BOMBARDIER MX·6

Its price puts it between the more expensive European machines and the cheaper Japanese models, and for what you get that's just about right.

INTRODUCTION

The story with Can-Ams (or more precisely Bombardiers — pronounced "Bomb-bar-d'-ayze") is that they began life as a Canadian design intermingled with American interests; hence the name was a mating of Can for Canada and Am for America, except in Australia the name Can-Am has been trademarked by Repco or somebody and it can't appear on the motorcycles.

Whatever, the Can-Am was introduced basically as a rocket powered nuclear bomb. That is, it was hell of a fast, but it wasn't the greatest handler in the world and crashing was fairly common. As well, the early models had sweet skidoo in the way of brakes, which only served to accentuate the problem.

Since that forgettable era, the factory has worked hard to overcome both the problems and the image. With this model, they have all but succeeded.

FRAME AND SUSPENSION

To do this test, the bike was prepared for and ridden in a two day reliability trial in the Bairnsdale area of Victoria. A distributor who is prepared to do this obviously is prepared to stand behind the product more than one who doesn't. We appreciate it and certainly try our best to look after such test bikes. And in the end we feel the reader gets a far better and more honest evaluation. In the whole event, which covered some 400 or so kilometres of terrain, only two problems cropped up; one, the spokes came a little loose — not much, but enough to require a tune up with a spoke spanner, and the locating bolt for the chain guide on the lower run of the chain came a little loose — again, not enough to fall off or to cause problems, but enough that it was a good thing it was spotted in time.

Apart from that, nothing went amiss, astray or wrong. It was stupefyingly reliable: ho hum, another section eh? Better give the engine a kick and go off and ride it. It's always good when a bike holds together that way. And with Bert Flood's bikes, it's typical of the meticulous preparation he performs on his test bikes.

And as well as holding together as a machine with a whole bunch of moving parts which are supposed to work just like so, a bike can only finish a tough event like the Calulu Two Day if you don't crash someplace and bend or break anything.

Which is the point to all this. During the event, at different times, the bike was cursed for this and that and the other bloody thing. It had the annoying habit of

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DIRT TEST

Photography by Vicki Flood

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stalling easily and after you do this a few times you have a short temper fuse the next time it happens; to paraphrase the Sound of Music, the hills were alive with the sound of cursing at times.

Another grim detail was the tyres: Pirelli Gara Cross tyres were fitted to the bike and they just didn't work. The front continually lost traction and slid out, it wouldn't behave itself when going over the millions of logs in the event, and the back bounced sideways on logs when it hit them. Bad news, and the rider couldn't depend on them to stick where they were pointed unless there was a berm or a groove, or unless the conditions were just that right combination of tackiness which offers good traction to any tyre. Metzelers would have cured that.

Third on the list was the brakes: these weren't bad, but nor were they super strong.

Despite all this, at the end of the event the bike hadn't been crashed. Sure, it had been overbalanced on lots of slippery logs and a couple of times it went a fraction too wide on a corner, and often it bounced and ricochetted around on rocks like a PE Suzuki, but the thing wouldn't crash.

In particular, there was one memorable nasty situation. You see, a trait of a Victorian event is that somewhere along the course, they have an "impossible" section. This isn't a special test as such, where riders lose a point a second. Riders can only drop whole minutes. But the effect is the same: you have to ride as fast as you can. The Bombardier was ridden through this section as fast as humanly possible, but there was a lot of dust kicked up by the two riders in front. Heading down into a certain gully there was a deep washaway, and a hump of dirt on the other side. In the dust, this was hit flat out in fourth. BANG! The whole show bounced a million feet, sideways, into the air and landed on the front wheel with the rider waving off the handlebars like a flag. Instant thoughts sprang to mind: "Is my insurance paid up?" "Who'll take care of the dog now?" "I'll never make it to the Six Days at this rate" and "Bert's gonna kill me for bending his bike . . ."

After landing, the bike went on its way as if that sort of thing was acceptable and par for the course. And that's the funny thing about it. Although it gives you the impression in some situations that it isn't fully co-operative, it actually does its thing without a lot of hassle.

Sure, it's not all easy. The bike does let you know you still need to work at the harmony factor. For-instances might explain.

For instance, in thick tree sections, the bike has an unwillingness to be easily flicked in and out as you try to negotiate the section quickly. This applies to the Qualifier as well as the MX-6. It wants you to sit right up on the tank for a start, and you have to consciously begin to turn for the corner well in advance of arriving there. Then, when you are there, you have to use the power to do it successfully.

It is more like a Husqvarna than anything else, although the reluctance of the bike to flicking down into a tight turn is a little like the monoshock-type of top-heaviness normally associated with a Yamaha. But in terms of sitting on the tank and using the power to steer the bike, it is very much like a Husqvarna.

But the steering isn't an exact replica. Again, the tyres have to be considered. If they were replaced with Metzelers you'd notice an instant improvement: the thing would stick where you put it. But the bike itself does seem to want to steer, under the right conditions.

Take a section where riders had to ride a tricky off-camber studded with rocks and trees and covered with bracken. Since there was a bit of a rut formed by the bikes in front, the Bombardier could be made to go **exactly** where it was put, much the same as a KTM with Metzelers. Or along an undulating trail filled with nasty holes and jutting rocks, you could pick exactly where you'd go. In those terms, the bike **did** steer.

It was just that sometimes, where you needed to make instantaneous direction changes to go fast in a tight section, the bike wanted to resist. And at those times, it felt a little heavier to ride than its light weight would suggest.

Now we'll relate it to something other than the two standards of enduros (the KTM and the Husqvarna) and talk about it in terms of something Japanese. Like has already been mentioned, it displays traits from a PE and an IT. In gibbery, loose, football-sized rocks, the Bombardier wanted to ricochet all around the universe: PEs do that, and it's very unnerving. Then there's the top-heavy sensation which creeps in at times: ITs have it.

Apart from that, it is a better thing. It handles in a superior fashion to the Japanese bikes.

The MX-6 you see in the accompanying photos was fitted with Ohlin shocks, in place of the standard S&Ws. A big improvement, you might say. In the US, you get a choice — standard with S&Ws, or for $200 extra you get Ohlins. Not here. S&Ws aren't bad, but they're in the category of budget racing units. Ohlins are rebuildable, don't fade, last longer, have excellent springs, work best when used hard and cost a mint. But they sure make mincemeat out of bumps, ledges and holes.

Like all good competition machines, the Bombardier comes into its own when the rider pushes it hardest. If you pussy-foot around like an ageing club level play-racer, it's OK and that's about all. Alternatively, if you get tired, it won't work any better for you than will any Japanese bike.

Blasting it up a nasty, rock-strewn hill filled with ruts, all you need to do is keep on the gas and pick the right lines. Under power it'll work fine.

And if you encounter a difficult riding section, if you enter it with a negative attitude you're a goner. The bike demands that the rider use it, unlike a KTM which will meet a rider halfway. A Husqvarna works like the Bombardier: as long as you dominate it, all is well. Slacken off for an instant and the bike will want to take control.

The point of the whole exercise is that the Bombardier does work well as long as you can ride it. That's not a cop-out because if you are a weaker rider you should be going for something else.

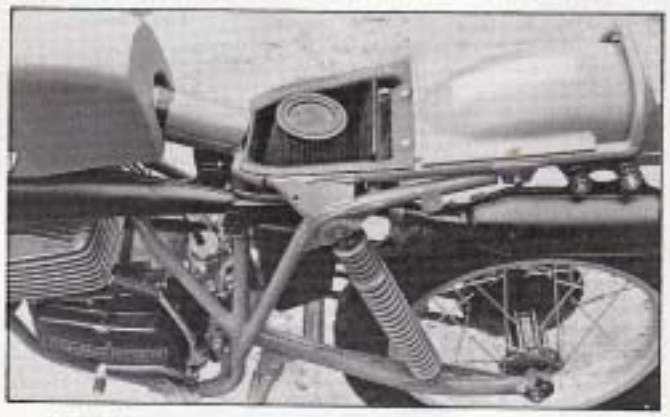
POWER AND ENGINE

Some things never change, do they? In the beginning, God created Can-Ams to be very fast and powerful. He still does. On a motocross track, the Bombardier is the fastest 250 around. But that's not at the expense of any decent powerband, either.

The MX-6 powerband starts right down at the bottom, progresses in a nice, steady arc up to the Official Powerband, then literally takes off. It has a fat midrange there to get it around any motocross course easily, and anyone who has ever owned a peaky motocross bike will appreciate the significance of a fat midrange to a motocrosser.

This midrange means it is best to shortshift the bike rather than rev it right out. It pulls so well and produces so much power than shifting early gets you going a lot faster than if you climb up over the powerband.

BELOW: The MX-6 tank was good for about 70-75 kilometres, no more. This translates into a good 45 minute moto for motocrossers. You burn your leg on the pipe. Filler hole is large.



ABOVE: The Qualifier — shown here — inducts air from the rear of the bike, under the seat. The MX-6 has a sophisticated tube running down the frame backbone. Filter is K&N with an oiled foam sock over the top.

ABOVE: This was the pit scene prior to the Victorian Calulu Two Day Trial. It attracted Victoria's largest enduro entry all year; not surprising — it is their only two day event. The ride was interesting and well run and was about the best test of a bike that we can think of.
RIGHT: The Qualifier has a larger tank (this is the 175 model), different gear ratios, heavier flywheel effect in the engine and full lighting. Silencing is excellent, and the engine pulls strongly.
ABOVE RIGHT: MX-6 has a smaller rear guard than the Qualifier. There is a centrestand on the Qualifier to aid tyre changes. Ohlins on the test MX-6 improved the rear end considerably.

Rotax builds the engine in Austria and their main aim in life is to build only engines rather than become involved in the messy subject of handling by trying to fit their engines into a frame. Since that's all they are worried about, they've managed to evolve a successful powerplant: SWM and Can-Am are only two of the motorcyle companies which use Rotax engines.

The MX-6 250 uses Rotax' rotary disc design: this system meters fuel to the engine through a rotating disc at the side of the crankcase. The shape of the disc determines the exact metering rates and the location feeds the fuel directly into the big end/crank area, where it performs its lubrication work. There are a few advantages to this system as opposed to the usual "whack the carb onto the back of the barrel because it's easier" system used by everyone else.

One is the rotary valve allows a far more precise metering of the fuel than even a Boyesen type reed valve does, because there is still a certain amount of blowback and whatnot going on through the reed petals. When the rotary disc cuts off the inlet opening, that's it — no more fuel can pass in either direction. As well, there becomes no need for an inlet port in the rear of the barrel; all you have are transfers and exhaust port. This means more available space in which to locate the transfer ports for the desired powerband, and it means there is less wear because there is one hole less.

BELOW: The forks have an air-equalising tube. We found 5 psi to be about right, but the forks need a heavier oil — a minimum weight of 15, probably best at 20 weight.

ABOVE: The sidecovers were removed for the test, and the bike looked about 20 lbs lighter. It is already light, though, even with them still on the bike. Silencer was replaced with an SWM motocross silencer.

In the past other manufacturers tried the rotary disc system but had less success than Rotax has had. Kawasaki is a notable example: years ago, they used it on their trailbike range. But they put the carburettor on the end of the disc, or out the side of the engine, which meant the overall width of the engine was enormous. Not too hot for sneaking through tight scrapes. Rotax put the carb at the end of a long inlet manifold, so that the overall width of a Rotax engine is the same as any other engine. An added bonus is that the longer inlet manifold theoretically adds to the bottom-end performance of the engine.

To all this, Rotax added their own magic touch and have built an engine which can go with the best of them. Such is the MX-6 250 engine.

So, you ask, if the rotary disc is so good, why doesn't everyone use it? Cost. That's all. If you bolt a carburettor onto an inlet manifold which leads directly into the back of the barrel, there really isn't anything complicated involved: a simple inlet port hole and a manifold onto which the carb is bolted.

But if you need to cast up a complicated inlet system into the left sidecase, machine a precise disc which can meter the fuel exactly as you need, then machine the mating side of the crankcase half (the inner side already has machining work no matter what engine type it is), then add seals and grommets and hoop-de-doos and things, then it adds up to a lot of extra cost. Not a fortune, mind you, but enough to make a manufacturer think that it might be advantageous to use the alternative system.

For this reason, even Rotax build conventional piston port engines: their 370 engine is one example.

Enough on the top of the engine, other than to say it uses a Mikuni and what need be added to that? Bert Flood felt it necessary to add that he'd found the standard silencer gave the engine too much restriction in air flow, with the result that he had experienced the odd seizure or two. He'd fitted another silencer to the test bike and there were no problems. Take 1mm off the throttle slide, use bog standard jetting, maybe raise the needle one notch to richen the midrange to eliminate the pinging, and away you go with an engine as clean and responsive as a whistle.

The Bombardier has a strong, trouble free clutch; no drag was experienced during the event. The gear ratios, though, need some explanation.

Our test bike was the MX-6, used in a reliability trial. It had the standard five-speed gearbox, which had close ratios. This meant a tall first gear and a low top gear, which led to some problems during the event. These centred mainly around the low top gear, which severely limited the top speed of the bike on the road sections of the trial.

With the power delivery and carburetion of the rest of the engine, the tall first gear was no worry, even in those situations where you'd think it would be. Funny, that: the bike has a light flywheel and a powerband designed for instant throttle response for motocross, yet it still pulled like the proverbial fourteen year-old.

But it kept on stalling. A combination of tall first gear and light flywheels made it all too easy to stall the engine. Lost count of how many times the engine was stalled. Got infuriated with it, in fact. Fortunately, the thing had primary kickstarting and a low lever height, so it was easily restarted.

Just out of curiosity, here's a comparison chart of the gear ratios of the MX-6 as compared to the Qualifier 250.

	MX-6	QUALIFIER
1st	2.38	3.40
2nd	1.76	2.31
3rd	1.40	1.68
4th	1.11	1.31
5th	0.995	1.095
6th		0.913
Sprockets	14/46	15/44

On the motocross track, the MX-6 gear ratios were perfect: well, what else would you expect from a motocross engine? In tight bush going, the MX-6 ratios were good, too. It just lost an edge in fast going, although that edge wasn't much at all, considering. This needs an explanation. One 80 kilometre long section in the two day was comprised mostly of fast fire-roads. The feeling on the Saturday was that the Bombardier would be left for

CAN-AM BOMBARDIER 250 MX-6

Test Bike: Bert Flood Bombardier, 1111 Whitehorse Rd., Box Hill, Vic. 3128. Phone (03) 88 5202

Price: $2135

Model: MX-6 250cc

SPECIFICATIONS

Engine	Single-cylinder, air-cooled, rotary-valved two-stroke
Bore & Stroke	72 x 61 mm
Capacity	248 cc
Compression ratio	13.5:1
Lubrication	Premix
Horsepower	28.1 kW (37.5 hp) at 7,700 rpm
Carburettor	Mikuni 34 mm
Air cleaner	Oiled foam sock over K&N
Electrical system	Bosch CDI

TRANSMISSION

Clutch	Oil bath with 6 discs
Primary drive	Gear, 2.91
Final drive	520 chain, 14/46 sprockets
Gear ratios (overall)	
1st	2.38
2nd	1.76
3rd	1.40
4th	1.11
5th	0.955
Transmission pattern	1-N-2-3-4-5

DIMENSIONS

Wheelbase	147.9 cm (58.25")
Handlebar width	86.3 cm (34.0")
Seat height	95.2 cm (37.5")
Ground clearance	32.7 cm (12.875")
Weight (dry)	97.8 kg (216 lbs)
Throttle	1/5th
Fuel capacity	6.7 litres

FRAME AND SUSPENSION

Frame	Tubular, double-loop with tapered backbone, chrome moly
Suspension:	
Front:	Marzocchi forks, 38 mm tubes, 289 mm (11.3") travel
Rear:	S&W shocks, 279 mm (11.0") travel
Wheels & Brakes:	Dunlop knobby tyres on Sun rims with 3.00 x 21 front and 5.00 x 18 rear
Footpegs:	Serrated, folding, spring-loaded
Mudguards	Preston Petty front, plastic rear, both orange
Number plates	Three (rectangular, yet!!)
Kill button	LHS, button-type
Silencer	Excellent
Lights	N/A on MX-6, but standard on Qualifier
Fork rake	29°
Toolkit	Yes
Controls	Magura

AS A MOTOCROSSER

An MX-6 is designed as a motocrosser: it doesn't have lights, chainguards, an easily accessible airfilter, large tank or a six-speed gearbox with the right bush ratios.

Instead, it is a lightweight rocketship which embarrasses the hell out of a lot of open class motocrossers. Fast? An understatement. The MX-6 250 would be the fastest 250 available right now, with a nice, fat juicy powerband which goes from here to here (describes big arc in the air with hands), with power you can call on instantly. No flywheel effect, just instant power. Everywhere.

And, more importantly to some people who don't mind being able to return to work on Mondays after a day spent racing with the boys, it handles a motocross circuit easily, predictably and safely.

Part of the Calulu Two Day involved a special test around a tight, twisty, loose, hellishly-bumpy off-camber motocross track. To be honest, the Bombardier loved it better than most of the rest of the event, and it certainly felt more at home belting off a berm or to shoot straight across a bunch of nasty bumps and things. It wouldn't wallow or jump sideways, while under brakes the bike tracked straight and didn't bounce to the back end into the air.

All the same, the rider had to be conscious of getting the bike set up right for each corner, because unless you were ready for it the bike would display that same resistance to plopping down into the turn. Get ready, anticipate just right, climb up on the tank and use that instant power, and the bike was a different creature.

It felt stable over jumps, remaining on line and in a good attitude, it slid predictably when necessary, soaked up the bumps and still obliterated the rest for power.

dead by the enduro-geared machines. The section time was easy, so there was no worry, and the bike was ridden/coasted the whole way. On the second day, the organiser announced that he'd tightened the section time for that section by ten minutes. Ten minutes! Had to be on the gas with the (assumed) low top gear to make that one! Funny thing, two thirds of the way through the section the riders on the minute ahead were caught, and at the end of the section there was still plenty of time in hand.

Conclusion? Even with the lower top gear speed of the MX-6, it is still possible to use it in an event with road work.

DETAILING AND THINGS THAT BOLT ON IN THE NIGHT

A Husqvarna is the only other motorcycle as simple as this.

Take off the sidecovers, and there's nothing left. Around the engine, where you get used to all the cables, guides, grommets, retainers, ledges and paraphernalia of all the Japanese bikes there is nothing except a cleanly designed engine, a low-profile carb and a few pieces of wiring to get the thing firing.

All the plasticware on the bike goes in straightish lines: although a few people said that the look of the bike left a little to be desired, it at least looked simple and uncluttered. There are so many big gaps that you ask the same question asked by all Husqvarna owners: where does the money go?

Marzocchi forks, Magura controls, Rotax engine, strong frame, Preston Petty front guard, K&N filter, Sun rims, Mikuni carburettor and a lot of Canadian labour (read, expensive Canadian Labour. Not your cheap Taiwanese labour here, fella). That's where it goes. The Japanese hand

BELOW: Some people say it looks ugly. Yeah? So what. Basically it works, and that's all that counts. It has the fastest 250cc engine around. With these Ohlins, the suspension is so-o-o plush.
BOTTOM: That's the Qualifier. Doesn't look much different, but it is in all the areas which matter.

you a bike which looks so cluttered and complicated that you always end up thinking that, if nothing else, you got a lot of hardware for your money. Too bad their bikes don't go any better than the more simply built bikes produced, say, in Sweden. Or, in this case, Canada.

Working on the bike is a combination of good and bad. Adjusting the chain requires a 22mm ring spanner and a touch on the snail-cam adjusters. Simple as 1-2-3. Just as quick. And foolproof. Yet maintaining the aircleaner of the MX-6 takes all the skill and dexterity of Houdini, getting at the SIX bolts with their nyloc nuts.

Oh, that's another thing: all the nuts on the bike are aircraft-type nyloc nuts. That means that when you tighten them up, they stay that way. As well, the quality of the steel in the nuts and bolts is good enough to allow you to tighten them up without stripping the thread or snapping the bolt in half.

Other good things are the Sun rims with the rim studs instead of rim locks, a brilliant air intake system which begins at the steering head and takes air down the frame backbone, bigger engine mounting bolts than last year (10mm instead of 8mm), a K&N filter with a wrap-around oiled foam sock in a waterproof still-air box, a fork equalising tube, folding gear-lever tip and strong pegs.

Modifications include the following: the gearbox has undergone a lot of redesign to overcome a few previous problems — they've reduced the number of gear selector dogs, changed their engagement angle and modified the clutch ramp to ride on ball bearings. The piston has been given a single L-shaped ring, which means less cylinder wall friction, and the cylinder was treated to an extra boost port and minor modifications to the transfers to increase both torque and power.

Up front, they made new fork boots and redesigned the Marzocchi dampers to improve reaction to chatter bump situations, and the surface/volume ratio of the damper rods has been changed to improve fork performance without resorting to machining. These changes have worked, too. A heavy oil is necessary, though, and our test was done using no air in the forks.

The MX-6 has been given more fork tube overlap (15mm) to reduce flex; the Qualifier 250 has 39mm less travel and they figured it wasn't necessary there.

The MX-6 has only 6.7 litres while the Qualifier has 10 litres. You'll only get about 65 kilometres out of the MX-6 tank, or enough for a long 45 moto. Both ignitions supply lighting coils, so either can run lights. Silencing on the Qualifier is excellent. Brakes work fine when new, but fade a bit, especially after water-crossings or on long downhills. The bike feels comfortable to sit on and ride for long periods, although the seat tends to slope down towards the front and when you are braking into a corner you slide onto the tank. That's OK, because that's the best way to corner the thing.

The Qualifier engine sees a few more features which adapt it to its intended use. It has no oil pump this year, so you can run conventional premix fuel. It also has a heavier flywheel which makes it harder to stall (and a lower first gear ratio). The front axle has a quick pull out grab handle. Different S&W shocks to the MX-6. A sidestand, where the MX-6 has nothing. Longer rear guard with a poxy taillight unit. Super strong blinding headlight which never switches off and which somehow never seems to break. No overflow tube to the large sized filler cap on the tank.

CONCLUSION

The MX-6 was never intended to be run as an enduro model. For that, you use the Qualifier. Bert Flood received the MX-6 first and was curious (as is his wont) and put one together to give it a trial run — sort of to see how these new model Can-Ams (oops, Bom-bar-d'ayze, thankyou) ran. Mark Chapman took it in the Stradbroke one day reliability trial in Victoria and won the event outright. Not too shabby for never having ridden the bike.

Rumours instantly started flying that Chapman was leaving his trusty KTM for the new orange thinga mabob. After having ridden both, all other things being equal, there is no way he'd leave a KTM to ride a Bombardier, simply because the KTM is superior.

The price of a KTM is also superior, and it can't be ignored. The KTM 250 Enduro retails for $3,095, while both the MX-6 and the Qualifier retail for $2,351. That's big differences in anyone's language.

But $2,351 is more than the retail of around $1,700 to $1,900 of a 250cc Japanese enduro machine. Do you get more value? Yep. Sure do. Apart from a set of rather wimpy shocks, and not state-of-the-art tyres, the Bombardier is superior in most everything to its Oriental equivalents. It has a powerplant which you'd swear came out of a 400, it handles well and steers with more precision, it's safe to ride, tracks like a greyhound on heat over whoop-de-doos, is easy to work on and a whole bunch of other things.

More importantly, it tends to do what they say in the brochures (wow!). What is it they say? "Whether you ride the woods, or the desert, or the track, if you've got what it takes to win, Can-Am builds the bike that will bring you home in front."

It doesn't offer things which are proportionally lots better than Japanese bikes, but it's the extra which counts sometimes. As a motocrosser, the MX-6 is neat; as a bush bike, it works, although the Qualifier would be better.

THEY'RE HERE!

EUROPEAN STYLE, EUROPEAN QUALITY,

BOMBARDIER

Features:

- Marzocchi magneisum forks
- Chrome-moly frames
- Rotax engines
- Preston Petty unbreakable guards
- Fully-floating rear brakes
- Plastic tanks
- Precise, forgiving handling
- Phenomenal power
- Good spare parts backup

Capacities:

Motocross: 250cc, 400cc
Enduro: 175cc, 250cc, 400cc

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