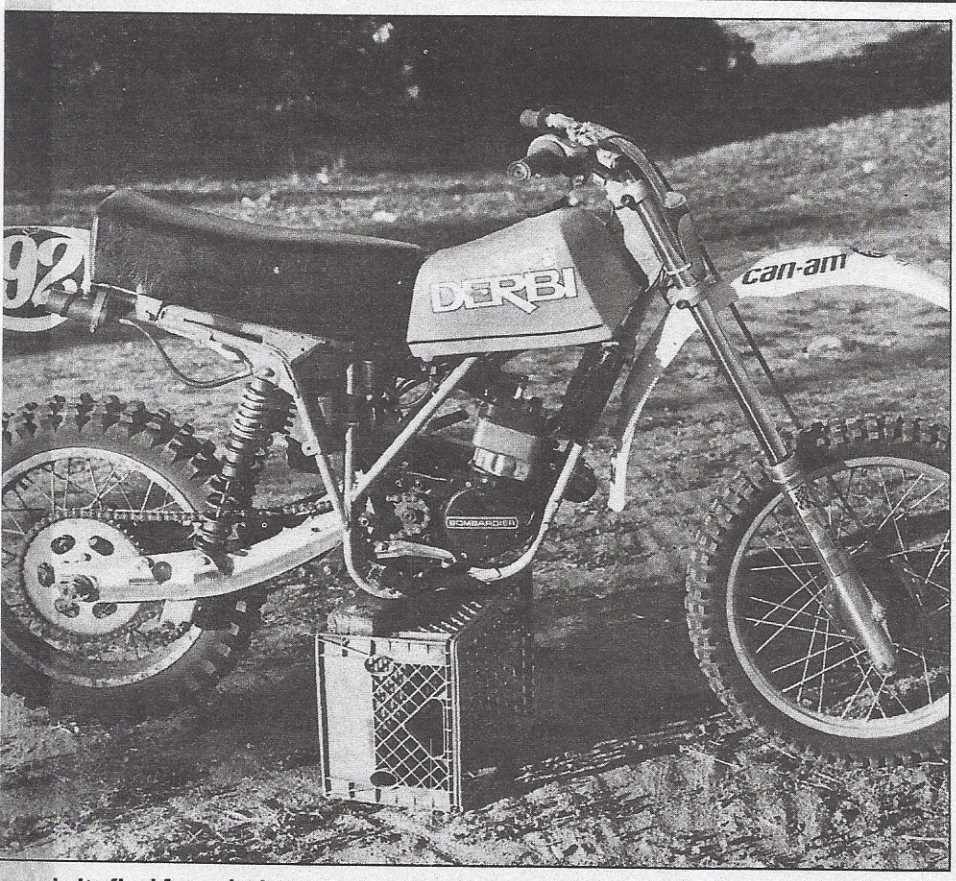
CAN-AM WATER-PUMPER

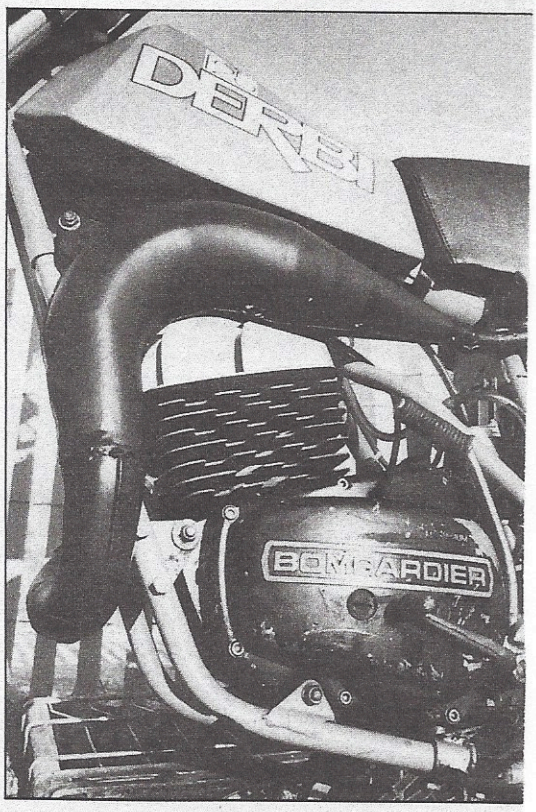
ROTAX/ BOMBARDIER 125

Canadian dream machine via California

By Jody Weisel



In its final form the latest Derbimobile featured Ohlins shocks, Thor swingarm, M. Robert rear fender and a Chrysler heater core.



The rocketship chrome cylinder of Number One was so fast that it was too pipey to ride. The pipe is a modified YZ125E pipe.

☐ Last February, while we were cavorting in Valcourt, Quebec, at the Bombardier factory, Tony Murphy, former Daytona go-faster and Can-Am rep, suggested that perhaps we would like to get involved in a Can-Am motocross project bike. Tony casually mentioned a few trick tidbits that he had lying around.

Since Can-Am has not made a 125cc production motocrosser since 1977, and they were planning on reintroducing one in the 1980 line, it seemed like a viable proposition to try and build a 125 to compare to the production effort.

The only available Can-Am 125 mills were 1976 production engines, and a couple of prototype engines left over from Jimmy Ellis and Charlie Iott's National Championship effort.

In March, Tony and I scrounged up enough parts to make a complete rolling chassis, even if it was a little shopworn. Kenny Zahrt tossed in his MX5 250 frame, a 1978 MX4 swingarm went on, we found one Girling shock, and a set of Marzocchis with blown seals. When the Can-Am was all bolted together, it looked less than promising.

ROTAX/BOMBARDIER NUMBER ONE

Starting with a stock Can-Am 125 lower end, manufactured by Rotax in Austria, we bolted on a special chrome cylinder with radical porting. The cylinder came from Can-Am's road race and Bonneville effort. We should have taken it to Bonneville, instead of Saddleback! The standard transmission was too widely spaced for the high-rpm engine, and the result was a frantic ride of clutching and bogging. The bike was fast, but almost impossible to keep on the powerband.

But Number One showed that the Marzocchi forks had had it, new shocks were needed, and that the standard power bend Magura levers weren't the hot setup.

ROTAX/BOMBARDIER NUMBER TWO

Number Two never hit the racetrack. The second engine was a water-cooled Rotax cylinder and head that operated off of the thermo-siphon system. The water got hot and circulated itself through the radiator, and then back into the cylinder. It was at this point that it was discovered that each of the Can-Am cylinders had the exhaust port in a different location. The result was that the special exhaust pipe we had fabricated for Number One had to be changed.

The water-cooled cylinder, which was almost identical to a stock cylinder in appearance, was too heavy and also too pipey for our tranny. But the suspension was beginning to get dialed in. A quick call to Kayaba had resulted in a set of 15½-inch KYB F-series air shocks and 38mm Kayaba air forks. The forks slipped right into the Marzocchi triple clamps, but the shock holes had to be enlarged and new bolts used to mount the shocks.

ROTAX/BOMBARDIER NUMBERS THREE AND FOUR

The third engine was Kenny Zahrt's 1976 125 race engine. It had a short life span, because we failed to break it in long enough and it seized. When engine number four also seized, we began to suspect that the special internal rotor Motoplat that we had joyously installed was frying the pistons.

A Suzuki front wheel was attached to the front forks, and Preston Petty fenders were mounted front and rear. The large orange side panels were trimmed down with a jigsaw to make a sleeker shape. The Magura levers were replaced with stock Suzuki lever assemblies. Renthal aluminum handlebars replaced the Gary Jones replicas. The rear frame loop was cut off, and additional cross-braces and fender tabs were welded on under the frame.

The package was beginning to come together. The bike handled very well, thanks largely to the 250 frame and over 11 inches of suspension. Of course, the head pipe had to be rewelded to match the exhaust port.

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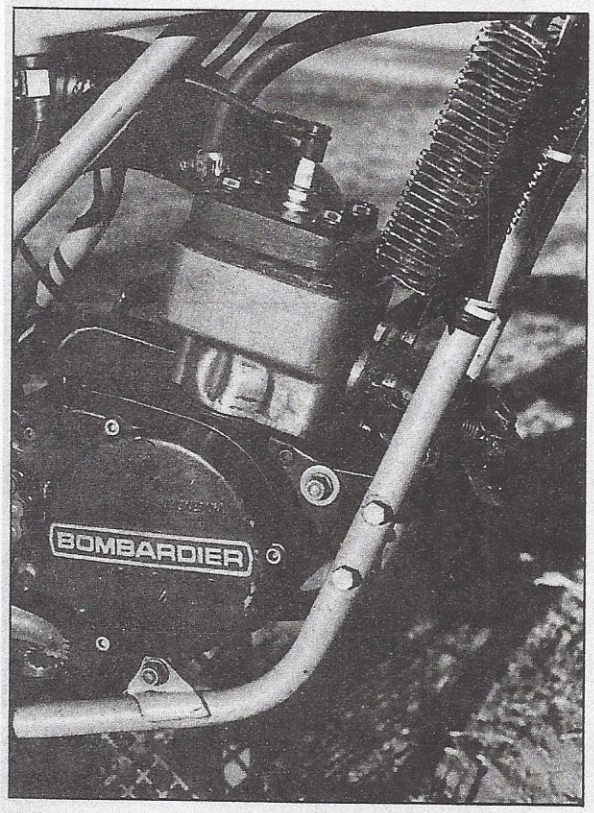
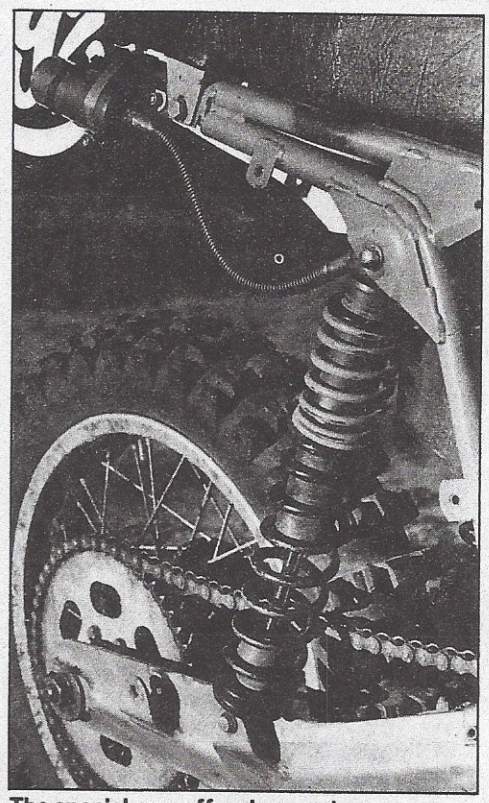


Devoid of finning, the Rotax 125 engine looks smaller than 125cc. The pipe bends under the radiator before starting backwards.



The special one-off swingarm has mounts for long Fox shocks or short Ohlins. The frame bears the burn marks of continuous welding, changing and chopping.

The rear suspension was handled by a short MX4 swingarm and Kayaba F-series air shocks. The shocks are a quick and clean fix.

ROTAX/BOMBARDIER 125
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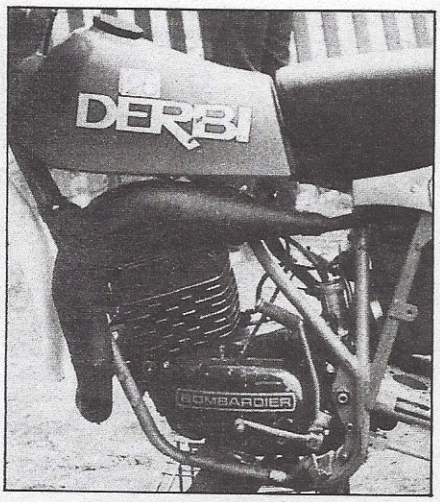
ROTAX/BOMBARDIER NUMBER FIVE

Cycle magazine, the paragon of knee-dragging and turn signals, was having great luck on the SoCal AFM 125 Grand Prix road race circuit with an exotic water-cooled 125 Can-Am. Through Tony Murphy and Can-Am, we procured identical parts. The top end is off of a Rotax water-cooled go-kart engine. It doesn't fit on the Can-Am lower end without a touch of machining. Trying not to repeat our previous mistakes, we got a special close-ratio road race gearbox to help keep it on the pipe.

As trick as it was, none of it was going together easily. In the go-kart and on Phil Schilling's road racer, the water was circulated with an electric fuel pump and 12-volt battery. This system was too heavy and failure-prone for motocross. Using the radiator from engine number two, and a lot of welding and machining, we mounted up a Yamaha TZ250 road racer water pump. Ted Moorewood of Cycle Town in Norwalk, California, pulled all the resources together to get the complete coolant system operative. Special gears had to be ground, plates had to be machined, water fittings were soldered, and a new pipe had to be designed and welded up (of course, the water-cooled cylinder had a different exhaust port than any other engine).

ROTAX/BOMBARDIER NUMBER SIX?

Because the bike is based on a Can-Am 250 frame, the machine weighs about ten pounds more than its Japanese competition, but it also has about two horsepower more than any stock 125. It is a complex and involved piece of racing equipment, but imagine the psychological advantage when you pull up to the starting line, and let your competitors hear the whine of your 24 hp, close-ratio, rotary-valve rocketship. ☐



Number Three's engine was fired by a faulty non-stock Motoplat. For engines that were three years old, they were still competitive after a little work.