

The 125 Can-Am Bombardier (bomb-bar-dee-yay) has to be about as close an equivalent to the black butler in Betty Grable movies as exists. Its constant neatness and its insistence on being of service are almost alarming. All the time it tries to please you.

"Wouldn't be all raght if ah jes' started raght up suh?" it asks.

"Care to sit it down raght here on this here nice soft seat?" it quietly and politely suggests.

"It's all raght wit you we maght jes' try out thishere easy clutch and some slick throttle," the subtle hint comes.

"Just sit raght back and ah'll do what ah kin to make things easy, suh," it comforts.

"Yezzzzza," just like Jack Benny you've been trapped.

The Can-Am's just like that—a motorcycle aware of creature comforts with one of the most amenable dispositions known to man. The Can-Am's—both 125 and 175 motocross and enduro—were produced under a substantial budget with almost four years of development by Jeff Smith (former World Motocross Champion) and a host of others. When Bombardier (that's the Ski-Doo people of Quebec, Canada) decided to build a line of motorcycles it wasn't really within their province to produce all the necessary components so they have concentrated on the basics and have used proprietary components to fill out the motorcycle. The significant difference between Can-Am's effort and most of the others like it is that

Bombardier of Canada's first effort is remarkably close to smoking the troops—northern, but not light

TEST: NEW CAN-AM 125 MX-1



they have bothered to buy the best proprietary components they are aware of rather than the cheapest or most convenient. The list goes like Bing carburetion, Bosch ignition, Betor forks, Girling shocks, Trelleborg tires and so on.

Analyzed piece by piece it is difficult to understand how Can-Am maintained such a quality of construction and components with a price tag \$300 less than most similarly constructed motorcycles. Building a motorcycle with many proprietary components is an expensive proposition, as many over \$1,000 125cc motorcycle manufacturers will be happy to tell you. Still, the Can-Am has a list price of \$845.

Not only is the quality of construction on the Can-Am impressive, but the design is just a gas. This might be a bit hard for some of you to swallow, but much of the technical know-how being stuffed into motorcycle engines today is being lifted from snowmobiles of a few years past. Ski-Doo has been making snowmobiles for as long as anyone and the Can-Am 125 has obviously benefited from that pile of experience. The Can-Am is so cleverly assembled that it even rekindled the interest of an old, bored mechanic who could yawn at a Yamaha 500 four.

A proliferation of allen screws and aircraft quality nylon lock nuts reaches out and grabs your eyes. You just know they're going to be a bunch of fun to take off. Being, if anything, less resistant to temptation than other people we of course were forced to perform one of our Junior High School Biology class dissection numbers on the Can-Am. In a wild afternoon we rampantly spread its innards all over the garage floor yelling for tools and exclaiming over what we found. A sidelight: in the end it was equally impressive that we managed to get it all back together again.

Starting up top on the Can-Am is the first item of interesting wrenchery. Taking in account different rider weights and varying riding styles, the Bombardier folks have incorporated an adjustable steering head. By loosening the steering head the whole assembly can be rotated on an eccentric allowing varying rake. In order to complement the steering head changes the shocks have four different upper mounting positions. By making appropriate adjustments you can make your Can-Am visually imitate Willi Bauer's works Maico.

As your 305mm adjustable wrench slips off the top nut on the steering head and steers a sure course for the gas tank, apprehension will no doubt build. The sound that results is quite unrewarding. No clang, no pling, no echo, no crack—just a dull

thuk-k-k. The gas tank is shot from Quebecer puffed polyethyl . . . magic plastic. It is heavier plastic than you will find in accessory gas tanks but equally, if not more durable. The tank is so characteristically plastic that decals fall off and paint rubs off. Such is the price . . .

The seat is heavily padded and of an acceptable shape. When you drop it, it flutters twice before settling to the ground; the backing is thin fiberglass. One of the most pleasant things about the tank-seat is the way they meld together. Certain circumstances will most likely find you well forward on the motorcycle and the



In the realm of the far-far out, check out the inline filter in the oil line coming from the top frame tube.

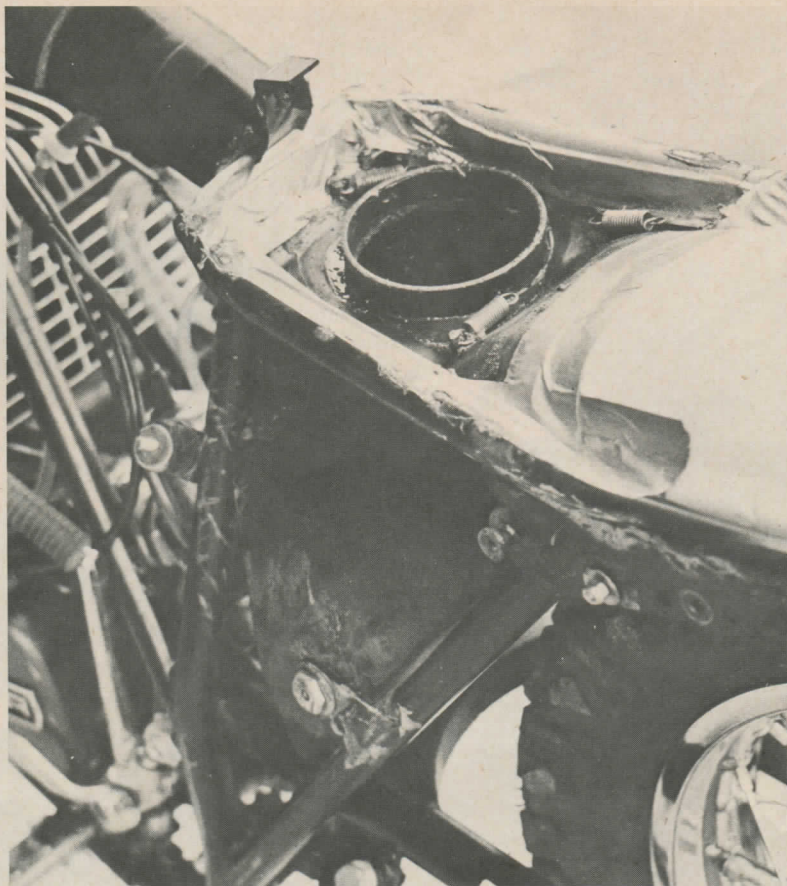


junction will do you no harm. The plastic tank is also more forgiving than its metal counterparts.

The exhaust pipe is an incredible assembly. It sneaks out between the two front downtubes, tucks up and around the right one and back over the top of the motor to run along the left side. A heat shield protects the hand embroidery on your Full Bores. Up until this point you have a fairly normal looking, well tucked away expansion chamber. From here on the similarity disappears. A slip fit junction with a rubber bushing and a hose clamp to keep it located leads into an awesome and mysterious enclosure. This large black box tucks in behind the number plate panel, and there is a small exhaust tube that exists unsettingly near the left shock. Hack sawing it apart was a temptation, but we resisted. So, we still don't know what happens inside there except for some busted sparks and an almost completely suppressed exhaust note. The most serious thing about it all is the heft. The pipe and magic box must weigh an easy

15 pounds. It's heavy. The next most serious thing is that any and all replacement pipes have resulted in a two to three horsepower loss at the rear wheel. This includes various attempts by the Eastern Can-Am racing team. Can-Am I.S.D.T. bikes ran stock exhausts.

The motor is actually built by the Rotax Division of Bombardier in Austria. They have had, do have and will have some amazing things up their sleeves. Design-wise Rotax is one of the, if not **the** most innovative designers of internal combustion engines. Three years ago they decided to build a racing snowmobile engine.



The air box is incredibly large, the filter snuggles down on top, and we still don't know if the duct tape is stock.

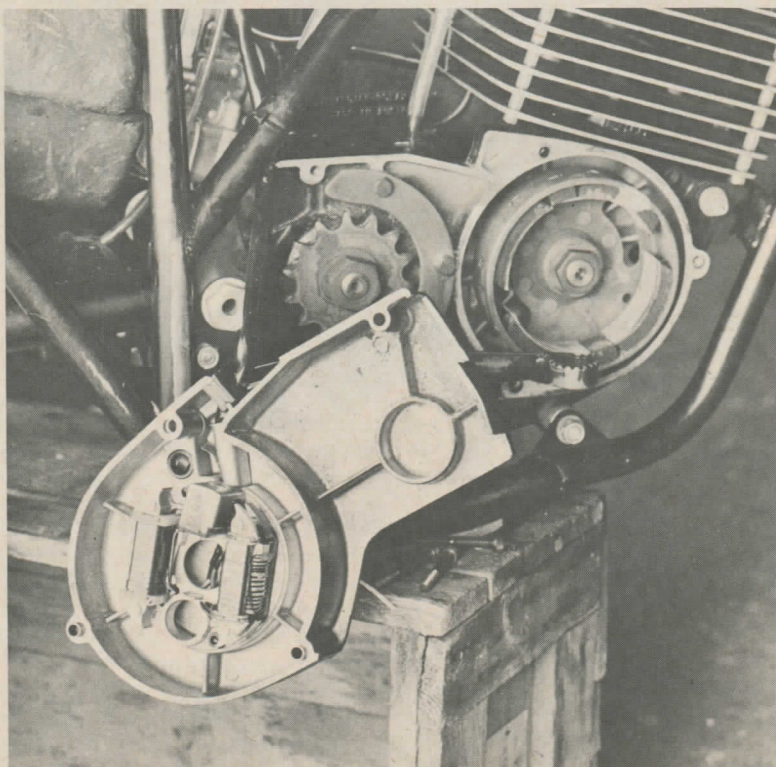
If you were an expansion chamber going out for a rather loose living weekend, would you take this along?

Most of the ignition components are stuck on the cover. Also notice the ingenious chain guide.



Their effort struck fear in the hearts of polar bears. The resulting engine was in the neighborhood of 900cc and produced not thoroughly established horsepower figures of around 110 hp. The dynamometer repair business took a serious upsurge that winter. The eyeball relocating business did, too. The Rotax snowmobile produced more horsepower than anyone could handle, but not because it was peaky. This year a watercooled version of their 125 seasoned the salt at 136.537 mph. Rotax has been building motors designed to start and run reliably in sub-zero weather for well over ten years. Ergo, Rotax has more than a small understanding of building reliable, rapid two-stroke engines. If you'd had a premonition about what they were doing (i.e., building a bike engine) you might well have been waiting with baited breath. What they came up with is properly revolutionary and damned exciting.

Rotax built a rotary valve engine that is as narrow as most piston-port two-strokes. How? The carburetor isn't on the side of the engine. How?





Some clever mathematical minds sat back and combined various measurements in degrees and inches and came up with an intake tract which puts the carburetor on the back of the motor. There is zero design by convenience. All the lengths and diameters are exactly as someone wanted them. If you don't believe it, go ahead and change one and watch the horsepower go away.

The rotary valve is fed through an intake tract roughly five inches long which moves through the upper portions of the left side of the case. Out at the end of the cavern is a 32mm Bing Concentric carburetor. Also stuck on the left side of the engine in alarming compactness are a Mikuni oil pump and a wet clutch. While you're taking it apart one of the fun things is finding that Mikuni oil pump. Staring at a Bing carb and Mikuni pump is somehow humorous.

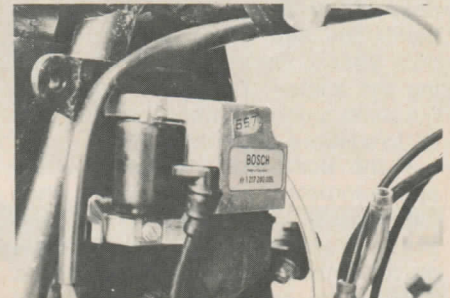
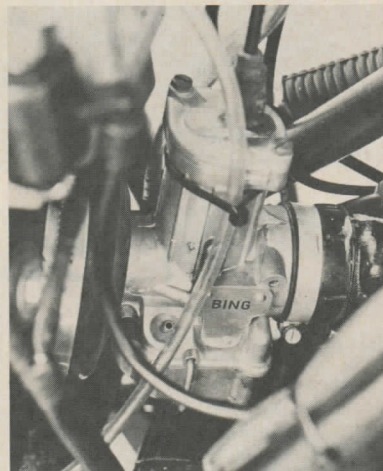
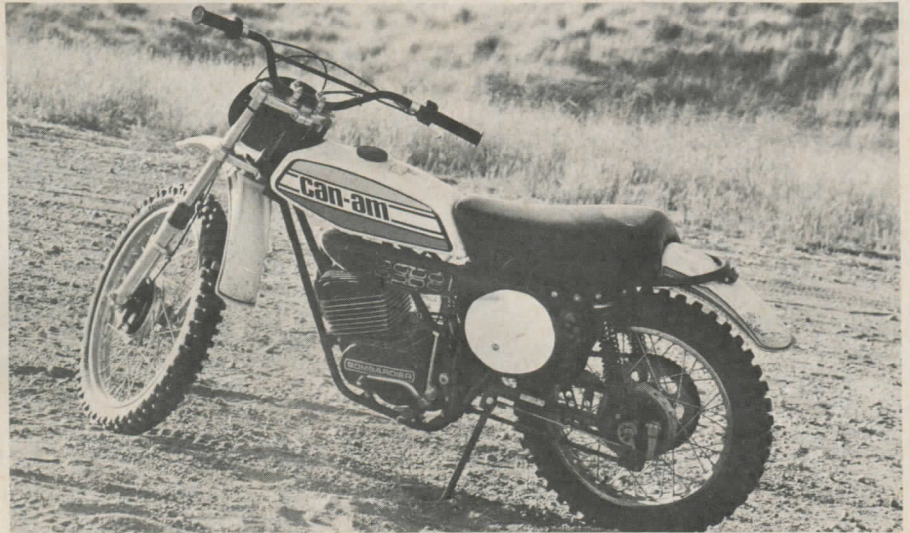
To the rear of the oil pump and rotary valve (which is underneath the pump) is a strong wet clutch. It is easily potent enough to handle the 125's torque but tends to be a bit grabby. Lever movement doesn't feel like it could have much to do with any mechanical engaging or disengaging. The clutch hub connects to the crankshaft by straightcut gears.

The transmission has six speeds which, in action, bear a remarkable resemblance to the KTM 175. Well, what a surprise, Rotax makes KTM's transmissions. All those companies are locked together in obvious Teutonic harmony. The transmission would have to be described as good, not great. The lever travel is ideal but the action is a bit notchy and stiff. It is definitely possible to find alternatives other than the next gear. Most of it is becoming accustomed. With the overall gearing supplied first gear is so low as to be only a whisper of memory for competition. You don't even need it to make a normal, clutch slipping start. It allows plonking speed. Second is low enough that there is a certain brand of corner which seems to find the bike between second and third gears. At the other end, sixth supplies plenty of top end for motocross. Still, for most motocross tracks a gearing change will probably be advisable to make the motor work in slow corners.

The ignition is very cleverly done. The primary coils and the pickup for the Bosch ignition unit are carried on the outer case and slip inside the flywheel from the outside. This means that there is no flywheel pulling to get at the electrics and ignition. In addition there is an access hole in the right case which you can aim a strobe timing light through for a quick timing check. The capacitor components of the CDI are rubber mount-

ed above and behind the engine where they catch the fall monsoons. Thus they stay cool (bueno) and potentially damp (not so bueno). We splashed ours a fair amount without problem and consequently assume that waterproofing is adequate. The output level is a designed maximum of 30,000 volts which should light off Wolf's Head 30 and kerosene with ease. A Bosch W 280 MZ is used, which is not a surface gap plug.

The countershaft exists on the right side of the motor behind the ignition and employs an ingenious case protector. A piece of strap steel



The Bosch capacitor components and the coil find a home on the frame up in this corner. Cool but maybe wet.

It's hard to argue with Bing carburetion anywhere, anytime. On the Cam-Am you have to search for the argument.

wraps around the countershaft sprocket with the edge passing very close to the chain. The result is that it is impossible for the chain to jump the countershaft sprocket. Your cases are safe. However, don't plan on installing road race gearing without removing the guard.

The cylinder is aluminum with an iron liner, and the piston is a one ring Dykes affair. Finning would embarrass a 1960 Plymouth. The engine seems to operate at quite stable temperatures regardless of strain. All the upper end parts are removable with engine in place, once the exhaust pipe is yanked. Pistons are available in three oversizes. In addi-

tion, our bike had no use for either a new piston or ring after extensive hours of running. The upper end seems to be quite long-lived.

The Mikuni oil pump supplies oil both directly to the crankshaft and to the air mixture at the rotary valve. Direct crankshaft lubrication has obvious advantages. Any bearing will live a longer and more fulfilling life when it doesn't have to dissect the oil from the gas. The oil from the pump journeys down from the top frame tube (ala BSA, sigh!). The tube seems to carry enough oil for a year of running. A dipstick keeps you atuned to what month it is. The day of the serious competition two-stroke with oil injection seems to be nigh. Hooray. As Betty Crocker would say, "No mix, no mess, just pop it in the oven—more time for bridge."

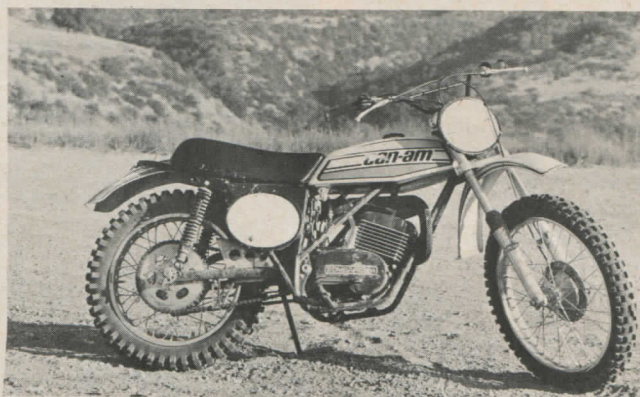
Other items which contribute to making the Can-Am engine a more responsible citizen able to contribute actively to society are a toggle switch type throttle and a humongous airbox. Because the Bing Concentric is so tremendously responsive and the motor's transitions reasonably subtle the quick throttle proves to be near perfect. The airbox is simply huge and simply heavy, though it is made of fiberglass. The thing occupies nearly all the space behind the engine and would probably allow the Can-Am to float in deep water. The filter and inlet are under the seat making you jeopardize your comfort before jeopardizing the engine. The box is fantastic, but there's enough fiberglass in there to do a Hobie Cat credit.

If the Bombardier serves you tea and crumpets on a silver platter when twisting its nuts and bolts, it supplies Instant Breakfast and Gatorade on a number plate out at the track. It has to be one of the easiest bikes around to race. Fill up the gas tank and look at the dipstick; tape some numbers on the front and side plates; squirt some anti-geriatric juice on the Renold chain; if by odd chance it needs adjusting the snail cam adjusters make it simple; turn on the gas, tickle the Bing, and one kick has you ready to go. Between motos you'll get bored. Things won't fall off, stretch, foul, or otherwise seem affected by what you're doing.

The pure logistics of riding the Can-Am 125 will prove to be almost as simple. Start in second gear and don't worry about the front end. To the first corner let it sing and shift a bunch. The motor is peaky but there is no rpm where it lunges. Power just builds as rpm's rise. You must rev it to go fast. Into the first corner the Can-Am is all stability. It handles much more like a 250. The brakes are smooth and sensitive. Un-

dr TEST BOMBARDIER LIMITED

Valcourt,
Quebec, Canada
PRICE: \$845



SPECIFICATIONS

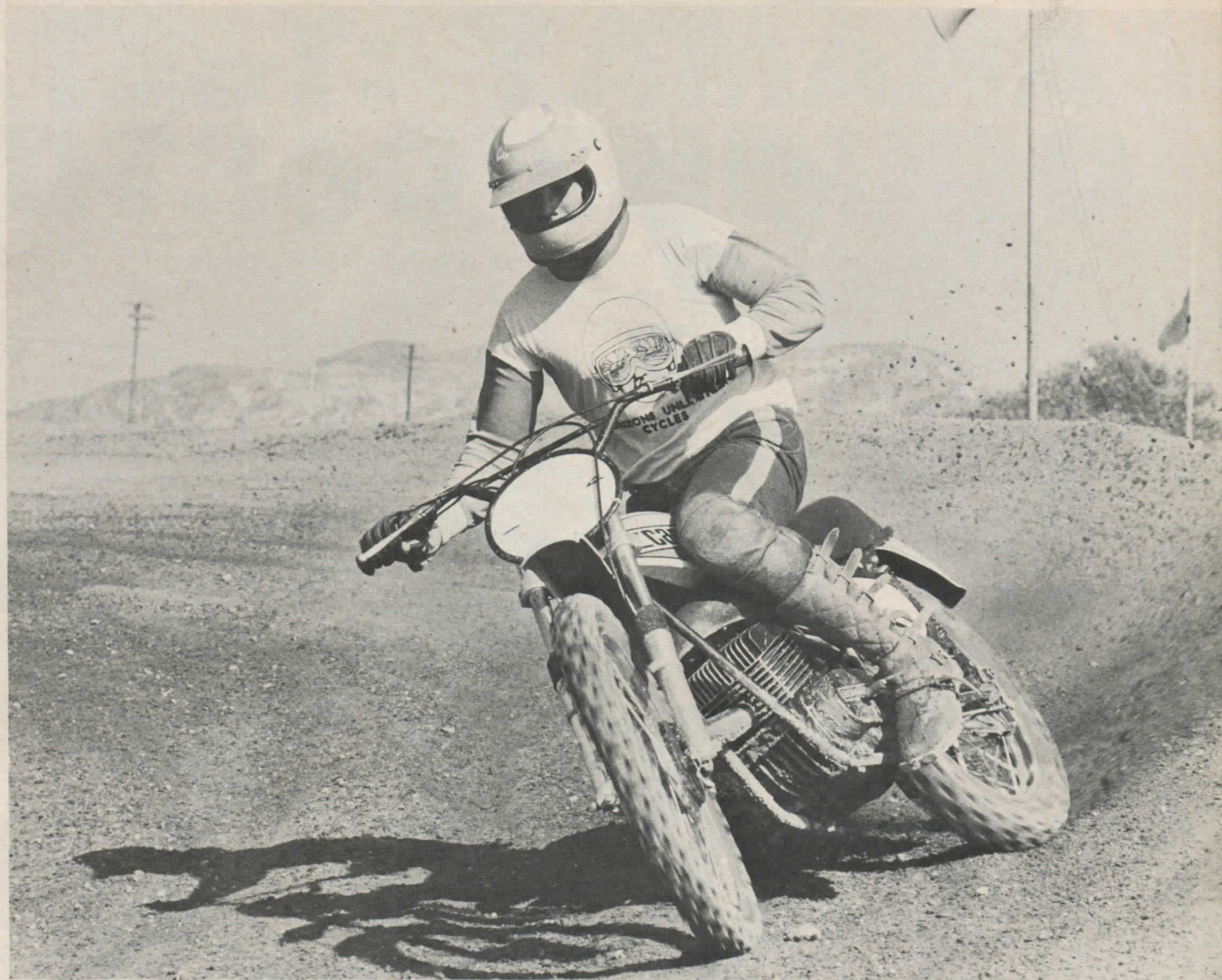
Engine	SINGLE CYLINDER/ROTARY VALVE/TWO STROKE
Bore/Stroke	54mm/54mm
Displacement	123.7cc
Compression Ratio	13:1 (UNCORRECTED)
Claimed Horsepower	20 @ 9500 RPM
Carburetion	BING CONCENTRIC 32mm
Primary Drive Ratio	3.286:1
Gear Ratios (:1)	3.40; 2.31; 1.68; 1.31; 1.09; 0.96
Final Drive Ratio	14/50 (3.58:1)
Lubrication	OIL INJECTION/MIKUNI PUMP
Fuel	LOW LEAD
Oil	CASTROL 30

DIMENSIONS

Wheelbase	55 INCHES
Ground Clearance	9.5 INCHES
Peg Height	12 INCHES
Seat Height	32.5 INCHES
Running Weight	228 POUNDS
Weight Bias	45% FRONT/55% REAR
Rake	VARIABLE BY 6 DEGREES
Trail	VARIABLE
Fuel Capacity	1.9 GALLONS
Oil Capacity	2.3 QUARTS
Transmission Capacity	1.2 QUARTS

COMPONENTS

Forks	BETOR
Shocks	GIRLING
Frame	DOUBLE LOOP FULL CRADLE STEEL
Pegs	FOLDING SERRATED/NO SPRING
Hubs	BOTH CONICAL/FLOATING REAR
Rims	STEEL
Tires	TRELLEBORG 3.00/21 & 4.00/18
Chain	RENOLD 520
Ignition	BOSCH CDI
Tools	NONE
Air Filter	FOAM IN STILL AIR BOX
Sparking Plug	BOSCH W 280 MZ



fortunately, the Betor forks seem to lack an air bleed valve which may be responsible for their tendency to get razzed over washboard. The rear Girlings work like you expect though the Can-Am people claim to be very dissatisfied and hint a change. The Trelleborg knobs hang for a long time in the corners, and the Can-Am's secret is one gear lower, up on the tank and flip the switch. The bike's last desire is to slide out. It takes some practice to become accustomed to the amount of throttle that can be applied.

On the straight it is quick enough to be in the game with the best. Like any 125 with horsepower it happens up high. Just get out there and scream with them. Whoops and ruts will not get the rear end out of line. Just keep it open. Above all the Can-Am is stable. Unlike some of the really quick handling 125's the Can-Am will absorb your errors. Naturally, that doesn't come for free. It won't respond like some 125's either.

The Can-Am's biggest problem is

Ce véhicule n'a pas été conçu pour être utilisé sur les rues ou routes publiques.

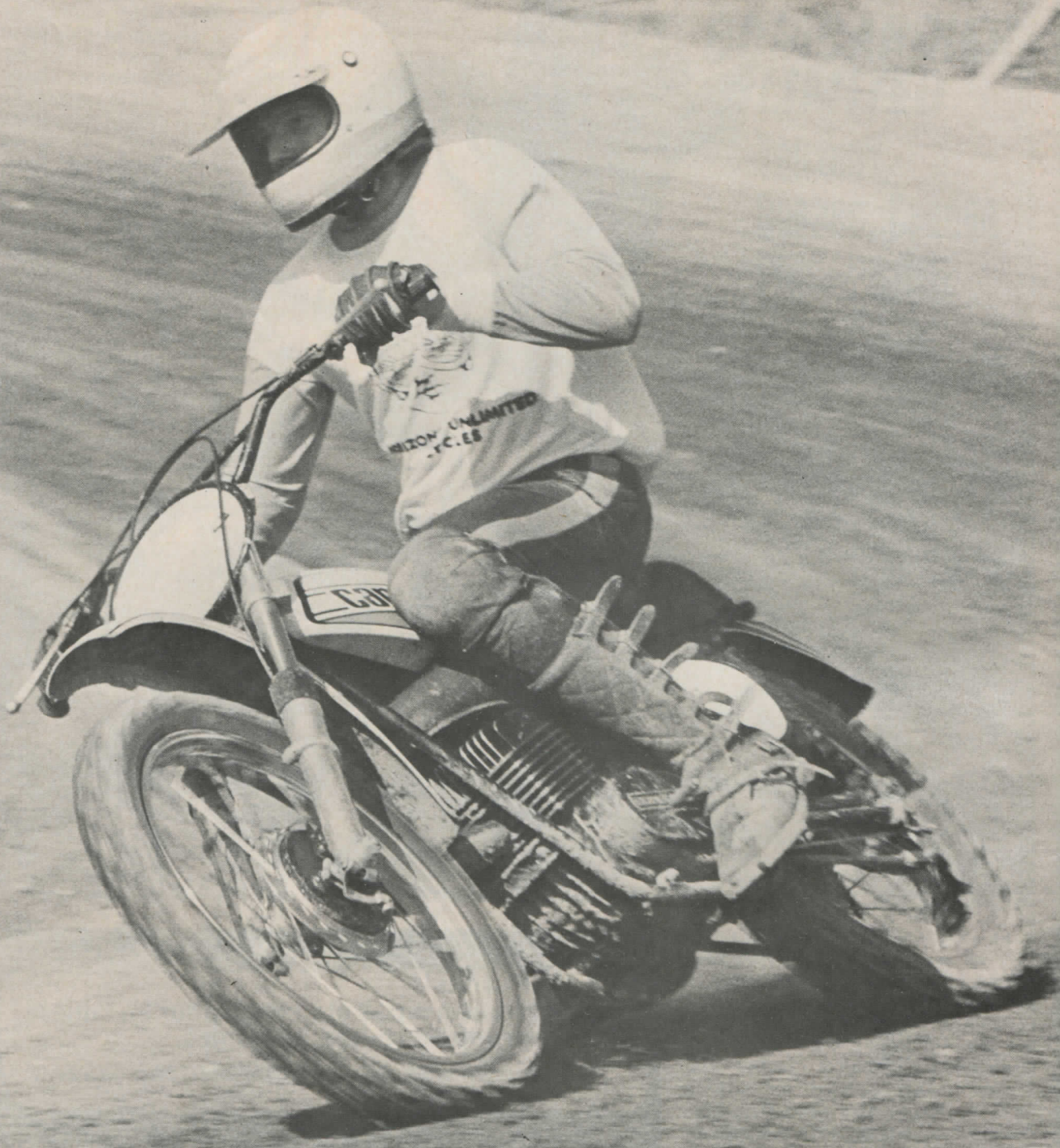
This vehicle was designed for off-road use only.

Having decals about preserving nature, riding off-road, etc., in French obviously has an infinite amount of class.

poundage. We weighed it at 228 pounds with no more than a gallon of gas. Obviously, that's heavy for a 125. It makes the bike handle more sluggishly and cuts down the instant response you expect from a 125. That the motor will carry the weight as quickly as it does is impressive. The real point of consternation is where all the weight comes from. The tank is plastic, the fenders are plastic, the seat is very light, the frame tips at 27 pounds which isn't terrible. Bombardier mumbles about the pipe and

the airbox. The rims are steel, too. Maybe that engine and its rather robust construction have something to do with it. In any event, the total is a bit high. Weight will hold the Can-Am back. However, it is encouraging to see the concern of the people involved with the construction of the bike. They are genuinely moody. There are certain to be some changes in a short time.

The Can-Am has two competitors, and it would be almost an insult to you to list them. You know who they are. The Can-Am is right in there with the Suzuki 125 and trying to be on the heels of the 125 Elsin-



ore. But, it's not quite there. It's a little more expensive than the Honda and substantially above the Suzuki. The components are truly impressive and detailing wise it exceeds both (that's damn hard to say next to the Honda). We suspicion that it will out-reliable both of the Japanese scoots, too. On the track the Can-Am and the Suzook will run together on power and while the Suzuki may out-turn the Can-Am, the Can-Am will out track it and keep you upright more often. The Can-Am is better for bigger people because it's just plain bigger. The Suzuki is fantastic for

the more petite. The Honda is going to outrun and out-turn the Can-Am this year. But it's almost a shame to have to compare them.

The Can-Am is fooling in a class with more wonderful machinery for less money than all the other classes put together. It is running in incredibly tough company. It operates like a machine that has had the benefits of production and sale for a few years. It is surprisingly bug-free. The Can-Am Bombardier is a very impressive first effort, and with what they have available the second might just put it to everyone. ●