

Indy race cars are equipped with CRASH DATA RECORDERS to improve safety

http://www.isthq.com/applications/crash_data_recorders.shtml

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Not many of us make our living driving an automobile 220+ miles per hour, for hours at a time, in a high-speed, high-stakes, high-risk racing competition. But for those of us who do, the issues of safety, protection, and survivability in the event of a crash or mishap are important ones.

This year for the first time Indy race cars are being equipped with onboard crash recorders for use during time trials and actual races. The Instrumented Sensor Technology, Inc. (IST) model EDR-3 environmental data recorder was selected by the GM Motorsports Technology Group late last year for installation on all 1993 Indy cars. The recorders were widely used on most Indy cars for the first time during the Indianapolis 500 race in May 1993. They are now being used regularly in all subsequent Indy car races, including the recent Detroit Grand Prix at Belle Isle, Michigan. The recorder was originally designed for environmental measurement of packaging/handling shock, drop, and vibration.

Selecting a crash recorder

The dynamic environment on board an Indy race car is extreme. The size and weight specifications for any piece of hardware placed in the chassis of the car are of the utmost importance. Before a prospective crash recorder was chosen for installation in Indy cars, it had to be qualified using laboratory crash tests and simulations. Controlled laboratory sled tests and actual automobile crash tests were conducted with the IST recorder at the GM Proving Grounds in Milford, Michigan. Recorder - captured impact acceleration data was then correlated and verified against acceleration data captured by the GM laboratory's standard crash data acquisition system.

GM engineers ultimately chose the IST EDR recorder as a result of its measurement and recording accuracy, as well as its small size and weight, self-contained battery-powered operational capability, and ruggedness. Use of the recorder on Indy race cars will enable GM engineers to more accurately quantify the actual acceleration amplitudes and duration's experienced by race car drivers during crashes.

Accurate crash data will then be used in re-evaluating and improving various safety and design factors associated with race cars.