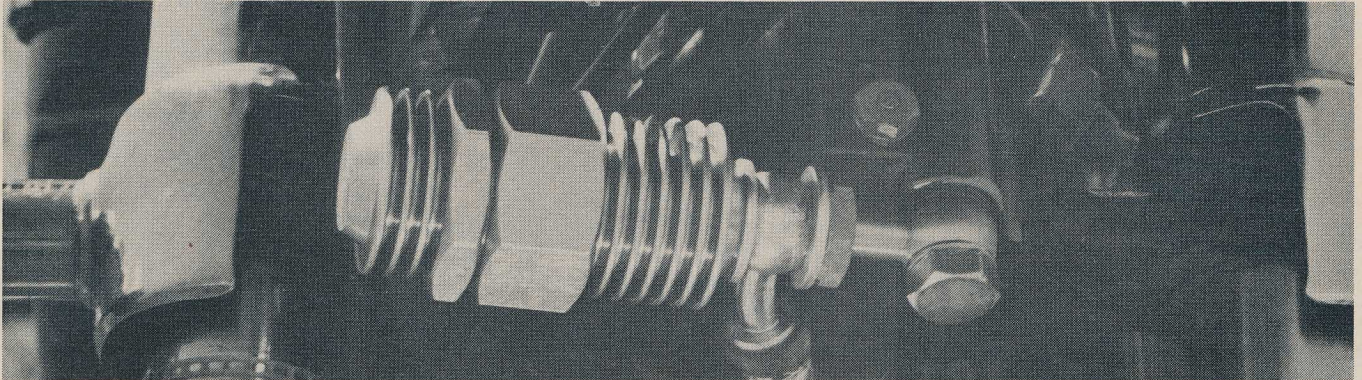


SAFETY BRAKER M/C

Better braking control for hydraulic disc brake systems



The Safety Braker M/C mounts quickly and out-of-the-way under the Honda's headlight.

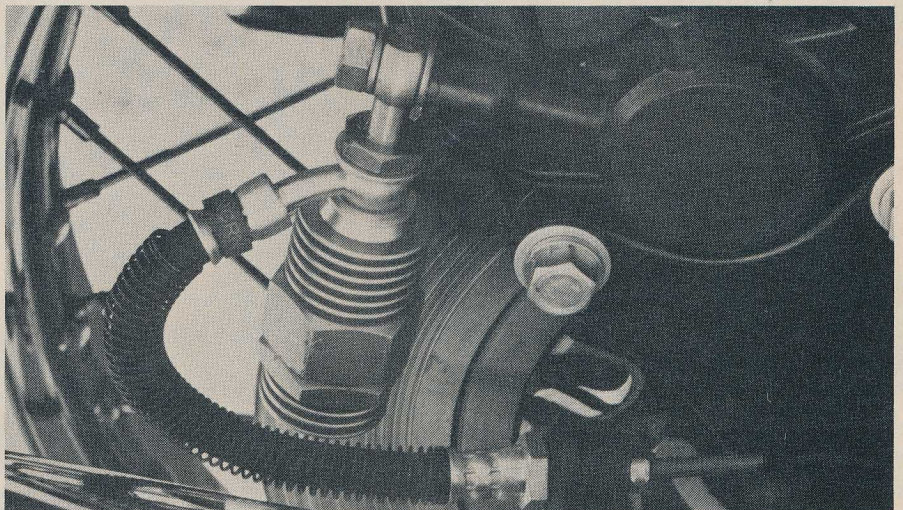
You're diving hard into a fast corner with your brakes on and suddenly your front tire begins to howl and the rear wheel commences a snappy little tap dance on the pavement. "O Spirits who watch over Steve Baker and Mike Hailwood," you mutter inside your helmet, "deliver me from the Great Thump that looms ever nearer."

Does that sort of experience sound familiar enough to make your breath short and your bowels clench just thinking about it? Have you ever shouted Anglo-Saxon epithets about your braking system when a group of little old ladies suddenly stepped out into the street in front of you? If so, you're probably aware of certain shortcomings in the way your brakes respond.

Disc brakes, for all their good points, are often less progressive, predictable and controllable than drum brakes; it is often difficult to tell when a disc brake is approaching the point of locking the wheel. Though disc brakes have superior fade resistance, they will not always stop a bike faster than drum brakes in panic situations. When a car suddenly materializes in front of you and you have to stand on the brakes, the controllability of the brakes can be more important than how powerful they are. The shortest stopping distance can be obtained only if the rider can keep the brakes right on the verge of locking up.

The over-sensitivity and lack of feel in many disc brakes have been recognized for a long time but they are part of the basic design and have therefore been accepted to obtain the many benefits disc brakes offer. Now, we are happy to say, a device is available which can make over-sensitive hydraulic disc brakes more progressive, improve their feel and compensate for some other problems as well.

This device is called the Safety Braker M/C. The "M/C" distinguishes the



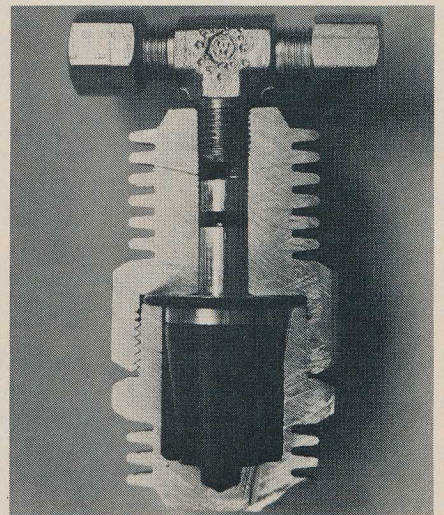
A Safety Braker M/C on the rear of our Suzuki GS750 improved the brake's predictability dramatically.

motorcycle unit from the original Safety Braker, which was designed for cars several years ago by Robert Booth, an engineer and automobile racer looking for a solution to the drawbacks of disc brakes. The simple device he came up with can best be described as a damper designed to fit into a brake's hydraulic system. When Booth first tried it on his Formula Vee racing car, the Safety Braker, as he called it, was so effective that many other racers asked for duplicates. The device soon earned the recommendation of the Sports Car Club of America, and Niki Lauda used Safety Brakers on his Formula One Ferrari.

After such success in automobiles, it was only natural that someone would adapt the Safety Braker concept to motorcycles, where the consequences of a locked wheel can be much more painful. After trying the unit on a Suzuki roadracer, Jim Richerson

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PHOTOGRAPHY: JOHN STEIN



This cutaway of the Safety Braker M/C shows its simple, fail-safe design.

SAFETY BRAKER M/C

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contacted the manufacturer and obtained rights to develop a unit specifically for motorcycles; enter the Safety Braker M/C.

The device itself is essentially a small aluminum cylinder containing a rubber block and an aluminum piston to separate the rubber from the brake fluid. When the brake is applied, some of the pressure in the system is directed to compressing the rubber block. Different fittings are available to adapt the unit to almost any motorcycle with hydraulic discs.

We installed the Safety Braker in the front brake system of a Honda CB550K and in both systems on a Suzuki GS750. Installation was very simple on both these machines because the units fit at the junction of the standard brake lines. On some machines—primarily British and American bikes—it might be necessary to cut a short section out of the metal brake line.

The actual installation is simple, but the brakes must be bled afterward. (Some riders may feel better letting an experienced mechanic do this.) When bleeding the air from the system, the body of the Safety Braker must be below the brake line or air will remain trapped in the unit. It

may be necessary (as we found) to leave the unit loose while bleeding and bolt everything down permanently after you are sure the system is devoid of air.

The only problem we encountered was a slight seepage of fluid from around the fittings. Steel washers were supplied with the kit and were less effective at sealing than copper or aluminum washers, which should be available from your motorcycle dealer.


You'll notice a difference in braking on your first ride with the Safety Braker. The span of lever travel over which the brakes are actually applied is about doubled. The brakes engage more gradually and there is, in effect, more room for error on the part of the rider—although there is no actual change in braking power.

Of course, the test of any braking system is how well it stops a bike, so we made a number of panic stops from 60 mph with and without the Safety Braker, using both the Honda and the Suzuki. The shortest stopping distances obtained without Safety Brakers were 141 feet, 6 inches for the Honda and 132 feet, 3 inches for the Suzuki. With the Safety Brakers installed we recorded 138 feet, 6 inches for the Honda and 128 feet, 6 inches for the Suzuki. That is an improvement in both cases of about 2.5 percent.

The biggest difference—and the greatest improvement—was in the action of the GS750's rear brake. As we commented in the test of the GS750, the standard rear brake system is insensitive, sudden and sometimes locks unexpectedly. With the Safety Braker installed, we found a dramatic improvement in predictability and control and a corresponding increase in rider confidence.

An improvement in stopping distance resulting from a rider being better able to regulate brake pressure is one advantage of the Safety Braker. Another is that the damping effect of the unit helps absorb pressure fluctuations in the hydraulic system caused by disc rotor irregularities, wheel hop and other causes. Because the pressure is kept more constant, brake application pressure is more even.

If an improvement of 2.5 percent seems small, remember that our results were obtained on smooth, dry pavement by an experienced rider who was concentrating only on braking. In a panic situation or on wet or rough pavement, the improvement is much more pronounced. The difference made by the addition of the Safety Braker, however, will vary from one machine to another, depending on just how good the original system was. If your machine has the sort of brakes that make every stop a panic stop, you may find this device—literally—a lifesaver.

The Safety Braker M/C will cost you \$36.95 per unit from your dealer. For more information contact: Safety Braker M/C Sales Co., 78 Lake Meadow Drive, Daly City, California, 94015 or call 415/755-8761. 

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