

WORDS: Aaron Frank PHOTOS: Ecosse

BEYOND THE FRAME

Frameless Ecosse Spirit ES1 redefines chassis design

What if you built a motorcycle without a frame, hanging the fairing, fuel tank, seat and suspension from the engine? According to the designers who dreamed up the Ecosse Spirit ES1, you'd end up with the lightest, fastest sportbike ever.

Bikes as diverse as the Britten V1100 and Vincent Black Shadow have employed similar designs, but the ES1 elevates the concept. Ecosse Spirit (www.ecossespirit.com) is a collaboration between Don Atchison's Denver-based Ecosse Moto Works and the UK's Spirit Motorcycle Technology, run by Formula 1 engineers Richard Glover and Andy

le Fleming. The pair observed that while sportbike engine performance has doubled in the last two decades, chassis design and aerodynamics have stagnated.

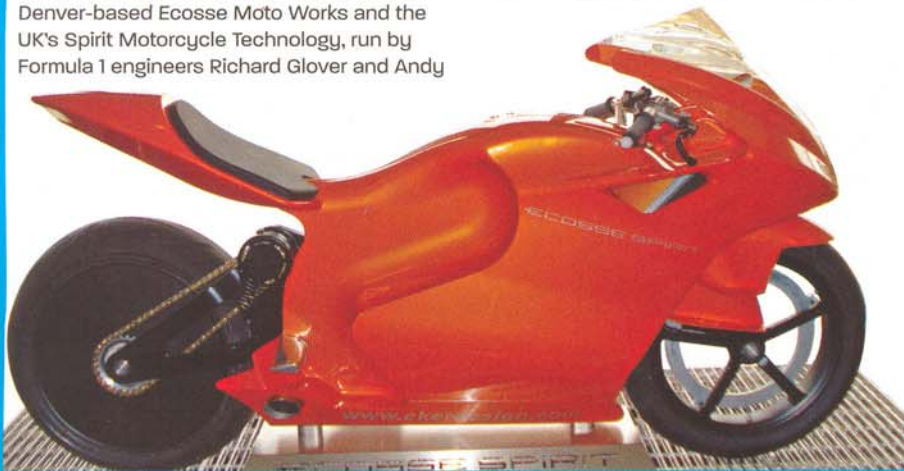
Step one was "deleting" the frame, allowing the rider to be positioned closer to the ground to reduce frontal area. Step two was devising a centrally located final drive (utilizing a jackshaft to clear the rear tire), to keep the rider's legs closer together, further reducing frontal area. The double-wishbone front



suspension was likewise designed to be as slim and aerodynamic as possible.

The end result? A claimed 50 percent reduction in drag and theoretical 26 percent increase in top speed. With a total weight of 265 pounds and 200 bhp from the proprietary inline-four engine currently under development, top speed could be as high as 240 mph.

The ES1 currently exists as a full-scale wind-tunnel model, built by EkerDesign in Norway. Ecosse Spirit hopes to build the first running prototypes in 2008, and a run of 10 bespoke versions by year's end. With prices ranging from \$330,000 to \$1.5 million depending on spec, they won't be cheap, but these exclusive first editions will finance a larger production run of lower-spec bikes.



WHATEVER HAPPENED TO...

WORDS: Brian Catterson

Lucifer's Hammer

PHOTOS: Brian Catterson & Harley-Davidson Archives

Never mind that the new Buell 1125R is powered by a Rotax motor, it's hard not to think about the brand's Harley-Davidson connection. And when you're thinking of racy Harleys, it's hard not to think of Lucifer's Hammer.

Named after a post-apocalyptic science-fiction novel, Lucifer's Hammer first saw action at Daytona in 1983, when it carried Jay Springsteen to victory in the AMA Battle of the Twins race. When the series returned to Florida that fall, Gene Church rode the bike for the first time. And with the help of former Richard Petty crew chief Don Tilley, he went on to win three successive AMA BoTT titles from '85-'87.

Commissioned by legendary Harley race-team boss Dick O'Brien, Lucifer's Hammer was built around

an XR750 dirt-track engine, with alloy heads mated to iron Sportster barrels. A pair of Mikuni 42mm carburetors fed avgas to the 10.5:1 engine, whose total-loss ignition worked with twin sparkplugs to combat detonation. Revving to 7000 rpm, the 998cc OHV V-Twin was said

to be good for just over 100 horsepower, and capable of just under 160 mph. Rolling on Campagnolo mags shod with Goodyear slicks, the bike purportedly weighed just 287 lbs.

Adding to the legend is the story that the chassis is the same one 1972 AMA



Lucifer's Hammer in action and in the pits at Daytona circa 1989 with rider Gene Church and U2 drummer Larry Mullen Jr.

Grand National Champion Mark Brelsford crashed at Daytona in '73, immortalized in the infamous fireball photo that graced the covers of both *Cycle Guide* and the AMA's *American Motorcyclist* magazines.

Today, Lucifer's Hammer resides in Don Tilley's home in Statesville, North Carolina.