

# TIPPING POINT

ROADMASTER  
TAMES A TILTING,  
HIGH-CENTERED  
MOTORHOME

by BRAD CLAYTON



The Itasca rounds a curve after installation of Roadmaster anti-sway bars and steering stabilizer.

**T**he motorhome industry transitioned to a 7-foot interior ceiling height several years ago to gain the visual impression of more interior space. It worked. But one of the trade-offs soon became obvious, at least in some coaches built on leaf-spring chassis: excessive body roll, or a tendency to tilt uncomfortably on curves.

It should be no surprise that a coach that stands 12 feet 3 inches tall might heel over, at least moderately, on curves. Nevertheless, it came as a surprise with a 2008 Itasca Sunrise 35A built on a Ford F53 chassis. During a test drive with par-

tial tanks of fuel and LP-gas, little water and no personal supplies, the motorhome showed only a modest tendency to tilt on curves and corners, and its overall road manners were good.

## LOADED TO THE MAX

Loading a coach to its maximum gross vehicle weight rating (GVWR) — 22,000 pounds in this case — can be expected to affect handling, but not this much! On curves, a different motorhome emerged; body roll was uncomfortable on curves even at lower than posted speeds. In left-hand curves on uneven, crowned roads, the

amount of lean to the right often progressed to the white-knuckle stage for the co-pilot.

The apparent causes of excessive body roll in this case included an excessively high center of gravity for a coach built on a leaf-spring suspension, inadequate sway bars and a rather long rear overhang. With other motorhomes, the need for better stability will vary with driver sensitivity and with different chassis and coach designs.

Late-model air-bag-suspended diesel pusher motorhomes tend to be equally as high centered as our test coach, but usually have better road manners due to the

dynamic stabilizing effect of their air bag suspensions. The Itasca was fitted with Bilstein shocks, which are quite good, but shocks are not a significant factor in controlling body roll.

The quest for solutions led us to Roadmaster Inc. Renowned initially for its tow bars, the company expanded into anti-sway bars (also known as anti-roll bars or stabilizer bars) and steering stabilizers.

### THREE ANTI-SWAY BARS

For the 35-foot Itasca, with its 22,000-pound GVWR, Roadmaster prescribed two of the company's anti-sway bars: a 1½-inch-diameter bar for the rear — in addition to the stock 1⅜-inch Ford rear bar — as well as a 1¾-inch-diameter front bar replacing the stock Ford 1½-inch unit. Thus, we were looking at three bars instead of two for this chassis, and it needed all three.

The company also recommended the Reflex Steering Stabilizer, which consists of a hydraulic damper inside a spring that is attached to the frame at one end and to the steering tie rod at the other. While it has no effect, per se, on body roll, steering characteristics can have an effect on a driver's response to body roll, and is essential for driving comfort in any motorhome.

Roadmaster anti-sway bars are made of grade 4140 cadmium-plated chrome moly steel for more stiffness, whereas the stock Ford bars are 1020-grade steel, according to Roadmaster. In addition, polyurethane bushings used at all pivot points by Roadmaster are more rigid than the stock rubber bushings, increasing effectiveness of the bars.

### STAYING UPRIGHT

Anti-sway bars attempt to keep the coach as firmly upright in relation to the wheels as is reasonably possible. The Roadmaster rear bar more than doubles resistance-to-body-roll at the rear, and the front bar increases resistance substantially over the stock bar. Roadmaster says roll stiffness is increased 30 percent with each additional ⅛-inch in bar diameter.

The company recommends its Reflex Steering Stabilizer since it applies return-



Roadmaster front stabilizer bar replaces stock Ford bar, utilizing polyurethane bushings.



Steel brackets provide a platform left and right for attachment of the Roadmaster bar below the rear axle. U-shaped brackets, center, are bolted to the frame for connection with tips of bar.



Reflex Steering Stabilizer consists of a steering damper inside a coil spring, designed to return wheels to center.



The larger Roadmaster rear bar encircles the stock Ford bar and more than doubles roll resistance.



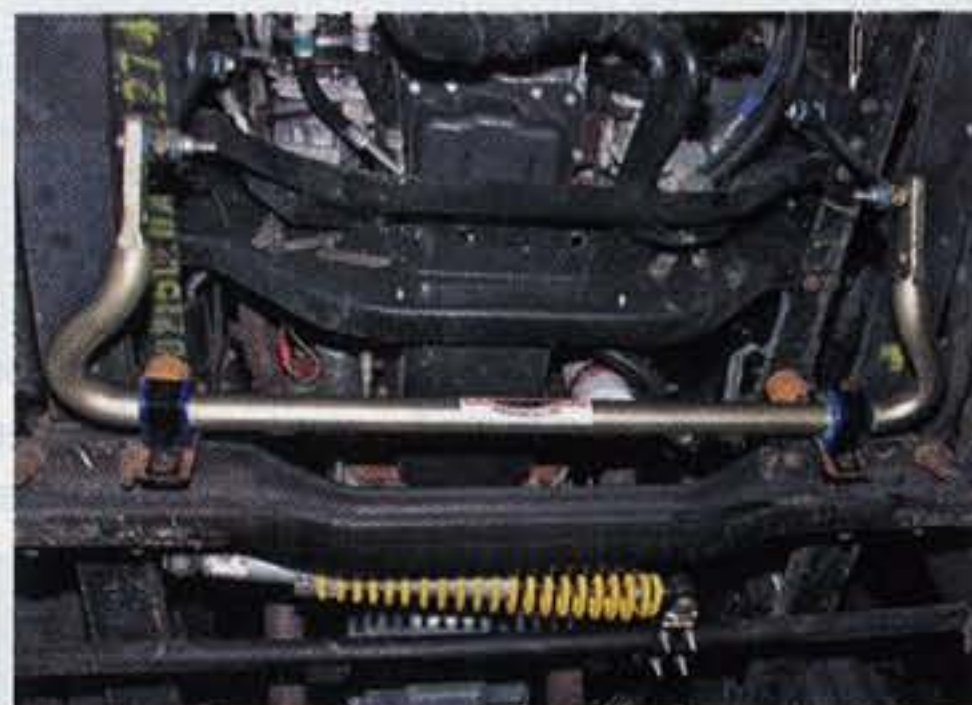
Roadmaster steel brackets are fitted below rear axle, using existing U-bolts.



The Roadmaster and Ford rear stabilizer bars are attached to the axle and frame independently, using separate linkage.



Polyurethane bushings permit less flex between bar and frame brackets.



Roadmaster front anti-sway bar is fitted forward of the axle while the Reflex Steering Stabilizer is attached to frame behind axle and to tie-rod end (center, rear).



Roadmaster front bar is thicker than stock bar and utilizes stock frame linkage.



Reflex Steering Stabilizer, bolted to frame (right) behind axle and to steering tie rod (center), exerts spring pressure to re-center steering and dampen steering motion.



Position of tie rod bracket determines neutral position of stabilizer.

to-center spring pressure and a steering damper effect anytime the wheels are turned out of straight-ahead alignment.

After having driven the Itasca for several thousand miles, a considerable portion of it on secondary roads that were crowned, uneven and narrow, we were well-acquainted with how far this motorhome would tilt on curves and in driveways, and how difficult it was to estimate what would happen on the next bend in the road.

### INSTALLATION

We arranged with one of Roadmaster's dealers, T&D Auto and Truck in Plainville, Mass., to install the components, which

took about three hours. Installation of the rear bar was mostly a bolt-up procedure, beginning with two steel brackets that were attached below the axle. Eight nuts on the U-bolts that attach the axle to the springs were removed, allowing placement of the brackets. The nuts were reinstalled with plenty of threads showing.

The bar was attached at four pivot points utilizing polyurethane bushings and clamps — two at the axle and two at the frame. Four holes were drilled through the frame for attachment of linkage brackets used to connect the forward tips of the bar to the frame.

Installation of the forward bar was a direct replacement, using new steel brackets with polyurethane bushings. The tips of the Roadmaster bar were connected to the frame using the stock Ford linkage.

### ON THE ROAD

We separated our driving test into several stages, first with the Roadmaster anti-sway bars in place. Later we connected and disconnected the Reflex Steering Stabilizer several times so it could be evaluated separately.

Our initial impression of the difference created by the anti-sway bars didn't take long; we were barely out of the driveway. As we exited the installation shop driveway through the rain gutter into the street, the coach did less of the whipsaw motion we had come to expect.

While heading through the town toward a country road, the effect was apparent on pavement undulations: The usual wobble from side to side was greatly reduced. While anti-sway bars will not eliminate body roll, they can greatly reduce it, and we noticed this effect immediately.

The real test was on a winding road. In each curve, a moderate amount of body roll would occur, and then we could feel the buildup of the bars' resistance. We began to realize and trust that we could drive winding roads at reasonable speeds with a feeling of confidence.

After several thousand more miles of backroads, this impression endured; the bars had made a dramatic improvement and had turned a coach that was very uncomfortable to drive on anything but flat, mostly straight pavement into one that could handle mountain roads with com-

fortable and predictable handling.

Oddly, crosswinds did not affect this motorhome as much as we had anticipated, based on the amount of body roll that had been occurring on curves. During crosswinds up to 40 MPH we had to reduce speed but didn't feel like we had to get off the road. Even so, the Roadmaster bars held the motorhome more upright, and made driving in strong winds more comfortable.

### STEERING

Roadmaster markets the Reflex Steering Stabilizer as an effective measure for handling front-tire blowouts, rut tracking, inadvertently wandering off the edge of the road, potholes, driver fatigue and crosswinds.

The unit consists of a hydraulic damper inside a spring that is attached at one end to the frame and at the other to the steering tie rod. The spring exerts no pressure when the wheels are straight forward. When they are turned, the unit applies pressure to return to center. And it dampens rapid steering movement.

The unit is a simple bolt-on installation, after which a bit of tweaking may be necessary if the stabilizer spring pulls steering slightly to the right or left while driving straight ahead. Adjusting the tie rod bracket to achieve the neutral position is easy, using a  $\frac{1}{16}$ -inch socket wrench.

One of the most noticeable effects of the Reflex unit on the Itasca occurred during strong, constant crosswinds, which we encountered on several occasions, including an interstate highway trek westward across Texas. The effort needed to constantly steer into the wind was noticeably reduced, along with driver fatigue. The unit also helped quell the effects of gusting crosswinds and pavement ruts by reducing the frequency and amount of steering correction.

The suggested retail prices for the anti-sway bars are \$678 front and \$918 rear. The Reflex Steering Stabilizer carries a price of \$384 for the unit plus \$118 for a mounting bracket. ♦

### FOR MORE INFORMATION

ROADMASTER INC.  
800-669-9690,  
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