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## Part 1. Overview of the Minivan Conversion

### *The Minivan*

RV's are great for camping and for the enjoyment of the great outdoors. But they are very expensive to buy and operate. The minivan is a great alternative: there is plenty of room for people and camping gear and the gas mileage is two or three times better than that of the large RV's. Moreover, it is much more practical as a second car.

As shown in the pictures below, bikes can be transported easily to the biking trails and a 10-foot kayak fits inside with room to spare. The sturdy roof rack can also be used to carry a large canoe or camping equipment. The average late model minivan has 10 cubic feet more room than a Chevrolet Suburban SUV.



For those who wish to own a simple inexpensive camper, the modifications described in the book transform the minivan into a great “minicamper RV”. In addition to transporting bikes and kayaks, it provides sleeping accommodations for two at campgrounds or at music festivals. And, a full complement of camping gear makes it perfect for picnics and tailgate parties.

### *The Mini Camper RV Conversion*

I bought the 8 passenger configuration of the Toyota Sienna because my plan was to remove the third row seats to make room for the sleeping area and the efficient storage of camping equipment. But, after these modifications were made, I still wanted to have a comfortable vehicle seating 5 adults for every day use as my second car.

The 8 passenger Sienna has the most usable space behind the second-row seats according to “Consumer’s Report” with the Honda Odyssey and the Nissan Quest very close seconds. Other makes and model years of minivans can also be converted into excellent “minicamper RV’s”. The pros and cons of various new and used models are discussed in the book. The most important dimensions to be considered are the size of the well for the coolers and the storage of the camping gear and the distance to the rear of the second row seats for the sleeping area.

## *Sleeping Arrangements*

The Sienna (and other minivans with similar dimensions), has 5 feet of flat space in back of the second row seats and 6 feet 4 inches when the second row seats are folded forward. By preserving this area while modifying the large well for storage, it was possible to provide a sleeping area the size of double bed (50 by 76 inches) as seen in the picture below.

I added a carpet with underlayment in addition to the standard carpeting and underlayment which comes with the van. These four layers of padding provide a firm but comfortable sleeping surface. However, for an older adult like me, a self-inflating camping pad provides much greater sleeping comfort. Two “Eddie Bauer” 2 ½ inch thick, self inflating sleeping pads, 25 x 76 inches, or two “Field and Stream” 25 x 72 inch pads (shown in the photo) fit perfectly in this space.



The coolers and the cover over the organizer have no padding but, since this is where the head rests, large, comfortable pillows provide adequate support.

## *Storage for food, Camping and Picnic Gear*



Normally, the third row seats fold into the rear well. By removing these seats and covering the top of the well with a plywood lid, a large amount of storage (8 cubic feet) is made available while 5 people can still sit comfortably in the van. As shown in the picture, two coolers with flat tops (26 quart size) fit perfectly into the back part of the well. One cooler functions as a refrigerator while the other is used to store baked and packaged goods.

The space between the two coolers is used to store and organize the plates, cups and utensils. This area can store the following: 25 10-oz hot cups and 40 8-oz cold cups, 25 10 inch paper plates, 25 3.5 inch paper bowls, and, at least 50 plastic forks, spoons and knives.

There is also room for the salt and pepper shakers and packaged condiments such as mustard and ketchup as well as other items such as lighters, openers and utility knives that are used often and must be kept handy. Below the organizer, there is additional space to store paper plates and bowls.

In front of the coolers and organizer, there is a deep, one by four foot storage area for camping and picnicking gear. In this space, the following can be stored: a two burner Coleman propane stove, a custom 22 inch by 24 inch folding table made according to the plans, 2 folding seats, pots and pans and an electric lantern. Canned and packaged goods can also be stored in this space.

Over this storage area, a hinged plywood cover provides the support needed for the sleeping area.

### *Construction Overview of the Storage Area*



One of the goals of this project was to install the storage area framing and the lid over the well and attach them to the car without drilling holes or modifying the Sienna minivan in any way.

The back seats were removed by taking out the 4 bolts that attach the seat legs to the bottom of the well. By replacing these 4 bolts with longer ones, a 3/8 inch plywood base approximately one by four feet was secured to the bottom of the well to the anchor nuts that were used for the seats.

The partitions which separate the space in the well are attached to this base. They hold the coolers in place and support the lid and the utensil organizer. The partitions are cut from a 12 foot piece of 1 by 4 as shown in the picture. The lid is supported by four posts about 10 inches long

The lid is a piece of 3/8 inch plywood approximately one by four feet. It is attached to 3 of the 4 seat locks with custom hinges. These hinges squeeze the seat locks so that, when the lid is opened, it remains in that position. As the picture shows, the hinges are made of 2 pieces of 1/8 inch aluminum.

Detailed plans and full size patterns to cut the plywood as well as a bill of materials are provided in the book to expedite the construction job and minimize waste.



The plans also show the utensil organizer's construction: the sides are built of 3/8 inch plywood while the dividers are built of 1/4 inch plywood. They are all glued together and to the sides. The exact configuration is, of course, the designer's choice.

Not shown is a 10 by 13 inch, 3/8 inch plywood cover over the utensil area which is attached to the back of the lid with two hinges to provide a head rest.

## *More Camping Goodies*

In the storage area to the left of the well (as shown in the picture below), there is room for about 2 gallons of water in containers of various sizes. Above the water storage, a paper towel dispenser is installed. This is an item which is always very useful at picnics

A hook for the camping lantern was installed in the overhead seat belt storage area. The standard grocery bags hooks are used to hang rubbish bags or can be used to support a wide shelf



A folding camping table described in the plans (see the pictures above and below) was designed to fit in the storage area. In its open position it measures 22 by 24 inches. The 26 inch height is about right to match the height of the folding chairs. The stubs to which the legs attach are 4 inches long. They serve two purposes: the table legs attach to them and the 2 burner Coleman propane stove fits safely under the table in the storage area in front of the cooler while allowing heavier objects such as the folding chairs to be stored on top. (See the picture above).



There are many 12 volt devices that can plug into the 12 volt outlets above the paper towel dispenser and in the front console. I use three of these: an electric bicycle tire pump, a spot light and a two cup electric beverage heater which heats water for coffee, tea or soup.

## *Summing Up*

So there you have it: a fully equipped minivan camper RV that sleeps two in comfort and can also be used for picnics or tailgate parties for about \$132 including the coolers and the carpeting. If more room is needed for camping there are several types of tents and awnings that attach to the open liftgate.

The camping conversion was made without modification to the vehicle. The weight of the additional carpet, underlayment, coolers, partitioning, folding table and chairs, camp stove and the many accessories is about 75 pounds while the weight of the 2 seats that were removed is 94 pounds. The net weight is decreased by about 20 pounds, so there is no negative effect to the mileage which is very good: better than 25 mpg on a trip.

The users of this versatile, multi-purpose fun machine are many. For the younger set, their main interest might be attending music festivals. For energetic oldsters it might be to travel on a budget while stopping at campgrounds or motels. For everyone, this mini-camper is an excellent second car, a roomy transporter of bikes and small water crafts and it is fully equipped for picnics, tailgating and camping. Whenever the great outdoors beckons, this minicamper RV is ready for action.

Part 2 provides a short history of the minivan starting with the 1950 VW microbus “Hippie Mobile” and the first Chrysler Plymouth Minivan in 1984. Charts are presented showing the many generations of minivans built in the last 25 years as well as the important characteristics of today’s eight competing models.

For best results, buy this book before choosing a vehicle.

Visit <http://www.myminicamper.com/> for more details.

Buy the book now on [Amazon.com](http://Amazon.com).