

# Electrical Budget Worksheet (Black Feathers - Cal 20)

1 Calculate your DC Loads:

Lighting		Amps	Hours	AH/Day
Running Lights - bow				0.0
Masthead Tricolor Light				0.0
Anchor Light				0.0
Strobe Light	0.3	10		3.0
Spreader Lights				0.0
Cabin Light (small)				0.0
Cabin Light (big incandescent)				0.0
Cabin Light (fluorescent)				0.0
Instrument Lights - compass light				0.0
Handheld Spot Light				0.0
Other - Stern Light				0.0
Lighting AH				<b>3.0</b>
Galley		Amps	Hours	AH/Day
Refrigeration				0.0
Prop Solenoid				0.0
Other				0.0
Galley AH				<b>0.0</b>
Electronics		Amps	Hours	AH/Day
Autopilot				0.0
VHF (receive)				0.0
VHF (transmit)				0.0
SSB (receive)				0.0
SSB (transmit)				0.0
SSB Digital controller				0.0
GPS with AIS Receiver	0.2	24		4.8
Instruments - knot/depth				0.0
Weather fax receiver				0.0
Radar Detector (CARD)	0.1	10		1.0
Radar (transmit)				0.0
Solar Panel Regulator	0.01	24		0.2
Energy Monitors - Link 20	0.03	24		0.7
Stereo				0.0
Computer (screen off)				0.0
Computer (screen on)				0.0
Computer (serial adapter)				0.0
Other				0.0
Electronics AH				<b>6.8</b>

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Energy Plan for the 2008 SSS TransPac  
Black Feathers

Plumbing		Amps	Hours	AH/Day
Fresh Water Pump				0.0
Bilge Pump(s) - Two manual				0.0
Other				0.0
Plumbing AH				<b>0.0</b>
Inverter		Watts	Hrs/day	AH/Day
Microwave				0.0
Chargers (nicad)	0.4	2		0.8
Other				0.0
Inverter AH				<b>0.8</b>
Gross Energy Consumption AH/Day				<b>10.6</b>

Calculate using average water consumption.  
This should be zero unless the boat leaks.

All values assume inverter efficiency = 85%.  
Power factor may mess up this estimate.

2	Alternative Energy Sources				
	Device	Amps	Hrs/day	AH/day	
	Solar, avg	4.0	5	20.0	
	Wind, avg			0.0	
	Water, avg.			0.0	
	Contribution of AES AH/Day			<b>20.0</b>	
3	Net Energy Consumption, AH/Day			<b>-9.4</b>	
4	Desired Hours Between Charging			<b>NA</b>	
5	Range of Battery Use (Two 73 AH Gels)			<b>73.00</b>	
6	Recommended Battery Capacity			<b>NA</b>	
7	Alternator Output, Amps			<b>NA</b>	
8	Charge Efficiency Factor			<b>NA</b>	
9	Minimum Minutes to Charge			<b>NA</b>	

Assumes one large panel.  
Assumes AIR Marine wind turbine in good location.

For example, from 50-85% state of charge.

Target would be 25% flooded, 40% gel, of capacity.

Gels = 95%, flooded cells = 85%

Assumes alternator runs at full output.