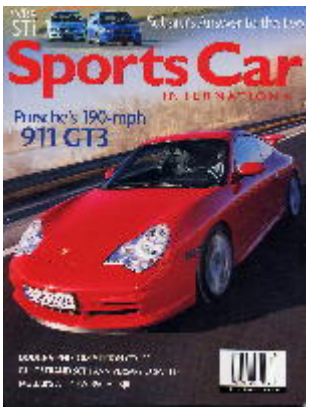
Sports Car International – July 2003



UNDERCOVER AGENT by Ian Kuah

Despite its stock appearance, this Lynx-modified Aston Martin Virage packs more power and torque than just about any street legal car on the planet.

Aston Martin has a reputation for turning out cars of exquisite form and beauty or in the case of the rare Zagato bodied variants, a subtle brutalism. No wonder then that any Aston Martin courts an opinion when seen in public. It's hard to think of any Aston Martin as understated, but compared to the Vantage that replaced it the Virage is understated.

First shown in 1988, the Virage was Aston Martin's flagship of the period; 400 were built between 1989 and 1995. As a grand finale, nine unique limited edition models were made, of which the car in our story is one.

books, but as every low volume car maker will tell you, there are a few clients who wish to express their individuality to an even greater extent. They have a specific idea in their heads, along with the will, patience and resources to make it happen. The owner of this very unique Aston Martin Virage is one such individual.

A purist who upholds the simpler unadorned shape of the original car, his overriding stipulation when he embarked on the project a few years ago was that the car's hand formed aluminum bodywork should not be altered in any way during the process of making it significantly faster and better handling.

In former times, he would have been able to ask the Service Department at Aston Martin's Newport Pagnell headquarters to undertake the bespoke work he had in mind. However, since Aston Martin's takeover by Ford, the scope of what it can realistically do to a car has been limited by product liability issues.

Enter Lynx Motors International. World renowned for its exquisite replicas of famous classic Jaguar sports cars like the C-Type, D-Type and the low-drag E-Type race coupe, the staff at Lynx have extensive knowledge and skills in such specialist work. And if a particular discipline or component is not available within their walls, they have a wide base of world class race car constructors and component manufacturers around them. The Aston's owner was an existing customer, and Lynx was happy to prepare a proposal, which was readily accepted.

Following a year of design, development and construction work (R&D ate up 20 percent of the labor time spent on the project), the car was completed, and we were invited to the Lynx works in the south coast town of St. Leonards-on-Sea to drive the finished car.

UNDERCARRIAGE - When we arrived, the Virage was up on the ramps, ready for our walk around. "This is a most unusual approach," explained Lynx boss and accomplished race driver, John Mayston-Taylor. "Normally, you look at a car on the ground, but in this case, almost all the changes are under the skin and can only be seen from below."

Also unusual was the fact that we started our tour of inspection from the rear of the car. "This is where the most radical changes have been made," explained project leader Andrew Parkinson. "We knew from day one that the modified engine would deliver over double the power and torque of the original." Thus, the A-frame located de Dion rear axle was ditched in favor of a bespoke arrangement utilizing the much stronger de Dion tube from the Vantage, located by substantial custom made fully adjustable links. All the locating bushings were also stiffened.

The steering was modified for more feel and weight, and the front suspension now uses Vantage springs, with the rear springs doubled in rating to 400 pounds. If that sounds like a recipe for harshness, amazingly the car now rides better than standard, thanks in part to the specially valved Koni dampers used all round.

Given the anticipated power increase, Lynx knew that the wheels and tires would need to be a lot wider than standard. This posed a problem, however, as the owner did not want the fenders flared. Compomotive came to the rescue and made up a one off set of four 9 x 18 inch wheels, with offsets that put most of the extra width inboard of the wheel center line. Together with the 255/45ZR18 Pirelli P Zero tires, these preserve the factory original look while putting the much needed extra rubber on the road.

It was not just a matter of getting the wheels to fit neatly under the arches. They also had to clear the huge Alcon racing brake components built around the Vantage ABS brake system. Measuring 14.8 and 12.8 inches front and rear, respectively, these slotted, vented discs use massive six-pot alloy calipers in front along with stock rear calipers. Even though Lynx was able to pare a significant amount of the Virage's 5,170 pounds, the finished product still weighs a hefty 4,850 pounds. That is why handling and braking were such big issues.

UNDER THE BONNET - Power and torque are what Aston Martin cars have always been about, but this Virage blows even the mighty supercharged 600-hp Vantage V600 into the weeds. The big numbers are 720 hp at 4,500 rpm with a driveshaft twisting 1,146 lb-ft of torque at 3,000 rpm.

When this Virage arrived at Lynx, the 5.3-liter Aston V8 had already been bored and stroked to 7.0 liters by an Aston Martin specialist, and was good for around 500 hp. With that as the starting point, Lynx stripped the motor down to check its condition and replaced the pistons with new ones, bringing the compression ratio down to 8.8:1 so the motor could safely live with the 1.0 bar of boost that was to be applied.

Then Lynx set about boosting this mighty motor with the largest ceramic bearing Garrett turbocharger they could find. Once found, they rebuilt the unit with a smaller impeller for a faster rise time and constructed a suitable wastegate. The bespoke exhaust headers are ceramic coated inside and out for optimum temperature control.

The new electronic engine management system is an American made Formula One unit; it controls spark and the Bosch fuel injectors. Initial setup was done on a dyno, with the final tweaking done in the car on the road.

Everything in the engine bay that could be affected by heat was shielded. That included wiring and even the piping for the air conditioner. In fact, the A/C pipes run to a heat exchanger that helps cool the fuel on its return loop to the tank. A stainless steel heat shield helps to keep excess heat away from the intake, which is fed cool air from the fender well.

The owner did not want any modifications to the bodywork, so Vantage style vents on the hood were out of the question. "Airflow management was a real challenge," explained Lynx's technical chief, Andrew Parkinson. "We really had to sit down and think this one through, but we are very proud of our solution."

Apart from a larger radiator and several extra oil coolers for the engine, gearbox and rear axle, the engine bay itself received work to draw the hot air away even in high ambient temperature situations. To this end, the two fog lights were removed from their housings below the bumper. "We used the space on the near side for an extra radiator with 50 percent the capacity of the main unit," said Parkinson. "It has its own electric fan to boost airflow, and a temperature sensor activates it before the fan on the main radiator."

The intercooler is a very compact and efficient unit straight from a Formula One race car and cost nearly $5,000. It sits in front of the main radiator in place of the A/C condenser. A very efficient electric fan sucks air through the intercooler and blows through the water radiator. This pull-push arrangement is apparently about 7% more efficient than having the fan blow through both.

An electric fan was fitted to each inner fender, venting into the wheel arches. They cut in when the air temperature in the engine bay exceeds 95 degrees F. With a total of six electric cooling fans sucking up a lot of current, the alternator was replaced with a Nippon Dense lightweight competition 150-amp unit, designed for rally use. This had to be modified with a new pulley to gear it down for the relatively low-revving Aston Martin's V8 motor.

POWER DELIVERY - The standard automatic transmission would have reduced itself to scrap in seconds with this much torque flowing through it. So now the massive power and torque is transmitted to the rear axle via a Bentley Turbo GM 4-speed automatic gearbox, which was gutted, stiffened internally and given its own external oil cooler. The transmission is also controlled by its own ECU, which is programmable for every relevant parameter like shift points, shift speeds and so on. The torque converter is handmade and bespoke for this car because again there was no suitable off the shelf unit.

Still, there is no way all this power and torque could be deployed without some form of traction control. The British-made Race Logic system, originally developed for Formula One and now employed by many aftermarket tuners, is used here. Out of the box, this system is infinitely variable, but Lynx chose three fixed settings on the knob by the gear shifter: Off, Full and Optimum; the Optimum setting allows 12% slip at the rear wheels.

Running the car with TC on Full, there is no problem whatsoever in deploying power. The whole drivetrain works seamlessly to deliver devastating acceleration at the command of your right foot.

INSIDE TRACK - Stepping into the cabin is a time warp experience. No big plastic moldings here; every major surface is covered with exquisite Connolly hides. The main color is tan, the traditional partner for the classic metallic British Racing Green paintwork.

The one surprise, however, is the radical departure from the de rigueur burr walnut wood trim on the dashboard and doors. In its place is carbon fiber, rare on any car built in 1992, let alone an Aston Martin.

A unique feature is the Jaguar J-gate control for the gearbox that allows manual override of the gearshifts. Apart from the voltmeter and boost and oil pressure gauges in the center console, this is the only visual giveaway that this is not an ordinary Virage.

UNDERFOOT - The driving experience is so different from a stock Virage that the two cars have little in common. The Virage we drove when the car was new felt ancient even then, against the far more competent offerings from mass manufacturers. Olde world charm is no excuse for outdated engineering, especially at this level, but in pre-Ford days, Aston Martin simply did not have the money to develop a car to the level its team of genuinely enthusiastic, loving engineers would have liked. The result was a car with barely adequate performance and a decidedly 1970s ride/handling compromise.

In town and on the fast country roads around the Lynx HQ, we were amazed at how much smaller and lighter the modified car felt. The steering is much more substantial in feel and feedback, allowing you to place this big car accurately through bends.

Turn into a corner and the chassis tracks perfectly on course, no longer prone to wallowing and being thrown off line by mid corner bumps. The ride is firm but supple at low speeds and improves as you pick up the pace. The sheer mass of the car helps here and the thought crosses your mind that maybe, just maybe, the lesser bumps on the road are being pounded into submission.

A long straight beckons and we massage the throttle gingerly, aware that with 1,146 lb-ft of torque on tap, brutal acceleration is there for the asking. Digging deeper into the throttle's travel, we are surprised to find a car as docile as you could wish for. Power delivery is strong and linear, and yet the throttle is so accurate you get the impression the horses can be called in one by one.

The old style GM auto drops into second with a slight kick, but this was par for the course in the late 1980s. Suffice to say, changes further up the 'box are silky smooth and the torque converter does a really good job of manhandling all this twisting force.

We have driven 700-hp Porsche Turbos, and you know about it when you go full throttle in one of those. The experience of going fast in this 720-hp Virage is completely different. It conducts itself with the deportment of a gentleman. Yes, its performance is blinding, but always discreet; the only indications to the outside world of its latent power are the deep V8 bellow from its engine and the muscular burble from its huge stainless steel exhausts. Unleash all that sound and fury, even for a brief moment, and you are traveling mighty fast indeed.

Given its roots and not insubstantial bulk, it is unreasonable to expect the Virage to handle like a nimble supercar, for that is not what even the new Aston Martin Vanquish is about. Aston Martins are grand touring cars in the traditional sense of the word: stylish coupes as much at home in Times Square as conveying you swiftly, comfortably and in great style from your London mansion to your yacht in Monaco. However, the well sorted Lynx car raised our eyebrows favorably on a demanding mix of road conditions.

Careful development and a vast amount of experience on the part of Lynx have turned this one off into the ultimate expression of what the Aston Martin Virage could have been. It may not be everyone's cup of tea, but given the original intent and inherent limitations of the Virage, the finished car exceeded our expectations by a country mile.