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Ural Patrol

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IMZ URAL PATROL

Motorcycle/sidecar Combination



by David L. Hough

FOR MOST RIDERS, the term “motorcycle” means a two-wheeler. But while only a small minority of motorcyclists have any experience with them, motorcycles equipped with sidecars are still “motorcycles” as defined by law in just about every state. So, we decided it was time to retest the Russian-built sidecar rig, the Ural “Patrol.”

If you’re wondering why anyone would be interested in a Russian-made motorcycle, it’s because the Ural is the only street-legal sidecar motorcycle available for sale in this country. Yes, we know there are various combinations being put together by clever individuals, and we know that Harley-Davidson sells both motorcycles and sidecars separately. But the Ural is the only one you can buy as a complete 3-wheeled motorcycle/sidecar combination, approved by the DOT and EPA.

We’ve followed the Ural saga with considerable interest. Frankly, the Urals of yesteryear verged on being serious rigs, but were always plagued by too many niggling problems. We’d heard the 2005 Urals had been improved considerably, and we were very interested to see whether or not they had finally become durable go-anywhere machines.

At first glance, the quality control of the 2005 version is much improved over what we had observed just five years ago. The new engine and transmission castings are nicely finished, the chrome plating is excellent, the wheel spokes are straight and true,

and the paint quality is quite good. And there have been some impressive upgrades: The front wheel now carries an impressive Brembo four-piston caliper clamping on a massive 300mm disc, and the handlebar switch pods are neat and functional. Looking a little closer, excellent Keihin carburetors are fitted, a serious electric starter is nicely integrated into the rear of the engine case, and an automotive-style Denso 35-Amp external alternator supplies the juice.

Ural has several other sidecar variations, including the “Gear Up,” basically a Patrol in military garb, with spare fuel container, spotlight, carrying rack, and a camouflage paint job, the “Tourist,” a Patrol without two-wheel drive, the “Troyka,” a deluxe version of the Tourist, and the “Retro,” a pinstriped Tourist. There are also two solo machines.

Let’s Go For A Ride

Okay, the improvements look good, but how does it all work? Starting is quick and painless; the fuel tank now has a vacuum-operated valve, so you don’t need to turn it on or off; the carbs have independent enrichers, so if it’s cold you need to reach down on each side and pull the knobs and the starter cranks the engine whether it’s in neutral or in gear. Simply turn on the main switch, flip the handlebar kill switch to “run,” squeeze the clutch, and thumb the starter. The engine starts easily, although it does take a few moments to warm up before the enrichers can be closed.

Ease out the clutch and the 745cc engine pulls cleanly with very adequate torque. The action of the two-plate dry clutch is light and predictable and the engine is surprisingly smooth—quiet, and well-balanced enough that there is practically no mirror vibration or tingling through the grips or pegs. In fact, it feels very similar to a 1970-vintage BMW “airhead” motor.

However, when it’s time to shift, the honeymoon is over. The four-speed transmission requires considerable toe effort, and shifts with a solid crunch regardless of technique. You spin up the engine, then wince as you squeeze the clutch and crash into the next gear. We tried all the usual techniques to smooth out shifting, but nothing seemed to work—you just have to live with it.

Also, the gearbox ratios are a bit on the tall side, especially 4th gear. The 750 engine has lots of torque for a 750cc opposed twin (38 lb./ft. @ 4000 rpm according to IMZ), but needs to be revved up to get enough power to maintain highway speed, and we found 4th gear just too tall for most situations. At a comfortable 55 to 60 mph, fourth would barely hold speed on the level. Typically, we just left it in third, which seemed to be fine for anything from 30 mph to 60 mph. To be fair, this machine was almost new, and it should run better after a few thousand miles of break-in.

Handling

Steering effort is an important consideration with rigid sidecar rigs because they don’t lean into turns. Steering trail (“caster”) is much shorter on the Ural’s leading link fork than for a typical two-wheeler. But steering effort still required more muscle than we’d prefer. For a novice sidecar pilot, relatively high steering effort encourages slower speed in corners—which is probably a safety advantage. But we think experienced hackers would prefer even shorter trail for easier steering.

The Patrol (and “Gear Up”) models both ride on 19” wheels for better offroad clearance, but that also makes them tall, and therefore less roll-resistant in corners. Normally, we would hang off in aggressive turns, but the Patrol comes with dual bucket-style saddles. A bench-style saddle is an option for those who like to corner more aggressively.

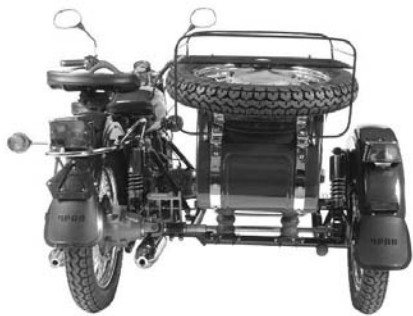
Of course, on-road manners must suffer somewhat to provide good off-road performance. On slick or unpaved surfaces, speeds are slower, and here’s where the Patrol really shines. You can putter down a forest road, splash through mudholes, or climb steep gravel sections without a lot of fuss. And, if you’re losing too much traction on the rear wheel, just reach down and engage the sidecar drive. Both wheels will

now churn away at the same speed until you extricate yourself, then it's back to one-wheel drive again. We think it's a much better system than having a differential that allows either wheel to slip. And there's no need to have two-wheel drive for normal pavement.

Heading downhill into a dead-end is no problem, either. If you need to back up, just shift to neutral and pop the reverse lever down by your right heel, ease out the clutch, and the rig backs up with as much power as you need, for as long as you want. Reverse is a very low 4.36 ratio, compared to 3.6 for first gear. You can back up in two-wheel drive, too.

The Sidecar

The sidecar itself is heavy-gauge steel, with a classic design that's very practical. We know from personal experience that you can carry a heavy passenger or a huge load of groceries or camping gear inside. Plus, there's a cutaway at the cockpit side for easier passenger ingress/egress, and a huge (3-cu. ft.) trunk at the back, accessed by a hinged lid.



The heavy tubular-steel sidecar chassis is supported on a single-sided trailing swing arm and monoshock, and the rear of the sidecar body is supported on huge rubber accordion "springs." Suspension is very adequate for additional loads, and extra weight doesn't seem to bog it down. In fact, with a load in the sidecar, right turns are much more controllable since there is less concern about the car flying.

The Patrol has a pillion saddle over the rear fender, to enable carrying a passenger behind the driver as well as in the sidecar. However, novice sidecar drivers should be warned to avoid carrying an adult passenger on the rear of the bike unless there is an equally heavy passenger in the sidecar. My vote would be to remove the pillion perch until later in the learning curve.

Brakes

Braking is much improved with the Brembo caliper up front. More importantly for sidecar use, the caliper is now pivoted off the front axle, with a thrust link to the

right down tube, to provide a neutral attitude when braking. Even during an aggressive stop, the front end doesn't squat as with the typical telescopic fork. Nor does it rise, as when the brake is mounted on the leading link. This results in better traction control during braking, since there is no hop when the tire momentarily loses traction.

The drum brakes on rear and sidecar wheels are adequate for their jobs, since you don't need as much braking power on those wheels. Both rear and sidecar brakes are actuated by rods, with the sidecar brake connected mechanically through a lateral shaft to the rear brake pedal. Since both rear and sidecar brakes are independently adjustable, they can be balanced for smooth straight-line stops. And we know those Russian brake shoes have thick linings that last "forever."

We'd rate the brakes excellent, except for a slight surge during hard braking on the front, perhaps the result of the disc being fixed rigidly on the front hub. But, considering the gritty environment of off-pavement excursions, the fixed disc is an advantage, since it has no small parts to wear out prematurely. With the Ural, long-term durability is more important than high-zoot brakes.

Wheels

All three wheels are chromed-steel rims attached to aluminum hubs with very stout (4.5mm) spokes. Ural wheels have always been strong, but their latest are very impressive, with clean hub castings, smooth, well-dimpled rims, and nicely plated straight-pull spokes with heavy nipples. Ural wheels are also unusual in having threaded collars to allow adjusting bearing clearances without shimmying.

The rear wheel and sidecar wheel are interchangeable with the spare wheel carried on the sidecar trunk lid. When's the last time you had a spare tire on your motorcycle?

The Fun Quotient

We used the Ural Patrol to run errands for a couple of weeks, and it drew a lot of attention. We'd get thumbs up while riding, and conversation every time we stopped. Sidecar passengers commented on how quiet the engine was, too. All in all, having a midsize sidecar outfit to run around on provides a lot of smiles.

What we really like about a rugged dual-sport sidecar outfit is being able to slip and slide down grotty unpaved roads without fear of falling, or concern about scratching any shiny paint. And, on those days when there was frost on the ground, we could still take a spin when properly bundled up—you've gotta love it. 🍕

URAL HISTORY

Ural motorcycles have been around since 1939, when the USSR Defense Ministry decided to "reverse engineer" the BMW R71, and called it the "M-72." By the end of WWII, nearly 10,000 Ural motorcycles had been delivered to the military, most with rugged steel sidecars.

After the war, Russians used sidecar Urals for basic transportation because they were cheap, tough, simple, and capable of managing rough roads through mud or snow. Since WWII, approximately 3 million have been produced by the factory in Irbit, a small trading town on the fringes of the Siberian steppes in the Ural Mountains.

With the Soviet Union's collapse in 1992, Ural began selling to other parts of the world, notably North America. For a number of years, Urals were imported and distributed in North America by Ural America (a subsidiary of Classic Motorcycles and Sidecars), in Preston, WA. The American importers understood quite well that those early Urals were very crude, and improvements were suggested as quickly as the Russian managers in Irbit could be convinced of the need. Specifically, the machines drastically needed more power, greater reliability, and features such as electric start and efficient carburetors.

Meanwhile, in 1998, back in Russia, the Ural factory was privatized about the same time that Russian citizens were deciding in favor of automobiles for basic transportation. Sales of domestic Urals slumped, and production dwindled from 132,000 sidecar motorcycles in 1994, to just 1700 by 2000. With the factory in a steep decline, Classic Motorcycles decided to get out of the sidecar business.

With wolves circling the gates, three Russian entrepreneurs purchased Ural, with the intention of building better motorcycles that could compete on the world market. The communist-style management was eliminated, 60% of the workforce laid off, production reorganized to be more efficient, and global distribution simplified. The three new IMZ partners assigned themselves to three separate global markets. In North America, Ilya Khait became the president of "Irbit MotorWorks of America, Inc.," in Redmond, WA, just a few miles from where Ural America used to do business.

Today, Irbit MotorWorks has 50 full service Ural dealers nationwide, including "service centers" that stock parts and repair components. Many of the former Ural America employees are now Irbit employees. They have a website at www.ural.com. And Irbit seems committed to producing, marketing, and supporting sidecar motorcycles they like to call "sport utility motorcycles."



Left: The Ural's 745cc boxer twin is based on the BMW R71 and was first built during WWII. Recently upgraded with a Denso alternator, Keihin carbs and better castings, its reliability should be greatly improved. Power is still a paltry 40 hp (claimed), so don't buy one for performance.

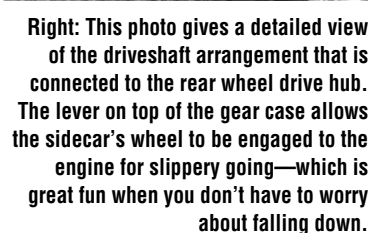
Right: The Ural's seating looks almost antique, but those old tractor-style seats were some of the best anatomically. The pillion seat should only be occupied when the sidecar carries a passenger. Sidecars don't countersteer like a bike, so proper driving takes some getting used to.



Below: Leading link forks are ideal for the job, as they resist dive. The excellent Brembo caliper grips a heavily ventilated disc to shed off-road dirt.



Left: The sidecar has a tonneau cover for the chair, a large 3-cubic foot trunk at the rear, and a full-sized spare tire is attached to its lid.



Right: This photo gives a detailed view of the driveshaft arrangement that is connected to the rear wheel drive hub. The lever on top of the gear case allows the sidecar's wheel to be engaged to the engine for slippery going—which is great fun when you don't have to worry about falling down.



TESTERS' LOG

The big question with Urals has always been reliability. When people would ask, "What do you think about the Ural?" until now, I had to waffle and suggest alternatives, say a BMW R100 with a Ural sidecar attached. I didn't want anyone to get the wrong impression, that the Ural was equivalent to a Russian-made BMW. I've occasionally compared driving an older Ural outfit to driving a 1937 Ford with mechanical brakes. It would be a novelty, but not something you'd want to take cross-country on the superslab.

Even IMZ admits the original 650cc Ural engine was underpowered and overworked. Transmission bearing failures were common. The old generator could barely keep the battery charged. The castings seeped oil. Kick starting was always a chore involving multiple kicks and fiddling with carbs and throttle settings. And the old drum front brake was pitiful.

So, is the new 2005 Ural improved enough to be considered a serious sidecar rig? I think it is. I'm cautiously optimistic that it's now reliable. The engine has more power (but still not enough), and it runs better. That big 35 amp automotive alternator keeps

the battery up, no question. And that means the electric starter cranks the engine every time. Okay, the gearbox is still a little clunky, but it's got new baffles to keep all the bearings lubricated. I've heard reports of Urals going 100,000 miles with nothing other than routine maintenance.

However, let's remember that the Patrol is still underpowered for today's highway traffic. 4th gear is so tall that it won't sustain 55-60 mph except on level ground without a headwind. Third is better, and will pull hills at 65 mph, but tackling 70-80 mph traffic isn't fun, and working the machine that hard is asking for trouble. What that means is that the Ural Patrol is really best for pattering down the backroads at 45 or 50 mph, and exploring unpaved roads.

I suggest we think of the Patrol as a street legal dual sport sidecar rig that's oriented about 60% off-road, and 40% on-road. Pick your roads, and it should do fine. Or, consider trailer-ing the outfit to a far-away place where you can offload it and go exploring.

—David Hough

2005 Ural Sidecar Combination



SPECIFICATIONS AND PERFORMANCE DATA

ENGINE

Type:Air-cooled, opposed twin
 Valvetrain:2-valve OHV with screw
 and locknut valve adjustment
 Size:745cc
 Bore/stroke:78.0mm x 78.0mm
 Comp. ratio:8.6:1
 Carburetion:.....Dual Keihin L22 AA
 32mm CVK
 Claimed output:40hp @ 5600 rpm
 38.5 lb./ft. @ 4000 rpm
 Exhaust:.....2-2

DRIVE TRAIN

Transmission:4-speed + reverse
 Final drive:Shaft w/ selectable two
 wheel drive to sidecar wheel
 RPM @ 65* mph/redlineNot tested

DIMENSIONS

Wheelbase:58.0"
 Rake/trail32.0°/2.56"
 Ground clearance:mc/sc 8.4"/9.0"
 Seat height:33.0"
 GVWR:1344 lbs.
 Wet weight (est.):746 lbs.
 Carrying capacity:598 lbs.

SUSPENSION

Front:Leading link on 38mm
 downtubes, 2.5" travel
 Rear:Trailing link, 2.0" travel
 Sidecar:Single trailing link,
 monoshock, 2.0" travel

BRAKES

Front:Single 300mm fixed rotor,
 w/Brembo 4-piston, dbl-action caliper
 Rear:.....Single 200mm drum,
 mechanical actuation
 Sidecar:.....200mm drum,
 mechanical link from rear pedal

TIRES & WHEELS

All:4.00" x 19" tube-type on
 2.75" x 19" wire-spoked wheels

ELECTRICS

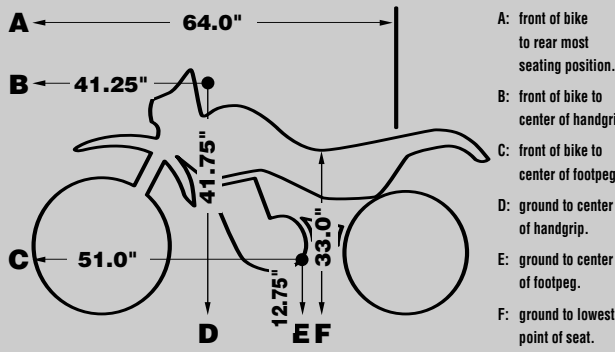
Battery:12V, ??AH
 Ignition:IMZ Electronic
 Generator:External 35A Denso w/
 internal regulator
 Headlight: 7" sealed beam, 65W/55W

FUEL

Tank capacity:5.0 gal.
 Grade:91 octane unleaded
 High/low/avg. mpg:35.7/25.1/31.3



ERGONOMICS TEMPLATE



MISCELLANEOUS

Instruments:Analog miles/km
 speedometer, km odometer,
 single tripmeter
 Indicators: Battery discharge, neutral,
 reverse, turnsignals, high beam
 MSRP:\$9695
 Routine service interval:.....1550 mi.
 Valve adj. interval:6210 mi.
 Warranty:.....24 mo., unlimited miles.
 Color:Woodland Green

DYNAMOMETER DATA

Low end ●●○○○
 Mid-range ●●○○○
 Top end ●○○○○

The Ural's 745cc boxer engine starts easily, warms slowly, and once warm pulls smoothly and quietly. The torque curve is flat, but it runs out of steam at higher revs, although it remains smooth running. It feels similar to a tractor motor.

NOTE: Dynamometer data for the Ural is not available as the machine would not fit on the dyno.

And, as testing took place in Washington State, near Ural headquarters in the US, we were unable to performance test the machine in MCN's normal fashion, so the performance data is also not supplied.

PERFORMANCE

Measured top speedn/a
 0-1/4 milen/a
 @ n/a
 0-60 mphn/a
 0-100 mphn/a
 60-0 mphn/a
 Power to Weight Ration/a
 Speed @ 65 mph indicatedn/a

M/C RATING SYSTEM



Motorcycle/Sidecar Combination

Engine ●●○○○
 Transmission ●○○○○
 Suspension ●●○○○
 Brakes ●●●○○
 Handling ●●●○○
 Styling ●●○○○
 Riding Impression ●●●○○
 Instruments/Controls ●●●○○
 Attention to Detail ●●●○○
 Value ●●●○○
 OVERALL RATING ●●○○○

TEST NOTES

PICKS

- Leading link front end with with big Brembo brake
- Heavy duty sidecar with huge trunk
- A spare tire

PANS

- Industrial-strength shifting
- 4th gear too tall for 19" wheels
- Wimpy power

STANDARD MAINTENANCE

Item	Time	Parts	Labor
Oil & Filter	0.4	\$2.94 +\$8	\$24.00
Air Filter	0.6	\$45.50	\$36.00
Valve Adjust	0.5		\$30.00
Battery Access	0.2	MF	\$12.00
Final Drive	0.1		\$6.00
R/R Rear Whl.	0.2		\$12.00
Change Plugs	0.1	\$6.00	\$6.00
Synch Carbs	0.4		\$24.00
Totals	2.5	\$62.44	\$150.00