

1968 CHEVROLET Chevelle SS 396/ 375 HP-4 bbl MPG= 12 Hwy

Written by Double Dragon

Thursday, 01 March 2012 22:42 - Last Updated Saturday, 20 March 2021 08:38

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oneownercollectorcar.com

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Metric= 6.5 L engine- 19.6 L/100km Hwy

The OOCC 1968 Chevelle SS 396 is special: original owner David Dodd ordered this car with the top supercar option 375 HP solid lifter engine. The OOCC Chevelle was set up with the four speed and 3.73 posi rear axle and no power options. This was the mandatory late 1960s route followed by Serious Strippo Warrior Stoplight Kings. See the ONE OWNER story in the CAR STORIES section of this website for a history of David's one owner collector car.

MPG OF 1968 CHEVELLE SS 396 WHEN NEW 11-13 MPG.

MECHANIX ILLUSTRATED OCT 1967 tested a 1968 Chevelle SS 396.

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POPULAR SCIENCE tested a garden variety version of the new 1968 Chevelle body. The PS car rode on the 116 inch wheelbase four door version with the new for 1968 307 two barrel, 2 speed Powerglide and 3.08 axle. Curb weight was 3,395 pounds with power disc brakes and power steering. The PS car was fairly slow, taking 12 seconds flat to get from 0 to 60 MPH. The PS Chevelle recorded 14 MPG overall throughout the testing process.

The Feb 1968 issue of CAR CRAFT tested a Chevelle SS 396 with the same rare 375 HP engine David Dodd specified in the OOC SS 396. The CAR CRAFT guys also got the same four speed. After this point, equipment diverges. The CC Chevelle SS 396 test car had power steering and brakes. CC quoted the AMA specs for a shipping weight of 3,550 lbs. For some reason the factory sent a 375 HP car with a passenger car 3.08 axle. Consequently, the CC Chevelle never made it out of third gear during quarter mile runs (low 14s) using Casler 8 inch slicks. The Car Craft guys never left the drag strip so we don't have any highway mileage figures to relate to David's highway trip.

The March 1968 ROAD & TRACK profiled a 1968 Chevelle Malibu two door sports coupe, the same body configuration as David Dodd's SS 396. The RT Malibu had a 327 running through a two speed Powerglide automatic and a 3.36 axle. Curb weight was 3,590 lbs. As tested it came just shy of two tons at 3,960 lbs with power steering, power disc brakes, A/C, radio and testers aboard. The RT Malibu 327 used a four barrel Rochester to produce 275 HP, 100 less rated HP than David's SS. The 100 HP deficit shows in the Malibu's 9.3 second 0-60 MPH and 17.1 second quarter mile. The Malibu's rear axle isn't a highway axle, but the 3.36 requires only 2,805 RPM at 60 MPH and is good for 115 MPH top speed. The OOC Chevelle on the other hand was turning 3,000 RPM at 60 but was good for a 120 MPH top speed. Both the 327 and 396 use premium gas and produced the same MPG figures. ROAD TEST recorded 11-13 MPG.

A rough comparison can be made with the Jan 1970 CAR LIFE evaluation of a 1970 Chevelle SS 396. The shape of the Chevelle had evolved, but is the same basic car and drive train used in 1968. Car Life wasn't impressed by the performance of their median option 396 (350 HP hydraulic lifters) with TH400 and 3.31 axle. It took 8.1 seconds for 0-60 MPH, 15.5 for the quarter and managed 124 MPH top speed. The CL test car had power steering, power disc brakes, power windows, radio and A/C for a massive 3,990 curb weight. As tested the Chevelle SS broke the two ton mark at 4,310 pounds.

Interestingly, the mileage CL got with a 396 was identical to the RT 327 car: 11-13 MPG. Engineers say that weight and frontal area are the main factors in MPG. In the late 1970s and

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early 1980s GM attempted to save gas by installing smaller 305 and 267 V8 engines in place of the 350 engine, but the smaller V8s got the same mileage as the old 350 mounted in the identical vehicle.

This seems to be part of the case with the Chevelle body of 1968-1970. The POPULAR SCIENCE Chevelle did manage better MPG with the 307 and 3.08 axle, but once you hit 327 cubes everything plateaus at 11-13 MPG regardless of how much extra power you opt for.

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Muscle car buyers in the 1960s avoided anything that would slow the car down. They eschewed weight adding, horsepower sucking options like power steering, power brakes and air conditioning. David's Chevelle SS 396 has manual brakes, manual steering and no A/C. The four speed manual transmission not only allows high RPM windups, but a side effect is that it has less slip than an automatic and saves weight, too.

A basic Chevelle is usually the lightest car in the GM 'A body' family. Looking beyond the image of the OOCC Chevelle SS as a stripped down stop light warrior the reality is that its weight exceeds the average Chevelle grocery getting sedan. The 396 engine adds a significant amount of weight and not just because of the big block itself. Along with a big block comes heavy duty radiator, beefier suspension and frame etc. Shipping weight for a 1968 base SS 396 was 3,475 lbs. The gas tank is 17 gallons. Gas weighs about 6.2 pounds per US gallon. There were probably about 3 gallons in the tank when shipped. Filling the tank with 14 additional gallons yields about 3,560 lbs for curb weight without any options.

David didn't didn't take the stripped down formula to its ultimate conclusion of heater/ radio/ insulation delete. The OOCC Chevelle has AM/FM radio with rear seat speaker and a vinyl roof which add a few pounds. The console and bucket seats are heavier than the bench and column shift. The OOCC Chevelle has a curb weight around 3,600 pounds. As driven, it would average about 3,750 pounds.

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Of course, in addition to moving a lot of weight, the Chevelle has an aggressive cam which dumps a lot of raw gas through the system at lower speeds. The high axle requires 3,000 RPM to cruise at 60 MPH and winds up to 4,000 RPM at 80 MPH.

Weight, cam and revs are an issue, but the major culprit for low mileage figures in this car is factory issue whitewall bias ply tires set to low PSI. The factory recommended low PSI in the 1960s was meant to improve ride smoothness which means the car has to work harder to turn against resistance of a soft tire. Modern radials are routinely inflated to 35 PSI and have much lower rolling resistance even when inflated to low 1960s era settings. See the article on tires in the GAS LOGS section for more on this.

At the time of the road trip the OOCC Chevelle SS was one year old, completely factory original and well past its break in period. David and his wife plus luggage added 500 pounds to the car. The weather was hot and dry for the two week 6,000 mile road trip taken in July, 1969. Most of the driving was on the new for the time Interstate highways. At steady 65 and 70 MPH cruising the Chevelle SS 396 averaged 12 MPG on the highway. At this time gasoline had greater energy content because it wasn't yet diluted with up to 10% ethanol as is the case with modern gasoline.

