BREWSHEET v2.5 (2011-11-13)

Batch			
Brew Name:	Dread Pirate Roberts (Old English Ale)		
Bottle Top Code:		Calories per Pint:	192
Estimated OG:	1.064	Actual OG:	1.057
Estimated FG:	1.021	Actual FG:	1.018
Estimated IBU:	50	Actual IBU:	54
Estimated SRM:	17	Actual SRM:	18
Brew Date:	11/13/11	Collected (gal):	5.45
Rack Date:	11/25/11	Racked (gal):	5.10
Bottle Date:	12/11/11	Bottled (gal):	5.00

BJCP Style Guidelines	
Style:	Old Ale
Code:	19A
OG:	1.060-1.090
FG:	1.015-1.022
IBU:	30.0-60.0
SRM:	10.0-22.0
ABV:	6.0-9.0+%
CO2:	1.5-2.3

Inventory	
Bottles:	
Gallons:	
Date Checked:	

Efficiency	
Brewhouse:	70%
Batch Size:	63%
Into Boiler:	71%
Into Fermenter:	62%

Yeast Strain	
Yeast Strain:	White Labs WLP002 (English Ale)
Type:	English Ale
Attenuation (%):	63-70%
Actual Attenuation (%):	68%
Fermentation Temp (F):	65-68F
Flocculation:	very high

Yeast Amounts	
Cell Count (billions):	264
Vials (White Labs/Wyeast):	2.2
Dry Yeast (g):	13
Starter Volume (mL):	3250
DME Required (oz)	11.38
Vials Required (w/ Starter):	1.0

Grain	Pounds	Potential	SG Share	Color	% Bill
Maris Otter Malt	11.50	1.038	0.051	4.0	76.67%
Home Toasted Marris Otter (Amber Malt)	1.50	1.038	0.007	35.0	10.00%
Caramel/Crystal 75L	1.50	1.034	0.006	75.0	10.00%
Rice hulls	0.50	1.000	0.000	0.0	3.33%

Brewing			
Batch Size (gal):	6.00	Estimated First Runnings (gal):	6.77
Total Grain Weight (lbs):	15.00	Desired Sparge Temperature (F):	169
Grain Temperature (F):	72	Sparge Water (gal):	2.96
Mash Ratio (qts/lb):	1.50	Sparge Water Temperature (F):	191
Mash/Lauter Deadspace (gal):	0.25	Estimated Preboil Volume (gal):	9.72
Total Water Needed (gal):	11.85	Boil Time (min):	105
Desired Mash Temperature (F):	148	Evaporation Rate (gal/hr):	1.70
Strike Water (gal):	5.63	Estimated Evaporation Loss (gal):	2.97
Strike Temperature (F):	163	Trub Loss (gal):	0.75
Grain Absorption (gal):	1.88	Volume Left in Kettle (gal):	0.00
Mash-out Temperature (F):	148	Actual Evaporation Rate (gal/hr):	1.37
Mash-out Water (gal):	3.27	Actual Evaporation Loss (gal):	2.40

ON BREW DAY
Heat 5.63 gallons of strike water to 163F
Add grain and mash at 148F for 60 minutes
Mash-out with 3.27 gallons at 210F, mix and hold for 10 minutes
Vorlauf and collect first runnings (approx. 6.77 gallons)
Add 2.96 gallons at 191F to lauter tun and sparge
Vorlauf and collect second runnings (approx. 2.96 gallons)
Boil for a total of 105 minutes with the following hop schedule:
4.375 oz. Golding (US) @60 minute(s)
1.09375 oz. Golding (US) @15 minute(s)

Hop	Alpha %	Ounces	Boil Time	IBU	% Bill
Golding (US)	4.0%	4.38	60	44.7	80.00%
Golding (US)	4.0%	1.09	15	5.5	20.00%

Gravity		Collections	
Potential OG:	1.091	First Runnings (gal):	4.35
OG:	1.057	SG of First Runnings:	1.061
OG Temperature (F):	60	SG Temperature (F):	90
Corrected OG:	1.057	Corrected SG:	1.065
SG at Racking:	1.022	Second Runnings (gal):	4.25
SG Temperature (F):	64	SG of Second Runnings:	1.023
Corrected SG:	1.023	SG Temperature (F):	60
FG:	1.019	Corrected SG:	1.023
FG Temperature (F):	47	Estimated Preboil SG:	1.044
Corrected FG:	1.018	Preboil Volume (gal):	8.60
Estimated ABV (%):	5.5%	SG of Preboil Volume:	1.045
Actual ABV (%):	5.1%	SG Temperature (F):	60
IBU to Gravity Ratio:	0.94	Corrected SG:	1.045

Diacetyl Rest		Carbonation	
Target Fermentation Completion:	50%	CO2 Volume:	2.40
Target SG for Diacetyl Rest:	1.038	Bottling Temperature (F):	
		Priming Sugar (oz):	
Fermentation		DME (oz):	
CO2 Released During Fermentation (g):	791.23	Forced Carbonation (lbs):	

Notes
Fuller's 1845 clone: Targets: 1.0635 OG, 1.0135 FG, 6.3% ABV, 17 SRM, 50 IBU
80% maris otter, 10% simpson's amber, 10% c-75
mash at 148F for 60 min; no mashout; sparge at 169F
60 min boil (7-8% boil off)
80% EKG@60; 20% EKG@whirlpool (15 min if not whirlpooling)
Fermentation:
Pitch at 63F; free rise to 68F (8-12 hrs); hold to half gravity (1.038)
Reduce to 64F until 0.25 is left (1.029)
Chill to 43F (over 3 days: 7F per day)
Then 1 more week in primary, 2 weeks in secondary (48F)
Bottle condition to 2.4 vols
Strike: 6.6 gal (~1.76 mash ratio); sparge: 4.75 gal.
11/13: mashed as specified, changed to 90 min boil due to low preboil gravity and higher preboil volume
Actual boil time was about 45 min before I added 60 min hops (so total boil time is 105 min).
Added 15 min hops at flameout and did 15 min whirlpool.
Missed OG by a bit. Not sure why, but extraction efficiency took a hit even with ph adjuster.
Cooled to 67; let cool to 63 before pitching (overnight).
Pitched entire starter (no time to crash cool)
No aeration other than wort crashing into the fermenter at low flow (valve about 1/10th open).
11/15: 1.027 SG already!! Lowered temp to 64F for 12 hours, then to 43F over 2 days.
Next time, check SG after 1 day!
Huge smell of bananas?
11/24: moved to room temp; beer got to 64F.
11/25: racked; smell slightly of diacetyl? Leave at room temp for 24 hours; then to about 46F for 2 weeks.
Also a bit of alcohol aroma which faded after a bit; diacetyl slightly present.
So 24 hours at about 70F; racking should have agitated the yeast to get it going a bit...
11/27: 1.019 SG; less diacetyl aroma and no diacetyl flavor.
Let at 68F for another 24 hours; cold crash tomorrow (11/28).
12/11: note that OG may have been due to bad wort collection methods and may actually be on target...
If OG was as predicted, then we're looking at 6.0% ABV, 0.84 IBU to gravity ratio, 71% efficiency, and 71% actual attenuation.
Wow. Nice and malty with a very slight hint of sweetness that goes away once the bitterness reveals itself.
No diacetyl at all which is comforting.
This should be a wonderful brew once carbonated.

User Variables	
12 oz. Bottles Required:	51
Primary Fermentation Temp. (F):	63
Secondary Fermentation Temp (F):	48
FWH IBU Factor (%):	10%
Strike Temperature Factor (F):	5
Sparge Temperature Factor (F):	3
Mash Time (min):	60
Specific Gravity (Brix):	14.8
Specific Gravity (SG):	1.057

Summary

Dread Pirate Roberts (Old English Ale)

Batch Size: 6.00 gal (9.72 gal preboil)
Estimated OG: 1.064 SG (actual: 1.057 SG)
Estimated FG: 1.021 SG (actual: 1.018 SG)
Estimated IBUs: 50 (Tinseth; actual: 54)
Estimated Color: 17 SRM (actual: 18 SRM)
Brewhouse Efficiency: 70% (actual: 63%)
Boil Time: 105 minutes

Grains:

11.50# Maris Otter Malt (4.0L) (76.67%)
1.50# Home Toasted Marris Otter (Amber Malt) (35.0L) (10.00%
1.50# Caramel/Crystal 75L (75.0L) (10.00%)
0.50# Rice hulls (0.0L) (3.33%)

Hops:

4.38 oz Golding (US) (4.0%) @60 min
1.09 oz Golding (US) (4.0%) @15 min

Yeast:

White Labs WLP002 (English Ale)
3250 mL starter; ferment, crash cool and decant

Mash/Sparge Schedule:

Single Infusion, 148F, 60 min; Batch Sparge

Fermentation Schedule:

Primary Fermentation: 12 days @63F
Secondary Fermentation: 16 days @48F