BREWSHEET v3.3 (2012-03-18)

user input
calculated

Brew			
Name:	Dread Pirate Roberts Old English Ale		
Brew Date:	2012 November 25	Collected (gal):	5.25
Rack Date:		Racked (gal):	
Keg/Bottle Date:	2012 December 19	Kegged/Bottled (gal):	5.00
Estimated		**Actual**	
ABV (%):	5.5%	ABV (%):	5.6%
OG (SG):	1.063	OG (SG):	1.059
FG (SG):	1.021	FG (SG):	1.016
IBU:	49.1	IBU:	57.9
SRM:	15.6	SRM:	17.1
IBU/Gravity Ratio:	0.78	IBU/Gravity Ratio:	0.99

Grain	Pounds	Potential	SG Share	Color	% Bill
Maris Otter Malt	10.63	1.038	0.051	4.0	77.98%
Home Toasted Marris Otter (Amber Malt)	1.25	1.038	0.006	26.0	9.17%
Caramel/Crystal 75L	1.25	1.034	0.005	75.0	9.17%
Rice hulls	0.50	1.000	0.000	0.0	3.67%

Hop	Type	Ounces	Boil Time	Alpha %	IBU	% Bill
Kent Golding	L	3.75	60	5.1%	46.6	78.95%
Kent Golding	L	1.00	5	5.1%	2.5	21.05%

Design 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) – I'll recirculate for 10 min.
Fermentation:
Pitch at 63F; free rise to 68F (8-12 hrs); hold to half gravity (1.039)
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
Temp controlled fermentation: 4 weeks

Batch Variables and Calculations	
Batch Size (gal):	5.50
Grain Temperature (F):	64
Total Grain Weight (lbs):	13.63
Mash	
Mash Time (min):	60
Desired Mash Temperature (F):	148
Strike Water (gal):	5.95
Strike Temperature (F):	165
Mash Ratio (qts/lb):	1.75
Grain Absorption (gal):	1.70
Mash Volume (gal):	7.04
Mash-out Temperature (F):	148
Estimated First Runnings (gal):	4.11
First Runnings (gal):	3.90
First Runnings Gravity (Brix):	16.80
First Runnings Gravity (SG):	1.065
Sparge	
Desired Sparge Temperature (F):	169
Sparge Water (gal):	3.64
Sparge Water Temperature (F):	187
Estimated Second Runnings (gal):	4.11
Second Runnings (gal):	4.10
Second Runnings Gravity (Brix):	6.70
Second Runnings Gravity (SG):	1.026
Estimated Preboil Volume (gal):	8.21
Estimated Preboil Gravity (Brix):	11.62
Preboil Volume (gal):	8.00
Preboil Gravity (Brix):	11.00
Preboil Gravity (SG):	1.043
Extraction Efficiency (%):	69%
Boil	
Boil Time (min):	70
Estimated Evaporation Loss (gal):	1.66
Hop Absorption (gal):	0.24
Volume Left in Kettle (gal):	-0.41
Actual Evaporation Rate (gal/hr):	1.82
Actual Evaporation Loss (gal):	2.12
Original Gravity (Brix):	15.13
Batch Size Efficiency (%):	65%
Actual Efficiency (%):	58%
Fermentation	
Primary Fermentation (days):	
Primary Fermentation Temperature (F):	
Gravity After Primary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Secondary Fermentation (days):	
Secondary Fermentation Temperature (F):	
Gravity After Secondary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Tertiary Fermentation (days):	
Tertiary Fermentation Temperature (F):	
Final Gravity (SG):	1.018
Temperature of Reading (F):	41
Corrected SG:	1.016
Target Fermentation for Diacetyl Rest (%):	75%
Target Gravity for Diacetyl Rest (SG):	1.029
Calories per Pint:	196
12 oz. Bottles Required:	51
Carbonation	
Bottling Temperature (F):	
Volumes of CO2:	1.90
Priming Sugar (oz):	
DME (oz):	
Forced Carbonation (lbs):	

System Variables	
Brewhouse Efficiency (%):	70%
Volume in Hoses (gal):	0.22
Volume in Wort Chiller (gal):	0.19
Volume in HERMS Coil (gal):	0.25
Mash/Lauter Tun Deadspace (gal):	0.14
Strike to Sparge Volume Ratio (%):	50%
Trub Loss (gal):	0.16
FWH IBU Factor (%):	10%
Strike Temperature Factor (F):	7
Sparge Temperature Factor (F):	4
Estimated Evaporation Rate (gal/hr):	1.42
Leaf Hop Absorption Ratio (qts/oz):	0.20
Pellet Hop Absorption Ratio (qts/ oz):	0.10
Cooling Losses (%):	4%
Hydrometer Correction (SG):	-0.001

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

Yeast Strain	
Yeast Strain:	White Labs WLP002 (English Ale)
Type:	English Ale
Attenuation (%):	63-70%
Actual Attenuation (%):	72%
Fermentation Temp (F):	65-68F
Flocculation:	very high

Required Amounts	
Cell Count (billions):	239
Vials (White Labs/Wyeast):	2.8
Dry Yeast (g):	12.0

Yeast Starter/Slurry	
Vials (White Labs/Wyeast):	2
Date Yeast Produced:	2012 November 1
Yeast Viability (%):	84%
Yeast Growth Rate:	1.42
Yeast Innoculation Rate (million/ml):	261.09
Starter Volume Required (ml);	**1000**
DME Required (oz):	3.25
Yeast slurry concentration (billion/ml):	2.5
Non-yeast Percentage (%):	20%
Yeast Slurry Required (ml):	125

User Variables	

Batch Scaling				
Desired OG:	1.064	Total Weight (lbs):		26.54
Batch Size (gal):	11.00	Total Bill:		100.00%
Brewhouse Efficiency (%):	70%			
Grain	**Pounds**	**Potential**	**Color**	**% Bill**
Maris Otter Malt	21.23	1.038	4.0	80.00%
Home Toasted Marris Otter (Amber Malt)	2.65	1.038	26.0	10.00%
Caramel/Crystal 75L	2.65	1.034	75.0	10.00%

Poundage		
Goal (lbs):	10.63	
Amount (lbs | oz.f_oz):	1	11.51
Amount (lbs | oz.f_oz):	1	11.48
Amount (lbs | oz.f_oz):	1	14.55
Amount (lbs | oz.f_oz):	1	13.39
Amount (lbs | oz.f_oz):	1	14.41
Amount (lbs | oz.f_oz):		
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Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
Needed (lbs | oz.f_oz):	1	8.66

Hydrometer Correction		
SG:	1.018	
Temperature (F):	69	
Corrected SG:	1.018	

Gravity Calculator			
Brix:	13.50	15.13	
Specific Gravity:	1.052	1.059	
Degrees Plato:	12.89	14.36	

Brix Ethanol Correction	
Original Brix:	
Current Brix:	
SG:	

Brewing Notes

11/25: Increased boil to 70 min.
Hops all added 10 min less than noted (50 min and -5 min).
11/26: At 10am (after 18 hours), 1.050 SG; check again this evening.
At 8:30pm (after 28.5 hours), 1.040 SG; lowered temp to 64F.
11/27: At 7am, 1.031 SG; lowered temp to 57F (first 7F down to 43F).
11/28: Reduced by 7F.
11/29: Reduced by 7F; temp now 43F.
12/12: 1.017 SG; raised temp to 48F.
Diacetyl bomb; great aromas and flavors of malt and caramel with perfect complementing bitterness.
Decided to leave it on the primary cake, rouse the yeast a bit, and increase the temp to 62F to try to get rid of the diacetyl.
12/17: 1.018 SG (?); temp went up to ~70F; I'm a little stuffed, but I don't detect diacetyl.
Cold crashed.
12/19: quite nice and malty with good backing bitterness.
Diacetyl is slight in both aroma and flavor, but more of a flavor as the beer warms.
1/6: aroma is slight diacetyl (perhaps a tad higher than appropriate) with malt, dark fruit, and a bit of caramel.
Flavor is sharp and malty with a hint of hop and pepper.
Bitterness kicks in (a bit higher than I'd like) and lingers in the aftertaste with some maltiness and esters.
No noticeable diacetyl in the flavor at serving temps.

2/8: diacetyl only shows itself when quite warm and is then very slight.
Has transformed in the last few days to have strong hints of coffee and cocoa.
Reminds me of Monty Python Holy Ail and many other great English Ales.
4/7: Floated. In the end, this was a tasty brew and probably the best version so far.
However, easier beers to brew (e.g., She's Got Balls) are just as tasty.
Maybe I do this again but without the "picky" fermentation schedule.
Diacetyl was present initially but was not present after a few weeks in the keg.