

Baja car gears up for spring run

By Dennis Caldwell

Hibernation is over. The Capitol All Terrain Access Vehicle (CATAV) will be redesigned for the 1984 Mini Baja East which may be held near Morgantown, West Virginia in May.

Two senior engineering students, Chris Patrignani and Greg Labelle, have committed themselves to the project of redesigning CATAV.

Labelle said safety is the first concern in designing an all terrain vehicle. Before the competition, the vehicles are rolled over onto their roll cage and drivers must stand on top of the vehicle to demonstrate the roll cage is strong enough to support the weight of the driver and the vehicle.

"Two different vehicles turned over during the events last year. One rolled down a 10-foot embankment. The other, during the one-quarter-mile swim, turned over by rotating sideways in the water," Labelle said. "Neither of the drivers were hurt."

CATAV also had its problems because of the rough terrain and the endurance required of a vehi-

cle. Chris Patrignani, president of the Society of Automotive Engineers' student branch at Capitol Campus, said, "There were three basic problems with last year's vehicle."

First, the Yamaha 185 engine clutch failed on the attempted run up the 45 percent inclined hill.

Next a weld broke in the tie rod on the steering mechanism. Lastly, the particular type of chevron treaded tires would not have suc-

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Engineering Student**

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The parameters of the competition include a \$1,350 maximum cost of vehicle materials and the completion of two days of competition. The vehicle has to be designed to meet safety standards, consumer appeal, and automotive component design.

In order to evaluate these

requirement of competition between new, creative designs.

The top three winners in the 1983 competition were West Virginia, Bucknell and Georgia Southern Universities.

"CATAV will cost a great deal of money," Labelle said. He hopes sufficient donations will make the project a success. Fund-raising efforts were made by the

Society of Automotive Engineers (SAE) with a drawing for a \$50 worth of gas.

Senior engineering student thoughts on designing CATAV will focus on the various events.

In order to improve in the hill climb event, the clutch mechanism may be changed from a wet clutch to a dry clutch designed for racing. Another important concern in this event is to maintain a high engine RPM (Revolution Per Minute). This could be accomplished through the use of a tachometer and a method of increasing the engine RPM to meet the changing needs of CATAV as it ascends the hill.

For maneuverability on the race course, which will be about fifteen miles long, the suspension needs to be beefed-up with larger tie rods. The steering mechanism needs to be changed to a worm rear unit or a small rack-and-pinion unit.

Another design concern is the use of aluminum for the body and frame instead of sheet metal and galvanized steel. This change in weight will, along with the eight HP Briggs and Stratton engine, respond better to speed and acceleration.

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