Brewing better BEER
master lessons for advanced homebrewers
By Gordon Strong

Practical Applications
Applying ‘Brewing Better Beer’

• Brewing Better Beer released in April 2011
• Equal parts autobiography, manifesto, and personal brewing lesson – it’s how I brew
• What did readers find new and interesting?
• A case study of making two beers
  • Both use tips from the book
  • But also understand the decisions and reasoning
• Learn the approach not just the recipe
  • Make your own choices based on your preferences
  • Remember to adjust recipes for your system
What’s ‘Advanced’ Mean?

• In the US, 80% of brewers are extract brewers (AHA)
  • If you brew all-grain, you’re Advanced!
• What should you have or be able to do?
  • Have an all-grain system and standard brewing method
  • Be able to follow a recipe that doesn’t include step-by-step instructions
  • Make decent beer
  • Have some repeatability
• What should you want to do?
  • Move ‘decent’ → ‘damn good’
  • Make your own recipes
  • Brew a wider range of styles
What’s ‘Master’ Mean?

- Less about knowledge, more about understanding
- No ‘golden mash paddle’
- Simplify & optimize – less wasted time and effort
- Deep understanding
- Able to choose between methods based on results
- More predictable outcomes – linking cause & effect
- Know the style target
- Be able to assess results directly
Theme: I hate harsh beers

- But you might like them, so take that into account
- Harshness
  - Coarse, rough bitterness
  - Astringency
  - Not a clean flavor profile
- Can come from many sources (ingredients, process)
  - Are IBUs the only measure of bitterness?
  - Harshness makes a beer seem more bitter
  - Clean bitterness vs. harsh bitterness
- Can you select techniques and ingredients to avoid or minimize this flavor?
Tip #1: Stop Messing with Your Water

- Think more about engineering your beer than engineering your water
- There are many ways to treat your water
- Try tasting beer made with softer water
- Alka Seltzer is not a good flavor in beer
- Why do you add salts to your brewing water?
  - Because your beer is a certain color?
  - Because of the water from a certain city?
  - Because you want to hit a certain mash pH?
  - Because you want a certain flavor profile?
  - Because a spreadsheet told you to?
Remember: Be Careful Out There

“Duty Calls” – www.xkcd.com
Water Tips

- If your water sucks, use RO water and build upon it
- Focus on getting a correct mash pH (5.2-5.5)
- Some calcium is helpful for the mash and boil
- Carbonates are generally bad
- Phosphoric acid can lower pH too
- Not all mash salts carry over into the boil
  - You can add salts to the boil for flavor
- Use $\text{CaSO}_4$ or $\text{CaCl}_2$ depending on hop vs. malt flavor preference
- Understand flavor impact of what you add
Tip #2: Handling Dark Grains

- Why do you mash dark grains?
  - Extract brewers just steep them
- What else do you get when you mash and boil dark grains?
  - Ever try coffee sitting on a burner all day?
  - Harsh and astringent vs. smooth and clean flavors
- Are you adding a lot of carbonates to your mash to neutralize the acidity of dark grains?
  - Why have either in the mash?
- Dark grains and water adjustments are related
Dark Grain Tips

- Don’t add dark grains to the mash
  - Add at vorlauf
  - Hot steep
  - Cold steep, no boil
  - Cold-steep, add during boil (various times)
- All give different flavor profiles and harshness
- Adjust mineral additions accordingly
- Not just dark grains – any specialty grains that have no diastatic power and no significant starch to convert
Tip #3: Maximizing Malt Flavor

- Use fresh, high-quality malt
- Avoid oxidation and staleness
- No sparge brewing – first runnings only
  - Boost grain bill by 33-40%
  - Don’t sparge
  - Add water to kettle if necessary
  - Not all gravity points taste the same
- Try decoction techniques, even in non-traditional styles
- Break country barriers – try Belgian malts in American beers, etc.
Tip #4: Maximizing Hop Flavor

- Later hop additions have less harshness
  - Not all IBUs are created equal
- Watch out getting vegetal flavors from more hops
- First wort hopping
  - Little aroma, lots of flavor
  - Seems like less IBUs than it is because it’s a clean bitterness
- All late additions (20 min or less)
- Whirlpool instead of dry hop – a personal choice
  - Pro brewers whirlpool more than you’d think
Tip #5: Signature Ingredients

- Learn the flavor profile of more obscure ingredients
  - Brown malt
  - Dark Munich malt
  - Special B malt
  - Pale chocolate malt
  - Belgian crystal malts
  - Torrified wheat
  - Belgian sugar syrups
  - New hop varieties
- Blending malts for new flavors
- Hop combinations – single hop vs. blends
- Yeast varieties, fermentation profiles
- Pick ingredients to support your theme/objectives
- Sources of inspiration – be creative
Recipe: American (?) Pale Ale
Brewed by: Joe Gish and Bill Trout

Recipe for 6.5 finished gallons
8.5 gallons pre boil
6.5 gallons post boil

6 lbs Pilsner malt (German)
6 lbs 2-row malt (US)
1 ¼ lbs Munich malt (German)
Mash 144F for 30 min
Mash 153F for 30 min

1 ½ oz Galaxy FWH
1 oz Galaxy @ 20
1 oz Galaxy @ 10
1 oz Cascade @ 1
Batch sparge
90 minute boil
20 min whirlpool
Used settling tank to remove extra hops, added 1 gal RO

1 ½ oz Galaxy @ 0 – whirlpool

RO water
½ tsp CaCl₂, ½ tsp CaSO₄
¼ tsp phosphoric per 5 gal
Ferment 62F
OG 1.050
FG 1.015
56 IBUs (calculated, doesn’t taste like it)

Wyeast 1968 London ESB
Galaxy pellets 13.7%
Cascade whole 8.9%
Recipe: Brown Porter
Brewed by Mark Tanner and Jeremy Allison

Recipe for 6.5 gallons

9 lbs Maris Otter (UK)
1 lb Munich malt (German)
1 ½ lbs Brown malt (UK)
1 ¾ lbs Crystal 60 (UK)
¾ lbs Chocolate malt (UK)

1 ½ oz Fuggles 4% whole @ 60
¾ oz Fuggles 4% whole @ 10

Wyeast 1968

RO water with 1 tsp CaCl₂
¼ tsp phosphoric per 5 gallons RO

Preboil volume 8 gallons
Final volume 6.5 gallons

Mash base grains 60 min @ 153°F
Add other malts at vorlauf
Batch sparge
60 minute boil
½ tsp CaCl₂ in boil
20 min whirlpool

Ferment 66°F

OG 1.054
FG 1.016
24 IBU
Cheers

• Questions?