The Heron — a New Zealand sports car

Story and photos: Donn Anderson

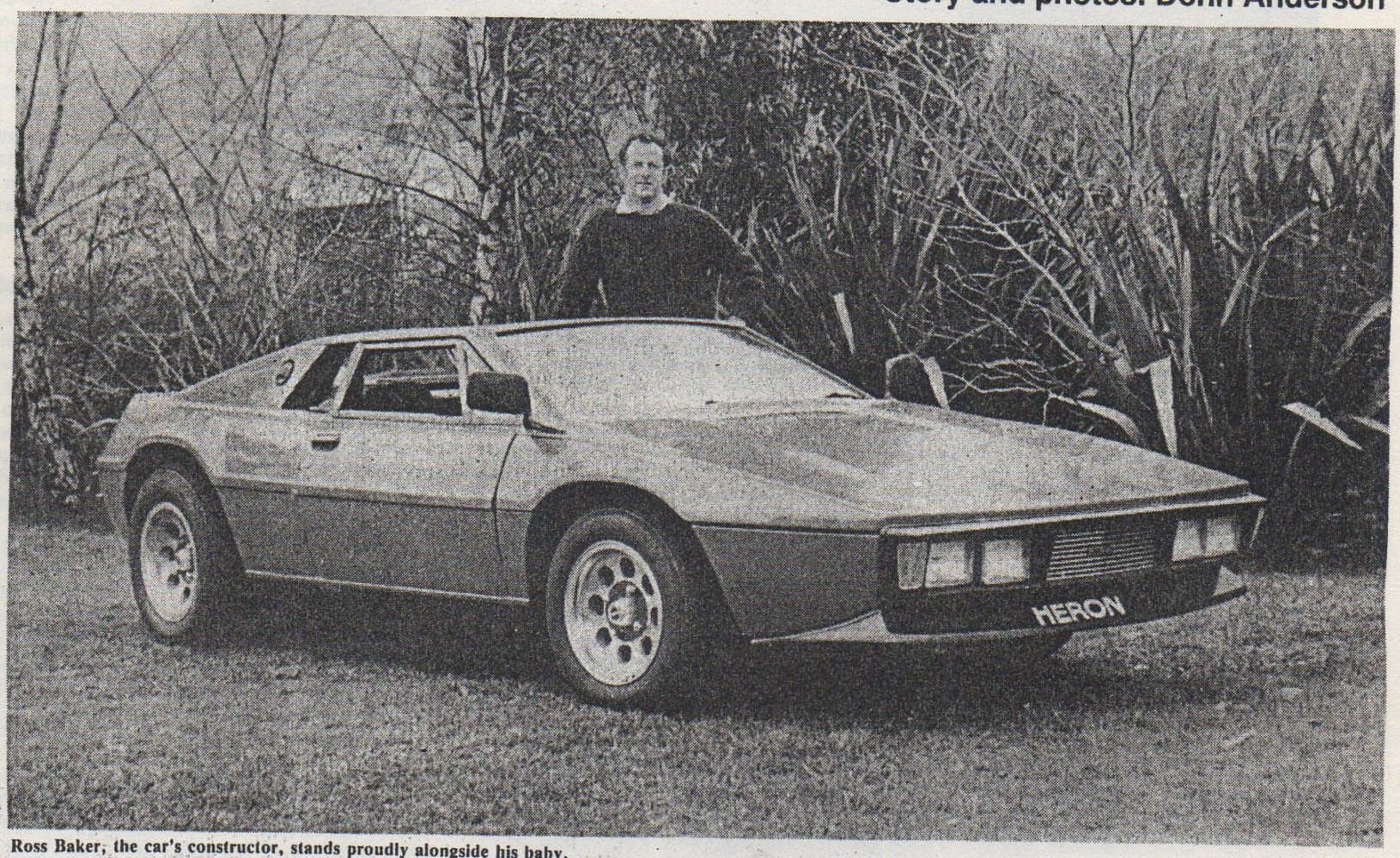
Building motor vehicles, in either limited or mass production, is fraught with obstacles and financial headaches.

The problems in New Zealand may seem even larger than overseas where large markets wait to be tapped.

But one New Zealander is on the verge of going into production with a two-seater, mid-engined fibreglass monocoque sports car.

Ross Baker has good reason to believe his Heron Sport MJ1 will work as he points to more than 30 orders received since the July Motor Expo show in Auckland. And all orders have been confirmed with paid desposits. Production is scheduled to commence early next year.

The prototype which was displayed at the Auckland show is in daily use by Ross Baker as he works on six cars now under construction at his compact Waters Street workshop in Rotorua. But the Heron's creator is at the crossroads as he ponders on the remarkable interest in the sports car. Baker will need to produce around one car every two weeks and this means substantial company expansion, total financial reorganisation or Government interest.



Ross Baker, the car's constructor, stands proudly alongside his baby.

This latest Heron is the most ingenious sports car to come from Ross Baker since he began tinkering, designing, building and racing cars two decades ago. At first glance, the MJ1 bears strong exterior resemblance to the Lotus Esprit. Like the Giugiaro-styled Lotus, the Heron has a glass reinforced plastic body but its construction is quite different.

As with most limited production cars (including Lotus), the Heron uses many proprietary components. The windscreen is from a Mark 2 Ford Escort, door handles, catches and window winding mechanisms originate from a Mitsubishi Mirage, while brakes, transmission and suspension are from the Skoda S1100 series. Tail-lights are standard Hella parts, the exterior door mirrors are by Repco, and headlights are also off-the-shelf parts.

"Few parts are made from scratch. We want the Heron owner to be able to buy parts wherever he may happen to be," says Baker.

Initial models, including the prototype, are powered by 4-cylinder Fiat engines of 1.6, 1.8 or 2.0 litres. The first car uses the 90 bhp 1608cc twin overhead camshaft Fiat 125 engine but Heron Developments Ltd intends offering the 2.8 Ford Cologne V6 and Rover 3500 V8 as alternative power sources. When using larger engines, Baker has most of the 4-speed transmission made locally, but with the smaller 4-cylinder power units, the Skoda gearbox with helical spur gears is used, with a one-inch alloy spacer to join the transmission to the engine.

Strength of the car is tested by is constructor and young visitor Jamie Anderson.

Steering is a modified Skoda worm and nut, with a tight two turns of the soft steering wheel from lock to lock. A two-piece universal steering column is designed to protect the driver in a frontal collision. Baker retains the rear axle ratio of 4.444 to 1, and gear ratios of 3.8 in first, 2.12 in second, 1.41 in third and a slightly overdriven 0.98 to 1 in fourth.

In fourth, the gearing allied to 14-inch diameter locally made aluminiun alloy wheels (13 inch alloy wheels up front) results in a fairly low 31.77 km/h per 1000rpm engine speed. Thus, at 80 km/h, the engine is turning at 2500rpm, and almost 3200 rpm when the Heron is doing 100 km/h. It is a pity no five-speed gearbox is available for the car.

Suspension

The Skoda suspension proves ideal for the job — it is compact, strong and relatively inexpensive. The independent front suspension consists of trapezoidal half axles and coil springs with centre mounted telescopic shock absorbers. At the rear, there are swinging half-axles and coil springs, with centre mounted telescopic shock absorbers. This all-independent arrangement provides a rather firm but sporting ride, with a lack of body roll and precise road manners.

Direct-action brakes are twin circuit hydraulic, with 254mm front discs and 241mm rear drums. Heron Developments makes up its own wiring looms, but Ross

says this is one of some aspects of the car's componentry which could be farmed out, cottage-industry style. In the prototype, VDO instruments are used, and facia components from Lancia and Alfa can also be adapted.

Small car

The Heron Sport is a small car, with an overall length of 4013mm, less than the Lotus Esprit (4191mm) and slightly shorter than a Mazda 323 sedan (4155mm). In terms of width, height and wheelbase, the Rotorua car is also smaller than the Esprit. It has a wheelbase of 2286mm compared with 2438mm for the Lotus, is 1041mm high (1118mm for the Esprit) and 1676mm (1854) wide.

But the most unusual aspect of the car is its construction.

It is light, but very strong, as Ross proved to us when he walked over the roof of a Heron body. A kerb weight of only 717kg is claimed for the New Zealand sports car. Again, using a Mazda 323 1500 sedan as a weight comparison, the Japanese car tips the scale at 840kg, while the normally aspirated Lotus Esprit weighs 1129kg.

Not compatible

Baker does not believe steel and fibreglass are compatible, so the fibreglass body is designed without a steel chassis or steel subframe. Door-catches and seat-belts are attached to a steel roll-bar, the only steel part of the main body structure, and there are alloy crash rails running through the doors. Rear and side window frames are aluminium extrusions, and each body sill is foam-filled to give a 30 percent increase in strength and to act as sound-deadening.

The car has a one-piece roof, and a steel jig holds the vehicle square while the strong monocoque body is being put together. Unlike Lotus, the main tunnel which forms the backbone of the sports car is fibreglass and is bonded with the same material as the rest of the vehicle. The main chassis is one complete unit with internal box sections and a front ...ud for the spare wheel and ...ator positioning.

Unique system

All components are attached to the body/chassis by a unique Heron-developed system (which has patent pending) that ensures no fracturing around mounting points — a long-time Lotus road car problem as the vehicle flexes and ages. Baker uses stainless steel mesh, bonded into the fibreglass around the area of the mounting points, and he says this is durable and won't rust or give any problems when flexing.

The body is made in two pieces, as are the doors, and a heavy laminate adds to strength. About 40 hours' work goes into the laying down of each body, with a further 40 hours to bond together panels which complete the body.

All running gear and accessories are either new or rebuilt components, depending on customer preference, and the plan is to build vehicles to individual client requirements.

Styling is neat and modern, with integrated front and rear bumpers, and about 18 litres of Dulon paint is used on each body. The company makes its own hinges, and has Wayne Maisey Auto Trim produce the interior upholstery and door trims. The air intake on the "B" pillar feeds cool air to the engine.

A steel 50-litre fuel tank is located above the transmission and behind the engine, but forward of the rear load compartment. Battery and radiator are located up front in a small carpeted area in which the spare wheel takes up most room. The rear compartment cover is secured by a pair of gas-filled struts.

NZ content

Ross Baker says around 90 percent of the Heron MJ1 is New Zealand-made or sourced, and the vehicle uses much in the way of recycled parts. Prices start around $17,000 for a fully completed vehicle, an indication that the Heron will not be for the wealthy few.

"But we want to have the model right before production starts. We are continually improving details," he says.

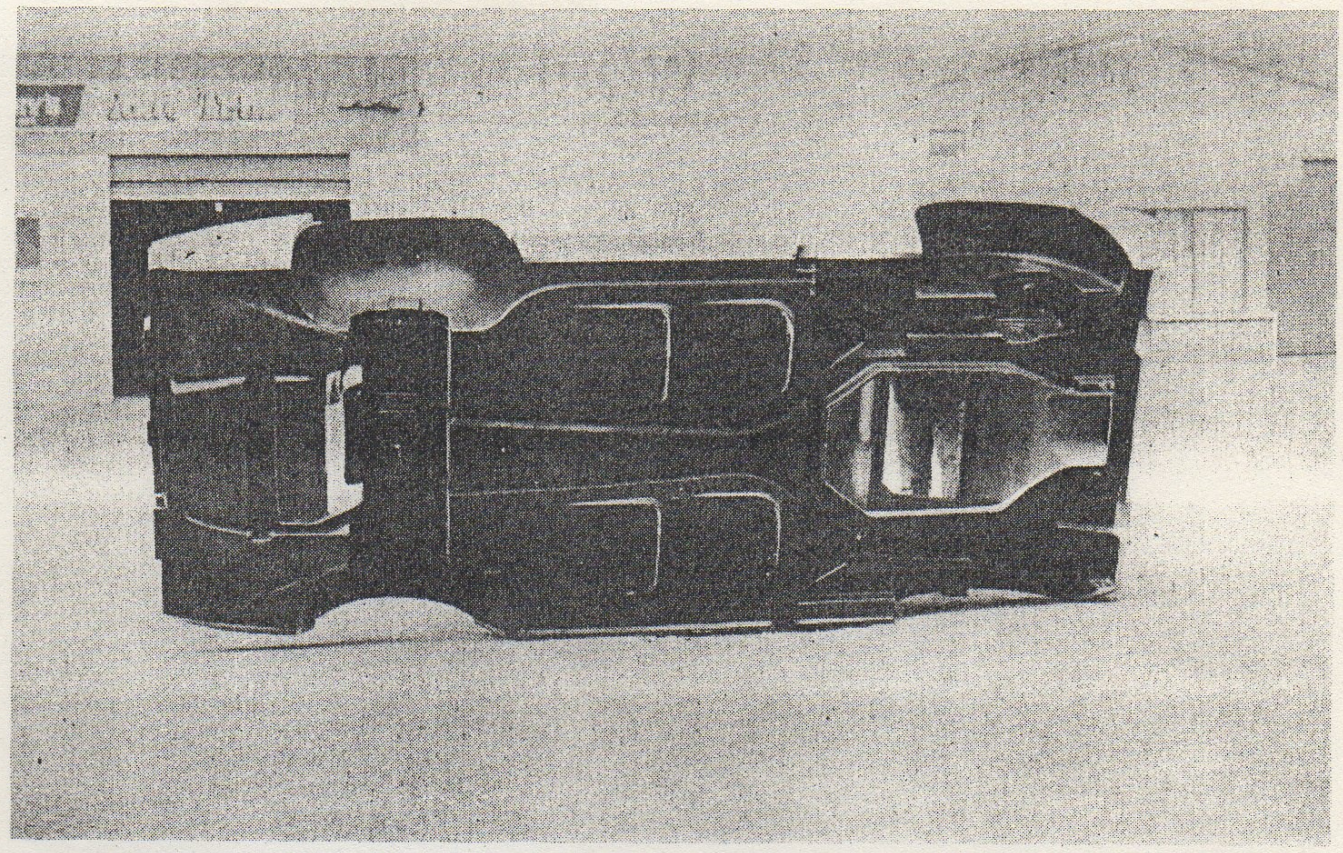
New Zealand Motoring News took the prototype MJ1 for a short run, and found the 1.6 Fiat engine gave the car brisk performance. Gearbox action is short, but the change is sometimes incalcitrant. The interior is small and well lined, but the Heron feels sporty and agile. A full evaluation will follow once a completed production model is available for road impressions.

Racing start

Baker's motor vehicle building began back in the early sixties with a Mistral, followed by the first Heron sports car. This was a lightweight space-frame car with an aluminium body and 1.5-litre Ford engine. Ross raced the car with considerable success, and then built the Heron Mark II, a Daimler-V8-engined car with a Citroen ID19 transmission, for Ken Richardson to drive.

The replica Ford GT Mark 4 — the model which sweeped Le Mans in 1968 — was almost finished by Ross in 1972 when MANZ changing the sportscar capacity limit, with the 2-litre restriction rendering the impressive GT obsolete so far as track work was concerned. The Mark 4 was put to one side, and a disillusioned Ross Baker turned his hand to running dirt oval racing, winning the local series in 1972, and again in 1974.

He had owned a Rotorua serice station with brother Tony, of rally fame, but left this to go into the agricultural machinery business. Ross designed and made a self-propelled orchard sprayer, several of which were produced and are still in use. The Rotorua enthusiast escaped from a serious speedboat accident which put him out of action for a while.



Underside of car shows the method of all-fibreglass construction.

Baker will look at the export potential for the Heron MJ1 once local production is up and running, but meanwhile has his hands full setting up what could be the most successful sports car ever designed and made here.

As a result of Moto Expo, Baker obtained more than double the orders he anticipated, and received serious enquiries from over 200 show visitors. Proof enough that people want this sort of car.

The latest Heron stands next to the Ford GT replica built by Baker 10 years ago.