

# Side Hacked

by Victor Wanchena

I've really wanted a sidecar for a very long time. The first time I drove one I was enthralled. It became a bit of an obsession after that. I looked at countless different models and setups. New or used, vintage or modern, rats and luxury models I searched for what would be my ideal rig. The Internet was, as always, very helpful; there are many great websites with volumes of information for beginners. The net also fueled my desire: like a pervert on a porn site I lingered on the 'net, taking it all in. After a couple of half-hearted attempts at buying used rigs of questionable repair I decided to get serious.

I found many practical reasons for wanting a sidecar rig. The first was it would mean an unending riding season. Yes, it gets cold in the winter but the reality is it no different than snowmobiling. As T.E. Lawrence once said, "It's not the cold, it's not minding it." A good positive attitude and enjoyment of a little adversity can do wonders for one's motivation on a 10° below morning. The increased utility of a sidecar means that your errands now become a riding opportunity. My first use of all that cargo capacity was hauling 6 bags of mulch home from the nursery and a 2 x 4 from the lumberyard. Too fun. A sidecar rig also enjoys excellent stability in rough terrain. I really enjoy poking around back county roads, especially the dirt byways that lead to nowhere. This is the kind of territory where sidecars really shine. For those that like dogs, sidecars have proven to be the ultimate open car window for your four-legged friend.

Sidecars are often misunderstood by the motorcycling masses. The first misconception is that they are unwieldy beasts to drive and are ill-handling at best. The reality is a well set up rig will handle well and reward a skilled rider with much enjoyment. Another misconception is that sidecars are only for the elderly or vintage bike enthusiasts. A pretty wide range of riders enjoys sidecars. From wickedly fast Hayabusa rigs to a traditional 1/2 BMW with a Steib car from the 50s, there is something for you. Sidecar racing is not popular in the US but enjoys great popularity in Europe and Asia.

There is as wide a range of sidecar styles as there are motorcycles to tug them around. They are several basic categories of sidecars: flexible and rigid mount, steel body and fiberglass, and the open and enclosed bodies. Prices vary greatly, but a basic open body sidecar can be yours for 2-3 thousand dollars, not including the mounting hardware. The flex-mount systems are interesting as they allow you to corner the motorcycle in the normal fashion by leaning. I have never ridden one but have been told they are great fun. Their drawback is the expense. Most run over 10 grand, not including the motorcycle. The rigid frame sidecar is more traditional. Its biggest drawback is the change in handling characteristics of the motorcycle. Your choice of body style and construction is really dependant on your budget and taste. An enclosed fiberglass sidecar will cost between \$5,000-8,000 depending on paint and options.

Buying a complete rig is an option. If assembled correctly and maintained by the previous owner they can be a good value, but buyer beware. A poorly setup and maintained sidecar is a dangerous thing. Not all deals are as good as they seem. One attempt I made at buying a used rig involved an ad of the Internet, several phone calls and some photos. The result was I drove to Oklahoma intent on buying but left empty handed because the condition of the rig was rather lacking to say the least.

Some of the basic explanation of sidecar geometry is in order here. Here in the US and other countries where we drive on the right the sidecar is mounted on the right side of the motorcycle. Because the sidecar is mounted to the side of the drive wheel of the motorcycle, this wheel is often called the "pusher." The sidecar rig turns under throttle inputs (yaw) because of this asymmetrical power delivery. In English this means as you roll on the throttle the rig pulls to the right because of the weight of the sidecar. As you roll off the throttle the rig pulls to the left because the sidecar wants to continue in motion due to its inertia. As you turn to the right, the sidecar has a tendency to want to lift. When the sidecar becomes airborne it is known as "flying the chair". As you corner to the left, the rig will want to lift the pusher wheel. This is called "nosing".

These handling characteristics are affected by three basic adjustments on the sidecar. A poorly setup rig is a handful to drive and very unstable. A well setup machine will track straight and have neutral steering. First, there is the lean-out. This is the amount that the

motorcycle leans away from the sidecar. It is measured in degrees and conventional wisdom is to set it at 1-3 degrees. Then there is toe-in. This is measured in inches and is measured by placing a straight edge along the motorcycle tires and the sidecar tire. The distance between the straight edges is measured. The difference in the distances front and rear is the toe-in. A normal toe-in measurement would be 1/2 of an inch. The last is called the axle lead. This is the distance that the sidecar axle is forward of the motorcycle's rear axle. This setting is less -adjustable than the others and is often already set if you use or buy model-specific mounts. It usually is set when you first mount the sidecar and would not normally be changed after set. Common axle lead would be 6-9 inches. All of these adjustments are a compromise. Too far any one direction causes negative reactions elsewhere.

The front end of a sidecar rig is subjected to very high loads. The geometry of the front end of a modern motorcycle is such that steering effort is usually very high. Standard forks will work in sidecar applications, but you will be at a disadvantage. Even if the forks are robust enough for sidecar duty the steering effort will be quite large and you will need a good steering damper to combat any headshake. Most sidecar drivers prefer a leading-link or "Earles" front end. The leading-link front end, which has been abandoned by almost all modern motorcycles, has many advantages when used on a sidecar rig. It is very strong and able to take great side loads. Also it can be set to have less trail than a conventional set of forks. Less Trail equals much less steering effort. There are also various adapters that change the trail of conventional forks. These include special triple clamps and redesigned fork sliders. They work to a lesser degree than the leading-link but are an improvement over the stock forks.

So, where to start? Currently, there is only one major motorcycle manufacturer that builds factory set up sidecar rigs, IMZ, better known as Ural. Harley-Davidson does offer a sidecar in their accessory catalog, but it is not a factory delivered option. You must buy the car and your dealer will set it up. BMW, who once delivered bikes with sidecar-specific items like mounting points and front ends with adjustable geometry, no longer supports sidecar installation. Owners are left to fend for themselves. There isn't any help from the Japanese marques either. I am a fan of BMW machines and after weighing several factors I decided on an older BMW R100/7. The reasons were many, but here are the key ones. The older R series BMWs, also known as airheads, are well supported by the aftermarket in the way of sidecar parts and accessories. High quality mounts specifically for the R100/7 were available at a reasonable price. The bike itself is a sturdy design, able to withstand the increased loads put on the frame and drive train that the sidecar causes. They continue to be a popular bike for sidecar use which means there is some information and support for the rider who goes this route.

The sidecar was a whole other debate. After shopping around I decided on a new Ural sidecar. Used sidecars can be tough to come across and their prices are not always a bargain. Available for a reasonable price, the all-steel Ural car is incredibly stout in design and construction. A copy of an old Steib design, the Russian-made Ural sidecar is a perfect match for an older bike or classic design motorcycle. It has an open body with a large spacious trunk and I could easily obtain BMW R100/7-specific mounts from a sidecar specialty shop.

With the plan set I began to assemble the pieces to my sidecar puzzle. I quickly found a friend with a 1978 R100S that was not so pretty that I would be afraid to run it in the winter and it was priced to sell. The S model came with only a small café style faring so wind protec-

tion would have to be addressed, but otherwise it was perfect. I drug it home and began to assess what would be needed to get the bike road worthy again. Well as the adage goes, "There are good bikes and there are cheap bikes, but there are no good cheap bikes." As I delved into the R100S I found a chewed-up wiring harness that had been modified by a less-than-competent owner at some point. After chasing electrical gremlins for a couple of weeks I actually got the bike started. This led to a mountain of carb work, which included replacing missing jets and generally

un-screwing up the bike. After a couple of months of work on the R100S I stopped and took stock of the situation. I made a list of every possible thing that needed to be corrected or upgraded before attaching the sidecar. It was a long list. The cost of all these items was going to make my bargain rig rather expensive. Just the basic mechanical items like shocks and springs, fixing leaks, etc. was going to run \$2000. The mounts, steering damper and trail reducing fork assembly and lower geared

final drive would run another \$1800 and the sidecar itself was going to be \$2500. This did not include any cosmetics or any of the incidentals that always crop up in a project like this.

I took a step back and really assessed what I was doing. After spending all this money, what would I have? A 25 year-old motorcycle not designed to tug a sidecar. The money was one thing, but time was another factor. I was trying to do as much of the work myself to keep the cost low but time is always a premium. I doubted that I could accomplish everything in time to put on test miles before the snow started to fly. So what now? All the work and effort on the R100S had only fanned the flames of sidecar ownership in me. I had two options. I could look for a reasonably priced used rig or buy a new Ural. I began shopping the Internet for ready-to-ride complete rigs. I found a few but most were either too pricey or not what I was looking for. The really nice rigs from Europe like EML or Armec are well-made, but you pay for it and they are too nice to beat up in the winter. The opposite side of the spectrum were the rat rigs. Crappy old Euro or Japanese bikes with equally beat up sidecars attached. I don't worry about paint scratches but the mechanical state of these bikes made me think about the R100S again.

So that left me with the Ural. I was very familiar with the Ural brand, having tested them for *MMM* on two occasions in the past. I had observed them develop a following in the US market and watched their quality and reliability improve. The Ural did fit most of my needs. First, it is priced right. For the price of good used machine you can buy a brand new Ural, \$8,195 - 10,195. Used Urals can be found for \$3,000 - \$7,000. For this price you get a purpose-built sidecar rig with features that are not found on many of the high buck rigs like a true reverse gear.

Easy and forgiving to pilot, the Ural is an excellent first sidecar rig. They are not tremendously powerful motorcycles. The current 750 is rated for only 40 horsepower, which is a very good thing for a sidecar novice. The rugged purpose-built frame and running gear is of good quality but the low price means I wouldn't worry too much about running it in harsh winter conditions. After pouring over the Ural sales literature I had to pick a winner from the five models they offer. Three of the models have an Earles front-end which was very important to me. Of the three I choose the Tourist model. It is a single wheel drive, as opposed to the 2 wheel-drive Patrol and Gear-Up, which was fine for the type of riding I would be doing. The 2 wheel-drive system is great when needed but does add to the weight, maintenance and cost of the rig.

Available in any color you want as long as its black, the Tourist is a no-nonsense machine. Easily serviceable by anyone with basic mechanical skills, the Tourist is unencumbered by any high-tech wizardry. It is cheap to buy and maintain.

After spending the summer getting acquainted with the Tourist I can only say, why I did I wait so long? The fun has been unending from romantic evening cruises with the better half to the utility of hauling six bags of rock salt home from the hardware store and when I figure in the fun per dollars spent it was an incredible deal.

MMM



photo by Gus Breiland

Who knew three wheels could be so fun?



photo by Gus Breiland

An example of sidecar attachment points.