

California Dreaming?

A controversial salesman launches an electric two-wheeler. Is it the first practical zero-emission vehicle? **By Stuart F. Brown**

HE SOLD VESPA MOTOR scooters to the New York Police Department, early micro-Subarus to a few puzzled persons, and the notorious Yugo to more customers than may care to admit it. Now here he comes with...an electric moped! Malcolm Bricklin, president of The Electric Bicycle Co. of Malibu, California, proclaims that college campuses and suburban streets soon will be teeming with his EV Warriors.

Essentially beefed-up city bicycles with a battery-electric power-assist system in place of the traditional little smoke-belching, two-cycle

gasoline motor, electric mopeds are hardly a surprising development. Asian manufacturers have offered battery bikes in their domestic markets for a few years now but haven't yet exported them to the United States. Is Bricklin smarter than the Japanese?

The EV Warrior is an uncomplicated machine with a sleekly packaged battery-and-motor module straddling its rear wheel. Inside this molded-plastic propulsion pod reside two motorcycle-sized, lead-acid gel cells that fuel a pair of 12-volt Ford Taurus cooling fan motors. Drive to

the rear wheel is by a metal friction roller resting atop the rear tire. A circuit board smooths power delivery and avoids overheating the electrical components.

A brief test ride on a hand-built prototype was pleasant. The cycle accelerated smoothly, with nary a whisper coming from its drivetrain. When starting on a gentle uphill stretch, I spun the pedals a few times to help get things moving, then the electric drive did the rest. The "throttle" is a spring-loaded thumb lever mounted on the handlebar.

Well-behaved cantilever-type brakes and a multispeed rear derailleur are adopted from the bicycle industry. The machine's main shortcoming is moderate top-heaviness due to the high-mounted powertrain.

Power pod atop the rear wheel holds two electric motors and two batteries.

Locating the electric drive hardware lower in the frame would improve stability but would also require the addition of a chain or drive belt to deliver the power to the road.

Riding range on pure electric power is 15 to 20 miles, depending on road conditions, Bricklin says. I didn't have a chance to confirm this. Plug-in recharge time is overnight if the batteries are deeply drained, shorter when they are less depleted. EV Warriors will be sold only through auto dealers, who will offer test rides and three-year financing for the \$900 to \$1,500 bikes.

Why car dealers? The answer may be that they are the customers Mr. Bricklin best understands from his previous ventures. Why locate a manufacturing venture in high-cost California? Bricklin cites the state's stringent 1998 environmental rules, under which the EV Warrior qualifies as a zero-emission vehicle (ZEV).

I don't quite get this electro-moped concept. Today's batteries are heavy, don't hold much juice, and make for a piggyish electric moped. The EV Warrior, for example, weighs a not-too-svelte 75 pounds. What's wrong with pedaling anyway? ♦



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