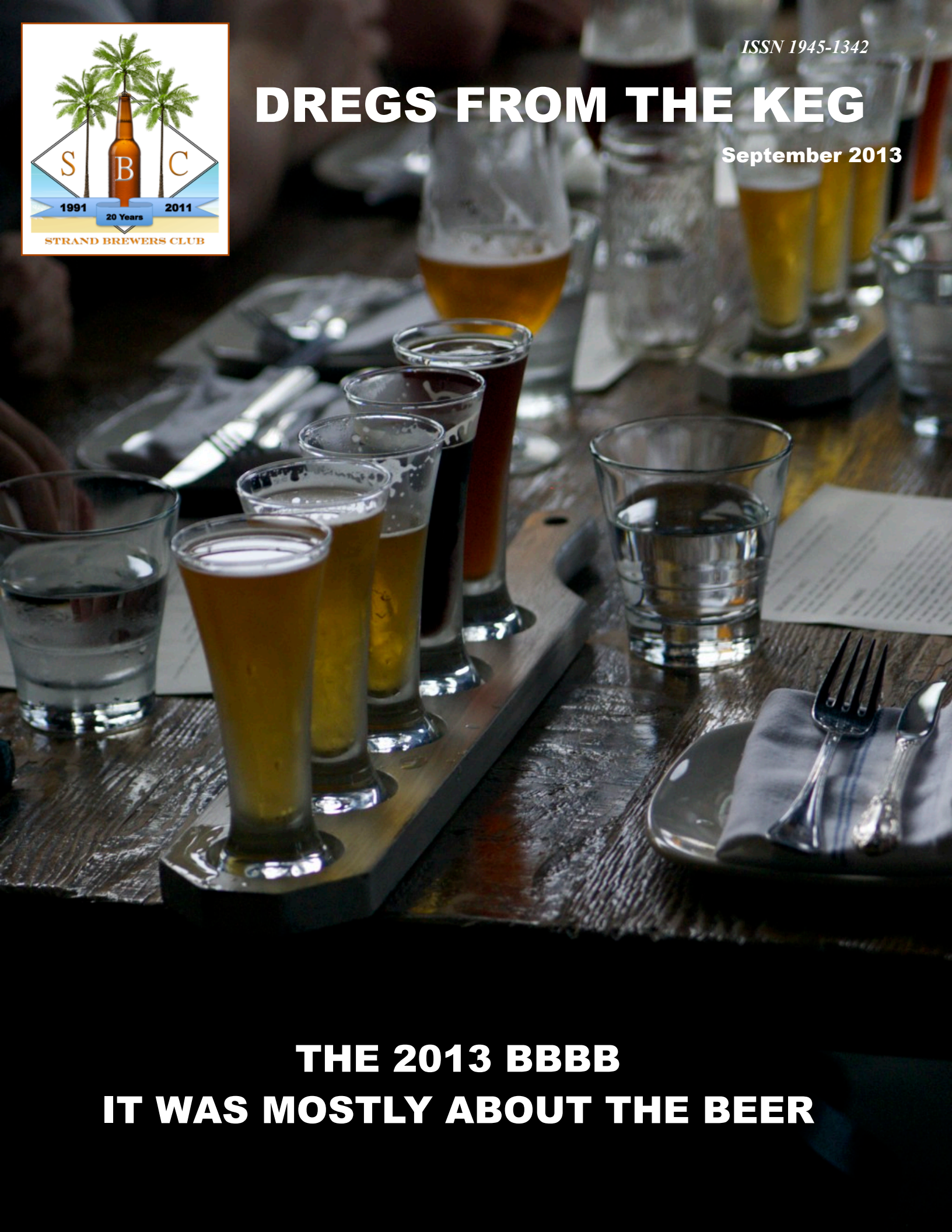




ISSN 1945-1342

DREGS FROM THE KEG

September 2013



**THE 2013 BBBB
IT WAS MOSTLY ABOUT THE BEER**

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Foam at the Top

[Rives Borland](#), Strand President

It's hard to believe that it's already September and Fall is upon us. Although the weather certainly hasn't felt like it lately. Maybe some of you have been taking advantage and brewing some Saisons. I need to head out of town for work for the rest of September so, unfortunately, I will miss the September club meeting. Fear not, you'll be in good hands with Jeff Sanders running the meeting. And BJCP Grand Master II Judge Jim Wilson will give a presentation on how to quickly and effectively judge a beer in a casual setting, such as a club meeting.

We have set a date for the Oktoberfest Party! It will be held Saturday, October 19th, at Jeff Sanders' place. Look for more details from Tammy Minion and brew a beer now for the party! Also coming up at the end of this month is [LA Beer Week](#) and [Oktoberfest at Alpine Village](#). There are going to be some amazing events and I encourage everyone to get out and check them out. I'm going to miss it all, because I will be out of town for work. So you'll have to fill me in on the highlights when I get back!

The [Pacific Brewers Cup](#) is quickly approaching. As a reminder, it is taking place Saturday, September 14th at [Smog City Brewing](#). I hope everyone submitted at least one entry and is planning to show up to judge or steward. Let's have a good showing from the club!

In case you missed the August meeting, we had another great turnout with a lot of new faces. Congratulations to new members Andrew and Adair Maxwell. They won best beer of the night with their American Wild Ale, which reminded

me of Jolly Pumpkin Noel de Calabaza. And it was at their very first meeting. Jim Wilson gave a presentation on wort oxygenation and presented the results of our experiments with the DO meter. We also celebrated South Bay Brewing Supply turning 3 years old!



Happy Third Birthday [South Bay Brewing Supply!!!](#)

Picture by Lloyd Brown, [CraftBeerGuy.com](#).

On August 17th we embarked on the annual BBBB (bike, beach, beer, . . . tour along the Strand). This year we added a new stop at [Brewery at Abigaile](#) in Hermosa Beach. In case you haven't been there yet, Brewmaster Brian Brewer, formerly at Stone, is brewing some really excellent beers. We also returned to Simmzy's for the first time in several years. Simmzy's is usually too crowded for our group, but this year we made it the first stop of the day, so we were there before they got too busy. We had a great turnout over the course of the day. Several of our brand new club members came out, as well as some people from other homebrew clubs. I think at one point we had more than 20 in our group. Maybe about ten of the more dedicated BBBBers made it all the way to the last stop at Select Beer. We finished with several great bottles, including some new brews from [Crooked Stave](#) and [Prairie Artisan Ales](#).

Meeting on September 11th at 7 pm



1311 POST AVE TORRANCE, CA 90501



BBBBers at the Brewery at Abigaile.

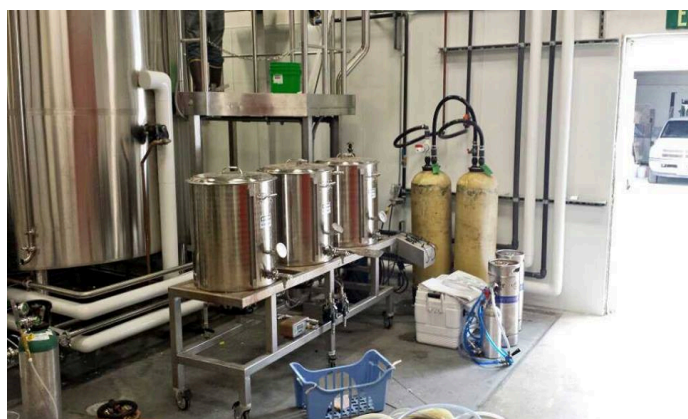
The [35th Annual California State Homebrew Competition](#) is coming up in November. It will be hosted by Anchor Brewing Company. At our last club meeting I mentioned the Anchor Brewing Company Homebrew Club of the Year Award. The winner of this Award is announced at the CA State Homebrew Competition. We are planning to submit an entry this year and we could use your help. Anchor Brewing will select the Homebrew Club of the Year based on the results of the CA State Homebrew Competition and other contest results. So continue to enter competitions, including the CA State Competition and let us know about any medals/ribbons you win. We also need you to submit any pictures or ideas about our club that we can include in our entry package to impress Anchor Brewing. Even if we don't win, we can still send five to ten members to the celebration luncheon and hopefully we will get experience and continue submitting entries each year.

I supported the Kickstarter for a new San Diego based brewery called [Modern Times Beer](#). My reward was to brew a pilot batch with Michael Tonsmeire, the brewer in charge of their sour and wild ales. I've been following Michael's blog, [The Mad Fermentationist](#), for several years now. He is probably one of the most knowledgeable and experienced homebrewers on the topic of making sour and wild ales. He is currently writing a book on the subject. Tammy Minion and I drove down to San Diego early the morning of August 15th to brew with Michael before our mead judging class at White

Labs. We actually did not brew a regular batch of beer. We brewed about 20 gallons of a limbic-ish type wort to grow starters for about 20 different *Brettanomyces* strains, Lactic Bacteria and mixed cultures. We were stepping some of the yeast samples up from a small bottle or vial to a 2L growler, and some from a 2L growler to 5 gallons in a carboy. The samples were from the big yeast producers like White Labs, Wyeast and Brewing Science Institute (BSI); smaller startup yeast labs such as [East Coast Yeast](#); independent hobbyist yeast labs, like [BK Yeast](#) and [Bootleg Biology](#); the dregs of commercial beers Michael drank; and some were even captured in the wild.



Cultures of *Brettanomyces* and Lactic Bacteria at Modern Times.



Modern Times' Pilot Brewing System.

The pilot brewing system was like a standard 1-tier system a homebrewer might have with Blichmann kettles and March pumps. The nice thing about brewing in a commercial brewery, though, is that they had hot water (at strike

water temperature) and cold water (~40 deg F) available on demand from liquor tanks. That and the sloped floors made the process go a lot faster. We did a standard single infusion mash on the higher temperature side and chilled through a Therminator plate chiller.

Modern Times is planning to have a pretty extensive barrel aging program where they will experiment with different strains and blends of microbes, so these starters will eventually each be used to inoculate a barrel. I can't wait to taste the results! In the meantime, we also tried a flight of every beer they had on draft. I liked their American Wheat Ale. It was clean and refreshing. Their coffee stout was made with coffee roasted in house. They also had two 100% Brettanomyces Trois beers. One was a really nice IPA called Neverwhere. It was fairly clean and the Brett added some pineapple and tropical notes that you might have guessed came from the hops if you didn't know about the Brett.

We had a few hours to kill between Modern Times and the mead class, so Tammy and I headed over to [Rip Current Brewing](#). Rip Current opened fairly recently and was started by 2011 Ninkasi Award Winner Paul Sangster. They make a variety of classic styles and always have one experimental beer from their pilot system. I liked all their IPAs and also thought their Hazelnut Porter was excellent.

Towards the end of August, I attended a bottle share at [Sophie's Place](#) hosted by [Bombshell Brewnutties](#). There were several familiar faces in attendance, including Jim Wilson, who walked down to the event, and Brendan Megowan. I think the highlights from the event were Brendan's Coconut Stout, Goose Island Cherry Rye Bourbon County Brand Stout and Cantillon Saint Lamvinus. I have been to several bottle shares at Sophies over the past year or so and they have all been great. Bobak Nayebdadash does an excellent job setting them up and is generous in giving up so much space at the restaurant for these events.

Then on Friday, August 30th, I attended the Grand Opening night of [Pacific Plate Brewing](#) in Monrovia. I had been loosely following their progress over the last year or so. I was happy

to see them finally open. The operation looks like a glorified homebrew setup, which I thought was very cool and somewhat inspiring. They have a 1 barrel brew system and 3 barrel fermenters, so they need to brew 3 times to fill one fermenter. Most of the stuff is Do-It-Yourself. For example, they wrapped the fermenters in copper tubing themselves and then added insulation on the outside, rather than pay for pre-built jacketed fermenters. One of their relatives does glycol systems professionally, so he was able to rig up a glycol pump system for them from spare parts. They had about half a dozen beers pouring for the opening night, including a Horchata Stout. It reminded me a lot of my last Iron Brewer entry, the chai tea milk stout. My favorite beer was their Mango IPA, which had a really nice mango flavor. They said they get the mangos from a nearby farmers market. All of their beers are inspired by Latin American cooking and spices.



Pacific Plate Brewing Team with their 1 Barrel Brewery.

The biennial Beachwood Sour Fest took place the first week of September. It is always a crowd pleasing event with some ultra rare and aged vintages of sour and wild ales. I was able to attend Wednesday evening and stopped by both the Seal Beach and Long Beach locations in the same night. My personal favorites were the Pizza Port Double Entendre (American Style Sour Blonde Ale), Birra del Borgo Rubus

Lamponie (Duchessa aged on whole raspberries, with a strong wild Brett character), The Bruery Windowsill (rhubarb pie inspired sour ale) and Sudwerk Game Changer (cherry-pomegranate Lambic aged in a Merlot barrel for 22 months and then blended with their Helles lager). I was planning to go back down on Friday for the Cascade night, but all the beer kicked in the very early evening, well before I could have made it down after work. Bummer. I heard it was pretty epic from those who were there.

Remember that Round 6 of the Iron brewer will take place at the October club meeting. The ingredients are sour cherries, crystal malt, and El Dorado Hops. There is still time to brew! An easy way to add the cherries is to use the canned [Oregon Fruit Red Tart Cherries](#), which you can order online or find in the baking aisle of Albertsons. If you can find whole fresh tart cherries, you can freeze them to burst the skins and then rack the finished beer onto them. I placed an order for El Dorado hops a while ago and handed some out to several club members already. If you still need some, the only place I have seen carrying them is [Midwest Supplies](#). I am looking into having the October meeting at one of the local breweries again. Stay tuned for updates on that. Also remember that elections are coming up at our last meeting of the year in November. So start thinking about whether you want to run for an officer position.

We are overdue for a club brew and are working on scheduling one. We will let you know as soon as we do. At our last officers board meeting we discussed the idea that the club brews don't necessarily need to just yield a single five gallon batch of beer, or even necessarily drinkable beer at all. If you have an idea for an experiment you want to do that would yield some valuable results, we can fund something like that. Please let the board know if you have any ideas for a club brew or would like to host one.

Finally, I'll leave you with this great picture from club member David Eaves, who just returned from Burning Man. His camp served up a ton of homebrew and commercial craft brew during the week. Nice Work! I'm hoping to attend Burning Man next year!



David Eaves evaluating the damage done at the Orphan/Endorphin Camp during Burning Man 2013!

Competition Calendar

[Jeff Sanders](#), Strand Vice-President

Iron Brewer Challenge Ingredients

Round 6

October 9, 2013 Club Meeting
El Dorado Hops, Crystal Malt and Sour Cherries

Local Competitions: in order of entry deadline

OC Fest of Ales Home Brew Challenge

Anaheim, CA **Entries due September 10th.**

Judging: September 14th. Entry fee: \$5.

Contact: Shelley Reeves.

Phone: (714) 956-3586.

Email: downtownshell@yahoo.com

University City Home Brew Contest

San Diego, CA **Entries due September 27th.**

Judging: October 5th. Entry fee: \$10 for first, \$5 for each additional entry.

Contact: Michelle Lolly.

Phone: (858) 922-3302.

Email: mflolly@wilsonlolly.com

The Big Fresno Fair Homebrew Competition

Fresno, CA Entries due September 15th.

Judging: September 22nd. Entry fee: \$0.

Contact: Mathew Humann.

Phone: (559) 618-5848.

Email: matt.humann@gmail.com

Oaktoberfest

Oakland, CA Entries due September 15th.

Judging: October 5th. Entry fee: \$8.

Contact: Brian Cooper.

Phone (209) 612-4185.

Email: brewerbrian@sbcglobal.net

Queen of Beer Homebrew Competition

Placerville, CA Entries due October 1st.

Judging: October 12th. Entry fee: \$8 for first, \$6 for each additional entry.

Contact: John Pyle.

Phone: (916) 316-5811.

Email: jkpyle@comcast.net

California State Homebrew Competition

San Francisco, CA Entries due October 12th.

Judging: November 2nd. Entry fee: \$8.

Contact: Bryan Gros.

Phone: (510) 336-3377.

Email: statecomp@nchfinfo.org

National Organic Homebrew Challenge

Santa Cruz, CA Entries due October 15th.

Judging: October 19th. Entry fee: \$8.

Contact: Cary Sunberg.

Phone: (831) 454-9665.

Email: 7bridges@breworganic.com

Los Angeles IPA Festival

Los Angeles, CA Entries due TBA.

Judging: November 16th. Entry fee: TBA.

Contact: Trevor Faris.

Phone: (818) 291-3949.

Email: tervor@goldenroad.la

Many more competitions are going on around the country and around the world so.....

Go to www.homebrewersassociation.org for a complete list. For a complete list of BJCP

competitions, go to http://www.bjcp.org/apps/comp_schedule/competition_schedule.php



Another great meeting turnout! See more pictures of the August meeting at CraftBeerGuy.com.

Spent Grains

[Brian Kellough](#), Strand Treasurer

We enter September with about \$3,650 in the bank. Inflows included \$35 in dues, \$65 in raffle money from the last meeting plus a few inflows from previous months (shirts, raffles, SCHF, etc.). We have some great prizes coming up at the raffles, so get your tickets at the meetings and let's have a great year for the raffle! We have 49 paid memberships, including one new member: David Dvorak. Welcome to the club! I still need applications from Christian Simms, Kelly Simms and Rudy Inauen. You can fill it out electronically and just email it now! [Click here](#). Lets keep up the good work recruiting. We are only 11 from our goal of 60 members. Spread the word about our club and the benefits it provides!

To get reimbursed for club expenses please bring receipts to the meetings and I'll write you a check or scan your receipts and email them to treasurer@strandbrewersclub.com and I'll send you a check through online billpay.

Membership Renewal Time!

We have members from 2012 that have not yet renewed their memberships. You know who you are. Dues are \$35 (\$37 through paypal) for individual membership and \$45 (\$48 through

paypal) including a spouse. TO MAKE IT EASIER FOR YOU, WE HAVE AN ONLINE PAYMENT OPTION THROUGH PAYPAL! [Click here](#) for information. It is nominally more expensive, but infinitely more convenient for all involved! If you don't like paying online, still fill out the application form electronically and email it, then just mail a check made out to "Strand Brewers Club" to me at 10890 Whitburn St, Culver City, CA 90230. You can also hand me a check or cash at the next club meeting (however, all applications should still be submitted electronically).

Attention returning and current members: If you think your contact information is different than what we have on file, please fill out the online membership application at the link above. It is a fillable pdf you can save and keep for your records. Annually we'll ask renewing members to check their forms and make sure the information is current.



Prizes, Prizes, Buy Your Raffle Tickets for Prizes! See pictures of the August winners at CraftBeerGuy.com.

What's On Tap

[Tammy Minion](#), Strand Activities Director

I would like to thank everyone that turned out for the BBBB. We had over 25 in attendance and thanks to Jay Ankeney's publicity at least seven people were from the Pacific Gravity and Maltose Falcons clubs.



2013 BBBBers.

September 3rd – 8th

Beachwood SourFest 2013 at Beachwood BBQ, Long Beach and Seal Beach. Every tap will be a sour. Each night they'll host a different brewer. Sept. 6-8 they are offering a free shuttle between both locations. For more details and info on special guests visit <http://beachwoodbbq.com/events.html>.

September 7th

4th Annual OC Brew Ha Ha at 5305 Santiago Canyon Road, Silverado, CA 92676. There you'll find 70+ breweries serving over 175 craft and import beers and live entertainment and presentations for your enjoyment. Admission is \$45 if purchased online and \$55 at the door. <http://ocbrewhaha.com/>

September 7th

Choose Your Hops at El Segundo Brewing Co. They now have five different hoppy beers available in bottles; Citra Pale, White Dog IPA, Blue House IPA, Grand Hill IPA and Two 5 Left DIPA. Tom Kelley, Sales Director, will be holding two classes at 3pm, and 4:30PM. He will be talking about the use of hops, why they taste and smell the way they do, a bit of pallet education, and guiding you through a tasting of all five beers. The class is \$20 and includes a flight of all five beers. Email susana@elsegundobrewing.com to sign up and indicate which class you will attend. The beers will be on tap and available for growler fills as well.

September 14th

South Bay Brewer's Chili Cookoff and Raffle for Heal the Bay at Select Beer – 5PM to 10PM. A South Bay Local Tap Takeover with delicious chili made by your favorite local brewers: Abigaile, El Segundo, Monkish, Smog City, Strand and The Dudes for a worthy cause.

September 14th

Drink Good Beerfest at the Factory, Long Beach – 1PM to 4PM. There will be 60 rare and unique craft beers from 30 local breweries. General admission is \$35 in advance and \$40 at the door. Price includes commemorative glass, ten 4 oz. tasters, live music and beer forums and demonstrations. For more info and to purchase tickets visit <http://www.brownpapertickets.com/event/431562>

September 15th

3rd Annual Local Craft Beer Festival at Rock & Brews – 12PM to 5PM. 15 local breweries will be pouring. Food, music and carnival games will accompany the beer. It's fun for the whole family. Admission is \$50 and \$10 for the kids/non-drinking. Adult tickets include: Admission, commemorative glassware, 10-4 oz pours and unlimited games! Non-drinking ticket includes: sodas, cotton candy, popcorn, and unlimited games.

September 17th

Brouwerij West Night at Simmzy's, Long Beach – 6PM to 11PM.

September 19th – 29th

LA Beer Week. To be held at various locations. Check the website for full list of events. <http://labeerweek.com/>

September 19th

Dogfish Head Night at Select Beer – 5PM to 10PM.

September 21st

South Bay Progressive featuring Great Divide Brewing at Select Beer – 5PM to 10PM. There will be Shuttle service between Brewco, Silvios Brazilian BBQ, Naja's Place and Select Beer Store provided by LA Craft Beer Tours.

September 22nd

LA Beer Week Opening Gala at Union Station – 11AM to 3PM. There will be unlimited sampling from over 50 breweries. Event will be held indoors with a limit of 600 tickets for sale. Cost is \$70. <http://labeerweek.com/opening-gala-craft-beer-session/>

September 26th

Autumn Equinox – A Fall Harvest of Beer at Total Wine & More, Redondo Beach – 6:30PM to 8:30PM. Class is \$15 and will offer tastings of Oktoberfest Lager and Pumpkin Ale among other seasonal beers. To register for the class visit <https://www.eventbrite.com/event/7788823581>

September 28th

Rarest of the Rare at Smog City – 12PM to 8PM. Nearly impossible to find experimentals, LABW beer and barrel-aged beers will be available at the taproom only. <http://www.smogcitybrewing.com>

October 19th

Stand Brewers Club Oktoberfest Party at Jeff Sanders' House. More details to come. Brew a beer now for the party!

For more events check the Strand Brewers Beer Events calendar: https://www.google.com/calendar/embed?src=tammy.minion%40gmail.com&ctz=America/Los_Angeles.



"Brewing the Best Damn Beer!" says everyone. See more pictures at CraftBeerGuy.com

Strand Brewer of the Year Points Standings

[Mike Haisma](#), Strand Communications

First off I'd like to congratulate Jim Hilbing on another successful month of competition entries. I realize this may sound like I'm just repeating myself, but last month Jim Hilbing managed to not only get several first, second, and third place medals in this year's LA County Fair competition, but also won Best of Show as well as runner-up Best of Show. If you are following along with our points system, this means Jim's score jumped an astounding 39 points since last month's tally.

Additionally, long-time members Jay Ankeney and Donna Boyce collaborated on a few entries in the same competition and also racked up first, second, and third place medals with their American and English Porters.

Meanwhile, at his first Strand meeting, brand-new member Andrew Maxwell brought in a large variety of tasty homebrew, all recently moved from the East Coast, including an amazing port-soaked oak chip sour variation of Stone's Special Holiday Ale. It garnered enough votes to win best beer. In the future, I plan to ship my beer back and forth across the country in the hopes that it, too, will become as tasty.

Finally, I will continue my refrain that these standings are only as accurate as the information they are based upon, so I need everyone's help to keep them up-to-date. If you or someone you know has participated in a points-earning activity (see the full list in the January 2013 edition of the Dregs), please send me an email (communications@strandbrewersclub.com) and I will update accordingly.

Name	Points
Jim Hilbing	187
Rives Borland	83
Jim Wilson	50

Name	Points
Jeff Sanders	44
Mike Haisma	40
Jay Ankeney	22
Ryan Penrod Donna Boyce	20
Steve Fafard Hunter Thacker	19
Bob Wilson	15
Tom Kulzak	12
Rick Wirsing Nate Federman	10
Ryan Ferrasci Dave Peterson Rich Thornton	9
Andrew Maxwell	8
Steve Gardner Jared Carson Eddie Martinez	7
Jim Webster Adam Pike	6
Tammy Minion	5
Micheal Litsey David Eaves	4
Steve Dehart Janet Fukumoto Doug Toperzer	3
Wally Senff Victor Pyter Lisa Cooper Lee Richardson Jimmy Gullenback Graham Hebson Ed Valcarel Dan Bottoms Charlie Thacker	2

Name	Points
Rory Dewan Ron Cooper Robert Hernandez Morgan Jones Ethan Allen David Dvorak Christian Sims Charlie Wallace Brian Basye Brendan Binns	1

This is important because we now know that the first thing yeast do when they find sugar is to reproduce and sustain their species. This requires energy and O_2 allows yeast to convert sugar to 12 times more energy than is possible without it. During the fermentation “lag” phase, yeast take inventory of their nutrient levels and fill up on the ones that are low. Then they do what’s most important to them followed by what’s important to us. O_2 is the limiting nutrient in both all grain and extract brews which is why we need to add it.

What

O_2 from air or pure O_2 can be dissolved in wort for use by yeast. About 10 years ago, Strand member Ron Cooper published an article in “Zymurgy” that investigated using hydrogen peroxide as an O_2 source and concluded that its side effects overrode its convenience. Aeration and oxygenation are different from oxidation which is the outcome that happens when wort or beer is exposed to oxygen at the wrong time in the process.

When and Where

If O_2 contacts wort before boiling, it can irreversibly cause stale flavors and haze over time even though unreacted O_2 is driven off in the boil according to the graph below.



Jim Wilson explaining Wort Oxygenation at the August meeting. Picture by CraftBeerGuy.com.

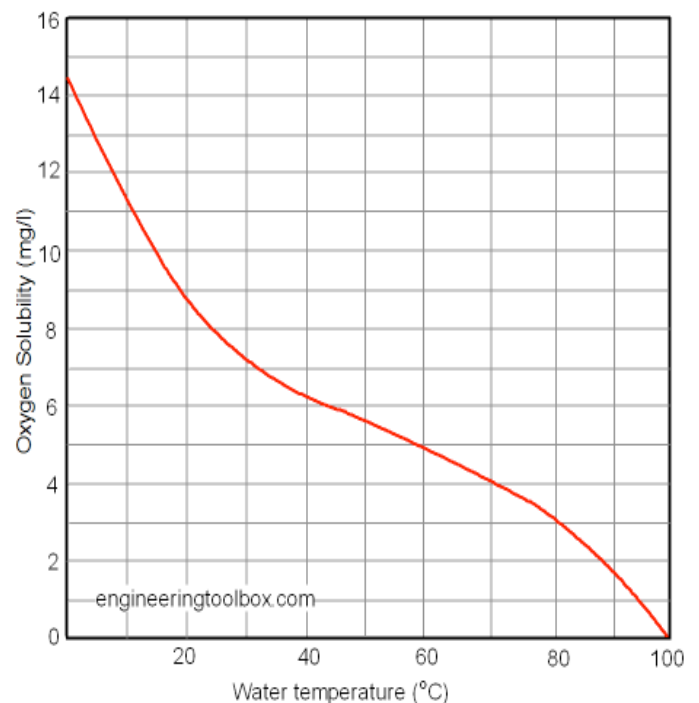
Wort Oxygenation

Jim Wilson, BJCP Grand Master II

At the April meeting, I discussed fermentation. Afterward, several members asked about how best and how much oxygen (O_2) to add before pitching. Here’s a take on oxygenation’s why, what, when, where and how.

Why

Yeast need O_2 for energy conversion and the production of healthy offspring that will flavor the beer and successfully complete the fermentation. It’s an essential nutrient along with sugar, vitamins, Nitrogen compounds and minerals. Observers have known for a long time that yeast reproduce much faster when O_2 is present and Pasteur first explained the science behind this behavior in the 1850s.



This process is reversible and O_2 will redissolve when water cools below 100 °C.

Beer exposed to O_2 in the later stages of fermentation or packaging suffers the worst rages of oxidation when paper or cardboard flavors can develop. They're caused by the oxidation product T-2-N (trans-2-nonenal) that has a detection threshold of only 0.1 ppb and are never acceptable in any beer. Secondary stale flavors are leather, sour and increased levels of sweetness, toffee, caramel, overripe or spoiled fruit or vegetables.

There is a special case of melanoidens oxidizing to acceptable, even desirable, nutty or Sherry wine like flavors in a few styles. I'll discuss it later.

Wort oxidation occurs rapidly at temperatures above 158° F (70° C) and slows as wort cools. The best time to aerate or oxygenate is after the wort is brewed, cooled and separated from the trub.

How Much

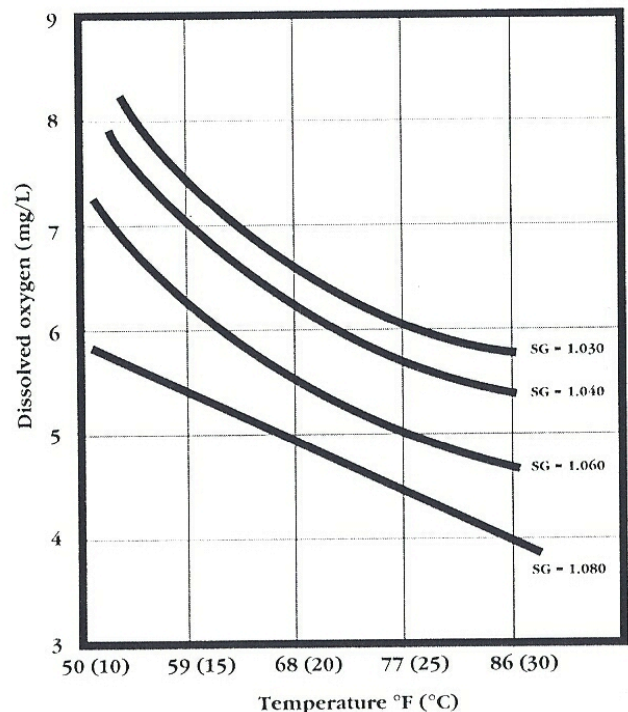
8 ppm is the generally accepted DO level needed to support a successful fermentation of 12° P wort. This is very convenient because it can be attained with aeration. More DO, up to 14–16 ppm, is required for high gravity or lager batches depending on the yeast strain, viability and wort OG. These require special handling that can either be a pure O_2 injection or a second aeration after the yeast reproduce at least one generation. For comparison, the Handbook of Brewing by Priest and Stewart suggests to oxygenate 1 ppm/°Plato OG.

Comparing dissolved oxygen (DO) levels that can be attained with aeration and oxygenation can be confusing. All gases dissolve in liquids according Henry's and Dalton's Laws. Water at Standard Conditions can be saturated with about 44 ppm of pure O_2 . If the head space is filled with pure O_2 , that 44 ppm will stay dissolved. If the head space is filled with air rather than pure O_2 , the partial pressures of O_2 in liquid and gas will equalize over time and a little less than 9 ppm DO will remain. This is

also the DO saturation level that aeration can achieve.

After pitching, DO is a moving target. If the DO is supersaturated, some of it will come out of solution and be lost before yeast can absorb it. Yeast pretty much gobble up the available O_2 within several hours and that allows about 80% of the DO to be captured from a supersaturated start.

Equilibrium O_2 saturation vs. temperature and SG



The graph above shows how DO saturation is related to wort gravity and temperature when air is in the vapor space above the liquid.

How

Gases dissolve fastest in liquids when the contact area between the two is large and the components are well mixed. Injecting O_2 as the wort is pumped to the fermentor is the best way. O_2 can also be added by shaking, stirring, pouring, using a venturi, spraying or injecting into the fermentor. Each of these methods has its own pluses and minuses.

- Shaking the fermentor is fast and is the cheapest but requires a vessel that can be securely closed and a strong back. If the vessel is glass, it's a dangerous

option. Shaking and the next four methods use unfiltered air as the O₂ source, which can contaminate the wort.

- Stirring manually or with a machine is slower and slightly more expensive than shaking.
- Pouring wort back and forth from one vessel to another is slow and is another back breaking option.
- A venturi uses [Bernoulli's](#) principle and is slow.
- Spraying can be done with or without a pump and is slow.
- Air injection with an aquarium pump is more expensive but is reasonably quick and the air can be sanitized with a 0.2 micron filter that removes wild yeast and bacteria.
- O₂ injection is free of microbiological vectors, is the fastest method and can attain the highest DO levels. Too much DO can produce off flavors so additions must be managed.
- O₂ injection is the most expensive option. A basic O₂ setup costs about \$60 and will do six to eight 5 gal batches. A replacement 1.4 oz. Bernzomatic O₂ cylinder costs about \$10.

All of these methods can work. How fast they work is a different question. The available data is difficult to compare as the brewer's processes aren't always fully reported. Here's an example for 5 gallon batches from Yeast.

Method	Time	DO ppm
Shake Fermentor	5 min	2-3
Siphon Spray		4
Aquarium Pump	5 min	8
@2L/min with Stone Pure O ₂	30 sec	5
@1L/min with Stone	60 sec	9
@1L/min with Stone	120 sec	14

Rives and I did a series of about 80 tests with his Milwaukee MW 600 DO meter with the hope of producing data that was less confusing than

online or published sources. We're reducing our data and hope to publish it in "Zymurgy". Our initial conclusions are that pouring and stirring are too slow to be interesting, shaking works very well but can be dangerous, pure oxygen is the most expensive and requires management to avoid side effects and air injection offers the best combination of low cost and flexibility for most brewers. We'll get the full discussion and the data to Strand members as soon as we sort it out.

My own choice is an aquarium air pump that costs about \$30 to set up. I use a Tetra Whisper 77853 to push 2 liters/minute of air through a 0.2 micron filter and a 0.5 micron sintered diffuser into the filled fermentor while stirring occasionally. 11 gallon batches with OG<60 are aerated for 10 minutes before pitching and higher gravity ones get an additional 10 minute dose 8-12 hours after pitching.

How do you know if enough O₂ has been added? By measuring the time for fermentation to start and finish. Each step in the process needs go to completion and faster is better for fermentation. Brew, take data, taste the beer and adjust the next batch if required. Even the big commercial brewers do it this way.

Earlier, I mentioned a special case of oxidation that produces sherry like flavors. Doppelbock, Strong Scotch and the Strong Ale group all have high enough melanoiden levels that can oxidize over a year's time to produce this flavor note. To my palate, Sherry flavors are most evident in aged Old Ale and English Barleywine.

References

1. Yeast by White and Zainasheff
2. Reeves' DO meter, http://www.milwaukeeinst.com/site/db/doc/manMW600_ENG.pdf
3. Homebrewtalk.com's forum section had very useful discussions
4. Ashton Lewis's columns in BYO are an excellent body of work that over the last 14 years have touched on all aspects of this important fermentation variable
5. Neva Parker's insightful paper on oxygenation in craft breweries [Are-Craft-Brewers-Underaerating-Their-Wort_Neva-Parker.pdf](#)

References

By [Rick Wirsing](#), Dregs Editor

The confusion about whether craft breweries will or will not fill growlers from other breweries rages on. There is no consensus among them as each has or is developing its own policy. So the California legislature is stepping in to help. You have got to know this can't be good. Assembly Bill 647 was recently passed by the California Senate. Senator Steve Knight, a Republican from Palmdale who carried the bill in the Senate, was quoted by the [San Jose Mercury News](#) as saying the bill clarifies labeling requirements "so that consumers can use their growlers to purchase craft beer from any microbrewery," regardless of where they bought it. In effect, however, the bill would do nothing to change the current circumstances. [AB 647](#) provides that "a beer manufacturer that refills any container supplied by a consumer shall affix a label that (identifies brand, type, manufacturer name and address, . . .) on the container prior to its resale to the consumer. Any information concerning any beer previously packaged in the container, including, but not limited to, information regarding the manufacturer and bottler of the beer, or any associated brands or trademarks, shall be removed or completely obscured in a manner not readily removable by the consumer prior to the resale of the container to the consumer." So the bill just makes into law the California Alcoholic Beverage Control's current interpretation of the existing law. How helpful is that? There is no requirement that breweries fill growlers from other breweries. It is unlikely that if AB 647 becomes law it will have any impact, except for one thing. The bill will limit the maximum volume of a growler to less than five gallons. Does this mean I can't take a 5-gallon corny keg to be filled? How about a 3-gallon keg? Has the legislature created a new problem? AB 647 is now on its way to be signed by the Governor.

We all know now as a result of Jim Wilson's lecture and article about carbonation and that proper carbonation is a very important step in making each style of beer. But it's not for the bubbles. It's for the acid. [Researchers](#) at the Monell Chemical Senses Center in Philadelphia have discovered that the refreshing bite you get

from a beer or soda comes from a chemical reaction that's going on inside your mouth. The carbon dioxide bubbles react to form carbonic acid, which irritates nerve cells in the tongue, that send pain signals to the brain, which we apparently like. So I guess we can say we like to suffer for our beer.

The American Homebrewers Association has announced the [pre-sale](#) of the long awaited book, "Water: A Comprehensive Guide for Brewers," written by John Palmer and Colin Kaminski. Because it's one of the primary ingredients in beer, the importance of having a source of good clean water is not being lost on commercial breweries in light of diminishing sources due to droughts and pollution, and increasing competing uses such as farming, industrial and residential. [NBC News reports](#) that brewers are taking action to conserve water. Maybe each of us homebrewers should look at reducing our water usage too.

Suppose there's been an earthquake and all your beer has been destroyed. Almost too awful to imagine, but all might not be lost if in your emergency preparedness kit you have a jar of [Birra Spalmabile](#), which is a "dark ale spreadable beer." It is the result of a collaboration between an Italian chocolate maker and an Italian brewer. Hey in an emergency, we may have to make compromises.

I was trying to come up with some clever way to explain this next story, but I have decided it's just better to state the facts. Back in 2010 a German firm applied to the European Union for a permit to brew beer and produce clothing under the name ["Fucking Hell."](#) Not surprisingly there were several objections, including one from the mayor of Fucking, Austria. The mayor's objection was that there was no Fucking brewery at which Fucking Hell could be brewed. The permit was eventually issued, however, because the name supposedly refers to a light ale, Hell, from a place, the Austrian village of Fucking. Fucking Hell has been brewed in the Black Forest since 2011 and has been available in Europe, Asia and Australia. There are no plans to have Fucking Hell imported to the United States.



Don't look for it in the U.S.

What We Stand For

The objectives of the Strand Brewers Club are to brew beer and share information about the brewing, presentation, consumption, judging and history of beer. We promote and encourage homebrewing competition and hope to foster general goodwill through the making and consuming of this noble and most excellent beverage. We aim to brew the best damn beer.

It is our policy to brew and consume beer strictly for fun. Under no circumstances does Strand support or condone in any manner the sale or barter of homebrewed beer, or the operation of a motor vehicle under the influence of alcohol by a member or a participant in any club event or the provision of alcohol to minors.

Tell Us What You Are Doing

Your stories are welcome in The Dregs. Upgrade your brewery? Fine tune your practice? Take a road trip? Do well in a competition? Have recipes to share? Read a good beer book? Have club related pictures, especially for the Dregs cover? Send all those, or anything else you think would be interesting to [Rick Wirsing](#). Thanks!

2013 Club Officers

President	Rives Borland	310-469-3634	president (at) strandbrewersclub dot com
Vice-President	Jeff Sanders	310-292-9301	vp (at) strandbrewersclub dot com
Treasurer	Brian Kellough	310-947-1855	treasurer (at) strandbrewersclub dot com
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Editor	Rick Wirsing	310-872-9915	editor (at) strandbrewersclub dot com

Mentors

The following members have volunteered to answer your brewing questions and to help beginning brewers learn the craft. You should take advantage of their expertise.

Bill Krouss	310-831-6352	bkrouss (at) cox dot net	Rancho Palos Verdes
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