

My fuel burn chart for Stargazer II. She is a 30 Express with 307Qs.
 By Jeff Vail July, 2016

Min.	6	12	18	24	30	36	42	48	54	60
1/10 hour	1	.2	.3	.4	.5	.6	.7	.8	.9	10

Speed Chart *Stargazer II* *

Minutes to tenth of hour table.

RPM	Speed		Gallons per hour
	MPH	KT	GPH, (combined)
4000	29.6	25.9	40
3800	28.0	24.5	38
3600	26.6	23.3	34
3400	24.4	21.4	31
3200	22.7	19.9	23
3000	20.9	18.3	22.5
2800	19.7	17.2	22
2600	18.2	15.9	20
2400	16.8	14.7	18
2200	15.4	13.5	17
2000	12.0	10.5	16
1800	11.1	9.7	12
1600	10.1	8.75	10
1400	8.4	7.3	7
1200	7.9	6.9	4
1000	6.5	5.6	3
800	4.6	4.0	2
500	3.5	3.0	2

Hull Speed is at 1300 RPM, 8.2mph, 7.13kt. Speed/RPM ratios assume clean bottom normal load.

- 30 MPH is one mile every 2 minutes. 40 GPH, 4.5 hours, 135 miles, (4100 RPM) .75 mpg
- 25 MPH is one mile every 2.4 minutes. 31 GPH, 5.8 hours, 145 miles, (3450 RPM) .80 mpg
- 20 MPH is one mile every 3 minutes. 22 GPH, 8.18 hours, 163 miles, (2900 RPM) .90 mpg
- 15 MPH is one mile every 4 Minutes. 16 GPH, 11.25 hours, 168.7 miles, (2100 RPM) .93mpg
- 10 MPH is one mile every 6 minutes. 9.5 GPH, 18.9 hours, 189 miles, (1550 RPM) 1.0 mpg
- 6 MPH is one mile every 10 minutes. 3 GPH, 60 hours, 360 miles, (900 RPM) 2.0mpg

MPH divided by GPH = MPG

Mileage figures based on 180 gallons of fuel, leaving a 20 gallon reserve.

Hours are the length of time it will take to burn 180 gallons of fuel at a given speed/GPH.

Miles are the miles run at a given speed for the time in hours. (20 X 8.18 = 163)

Statute Miles X 0.875 = knots (KT) Knots (KT) X 1.15 = Statute Miles.

* With 12.75X11 super cup props.

Now, a few things you need to know to make a comparison.

We are 30 feet long on the center line on deck, 32 feet overall, and have a loaded water line length of 28.4 feet, 10.5 foot beam, 5 degree dedrise hull shape, (Big Flat Ski Boat)
Our minimum speed to plane at Normal Displacement both calculated and observed is 15.74 MPH.

Light Ship we are 9950 pounds. LS conditions are 1 person on board, no water, no waste, and less than 50 gallons of fuel aboard.

Normal Displacement, what we were when this chart was done we are around 10600 pounds. That is 2 people on board, provisioned for a weekend, between 90 and 110 gallons of fuel aboard, at least 10 gallons of water in the tank, and less then 5 gallons of waste.

The next two displacement settings are Trip displacement, 180 gallons of gas, provisioned for at least 4 days, which comes in at 11700 pounds, and Expedition Displacement, full tank of gas, full water, empty waste, and food for two people for a week, that is 13500 pounds. The last two don't really apply to your situation.

When the chart was done we had low time engines, less than 200 hours on the rebuilds, and we did it with a stop watch and the tank dip stick. We would run up river for 7 1/2 minutes, then turn and run down river for 7 1/2 minutes, average the speeds, and measure how much gas we used. We used 15 minute intervals, then multiplied by 4 to get Gallons per Hour. The speeds are speed over ground from a Garmin GPS unit. We get slightly better mileage now that they have a few hours on them, on the order of 12%, but I have not changed the chart, (lazy)

The engines don't care much about what we weigh, the only thing they know is how wide the throttle plates are open, but as we get heavier we get slower. I have found over time that an extra 1000 pounds will take an extra 100 RPM to move, so 20 mph takes 3000 RPM rather than 2900.

Our "happy" spot with guests aboard, more weight, is around 1300 RPM.

And this is what she looks like;

