Heron History in Pictures

All these vehicles were designed by Ross Baker and built by Heron Developments Ltd, Rotorua, New Zealand. Website: www.heroncars.org.nz Email: rossbaker1@bigpond.com.au

Heron MJ1. 30 Built 1980 -1985. Sold New Zealand/Australia. ***See page 20.***

Heron GT MK4. 1 Built 1970. Raced at Lemans 2018. ***See page 27.***

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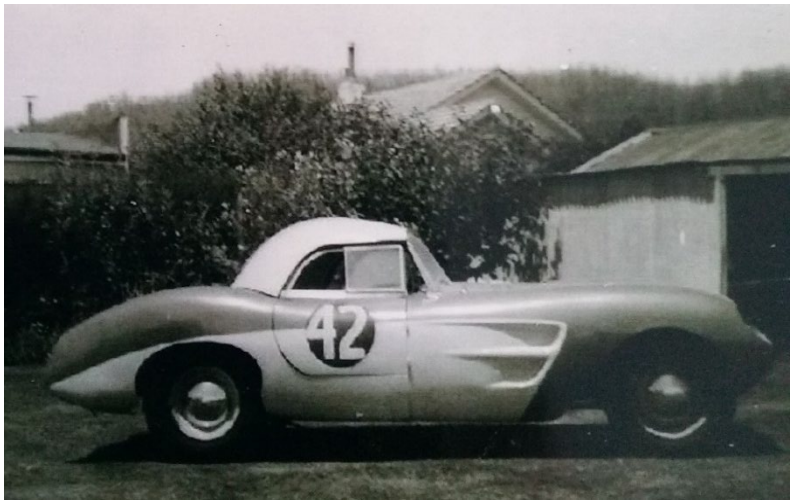
Mistral – 1960

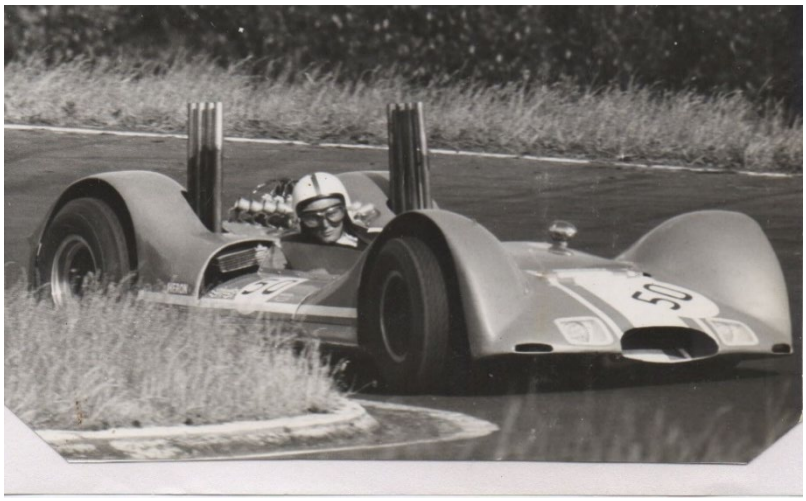


A kit car by Emsley and Flockton, Christchurch assembled by Ross. Fibreglass body with tubular steel chassis. Powered by Ford 10 then 1600 cc Humber 80 motor and gearbox. Twin SU carbs with mild cam. Very successful car that was driven daily and raced on weekends.

Heron MK 1 – 1961

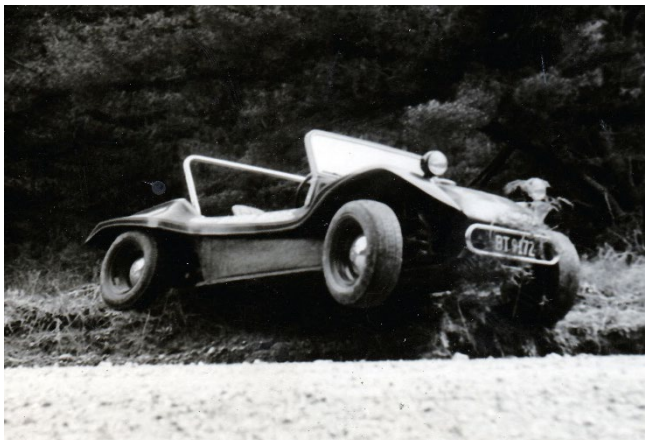
First car designed and built by Ross Baker, Heron Developments Ltd. Tube space frame chassis with aluminium body built be Eddie Jones. Powered by fully worked Ford Cortina 1500 cc with twin Webbers and VW 4 speed gearbox. A very successful car winning the under 1500cc Auckland Car Club Trophy in 1962.

Heron MK 2/3 – 1963



Two cars originally designed to be powered by 3000cc Corvair flat six motor and gearboxes. Import restrictions force this car to be powered by a Daimler SP 250 motor with Citroen gearbox. It was not a successful car due to the motor and gearbox giving trouble. The second car was sold unfinished without motor or gearbox. Owner Ken Richardson driving.

Sandpacer Beach Buggy – 1964.



The beach buggy used a 1200 cc WV floor pan, motor and suspension. The floor pan was shortened 300 mm and a fibreglass body fitted. This vehicle was great fun and would go anywhere if you were game enough to drive it. It was also used as the workshop run-about.

First Stock Car -1966.

Stock car racing began in Rotorua in 1966 and Ross decided to have a go at this new sport and quickly built up a MK 1 Zephyr. While not one of his best-looking cars he had built, he had a lot of fun racing it with Alf Luckin his apprentice.

"E" Type Jaguar Stock Car – 1967

The chassis of this car was built out of Corten steel, the same as they use for battleships making it a very strong car. The body was hand made using Dodge panels. Powered by a 3.8 Jaguar motor and Dodge running gear. It was part of the Australia/New Zealand Challenge team as the block car due to its strength, which New Zealand won. It later won the Rotorua Stock Car Championship.

Heron GT MK 4 - 1968

Replica of the Ford GT Mk4.This car had a steel monocoque chassis with fibreglass body. Powered by a 327 ci Chev motor and 4 speed transaxle designed and built by Ross. This car was sold in 1990 and after going to America, France, Belgium and Germany was eventualy bought by Alex Drogin in Russia who is now racing it in Europe. Bev and I went to Le mans to watch it race in 2018

Ford Escort - 1970

Completely built from parts over the counter from Lakeland Ford, Rotorua. Fitted with Zephyr 6 motor and gearbox. Ford issued a VIN number for this car making it the only six- cylinder Ford Escort ever registered by Ford. This was a very nice smooth car to drive with plenty of power.

Ford Anglia Saloon Car (Speedway) – 1971.

This was my first Saloon Car. It was a 1964 Ford Anglia powered 1600 cc Cortina motor fitted with 4 Amal motorbike carbs. This car had no extra chassis reinforcing and it was shorted up many times, then stretched out again to race the next week. A fun little car to drive, but I soon found out it was not strong enough for tight speedway racing.

Escort Saloon Car (Speedway) – 1971 (Fully sponsored car)

Ford Escort Mk1 fitted with a twin cam Lotus motor bored out to 2 ltr. This was one for the first speedway salon cars with a full space frame chassis. This car was sponsored by Forest Lake Stadium and raced by Ross. Ross won the New Zealand Saloon Car Championship in 1972.

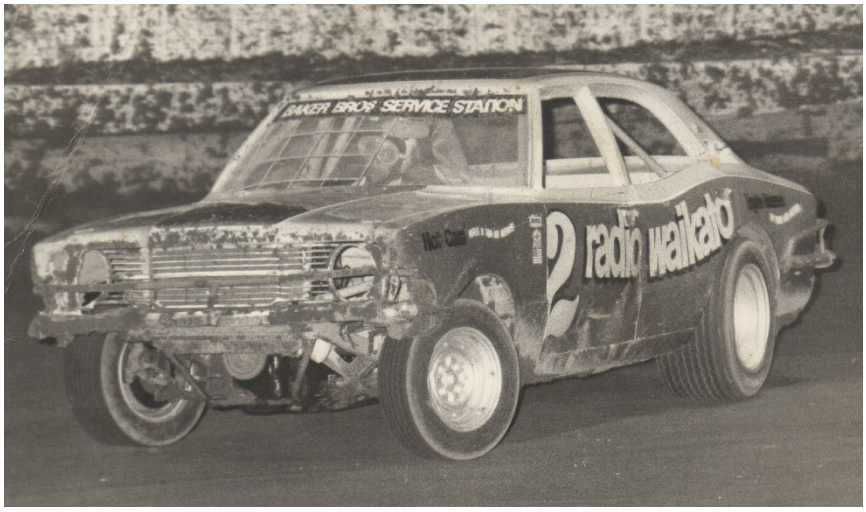
Camaro Saloon (Speedway) – 1973. (Fully sponsored car)

This was a completely built car including the body. It was powered by a 400ci small bock Chev motor. It was a hard car to drive on dirt due to the torque the motor developed. It was later stopped from racing as it was not a genuine Camaro.

Holden Saloon (Speedway) – 1974. (Fully sponsored car)

All the running gear and roll bar etc. were swapped from the Camaro into a HK Holden in one week. While this car was legal, it was still a hard car to drive, therefore, not a successful car.

Cortina Saloon (Speedway) – 1975. (Fully sponsored car)



The Cortina was fitted with a Bathurst 6 Cylinder Falcon 12 port Bathurst motor with a cam and 3 Webber carbs and a full tube space frame chassis. The motor developed 425 hp and was a beautiful car to drive. Becoming runner up in the NZ Saloon Champs in 1976.

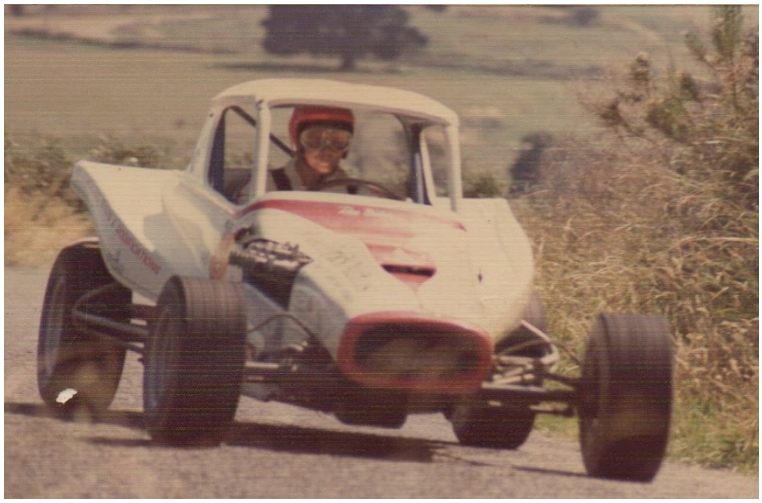
Marny's first car - 1975

I built my daughter Marny's first car using a bought plastic body and a 12-volt wiper motor driving one rear wheel. It only had one speed and nothing much has changed since; she still only has one speed – flat out, pedal to the metal!

Third Escort – 1976.

This Escort was fitted with a 3.5 ltr. Rover V8 with a cam, 4-barrel Holley and Fiat five speed gearbox. The front suspension was Triumph Vitesse. This car was built for my wife but also for me to race in hill climbs at the weekend. Another great car to drive.

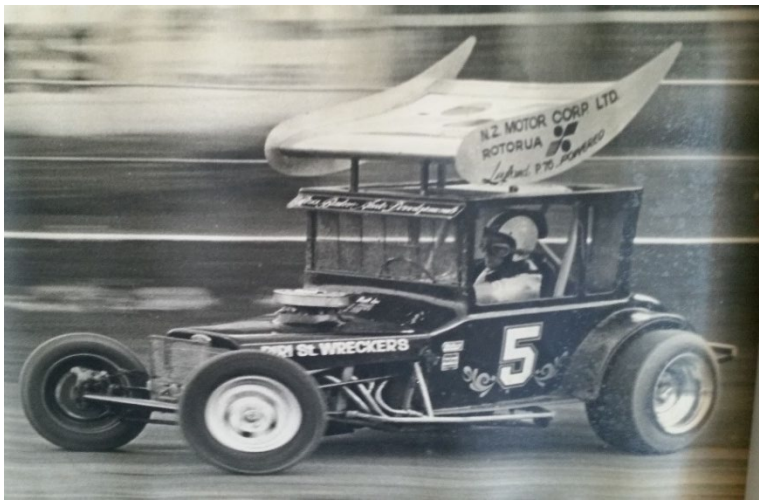
First Super Stocks (Speedway) – 1976.



In 1976 the Rotorua Stock Car Club decided to run a new class called Super Stocks. I used the motor out of the Cortina Saloon Car and built a very light tube chassis with the fibreglass body taken off a Ford Anglia. This was one of the most successful cars I have ever built winning the NZ Super Stock Champs and gaining the Forest Lake Stadium lap record. I also hill climbed and circuit raced it.

Ross had a bad jet boat racing accident in 1978 and spent 3 years recuperating.

Second Super Stock (Speedway) – 1979



By 1979 I was fit enough to build another Super Stock. The chassis was the same as the first Super Stock but this time it used a P76 Leyland V8 motor, cam and 4- barrel Holey carb.

This was again a very good car winning the 50 lap New Zealand Super Stock Grand Prix in 1980

Heron Spraymaster – 1980

Original Spray Master designed and built for Bob Gee. This second production model built for New Zealand Fruit Federation Ltd. Sold to Croplands Equipment Ltd, Wellington where seventeen of these units were built with one going to Australia.

A fantastic vehicle that changed orchard spraying as it was air conditioned, 4x4 drive, 4 wheel steering and carried 3000 litres of spray.

Heron MJ1 – 1980. (Over 30 Built)

In 1980 I designed and built the first prototype Heron MJ1.Sports car. This had a fibreglass monocoque chassis with Fiat 1600 cc motor and Skoda running gear. Heron Developments built 6 prototypes before selling 2/3 shares to Summit Engineering. A total of thirty cars were built. The moulds, drawings and a car is in the MOTAT museum in Auckland.

Marny's Second Car – 1984.

This car was built for Marny using a 250 cc Honda Motor fitted on top of a Ford 10 rear axle and driven with a V-belt. It also used a Ford 10 front axle and 50 x 25 x 3 mm RHS chassis. Fun car for all the children and dogs at Parkcliffe Road.

Formula Manufacturing Ltd – 1987. (Over 500 built)

In 1987 Heron Developments were commissioned by Formula Manufacturing Ltd of Hamilton to design and build prototype golf carts, electric industrial trucks, go-carts, bumper boats and car display turntables for the New Zealand, Australian and USA markets. Over 300 golf carts were built, 200 electric trucks, 500 go-carts, 100 bumper boats and 150 turn tables.

Formula Manufacturing Ltd - 1987. (Over 30 built)

Ross designed three quarter sized racing cars for Rainbows End at Manukau City and a track in Melbourne Australia. They ran Rotax motors through a Heron designed transmission. This car ended up in a Car Sales in Maroochydore in 2005. Shown with my grand-children, Alex and Anna.

Heron MJ 2+2 - 1987.

Heron development bought the rights back from Summit Engineering to make further Heron cars and made moulds for the Heron MJ 2+2. Two MJ 2+2 bodies were built. One for Roy Hoare of Wellington who fitted a turbo charged 3 litre V6 Mitsubishi motor and the second was never finished. Roy still holds the moulds for this car.

Fourth Escort – 1987.

In 1977 I bought a written off Escort and cut the front off and built a subframe to hold the suspension and fitted a 3.5 litre. Rover V8 motor and 5 speed Fiat gearbox. My daughter Marny help me make the fibreglass front and we raced it together for a couple of years – until her times were quicker than mine! Luckily, she went overseas and I could again hold my head up high!

First vehicle for disabled orchardist Brom Wells – 1988

Brom ran a large kiwi fruit orchard in Te Puke. After an accident he was confined to a wheelchair. We built this vehicle so he could continue to work in the orchard. It was built using the electric truck components and steered by a tiller that was pushed down to operate the brakes. He operated this vehicle from his wheelchair.

Short Spyder – 1988. (Two built)

Jim short commissioned Heron Developments to build him a sports car based on sports cars of the 1950's. I designed a tubular chassis that ran a Rover V8 motor and 5 speed Fiat gear box. The front and rear suspension were from a MK3 Ford Cortina. We built one complete car and one chassis and body for Jim. This was a beautiful looking car that went extremely well. Jim still owns this car.

PC 80 Electric car – 1990. (Two built)

In 1990 Heron Developments were commissioned to build two electric cars for Powerco, Wanganui. These were again fibreglass monocoque chassis/bodied two-seater cars. They were powered by 2x 60-volt electric pancake motors driving through a Heron designed transmission in each rear wheel. These were nice little cars with a range of 100 kms at 100 kms an hour.

MOTAT Museum, Auckland has this car on display.

Honda City for Cherise Hobbs - 1991

Cherise was sent to Heron Developments by the Disabled Association to build a car for her to drive. Cherise had chalky bones with a break in her left arm that would not heal. This meant we could not use normal hand controls. I designed a system where the steering wheel moved up and down to apply the brakes. It also had a retractable ramp to allow Cherise to enter the car. This ramp slide inside the car for her to remain in her wheelchair and drive the car. The accelerator was where the washer control is normally located.

Golf cars – 1992. (Over 500 built)

Heron Developments were commissioned to design golf carts for Formula Manufacturing. When they ceased making golf carts, Heron carried on building them. They also redesigned the golf cart and fitted a tray to the back as light truck for farm use, gardeners and maintenance vehicles. Fifty of these units were built using the same running gear as the electric trucks below.

Electric Industrial Trucks – 1992. (Over 60 built)

Heron also took over the Electric trucks and built about 60 units for Tasman Pulp and Paper, Kawerau Board Mills and New Zealand Electricity Co.

They were built from 3 mm chequer plate with a 36-volt Baldor electric motor, Curtis controller and Toyota KE 30 narrowed rear axle. The front suspension was built by Heron.

Second vehicle for Brom Wells - 1992.

Now that Brom had retired from working in the orchard, we built this vehicle for him to drive around the orchard and supervise his staff. It was built using parts from his first vehicle.

Cars and a Caravan Built in Australia.

Second Cortina Saloon Car - 2004.

In 2002, Ross and his wife Bev decided to retire to Maroochydore on the Sunshine Coast, Australia. Ross and his daughter Marny decided in 2004 to rebuild a Saloon car and race it. Just before the car was finished Marny became pregnant, so instead of race again, I happily now had a grandson Alex and granddaughter Anna.

Grandson Alex's first car – 2005.

This car had electric scooter motors in each rear wheel with forward and reverse. The chassis was built from 25 x 25 x2 mm RHS. Two 6-volt motor-cycle batteries with the scooter speed controllers. His five-year old grandson Alex had a lot of fun learning to drive in this car.

Datsun Rover V8

In 2007 Ross bought a Datsun 1600 with a Rover V8 and Toyota gearbox that had sat in a garage in Sydney for about 20 years. He completely rebuilt it and sold it in Melbourne. While Ross never raced this car, it was a very quick car and it had success in it's new owners hands.

Caravan – 2011

In 2011 Ross designed a built a very light caravan that could be towed by a small 4 - cylinder car. It had all the mod cons, TV, microwave, fridge, freezer and a double bed that converted in to lounge. It was only 3.5 metres long and weighted 750 kg. This was also sold when finished.

Heron Alanna – 2017.

By 2017 Ross could not stand retirement any longer and began designing a sports car based on the Ferrari Daytona Spyder using a VX/VZ Holden Commodore as the doner car. While Ross says this will be his last car, time will tell!

These are vehicle that were designed and built from scratch or vehicle extensively modified for a specific reason such as racing, vehicles for people with disabilities, leisure parks or just fun. There were many more vehicles with minor modifications such as engine swaps or converted from saloon cars into utes or convertibles too numerous to show. In fact, Ross has owned, modified or built over 150 vehicles. This does not include where more than one was produced. Ross would like to thank all the people who helped him build these vehicles.

For further information: www.heroncars.org.nz or type in: Ross Baker Heron Cars

The Road to Le Mans

Heron GT Mk4

By Patrick Harlow

Pictures provided by Ross Baker and MOTAT (Museum of Transport and Technology)

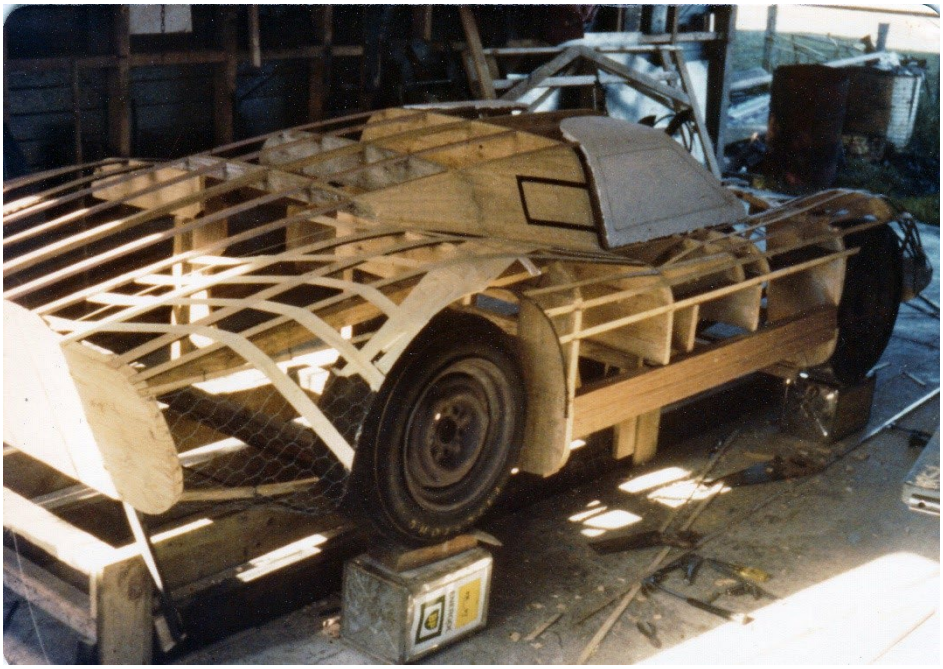
During September of 2018 Ross Baker and his wife Bev boarded an aeroplane for France. He had been invited by Andris Stals to come and see a car that he had sold over thirty years ago, and until recently believed to have been destroyed. What was so special about the car, well, it is believed to be the only replica of a Ford GT40 Mark 4 in existence and Ross had built it from scratch in his basement-shed roughly fifty years ago. Adris of RS Motorsport had restored the car so that its current owner, a Russian gentleman by the name of Alexandra Drogin, could race the car on racetracks around Europe. The reason for the Invitation was because the Baker car was being raced on the same track that the original Ford GT 40 Mk 4 had its greatest victory, Le Mans.

The journey starts back in 1961, Ross was living in Rotorua, Le Mans was a race track that Ross had heard of but would have never believed that he would one day stand on it. 1961 was the year Ross purchased a kit set car called the Mistral, at the time he was working as an apprentice mechanic. As a young man in his early twenties he thought that building a car from a bunch of bits would be a good way to test his developing skills. When finished it was a road legal and it even provided him with many hours of fun on race tracks around the upper North Island. Anybody that knows Ross Baker's story knows that this was not the last car he would build from scratch. Although he would have a lot more fun racing production cars through the ensuring years, it is hard to beat the thrill of racing a car that you have built from the ground up. The Mistral would be the one and only kit set car that he would build. The main difference between the Mistral and future cars is that they would be totally designed and built by Ross. Oh, another difference worth mentioning, is that they would be called HERONs. After the Mistral would come many homebuilt cars of which the most well-known example is the Heron MJ1, New Zealand's only production supercar.

When the Mistral was sold in 1962 Ross was already working on his next car with his good friend Bob Gee. The car was called the Heron Mk1 and had a lovely hand-beaten aluminium bodied car inspired by the Lotus 23. The next two cars the Mk2 and Mk3 Herons were supposed be powered by the aircooled flat-six Chevrolet Corvair motor, along with its four-speed gearbox. Unfortunately, the motors were impounded by the government when they arrived in the country. In the end Ross used a Daimler V8, but that is another story.

By the late 60s Ross was looking for another challenge, perhaps their hardest to date. For his next car Ross decided that he and Bob would have a go at making a replica of the Ford GT40 Mk4, a car that had dominated GT Sports Car racing in the U.S.A. and Le Mans from 1966 to 1968.

The intention was to build it to be ready for the 1970 Sports Car race season. They chose the 1967 MK4 GT40 because in Ross's opinion, it was, at the time, one was the best looking race cars ever. It was also the car that won Le Mans for Ford in 1967. About half way through 1967, he began collecting all the information he could find from magazines and other sources such as how difficult it was to climb over the15-inch-wide door sill or the length of the windscreen. Each little gem had an important measurement. Using this information, he had accumulated, he started on the design drawings. As he drew the car to scale, Ross came to the realisation that his design was not going to be an exact replica as the original car was a honeycomb aluminium monocoque. The fibreglass doors, hinged fibreglass front and rear body panels were not a problem, but there was no way that Ross would be able to acquire sheets of honeycomb aluminium from the local hardware store.



The car, now known as the ‘Heron GT Mk4’, would have an all fibreglass body over a steel monocoque chassis. The motor that powered the original was a 7-litre Ford V8, but Ross settled for a 5.4-litre Chevy V8 (327 cubic inch), since it was far easier to obtain ‘make it go faster’ Chevy competition components. The transmission was the main problem: to buy a transaxle transmission for a mid-engine car with this type of power would cost a fortune, so there was no alternative but to…. build one!

Naturally, there were many challenges, since he had never built a monocoque chassis or a fourspeed transaxle transmission — let alone one that could cope with in excess of 350 HP (260kW). He drew the basic car and then broke it down into individual panels, to make up the monocoque chassis. There were 57 panels in total. Once the drawings were complete, Bob and Ross started cutting the panels out by hand and folding them to shape. The panels were either spot-welded or pop-riveted together, but they had to be very careful as a good fit was crucial. It is a testament to the care and skill that went into drawing phase, of the 57 panels required, there were only two that had to be remade.

Around that time Ross had fitted a 5.7-litre (350 ci) Chevrolet engine into a Ford Mk4 Zephyr. As the original Zephyr gearbox handled the power without any problem, he decided to use the same geartrain for the gearbox/transaxle he would design for the GT. The crown-wheel and pinion were from a 1934 Ford V8. Next, Ross modified the crown-wheel carrier to take the Mk4 Zephyr spider gears, output shafts and half-shafts. Another problem was solved when Ross took the gears out of the transfer gearbox of Bob Gee’s Howard Rotary hoe and used them to quickly change the final drive ratio.

Now with all the components, for the rear drive train selected, all he had to work out was how to join them all together. The only real solution was to design and cast a new aluminium transaxle housing. Ross drew all the components in their respective positions, then proceeded to draw the housings around them. Using the drawings Bob made a full set of patterns out of wood and fibreglass ready for casting the transaxle housings in aluminium.

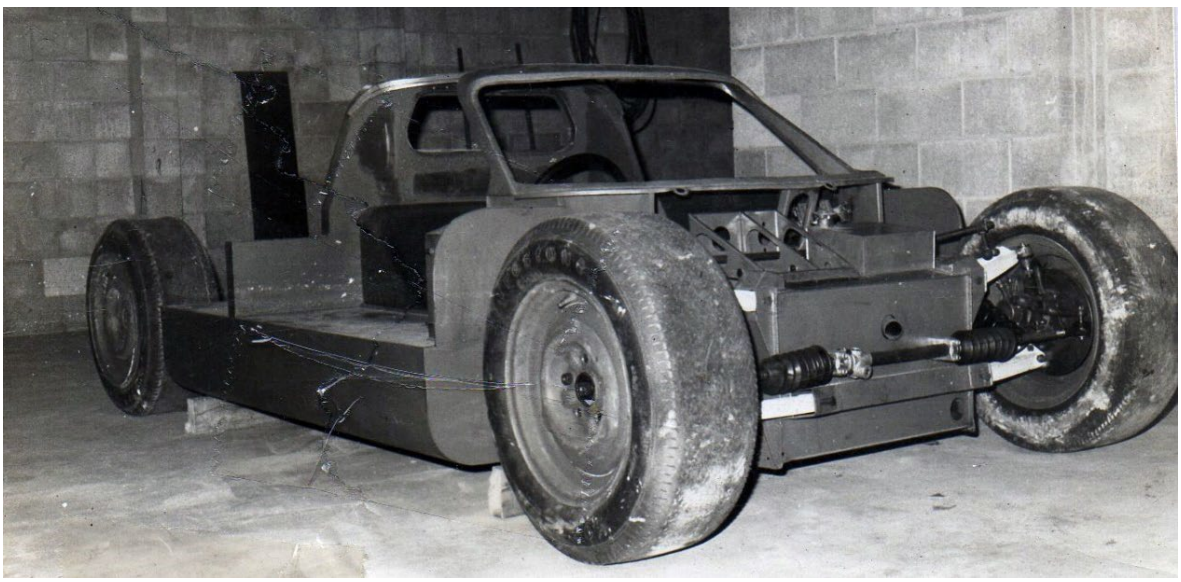
Finding a foundry to cast the patterns proved to be more difficult than they anticipated. The first foundry they approached in Auckland laughed and said that no one could cast a housing as complex as their one. The second, third and fourth said similar things. The boys from the sticks turned around and headed back to Rotorua very disillusioned. All the hard work and thinking was heading for the wood pile.

Approaching Rotorua, Ross decided to try, as a last resort, a little Rotorua backstreet foundry called Foundry Engineering who cast mainly brass antique lights but had cast a few aluminium wheel spacers for him over the years. Ray, the foreman, took one look at their funny shaped firewood and said to give him a ring in two weeks, by which time he would have had a look at them. The two weeks slowly ticked by and Ross expecting the worst gave him a ring and asked them if they thought they could do the job. In a very dry and slow voice, Ray said: "They are all finished, come and pick them up!"

Caught completely off guard, Ross raced around to find a complete set of aluminium castings made from their patterns. The castings were then machined to the specifications in Ross's drawings and the first Heron four-speed transaxle was a reality.

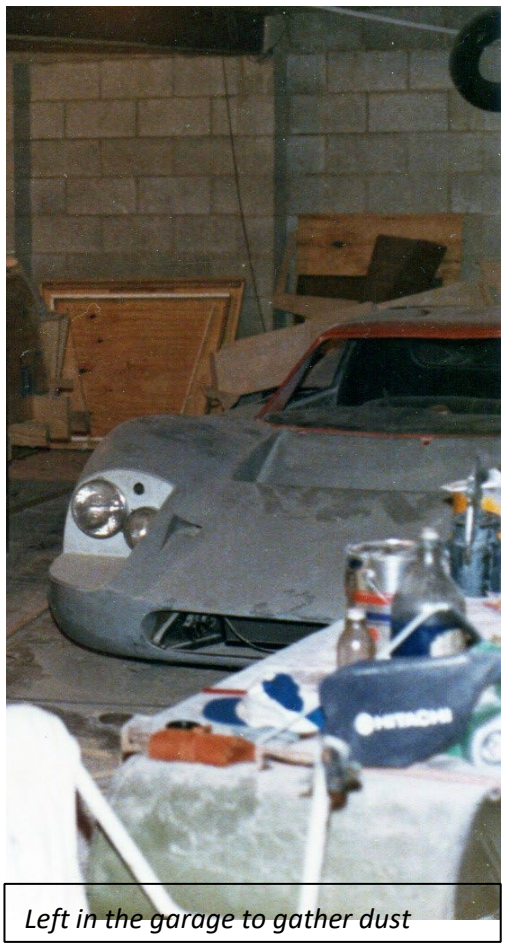
Baker designed gearbox and Transaxle

Ross spent many more months constructing the monocoque chassis and suspension components, while Bob worked on the male plug for the body. When Ford built the GT40, they were determined to beat Ferrari at any cost. Ross had a slightly different perspective, and not even a smidgen of the Ford budget. Technical support came from books and the school of: 'if it doesn't work, find a solution and make it again'.



At the end of the day, it was two blokes working in a shed. Each comfortable with what the other was doing. It's the sort of friendship that is unique and only blokes that have worked together in this situation will understand. The satisfaction obtained from taking on this sort of project with a good friend, is far greater than the satisfaction of doing it all by yourself.

All was going well until the car was about three quarters finished, when the controlling body of motor racing in New Zealand suddenly announced it had decided to lower the capacity of Sports Cars to 2-litres. In Ross's opinion, this



Left in the garage to gather dust

effectively killed sports car racing in New Zealand and until this day, it has never recovered. Both Ross and Bob were devastated. They had worked almost nonstop on this car for a considerable amount of time, they had overcome multiple challenges and all to have 'the establishment' make it obsolete. The car was almost finished, so in disgust they pushed it to the back of the basement/shed/garage under his house where it sat gathering dust for years.

In 1986, Ross was given the opportunity to display his Heron GT MK4 at the Whenuapai Wings and Wheels historic race meeting. Ross accepted the invitation and, with the help of another good friend, Chris Cook, dragged the Heron GT out of the shed, dusted it off and proceeded to make it driveable. Sadly, this would be the only time that Ross would ever drive this car in anger. It sounded beautiful and went well in a straight line, faster even than all the Ferrari's and Porsche's, but the 1965 Humber 80 brakes were not up to the task of stopping it. Ross said, "*It was a very easy car to drive and handled well despite being a little off-tune.*"

The car was driven one more time on a New Zealand race track. Not by Ross but by his now grown up daughter, Marny.

Apart from those two events, the GT probably did more miles being pushed in and out of his workshop than it ever did on the track. It was great to look at and a great conversation starter but unfortunately, forced into obsolescence before it was completed.

The car was sold in 1990 to David Manton of Tauranga. When David sold up and moved away, Ross lost contact with the car until 2008 when he heard the Heron GT was for sale in Belgium. Keen to find out what was happening with the car he tried to contact the new owner, who was afraid that Ross was trying to repossess it. That was a bit of a dead end, so Ross did some sleuthing on his own, and believed that when the car left New Zealand, it headed to a new owner in the USA, before being sold again to another person in Europe. Unfortunately, as it entered Europe it was seized by Customs and they kept it for at least 3 years. At this point Ross, once again, lost track of it. Another fact that he found out, was that at some point in his life it was registered illegally as an actual Ford GT40. All reference to it being a Heron GT Mk4 built in New Zealand had been removed.

Then In 2016, Ross was contacted by Adrias Stals, from Latvia, who said he thought the car he was racing in Europe was the Heron GT MK4. It's owner Alex, was having great success in racing but wanted to find out more about it. The brakes had been upgraded, along with the coil over springs and engine which was now putting out more horsepower. Amazingly, it still ran the same transaxle that Ross had designed and built decades earlier In 2017 Alex had a bad accident in the car so he took the opportunity to give the car a full restoration, including changing the Heron gearbox that was becoming unreliable due to the extra horsepower. Fortunately, Ross was able to help him out by obtaining some parts for him and telling him where some of the other parts had originated from.

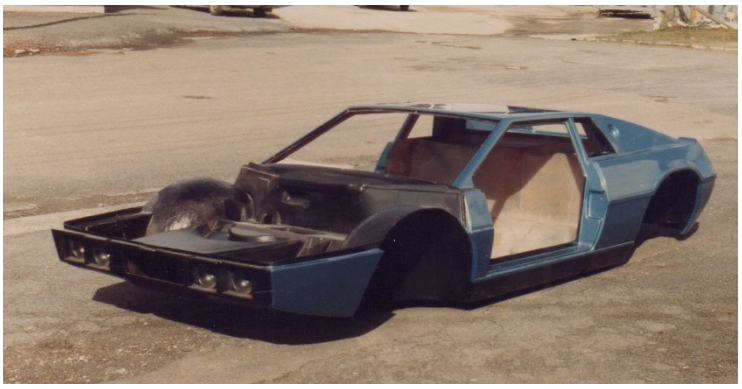
It was very special moment when Ross saw the car he had built almost 50 years ago sitting on the Le Mans race track. It was a very emotional time. The car looked magnificent amongst the other 40 or 50 cars in Alex's group (pre-1975 race cars) on the dummy grid and caused a lot of interest. It went very well in practice, but due to the rules it was racing under, it was only allowed narrow tyres which was a real great disadvantage especially in the corners, when compared with later model cars using slicks. While it was very quick down the straights the cars with slicks were much faster in the corners. This may have been the first and last time that this car is raced at Le Mans as Alex has decided to sell it as they have reached a point where it is competitively restricted due to the types of tyres it has to use.

During the week that Ross was there the Le Mans officials asked if they could have the car under the “Dunlop Bridge” for photos for their archives. The replica car is currently for sale for around half a million dollars. Not bad when you consider it was built 50 years earlier by a couple of blokes in a shed in Rotorua.

Heron MJ1

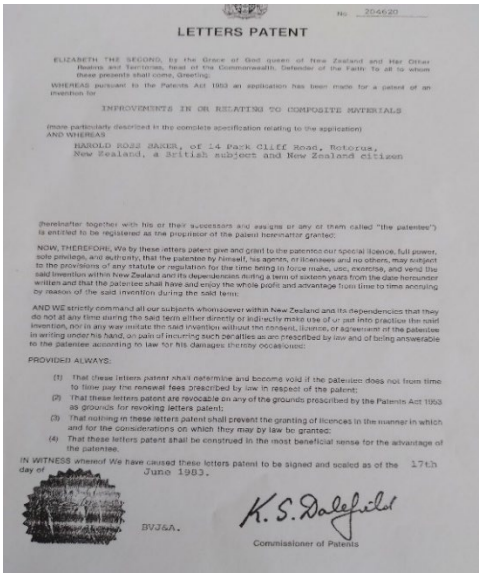
By Patrick Harlow and Ross Baker.

In the early '80s Ross Baker started work on what would be his biggest adventure yet. Using his drawing board, he started to design what would become New Zealand's most successful production car. Initially, it was never intended to be sold as a brand-new drive away car. Instead, it was supposed to be a factory assembled kit-car. The customer supplied the running gear, Heron built the monocoque body, assembled the car and had it supplied with a warrant of fitness and registration.



The idea for a fibreglass monocoque had come to him when he was building the first Heron Spraymaster. By this time, he had learnt enough about fibreglass to believe that he was quite capable of building a fibreglass monocoque body/chassis at least as strong as an equivalent built using steel. Fibreglass did not require the use of huge industrial steel presses to stamp the panels, so it was the ideal material for small volume production. Additionally, with fibreglass being ‘laid up’ in multiple layers it was relatively easy to add strength to critical mounting points by either making the fibreglass thicker or by adding Kevlar and/or stainless-steel mesh. He calculated that to get the same strength as steel, the thickness of the fibreglass had to be multiplied by three.

Ross also developed the “Heron Fixing System” of adding additional strength and stiffness to panels that supported high load components like the engine and suspension. Fibreglass is very strong over



No. 204620

LETTERS PATENT

ELIZABETH THE SECOND, by the Grace of God queen of New Zealand and Her Other Realms and Territories, Head of the Commonwealth, Defender of the Faith: To all to whom these presents shall come, Greeting:

WHEREAS pursuant to the Patents Act 1953 an application has been made for a patent of an invention for

IMPROVEMENTS IN OR RELATING TO COMPOSITE MATERIALS

(more particularly described in the complete specification relating to the application)
AND WHEREAS

HAROLD ROSS BAKER, of 14 Park Cliff Road, Rotorua, New Zealand, a British subject and New Zealand citizen

(hereinafter together with his or their successors and assigns or any of them called "the patentee") is entitled to be registered as the proprietor of the patent hereinafter granted:

NOW, THEREFORE, We by these letters patent give and grant to the patentee our special licence, full power, sole privilege, and authority, that the patentee by himself, his agents, or licensees and no others, may subject to the provisions of any statute or regulation for the time being in force make, use, exercise, and vend the said invention within New Zealand and its dependencies during a term of sixteen years from the date hereunder written and that the patentee shall have and enjoy the whole profit and advantage from time to time accruing by reason of the said invention during the said term:

AND WE strictly command all our subjects whomsoever within New Zealand and its dependencies that they do not at any time during the said term either directly or indirectly make use of or put into practice the said invention, nor in any way imitate the said invention without the consent, licence, or agreement of the patentee in writing under his hand, on pain of incurring such penalties as are prescribed by law and of being answerable to the patentee according to law for his damages thereby occasioned:

PROVIDED ALWAYS:

(1) That these letters patent shall determine and become void if the patentee does not from time to time pay the renewal fees prescribed by law in respect of the patent:
(2) That these letters patent are revocable on any of the grounds prescribed by the Patents Act 1953 as grounds for revoking letters patent:
(3) That nothing in these letters patent shall prevent the granting of licences in the manner in which and for the considerations on which they may by law be granted:
(4) That these letters patent shall be construed in the most beneficial sense for the advantage of the patentee.

IN WITNESS whereof We have caused these letters patent to be signed and sealed as the 17th day of June 1983.

BVJ&A.

K. S. Dalefield

Commissioner of Patents

large area but has little localised strength. The use of stainless-steel mesh embedded in the fibreglass allows the load to be spread over the area determined by the size of the mesh or number of layers.

The donor car he decided to use was the Skoda 110. Despite being a bit of a joke at that time, they did not deserve their bad press. Having worked on many of these cars in his shop he knew they were really a good little car, except for the rust. The Skoda front suspension had a cross member with wide mounting points, unequal length wishbones and disc brakes, ideal to spread the load over a wide area and give plenty of leg room. The Skoda transaxle and rear suspension also had wide mounting points and the transaxle was a very sturdy four-speed unit. With plenty of second-hand cars around, Ross knew that using second hand parts, he would not have the additional cost brought about by the 40% sales tax that was levied on new cars at the time.

While Ross had designed the MJ1, he was helped to build the wooden plugs by Chris Cooke and Peter Guilford. Once the plugs were finished and painted to a very high quality, they were taken to Rotorua Fibreglass where Paul McDiarmid made the fibreglass moulds.

By the start of 1983, the Prototype was fully road worthy. In the early ‘80s, the only thing that was required before the car could be registered, was a Warrant of Fitness (WoF), but in those days, there was not the hassle to get a kit car registered as there is today.

Early in 1983 Ross was approached and asked if he wanted to show his Heron MJ1 at the Auckland 1983 Motor Expo scheduled for July. With the excitement of the prototype being finished, Ross decided to put three Herons on display.

Having no idea what was going to happen at the show Ross promised, that if by the end of the weekend, they had four orders, he and Bev would buy his team of volunteers, Chris Cooke, Peter Guilford, Derrick Canty, Allan MacKay and Wayne Maisey dinner on the Sunday night, but as everyone was so exhausted by the Saturday night, the dinner was postponed until later.

After the show, Ross was stunned by the success of the weekend. In his pocket was a notebook which held 350 names of people that had expressed an interest in buying a car. These resulted into 30 definite orders with refundable $1000 cash deposits.

Ross was pretty sure that he and Chris could build four or five cars a year. Demand was already outstripping what he could supply. He was going to need to employ more staff, which meant he was going to somehow have to cover all their wages until the money from car sales started to roll in.

However, before he started gearing up for production, he was convinced by Frank Hart, of Summit Engineering, that a car this good should only be sold brand new, and turnkey. Frank even offered to become the projects main financial backer and offered to purchase fifty one percent of the Heron Company.

Ross quickly learned the downside to this arrangement as Summit having the majority vote started to make changes. One of the many changes that Summit made was to have the original 1.6-litre motor changed to a brand new 2.0-litre Fiat motor. Ross had designed the car around the 1.6-litre unit, and the 2.0-litre meant that parts would have to be beefed up and possibly changed to take the greater power. Summit Engineering was looking for a quick return on their investment, so any development work had to be done while the car was in production. As a consequence of this, imperfect design/development process, cars left the factory that Ross knew would return under warranty. He was not happy with this situation but being the minority shareholder, he had lost control.

The situation between Ross and Summit grew tense and despite the last couple of cars being profitable, Summit decided to back out of the car business, as they were not getting a reasonable return. Ross opted to buy back the rights to the Heron and the moulds. Production officially stopped early in 1985.

Ross had designed a new model Heron called the Heron MJ 2 + 2. This was a bigger car with more head room and a transverse Ford Telstar 2 litre motor and gear box. He had made the plug for the moulds, but this all came to an end when Summit pulled the plug. Luckily, Roy Hoare saw the plug and fell in love with it. He was so keen to have one, he paid to have the moulds made and a body made. He ended up fitting a turbo charge 3 litre Mitsubishi motor and gear box. He made a beautiful job of this car. A second body was built and is now owned, with the moulds by Alan Wichman who owns 4 other Heron MJ1 in various stages of restoration. Alan promises he will finish the second Heron MJ 2 + 2, which would be great to have 2 Heron MJ 2+2's on the road.

Modified Honda City For Cherise Hobbs.

Cherise Hobbs was sent to Heron Developments Ltd by the Auckland Disabled Association to modify a car for Cherise to drive. Cherise had chalky bones and her back had collapse, she had a broken left arm that would not heal, and her legs were only about 350 mm long. I decided to modify a Honda City as this car was easy to drive and had a large door opening.

This was one the most challenging projects I had ever attempted. While I had made and fitted many normal hand controls where the driver can use one hand to steer and the other to operate the accelerator and brake, Cherise only had one arm to operate both. She also could not transfer from her wheelchair to the drivers-seat.

The main challenge was how to steer, brake and accelerate the car with only one “good” arm. This was achieved by placing another universal in the steering column with a linkage to the brake pedal so the steering wheel could be pushed up to operate the brake. A mock-up of this was made and it worked perfectly. The hand brake and automatic gear leaver were raised within easy reach for Cherise to operate.

The next challenge was to get Cherise in and out of the vehicle. I mounted two runners to the floor with a step to allow a platform for her wheelchair to slide in and drop down over the sill. A platform was then constructed to sit on the two runners with wheels to allow it to lift up and slide out and down to allow Cherise to drive her wheelchair up the ramp and into the car. The ramp was powere by a screwthreaded rod driven by an electric motor and the ramp was operated by a hydrolic pump and motor from an outboard.

There were control switches on the back panel of the car to open the door, slide out the platform and lower the ramp. Cherise then drove up the ramp where 2 hooks would clamp the wheelchair to the platform

Another set of switches mounted on the ramp would lift the ramp up and slide the platform and wheel chair into the car. The accelerator pedal was mounted next to the indicator switch.

To make it easier for Cherise to drive, I fitted a power steering unit from a Honda Accord. We had no trouble certifying this car. Cherise spent the weekend end learning to drive the car around the back of our workshop. On the Monday, she had a driving lesson and on the Friday went for her driving license and passed it with flying colours. Since we built this car in 1990 Cherise had covered 20,000 kls, but unfortunately, she sadly died of her health complications in 2005.

Heron Vehicles on Display in Museums

All the drawings and photos of the many vehicles designed and built by Ross Baker, Heron Developments Ltd, including the moulds for the Heron MJ1 are held in the MOTAT Museum in Auckland, New Zealand.

Heron MJ1 cars are on display at the MOTAT Museum in Auckland, New Zealand and at the Gold Coast Museum in Queensland, Australia. The cars were designed and built by Ross Baker, Heron Developments Ltd, Rotorua, New Zealand in 1983. It has a monocoque body/chassis and is powered by a 2 ltr. Fiat Motor and 5 speed Heron /Skoda gearbox. 30 built.

Heron PC 80 Electric Car is on display at MOTAT Museum in Auckland, New Zealand. The car was designed and built by Ross Baker, Heron Developments Ltd, Rotorua, New Zealand in 1992. It had monocoque body/chassis with 5 x 6-volt gel/lead acid batteries that drove 2 Fletcher pancake motors, one in each rear wheel. Top speed.100 kph x 100 kms. per charge. 1 built.

Heron Spraymaster is being restored by MOTAT Museum in Auckland, New Zealand and will go on display when finished. The sprayer was designed by Ross Baker, and built by Ross Baker and Bob Gee, Rotorua, New Zealand in 1980. It was powered by a Ford Falcon Motor and was, 4-wheel steer, 4-wheel drive, air conditioned and carried 3000 litres of spray. 17 built.

THE HISTORY OF HERON DEVELOPMENTS LTD, NEW ZEALAND.

In 1960 Ross and his brother Tony stated a garage in Old Taupo Road, Rotorua repairing cars, called, Baker Bros Garage. During this time Ross had designed build many successful racing cars under the name of Heron.

In 1970, Bev and Ross Baker decided to form a new company called Heron Developments Ltd. For over 50 years Heron Developments Ltd., designed, built, and modified hundreds of vehicles including, go carts, golf carts, electric vehicles, orchard sprayers, racing cars, sports cars and equipment for people with people with disabilities.

All these vehicles were designed and built by Heron Developments Ltd for private customers as well large companies such as Tasman Pulp and Paper, Whakatane Board Mills, Electro-Corp New Zealand, Wanganui Power Co, Waikato University and New Zealand Disability Association. Heron also designed and built protype vehicles for Formular Manufacturing and Bisley's Industries as well as Bevco in the USA. Many of the products being exported to Australia, Canada, and the USA.

Racing cars designed and built by Heron Developments and raced by Ross have been extremely successful winning the under 1500 cc New Zealand Sports Car Championship, New Zealand Saloon Car Championship (Speedway) New Zealand Super Modified Championship as well as representing New Zealand in the New Zealand/Australian Stock Car Championship, which New Zealand won.

In 1980, Heron Development Ltd. decided to design and build a fibreglass monocoque sports car called the Heron MJ1 named after their daughter, Marny Jane. Over 30 of these vehicles were built between 1983 and 1985. Heron also patented a system of mounting the components to the fibreglass, which had been a problem previously with fibreglass monocoque cars. Many of these vehicles build over the last 60 years have been beautifully restored or are in the process of being restored.

In 1995, Bev and Ross, Heron Developments Ltd. won the prestigious New Zealand Forest Corporation Award for Business Innovation presented by Mayor, Grahame Hall.

In 2002, Bev and Ross decided to retire to the Sunshine Coast, Queensland to be closer to their daughter Marny, her husband Yaser and grandchildren, Alex and Anna, but Ross still had one more car to be built, a 1972 Ferrari Daytona Spyder using a 2002 VX Holden Commodore as the doner car. The car is now finished.

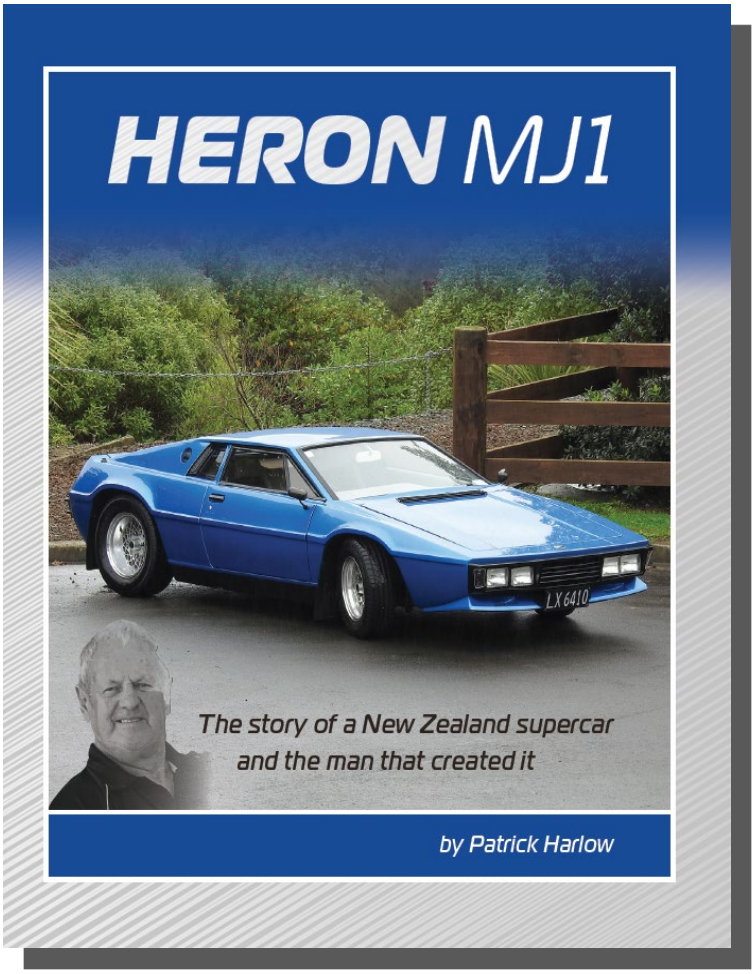
Bev and I would like to thank all the people who helped build these vehicles over the last 60 years, without them this would never have happened, but especially our most trusted and loyal friends, Bob Gee, Chris Cooke and John Grant who have sadly all passed away. We are forever grateful to them and miss them terribly, but hopefully one day we can carry on designing, building, and racing cars as if nothing had happened!

Bev and Ross Baker, Heron Developments Ltd. Email: rossbaker1@bigpond.com.au.

Book Order Form

Heron MJ1

The story of a New Zealand supercar and the man that created it



New Zealand's local car industry is widely unknown and generally unreported in this country. If push came to shove, some Kiwis could probably tell you of a few locally designed and manufactured cars. However, it is doubtful that many will have heard of New Zealand's home-grown and only mass-produced supercar.

Ross Baker, a Rotorua A-Grade mechanic, had a look at the supercars that existed around the world and decided to design and build his own in New Zealand. To add more challenge, he built it using a fibreglass monocoque chassis construction instead of the normal steel chassis, which stretched the boundaries of both design and materials. Despite only being in production for a short time, it still ranks as being New Zealand's most successful turn-key factory produced supercar.

This book looks at the man and the wide range of cars he created and then focuses on the Heron MJ1. Despite less than 30 of them being produced, this car plays an important part in New Zealand's automotive history. The fact that the car got into production at all is a tribute to Ross, his vision, and his charisma. The '80s were an amazing time for small manufacturer car production. With today's multitude of regulations, it would cost millions to manufacture an equivalent car today, if at all.

For further information; www.heroncars.org.co.nz **or Email:** rossbaker1@bigpond.com.au

Books cost $65-00 each. Plus $6-00 P & P.

Payment Options

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