

Why rally cars need no airbags

By Ahmad Muto

Ever looked at the interior of a rally car? Well, bucket seats with five-point seatbelts, a roll cage, a steering wheel normally smaller in diameter compared to that of a passenger car, and with no sign of an airbag anywhere.

Rally cars are agile and robust in performance, built with the ability and power to conquer different terrains.

It is indeed true that rally cars do not have airbags – to reduce the weight of the car and eliminate chances of accidental deployment, given that rally cars are driven at high speeds, make rough manoeuvres, and therefore, produce forceful vibrations. All these consistent shocks can prematurely force the deployment of airbags mid-race, injuring the driver and causing an accident.

Replacing the effectiveness of the airbag is another effective rally-specific set of alternatives that render airbags redundant.

Moses Wakhasa, a two-time 4x4 rally champion, explains that rally cars are given safety requirements and design specifications, eliminating the need for airbags to serve any purpose. They are also equipped with a roll cage, which is a steel frame installed in the cabin acting as a safety bubble to prevent structural collapse during collisions or rollovers.

"Rally cars have bucket seats and five-point seatbelts that hold the driver and co-driver in place, plus a roll cage. The seats are firmly bolted to the body of the vehicle and padded – and do not forget that the driver and co-driver both have helmets and head and neck support [HANS] devices that protect the neck," he explains.

A rally car must also go through homologation, which is the process through which a car is certified after meeting regulatory and safety standards, locally handled by the Federation of Motorsport Clubs of Uganda.

Wakhasa adds that the parts of a rally car – fuel tank, seats, seatbelts – expire after about a decade and must be replaced.

Because the seatbelts are meant to tighten in case of impact, rally cars are equipped with blades that the occupant is meant to use to cut the seatbelts in order to exit the car.

Joel Katongole, a rally driver, also explains that rally cars do not have airbags because the seatbelts are effective enough to hold the body in position, allowing only minimal movement.

"Because the seatbelt holds you in one place, even if the vehicle rolls over, it will not release you. But for normal passenger cars with three-point seatbelts, in case of impact there is a forward jerk – the reason they have airbags to protect the occupants."

Rally cars also have the HANS device, a rigid collar worn under the shoulder harness as a restraint and safety device in motorsport, to minimise the risk of head and neck injuries.



Five-point seatbelts of a rally car render airbags redundant