

# Road Beat: Toyota RAV4 hybrid – a complete car



The RAV4 AWD Hybrid is a good choice for snow country.  
Photos/Larry Weitzman

**By Larry Weitzman**

RAV4 is another Toyota success story, with continuous sales growth since 2011 (sales were 132,000) to its best year ever 2016 when U.S. sales topped 350,000 for the first time. The bestselling car in America, the Toyota Camry, had sales approaching 390,000 (Camry was fourth in overall sales behind three pickups, 1. Ford F-150, 2. Chevy Silverado and 3. Dodge Ram). Toyota is definitely doing something right, very right.

This new compact CUV RAV4 is in its fifth year of the fourth generation. Styling remains ruggedly pleasant, certainly superior to the Honda CRV which actually outsold the RAV4 by about 5,000 vehicles. Perhaps its best styling feature is the high belt/character line which creates a horizontal shelf out

of the tail lights. Size remains the same at 180 x 73 x 66 inches in length, width and height. Wheelbase is still 105 inches.

Toyota's biggest improvement is the interior. When I opened the door for the first time I remarked to myself, wow! What an improvement and a very nice change. It wasn't until I checked out the specs after a few days that I learned what I thought was leather was actually SofTex, Toyota's name for the superb vinyl. My tester was done in black and a saddle tan, which is either called cinnamon or nutmeg. It was stunning and my tester was not even the top of the line model, the Limited. Mine was an SE model. There were more soft touch materials even the lower dash trim was done in the seating materials with some nice stitching. Even better was the comfort level of the front chairs, excellent.

Under the hood of my hybrid tester was Toyota's 2.5L, DOHC, 16 valve inline four, but in the hybrid's case it runs as a high compression (12.5:1) Atkinson cycle engine which improves efficiency by increasing the ratio between the compression and expansion cycle. But some peak power is lost as instead of 176 hp this motor puts out a peak hp of 150 hp at a slightly lower 5,700 rpm. Torque is still a healthy 152 pounds of twist which follows the rule of one pound of torque per cubic inch of engine displacement.

Adding to the RAV4's thrust is the hybrid component which has electric motors that help drive the front wheels and a separate electric motor that drive the rear wheels. The gas engine is not connected to the rear wheels, there is no driveshaft. The rear wheels are driven by the rear mounted electric motor only and is an on-demand system. It's a clever AWD system. While the motors have a rating of a max power output of 141 and 67 hp respectively, the combined hp of all power systems is a still respectable 194 hp. The limitation is the max output of the Nickel-Metal Hydride battery system which is limited to about 33 kWh or 44 hp.



### **Specifications**

Price \$ 32,185 to about \$37,000

### **Engine**

D0HC 16 valve Inline four-cylinder gasoline 150 hp @ 5,700 rpm

152 lb-ft of torque @ 4,400 rpm

Electric power 44 hp

Combined hp 194 hp

### **Transmission**

CVT automatic

### **Configuration**

Transverse front mounted engine/AWD

### **Dimensions**

Wheelbase 104.7 inches

Length 179.9 inches

Width 72.6 inches

Height 67.1 inches

Ground clearance 7.0 inches

Track (f/r) 61.4/61.4 inches

Weight 3,950 pounds

GVWR 4,960 pounds

Fuel capacity 14.8 gallons

Tow capacity 1,500 pounds

Cargo volume (rear seat down/up) 70.6/35.6 cubic feet

Wheels 7.0×18  
steel/alloy/alloy  
Tires P235/55×18  
Turning circle 36.7 feet  
Steering lock to lock 2.68  
turns

### **Performance**

0-60 mph 7.08 seconds  
50-70 mph 4.09 seconds  
50-70 mph uphill 5.95  
seconds  
Top speed Who cares?  
Fuel Economy EPA rated at  
34/30/32 mpg  
city/highway/combined.  
Expect 31 mpg overall in a  
combination of all driving  
and 33-34 mpg on the highway  
at legal speeds.

Throttle response is quite snappy recording a 0-60 mph elapsed time of 7.09 seconds or almost a second and a half quicker than the standard RAV4 with a similar 2.5L engine 176 hp. Passing performance also improves significantly with a 50-70 mph simulated passing run of 4.09 seconds and the same run up a six-seven percent grade slowing that time to 5.95 seconds which is a pickup of about a half a second and a second and three quarters. Another huge performance improvement. The standard RAV4 had times of 8.51, 4.57 and 7.73 seconds. And this performance improvement (and fuel economy, see below) is in spite of a weight penalty of about 350 pounds over the conventional RAV4.

And this staggering performance improvement comes with significantly improved fuel economy. EPA rates the RAV4 Hybrid at 34/30/32 mpg city/highway/combines. The reality of my 310 miles of varied driving showed 31 mpg overall with a two-way

level highway run at 70 mph returning 33.5 mpg. The conventional RAV4, while returning an average of 32.7 mpg at 70 mph, only averaged between 25-26 mpg overall. The hybrid version will offer significantly improved performance and a 5-6 mpg boost in overall fuel economy. Is there a drawback? About the only niggle with the hybrid is the auto stop engine feature which at times could be felt restarting upon brake release. But the integration of the electric motors are extremely smooth and basically imperceptible. And with the ability to run pure electric up to about 45 mph under very light throttle, the RAV4 becomes unbelievably smooth and quiet. One very small negative is the fuel tank shrinks by about a gallon to 14.8 gallons; probably due to the battery.

Handling is very good as RAV4 has serious creds. The electric power steering rack is very quick at 2.68 turns lock to lock. Suspension is MacPherson struts up front and a state of the art double wishbone holding up the rear with a ground clearance of 7 inches. Wheels are 18 x 7 inch alloys shod with some pretty meaty 235/55 series rubber. It adds up to sporty driving with strong cornering power with crisp turn in. It handles the twisties with aplomb. It will not disappoint.

Ride quality is smooth, handling both large and small imperfections with ease keeping its occupants coddled. Head tossing is kept to a minimum and jumping from a sports sedan to the RAV4 would be almost imperceptible. There is no tack, but based on vehicle quietness, rpm at 70 mph should be somewhere around 2,000 rpm. There is some road noise on coarser roads, but the RAV4 is reasonably quiet. There is no wind and engine noise unless there is aggressive use of the throttle. In EV mode it is silent.

Four wheel discs are almost a foot in diameter and are strong and of course the RAV4 has all the acronyms including lane departure assist with steering assist. LED headlights were excellent especially on low beam and the automatic high beaming dimming system worked perfectly. Just leave it in

automatic and let it work. A big safety feature that sometimes dimmed the highs when reflecting off a large, new reflective sign which actually helped as the reflection from these headlights sometimes was pretty bright. Going to low beams was an improvement in forward vision. It's a great feature, standard in the middle trim level of an SE.

Inside, as said above, is a trick interior. Instrumentation is complete except for a tach which is replaced by a power meter which reflects power usage. The trip computer is complete and the sound system and HVAC is easy and simple to use, no three-unit college course is required. Rear seating is spacious and comfortable. Cargo capacity is large with over 70 cubes behind the front chairs and about 36 cubes with the second row up.

Pricing for this bullet proof RAV4 is a deal. The base price for an SE Hybrid AWD is \$32,185, plus \$940 for the boat ride from Obu, Japan. But here is the deal. The premium for AWD in conventional RAV4s is \$1,400, but with the Hybrid it is standard. So, the price differential between a RAV4 SE AWD and the RAV4 SE AWD Hybrid is just \$800. Buying the RAV4 with AWD it becomes a no brainer to buy the hybrid. For that \$800 you get significantly better fuel economy and performance with no downside. Oh, you worry about the battery and hybrid system. Toyota hybrids have the highest reliability ratings, even higher than conventional cars and their battery system is as close to fail safe as a battery can be. Toyota has tested its batteries to over 150,000 cycles with no loss of efficiency and performance.

*Larry Weitzman has been into cars since he was 5 years old. At 8 he could recite from memory the hp of every car made in the U.S. He has put in thousands of laps on racetracks all over the Western United States.*