

REFINING THE ROTAX

BUILDING A TWO-STAGE ROCKET

Stage one: the low-bucks approach

By Rick Sieman

The *Dirt Bike* editors were so impressed with the new Can-Am Sonic 500 that we bought one from Bombardier of Canada. Naturally, we can't leave well enough alone, so the bike will be modified to suit our peculiar needs.

We plan on doing a two-stage Project Bike. Stage One will be mostly low-cost modifications and will concentrate on getting rid of the few irritating flaws we found with the stock equipment. Some weight will also be shed in the process.

Stage Two will be a no-holds-barred technological experiment, using a Horsepower Factory single-shock frame, disc brakes, a monster motor and the latest of everything.

STAGE ONE: GOALS

While the Sonic handled well and had a superb motor, it was uncomfortable in certain areas, notably the oddly shaped gas tank. The squarish edges dug into the rider's thighs when the bike was worked hard; the soft saddle let the rider sink even lower than the natural line of the tank. Result? Bruised inner thighs after a long riding session. Also, we never really cared for the look of the gas tank.

Other areas of extreme discomfort are the top shock mounts on both sides. These extend quite a bit and snag the back of the rider's legs when he's moving around on the bike. We want to trim this area as much as possible without resorting to major surgery.

Bar shape and saddle height are, of course, personal-preference items, but when the Sonic is too tall for a monster like Webb, then something must be done. We also wanted to make the bike look better, hence the use of fresh plastic and another color. It's not that we have anything against orange. It looks great in sherbert ice cream but no so swell on a motorcycle.



The Can-Am 500 Sonic, in stock form, handles well and has a good motor, but Team DIRT BIKE believes it can still be improved. Stage One of Project Supersonic begins.

Performance changes will be limited to using the factory horsepower kit, which does a good job and is reasonably inexpensive. This consists of a carb, manifold, cam and instructions. You have to make your own pipe, should you choose to discard the stocker.

GOALS MET!

We built a tidy pipe that attached to the stockers and chose a lightly silenced megaphone rather than a silencer/spark arrester, because our bike will be used primarily for four-stroke motocross races and special Grands Prix.

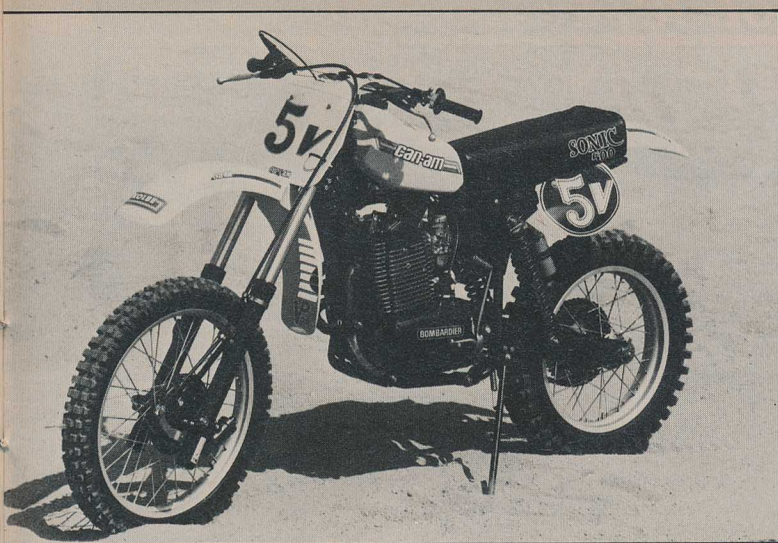
It was found that a '79 YZ250 gas tank nicely fit the large top frame tube. Used tanks are commonplace and a new replacement plastic tank can be had from various plastics sources for anywhere from \$50 to \$75.

With the tank in place, we cut the seat to closely fit the YZ tank contours, using the stock Can-Am seat base. (See July *Dirt Bike* for seat lowering how-to). Saddle height is now one and one half inches lower and the shape is better . . . accomplishing two goals in one swoop.

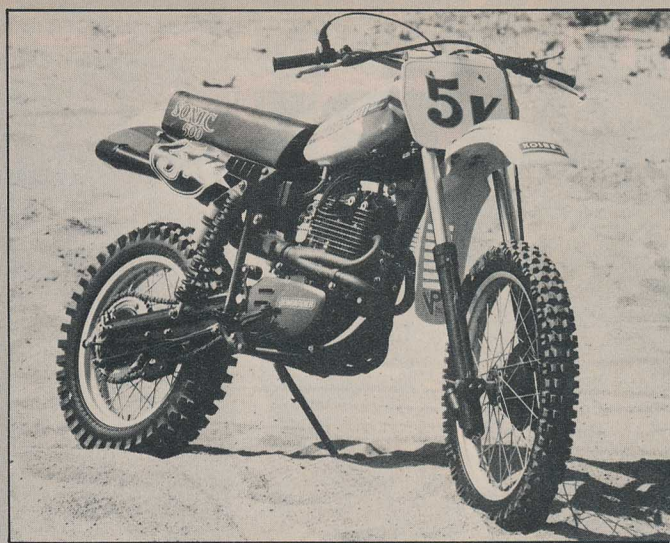
We used Cycle-Am fenders and a Cycle-Am front numberplate, discarding all the enduro hardware and lighting, in the process. To trim the bike, the top shock-mount spacer was cut in half and one fourth inch was removed from the outer shock bushing; the mounting bolt was trimmed about three eighths of an inch. Some careful rounding off with a file removed most of the awkward projection on the forward part of the shock top. This made the bike one full inch narrower and greatly reduced the bulky feel when standing.

The heavy chain (530) was replaced with a Tsubaki 520 QR racing chain. The front sprocket was replaced with a 520 sprocket from a 370 Can-Am and the rear sprocket can be replaced with any normal 520 Can-Am item. This saved about four pounds of dead weight.

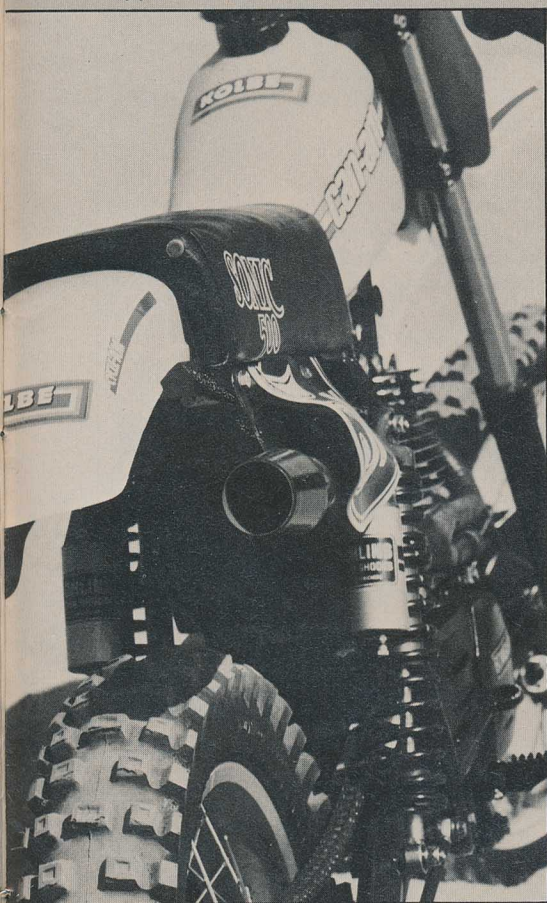
We took the stock sidestand and modified it to work in a better manner, by careful heating and bending. It was also shortened one full inch and the forward movement of the kickstand was limited by building up some welding bead to prevent



Cycle-Am plastic all around and a YZ tank clean up the appearance considerably.



Looking lighter, leaner and better, our Sonic weighs in 21 pounds less than a stocker.



We made our own exhaust system and cut the saddle down to fit the YZ tank.

it from going so far over center. As you might recall, we hated the stock sidestand.

Answer bars replaced the stockers and the old style Magura throttle was canned. A straight-pull Magura throttle was installed on the right side of the gold bars and Terry cables were used all around for better feel and greater reliability.

By heating a trimmed pair of plastic numberplates, the desired shape was realized. To get the right contours to clear the pipe and top of the shock, we played a torch lightly on the back side of the



Good all-around suspension of the Sonic felt even better with the weight reduction. Now if we could just get the rider to drop 21 pounds...

plastic, bent it by hand and ran cold water over the warm plastic, making it set up instantly in the new shape. Only the forward part of the stock side trim was used in front of the new side numberplates. This acted to protect the filter from dirt and water and filled up an otherwise empty space on the bike. A coat of black paint took care of the orange color.

There's a foam filter over the K&N gauze filter. This was removed and set aside. The K&N does a good job by itself and we noticed a small improvement in power and response with the foam outer layer removed.

After installing the accessory Can-Am big carb and cam (about \$150 from your local Can-Am dealer), we buttoned everything back up and put in 2.71 quarts of Kal-Gard 4-Plus 20W50 oil. Past experience has shown us that this often improves the shifting of most any four-stroke.

WEIGHT SAVED

Here's what you can save on a weight reduction program for the Sonic:

Headlight/numberplate combo	1.5 lbs.
Muffler/spark arrester	7.5 lbs.
Taillight, includes rubber mount	0.5 lbs.
Bars, cut saddle, trim side panels, misc. nuts & bolts	4.0 lbs.
Gas tank, stock	3.0 lbs.
Chain/sprockets	3.0 lbs.
Total	20.3 lbs.

Note: You can save another pound and a half by removing the sidestand and attaching nuts and bolts.

FIRST STAGE BENEFITS

All things considered, our first-stage Project is a better bike and 20 pounds lighter, without spending a fortune. We also like the looks of the Cycle-Am plastics. They're available from your local dealer in a variety of colors.

With the trimmer YZ tank (Clarke Manufacturing has replacement tanks for sale) and cut-down saddle, we could now climb forward for cornering, without thigh bruises. The one-inch savings in width at the top shock mounts and basic filing off of the sharp edges made all the difference in the world as far as comfort. Quite naturally, we Loctited the threads for safety.

The performance kit gave the Sonic a healthy boost just about everywhere. We couldn't discern any loss of low-end torque and the punch at mid-range and upper revs is impressive. The bike is now as fast as a fully built Honda XR500, at a fraction of the expense. No pipe was available at press time, so, as you know, we built our own. Several companies are working on accessory pipes and we'll give you that information as it becomes available.

STAGE TWO?

It's now off to the famed Horsepower Factory for a no-holds-barred, single-shock special. We also want to build a maximum motor... one that'll run with any two-stroke made. Team DB plans to race the HPF Sonic this year and report on just how the bike fares as the year progresses. Stay tuned, as we'll try to complete the Ultimate Sonic in the next issue or two. □