders rounds of Kolsch, survives the Great American Beer Festival®, and ferments more than a few batches of homebrew. If your friends say you read too many books about brewing, pick up *My Beer Year* and tell them you've switched to personal narrative nonfiction.

# >> CLUB NEWS GORDON STRONG COLLABORATES WITH LIBME

BY ANDREW LUBERTO



Gordon Strong seems at home just about everywhere he goes. It's hard to imagine him wearing anything other than his signature casual wear as he jumps from stories about pub crawling with locals in Ireland (travel tip: "Time for one more?" rarely means just that) to eating fire-roasted wild boar carved with a hack saw in the parking lot of a Chilean brewery.

This past August, the Long Island Beer and Malt Enthusiasts (LIBME) brought in Gordon for a series of events to coincide with his newest book, *Brewing Better Beer: Master Lessons for Advanced Homebrewers*. By coordinating with John La Polla of Bitter & Esters in Brooklyn and securing some financial support from Brewers Publications, we were able to pack several events into a 48-hour period.

One of the events was a brew day and book signing at Homebrews and Handgrenades in Plainview, N.Y. Owner Peter Trip has done a fantastic job of forging a community of homebrewers around his shop. Partly responsible is the 10-gallon (37.85-liter), fully automated electric brewing system he sports in the back of the shop.

For our club brew day, Gordon created a recipe modeled loosely on O'Hara's Leann Folláin, a 6-percent ABV Irish extra stout. It's a recipe he formulated after visiting



the brewery in Ireland and engaging the tight-lipped head brewer in subtle interrogation. The brewing process included a 120-minute boil, something fairly unique for brewing the style, and Gordon was adamant about using Thomas Fawcett chocolate malt.

Peter sent a couple of bottles to Gordon after it was finished, and here were his thoughts on the finished product:

*The two things I like the most about this beer are the full, silky body and the toasty-coffee aroma. The aroma is rich and bready with very dark chocolate and deeply toasted bread crust accents, and a light floral hop and fruity background. The flavor is similar to the aroma, but has a firm bitterness balancing the malt. The finish is dry with roasty and grainy notes, but isn't burnt or super dry. There is a richness and fullness without it being heavy; I find it quite drink-*

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able at 6 percent. It's definitely different than a Guinness-style stout dominated by roasted barley; this one has more of a balanced feel to it.

Peter also set up a tasting event at the shop for people to come by and try it, with proceeds benefitting a local food pantry that provides Thanksgiving dinners to local families. It was a nice way to cap off the entire weekend, a simple reminder that the social aspects of brewing and enjoying beer are really what make this hobby so enjoyable.

The accompanying 5-gallon (18.93-liter) recipe is what we brewed with Gordon at Homebrews and Handgrenades.



## DENTAL STOUT IRISH EXTRA STOUT

**Batch Volume:** 5.5 U.S. gallons (20.8 L) at 72% efficiency

**Original Gravity:** 1.066

**Final Gravity:** 1.011

**Bitterness:** 42 IBU

**Color:** 43 SRM

**Alcohol:** 6% by volume

### MALTS

<b>7 lb.</b>	(3.22 kg) Golden Promise malt
<b>1.67 lb.</b>	(757 g) flaked barley
<b>1.5 lb.</b>	(658 g) Thomas Fawcett chocolate malt
<b>7 oz.</b>	(201 g) brown malt
<b>7 oz.</b>	(201 g) torrified wheat

### HOPS

<b>1.5 oz.</b>	(43 g) Northdown, 5.5% a.a. @ 90 min
<b>1 oz.</b>	(26 g) Fuggle, 4.5% a.a. @ 30 min
<b>0.5 oz.</b>	(14 g) Fuggle, 4.5% a.a. @ 5 min

### YEAST

Wyeast 1084 Irish Ale Yeast

### BREWING NOTES

Mash Golden Promise, flaked barley, and torrified wheat at 147° F (64° C) for 60 minutes, 154° F (68° C) for 30 minutes, and 169° F (76° C) for 15 minutes. Add chocolate and brown malts to mash during vorlauf. Sparge, boil 120 minutes, chill, and run into carboy. Let stand until break material and particulate matter visually settle out, then rack remaining wort into fermenter, oxygenate, pitch yeast, and ferment at 68° F (20° C). Keg or bottle and carbonate to 2.5 volumes (5 g/L) of CO<sub>2</sub>.

### PARTIAL MASH RECIPE

Mash 2.25 lb. (1.02 kg) Golden Promise with flaked barley and torrified wheat for 30 minutes at 152° F (67° C). Add remaining malts and hold 30 minutes. Drain, sparge wort into kettle, and dissolve 3.75 lb. (1.75 kg) Maris Otter malt extract syrup in wort. Sparge until desired boil volume is reached and continue as above.

By Gary Glass



# The Year in Homebrew

**H**appy holidays, fellow homebrewers! Hopefully, you've brewed up a nice winter warmer to sip while you read your favorite magazine (maybe those of you in the Southern Hemisphere are enjoying a crisp Pilsner instead). Looking back on 2016, it's been a great year for homebrewing and the AHA, and we're eagerly looking forward to great things to come in 2017.

In 2016, we added around 350 new participants to the AHA Member Deals program, nearly double the number we added in 2015. Surveys of our members have indicated that this is one of the most highly valued benefits of membership, so we devoted more energy in 2016 to Member Deals recruitment and brought the total number of participating locations to more than 1,500.

Homebrew Con 2016, held in Baltimore last June, was one of the biggest in the event's 38-year history, with more than 3,000 AHA members in attendance. We're hoping to see as many, if not more, of you next year in Minneapolis. The National Homebrew Competition set a new record for number of entrants, with 3,396 AHA members competing with 7,962 entries in 2016. And the AHA hosted 15 rallies across the United States in 2016, with 2,215 total members attending.



## Zymurgy Live

In May 2016, the AHA launched a new member benefit called Zymurgy Live, a series of webinars available exclusively to members of the American Homebrewers Association. Stan Hieronymus kicked off



the series with "Brewing Local," a presentation based on his latest title from Brewers Publications. AHA members can participate in the live webinars as well as view archived presentations in the Events section of HomebrewersAssociation.org. By the end of 2016, we had hosted and archived six Zymurgy Live webinars on topics like pairing beer and food, using wood in beer, and reading water quality reports.

Stay tuned for our next Zymurgy Live webinar in early February, featuring Averie Swanson, brewery production manager for Jester King Brewery in Austin, Texas, who will present on mixed-culture fruit beers.

## Brew Guru

Also in 2016, the AHA launched our new Brew Guru app. This free app was specifically designed to make it easier to access your AHA member benefits, particularly AHA Member Deals. The app includes a map of all of the breweries and homebrew supply shops in the Brewers Association's database, highlighting those that offer discounts to AHA members. The app can be configured to notify you when


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Learn to Homebrew Day is celebrated at Kettles & Grains in Leesburg, Virginia on November 5, 2016. #LTHD

you are within 100 meters of a Member Deals location. It also includes a digital member card to free up space in your wallet and shows the details of participants' deals, making it super easy to redeem those discounts.

Along with the map and member card features, we recognized that the AHA has a ton of content spread across HomebrewersAssociation.org posts, Homebrew Con seminars, Zymurgy Live presentations, and Zymurgy articles, so the AHA staff has been compiling collections of related content to make it easier for you to find the information you are looking for.

Brew Guru is available from Google Play and the Apple App Store for Android and Apple mobile devices. The app is supported for Android 4.4 (KitKat) and Apple iOS 8 and higher.

## Learn to Homebrew Day

On November 5, homebrewers, homebrew clubs, homebrew shops, and breweries hosted 300 registered Learn to Homebrew Day sites. On this day of service, homebrewers worldwide helped introduce 4,417 family members, friends, neighbors, and new acquaintances to the joys of homebrewing.

Thanks to everyone who hosted a Learn to Homebrew Day site in 2016!

## Capitol Hill Staff Homebrew Competition

You may be familiar with the AHA's efforts to pass legislation at the state level, but the AHA also works to promote homebrewing at the federal level. To that end, we launched the first annual Hill Staff Homebrew Competition in December.

The AHA, with help from Brewers Association federal affairs manager Katie Marisic, invited Capitol Hill staffers (the staff of elected US Representatives and Senators) to show off their brewing skills by participating in the Hill Staff Homebrew Competition. Many staffers are avid homebrewers, so we wanted to give them the opportunity to have their beer judged by certified beer judges and professional brewers while participating in a friendly competition with their peers. Beyond just awarding medals to the top contenders, this competition will help to elevate awareness of homebrewing with this influential group.

The competition took place on December 6, 2016 at 3 Star Brewing Company in Washington, DC, and the winners were announced on December 7, 2016 at the annual Capitol Hill Tasting presented by the Brewers Association.



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The screenshot shows the American Homebrewers Association website. The main navigation bar includes 'MEMBER LOGIN', 'DIRECTORIES', 'SHOP', 'JOIN', 'BREW', 'FORUM', and 'CL Search'. Below the navigation are links for 'homebrew recipes', 'let's brew', 'community', 'events', 'competitions', 'membership', and 'magazine'. A search bar is also present. The main content area features a banner for the 'Big Brew Para el Dia Nacional de Cerveza Casera' event, dated May 7, 2016. It includes statistics: 404 events, 11,004 participants, 2,722 batches brewed, 19,631 entries, and 14 countries represented. A 'LEARN HOW TO BREW' button is visible.



## Zymurgy en Español

Over the last few years, homebrewing among Spanish speakers has seen spectacular growth. Unfortunately, there are not many Spanish-language resources for those homebrewers. Recognizing that void, the AHA will be translating the content from each 2017 issue of *Zymurgy* magazine into Spanish and publishing the translations as members-only content on HomebrewersAssociation.org.

Initially, the Spanish-language edition may post several weeks after the original English issue of *Zymurgy* becomes available, but we hope to become more efficient in our turnaround with each issue. Depending on AHA membership growth in Spanish-speaking countries, we may in the future offer digital editions and possibly print editions in Spanish.

Anyone interested in helping translate content for the AHA is encouraged to contact us at [zymurgy@brewersassociation.org](mailto:zymurgy@brewersassociation.org).

## Club Newsletter

Homebrew club officers, the AHA is reviving our Club Connection newsletter. Through the newsletter, the AHA will deliver content on club activities, membership engagement tactics, and educational resources for your club meetings.

By the time you read this, your club should have received the first newsletter. To ensure that we're staying in contact with your club, please encourage your club's leaders to update their contact information regularly on the AHA website via the Community section of HomebrewersAssociation.org.

## 2017 Calendar

Looking ahead to the new year, here are some important dates for the AHA in 2017. Be sure to update your homebrew calendar for the coming year.

**January 30–February 6**

**AHA National Homebrew Competition**  
Entrant application window

**Mid-February–March 31**

**AHA Governing Committee election**  
Ballots accepted

**Early March**

**AHA Homebrew Con Minneapolis**  
Registration

**March 17–April 23**

**AHA National Homebrew Competition**  
First-round judging

**March 31**

Deadline to submit entries for the  
**AHA Radegast Club of the Year award**  
(see *Community* section of  
HomebrewersAssociation.org for details)

**May 6**

**Big Brew/National Homebrew Day**

**June 15**

**AHA National Homebrew Competition**  
Final-round judging

**June 15–17**

**AHA Homebrew Con Minneapolis**

**August 5**

**Mead Day**

**October 5–7**

**Great American Beer Festival**

**November 4**

**Learn to Homebrew Day**



Visit the Calendar on  
HomebrewersAssociation.org  
for the most up-to-date listing  
of events, including upcoming AHA  
Rallies and AHA/BJCP sanctioned  
homebrew competitions.

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The winning club takes home a super-cool mash paddle trophy from award spon-

sor Yakima Chief Hopunion and splits a \$1,000 cash award with the charity of the club's choice.

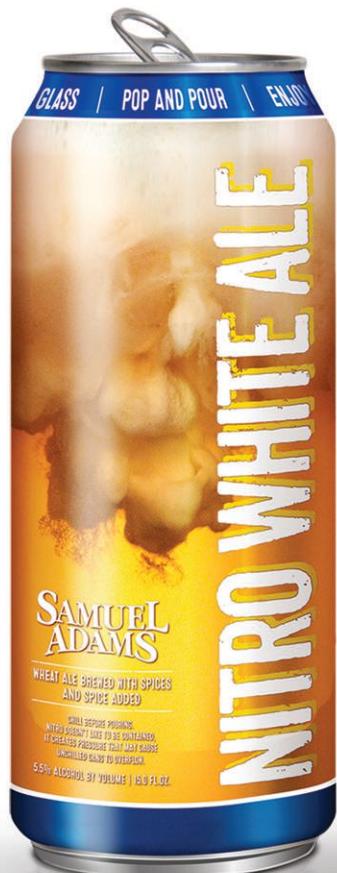
Entries are due by March 31. The winning club will be announced at Homebrew Con 2017 in Minneapolis. See the *Community* section of HomebrewersAssociation.org for more details.

**Gary Glass is director of the American Homebrewers Association.**





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By Our Readers

# Session Beer Cheer

Dear *Zymurgy*,

I read the session beer article in the latest *Zymurgy* with interest since I also appreciate a beer I can drink with fewer ill effects. I have taken it much further, however.

I brewed an Amerian pale ale that was 2 percent ABV. The trick is to get body and flavor with very little base malt. This can be achieved by using Victory®, melanoidin, and/or biscuit malts to add color and malt flavor, adding Carapils® and crystal malts for body and sweetness, and including rolled oats and flaked wheat for mouthfeel and head retention. I used more than I normally would to offset some of the “missing” base malt, and I decoction mashed to boost melanoidins.

The other thing is to aim low on the IBUs. Lower gravity means greater hop utilization in the boil. My first batch came out a little too bitter, so that's an adjustment that should be made even if your software says it's too low for the style.

Here's the recipe for 5 gallons (18.9 liters). You could swap the hops out for Kent Goldings and use a British yeast if you'd prefer an English-style ale.

Mash 1 lb. (454 g) each of Maris Otter and Munich 10° L; 8 oz. (227 g) each of Carapils®, crystal 40° L, melanoidan, and Victory®; and 4 oz. (113 g) each of flaked wheat and rolled oats for an hour at 154° F (68° C). Boil wort with 0.25 oz. (7 g) Columbus first wort hops and 1 oz. (28 g) of Cascade at 10 minutes. Add another ounce (28 g) of Cascade at flameout. Ferment with US-05 and dry hop with 1 oz. (28 g) of Cascade.

Bob Rouse  
Alexandria, Va.  
DC Homebrewers Club, BURP



## Zymurgy Menagerie

*Editor's Note: Thank you for continuing to send us photos of the dogs, cats, and other pets who keep you company on brew day! We receive far more submissions than we can possibly print, but keep an eye on the AHA's social media accounts for more furry friends. We're on Instagram, Twitter, and Facebook under the handle @homebrewassoc.*

Dear *Zymurgy*,

Here is my homebrewing assistant, Croquette, lying down by my new 7-gallon (26.5-liter) conical fermenter. She is always next to me when I brew and always curious to try new recipes. She has read the magazine with interest since I started my AHA membership.



Cheers from Belgium,  
Jean-Yves Deltour  
Andenne, Belgium



Dear *Zymurgy*,  
Keep up the great work! Reba approves.

Brian Mulhall  
Winooski, Vt.

## 2016 BATTLE OF THE BOTTLE LABELS WINNER

**Henrique Coan** — Santa Catarina, Brazil



I brew 40 liters (10 gallons) in an electric BIAB system. I've been brewing for almost three years, brew at least once a month, and enjoy making IPA, session IPA, and stout. My label design is inspired by the way I brew because "incognito" means something hidden. A friend created the label for me.



Homebrewing in Brazil has been growing fast in recent years. Last year's II Congresso Técnico da ACervA Catarinense featured lectures from Drew Beechum, Denny Conn, and Michael Tonsmeire. This year, John Palmer and John Mallett came to share their knowledge.

## 2016 BATTLE OF THE BOTTLE LABELS RUNNER-UP

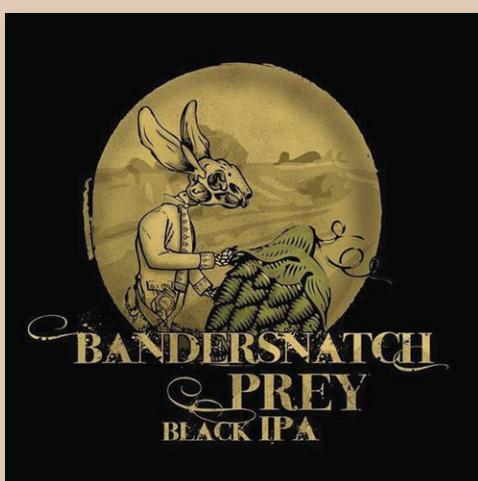
**Jesse Glover** — Colorado, USA



I started homebrewing as a way to apply what I learned in my chemical engineering coursework. I've been brewing for three years, and over the last year I was employed by the Colorado School of Mines to teach brewing science lab. Prior to returning to school for engineering, I worked as a graphic designer.

I always create my beer labels before I even design the beer recipe. In my mind, the label design gives the brew character, which then helps me figure out what type of profile I should be shooting for. I enjoy brewing any beer style that offers a challenge. To date, the top of that list would be my attempt at a Wychwood Hobgoblin clone fermented with elderberries. It has an awesome caramel and chocolate character with just a hint of elderberry funk.

I am a bit of a mad scientist when it comes to brewing. I've conducted research with pressurized fermentation to suppress yeast ester production, and I have used bioinformatics to find genetic relations to hops, in flavor and aroma. My next couple of planned brews use some of these plant species as hop substitutes, several of which have been shown to improve heart and liver function. Replace diet and daily vitamin supplements with beer! (Insert maniacal laughter here.)



See all the finalists @ [HomebrewersAssociation.org/bb2016](http://HomebrewersAssociation.org/bb2016)

Send your Dear *Zymurgy* letters to  
[zymurgy@brewersassociation.org](mailto:zymurgy@brewersassociation.org).  
Letters may be edited for length and/  
or clarity.

Hey homebrewers! If you have a homebrew label that you'd like to submit for the Dear *Zymurgy* section, send it to magazine art director Jason Smith at [jason@brewersassociation.org](mailto:jason@brewersassociation.org).



Dear Zymurgy,

This is Izzy, my brew buddy's golden retriever, enjoying our first annual IPA day. She loved brew day as much as we do, but unfortunately, due to health problems, she is no longer with us. She will be missed on brew day but is still with us in spirit.

John Mundt  
Milwaukee, Wis.



Dear Zymurgy,

This is Tuna. Tuna loves bottling day, when we empty all of our boxes of recycled bottles and she is free to use them as her fortress for an hour.

Caitlin Schut  
Via Facebook



Dear Zymurgy,

This is my brew cat. One beer and he's out.

Jerry Mitchell  
Via Facebook



Dear Zymurgy,

This is our sassy brew dog, Avery! I think she saw I missed my mash temperature by a couple of degrees.

Michael Frith  
Denver, Colo.



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By Professor Surfeit



# Accountability of Specialty Malt

Dear Professor,  
I hope you can clear up some confusion I have about specialty malts.

I know that crystal malts do not provide many fermentable sugars when included in the mash, but I'm not so certain about some other malts. In particular, I'm thinking of malts such as Simpsons Golden Naked Oats™, dextrin malts, and biscuit malt. I know that these have no diastatic power of their own but would like to understand if they provide fermentable sugars when mashed with base malts, or if they only provide the various characteristics they are best known for, such as mouthfeel, head retention, and flavor.

Any clarification you can provide would be greatly appreciated.

Thank you,  
Tom Hartley  
Bentley, Mich.

Dear Tom,  
You have a legit reason to be confused. The name "Golden Naked Oats" is a bit misleading. These are not simply "naked" oats in the sense of "minimally processed," but rather a type of crystal malt. You have to be a knowledgeable insider to figure out that "naked" refers to huskless, crystal, malted oats. Extract rates are not published yet, so you have to assume your extract yield will be similar to barley crystal malt, at about 75 to 77 percent.

But back to your question, the simple answer is that yes, these malts contribute quite a bit of fermentable sugar to your wort. Let's imagine that you use about 10 to 15 percent



of these malts by weight in a beer recipe. If all the extract that these malts contributed was unfermentable, that would mean 15 percent of your wort wouldn't ferment. That would be one sweet, wort-y beer! So it makes sense that a significant amount of the extract from these malts is fermentable. It doesn't take much unfermentable extract to contribute to mouthfeel, body, flavor, and head retention.

Figuring it out empirically from experience,  
The Professor, Hb.D



## Bagging Rice Hulls

Hello Professor,  
I'm looking to get into all-grain brewing

via the brew-in-a-bag (BIAB) method. As a lover of Weißbier (Bavarian hefeweizen), I'll be looking to try my hand at brewing one. Would there be an advantage to adding rice hulls when using BIAB as there is with traditional all-grain brewing?

Bryan Orson  
Lindstrom, Minn.

*Hi Bryan,*  
*Good at you. You're starting to think like a brewer. There is a lot written about beer and brewing, but despite all the great information, the best beer is made by adapting to your own situation and knowledgeable reasoning. You will have a lot of great beers ahead of you with your direction of thinking.*

If you haven't figured out the answer to your "Is there an advantage?" question yet, I take the previous paragraph back. Nevertheless, the answer is a resounding yes. Rice hulls have minimal tannin content and serve to "loosen" the mash so that liquid wort can flow out of the mash solids more easily. It doesn't matter whether it's in a bag or a mash tun, the same issues are at play. Wheat malt doesn't have a husk and is a bit "gummier" than barley malt. Those two factors increase the probability that your mash runoff will be slower and—in some circumstances—get maddeningly stuck. Adding several handfuls to your mash will encourage you to relax, not worry, and have a homebrew.

And by the way, since BIAB's your bag, check out the tips on pages 52-58 of this very issue of Zymurgy.

Circumstantially,  
The Professor, Hb.D.

### Must We Boil Must?

Hello y'all,

I was reading the AHA's tutorial for brewing mead and saw no mention of cooking the honey beyond submerging it in warm water. Does this process require the must to be cooked at all before fermenting?

Thanks,  
Mario Alberico

Hello Mario,

We've gotta talk to someone in the tootorial department at the American Homebrewers Association, don't we?

When you say, "cooking the honey," I assume you're referring to heating or boiling the must, or mixture of honey and water. Mind you, there is a type of mead called bochet. Sometimes called "burnt honey mead," bochet involves slowly and carefully boiling 100 percent honey and caramelizing the sugars. This process requires great care because the honey foams, expands in volume, and can get burnt on the bottom. Boilovers are dangerous and severely messy. But when successfully made, this is a wonderful and unique type of mead. But that isn't what

you asked me about. Sorry about my delicious digression.



There are several schools of thought about heating, boiling, or cooking honey water in the mead formulation process. The purist will advise that if you really want to help preserve the subtle fragrances and flavors of your honey, you shouldn't boil, heat, or cook it. On the other hand, people like me will advise that if your honey is really not that exotic, it is okay to bring the water-honey mix to a boil for a minute or two to pasteurize. When cooled and ready to receive the yeast, you will have a better chance of predictable fermentation. I say this with the caveat that predictability and meadmaking don't always go together. There are so many variations in honey character—from location to location and year to year—that predictability often goes out the window when making mead.

I've made all kinds of mead for more than 40 years, and they've all turned out really good. Some are terrific, and others are just very good. Most of the time, I'll boil a concentrated honey-water mixture for about two to three minutes. Then I mix with cold water (kind of like malt extract homebrewing procedures) to make the appropriate volume, add yeast, and ferment. When I think I have some special honey, I'll heat it enough to dissolve more easily in water, but I don't boil it.

The truth for me is the final taste. When the mead tastes great, I tend to forget about the details of its origin, process, and cook or no-cook decisions.

Do what's right for you.

Have at it, Mario,  
The Professor, Hb.D.

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By Amahl Turczyn

# Vienna Lager

In the early 1800s, the city of Vienna was not just capital of the Empire of Austria, it was also one of Europe's most influential cultural and political centers. It was home to some of the greatest composers in the civilized world, including Brahms, Beethoven, Hayden, Schubert, and Strauss. It's where the Congress of Vienna was held in 1814 to address the aftermath of the Napoleonic wars and the French Revolution. Its dominance surged yet again in 1867 when Hungary united with Austria to form the Austro-Hungarian Empire, and Vienna was crowned capital.

Meanwhile, Vienna brewer Anton Dreher and his friend from Munich, Gabriel Sedlmayer, were tinkering with a couple of brewing innovations that would change the course of brewing history. Both brewery owners, the pair collaborated to create a new, lightly kilned malt to produce beers that might compete with a very popular new Bohemian beer style called Pilsner. Vienna malt, as it's been called ever since, was paler than Munich malt, but not as pale as Pilsner malt. However, its higher acid content was more forgiving than Pilsner malt when brewing pale beer with Munich and Vienna water.

Apart from the development of the malt, the two brewers also came to recognize the importance of yeast in brewing, specifically the use of cold-tolerant yeast. A product of the Bavarian practice of storing kegs of spring-brewed beer in icy caves during the summer, cold fermentation and storage (or "lagering") produced noticeably smoother, more refined-tasting beer. *Saccharomyces pastorianus* wouldn't be isolated and recognized as "bottom-fermenting" or lager yeast, until Emil Hansen completed his research at the Carlsberg brewery in Copenhagen in 1883, but Dreher and Sedlmayer knew there was a




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## COLD FERMENTATION AND STORAGE (OR "LAGERING") PRODUCED NOTICEABLY SMOOTHER, MORE REFINED-TASTING BEER.

---

direct correlation between this yeast and great-tasting beer, so they soon began using it exclusively.

Dreher's lager, a lighter take on Munich's popular Märzen style, was an orange-copper color, and used German noble hops to add a smooth bitterness to complement the new, lightly toasty malt and clean yeast profile. Vienna lager (though it was not yet called this) soon became as fashionable as the waltz. We could stop at this

point, but there soon followed another twist in Vienna lager's stylistic evolution.

In the 1860s, halfway across the world, trouble was brewing in Mexico. Its president, Benito Juárez, decided to stop making interest payments on loans his country had taken from France. One thing led to another, and Emperor Napoleon III invaded Mexico in 1862, eventually occupying Mexico City. He offered the Mexican throne to Maximilian I, who accepted the monarchy, though many powers outside of Mexico (including the United States) did not recognize him as its legitimate ruler. In 1867, Juárez's forces seized and executed Maximilian I.

In the three years Maximilian ruled, however, many people emigrated from Austria to Mexico, and they brought their love for Vienna lager with them. Among them was one Santiago Graf, who imported brewing ingredients from Europe and began brew-

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## Noche Buena-Style Graf Vienna

Recipe by Amahl Turczyn

**Batch Volume:** 5.5 U.S. gallons (20.8 L)  
**Original Gravity:** 1.059 (14.5° P)  
**Final Gravity:** 1.014 (3.5° P)

**Bitterness:** 27 IBU  
**Color:** 11 SRM  
**Alcohol:** 6% by volume

### MALTS

**7 lb.** (3.18 kg) Vienna malt  
**2 lb.** (907 g) Pilsner malt  
**1.5 lb.** (680 g) corn (flaked or polenta)  
**1 lb.** (454 g) light Munich malt  
**0.5 lb.** (227 g) Caramunich malt  
**2 oz.** (57 g) Carafa II malt

### HOPS

**2 oz.** (57 g) Tettnang pellets, 4.5% a.a., first wort hop

### YEAST

Bavarian or Czech lager yeast (2 L starter)

### WATER

Reverse osmosis (RO) water treated with 2g calcium chloride per 5 gallons water

### BREWING NOTES

Mash in for a protein rest at 122° F (50° C) for 20 minutes. If using polenta corn instead of flaked maize, conduct a cereal mash with the corn. Otherwise, bring mash to 151° F (66° C) and allow to rest one hour. Apply heat or boiling water to mash out at 168° F (76° C) for 10 minutes. Sparge, boil 90 minutes, and add hops at stated intervals. Chill to fermentation temperature and oxygenate. Pitch a strong starter of yeast at 50° F (10° C). Fermentation temperature may be allowed to rise to 54° F (12° C) depending upon chosen lager strain. As fermentation slows, bring to 55° F (13° C) and hold 3 days for a diacetyl rest, if desired. When the gravity reaches 1.014 (3.5° P), crash to lager temperatures (35° F or 2° C) and lager the beer for at least two months before packaging.

### EXTRACT VERSION

Omit corn, Vienna, Munich, and Pilsner malts, and reduce Carafa to 1 oz. (14 g). Steep Caramunich and Carafa malts at 155° F (69° C) for 30 minutes. Drain, rinse grains, and dissolve 9 lb. (4.08 kg) Vienna malt extract syrup completely in RO water, then top off to desired boil volume. Proceed as above.

ing in Mexico City. While Vienna lager fell out of favor by the end of the 19th century in Austria, its popularity surged in Mexico, and it was soon adopted by several new breweries, among them Cervecería Modelo, in 1925. They called it Negra Modelo, and it was soon a hit (along with Corona) in both Mexico and the United States.

In fact, a surprising number of big brewers in Mexico still pay homage to Graf Vienna, though some are more difficult to find than others. Of course, the style continued to change and adapt, as all beer

styles tend to do when they travel around the world, and not all of these adaptations have been seen as favorable.

For example, Modelo makes substantial use of adjuncts in the current beer, as does Cervecería Cuauhtémoc Moctezuma, brewers of Dos Equis Dark lager and Bohemia Obscura. Both beers are brewed in the Graf Vienna tradition, and while both are said to have caramel added for coloring, Bohemia and Negra Modelo are often considered two of the best mega brewery-produced beers in Mexico.

## Classic Vienna Lager

Recipe by Amahl Turczyn

**Batch Volume:** 5.5 U.S. gallons (20.8 L)  
**Original Gravity:** 1.053 (13° P)  
**Final Gravity:** 1.011 (2.5° P)

**Bitterness:** 29 IBU  
**Color:** 5 SRM  
**Alcohol:** 5.4% by volume

### MALTS

**10.75 lb.** (4.88 kg) Vienna malt

### HOPS

**1.5 oz.** (42 g) Spalt Select pellets, 4.5% a.a. @ 30 min  
**1.5 oz.** (42 g) Spalt Select pellets, 4.5% a.a. @ 20 min

### YEAST

Bavarian or Munich lager yeast (2 L starter)

### WATER

Reverse osmosis (RO) water treated with 2g calcium chloride per 5 gallons water

### BREWING NOTES

Mash in for a protein rest at 122° F (50° C) for 20 minutes. (A decoction mash is recommended for this beer, but you may also use an infusion schedule.) Pull your first decoction of about 9 quarts (9 L) and boil for 15 minutes. Add back to main mash and equalize at 150° F (66° C). Hold at that temperature for 60 minutes. Apply heat or boiling water to mash out at 168° F (76° C) for 10 minutes. Sparge, boil 90 minutes, and add hops at stated intervals. Chill and oxygenate. Pitch a strong starter of yeast at 50° F (10° C). Fermentation temperature may be allowed to rise to 54° F (12° C) depending upon chosen lager strain. As fermentation slows, bring to 55° F (13° C) and hold 3 days for a diacetyl rest, if desired. When the gravity reaches 1.011 (2.5° P), crash to lager temperatures (35° F or 2° C) and lager the beer for at least one month before packaging.

### EXTRACT VERSION

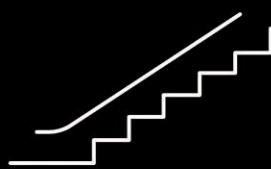
Dissolve 8.5 lb. (3.86 kg) Vienna malt extract syrup completely in RO water, then top off to desired boil volume. Proceed as above.

Modelo, which has long been co-owned by Anheuser-Busch, also brews Victoria lager. Victoria's roots can be traced back to 1865, according to its importer, which would mean it was born during the Austro-Hungarian occupation. Copper colored, with a faint, nutty, bready malt profile, it still has echoes of a true Graf Vienna and has much more flavor than most 4-percent ABV Mexican mega-beers. Moctezuma also produces a stronger "bock" version of Graf Vienna for the holidays. The quotes are there because, sadly, Noche Buena has gone from nearly 6 percent ABV to just over 5 percent over the last few decades. Still, this winter seasonal is worth seeking out, as it's probably more like Graf Vienna used to be brewed.

Of course, US craft brewers have their own ideas about how a Vienna should be made, and more and more breweries include a Vienna in their lineups: Sierra Nevada, Heavy Seas, Chuckanut, and Great Lakes are among the craft breweries who have tackled the style with their own creative twist. Sierra Nevada uses its rendition to showcase the modern hop varieties Bravo, Mandarina, and Crystal. Other craft versions rely on a big helping of caramel malt to add heft, color, and sweetness.

While this isn't a bad thing necessarily, in my opinion, caramel malt focus is no more faithful to the original Vienna style than corn and rice adjunct—Dreher's original beer was a celebration of his new malt and lager yeast, and its strengths

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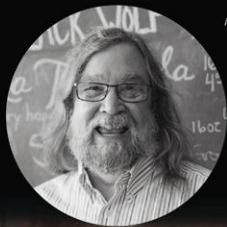


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were in subtlety and balance. No single element overwhelmed another. Hops were delicate and floral, bitterness was restrained, and malt was lightly sweet but distinct from the heavier toasted flavors of an Oktoberfest or Märzenbier. Each element played a supporting role, and when brewed properly, the whole came together like an elaborate dance.

So there are at least three versions of Vienna to explore. Blessed with an ever-widening selection of high-quality malt and a full spectrum of aroma hops, we can either seek out Dreher's vision of balance and delicacy with a stripped-down SMaSH interpretation, go the corn-laden, easy-drinking, south-of-the-border route, or brew up a modern interpretation that's a little fuller and spicier. So whether you prefer classic, Graf, or craft Vienna, you'll want to check out ingredient options.

Base malt is probably the most critical ingredient in Vienna, even more so than yeast. Back in the 90s, homebrewers didn't have much choice—we could get good Pilsner malt and blend that with decent caramel malts and come up with something that sort of resembled a Vienna. For some, that approach hasn't changed much. But now several malting companies offer excellent two-row Vienna malt that, like Pilsner and Munich, has its own distinct flavor and aroma. My favorites include the Vienna malts from Weyermann, Avangard, and Best Malz. So good are these malts that you could brew a perfect Vienna lager with 100% base malt. It would be interesting to see how several SMaSH beers like this would reveal differences between the Vienna malt from brand to brand.

New World Vienna lagers are often made with Pilsner and Munich malts as well, though in lesser amounts. A small amount of light Munich (around 10 percent of the grain bill) adds a nice malt character without overwhelming the distinct flavor of Vienna malt. I personally feel that Pilsner malt doesn't really add much to a Vienna, but it comes in handy for extra enzymes if you brew a Vienna with adjuncts.

A single- or double-stage mash can be used, though many say decoction adds

fuller malt depth due to melanoidin development when the mash is boiled. This is certainly appropriate for any Vienna, but it can be skipped in the interest of time savings. After your (optional) protein rest (122° F or 50° C for 20 minutes), mash at low temperatures (150° F or 66° C for an hour) to produce a highly fermentable wort. This is especially important if you will be using caramel malts, and/or a lager strain that isn't highly attenuative, such as the Southern German lager strain.

Use specialty malts with restraint, if at all. Medium to dark caramel malts are OK in a craft or Mexican-style Vienna, but they can throw the balance towards a too-sweet finish. They can bring an adjunct Vienna back to balance, however, by adding body. Color malts like chocolate and black malt can also be used very sparingly—as in not much more than one percent of the grain bill—to darken a Vienna's color. But there's really nothing that says Vienna lagers, even made in the Graf style, have to be dark beers.

Victoria, for example, is a fairly light orange copper. The BJCP pegs Vienna lager's color range between 9 and 15 SRM to accommodate examples like Negra Modelo and many relatively dark craft Vienna beers. (Note that this means the single-malt Classic Vienna recipe above, which gets all its color from the base malt, is actually too light for the style, at 5 SRM.) Negra Modelo is dark amber, but the brewer's caramel used to color this beer is not the same as the caramel malts craft and homebrewers use. So color if you must, but avoid having any roast, burnt, or coffee flavors intrude from your dark malts. Either go very light with additions, or just be happy with the light orange-copper hue the Vienna malt naturally contributes. Remember that this was a beer created to compete with Pilsner!

Adjuncts should only be used for Mexican-style Viennas, and while the large brewers often use rice, I like the flavor of corn (maize), especially if you opt for a cereal mash. Up to 20 percent adds a pleasant grainy flavor and lightens the body somewhat—very appropriate for Graf Vienna. Flaked maize is much easier to use, as you can simply add it to the mash. Make sure

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## Beelzebub's Backside Craft Vienna Lager

Recipe by Amahl Turczyn

**Batch Volume:** 5.5 U.S. gallons (20.8 L)

**Original Gravity:** 1.050 (12.5° P)

**Final Gravity:** 1.016 (4° P)

**Bitterness:** 18 IBU

**Color:** 9 SRM

**Alcohol:** 5% by volume

### MALTS

**4 lb.** (1.81 kg) Vienna malt

**4 lb.** (1.81 kg) Pilsner malt

**1.25 lb.** (567 g) 20° L Munich

**1.25 lb.** (567 g) 30° L Cara-amber malt

### HOPS

**0.6 oz.** (17 g) Northern Brewer pellets,  
8.5% a.a. @ 60 min

**0.25 oz.** (7 g) Saaz pellets, 4% a.a. @ 20 min

### YEAST

Munich lager yeast (2 L starter)

### WATER

RO water treated with 2g calcium chloride per 5 gallons water

### BREWING NOTES

Mash in for a protein rest at 125° F (52° C). Heat to 147° F (64° C) and hold for 30 minutes. Heat to 162° F (72° C) and hold for 30 minutes. Mash out at 170° F (77° C). Sparge, boil 90 minutes, and add hops at stated intervals. Chill and oxygenate. Pitch a strong starter of yeast at 50° F (10° C). Fermentation temperature may be allowed to rise to 54° F (12° C). As fermentation slows, bring to 55° F (13° C) and hold 3 days for a diacetyl rest, if desired. When the gravity reaches 1.016 (4° P), crash to lager temperatures (35° F or 2° C) and lager the beer for at least one month before packaging.

### PARTIAL-MASH VERSION

Omit Vienna and Pilsner malts. Mash Munich and Cara-amber malts at 155° F (68° C) for 45 minutes. Drain, rinse grains, and dissolve 6.25 lb. (2.83 kg) Vienna malt extract syrup completely in RO water, then top off to desired boil volume. Proceed as above.



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it's fresh! Stale or rancid corn can ruin a Vienna. Vienna malt has enough diastatic power to convert its own starches and should convert this small percentage of corn adjunct as well, but just to be on the safe side, I like to include Pilsner malt in the grain bill if I'm using corn.

Hops should be used early and lightly. Noble varieties like Hallertau, Spalt, Tettnang, and Saaz are all candidates for classic Vienna; American varieties like Mt. Hood, Willamette, and Crystal would be most suitable for Graf Vienna; and with craft Vienna, anything goes—just make sure hop aromatics and bitterness don't overwhelm the beer or distract from the balance. Save your Equinox, Citra, Comet, and Galaxy for another style. Generally speaking, you should target 18–30 IBUs and use an early, noble addition to generate just enough bitterness for a dry, balanced finish. Low hop flavor is OK, but avoid kettle additions later than about 20 minutes. First-wort hopping works well for this style.

Yeast varieties are pretty open, as long as they are clean-fermenting lager strains and fairly attenuative. I prefer White Labs' Czech Budějovice lager strain, but the Ayinger strain or any of the Bavarian and Munich strains would work just as well. Just be aware that depending upon how fermentable your wort is, you might need to adjust for attenuation differences between strains. It sounds contradictory, but you want to shoot for a finish that's both crisp and malty—too low a finishing gravity and hop bitterness will come forward too much. Too high, and the finish will be sweet and cloying. The BJCP suggests an original gravity of 1.048 to 1.055 for Vienna lager, finishing at 1.010 to 1.014. This will put you in the 4.7 to 5.5 percent ABV range.

The water profile in the city of Vienna hasn't changed much over the years. It's moderately hard, with a high carbonate content. Brewers solved the problem of temporary hardness by boiling the water first. Once boiled, the profile has 27 ppm calcium, 15 ppm magnesium, 10 ppm sodium, 60 ppm sulfate, 15 ppm chloride, and 80 ppm bicarbonate. If you are

a stickler for accurate water, you can start with reverse osmosis (RO) water and dial in each of these numbers with minute additions of Epsom salts, baking soda, sodium sulfate, and the like.

There are several online calculators available to assist with building this profile. However, I've found that what's spot-on accurate doesn't always result in the best-tasting beer or the healthiest yeast. Many feel that high sulfates don't work well with noble hops, so be careful if you are adding this salt. I like the way calcium chloride brings out the

malt in this style without adding harshness or brittleness to the hop bitterness, so I start with RO and add about 2 grams of calcium chloride per five gallons of water.

## Resources

- <http://hock-n-brew.blogspot.com/2011/06/negra-modelo.html>
- Fix, George and Fix, Laurie. *Classic Beer Style Series: Vienna, Märzen, Oktoberfest*, 1999.

**Amahl Turczyn is associate editor of Zymurgy.**

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# 11TH ANNUAL HOME BREW GAD GETS

By *Zymurgy* Readers

The *Zymurgy* Gadgets issue is an annual celebration of the do-it-yourself nature of homebrewers. If a piece of equipment isn't working for them, they'll often tweak it, build something from scratch, or find a homebrew-related use for household appliances or parts.

For more than a decade, *Zymurgy* readers have written in to tell us about the cool toys they've built, and we're proud to showcase another heaping helping of homebrew ingenuity in this, the 11th annual Gadgets issue. There's a gadget here for every budget and every ability. Some are simple, elegant solutions that require nothing more than rearranging items you already have into something more useful and interesting. Others are complex builds that demand a bit of elbow grease and some technical know-how. All of them are guaranteed to help you brew and serve better beer.

Thank you to all who submitted gadgets this year, and keep sending us your stories for the 12th annual Gadgets issue. And in the meantime, be sure to check out [HomebrewersAssociation.org](http://HomebrewersAssociation.org) for more great gadget ideas.

>>

## >> Cold Cabinetry

I stashed away a keg fridge and fermentation chiller combo in a redwood cabinet. The keg fridge is a standard Danby conversion, and the fermentation chamber is a foam unit with an icebox that uses a computer fan thermostat.

Conner Macleod  
Concord, Calif.



## >> Easy Yeast Cropping

When I reuse yeast, I like to keep it in glass canning jars. They seal well, are easy to sanitize, and have enough room to pour in some starter to get the yeast going prior to re-pitching. After seeing so much good yeast go to waste in blow-off tube buckets, I decided to capture it. I cut two holes in a canning lid top, added rubber grommets, and voilà! Easy top-cropping, ready to go in the fridge for later use.

Bob Rouse  
Alexandria, Va.  
*DC Homebrewers Club*



## V V Pre-Wort Chiller

I call this a pre-wort chiller. Anyone who lives in the South knows that the water temperature out of the tap is too warm to successfully cool down your wort after the boil. In south Florida, you're lucky to get tap water in the mid to upper 60s °F (upper teens °C), which means you'll be done drinking down your beer fridge before your wort has finally cooled down enough to pitch yeast.

I made a pre-chiller device from an old cooler, copper tubing, and some flexible piping with 0.75-inch hose adapters on the ends. When I'm ready to chill wort, I fill the cooler with a little water and a lot of ice. I run a length of hose from the outdoor bibb to the input side of the cooler. I then attach the output side of the cooler to the input side of the wort chiller. The effluent from the wort chiller goes to a drain or is used to water plants or for other general uses.

I can add length using a standard garden hose depending on where I set up to brew. I typically get wort down to pitching temperature in roughly 15 minutes with the temperature of the water dropping by 20° F (11° C) initially. It's not as fancy as a plate frame heat exchanger, but it does the trick at a fraction of the cost.

Scott Katzer  
Fort Lauderdale, Fla.



## >> Power Brush

Here's an inexpensive way to build a power brush for cleaning kettles, kegs, and more. First, get a length of half-inch PVC pipe (the one shown here is 20 inches long). In one end, epoxy a half-inch bolt with the head sawed off and smoothed. Then saw the handle off of a (new!) round toilet brush, and sand grind it to fit in the other end of the PVC pipe. Epoxy it in place. With a half-inch cordless drill chuck, you now have a handy, versatile power brush that cleans without scratching. It works well for getting under the rim of corny kegs.

James Werner  
New Berlin, Wis.  
Beer Barons of Milwaukee



## V Flexible Side Dip Tube

I built a flexible side dip tube in my boil keggle for maximum wort collection after whirlpool. It uses a short length of silicone tubing to allow me to move the dip tube around, and it works great!

Tracy Burns-Lusich  
Bakersfield, Calif.



## << String!

String! That's it. A heavy blowoff tube kept pulling the rubber stopper out my fermenter's lid, so I fashioned an elegantly simple solution: string!

Steve Fludder  
Hull, Mass.



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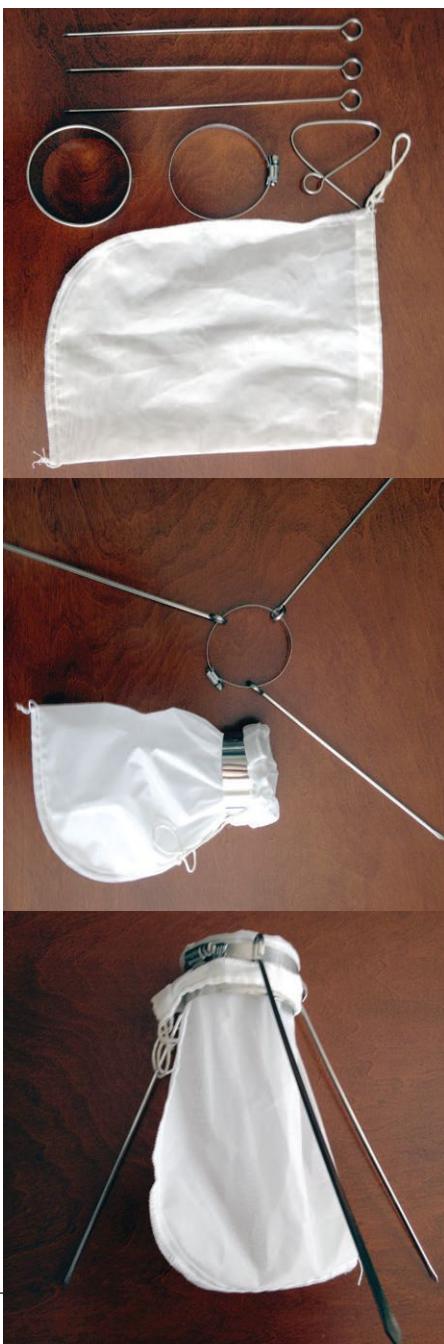
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## V Hop Spider

This is a budget-minded hop spider. I made two of them with materials purchased from Amazon and Home Depot for about \$8 per spider. My (adult) son was more than happy to take the second one off my hands when I showed it to him. We used it during our annual father/son all-grain brew day earlier this year and it worked very well.

#### Hop Spider Materials

- 4 x 12-inch (30 cm) stainless steel skewers with a loop at one end
- 1 x 4-inch (10 cm) stainless steel clamp
- 1 x 3.5-inch (9 cm) diameter stainless steel biscuit cutter
- 1 x hop bag



#### Assembly

1. String the looped ends of three skewers around the clamp.
2. Pull the hop bag through the biscuit cutter from the bottom and fold the top around and over the side.
3. Slide the skewer-clamp assembly over the top of the biscuit cutter/hop bag assembly.
4. Tighten the clamp to secure the skewers to the biscuit cutter and hop bag.
5. Stand the hop spider in your boil kettle, using the skewers like a tripod.
6. Bend the fourth skewer around and onto itself as shown and place in the bottom of the hop bag to weigh it down and hold it open for easier hop additions.

John Ottarson  
Rochester, Mich.



&gt;&gt;

## Thermoelectric Chiller

I ferment 10-gallon (37.9 L) batches in my basement, which usually holds steady at around 68° F (20° C). However, during fermentation, temperatures can exceed this ideal range by several degrees. I didn't want to add a second beer fridge for fermentation, so I decided to build a thermoelectric chiller that uses Peltier devices to control the temperature of my 12-gallon (45-liter) conical fermenter.

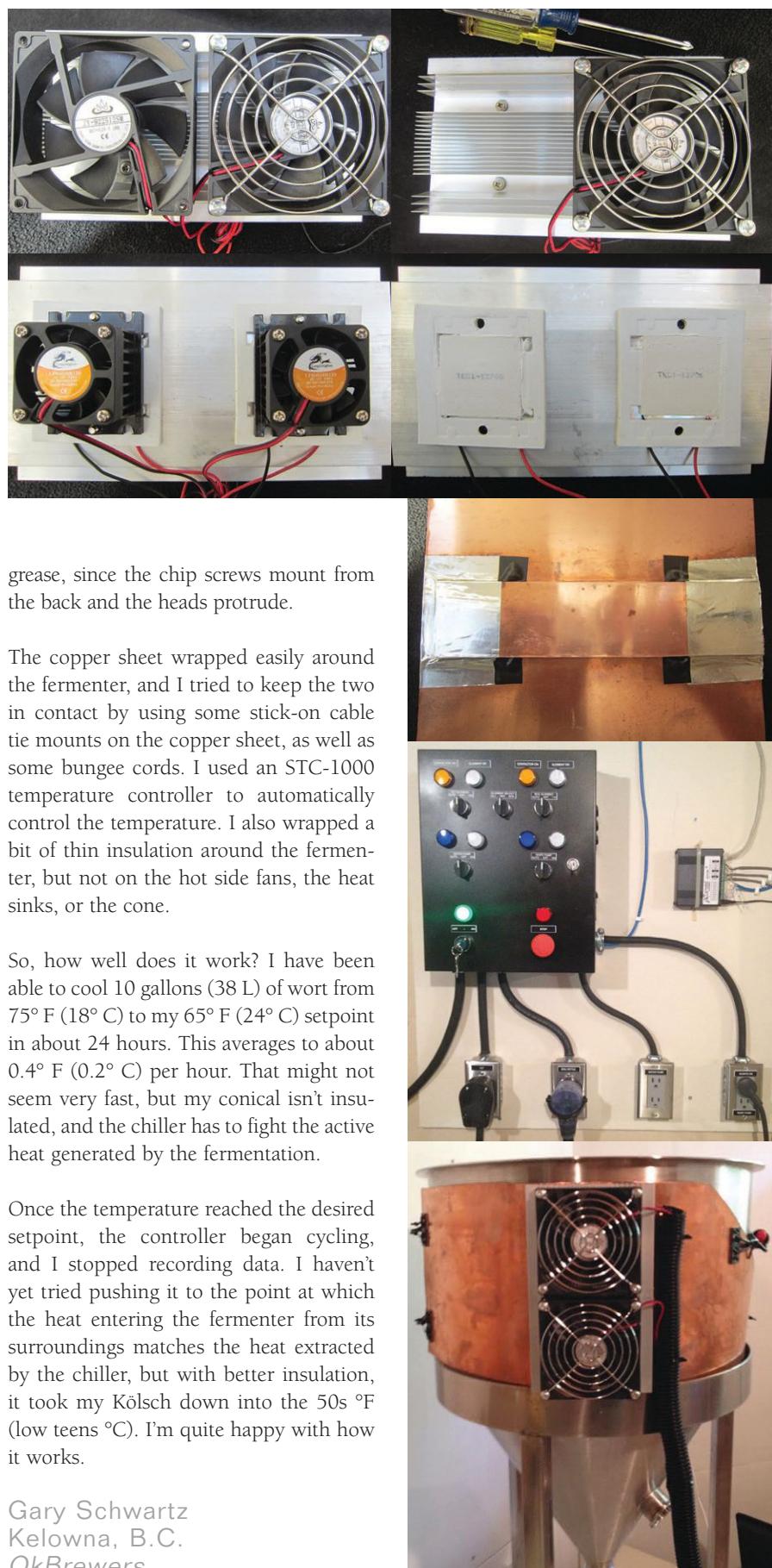
Other builds I have seen use thick aluminum blocks milled to the contours of the fermenter. They are very expensive, and aluminum has half the thermal conductivity of copper. Other popular designs use an immersed metal rod.

I bought a thermoelectric module that has heat sinks and fans on both its hot and cold sides. The module is rated to operate at 12 volts and 120 watts, which draws 10 amps, so I used an old 12-volt computer power supply to power both the two thermoelectric chips and the hot-side fans on the module.

### Thermoelectric Chiller Parts List

- Thermoelectric cooling module
- Copper sheet, 24 gauge  
(I used an irregularly shaped 8"x24" sheet I had on hand.)
- Power supply
- Temperature controller
- Thermal grease
- Wire
- Stick-on cable tie mounts
- Zap straps
- Bungee cords
- Wire nuts or bullet connectors
- Insulation

After removing the heat sinks and fans from the cold side of the thermoelectric module, I mounted it to a sheet of 24-gauge copper left over from an old roofing project. You can buy 24-gauge copper sheets online and cut them to size using shears or tin snips. I applied cheap, white thermal grease between the thermoelectric modules and the copper sheet, but diamond grease is a much better conductor and can be found inexpensively online. I shimmed out the back of the copper sheet under the chips with copper strips, also using thermal



grease, since the chip screws mount from the back and the heads protrude.

The copper sheet wrapped easily around the fermenter, and I tried to keep the two in contact by using some stick-on cable tie mounts on the copper sheet, as well as some bungee cords. I used an STC-1000 temperature controller to automatically control the temperature. I also wrapped a bit of thin insulation around the fermenter, but not on the hot side fans, the heat sinks, or the cone.

So, how well does it work? I have been able to cool 10 gallons (38 L) of wort from 75° F (18° C) to my 65° F (24° C) setpoint in about 24 hours. This averages to about 0.4° F (0.2° C) per hour. That might not seem very fast, but my conical isn't insulated, and the chiller has to fight the active heat generated by the fermentation.

Once the temperature reached the desired setpoint, the controller began cycling, and I stopped recording data. I haven't yet tried pushing it to the point at which the heat entering the fermenter from its surroundings matches the heat extracted by the chiller, but with better insulation, it took my Kölsch down into the 50s °F (low teens °C). I'm quite happy with how it works.

Gary Schwartz  
Kelowna, B.C.  
*OkBrewers*

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## V V A Kegerator Built for Adventure

I do a lot of camping and like to bring my homebrew with me. I had simply wrapped my kegs in a bedroll or towels until I came upon this idea, and it has worked great so far. I just came back from a four-day canoe trip, and the ice lasted a lot longer than the beer.

Marc Cummings  
Poplar Bluff, Mo.  
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## >> Gas Splitter

I like to flush air from carboys and bottling buckets with CO<sub>2</sub> prior to racking beer, but my 20-pound tank is unwieldy and difficult to remove from my kegerator. I already had another regulator for a 5-pound tank I use to carbonate beer in my lagering fridge, so I made a small modification. I split the hose that connects the regulator to the keg and placed a tee splitter inline. I attached a length of hose and a male CO<sub>2</sub> quick disconnect to the stem of the tee so I can pull gas as needed.

I have a separate length of hose with a female CO<sub>2</sub> quick disconnect, so now all I need to do is stick the free end of that hose into the carboy and snap together the disconnects for a couple of seconds to flush out the air with carbon dioxide. Very easy!

Bob Rouse  
Alexandria, Va.  
*DC Homebrewers Club*

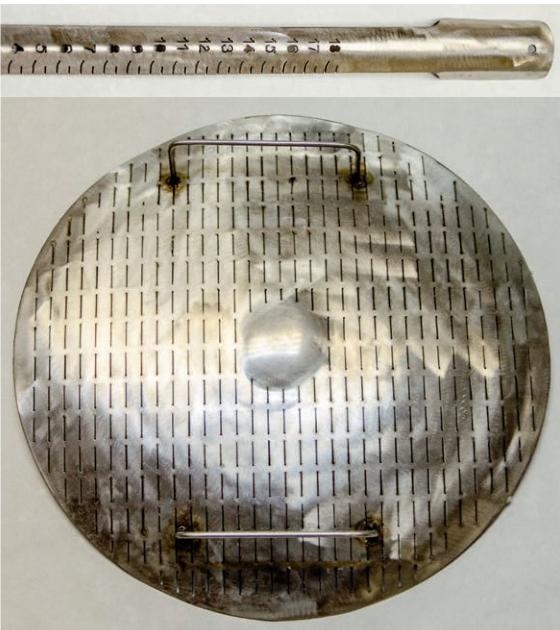


## >> Custom-Built Stainless Brew Tools

My first gadget is a graduated measuring stick calibrated to my 20-gallon (75.7 L) brew pot. It's made from 16-gauge 304 stainless steel and was cut on a CNC plasma machine.

Next up is a "false top" that sits on top of the grain bed during the sparge. Water flows onto the raised area in the center and then flows radially outward and through the grid of slots. It was made from 20-gauge 304 stainless steel using a CNC plasma cutter and Pullmax power hammer. The handles are built from 3/16" 304 stainless rod, which was bent and then TIG welded in place.

Robin Wilkinson  
Freighsburg, Quebec



The image on the right is a composite. On the left, a man with grey hair, Rich Van Horn, stands in a lush green hop field, smiling. He is wearing a light-colored button-down shirt with 'YAKIMA CHIEF HOPUNION' printed on the sleeve. On the right, there is a large vertical advertisement for YCH HOPS. At the top is the YCH HOPS logo. Below it is a photograph of a hop field. The central text reads 'GREAT BEER GROWS HERE.' in large, bold, white letters. At the bottom of the ad, it says 'VAN HORN FARMS, MOXEE, WA'.



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## >> DIY Randall 3.0

**Editor's Note:** This is an abridged version of a build that Dave Clark describes in considerably more detail on the Maltose Falcons' website. We have printed this adaptation with his permission. Full instructions may be found at [maltosefalcons.com/tech/building-diy-randall-30](http://maltosefalcons.com/tech/building-diy-randall-30).

Dogfish Head's original Randall stirred up the beer world quite a bit, but it did have a pretty serious flaw: it foamed—a lot! So, in 2010 they redesigned it to include a second "de-foaming" chamber that can be surrounded by ice, and a flow control faucet to balance beer flow on the way out. Having recently filtered a problematic beer, I had two filter housings (Pentek model 158117) on hand doing nothing. I started thinking of what else I could use them for, which led me to the design you see here.

For the stainless centers within the filter housings, I had to come up with something that could route the beer where it needed to go while also being strong and food-safe. I ended up finding the perfect solution in a spear (dip tube) from a commercial (legally obtained) Sankey keg I had. If you don't have any of these yourself, you may be able to get one at a local metal scrap yard for a few dollars, or ask around at your club or your favorite online homebrew forums. I found that the spear cut rather easily using a tubing cutter, but I would suggest using a saw to cut it to the lengths you need. Just make sure to de-burr the cuts afterwards.

Next came drilling the holes in the longer tubing. Beer comes up through the filter housing on the outside of the center tubing, through your flavor infusion ingredients, and then through some small holes at the far end of the center tubing. From there, it goes down the center tube, and on to the next filter housing.

I have seen builds with holes along the entire length of the tubing, but I would not recommend doing this. If you place holes near the entry point, the beer only passes over a small portion of your infusion ingredients and you won't get



the most flavor extraction possible. I chose to drill twenty 1/16-inch holes, starting about an inch from the end of the tube. You need to leave that space at the end, as the spear will slide over a plastic piece at the end of your housing that will block the holes if you drill too far up.

You need to run your beer backward through the output of the filter hous-

ing. This sends beer up the center tube and lets it cascade down to fill the filter housing. A valve at the top can be used to bleed out the air when first hooking up the Randall. Once this chamber is full, it gives the foam a chance to rise to the top, and allows you to pull foam-free beer from the bottom. This is also the reason that the filter housings *must* be used upside down when you use them in a Randall!



Dogfish Head adds what they call Automatic Air Vents to the tops of their Randall 3.0 (earlier builds actually used toilet or sink supply valves). These are typically used in colder climates that use a boiler to cycle hot water through radiators to heat areas. While the automatic version might be convenient, acquiring one to use in my build in Southern California proved too expensive.



Going back to the early builds and Dogfish Head's supply valve design, I ended up using a stainless inline shut-off valve instead. To install it, I drilled a hole in the end of the filter canister, one just large enough for the barbs to fit through. Then I mixed up some good quality epoxy and spread just enough over the barbs to coat them all the way around. This approach is not strictly "food safe," but I wasn't too concerned since beer in the de-foaming chamber never actually gets high enough to touch it. Also, you may have noticed that I didn't



put a valve on the infusion chamber. I didn't feel that it was necessary, and subsequent tests confirmed my theory.

I use quarter-inch MFL connectors on just about everything keg-related in my brewery, and this case was no different, so I ordered two stainless quarter-inch NPT male to quarter-inch MFL adapters. You'll also need one quarter-inch NPT pipe nipple to attach the two filter housings.

I don't use a flow control faucet or an ice chamber like Dogfish Head's original does. That's because, instead of going straight from the Randall to the faucet, I run it through a jockey box first. This has a few advantages, despite the extra cost of a jockey box! First, the jockey box provides

enough flow resistance to deliver perfect pours without any extra foam, even when pushed through at 25 to 30 pounds per square inch of pressure. Second, even if the beer gets hot sitting in the Randall, it's ice-cold by the time it makes it to your glass. And, since I have a two-tap jockey box, I can split the beer and run one tap through the Randall and one without. People love to taste the difference at parties!

I would suggest keeping your new Randall out of direct sunlight if at all possible. Ultraviolet light can skunk your beer rather quickly through the clear filter housings.

Dave Clark  
Valencia, Calif.  
*Maltose Falcons*

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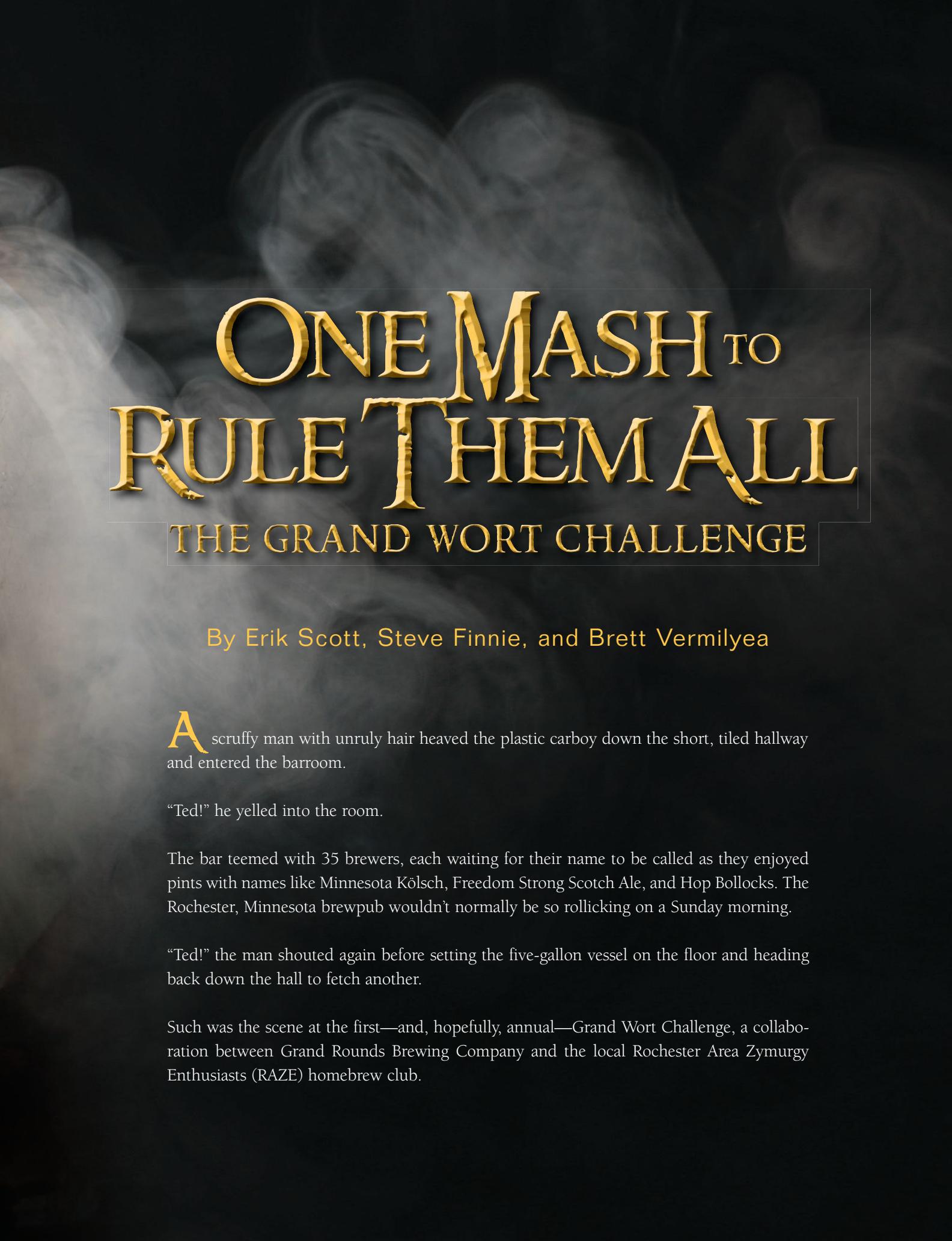
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# ONE MASH TO RULE THEM ALL

## THE GRAND WORT CHALLENGE

By Erik Scott, Steve Finnie, and Brett Vermilyea

A scruffy man with unruly hair heaved the plastic carboy down the short, tiled hallway and entered the barroom.

“Ted!” he yelled into the room.

The bar teemed with 35 brewers, each waiting for their name to be called as they enjoyed pints with names like Minnesota Kolsch, Freedom Strong Scotch Ale, and Hop Bollocks. The Rochester, Minnesota brewpub wouldn’t normally be so rollicking on a Sunday morning.

“Ted!” the man shouted again before setting the five-gallon vessel on the floor and heading back down the hall to fetch another.

Such was the scene at the first—and, hopefully, annual—Grand Wort Challenge, a collaboration between Grand Rounds Brewing Company and the local Rochester Area Zymurgy Enthusiasts (RAZE) homebrew club.



**Grand Rounds is a 7-barrel (8.2-hl) brewpub that can produce about 220 gallons (833 L) of wort, so event organizers limited participation to 35 brewers.**



A couple of months earlier, RAZE had approached Grand Rounds head brewer Steve Finnie about brewing a big batch of wort that club members could take home to ferment as they liked. Finnie agreed, but not before upping the ante: “Let’s make it even more interesting and use virgin wort.”

Virgin wort, also called sweet wort, comes straight from the mash tun. Unhopped and unboiled, it’s a blank canvas upon which to paint the brewer’s art.

RAZE members immediately saw the possibilities. You could take this home and do whatever you wanted with it. Add sugar and light hops to make a Belgian golden strong ale; steep a couple of specialty grains and load up on hops to make an IPA; or add a bunch of honey to brew a braggot. Not to mention using different yeast strains. The possibilities were endless!

Within an hour of arriving at the brewery, each brewer left with a ration of fresh, 1.048-gravity, 100-percent Golden Promise wort.

## BREWING

Grand Rounds is a 7-barrel (8.2-hl) brewpub that can produce about 220 gallons (833 L) of wort, so event organizers limited participation to 35 brewers (or 35 batches of wort—if fewer brewers signed up, some could take two portions). That would give each brewer 5.5 gallons, for a finished volume of 5 gallons (18.9 L). To cover the cost of grain, each brewer paid \$10 per 5.5-gallon batch, which also included a pint of Grand Rounds beer to enjoy during wort pickup.

To get more people involved in the local brew scene and in the local brew club, organizers reserved 20 spots for current RAZE members and 15 for nonmembers. They advertised the event at Grand Rounds, on the Facebook pages for RAZE and Grand Rounds, and through word of mouth.

RAZE asked its Facebook followers to vote on what kind of wort to use: 100-percent Golden Promise was the unanimous winner. (Other options included 100-percent Maris Otter and a 50/50 split of those two malts.) Steve and Erik started brewing



Events like these offer easy conversation starters —there's always beer to discuss. “What did you make?” quickly becomes a 10-minute conversation about brewing processes.

early Sunday morning, mashed the 330 pounds (150 kg) of grain for 30 minutes at 151° F (66° C), and recirculated for another 30 minutes. The pH was 5.3, and the original gravity came in at 1.048. Then it was delivered to contestants to work their magic.

## JUDGING

About two months after the brewers gathered their wort, they returned to the Grand Rounds Brewing Company. Just after 6 p.m. on the third Wednesday of the month (RAZE's regular meeting time), brewers walked into the brewpub with their entries: a motley collection of bottles and beer styles: standard 12-ouncers, big bombers, thick Belgian 750s, half-growlers, swing-tops, and more.

Erik assigned each brewer a number, and beer entries were assembled on high-top tables arranged in a giant square in the corner of the brew pub. Each brewer placed their entry and headed to the bar, taking time to greet friends they hadn't seen since the last meeting.

Members who had been in the homebrew club for more than a couple of years noticed an unusually high number of brewers at this meeting, and more than a couple of unfamiliar faces. A slightly awkward, subdued air filled the room as new guests and club veterans made small talk and started getting to know one another.

# FRENCH TAUNTER SAISON

RECIPE BY CHRIS HOFICH – 1ST PLACE GRAND WORT CHALLENGE

**BATCH VOLUME:** 5 U.S. gallons  
(18.9 L)

**ORIGINAL GRAVITY:** 1.066

**FINAL GRAVITY:** 1.003

**BITTERNESS:** 21 IBU

**ALCOHOL:** 8.2% by volume

**ADDITIONAL ITEMS**

**2 oz.** (57 g) fresh ginger  
(in secondary, 7 days)  
**2 oz.** (57 g) elderflower petals  
(in secondary, 7 days)

### MALTS AND SUGARS

**6 gal.** (22.71 L) Golden Promise wort (1.048 OG)

**0.5 lb.** (227 g) aromatic malt  
(steeped 30 min)

**0.5 lb.** (227 g) flaked wheat  
(steeped 30 min)

**10 oz.** (283 g) candi sugar (5 min)

**12 oz.** (340 g) wildflower honey  
(5 min)

### BREWING NOTES

Steep the specialty grains in the Golden Promise wort for 30 minutes, bring to a boil, and add hops, candi sugar, and honey as indicated above. Fermentation volume after evaporation losses is 5 gallons (18.9 L). Ferment at 68–70° F (20–21° C). Add ginger and elderflower petals to secondary.

### PARTIAL-MASH VERSION

Substitute Golden Promise wort with 6.75 lb. (3.06 kg) pale malt extract syrup diluted with reverse osmosis water to a pre-boil volume of 6 gallons (22.71 L). Steep remaining grains in a portion of this wort at 155° F (68° C) for 30 minutes, then remove grains and proceed with recipe as above.

### HOPS

**0.25 oz.** (7 g) Centennial @ 60 min

**0.25 oz.** (7 g) Centennial @ 30 min

**0.25 oz.** (7 g) Citra @ 15 min

**0.25 oz.** (7 g) Citra @ 5 min

**0.25 oz.** (7 g) Citra @ flameout

### YEAST

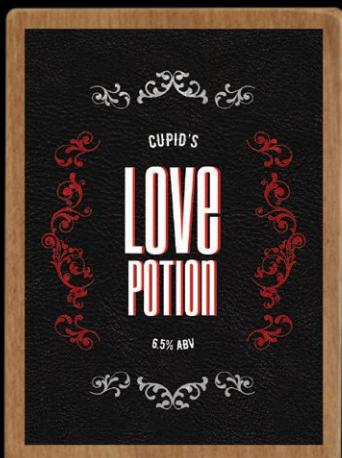
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## MOUNTAIN MAN IMPERIAL IPA

RECIPE BY TODD CHARLES – TIED 2ND/3RD PLACE GRAND WORT CHALLENGE

**BATCH VOLUME:** 4.7 U.S. gallons  
(17.8 L)

**COLOR:** 5.9 SRM  
**ALCOHOL:** 7.2% by volume

**ORIGINAL GRAVITY:** 1.062  
**FINAL GRAVITY:** 1.007

### MALTS AND SUGARS

<b>6 gal.</b>	(22.71 L) Golden Promise wort (1.048 OG)
<b>2.25 lb.</b>	(1.02 kg) 10° L crystal malt
<b>1 lb.</b>	(454 g) table sugar (in primary)
<b>8 oz.</b>	(227 g) brown sugar (in primary)

### HOPS

<b>3.5 oz.</b>	(99 g) Amarillo @ 60 min
<b>1.5 oz.</b>	(42 g) Amarillo @ 30 min
<b>1 oz.</b>	(28 g) Chinook @ 5 min
<b>1 oz.</b>	(28 g) Amarillo @ 0 min
<b>2 oz.</b>	(57 g) Simcoe, dry hop

### YEAST

Safale US-05

### ADDITIONAL ITEMS

Irish moss (15 min)

### BREWING NOTES

Ferment at 67–68° F (19–20° C).

### PARTIAL-MASH VERSION

Substitute Golden Promise wort with 6.75 lb. (3.06 kg) pale malt extract syrup diluted with reverse osmosis water to a pre-boil volume of 6 gallons (22.71 L). Steep remaining grains in a portion of this wort at 155° F (68° C) for 30 minutes, then remove grains and proceed with recipe as above.



Events like these offer easy conversation starters—there's always beer to discuss. "What did you make?" quickly becomes a 10-minute conversation about brewing processes.

The range of beers on the table was impressive. On the small end there was

an English dark mild (4.4 percent ABV) and a Southern English brown (4.5 percent). Most fell into the 5.3- to 5.7-percent range, but there was a Belgian golden strong ale at 10.5 percent and a Russian imperial stout clocking in at 11.6 percent.

Unsurprisingly, there was more IPA than anything else, but even those showcased diversity—session IPA, SMaSH IPA, rye IPA, brown IPA, and imperial IPA. There were also ESBs, a Scottish ale, an alt, several saisons, a blond sour, a dubbel, and a couple of pale ales. One brewer split his batch in half, making a saison with one part and a braggot with the other.

Once all the bottles had been assembled, the judging began. Organizers chose an informal voting system to efficiently evaluate the wide variety of styles. Each taster was given three wooden chips they could drop into cups next to the beers they liked. They could give all their chips to one beer or distribute them among two or three, basing their decisions on whatever criteria they liked.

All competition beers were assembled around a large collection of tables, and each taster had to go around in a clockwise fashion. It all gave one the feeling of entering the line for an amusement park ride because once you entered, there was only one way out: go all the way around and sample every beer!

It was a slow process. As each taster entered the line, you could feel a bit of trepidation, a sense that you were going to be stuck next to these guys for a while, like sitting in the cheap seats on an airplane. But after entering the line and trying the first couple of beers, each taster relaxed; sampling a few beers soon led to laughter and lively discussions about which beers worked and which missed the mark.

## WINNING

After an hour, everyone had distributed their chips and the din had become noticeably louder. Hearing one's neighbor became increasingly difficult as brewers laughed, exchanged secrets (“Add a bit of lambic at bottling!”), and revealed “mistakes” that in the end actually worked out OK. One brewer forgot to assign their brewing liquor a specific gravity of 1.048 in their brewing program, and the additional extract yielded a wort of 1.110 instead of 1.070! That’s how a black IPA becomes a Russian imperial stout.

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# A DARK AND MILD NIGHT

RECIPE BY ERIK SCOTT – TIED 2ND/3RD PLACE GRAND WORT CHALLENGE

<b>BATCH VOLUME:</b>	5.5 U.S. gallons (20.8 L)
<b>ORIGINAL GRAVITY:</b>	1.040
<b>FINAL GRAVITY:</b>	1.005
<b>COLOR:</b>	20 SRM
<b>ALCOHOL:</b>	3.9% by volume

### MALTS AND SUGARS

<b>4 gal.</b>	(22.71 L) Golden Promise wort (1.048 OG)
<b>1 lb.</b>	(0.45 kg) pale 2-row malt
<b>0.5 lb.</b>	(227 g) chocolate malt
<b>0.25 lb.</b>	(113 g) chocolate rye malt
<b>0.25 lb.</b>	(113 g) malted oats
<b>2 oz.</b>	(57 g) black wheat malt

### HOPS

<b>0.5 oz.</b>	(14 g) Willamette, 5.3% @ 60 min
<b>0.5 oz.</b>	(14 g) Willamatte, 5.3% @ 5 min

### YEAST

Wyeast 1332 Northwest Ale yeast

### BREWING NOTES

Mash grains with 2 gallons (7.57 L) of water at 155° F (68° C). Remove and drain grain, add 4 gallons (15.14 L) of Golden Promise Wort (1.048), and boil with hops as indicated. Ferment in low 60s °F (16-18° C).

### EXTRACT VERSION

Substitute Golden Promise wort with 6.75 lb. (3.06 kg) pale malt extract syrup diluted with reverse osmosis water to a pre-boil volume of 6 gallons (22.71 L). Steep remaining grains in a portion of this wort at 155° F (68° C) for 30 minutes, then remove grains and proceed with recipe as above.

# COMFORT SOUR

RECIPE BY RON ANDERSON – HONORABLE MENTION GRAND WORT CHALLENGE

<b>BATCH VOLUME:</b>	5 U.S. gallons (18.93 L)
<b>ORIGINAL GRAVITY:</b>	1.061
<b>FINAL GRAVITY:</b>	1.010
<b>COLOR:</b>	4.6 SRM
<b>ALCOHOL:</b>	6.3% by volume

### MALTS AND SUGARS

<b>3 lb.</b>	(1.36 kg) white wheat malt
<b>1 lb.</b>	(0.45 kg) uncrushed pale two-row malt

### HOPS

<b>0.5 oz.</b>	(14 g) Magnum hops @ 60 min
<b>0.5 oz.</b>	(14 g) Willamette hops @ 5 min

### YEAST

Safale S-04

### ADDITIONAL ITEMS

<b>2 oz.</b>	(57 g) French oak chips (secondary)
<b>24 oz.</b>	(0.7 L) Southern Comfort (secondary)

### BREWING NOTES

Heat Golden Promise wort to 148° F (64° C) and steep 3 lb. of crushed white wheat grains in it for 45 minutes. Remove grains and heat to 200° F (93° C) to kill off bacteria and wild yeast. Do not boil, which will remove vital proteins needed in the souring process by the Lactobacillus. Chill wort to 115° F (46° C). Add uncrushed two-row and steep for 22 hours. To avoid oxygen contact during the souring process, I use a large fermenter and purge with CO<sub>2</sub>.

Souring can take 14 to 48 hours, but stop before the pH level drops below 3.4; more acidity may affect the fermentation by your standard yeast. When pH reaches 3.8, boil 60 minutes with 60- and 5-minute hops as indicated. Chill, pitch Safale S-04 at 68° F (20° C), and ferment until specific gravity reaches 1.010. During fermentation, steep oak chips in Southern Comfort for one week. When fermentation is complete, rack beer to secondary on top of wood chips and liqueur and let sit for one more week. Chill and rack to keg.

Erik tried to get everyone's attention to announce the results. The room quieted as much as could be expected from a few dozen brewers who had been drinking for more than two hours. After a few honorable mentions, Erik revealed a tie for second and third place between Todd Charles' imperial IPA and an English dark mild by...Erik Scott.

"What a surprise!" someone shouted with a smile. "Rigged!" yelled another to laughter.

First place went to Chris Hofich for his saison with elderflowers and ginger. Chris, who wasn't a member of RAZE when he picked up his wort, hadn't been brewing even a year. His winning recipe offered a reminder of why so many of us started brewing in the first place: to imagine a flavor and then experiment to get there. Chris' beer was impressively balanced considering its complexity. After all, ginger can quickly overtake any brew. But Chris used a gentle touch to give a noticeable, pleasant flash of ginger that harmonized with the saison yeast esters and elderflower.

For second and third place, Todd and Erik scored Grand Rounds swag. For taking first, Chris received a \$50 gift card at Grand Rounds, provided by RAZE.

After the winners had been announced, some brewers headed home, while others resumed their conversations. Over the next hour the crowd thinned as rides arrived and folks left. But before everyone took off, all agreed that the First Grand Wort Challenge had been a great way to learn, be creative, and meet new brewers.

**Erik Scott started homebrewing in college in 1997 and was active in homebrew clubs in Chicago and Milwaukee before moving to Rochester, Minn., where he is a member of RAZE and loves being an assistant brewer at LTS Brewing Company. Steve Finnie is head brewer and part owner of Grand Rounds Brewing Company. He started homebrewing in 1999 and took the plunge into professional brewing in 2015. Since the Grand Wort challenge, Brett Vermilyea has quit the corporate world to brew full time at LTS Brewing because Life's Too Short to work bad jobs.**

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# advanced brew-in-a-bag mashing

By Gavin Convey





IN THE MID-1990S, I HAD THE PLEASURE OF SPENDING A WONDERFUL SUMMER IN MUNICH WITH FRIENDS. WE LIVED IN A SMALL APARTMENT UP THE ROAD FROM THE FAMOUS LÖWENBRÄU KELLER AND, WHEN OPPORTUNITY PRESENTED ITSELF, ENJOYED SAMPLING THE DELECTABLE CULINARY AND BEER-RELATED OFFERINGS FOUND WITHIN. AS A YOUTHFUL UNIVERSITY STUDENT, THIS WAS ONE OF MY EARLIEST FORAYS INTO THE WONDERFULLY DIVERSE WORLD OF BEER BEYOND MY HOME SHORES.

Over the past year, I have been attempting to recreate some of those wonderful beers from that memorable Bavarian summer. I have tried my hand at many styles, including Munich helles, Munich dunkel, Vienna lager, German Pilsner, Märzen, Kölsch, and altbier.

In researching these styles, I noted a trend. Traditional methods that include step mashes are commonplace and still used by many breweries. These establishments typically have deep histories that often include adherence to arcane, centuries-old purity laws.

Perusing the award-winning recipes in the American Homebrewers Association's database, a similar trend in mash profiles became apparent. It would appear that both traditional stylistic brewing methods and competition success at the national level strengthen the case for the use of a step mash in brewing these styles of beer.

"MY PURPOSE IN WRITING THIS ARTICLE IS TO ILLUSTRATE THE PROCESSES INVOLVED IN STEP MASHING, NOT DEBATE THE SCIENTIFIC BASIS FOR THEIR UTILITY OR, FOR THAT MATTER, THEIR REDUNDANCY."



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The counterpoint to this largely anecdotal support for step mashing comes from many well-versed and respected brewers and brewing authors who quite reasonably argue that, given the nature of fully modified modern malts, there is little, if any benefit to employing a step mash. I would ask readers to shelve their thoughts related to this debate for the time being. My purpose in writing this article is to illustrate the processes involved in step mashing, not debate the scientific basis for their utility or, for that matter, their redundancy.

Excluding heat exchange recirculating mash systems (HERMS) and recirculating infusion mash systems (RIMS), of which I have no personal experience and only a rudimentary understanding, there are four ways to execute a step mash. These include

- Heating the mash directly,
- Infusing the mash with hot water,
- Decoction and boiling a portion of the mash and returning it to the tun, and
- Combining one or more of the above.

A metal mash tun, though certainly not essential, does make step mashing easier. Being able to directly heat the mash confers an oft-overlooked advantage of single-vessel brewing, one that I—a happy proponent of brew-in-a-bag methods—feel single-vessel brewers underutilize. Step mashing is possible with a variety of all-grain equipment, but its easier to apply

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[HomebrewersAssociation.org/biab](http://HomebrewersAssociation.org/biab)

Photos courtesy of Gavin Convey; iStock

corrective measures with BIAB since the mash tun can be heated.

An accurate, calibrated thermometer and reliable brewing software are also indispensable tools if one wishes to carry out a step mash with control, ease, and precision.

### STEP MASHING WITH DIRECT heat

The main advantage of direct heat is that it requires no additional pots or heat sources. But you do have to continuously stir the mash while applying heat to your metal mash tun.

A mash is a poor thermal conductor. With direct heat, you need to stir to avoid scorching the mash and denaturing critical enzymes in the hottest areas near the heat source. In addition, the measured mash temperature should be representative of the mash as a whole to prevent overshooting the desired rest temperatures. Continuously stirring the mash helps maintain such thermal uniformity.

When step mashing this way, I find it best to kill the heat 1–2° F (0.5–1° C) shy of my

target rest temperature. The residual heat in the pot itself continues to warm the mash the last bit of the way. It's analogous to driving up to a red light, when you take your foot off the gas and let the vehicle's momentum carry you the rest of the way there.

Most common insulation has a low melting point, so it's important to remove any foam or plastic pieces from the mash tun when applying direct heat in this manner. Insulation is desirable during a mash rest, but exposing it to a naked flame is an obvious fire hazard worth avoiding. Keep in mind, though, that removing an insulated lid and stirring a full-volume mash means taking more time to ramp the temperature from one rest to another.

### STEP MASHING WITH INFUSIONS

Step mashing with infusions of near-boiling water requires much less work and attention from the brewer. Stirring is only needed when adding the calculated volumes of water necessary to reach the desired temperatures, and direct heat is only needed if you undershoot a rest temperature by a few degrees. Here's

how I do it in my single-vessel, brew-in-a-bag system.

1. Collect the full water volume in the mash tun/boil kettle (MT/BK), and add any minerals needed to achieve the desired water profile. If the water has chlorine or chloramines, sodium metabisulfite or potassium metabisulfite may also be added to eliminate them.
2. Draw off a measured volume of this brewing liquor to a second pot, which serves as the hot liquor tank (HLT). This will provide all the water needed for hot water infusions.
3. Heat strike water in the MT/BK to the target temperature and add grain to hit the first rest temperature.
4. Bring the water in the HLT to a boil and maintain a simmer with the lid on.
5. Add pre-calculated volumes of boiling water from the HLT to the mash to heat it to the next rest temperature. Stir the mash thoroughly while adding hot water to ensure homogeneity and representative temperature readings.

I FIND STEP MASHING A LOT OF FUN, AND BREWING THIS WAY PRESSES MY INNER-GEEK BUTTONS. I ENJOY THE ADDED PLANNING AND MEASUREMENT, AND I ENJOY THE BEERS I BREW USING A STEP MASH.



# gavin's GLORIOUS gerMAN PILSNER

Contributed by Gavin Convey

**Batch Volume:** 5.5 U.S. gallons (20.8 L)

**Original Gravity:** 1.047 (11.6° P)

**Final Gravity:** 1.008 (2.1° P)

**Color:** 3.6 SRM

**Bitterness:** 36 IBU

**Alcohol:** 5% by volume

## MALTS

**8.5 lb.** (3.86 kg) Belgian Pilsner malt  
**5 oz.** (142 g) acidulated malt  
**2 oz.** (57 g) melanoidin malt

## HOPS

**2 oz.** (57 g) Hallertau, 2.7% a.a. @ 60 min  
**1 oz.** (28 g) Hallertau, 2.7% a.a. @ 30 min  
**1 oz.** (28 g) Saaz, 3.2% @ 15 min  
**1 oz.** (28 g) Saaz, 3.2% @ 5 min

## YEAST

White Labs WLP833 German Bock yeast (starter)

## WATER

Ca 50 ppm, Mg 1 ppm, SO<sub>4</sub> 71 ppm, Cl 46 ppm, Na 12 ppm,  
Mash pH 5.45

## ADDITIONAL ITEMS

Gelatin finings

## BREWING NOTES

The acid malt is needed in my setup as I utilize full-volume mashes with no sparging. Thinner mashes may need some form of additional acid. I use acidulated malt in calculated amounts and subtract it from the base malt to maintain the same original gravity. If acid malt is not needed in your setup, simply swap it with Pilsner malt.

Mash in with 23.5 qt. (22.3 L) of 152° F (67° C) water for a beta amylase rest at 140–150° F (60–66° C). Add 8 qt. (7.6 L) of near-boiling water for an alpha amylase rest at 155–165° F (68–74° C). Use direct heat for a short mash-out rest at 168° F (76° C). Alternatively, conduct a single infusion mash at 150° F (66° C). Remove grain bag and boil wort for 90 minutes, adding hops according to the indicated schedule.

Pitch yeast at 48° F (9° C) and ferment at 50° F (10° C) for two weeks. Allow beer temperature to passively rise to 68° F (20° C) for a one-day diacetyl rest. Cold crash to 31° F (−0.6° C) and let rest for a day. Then add gelatin finings and rest for another day before racking to a keg. Force carbonate to 3 volumes (6 g/L) of CO<sub>2</sub> and lager at 34° F (1° C) for an additional three weeks before serving.

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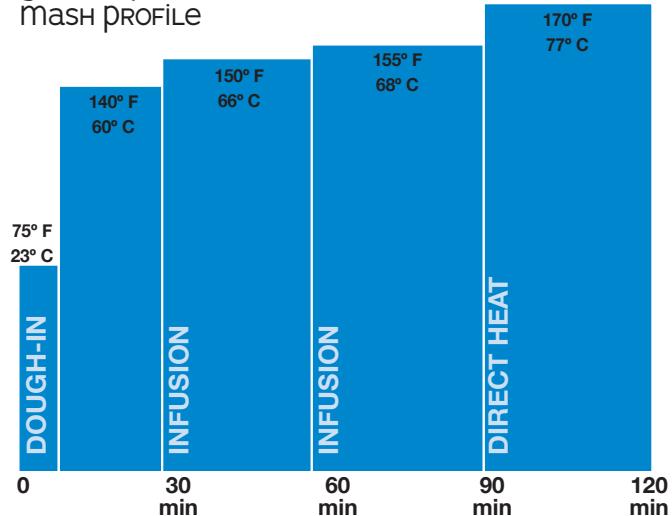
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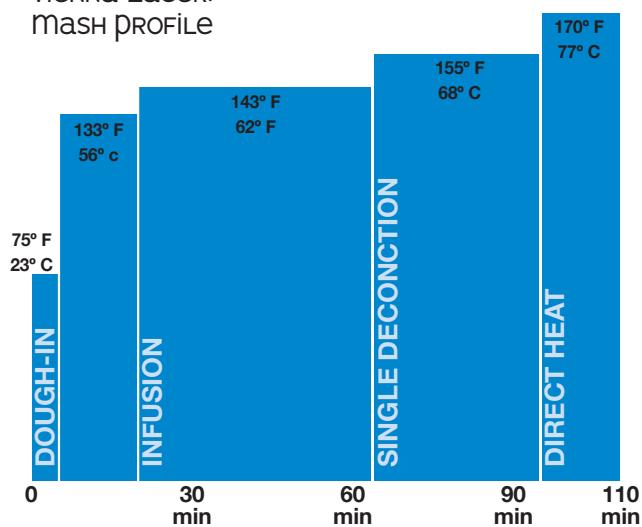
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## GERMAN PILSNER: MASH PROFILE



## VIENNA LAGER: MASH PROFILE



If you carry out infusion mashes this way, using pre-measured volumes of water, there's no risk of overshooting the volume of your mash tun/boil kettle. And if you come up a bit cool on an infusion step, just remove any insulation and apply direct heat to make up the difference.

### STEP MASHING WITH DECOCTIONS

The third way to carry out a step mash is with decoctions. This is a little more complex and time-consuming but follows a similar principle of adding near-boiling material (in this case a portion of the mash itself) to raise the temperature of the mash. No direct heating of the main mash is involved. My process is as follows.

1. Remove a thick portion of the mash to a second pot. This is the decoction.
2. Heat the decoction. This can optionally include a conversion rest for the deco-

- tion itself before it is heated further.
3. Bring the decoction to a boil, and continue to boil it for a period of time. Once again, constant stirring is needed to avoid scorching.
  4. Return the decoction to the main mash, which will raise its temperature to that of the next rest.
  5. Repeat this process as needed, depending on the number of steps in your mash schedule.

My brewing software usually underestimates the decoction volume required to move from one mash temperature to another. I believe this is unavoidable and related to how the software models the mash without accounting for heat associated with opening the mash tun, stirring the mash, pulling a decoction, and returning it to the tun. All of these steps lose some thermal energy along the way.

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My mash tun loses a fair amount of heat when I pull a decoction, and the temperature drops accordingly. As with infusions, it's easy to recover with the all-metal MT/BK used with BIAB methods. Simply remove any insulation and apply direct heat.

Another solution is to increase the decoction volumes when planning your mash to deliver more heat to the main mash. I typically add 25 percent to the decoction volume my software recommends to account for the inevitable loss of heat.

I have also noted that, on a number of occasions when carrying out a decoction mash, the measured mash pH was slightly lower than anticipated following the decoction. This may not be attributable to the decoction itself given the myriad other possibilities, not least of which includes measurement error and the dynamic nature of mash pH. This is something I plan to further explore in future brews, but it may not have any practical relevance for the resulting beer.

## STEP MASHING WITH A HYBRID APPROACH

I typically use a hybrid approach when I conduct a step mash in light of the pros and cons of each of these methods:

- Infusions are easy to calculate, prepare, and execute.
- Directly heating the mash tun is very accurate but requires more work on the part of the brewer. It also takes longer to raise the temperature of the mash than does an infusion.
- Decoction mashing takes a bit more trial and error to deal with the thermal inefficiencies in one's brewing setup.

I will typically use a hot water infusion to dough-in and then either a decoction or another infusion to move to the next mash rest. Direct heat is used to adjust the mash temperature if I undershoot my desired rest temperature by a couple of degrees.

I find step mashing a lot of fun, and brewing this way presses many of my inner-geek-buttons. I enjoy the added

planning and measurement and, more importantly, I enjoy the beers I brew using a step mash, and I have included two of my favorite recipes that I've brewed with a hybrid step mash approach.

A single-vessel brew-in-a-bag setup is perfect for experimenting with step mashes since the ability to apply direct heat makes it easy to recover if you miss your mash temperature. If adding a little complexity and some extra time to your brew day doesn't faze you, I encourage you to experiment with step mashes and see for yourself what they can do for your beer. Prost!

**Gavin Convey is an Irish expat who lives in the great state of Texas and has been brewing beer in his kitchen since 2014. When not brewing, working, or pining for creamy pints of Guinness and the craic from back home in Dublin, he can usually be found hanging out and playing silly games with his wife and two little girls. Sláinte!**



# GAVIN'S MAJESTIC MUNICH DUNKEL

Contributed by Gavin Convey

**Batch Volume:** 5.5 U.S. gallons (20.8 L)

**Original Gravity:** 1.053 (13° P)

**Final Gravity:** 1.011 (2.6° P)

**Color:** 20 SRM

**Bitterness:** 26 IBU

**Alcohol:** 5.6% by volume

### MALTS

6 lb.	(2.72 kg) Light Munich malt
2.5 lb.	(1.13 kg) Belgian Pilsner malt
1.5 lb.	(0.68 kg) Dark Munich malt
5 oz.	(142 g) Carafa Special III malt
2 oz.	(57 g) acidulated malt

### HOPS

2 oz.	(57 g) Hallertau, 2.7% a.a. @ 60 min
0.5 oz.	(14 g) Hallertau, 2.7% a.a. @ 15 min

### YEAST

White Labs WLP833 German Bock yeast (starter)

### WATER

Ca 50 ppm, Mg 3 ppm, SO<sub>4</sub> 76 ppm, Cl 57 ppm, Na 21 ppm,  
Mash pH 5.30

### ADDITIONAL ITEMS

Gelatin finings

### BREWING NOTES

Mash-in with 18 qt. (17 L) of 129° F (54° C) water for a short protein rest at 122° F (50° C). Add 14 qt. (13.2 L) of 180° F (82° C) water for a beta amylase rest at 140–150° F (60–66° C). Decoct 8 qt. (7.6 L) of thick mash, boil, and return to main mash for an alpha amylase rest at 155–165° F (68–74° C). Use direct heat for a short mash-out rest at 168° F (76° C). Alternatively, conduct a single infusion mash at 150° F (66° C). Remove grain bag and boil wort for 90 minutes, adding hops according to the indicated schedule.

Pitch yeast at 48° F (9° C) and ferment at 50° F (10° C) for nine days. Allow beer temperature to passively rise to 68° F (20° C) for a one-day diacetyl rest. Cold crash to 31° F (-0.6° C) and let rest for a day. Then add gelatin finings and rest for another day before racking to a keg. Force carbonate to 2.8 volumes (5.6 g/L) of CO<sub>2</sub> and lager at 34° F (1° C) for an additional four weeks before serving.



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# THE MICHIGAN HOMEBREW FESTIVAL

By Pat Hyde





# IN JUNE 2010, I RECEIVED A VOICEMAIL FROM A GUY I HAD NEVER MET NAMED PAT CRADDOCK. HE WAS AN ACTIVE MEMBER OF THE KUHNHENN GUILD OF BREWERS, A FELLOW MICHIGAN HOMEBREW CLUB. HIS VOICEMAIL SAID SOMETHING ALONG THE LINES OF, "HEY, MY CLUB OFFICERS TOLD ME I'M SUPPOSED TO HELP YOU WITH SOME FESTIVAL THING. CALL ME BACK, OR DON'T. I DON'T CARE."

He was referring to conversations I had had with several area homebrew clubs—Cass River Homebrew Club, the Kuykendahl Gran Brewers (KGB), and a group of brewers from Mid Michigan called the Shiawassee County Area Brewers Society (SCABS)—who all thought it would be a great idea to get together for overnight or weekend homebrewing festivities.

My wife and I started becoming active in the Michigan homebrewing community in 2008. We entered competitions, took some BJCP classes, began judging, and eventually helped run some large competitions. I met so many great people and had so much in common with them, I felt like I had known some of them half my life.

There were quite a few competitions in Michigan back then, and we judged almost all of them. I would have the customary pint or two with someone after judging, and we would eventually go our separate ways. I always wanted to hang out longer and continue the conversation.

When I was appointed the task of planning a club pig roast for SCABS and Cass River (my club at the time), I saw an opportunity to try to bring the homebrew community in our region together by doing a weekend camping event. My club agreed to cover the expenses as long as I paid them back after the event. That

was when I met that young curmudgeon Pat Craddock and things really took off.

We decided on the third weekend in August, at Groveland Oaks Campground in Holly, Michigan. We spent the summer attending homebrew club meetings all over the state, appearing on local podcasts, and doing everything we could to get the word out about the Michigan Homebrew Festival (MHF) and all of our ideas that went with it. It was scary, not just because we didn't know how things would go, but also because I would be stuck paying back the hefty deposit to the campground if it failed.

As things fell into place, we teamed up with a friend named Dan Frechette. Dan was in the process of taking over the defunct Michigan State Fair homebrew competition and turning it into what is now known as the Michigan Beer Cup. We decided to work together and host the awards ceremony at MHF. We would do a proper awards ceremony with a microphone, a stage, and no time limit—a big improvement over the small corner of the hut we'd been stuffed into at the State Fair.



As the first MHF drew nearer, we filled reservations and received overwhelming support from sponsors. The first year we reserved and filled 30 campsites in a private loop at the campground. I no longer worried about reimbursing my club because we raised enough money to break even. Campsites were split between club sites and camping sites. Clubs set up booths in campsites and poured homebrew from corny kegs and bottles, just like at a real festival!

We had a successful awards ceremony, roasted a pig, and showed a good time to the approximately 100 attendees. With the first MHF behind us, there was no doubt that the Michigan homebrewing community had enough interest for us to make the festival an annual event.

The following year we doubled in size to 60 campsites and around 200 campers, and by year five, more than 130 campsites and six cabins hosted 500 happy campers, many of whom stayed from Wednesday evening through Sunday morning. We were thrilled to experience strong growth throughout those years while keeping our crowd mostly limited to homebrewers and beer enthusiasts. The growth of



# MICHIGAN HOMEBREW FESTIVAL WELCOME BEER

## Hoppy Wheat Beer

**Batch Volume:** 12 U.S. gallons (45.4 L)

**Original Gravity:** 1.047 (11.6° P)

**Final Gravity:** 1.011 (2.6° P)

**Color:** 5–6 SRM

**Bitterness:** 25 IBU

**Alcohol:** 4.8% by volume

### MALTS

7 lb.	(3.18 kg) Briess white wheat malt
8 lb.	(3.63 kg) Briess 2 row
4 lb.	(1.81 kg) Weyermann Pilsner malt
1 lb.	(454 g) honey malt

### HOPS

0.4 oz.	(11 g) Citra, 12.5% a.a. @ 60 min
2 oz.	(57 g) Amarillo, 12% a.a., whirlpool 20 min
2 oz.	(57 g) Citra, 12.5% a.a., whirlpool 20 min
1.5 oz.	(42 g) Amarillo, 12% a.a., dry hop 5 days
1.5 oz.	(42 g) Citra, 12.5% a.a., dry hop 5 days

### YEAST

2 packs White Labs WLP 007 Dry English ale yeast  
(see directions)

### BREWING NOTES

Twenty-four hours before brew day, make an 1,800 mL stir plate starter of 1.038 OG and pitch the two yeast packs. Single infusion mash at 152° F (67° C) for 60 minutes. Cool wort to 66° F (19° C), aerate, and pitch yeast. Slowly ramp up temperature, finishing last 15% of active fermentation at 71° F (22° C). Hold at that temperature until day 8. Reduce temperature to 67° F (19° C) and dry hop with 1.5 oz. Citra and 1.5 oz. Amarillo. Rack to keg on day 13 or 14 using a pressurized sealed transfer. Beer should be at peak flavor at about three weeks of age.

### PARTIAL-MASH VERSION

Mash honey and Pilsner malts at 152° F (67° C) for 60 minutes. Recirculate mash until wort runs clear, run wort into kettle, sparge with 163° F (73° C) reverse osmosis water, then dissolve 12 lb. (5.44 kg) Briess liquid wheat malt extract into the wort. Continue lautering until desired boil volume is reached, then proceed as above.

## NEARLY ALL OF THE INGREDIENTS

## ARE EITHER SOURCED FROM LOCAL

## FARMERS MARKETS OR GROWN AND

## HARVESTED OURSELVES.

MHF also required more volunteers. We were lucky enough to sucker a couple of friends into helping; Ben Ruppel and Amy Williams have been part of the team ever since.

Considering all that has changed over the years, two constants have been cornerstones of the successful festival. Beer is the obvious one, and food is the other. No matter the time of day, many of the activities that are planned from Wednesday to Saturday evening focus on cooking.

The first culinary experience of the weekend is a five- to six-course beer and food pairing dinner held Thursday evening.

Only 30 to 35 lucky people get to attend the event, which is prepared by MHF organizers and volunteers. Nearly all of the ingredients are either sourced from local farmers markets or grown and harvested ourselves. The meal is prepared and served outdoors, and is cooked over gas, charcoal, or fire.

Dinner starts with a homebrewed welcome beer, usually something light and refreshing. Each course is then paired with one, sometimes two, samples of a commercial Michigan beer. Popular dishes in years past have included venison tenderloin and a dried cherry reduction paired with Belgian dark strong ale; goat

cheese and nuts paired with Belgian quad; and homemade corn dogs paired with German-style Pilsner. On more than one occasion, dessert has been served alongside Dragon's Milk Bourbon Barrel Stout from New Holland Brewing.

On Friday morning many MHF guests gather under one of the pavilions for the annual French toast cook-off. This is the longest-running event of the festival and attracts many entrants. From homemade sourdough bread in a stout reduction to Fruity Pebbles-encrusted French toast, nothing is off limits. One major challenge of the competition is that many of the judges are 12 years old or younger.

The Feast of Friday has been around since year one and is by far the most popular food event of the weekend. It is an evening potluck-style dinner cooked by homebrewers at their campsites and shared under a large pavilion with beer friends from all over the state. Locally brewed commercial beer is available, and Feast of Friday attendees are encouraged to cook and pair their creations with it. The commercial beer provided is from a homebrewer who has recently gone pro, and this year's Feast featured CRAFT

homebrew club member Cary Brooks, who poured beer from his new Brooks Brewing. Also coinciding with the dinner is a smoked food cook-off hosted by a few local clubs, which draws dozens of entries and awards prizes to the top three winners.

Once the food is put away and the sun sets, the beer festivities begin. Club booths light up, music and laughter can be heard everywhere, and it usually lasts into the wee hours of the morning. It's not uncommon to walk into a booth disguised as a Roman coliseum or a 19th-century saloon. You might even meet a robot or two serving nuts and bolts as snacks.

Friday's festivities tend to leave everyone a bit groggy come Saturday morning, but we've found a way to combat that awful feeling: the ever-popular Bloody Mary bar. With plenty of help from vendors, sponsors, and awesome clubs like the Genesee Brewers, we provide relief for the hang-over-afflicted. In addition to traditional Bloody Mary ingredients, it's not uncommon to find unusual items like freshly smoked ribs to augment your drink. Take your drink over to the main lodge, and you'll be served a free breakfast courtesy of participating homebrew clubs. This year, Black River homebrew club provided smoked biscuits and gravy, and Sons of Liberty made breakfast casserole with sausage, hash browns, eggs, and cheese.

As Saturday morning turns into afternoon, club booths re-illuminate in anticipation of what we call the "day trippers." Many of our one-day-only guests like to attend the awards ceremony for the Michigan Beer Cup homebrew competition. It and its predecessor at the Michigan State Fair represent one of the longest-running single-state competitions in the country. Brewers come from as far away as Michigan's Upper Peninsula to attend, and entries usually number around 700.

After the awards, festivities range from simple socializing at the club booths to fierce club vs. club tug-of-war matches. A food truck or local barbecue company can be found most of the day Saturday for those who don't feel like cooking. I prefer to wander around the campground and seek out one particular outdoor chef

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whose billowing plumes of smoke give away his location. I don't think I have prepared a meal for myself at MHF in six years.

Eventually day turns to night, and the club area once again transforms from a campground to a homebrewer's playground. You might find a band playing in the corner. You might pet a pot-bellied pig. You might find yourself in the middle of a dance party. But you will always find great beer, great food, and great friends at the Michigan Homebrew Festival.

The Michigan Homebrew Festival is held annually on the third weekend of August at Camp Agawam, Lake Orion, Mich. Homebrewers and clubs from around the region and country are always welcome. Visit [mhfsite.com](http://mhfsite.com) for more information.

**Pat Hyde is a siding contractor in southeast Michigan by day and avid homebrewer by night. He has won dozens of medals while competing and is a BJCP National judge but he never takes things too seriously, including beer. ☻**

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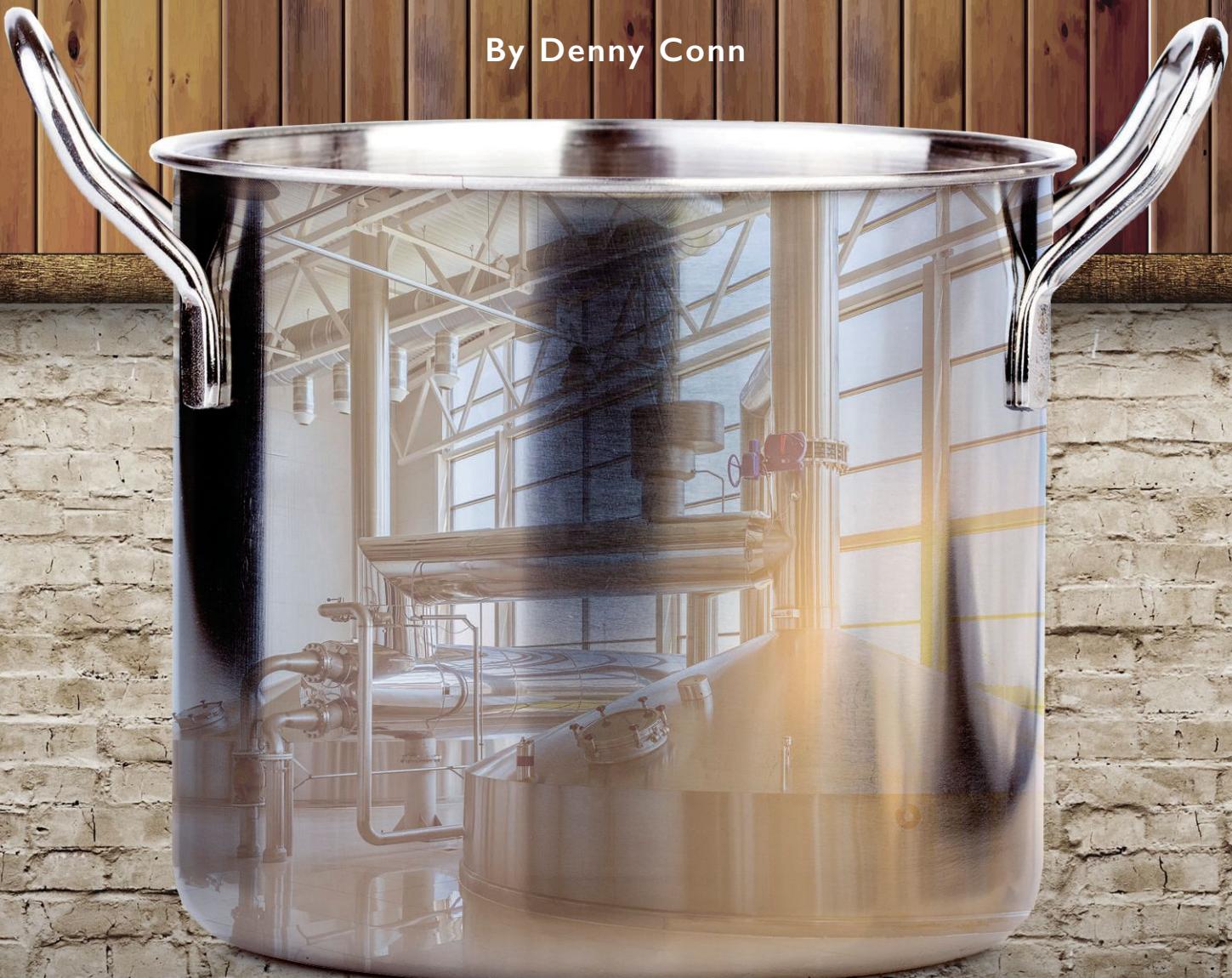
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GREAT AMERICAN BEER FESTIVAL®  
**PRO-AM**  
COMPETITION

# LARGE BATCH BREWING

By Denny Conn



**G**hen you walk through the doors of the Colorado Convention Center to attend the Great American Beer Festival® (GABF), the first thing that strikes you is the size. It's big—really big. As in 400,000-square-feet-and-nearly-4,000-beers big. "Holy cow" big!

The enormity of the event helps explain the thrill that a select few homebrewers get to experience when their beers are chosen for the GABF Pro-Am competition. If you make it to the Pro-Am, you've hit the big time. One of the nearly 4,000 beers served in the festival hall will be yours!

The Pro-Am competition is a team effort between a commercial brewery and a homebrewer who has won a BJCP/AHA-sanctioned competition. The award-winning homebrew recipe gets

brewed on a commercial system with help from the professional brewer and is then served alongside other winning entries, 30 at a time, at the GABF Pro-Am booth.

This year there were 88 total entries in the competition. Styles ranged from the perennially popular like American IPA to the unusual and creative. Saison with blackberries and Earl Grey tea. American lager with kaffir leaf, dried Persian limes, agave nectar, and flaked corn. Sweet cream stout with candy bars and peanut butter. Obviously, homebrewers took advantage of their ability to brew outside the BJCP guidelines!

Three Pro-Am beers won medals for the homebrewers and their partner breweries. Here are their stories.



2016 GABF  
Pro-Am Competition

**GOLD  
MEDAL**

## **JUST RYE'TE**

*Panther Island Brewing with AHA member Clifton Ellis*

**H**omebrewer Clifton Ellis said he was inspired to create his gold-medal-winning recipe for Just Rye'te after having tried Three Floyds' Zombie Dust at a local bottle share. Zombie Dust, which isn't normally distributed where Ellis lives in Texas, was, for him, a "liquid euphoric experience."

Clif looked at several recipes online for inspiration and focused his efforts on how best to use Citra hops. After brewing several test batches that were too "dank" for his liking, he tried adding other ingredients to brighten up the flavor. Orange blossom honey and flaked rye did the trick.

Of his collaboration with Panther Island, Clif said, "Ryan and I have been collaborating on recipes for the better part of two years; call it pity or family obligation (Ryan is married to my cousin), but I don't recall a time that we haven't had full transparency with one another in regards to recipes. I've even been fortunate enough to pilot a few different recipes for Panther Island, and while never an official employee of the brewery, I feel like an integral part of it."

Having won a gold in the 2016 Bluebonnet Brew-Off, Clif knew he was technically qualified to compete in the GABF Pro-Am. Asking Panther Island Brewing to sponsor him was "a no-brainer," Clif said. "Ryan's lack of hesitation to enlist me in the competition was a testament to either his flattering confidence in my brewing or an attempt to alleviate my relentless pestering. I prefer to think it was the former rather than the latter."

This beer's juiciest detail no doubt concerns the disaster now known as the "Just Wrong" brew day. Constraints related to ingredient availability, fermenter space, and other factors prompted brewers at Panther Island to brew Just Rye'te on their pilot system. But just because a pilot system is situated within a professional brewery doesn't necessarily mean it's much better than a finicky homebrew setup. As it happens, the

AFTER BREWING  
SEVERAL TEST  
BATCHES THAT WERE  
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FLAVOR. ORANGE  
BLOSSOM HONEY  
AND FLAKED RYE  
DID THE TRICK.



▲ AHA Member: Clifton Ellis

▼ Brewmaster: Ryan McWhorter



Photos © Jason E. Kaplan:  
Supplied by winners

## JUST RYE'TE

Panther Island Brewing with AHA member Clifton Ellis

**Batch Volume:** 11 U.S. gallons (41.6 L)

**Original Gravity:** 1.060 (11.6° P)

**Final Gravity:** 1.011 (2.1° P)

**Color:** 6 SRM

**Bitterness:** 50 IBU

**Alcohol:** 6.5% by volume

### MALTS

<b>17 lb.</b>	(7.71 kg) American pale 2-row malt
<b>2 lb.</b>	(0.9 kg) flaked rye
<b>1.8 lb.</b>	(816 g) Caravienne malt
<b>10 oz.</b>	(293 g) 40°L crystal malt

### HOPS

<b>1 oz.</b>	(28 g) Citra, 13% a.a., first wort hop
<b>0.25 oz.</b>	(7 g) Magnum, 13% a.a. @ 60 min
<b>1 oz.</b>	(28 g) Citra, 13% a.a. @ 15 min
<b>1 oz.</b>	(28 g) Citra, 13% a.a. @ 10 min
<b>1.5 oz.</b>	(43 g) Citra, 13% a.a. @ 5 min
<b>2 oz.</b>	(57 g) Citra, 13% a.a. @ flameout
<b>6 oz.</b>	(170 g) Citra, 13% a.a., dry hop 5 to 7 days

### YEAST

Wyeast 1272 American Ale II, 10–15 million cells per mL

pilot system at Panther Island is a three-keggle electric HERMS (heat exchange recirculating mash system) that's seen some combat.

Family obligations kept Ryan away from the brewery on the big day, but Clif nonetheless agreed to brew on an unfamiliar system—after all, isn't that why we have Google? Murphy's Law kicked into high gear as pumps failed to prime, the mash refused to stay in the right temperature range, and the sparge stuck. But with Ryan on speakerphone, Clif and onsite Panther Island employee Joe Chapa salvaged the wort and pitched a nice slurry of Wyeast 1272 (American Ale II). The rest is history. It was a challenging brew day, but a great payoff!

### ADDITIONAL ITEMS

**2 lb.** orange blossom honey at flameout\*

### BREWING NOTES

Conduct a 150° F (66° C) single infusion mash with 1.5 qt./lb. mash thickness for 60 minutes. Boil time is 60 minutes. Ferment at 68° F (20° C). Ramp to 70–72° F (21–22° C) towards end of primary ferment. Transfer to secondary and dry hop at 70–72° F for 5 to 7 days (or until desired level of dry hop is met).

\*If desired, honey may be added 2 days into primary fermentation instead of at flameout.

### PARTIAL-MASH RECIPE

Substitute all but 3 pounds (1.36 kg) of the pale 2-row for 10.75 lb. (4.88 kg) pale liquid malt extract. Mash 3 lb. pale 2-row, flaked rye, Caravienne, and crystal malt together at 152° F (67° C) with reverse osmosis water for 45 minutes or until complete conversion. Recirculate and lauter mini-mash, and dissolve 10.75 lb. extract syrup completely into resulting wort. Continue sparging to top up to desired boil volume and proceed as above. Partial-mash version may be slightly darker than all-grain version.

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2016 GABF  
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## SILVER MEDAL

### VERNAL EQUINOX

*Starr Hill Brewery with AHA member Gary Layton*

**W**hen I asked homebrewer Gary Layton to describe how Vernal Equinox came about, he said, "The original recipe came about from experimenting with hop combinations. I went through several different combinations and finally hit the nail right on the head with Equinox and Galaxy. The recipe was originally an American IPA, borderline imperial. I entered it in a local event we have here in Virginia, called the Battle of Fredericksburg. It's one of those cross-town events where our brew club (Stafford Brewers Club) competes against the Fredericksburg Brew Club (FBI) for bragging rights."

Gary entered his IPA in three different categories—American IPA, Imperial IPA, and English IPA—and ended up winning first place as an English IPA. After the competition, Gary read through the score sheets to see how he could improve. Most judges said it lacked the malt backbone of an English IPA but that the hops were amazing. So, he took that information and ran with it.

"Several weeks later I saw that Starr Hill was having an IPA Jambeeree for homebrewers, where you entered your best IPA," Gary noted. "The winner would get to brew their recipe full-scale at Starr Hill and get it entered at the Pro-Am for GABF. So, taking the information I received from the judges at the last event, I tailored my IPA to fit more of an English style. I switched my base malt to Maris Otter, added Crisp crystal malts, and switched to the Fuller's yeast. The beer came out amazing."

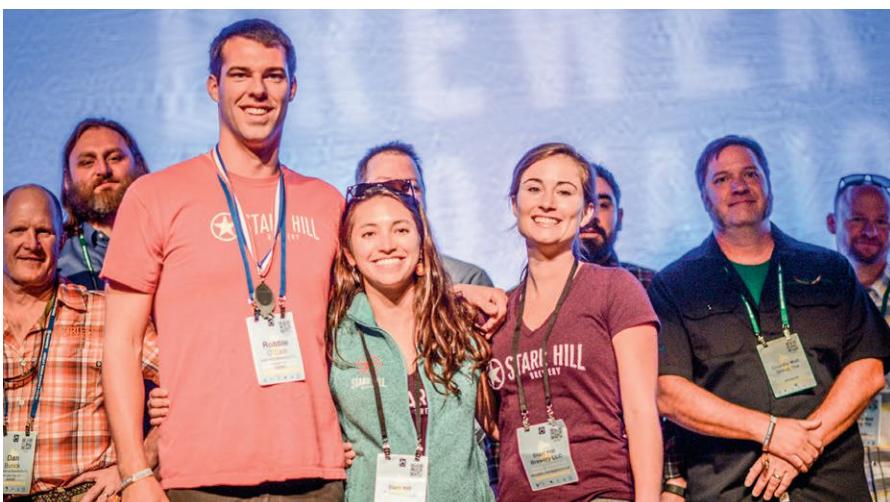
Gary managed to carbonate his beer just in time to enter it in Starr Hill's Jambeeree, but he almost didn't make it.

"I ended up driving out there (two hours away) on a work night just to drop my bottles off," he recalls. "They were closing right when I pulled up. The bartender was nice enough to serve me a couple beers since I drove so far! A few weeks later Starr Hill sent out an email saying I made the top 25 and invited me to the brewery for an event that included the top 25 beers. They gave us a tour, served us some amazing beer, and then they announced the winners.



▲ AHA Member: Gary Layton

▼ Brewmaster: Robbie O'Cain



## VERNAL EQUINOX

Starr Hill Brewery with AHA member Gary Layton

**Batch Volume:** 5.5 U.S. gallons (20.82 L)

**Original Gravity:** 1.063 (15.4° P)

**Final Gravity:** 1.017 (4.3° P)

**Color:** 8 SRM

**Bitterness:** 60 IBU

**Alcohol:** 6.1% by volume

### MALTS

**10.75 lb.** (4.88 kg) Maris Otter

**0.5 lb.** (227 g) Crisp 20L crystal malt

**0.5 lb.** (227 g) Crisp 40L crystal malt

**0.5 lb.** (227 g) melanoidin malt

### HOPS

**0.5 oz.** (14 g) Equinox, 15% a.a. @ 60min

**0.5 oz.** (14 g) Equinox, 15% a.a. @ 30 min

**0.5 oz.** (14 g) Galaxy, 14% a.a. @ 30 min

**0.5 oz.** (14 g) Equinox, 15% a.a. in whirlpool

**0.5 oz.** (14 g) Galaxy, 14% a.a. in whirlpool

### YEAST

Wyeast 1968 London ESB

### BREWING NOTES

Single infusion mash at 154° F (68° C). Ferment at 68° F (20° C) for 7 days. Crash to 32° F (0° C) for 7 days. Rack and package.

### PARTIAL-MASH RECIPE

Substitute all but 3 pounds (1.36 kg) of the pale 2-row with 6.25 lb. (2.83 kg) Maris Otter liquid malt extract syrup. Mash 3 pounds pale malt, melanoidin, and crystal malts together at 152° F (67° C) with reverse osmosis water for 45 minutes or until complete conversion. Recirculate and lauter mini-mash, and dissolve 6.25 lb. extract syrup completely into resulting wort. Continue sparging to top up to desired boil volume and proceed as above. Partial-mash version may be slightly darker than all-grain version.

"I waited anxiously as Gretchen called out the names of the winners, starting with third place. I didn't hear my name. She called out second place, I didn't hear my name. I'm thinking, well, it was a fun ride at least. Then I hear, 'First place: Gary Layton!' I stood there in awe. It was crazy. I knew my beer was pretty damn good, but I had no idea. I ended up beating out over 50 other people. It was awesome! So, this beer single-handedly carried me the distance. I'm not even a big IPA drinker. I'm more of a lager and stout guy."

It was up to Starr Hill brewer Robbie O'Cain to work with Gary to scale up the recipe. Taking the homebrew recipe up to 25 barrels meant changing

a couple of things. Some of the malts were substituted, the hop additions were moved back in the boil schedule, and the bittering hops additions were removed completely.

O'Cain said, "In my opinion, the most important part of executing this recipe was raw material selection: going for high quality Maris Otter and crystals was extremely important. Also, the yeast strain works perfect in balance with the late addition hops to give a great hop flavor."

If you didn't have an opportunity to try Vernal Equinox at GABF, you're in luck. "We will have the beer on tap in our tap room and for distribution on draft throughout Virginia!" exclaimed Robbie.

**"THE ORIGINAL RECIPE  
CAME ABOUT FROM  
EXPERIMENTING WITH  
HOP COMBINATIONS.  
... FINALLY HIT THE  
NAIL RIGHT ON THE  
HEAD WITH EQUINOX  
AND GALAXY."**



You can view the full list of ProAm entries from the 2016 Great American Beer Festival at [HomebrewersAssociation.org](http://HomebrewersAssociation.org)

2016 GABF  
Pro-Am Competition

**BRONZE  
MEDAL**

## KÖLSCH EXPERIMENT

*Altitude Chophouse & Brewery with AHA member Shawn Miller*

**S**hawn Miller was shocked when his homebrewed Kölsch won category 7 (amber bitter European lager) at his club's "8 Seconds of Froth" competition. He was even more shocked when it was named the best homebrewed beer in Wyoming. When he heard from club members that Jesse Brown, brewer for the Altitude Chophouse and Brewery in Laramie wanted to contact him, he was beyond shocked. But the thrill helped ease the shock.

"After the homebrew comp, I got a frantic call from a couple of people in the club saying that Jesse was trying to get ahold of me (he didn't have my phone number)," said Shawn. "I didn't know it at the time, but he was on the computer trying to get the Pro-Am entered into GABF."

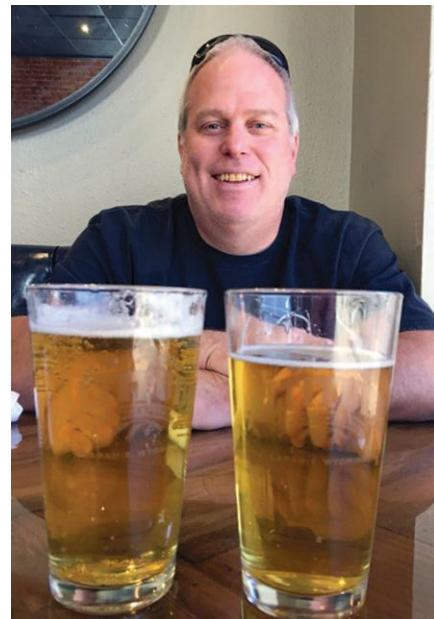
Jesse explained, "I enjoy making German-style brews, so when the Kölsch-style ale won [at 8 Seconds of Froth], I was more than thrilled to tackle this style with Shawn. I made my mind up that I would submit this entry into the GABF Pro-Am. The day I was signing up for the Pro-Am along with my other entries, I didn't have Shawn's AHA number and I began to panic. Signing up for the Pro-Am is first-come, first-served and limited in number of entries."

Eventually Jesse managed to get in touch with Shawn and enter the competition. "Winning the bronze and almost not even being able to enter the contest is something Shawn and I laughed about at GABF," he noted.

"The day we brewed the Kölsch was really a lot of fun," Shawn continued. "It was very educational to brew on a system of that size (we brewed a seven barrel batch) compared to a small 10-gallon system. I truly understand why brewers don't want to make any mistakes brewing in such large quantities. I would hate to dump a batch of that size."

One thing that particularly impressed Shawn about brewing at the professional level was hitting all the numbers right on. "The pH, O.G., everything seemed really smooth, and everything went well," he said. "I helped whenever needed, dumping the grains, loading the grain hopper, etc. Overall it was an awesome day."

Jesse says that working with Shawn was a pleasure. "Shawn made it easy on our



▲ AHA Member: Shawn Miller

▼ Brewmaster: Jesse Brown



## THE KÖLSCH EXPERIMENT

Altitude Chophouse & Brewery with AHA member Shawn Miller

**Batch Volume:** 5 U.S. gallons (18.9 L)

**Original Gravity:** 1.051 (12.3° P)

**Final Gravity:** 1.010 (2.5° P)

**Color:** 4 SRM

**Bitterness:** 29 IBU

**Alcohol:** 5.3% by volume

### YEAST

White Labs WLP029 German Ale/Kölsch

### BREWING NOTES

Single infusion mash at 152° F (67° C) for 60 minutes. Batch sparge with 168° F (76° C) water. Ferment at 63° F (17° C) for 2 weeks, then keg and carbonate.

### MALTS

**8.75 lb.** (3.97 kg) Pilsner malt

**1 lb.** (0.45 kg) white wheat malt

**8 oz.** (227 g) acidulated malt

### EXTRACT RECIPE

Substitute 5.5 lb. (2.49 kg) Pilsner malt extract syrup and 1.5 lb. (0.68 kg) wheat malt extract syrup for Pilsner malt and wheat malts. Omit acidulated malt. Dilute extracts with reverse osmosis water to desired boil volume and proceed as above. Extract recipe may be slightly darker than all-grain version.

### HOPS

**1.25 oz.** (35 g) Saaz, 4.8% a.a., 90 min

**0.50 oz.** (14 g) Hallertauer, 2.7% a.a., 10 min

**0.50 oz.** (14 g) Saaz, 4.8% a.a., whirlpool 5 min

brew day. He came with his award-winning recipe, [and] we made some slight tweaks to accommodate my inventory of malts, hops, and yeast. The execution of the brew day went very well. Shawn was involved in all aspects.

"I think it's important in collaborations to involve the other brewer as much as possible. He was more than happy to clean the mash tun and consistently asked great brewing questions. It was obvious this wasn't his first rodeo."

The duo mashed low to keep the beer dry and the mash pH at around 5.25. They opted for a longer boil to help drive off DMS, followed by a 15-minute whirlpool and a 15-minute rest.

"This beer enjoyed a longer, colder fermentation than some of the other ales Altitude produces," noted Jesse, "and it's important to really let the beer finish completely and not rush. We used a German ale strain that loves to ferment between 59 and 63 degrees."

Jesse says that based on his experience, Kölsch-style beers can exhibit a wide range of flavors.

"Some are grainier. Some have evident wheat characteristics. Some have a more pronounced Riesling wine-like sweetness. If you can restrain these flavors to balance and present a clean, light, easy-drinking beer, you're on your way to an award-winning Kölsch."

Congratulations to all of the winners, and a big thank you to all of the homebrewers and breweries who entered the Pro-Am this year. And remember, keep brewing your best beers and entering them in competitions. Next year you might be the gold medal winner!

**Denny Conn is co-author, along with Drew Beechum, of *Experimental Homebrewing: Mad Science in the Pursuit of Great Beer and Homebrew All-Stars: Top Homebrewers Share Their Best Techniques and Recipes*. He also co-hosts the *Experimental Brewing* podcast with Drew and serves on the AHA Governing Committee.** ☈

## 2016 GREAT AMERICAN BEER FESTIVAL PRO-AM COMPETITION

### ■ 88 entries

**GOLD:** Gold: Just Rye'te, Panther Island Brewing Co., Fort Worth, Texas.  
Brewmaster: Ryan McWhorter. AHA member: Clifton Ellis

**SILVER:** Vernal Equinox, Starr Hill Brewery, Crozet, Va.  
Brewmaster: Robbie O'Cain. AHA member: Gary Layton

**BRONZE:** Kölsch Experiment, Altitude Chophouse & Brewery, Laramie, Wyo.  
Brewmaster: Jesse Brown. AHA member: Shawn Miller



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By Amahl Turczyn

# The First Annual Ark-La-Tex Brew-Off

The River Cities Brew Krewe held its first competition a mere eight months after the club was founded in August 2016, according to charter member Jeremy Saye, who spoke at length about both the fledgling club and its Brew-Off. "We were a group of homebrewers who wanted a club with a sharp focus on education," Saye said. "We also wanted to establish the first BJCP/AHA homebrew competition in north Louisiana."

Shortly after the club was founded, it put together several live public demonstrations at a local homebrew shop and at local breweries. These events included brewing a batch of beer for Learn to Homebrew Day and a mead-making class. Thanks to recent Louisiana homebrew legislation, club members have been able to hold public events in local restaurants and bars where they can now legally serve their own homebrew.

But the Brew Krewe didn't limit itself to local activity. "We also travel the region and interact with our neighboring clubs," Saye continued. "In May, we attended the Spring Beerfest in Nacogdoches, Texas, where we, along with our hosts, the Nac Brew Club, and three other clubs served over 300 gallons of homebrew to over 400 attendees. In October we traveled to Longview, Texas to visit the East Texas Brewers Guild Homebrew Club at their Longview Bierfest."

Then it was time to tackle their own event. "The Ark-La-Tex Brew-Off is named after our tri-state area of Arkansas, Louisiana, and Texas," Saye explained. "Our competition was also included as the second leg of the Louisiana Bayou Circuit. Our local homebrew shop, Brewniverse, graciously acted as an entry drop-off point."



## THANKS TO RECENT LOUISIANA HOMEBREW LEGISLATION, CLUB MEMBERS HAVE BEEN ABLE TO LEGALLY SERVE THEIR OWN HOMEBREW.

Saye was particularly proud of the quality of judges. "We had sixty entries from five states, all judged by at least one certified BJCP judge. We were fortunate to have a strong contingent of judges travel in from across the state to assist us. I would like to specifically mention our competition organizer, Jeffery Judge; his assistant, head steward, and bottle master, Ruth Paul; and our three resident BJCP judges, Jeremy Saye, Jeffery Pieper, and Jay Gray, for making the competition possible. We would also like to thank Certified BJCP beer judge Bob Carbone for his guidance and encouragement."

The club was doubly fortunate to have two local craft breweries offer their



**^ From top to bottom:**  
**Best-of-show winners Jonathan Barnhill (left) and James Boyd (right) with Certified BJCP beer judge Bob Carbone (middle); Best-of-show judge panel**

# GOLDEN SPIKE

*Belgian Golden Strong Ale*

Recipe by James Boyd and Jonathan Barnhill

**Batch Volume:** 5.5 U.S. gallons (20.8 L)

**Original Gravity:** 1.073 (17.6° P)

**Final Gravity:** 1.010 (2.6° P)

**Bitterness:** 35 IBU

**Color:** 8 SRM

**Alcohol:** 8.3% by volume

## MALTS AND SUGARS

**11 lb.**(4.99 kg) Weyermann Pilsner malt

**2 lb.** (907 g) table sugar (90 min)

## HOPS

**3 oz.** (85 g) Saaz, 3.8% a.a., FWH

## YEAST

SafBrew Specialty ale yeast T-58 (2 sachets)

## OTHER INGREDIENTS

1 Whirlfloc tablet

## BREWING NOTES

Mash at 149° F (65° C) for 90 minutes. Batch sparge with 170° F (77° C) water to reach boil volume. Boil for 90 minutes. Cool wort to fermentation temperature and transfer to clean and sanitized fermenter. Starting fermentation temperature is 64° F (18° C), ramping up to 80° F (27° C) in seven days. Hold temperature at 80° F for seven days. Cold crash the beer to 34° F (1° C) over the next seven days. Keg and carbonate to 2.6 volumes of CO<sub>2</sub>.

## EXTRACT VERSION

Substitute 8.7 lb. (3.95 kg) Pilsner malt extract syrup for Pilsner malt and dilute with reverse osmosis water to desired pre-boil volume. Add the sugar at beginning of boil, as above.

facilities and brewers to assist with the competition. “Red River Brewing Company and Flying Heart Brewery welcomed us and allowed us to hold our judging and award ceremonies on their premises. We judged the primary round at Flying Heart, and the best-of-show round was judged by professional brewers from both of our sponsoring breweries, at Red River.”

To ease into holding its first-ever competition, the club limited the accepted styles

to 12 sub-styles, a limitation common to competitions on the Louisiana Bayou Circuit. They will be adding four more sub-styles in 2017. “We look forward to watching the homebrew culture grow in the state of Louisiana and holding our second year’s competition,” Saye concluded.

Best-of-show winners James Boyd and Jonathan Barnhill, collectively known as the Rumble Train, took the top prize with their Belgian golden strong ale, Golden Spike. The duo has been brewing on and off

since 1994. “It was Jonathan’s idea to start brewing beer,” Boyd explained. “Our first batch did not turn out great, but we weren’t deterred.” Once they found Beerslayer’s homebrew shop, the owner—the same Bob Carbone mentioned above—became their mentor. Their beer rapidly improved. Then after several successful collaborations with another friend, Jeff Mason, Boyd started sharing their beer with other friends and coworkers for parties and other events. One batch of Bohemian Pilsner called “Lizzie’s Lager” christened a coworker’s wedding.

## ▼ Nacogdoches Spring Beer Festival



Why Rumble Train? As Boyd explained it, he and Mason worked for a digital marketing company and two new employees with a quirky sense of humor, Patrick Crawford and Beau Stewart, decided to give everyone office nicknames. Mason’s was Rumbleweed, “because he reminded them of a wizard smoking a pipe,” and Boyd’s was Swayzetrain, a fusion of Patrick Swayze and Ozzy Osbourne’s song Crazytrain. (Boyd is quick to point out that it’s *Road House Swayze*, not *Ghost Swayze*). Mason and Boyd took the liberty of combining their nicknames when they began brewing together and ran with the brand, making T-shirts, glasses, and growlers with their own Rumble Train logo. These days, the team lineup is different, but the brand continues. “Jeff took



Round one judging of the Ark-La-Tex Brew-Off at Flying Heart Brewery.

a job with our company in Amsterdam," Boyd said, "so it was back to the original brewing buddies. Jonathan and I have continued to brew together to this day."

The pair brews with a 120-quart (114-liter) Coleman cooler as a mash tun with a home-built copper tubing manifold. "Our boil kettle is a 20-gallon (76-liter) Blichmann Boilmaker, and we use a 40-gallon (151-liter) aluminum pot as a hot liquor tank," Boyd continued. "Our fermenters are typical half-barrel Sankey kegs. We use refrigerators with dual-stage controllers to maintain and adjust fermentation temperatures," and for Southern-style wort chilling, they use a 30-gallon (114-liter) plastic trashcan filled with ice water to pre-chill a Blichmann Therminator. "Using the ice water, we are able to cool the wort in one pass, pumping it directly into the fermenter. We add oxygen at one liter per minute for three minutes prior to pitching. Our yeast of choice is the Fermentis line of dry yeasts." Boyd noted that the oxygen regimen "greatly improved our beers when we switched from liquid yeast starters to dry yeast."

The team sticks with traditional styles: Bohemian Pilsner, American pale ale, IPA, double IPA, Belgian pale ale, Baltic porter, and, of course, their winning Belgian golden strong ale.

**Amahl Turczyn** is associate editor of *Zymurgy*.

Photos courtesy of Ruth Paul

An advertisement for South College Asheville. It features a smiling young man in a denim shirt holding a glass of beer in front of a brewery background with large tanks. The South College logo is in the top right corner, and the text "South College Asheville" is written below it.

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A close-up photograph of a cold beer glass, showing condensation on the outside and a thick head of white foam on top of the golden beer.

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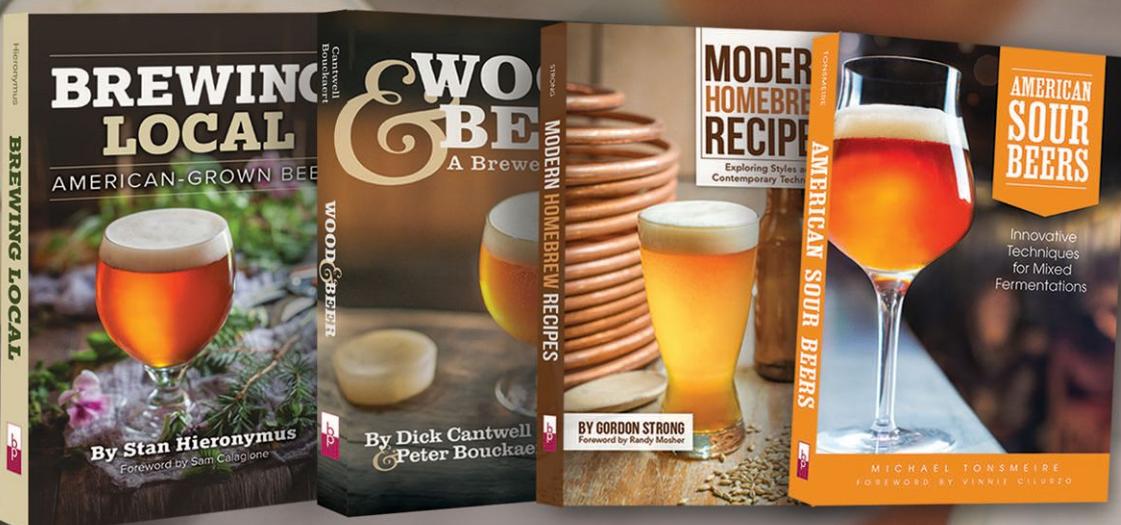
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## KUDOS—BEST OF SHOW

### AHA/BJCP Sanctioned Competition Program

#### August 2016

5º Concurso Cervejeiro Caseiro Bierland, 120 entries—*Flávio Domingues, Poços de Caldas, Brazil*  
 National Capital Homebrew Competition, 322 entries—*Michał Foniok, Calgary, AB*  
 BSCC Fall Festival 2016 - Sludge Puppy Brewing Competition, 33 entries—*Dean Volungis, Holladay, UT*  
 Oregon State Fair Homebrew Beer Competition, 256 entries—*Mike Forbes*

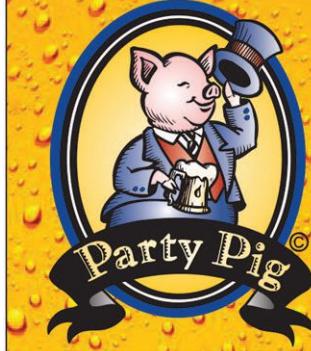
#### September 2016

Schooner Homebrew Championship, 330 entries—*Kevin Flynn, Racine, WI*  
 Picnique Belga, 74 entries—*Jonathan Williamson, Lenexa, KS*  
 Home Brew League: Pike 51 Challenge, 30 entries—*Nick Rodammer, Grand Rapids, MI*  
 SFHG Summer Brews, 27 entries—*Sam Dalton*  
 Roberts Cove Germanfest Home Brew Competition, 39 entries—*Charlie Milan, Baton Rouge, LA*  
 UK National Homebrew Competition, 525 entries—*Pierre Adedze, Portsmouth, UK*  
 2016 Intervarsity Beer Brewing Competition, 67 entries—*University of Cape Town, Cape Town, South Africa*  
 State Amateur Brewers Show of South Australia, 321 entries—*Bruce Tonkin, Adelaide, Australia*  
 Rochester Chili Challenge Brewer's Choice Pro-Am, 5 entries—*John Eischen, Rochester, MN*  
 Santa Cruz County Fair Homebrew Competition, 38 entries—*Cory Barton, Santa Cruz, CA*  
 Hogwild Intraclub Competition, 22 entries—*Dave Kramer, High Springs, FL*  
 Red Earth Brewers 3rd Quarter Competition, 58 entries—*Justin Wilson, Norman, OK*  
 The Great Frederick Fair Homebrew Competition, 81 entries—*Dennis Rice, Frederick, MD*  
 2016 Sonoma County Harvest Fair Home Brew Competition, 76 entries—*Rick Landry, Napa, CA*  
 Kirkland OktoBREWfest, 65 entries—*Ben Davidson, Montlake Terrace, WA*  
 Salt City Brew Club Homebrew Competition, 89 entries—*Jason Chang*  
 Made on American Street, 85 entries—*Jason Zambrzki, Woodlyn, PA*  
 Fugetaboutit, 214 entries—*Chris Allen, Nashville, TN*  
 VEToberfest Brew-Off, 19 entries—*Adam McKenna, Milwaukee, WI*  
 Tulsa State Fair Homebrew Competition, 94 entries—*Black Rye IPA, Mac Butcher, Tulsa, OK*  
 III Concurso Estadual da ACervA-ES, 25 entries—*Rubens Carvalhaes de Paiva Neto, Vila Velha, Brazil*  
 Maryland Microbrewery Festival Homebrew Competition, 92 entries—*Lee Kexel, Cockeysville, MD*  
 NOLA on Tap 2016 Homebrew Competition, 76 entries—*Matt Morgan & Caleb Schlamp, Hammond, LA*  
 Big Fresno Fair Homebrew Competition, 76 entries—*Sean Wood, Fresno, CA*  
 HOPS ENVY Home Brew Competition, 19 entries—*Matthew Sewell, Reno, NV*

Hoptoberfest Brew-Off, 12 entries—*Steve Brainerd, Bend, OR*

Cáceres Beer 2016, 38 entries—*Juan José Tur Lahiguera, Castellón, Spain*  
 Northeast Big River Homebrew Competition, 151 entries—*Greg Hinton, Yorba Linda, CA*  
 HomeBrew Hang, 5 entries—*Eric Gillard, Havertown, PA*  
 LJT's 11th Annual Rhymes & Vines Texas Music Festival and Homebrew Competition, 42 entries—*Randy Zorn, Garland, TX*  
 Rocky Mountain Homebrew Challenge, 150 entries—*Daisy Raymondson, Louisville, CO*  
 Concurso Nacional - Lamas Brew Day, 62 entries—*Fabiano Gaetani Marrone, São Paulo, Brazil*

Pacific Brewer's Cup, 470 entries—*Levi Fried, Long Beach, CA*  
 Texas Mead Cup, 190 entries—*Marek Leczycki, Poland*  
 Saskatoon Headhunters Brewing Competition, 233 entries—*Brendan Barnett, Calgary, AB*  
 Lonerider Brew It Forward VIII, 26 entries—*Mary Johnson, Cary, NC*  
 Members of Barleyment & Beau's Oktoberfest 4th Annual Homebrew Competition, 365 entries—*Michał Foniok, Calgary, AB*  
 Oktoberfest in the Diamond, 83 entries—*Stan Gardner, Fremont, CA*  
 V Concurso Estadual de Cervejas Caseiras da ACervA Catarinense, 281 entries—*Carlos Alberto Pereira Junior, Brusque, Brazil*



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## KUDOS—BEST OF SHOW

### AHA/BJCP Sanctioned Competition Program

South Yeasters Spring Festival, 12 entries—

Russell Naude, Cape Town, South Africa

#### October 2016

Black Forest Brewoff, 78 entries—Adam Reinke, Asheville, NC

Keep EM Brewing Home Brew Contest, 20 entries—Matt Greinert & Mike Blocker, Fenton, IA  
Michigan Mead Cup, 155 entries—Derek Elkins, Lapeer, MI  
Brixtoberfest, 121 entries—Jeff Landers  
Tangled up in Brew, 18 entries—Robert Kotarsky & Matt Smiley, Morgantown, WV

Educate the Mash Heads, 27 entries—

Tricia & Jamie Gallant, San Diego, CA

2016 Roxtoberfest Homebrew Competition, 11 entries—William Dix, Philadelphia, PA

Niagara Homegrown Homebrew Competition, 18 entries—Jimmy Ewy, Lewiston, NY

Byggvir's Big Beer Cup, 120 entries—Travis Lott, Maple Grove, MN

Son of Brewzilla Homebrew Competition, 400 entries—Larry Reuter & Donna Reuter, Akron, OH

Ensenada Oktoberfest, 18 entries—

Rodolfo Flores-Mauricio Peralta, Ensenada, Mexico

Fresh Hop Ale Festival, 40 entries—Stephanie Rodriguez, Yakima, WA

Big Muddy Monster Brewfest Home Brew Competition, 77 entries—Greg Wharton, Murphysboro, IL

QUAFF Club Only Stouts vs Porters, 23 entries—Lauren Gaggioli, San Diego, CA

Home Brew League: Gravel Bottom Challenge, 30 entries—Kevin Schumacher, Grand Rapids, MI

Buckeye BrewCraft's Autumn Beer Contest, 20 entries—Mitch Langford, Columbus, OH

V Concurso Paranaense de Cerveja Feita em Casa, 200 entries—Rafael David, Curitiba, Brazil

The Conical Cup, 162 entries—Royce Vaughn, Bear Creek Township, PA

Oktoberfest in the Park Homebrew Competition, 16 entries—Rodney Kibzey, Portland, OR

HAZtoberfest, 171 entries—Steven Rapko, Aurora, OH

7º Concurso Estadual de Cervejeiros, 77 entries—Sergio Muller, Sao Paulo, Brazil

Comp de L'abbaye Normale, 41 entries—Shaun Newman, Jacksonville, FL

Tri-State Homebrew Competition, 89 entries—Paden Morris, Moundsville, WV

Ozarktoberfest, 16 entries—Gary Slate, Springfield, MO

2º Copa CervaSerra de Cervejas, 50 entries—Jocemar Gross & Elson José Martins de Sousa Jr., Caxias do Sul, Brazil

Celebrewtion, 80 entries—Joshua Cote

MoBI European Homebrew Competition, 150 entries—Giuseppe Galati, Italy

Good Beer Festival Homebrew Competition, 70 entries—Nathan Wroblewski, Greenbackville, VA

2016 Taiwan Homebrew Competition, 210 entries—Suen Kwan, Nantou County, Taiwan

Copa Cerveceros Mitad del Mundo, 266 entries—Concordia, Latitude Cero, Cuenca, Ecuador

Old Forge BIG Beer and Odd Ale Competition, 31 entries—John Lee, Queensbury, NY

Arkansas State Fair Homebrew Competition, 62 entries—Mark Sniff, Little Rock, AR

Lincoln Lagers Sower's Cup, 482 entries—Kellan Stec, Omaha, NE

Oktobersbest Homebrew Competition, 245 entries—Randy Nickum, Cincinnati, OH

4th Annual Barley & Hops Hoopla, 23 entries—Lincoln Purvis, Columbia, MO

Ida Grove Wine & Bier Contest, 65 entries—Edward Hines, Sioux City, IA

1a Grande Taça BJCP Portugal, 13 entries—Joao Brazao & Mick O'Toole, Costa da Caparica, Portugal

Nevada State Homebrew Competition 2016, 182 entries—Diana Hull, Las Vegas, NV

Proctoberfest - Pints for Prostates, 232 entries—Thomas Wallbank, Indianapolis, IN

Arizona Fall Classic Homebrew Competition, 300 entries—Darrin Umbaugh, Scottsdale, AZ

Tulare County Home Brew Competition, 54 entries—Damon DeRoma, Visalia, CA

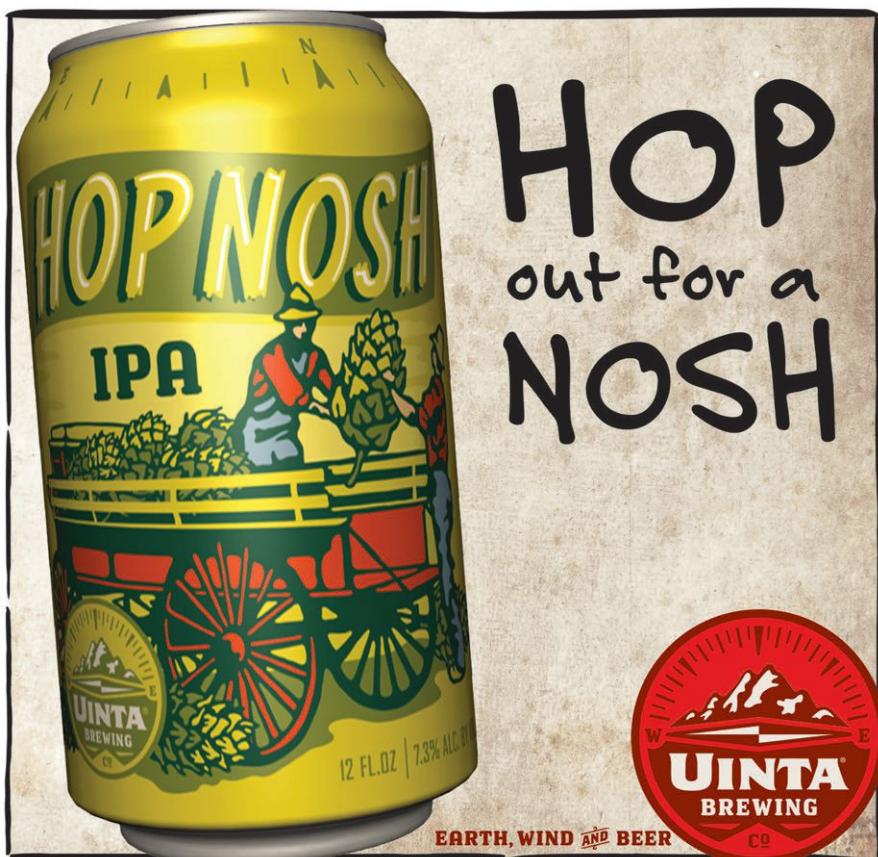
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## KUDOS—BEST OF SHOW

### AHA/BJCP Sanctioned Competition Program

Motown Mash, 385 entries—Chris Bellina, North Plainfield, NJ  
50 West Invitational, 50 entries—Adam Mouw, Dulles, VA  
11th Annual New England Regional Homebrew Competition, 429 entries—Philippe Vaillancourt, Manchester, NH  
OC Mash Ups Fall Classic, 8 entries—Sean O'Shea, Costa Mesa, CA  
Star City Homebrew Throwdown, 121 entries—Jamey Barlow, Ruckersville, VA  
SA on Tap, Pretoria, 19 entries—Marius Botha, Pretoria, South Africa  
Anchor Town Invitational Homebrew Competition, 38 entries—Ted Rosenzweig, Anchorage, AK  
Homebrew Harvest 3.0, 69 entries—Rob Knighton  
Southern New England Regional Homebrew Competition, 370 entries—Robert Burger, Branford, CT  
Battle of the Brews, 20 entries—Kevin Multop, Bend, OR  
Salmonid's Grim Reaper Challenge, 25 entries—Jeff Knudson, Salmon, ID  
4º Concurso Pernambucano de Cerveja, 33 entries—Alan Lyrio Soares, Salvador, Brazil  
Santa Fe Open, 103 entries—Jim Steinbach, Santa Fe, NM

### November 2016

Home Brew League: Elk Brewing Challenge, 32 entries—Steve Morren, Grandville, MI  
Austin Homebrew Festival, 28 entries—Brad Janowski & Sean Dunne, Austin, TX

Southern Season Annual Homebrew Competition, 20 entries—Heiko Rath, Durham, NC

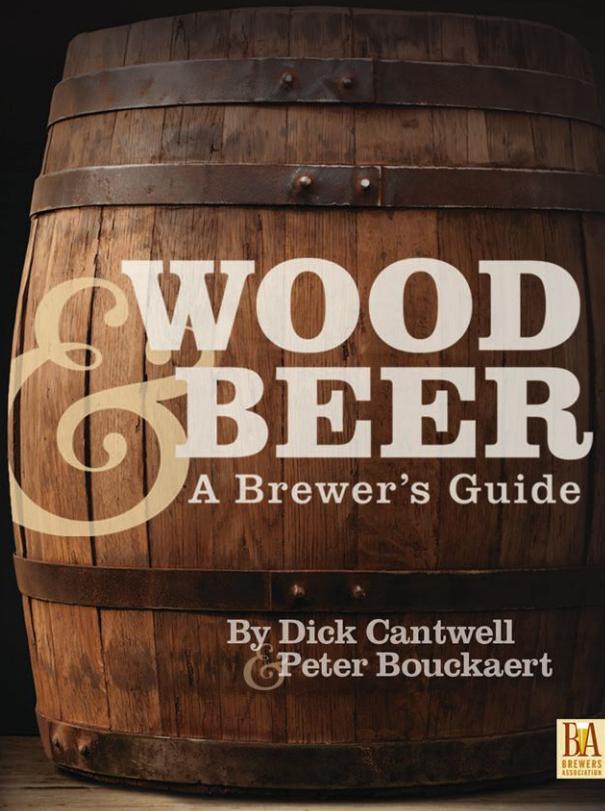


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—Matt Brynildson

Brewmaster, Firestone Walker Brewing Company

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COMPETITION PROGRAM CALENDAR

For complete calendar, competition and judging information go to  
[HomebrewersAssociation.org/pages/competitions](http://HomebrewersAssociation.org/pages/competitions)



**January 6, 2017**

**Big Beers Festival Homebrew Competition**

Breckenridge, CO

Entry Deadline: 12/3/2016

[bigbeersfestival.com](http://bigbeersfestival.com)

**January 13, 2017**

**Big Bend Brewoff**

Tallahassee, FL

Entry Deadline: 1/6/2017

[bbbo.nfbl.org](http://bbbo.nfbl.org)

**January 14, 2017**

**Mardi Gras Casino's 4th Annual  
Homebrew Competition**

Hallandale Beach, FL

Entry Deadline: 1/14/2017

[mgfl.com](http://mgfl.com)

**January 14, 2017**

**Winterbrew 2017**

Chicago, IL

Entry Deadline: 1/6/2017

[squarekegs.com](http://squarekegs.com)

**January 14, 2017**

**Beer Army Beer Wars**

Charlotte, NC

Entry Deadline: 12/1/2016

[beerwars.brewcomp.com](http://beerwars.brewcomp.com)

**January 28, 2017**

**STOUT BOUT**

Portland, OR

Entry Deadline: 1/20/2017

[pdxt stoutbout.com](http://pdxt stoutbout.com)

**January 28, 2017**

**Biere de Rock**

Castle Rock, CO

Entry Deadline: 1/15/2017

[bierederock.com](http://bierederock.com)

**January 28, 2017**

**OC Mashups Winter 2017 Homebrew  
Competition**

Fullerton, CA

Entry Deadline: 1/13/2017

[ocmashups.org/competitions/winter](http://ocmashups.org/competitions/winter)

**January 28, 2017**

**Champion of the Pint**

Maryland Heights, MO

Entry Deadline: 1/17/2017

[garagebrewers.com/champion-of-the-pint](http://garagebrewers.com/champion-of-the-pint)

**February 4, 2017**

**Amazing Homebrew Competition**

Seoul, Korea

Entry Deadline: 1/26/2017

**February 4, 2017**

**I Concurso Homebrew Birras Baixas**

Vigo, Spain

Entry Deadline: 12/1/2016

[facebook.com/concursobirrasbaixas](http://facebook.com/concursobirrasbaixas)

**February 4, 2017**

**Domras Cup 19th Annual Mead  
Competition**

Savannah, GA

Entry Deadline: 1/26/2017

[savannahbrewers.com/domrascup.php](http://savannahbrewers.com/domrascup.php)

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**February 9, 2017**

**Great Northern Brew Ha Ha**

Duluth, MN

Entry Deadline: 1/28/2017

[greatnorthernbrewhaha.brewcomp.com](http://greatnorthernbrewhaha.brewcomp.com)

**February 10, 2017**

**Homebrew Alley XI**

Long Island City, NY

Entry Deadline: 2/3/2017

[homebrewalley.com](http://homebrewalley.com)

**February 11, 2017**

**Napa Homebrewers Classic**

Napa, CA

Entry Deadline: 1/21/2017

[northnaparotary.org](http://northnaparotary.org)

**February 11, 2017**

**2017 GEBL IPA Bracket Challenge**

Everett, WA

Entry Deadline: 2/4/2017

[gebl.org/articles/2017-gebl-ipa-bracket-challenge](http://gebl.org/articles/2017-gebl-ipa-bracket-challenge)

**February 11, 2017**

**5th Annual Romancing the Beer**

**Homebrew Competition**

Thousand Oaks, CA

Entry Deadline: 1/27/2017

**February 11, 2017**

**Cabin Fever Craft Beer Festival**

**Commercial Competition**

Morgantown, WV

Entry Deadline: 2/10/2017

[wvbeerfest.com/brewer](http://wvbeerfest.com/brewer)

**February 11, 2017**

**Kansas City Bier Meisters 34th Annual**

**Competition**

Kansas City, MO

Entry Deadline: 1/28/2017

[kcbiermeisters.org/competitions/kcbm-competition.html](http://kcbiermeisters.org/competitions/kcbm-competition.html)

**February 17, 2017**

**Peterson Air Force Base Homebrew**

**Competition**

Colorado Springs, CO

Entry Deadline: 2/4/2017

[brewbrosco.com/competitions/peterson-air-force-base-homebrew-competition](http://brewbrosco.com/competitions/peterson-air-force-base-homebrew-competition)

**February 18, 2017**

**War of the Worts XXII**

Montgomeryville, PA

Entry Deadline: 2/5/2017

[keystonehops.com/wotw.php](http://keystonehops.com/wotw.php)

**February 25, 2017**

**The Temecula Valley Strange Brew**

Murrieta, CA

Entry Deadline: 2/17/2017

[strangebrew.temeculahomebrewers.com](http://strangebrew.temeculahomebrewers.com)

**February 25, 2017**

**Biela Vrana 2017**

Košice, Slovakia

Entry Deadline: 2/25/2017



ON THE WEB  
For an up-to-date calendar  
of AHA and BJCP events  
go to the Events section of  
[HomebrewersAssociation.org](http://HomebrewersAssociation.org)

*Stan has written a zeitgeist book for a zeitgeist moment.*

*This book is literally all over the map, and that is a beautiful thing.*

*—Sam Calagione, Founder, Dogfish Head Craft Brewery*

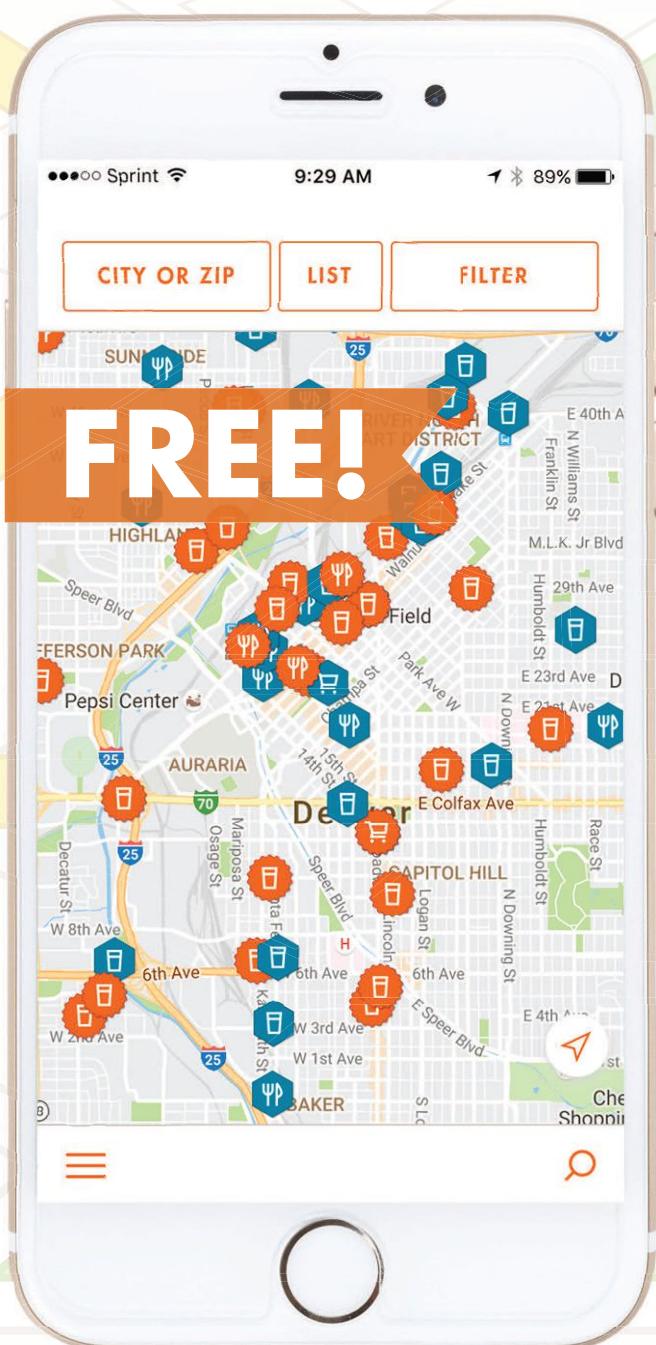


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**One way beer judges check their palates is by using commercial “calibration beers”—classic versions of the style they represent. Zymurgy has assembled a panel of four judges who have attained the rank of Grand Master in the Beer Judge Certification Program. Each issue, they score two commercial beers (or meads or ciders) using the BJCP scoresheet. We invite you to download your own scoresheets at [bjcp.org](http://bjcp.org), pick up a bottle of each of the beverages and judge along with them in our Commercial Calibration.**



**W**hen this issue hits newsstands and mailboxes, it's going to be dark outside. Depending on where you live, it might be *really* dark outside (unless you're one of our Southern Hemisphere members, in which case can we come visit? We promise we won't stay past March).

It's common to favor big, strong beers in the cold, dark days of winter. In Bavaria, that means doppelbock. In Scotland, it might be wee heavy. And for this issue of Zymurgy, it's Barrel-Aged Old Ruffian from Great Divide Brewing Company and Old Stock Ale from North Coast Brewing Company.

Great Divide says, “This special release of our acclaimed, hefty barley wine has been aged for over 12 months in whiskey barrels. The process tempers Old Ruffian’s edges for a mellowed version with heady whiskey flavors and subtle oak notes.” With 85 to 90 IBUs and 10.2 percent ABV, it's a big beer, indeed.

Old Stock Ale is also a beast, with 11.8 percent ABV and 34 IBUs. “Like a fine port, Old Stock Ale is intended to be laid down,” says the brewery. “With an original gravity of over 1.100 and a generous hopping rate, Old Stock Ale is well-designed to round out and mellow with age. It's brewed with classic Maris Otter malt and Fuggles and East Kent Goldings hops, all imported from England.”

We wanted to feature beers that a large percentage of our readers would be able to find, and at press time, Great Divide and

**OUR EXPERT PANEL** David Houseman, a Grand Master VI level judge and competition director for the BJCP from Chester Springs, Pa.; Sandy Cockerham, a Grand Master III level judge from Indianapolis, Ind. and an associate exam director and Midwest Representative for the BJCP; Scott Bickham, a Grand Master III judge from Corning, N.Y., who has been exam director or associate exam director for the BJCP since 1995; and Gordon Strong, a Grand Master IX judge, principal author of the BJCP Style Guidelines, and president of the BJCP board who lives in Beavercreek, Ohio.



**Great Divide Brewing Company**  
[greatdivide.com](http://greatdivide.com)

**North Coast Brewing Company**  
[northcoastbrewing.com](http://northcoastbrewing.com)

**BJCP Style Guidelines**  
[bjcp.org](http://bjcp.org)

**Commercial Calibration Index**  
[HomebrewersAssociation.org/pages/zymurgy/commercial-calibration](http://HomebrewersAssociation.org/pages/zymurgy/commercial-calibration)

North Coast products were available in 26 and 45 states, respectively. So go out and buy one or both of these big beers and play along. While you're at it, buy a few—these are built for aging.

Finally, we'd like to welcome Sandy Cockerham to the Commercial Calibration panel. Sandy is a fixture in the BJCP and a member of the AHA Governing Committee. Cheers, Sandy!

# THE SCORES



Barrel-Aged Old Ruffian—Great Divide Brewing Company, Denver, Colo.  
BJCP Category: 33B, Specialty Wood-Aged Beer (American Barleywine)

## THE JUDGES' SCORES FOR BARREL-AGED OLD RUFFIAN



DAVE HOUSEMAN



SANDY COCKERHAM



SCOTT BICKHAM



GORDON STRONG

**Aroma:** Toffee-like malt with considerable alcohol. No hop aroma. Bountiful fruity esters of raisins and prunes. Subtle whiskey and faint oak character. A very complex aroma that balances malt, esters, and alcohol. No diacetyl, DMS, or oxidation. (10/12)

**Appearance:** Elegant packaging. Brilliant clarity. Mahogany amber color. Dense tan head with excellent retention. Beautiful beer. (3/3)

**Flavor:** Sweet, toffee-like malt with moderate whiskey notes and lots of alcohol. Very high hop bitterness initially seems balanced, but bitterness lingers long into the finish, along with salt and minerals. Low vanilla notes and other oaky flavors from barrel aging are subtle for the style category. Significant dried fruit esters, whiskey, and toffee-like malt go well together. No diacetyl, DMS, or oxidation. Quite dry due to the hopping and alcohol. Salt, alcohol, hop bitterness, and alcohol astringency dominate the aftertaste. (16/20)

**Mouthfeel:** Chewy mouthfeel with medium body. Alcohol warmth is hot but stops short of being harsh. Bitterness and alcohol astringency linger in mouthfeel long after the final sip. (3/5)

**Overall Impression:** The base barleywine is rich, malty, and estery, but high bitterness and emphasis on alcohol are balanced with the malt. Whiskey notes blend well with the malt and esters, but the oak expression is subtle for the wood-aged category. Overall, not as balanced as it might be with less alcohol and bittering hops. This is a good sipping beer for a cold winter's night with some aged cheddar or Brie en crûte. (7/10)

**Total Score:** (39/50)

**Aroma:** Medium-high malt mixes bread, grain, and light caramel. Some barrel character, mostly light oak and a touch of whiskey. Low hop aroma is earthy, and there is a subtle, pleasant horsey aroma. Medium alcohol imparts gentle sweetness. No esters. (10/12)

**Appearance:** Deep amber with garnet highlights and brilliantly clear. Pours with a thick, rocky, ivory head. Retention is excellent, especially for such a big beer. Foam leaves pretty lacing on the glass. Lovely appearance! (3/3)

**Flavor:** This beer is definitely big, bitter, and barreled! High bitterness has some roughness, which merges with oaky astringent notes to pack a wallop. Moderate malt character (toast, caramel, and light notes of chocolate) helps keep things from getting out of hand. Alcohol is warming and spicy, but not harsh. Wood phenols impart mild whiskey flavor, vanilla, and spice. Hop flavor is medium-low and mirrors the aroma. Raisin, prune, and fig esters increase as the beer warms. (16/20)

**Mouthfeel:** Medium-full body couples with medium-high carbonation. A bit of harshness from the hop bitterness combines with wood tannins, leaving a slightly drier finish than this beer needs. (3/5)

**Overall Impression:** This beer is assertive but provides a good balance between malt, bitterness, and barrel. This 2016 bottle is delicious now but will be even better in a year or so. The barrel provides a good balance of wood and spirits and plays nicely with the base beer. While I enjoyed this now, I hope to try it in the next year or two when the alcohol mellows. (8/10)

**Total Score:** (40/50)

**Aroma:** Enticing complexity, with notes of treacle and molasses supported by vanilla and wood. Pronounced alcohol has a distinct whiskey character. Light oxidative sherry notes. Low hop character for a young American barleywine, but that's expected after wood aging. (9/12)

**Appearance:** Crystal clear, with an attractive reddish-copper color. A tight-beaded beige head floats effortlessly over the liquid and displays impressive retention. (3/3)

**Flavor:** Medium-low malt with dark caramel and slightly roasted notes. No hop flavor, but vanilla and wood phenols offer complexity. Low sherry-like oxidation and toasted coconut are overwhelmed by the alcohol, which delivers a boozy finish with some harshness. Bitterness is moderately high, with contributions from both hops and wood tannins. (14/20)

**Mouthfeel:** A good balance between dextrins and carbonation provides pleasant creaminess. There is plenty of alcoholic warmth, but it's hot and finishes with too much harshness and astringency. (3/5)

**Overall Impression:** This is a complex and interesting beer that needs time in the bottle to mellow. The base beer is solid, but wood tannins amplify the high hop bitterness, which takes the finish over the top in terms of bitterness and astringency. The rounded, complex malt character works well with the vanilla and whiskey notes. It is a thought-provoking beer, and I will seek out more of this to lay down for a few years and compare with the base beer. (7/10)

**Total Score:** (36/50)

**Aroma:** Sharp whiskey and wood aroma with a burnt, smoky edge, rich malt, and an alcohol backdrop. Malt is strong but the barrel is stronger. Medium fruity hops. There is a rum-raisin quality to the aroma with the barrel, booze, and malt mingling together. The alcohol is somewhat sharp and forward. (9/12)

**Appearance:** Copper with light red highlights. Very clear—impressive for a beer of this strength. Tall, rocky beige head with tight bubbles and good retention. (3/3)

**Flavor:** Strong whiskey-like, alcoholic, woody char flavor. High rich malty flavor with very high bitterness. Off-dry finish with moderate malt sweetness cut by the sharp alcohol and bitterness. Malty and bready, with high, moderately dark caramel and moderate fruit. Medium-high hop flavor is woody and citrusy. Malty-bitter aftertaste with whiskey flavor and alcohol heat. (14/20)

**Mouthfeel:** Full body, chewy, thick, and dextrinous. Warming alcohol enhanced by whiskey, a bit too hot, especially when exhaling. Medium carbonation. Medium-high barrel wood tannin. (3/5)

**Overall Impression:** The individual components are all quite strong and distinctive but they really haven't melded together yet. The whiskey barrel character is prominent and sharp, and the alcohol and bitterness are both quite forward. Definitely an American barleywine. I'd like to see this aged longer to allow the elements to become more unified and balanced. With the high alcohol and hop levels, it should age well. I'd love to try this in two to three years. (7/10)

**Total Score:** (36/50)



## THE JUDGES' SCORES FOR OLD STOCK ALE



**Aroma:** Delightful malt with notes of apricots and sweet cherries. Malt is slightly caramel-like and toasty, but fruity esters dominate. No hop aroma, diacetyl, or DMS. There is noticeable alcohol aroma but not like sherry, port, or other old wines. No oxidation. (9/12)

**Appearance:** Clear with light chill haze. Rich, amber color. Dense, thick, tan head falls quickly as carbonation subsides. Nearly flat and still afterward. (2/3)

**Flavor:** This beer presents sweet malt and lots of fruity esters up front, with substantial hop bitterness to balance. Malt is toffee-like, with caramel and toasty bread notes. No hop flavor. Fruitiness is complex, with a mix of pit fruits, raisins, and dried cherries. Lots of alcohol with a hot, sharp finish. Balance is toward fruity alcohol, like a cordial. Finish is dry. No diacetyl, DMS, or oxidation. (16/20)

**Mouthfeel:** Medium-thin body; the beer may have attenuated further in the bottle. High alcohol warmth. Hot mouthfeel with lingering bitterness and astringency. (4/5)

**Overall Impression:** Lots of subtle complexity that's overshadowed by the alcohol. This is more than vinous; it's as if a good dose of pure ethanol has been added, but more likely, the beer continued to attenuate in the bottle. "Old" doesn't come to mind when tasting this beer: neither sherry nor port nor oxidation. Since this reminds me somewhat of a Manhattan cocktail with extra cherries, serving it with appetizers like bruschetta would work well. (6/10)

**Total Score:** (37/50)



**Aroma:** The nose is a rich mix of biscuit, some light treacle, and dried fruit (notably raisin and currant) at just above moderate intensity. Hop aroma is absent, as expected. I perceive just a hint of leather. There are low notes of sherry oxidation and ethanol. Whether from malt or alcohol, the nose has a light sweetness all the way through. (9/12)

**Appearance:** The beer is deep amber with ruby highlights and is clear, but not brilliantly so. Fine bubbles stream up and help support a moderately thick ivory head for a good while. (3/3)

**Flavor:** The flavor is not as rich as the nose implies. The substantial alcohol is quite evident and mostly inviting, but it does cause a burn in the back of the throat. Medium-high bitterness and some tannins that make me think of wood aging linger into the finish. No hop flavor to note. The malt character is medium-sweet and bready, with just a touch of treacle. There is a medium note of fruity esters, raisins, and currants, especially as the beer warms. The balance is fairly even. (17/20)

**Mouthfeel:** Medium-bodied with moderate carbonation. Alcohol is evident but fairly well-integrated for the double-digit strength. Light astringency lingers and helps dry out the finish. (4/5)

**Overall Impression:** This is an enjoyable old ale that will likely be better with another year on it in the hope that some pleasant oxidation would become more evident and boost the overall complexity. The nose promises a bit more than the flavor could deliver. (7/10)

**Total Score:** (38/50)



**Aroma:** Medium-high toasted malt with low caramel and toffee. Slight roast note in the background, low sherry-like oxidation, and pleasant oak character. Moderate alcohol with a touch of white pepper and rye whiskey. Any fermentation and hop character are buried beneath wood-aged aromatics. (10/12)

**Appearance:** Beautiful garnet color with excellent clarity. The carbonation is quite low, with a small head that fades quickly. Head appearance is not a key element of this style, but I was expecting a little more. (2/3)

**Flavor:** Medium-high toffee and toasty, bready malt. Raisin and prune dried fruit character is not as evident in the aroma, but it supports and adds complexity to the other flavor elements. Moderate oaky, earthy notes suggest wood aging, though that wasn't advertised. Hop bitterness is moderately low, but the beer is fairly well-attenuated, and peppery alcohols help balance the malt and yield a soft, round finish. (17/20)

**Mouthfeel:** Residual sugars leave some sweetness on the lips. The malty fullness is a bit cloying and would be lightened with a little more carbonation. Moderate alcoholic warmth is pleasant and not hot—nicely done. (3/5)

**Overall Impression:** This is a nice old ale with chewy malt balanced by alcohol, dried fruit esters, and interesting woody and earthy notes. Hop bitterness is soft to keep focus on the malt. Higher carbonation would enhance appearance and mouthfeel and make it a little less cloying. Thanks for sharing a very enjoyable beer! (8/10)

**Total Score:** (40/50)



**Aroma:** Vaguely metallic aroma initially, otherwise fairly neutral. Low hop aroma and medium-dark dried fruit. Becomes more deeply caramel-malty and rich, with noticeable alcohol, as it warms. Malt becomes breadier, with a biscuit-like, toasty accent. Slight aged, papery aroma. (10/12)

**Appearance:** Deep copper and quite effervescent. Moderate-sized tan head with poor retention. Some flaky floaties in the bottle. The beer itself is lightly hazy. (2/3)

**Flavor:** Full malt flavor finishes dry with strong, balanced bitterness. Aftertaste is malty, with alcohol and bitterness supplying balance. Medium-low hop flavor. Bready malt with light toast and biscuit accents, moderate dark caramel, and dried dark fruit. Alcohol enhances the bitter, dry impression. Malty and rich, but not sweet. Except for caramel and dried fruit notes, aged character is relatively low. (16/20)

**Mouthfeel:** Very warming—exhaling produces a hot impression. Very full body: luscious, heavy, silky, and chewy. Medium-high carbonation. Not astringent. (4/5)

**Overall Impression:** Strong for the style, more like a high-gravity aged English barleywine. Alcohol sticks out, but other flavors are well-integrated. Caramel, fruit, and bready malt seem English, but bitterness and alcohol are both high. Has an aged quality (slight paper aroma with fruit and caramel) but I'd like to cellar it longer to let the alcohol come into balance. Give it at least another year, and don't serve it too cold. A real fireside sipper. (8/10)

**Total Score:** (40/50)



## Sweden '95: Stockholm

In 1995 I was exploring beer parts of Europe. I visited Sweden for several days. It was my first time there. I recently came across and reread my trip report and reflected. This typifies many of my experiences and captures a lot of what my life has been. I share here excerpts from my first-person account of a typical journey as a world beer explorer. This is the first of four parts of this story.

**M**ay, 1995. Sonofagun. Here it is three—or is it four?—days later in Stockholm (I think). I feel like I've been tumbling down the up-escalator for four days; someone turn it off. NEVER, EVER, EVER, EVER trust a homebrewer who says, "This is the last beer we're going to taste." NEVER, EVER in a million years EVER!

My visit with homebrewers, brewers, and beer sites in Sweden has been pleasantly brewtal. I have had incredible and amazing experiences. More beer. More mad brewers. More terrific people and places.

Upon my arrival, I knew I was in a strange country. As we left the airport two signs direct you to either "Infart" or "Outfart." "Fat" beer was advertised boldly on various labels.

Håcken (pronounced "Ho can") Lundgren, president of the Swedish Homebrewers Association, is my host and one of the nicest hell-bent beer and homebrew enthusiasts I'd ever encountered. He is also an avid gardener, sailboat sailor, and painter. But we seemed to never really talk about anything but BEERRRRRRR. Beers kept coming my way every five minutes.

Our very first stop was the local Swedish supermarket. The prices sent me into sticker shock. The food he bought was for an event that was to follow within minutes. Then a brief stop at the house to unload my bag-



gage and we were off to a lake where we had lunch on Håcken's sailing boat, a modest vessel with a small cabin. Moored at the dock on one of Sweden's largest freshwater lakes, I was looking forward to a leisurely sail for a few hours, enjoying the peaceful forest and sunny skies.

Not to be. I didn't know what to expect. Throughout this Swedish odyssey it seemed that I either wasn't listening carefully enough or I was never being given the complete details about the when, where, who, why, etc. of our next stop. It didn't really matter; I was jet-lagged and too zoned out to absorb any real schedule at this point anyway. I felt like a lamb being led to the lamb-chop maker.

Without warning I found myself in the company of four homebrewers on the small lower deck of a sailboat moored to the dock eating lunch. We never untied





the bowline but we began an even better journey to beer oblivion.

Wave after wave, we tasted several beers, scoring and evaluating each one. Håcken had designed a diploma recognizing gold, silver, and bronze standards of achievements for beers we were to judge during my four-day stay in Sweden. So there we were, eating hot-spicy smoked sausage and Greek olives and trying to evaluate beer. I continued to hint that the beer tasted like smoked sausage to me, but the beers and the seriousness kept coming. We tasted about 12 beers without going overboard.

The evaluations were serious, and the homebrewers were all skillful evaluators. I noted that my scores tended to be higher than theirs by a consistent six to eight points. But this gradually changed over the next few days as we began to understand the standards of styles we were judging against.

The sun was shining, the sky was blue, and it was beginning to feel somewhat comfortable on board, but just as a sense of relaxation began to overwhelm me, whammo: "Time to go, Charlie. Now we go visit the Mountain Brewery..."

Huh? Wha—? Can't we stay and really enjoy another beer?

"No, not really, we have a program and schedule today, and we can't be late."

I saw a white rabbit running through the woods. He was wearing a gold pocket watch. Who, what, and where were the Mountain Brewers?

### Noonanites in Sweden

I soon found myself in a small basement in a large, yellow house. This was the home brewery of Tomas Segebladh. In awe, I viewed a rather sophisticated 1-hectoliter (1 hl is about 28 gallons) brewing system, stainless and copper, all fashioned from used and recycled vessels, but adapted electronically for Tomas' 1-hl brews. Everything was hard plumbed, the mash tun was neatly jacketed with slats of wood for insulation, and the heat source was an immersion heater. Electricity is very cheap in Sweden, and virtually all homebrewers were using electricity as a source of heat for their breweries.

"I've read Greg Noonan's book (*Brewing Lager Beer*, Brewers Publications 1986). It is a very good book, isn't it?" Tomas proudly proclaimed. My god, there were

## 1996 SAMUEL ADAMS® SCOTCH ALE

In 1996 (one year after my trip), Samuel Adams Scotch Ale, brewed by the Philadelphia Brewing Company/ Samuel Adams Brewhouse (Production level at 1,000 barrels) won gold in the first World Beer Cup®. Excerpted from my book *Homebrewers Gold*, here are the details of that beer and the homebrew recipe I formulated after extensive research.

Part of the family of Boston Brewing Company's brewing ventures, this small brewpub located in downtown Philadelphia features an assortment of ales and lagers year round. The Boston Brewing Company was founded in 1984. Their beers are brewed at several locations around the country. The brewhouse in Philadelphia, solely owned and operated by the Boston Beer Company, produces beer under the guidance of master brewer Jim Koch, brewing beer in the craft tradition of the smallest brewers in America.

Character description of gold-cup-winning Samuel Adams Scotch Ale: Color is a deep ruby-red-brown. Full malt aroma with suggestion of smoked malt rounding the rich character of the aroma. Extraordinarily well-balanced aroma with hop character appropriately absent. Caramel and roast malts combined with peat-smoked malt. The smoked malt is done very subtly, not competing as the primary character. Full-bodied texture with flavor bearing the same character that is evident in the aroma; full malt flavor. Alcohol strength is evident but deceptively subtle due to the richness of body and fullness of malt. Hop character is all expressed as medium bitterness, quite adequate to balance the fullness of malt. Aftertaste is clean, malt lingers and gently gives way to the emergence of a pleasant bitterness and smoky memory. Excellent rendition of this style.

Noonanites in Sweden! Swedish homebrewers were serious. They didn't mess around with 20-liter (5-gallon) batches, no; the smallest system I saw in my four days was 75 liters. The Swedish Homebrewers Association was a group of knowledgeable and enthusiastic all-grain brewers.

I note that then, as now, the small-scale brewing phenomenon continues to root itself within the network of homebrewers, the world around. Sweden supported 300

to 400 small breweries in the early 1900s, but as happened in America, they, too, had Prohibition and a repression of all things alcohol. Now there are a few major brewers, and only about five 2,000- to 4,000-hl microbreweries. Though brewpubs are not completely legal yet, there is one "unofficially" opened on Gotland Island—more on that later.

Meanwhile, homebrew can be made legally for about one-tenth the price of buying

beer. Quite obviously there is a strong incentive. But my conversations with this circle of homebrewers and one local homebrew shop lead me to believe that interest in homebrewing has decreased in the last two years. Why? I think the reason is a lack of information for beginning brewers about making good extract-based beers.

The Swedish Homebrewers Association is struggling with this issue and discussed it with me on several occasions. They

## 1996 SAMUEL ADAMS® SCOTCH ALE (2017 ALL-GRAIN ADAPTATION)

**Batch Volume:** 5 U.S. gallons (18.9 L)

**Original Gravity:** 1.060 (15 B)

**Final Gravity:** 1.018 (4.5 B)

**Color:** 19 SRM (38 EBC)

**Bitterness:** 30 IBU

**Alcohol:** 5.6% by volume

### MALTS

<b>9.5 lb.</b>	(4.3 kg) English 2-row pale malt
<b>8 oz.</b>	(227 g) American (aromatic) Victory® malt
<b>8 oz.</b>	(227 g) 60° L American caramel malt
<b>1.6 oz.</b>	(45 g) Scottish peat smoked malt
<b>0.8 oz.</b>	(23 g) American chocolate malt

### HOPS

<b>1.1 oz.</b>	(31 g) English Fuggles, 5% a.a. (6.3 HBU/179 MBU) @ 90 min
<b>0.5 oz.</b>	(14 g) UK Kent Goldings, 6.5% a.a. (3.3 HBU/91 MBU) @ 30 min

### YEAST

Scottish Ale yeast

### ADDITIONAL ITEMS

<b>1/4 tsp.</b>	(1 g) powdered Irish moss
<b>3/4 cup</b>	(175 ml) corn sugar for priming bottles or 1/3 cup (80 ml) corn sugar for kegging

### BREWING NOTES

A step infusion mash is employed to mash the grains. Add 10.5 quarts (10 L) of 140° F (60° C) water to the crushed grain, stir, stabilize and hold the temperature at 132° F (56° C) for 30 minutes. Add 5.25 quarts (5 L) of boiling water and add heat to bring temperature up to 155° F (68° C) and hold for about 30 minutes. Then raise temperature to 167° F (75° C), lauter, and sparge with 3.5 gallons (13.25 L) of 170° F (77° C) water. Collect about 5.5 gallons (21 L) of runoff. Add 90-minute hops and bring to a full and vigorous boil.

The total boil time will be 90 minutes. When 30 minutes remain, add the 30-minute hops. When 10 minutes remain, add the Irish moss. After a total wort boil of 90 minutes, turn off the heat and place the pot (with cover on) in a running cold-water bath for 30 minutes. Continue to chill in the immersion or use other methods to chill your wort. Then strain and sparge the wort into a sanitized fermenter. Bring the total volume to 5 gallons (19 L) with additional cold water if necessary. Aerate the wort very well.

Pitch the yeast when temperature of wort is about 70° F (21° C). Ferment at about 70° F (21° C) for about one week or when fermentation shows signs of calm and stopping. Rack from your primary to a secondary. If you have the capability, "cellar" the beer at about 55° F (12.5° C) for about one week.

Prime with sugar and bottle or keg when complete.

wish to expand and get more members. I recommended that they develop good information on extract brewing and try to encourage people to make better beer and improve their skills, rather than focusing exclusively on all-grain enthusiasts.

Tomas' Mountain (home)brewery was just the beginning of this long day, where the sun wasn't setting until 10 p.m. and dusk lasted all night long.

Vörtens Vänner means "The Friends of the Wort." I somehow magically appeared at their clubhouse after I heard Håcken proclaim, "It's time to go now, Charlie. We must go to see a homebrew club."

The traveling interlude was a soft whoosh. As usual I found the front seat of the car (a Saab, of course) an exit to dream land, a brief interlude with sleep, dreams that took me far, far away to events, people, and places, some of which I knew and others of unknown origin.

To be continued in the March/April 2017 issue of Zymurgy: Swedish beer paradise

found. Swedish beer tap engineered from a Triumph T100 Engine.

Beyond the shuck and jive, here's this issue's recipe.

**Charlie Papazian is founder of the American Homebrewers Association and the author of *The Complete Joy of Homebrewing*.**



## 1996 SAMUEL ADAMS® SCOTCH ALE (ORIGINAL 1996 PARTIAL-MASH RECIPE)

**Batch Volume:** 5 U.S. gallons (18.9 L)    **Color:** 19 SRM (38 EBC)

**Original Gravity:** 1.060 (15 B)

**Bitterness:** 30 IBU

**Final Gravity:** 1.018 (4.5 B)

**Alcohol:** 5.6% by volume

### MALTS

<b>3.25 lb.</b>	(1.47 kg) British amber dried malt extract
<b>1.25 lb.</b>	(0.57 kg) British light dried malt extract
<b>3 lb.</b>	(1.36 kg) English 2-row pale malt
<b>8 oz.</b>	(227 g) American (aromatic) Victory® malt
<b>8 oz.</b>	(227 g) 60° L American caramel malt
<b>1.6 oz.</b>	(45 g) Scottish peat smoked malt
<b>0.8 oz.</b>	(23 g) American chocolate malt

### HOPS

<b>1.6 oz.</b>	(31 g) English Fuggles, 5% a.a. (6.3 HBU/179 MBU) @ 75 min
<b>0.5 oz.</b>	(14 g) UK Kent Goldings, 6.5% a.a. (3.3 HBU/91 MBU) @ 30 min

### YEAST

Scottish Ale yeast

### ADDITIONAL ITEMS

<b>1/4 tsp.</b>	(1 g) powdered Irish moss
<b>3/4 cup</b>	(175 ml) corn sugar for priming bottles or 1/3 cup (80 ml) corn sugar for kegging

### BREWING NOTES

A single-step infusion mash is employed to mash the grains. Add 4.15 quarts (4 L) of 172° F (78° C) water to the crushed grain, stir, stabilize and hold the temperature at 156° F (69° C) for 60 minutes. After conversion, raise temperature to 167° F (75° C), lauter, and sparge with 2 gallons (7.6 L) of 170° F (77° C) water. Collect about 3 gallons (11.4 L) of runoff. Add malt extract and bittering hops and bring to a full and vigorous boil.

The total boil time will be 75 minutes. When 30 minutes remain, add 30-minute flavor hops. When 10 minutes remain, add Irish moss. After a total wort boil of 75 minutes, turn off the heat, separate or strain out and sparge hops, and direct the hot wort into a sanitized fermenter to which 2 gallons (7.6 L) of cold water have been added. If necessary add additional cold water to achieve a 5-gallon (19 L) batch size. Chill the wort to 70° F (21° C). Aerate the cooled wort well.

Pitch the yeast when temperature of wort is about 70° F (21° C). Ferment at about 70° F (21° C) for about one week or when fermentation shows signs of calm and stopping. Rack from your primary to a secondary. If you have the capability "cellar" the beer at about 55° F (12.5° C) for about one week.

Prime with sugar and bottle or keg when complete.

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# The Art of the Brew



Like J. Robert Oppenheimer, who in a letter to a friend dreamt of uniting his passion for physics with his love of the desert landscape, I have searched for a way to unite painting and brewing. Preferably in a way less cataclysmic than Oppenheimer's.

I teach painting with a bit of alchemy and a generous helping of the humanistic tradition, and I can tell you that it was Nietzsche who said that the psychological precondition for all art is intoxication. What he had in mind was more profound than inebriation: the Dionysian frenzy from which poetry originated. But it makes me think that a link between painting and brewing might be perception.

As homebrewers, we observe our creations at different levels. Some take detailed

measurements. I prefer to reference the empirical with the palpable: the stickiness of wort at various gravities, or the color of beer at different volumes. Similar factors influence the color of my paint. Like beer, watercolor is transparent, and its color is similarly variable. As paint dries, water evaporates, changing how light passes through the film and altering its color.

To find a connection between brewing and painting, I wanted to see how changes in a beer's refractive index might affect its color. Going further, if I were to paint a fluid (like beer) with a fluid medium (like watercolor), I could base my palette on paint mixtures with refractive properties equal to those of my subjects. So I brewed nine small batches of beer with evenly dis-

tributed original gravities and SRM colors. And I experimented with a few flavor combinations that—while not affecting color—would offer further food for thought when the experiment was complete. Among others, I brewed a lavender blonde and a Szechuan peppercorn barleywine.

The painting seen here is one of the fruits of this project—the beer however, is long gone. Upon completion, my colleagues and I subjected all nine batches to a rigorous peer review. The result I am most pleased with is finding a new process of painting. Routinely, I observe with my eyes and then paint based on that perception. In this instance, I painted based on what my refractometer perceived, choosing color combinations with refractive indices equal to those of the beers I brewed. Working with well-defined boundaries did not diminish my creativity. Rather, I reached conclusions I would not have otherwise known to seek.

Creativity is often identified with anarchic freedom. I would describe creativity as a continuum along which multiple modes of operation can exist; the polar ends of this spectrum can be understood as Apollonian and Dionysian. At one end we have order, rules, and historical traditions—think of the stylistic rigor of some Continental brewing, with meticulously decocted wort and carefully lagered beer. At other end is intuition, typified by flamboyant craft brewers like Dogfish Head. Their beers have evolved naturally from brewing fundamentals but include odd ingredients or are made by unusual methods.

Our craft is enriched by both order and the occasional iconoclasm. Ultimately the interplay of Apollonian and Dionysian elements is what makes brewing—or any creative endeavor—engaging. The tension sets the wheels of the mind in motion and spurs us on to greater creative heights.

**Scott Foster is Associate Professor of Studio Art at Siena College in Loudonville, N.Y. To view his portfolio, including the *Fermentations* series, go to [scottnelsonfoster.com](http://scottnelsonfoster.com).**

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