

RTV RTV RTV

By Stuart Marshall



Robert Mandry's latest brainchild is no threat to the Land Rover, Jeep or any other conventional four-wheel drive. It simply takes over when they can go no further.

The RTV (it stands for Rough Terrain Vehicle) is only good for 30 mph on the road, though with the necessary bits and pieces it is street legal. What it does superbly well is to get in and out of places that are denied to the Land Rover type vehicle because of lack of flotation, not enough agility or both. It was invented to meet a specific need; to provide mobility for shooting parties who until now have had to resort to a multi-wheeled machine like an Argocat or a light tracklaying vehicle such as a Sno-cat.

These very low ground pressure vehicles put less weight on each square inch of terrain than the sole of a man's shoe — very much less, in fact. On peat and similar surfaces that won't support a normal 4x4, the Argocat and Sno-Cat keep going because they float on the top rather than cut in and belly. Good though they are, they have snags. The Argocat is very small and has no suspension, which makes more than a mile or two in one a bit of an endurance test. Steering by differential braking is fine when you know how but it does take a lot of getting used to. The Sno-Cat's tracks will take it over very soft surfaces but if you hit a rock, it's easy to knock a track off. The Argocat is amphibious and will cross still water slowly under the paddling action of its boldly patterned tyres. But, as I know to my cost, it is not always easy to make it clamber out of the water and on to dry land unless a ramp — natural or artificial — is at hand.

The RTV won't float but it will do almost anything else on its four Goodyear Terra-Tyres, which are inflated to only three pounds per square inch. It has permanent four-wheel drive, all-independent suspension by rubber cones and links, normal steering and is as effortless to drive as a Mini. This isn't surprising, because virtually all the mechanical components are from BL's seemingly immortal baby car.

The wheels rise and fall vertically and cushion the ride reasonably well on farm tracks. But the secret of the RTV's cross-country capability is articulation. Not just axle articulation — the whole machine twists about its own longitudinal axis, like two pieces of steak on a kebab skewer.

The effect is quite remarkable, as the pictures show. Whereas a normal 4x4's axles reach the limit of articulation when diagonally opposite wheels hit the bump stops, the RTV just keeps on twisting about its axis, spreading the load more equally among all four wheels and giving each of the Terra-Tyres its fair share of traction. About the only way the RTV sticks is if you try to cross a V-shaped gully and the angle is so steep that the nose hits the far bank while the front

wheels are still in the dip. The answer then is to select reverse on the AP automatic transmission and back it straight out again. The same tactic is used if you are driving through undergrowth and you meet a hidden stump. The wheels may ride over it. If the 13 in ground clearance is insufficient, the steel belly rides up on it. You come to a stop and back off.

Basis of the RTV is a square-section steel tube frame, not unlike that of the Scamp, though tougher and more elaborate. (What is the Scamp? A Mini-based runabout looking like a raw bone Moke. Robert Mandry has sold over 1,000 self-assembly kits). The 1,000 cc Mini engine and AP transmission live under the floor, driving the front wheels directly and the rear pair by means of a shaft running through a hefty bearing on which the two halves of the vehicle articulate. That is, incidentally, the reason why no manual gearbox version is offered. The linkage that could accommodate about 40 degrees of twists is just too complicated. The rear final drive unit is similar to a Triumph Herald's.

The RTV is being built in a picturesque Surrey farmstead at the rate of one a week, with plans to step up output substantially by the end of the year. I tried several development machines over the surrounding countryside. An evil-looking ditch with very steep approaches from both directions was no problem, though I wouldn't have rated my chances of negotiating it in a normal 4x4 very highly. It went up a 1-in-1 hump, and made a right-angle turn on the summit between a couple of trees. Next, I tried dropping it into a hole and then climbing out again in what was a mirror image of the previous obstacle. It all seemed too easy. Few of the people who buy the RTV will treat it like this. Their requirement is for a low ground pressure vehicle that will take up to eight people (14 with a trailer) over grouse moors and



RTV designer Robert Mandry (left) and his collaborator John Beach at the wheel of a prototype machine.

deep into deer forests. They will want it to ford moorland streams and bounce over boulders. Normal load capacity is 5 cwt, but a beefed-up set of suspension rubbers increases this to 8 cwt if required. Fuel consumption is modest - 30 mpg at 20 mph on the road and the 6½ gallon tank last for up to 10 hours when off-roading.

The basic vehicle - in essence a flat platform with a couple of car-type seats but no weather protection - is £6,900, plus VAT. Adding body panels, lights and instrumentation puts the price up to £8,900. You could use an RTV on the highway but, as it wouldn't normally be driven very far from base, it would probably be taxed as an agricultural vehicle. Robert Mandry thinks the RTV might possibly be used as a light tractor substitute. He used a prototype to haul a heavy roller on hilly land he was reseeded, with complete success. (His moment of triumph came when he was able to recover a Mercedes-Benz G-Wagon and trailer that had sunk to its axles in soft ground!)

Looking to the future, he hopes he might be able to power the RTV with a small diesel, knowing how farmers prefer to use tax-free "red" gasoil instead of petrol, even in a machine with a very modest thirst.

One of the great plus points at present is that practically every mechanical spare part is available from your friendly neighbourhood BL dealer at moderate prices. The square-tube chassis frame may be galvanised if you wish and the body is either of wood or aluminium. Either way, rust should not be a problem, even if the RTV has to live out most of the time.

Specification

Engine - BL A-series, 998 cc, 40 bhp.
Transmission - AP 4-speed automatic with manual over-ride facility. Final drive gears 4.2:1. Suspension - all-independent, rubber cones. Steering - rack and pinion. Brakes - discs front and rear, dual line hydraulics. Wheels and tyres - pressed steel discs fitted with Goodyear 31 x 15.5-15 4PR ultra low profile tubeless tyres, inflated to 3 lbs psi. Electrical system - 12 volt negative earth. Weight - 945 kg, carried 600 kg front axle, 345 kg rear axle. Length 2960 mm width 1700 mm, track 1300 mm. wheelbase 1640 mm, ground clearance (adjustable max.) 325 mm.

Manufacturer RTV 83 Ltd., Potters Farm Lodge, Queenswood Farm, Ottershaw, Surrey. Tel: 3252.

Stuart Marshall

RTV

Photos on right:

Getting in a twist . . . The RTV's massive articulation lets it climb safely where a conventional rigid chassis 4x4 might tip over.

Ultra low profile Terra-Tyres and the articulating chassis combine to make the RTV almost unstoppable.

