The marsh screw in full flight! Note the bullet-shaped ends to the pontoons and the attitude of the vehicle in the water under power.

The editor delves into the mystery that is the Chrysler 'marsh screw amphibian'

Walking on water is one of those tricks for which the military always seem to have been prepared to pay a large sum of money and, of all of the weird and wonderful devices that have been offered to the military for this purpose, two machines stand head and shoulders above the rest. The first is the 'Hover Rover', a fan-equipped Land Rover Series 2A that was intended to float above land or water in exactly the same way as a hovercraft. We'll leave that particular machine for another day because the clear winner in this category is the Chrysler 'marsh screw amphibian'...well, actually, perhaps we should declare it joint winner because it seems that both the Americans and the Russians tried this particular trick.

Dating from 1964, the '1/4-ton amphibious marsh screw' carrier (officially, the 'marsh screw amphibian', or MSA) eschewed anything as simple as conventional wheels, and was equipped with a pair of, roughly, three-foot diameter sealed steel cylinders running the full length of the vehicle on either side. Attached to these cylinders - which were described as 'screw pontoons' - were thin spiral blades, about 3-4 inches high, with a pitch of about 16 inches. It was described by the military as a 'marginal terrain vehicle' (MTV), and was said to have been intended for use in the swamps or rice paddies of Vietnam. The idea was that, by means of the helical blades, the machine would be able to literally screw itself through soft ground, mud or snow, or be propelled in the water rather like an Archimedes screw acting in reverse. The device weighed little more than a ton and, although the ground pressure must have been very low, the nature of the tractive pontoons left deep channels behind the vehicle in soft terrain. Steering was controlled via a conventional steering wheel and was effected by simply slowing one pontoon in the manner of a tracked vehicle.

With a total length of just 164 inches, and a width of little more than eight feet, measured across the pontoons, it was by no means a large vehicle for its '1/4-ton capacity. The 'body', such as it was, consisted simply of an open aluminium box, with a small Plexiglas windscreen - there was no top, and obviously, there were no doors. A three-man bench seat was fitted across the front, and the driving seat seems to have been in the conventional left-hand position. The engine and drive-train were centre-mounted, and the shape of the rear transmission casing suggested that power was conveyed to the pontoons by chains. Power came from a Chrysler 225 'slant six' engine of 3687cc, turning out 140bhp, and driving the pontoons through an automatic gearbox.

Although it was entirely experimental, the machine was surprisingly effective in soft terrain, including mud, snow and water, where the maximum speeds were in the order of 14mph, 9mph and 20mph, respectively - and the cylinders were self-cleaning. When faced with a hard surface, however, it was scarcely better than a Dalek confronted by a staircase and, at first, the only option seemed to be to turn the machine sideways and simply roll on the pontoons... since the paddles were unable to bite into the hard surface, the pontoons

In 1965, Chrysler built a wooden mock-up of an armoured version - which, as the picture opposite shows, was also armed with twin .50 calibre machine guns mounted in a small rotating turret. The problems of moving on hard ground were solved by fitting 16in wheels on hydraulically-operated arms.

Classic Military Vehicle October 2003
would then operate as though they were wheels. As for
16in wheels on hydraulically-operated arms - when the wheels were dropped down,
they lifted the pontoons off the ground. Even so, there was no conventional
steering gear and so presumably turning was effected by braking the wheels on one side.

Clever though it may have been, the US Army decided that the 'marsh screw' was not suitable for military service and there was no production contract. However, this was not the end, for the carrier variant was subsequently evaluated by the US Army Engineer Waterways Experiment Station, in Vicksburg, Massachusetts, for possible use as a platform for applying herbicide but it seems that nothing came of that either.

Others tried a similar approach. Land Rover, for example, fitted similar devices to a forward-control machine but, rather than replacing the wheels, they sensibly decided that the pontoons should provide a supplementary means of propulsion... but, again, it never went into production. The Soviet version, which was intended largely for over-snow use, was based on the GAZ-47 CT-5 medium amphibious carrier and was fitted with foam-filled pontoons to increase buoyancy.

...and just when you think that the idea must surely have disappeared without trace, incredibly, one turned up for sale recently on E-Bay, the internet auction site! If the new owner reads this, I'm sure we'd all like to see a photograph.

Actually getting out of the water must have been a tricky business. Here, the driver tries to signal to the winch operator who is attempting to pull the vehicle onto an almost-submerged trailer.