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MACHINE DESIGN

## BERKE ON SAFETY

### Faulty throttle cripples rider



Recently, I was an expert witness in a lawsuit involving a faulty throttle on a motocross motorcycle. In this case, the throttle stuck wide open as the rider made a jump. Upon landing, the motorcycle, still at full throttle, threw the rider to the ground, breaking his back. This particular motorcycle model was already involved in a recall for the same problem. Unfortunately, the injured party never received the recall notice, even though he was the original owner and had purchased the motorcycle new within a year of the accident.

Fourteen months earlier, the motorcycle manufacturer's entire racing team experienced a sticking problem with the same throttle system. Team members alerted the manufacturer and returned the faulty throttles, though the company never followed up. Just before the subject accident, the manufacturer stumbled across the documentation from the racing team as it was preparing to defend the motorcycle in a similar lawsuit.

During the discovery portion of the subject lawsuit, it came out that the manufacturer discounted the racing team's findings as a "fluke occurrence." The manufacturer had also received numerous customer complaints of stuck throttles, but this information never reached its engineering department.

To make matters worse, the company failed to conduct a formal hazard analysis on the throttle system during the design phase or after. Further, the throttle was never thoroughly tested other than as part of the assem-

bled motorcycle, until the lawsuits

started pouring in. Then, extensive testing by the company failed to duplicate the sticking problem.

The manufacturer also failed to perform a formal root-cause analysis of the throttle system so that it could start and stop the problem at will. While exploring obvious weak areas of the throttle design, engineers concluded that a flawed rotor the throttle cable rode upon caused the throttle to stick. They were never able to confirm this suspicion though testing, however. The engineers went ahead anyway and redesigned the rotor to be much stiffer and larger. Based on nothing to confirm that the redesign addressed the problem, the company recalled the rotors for replacement.

I find it extremely disturbing that a manufacturer would use such a shotgun approach at problem solving, especially when the problem is safety related and could easily kill or seriously injure a user.

In a lawsuit, a pretrial settlement conference with a judge lets both sides disclose what the experts are going to say. The case settled during such a settlement conference. Knowing the plaintiff's medical and other expenses related to the case, I would not be surprised if the settlement was well into seven figures. My client says the sticking problem remains, but to what degree is unclear. **MD**

*Lanny Berke is a registered professional engineer and Certified Safety Professional involved in forensic engineering since 1972. Got a question about safety? You can reach Lanny at [lannyb@comcast.net](mailto:lannyb@comcast.net).*

Edited by Lawrence Kren