personnel. Examples of aircraft and other vehicle halting systems are described in many of the assignee's patents and patent applications, including U.S. Patent Nos. 6,726,400; 6,971,817; 7,261,490; 7,467,909; 7,597,502; 7,837,409; 8,007,198; 8,021,074; 8,021,075; 8,224,507 and U.S. Patent Publication Nos. 2008/0014019; 2011/0020062; and 2011/0177933. For example, in addition to systems designed to stop overrun aircraft, other energy-absorbing walls have been considered for use in highway situations as well, in order to stop a car from leaving the highway at a dangerous pace, but to also stop the car without injuring its occupants. Further improvements to catch fences, however, are needed, particularly for high speed crashes, such as those occurring at speedways or racetracks.

BRIEF SUMMARY

Embodiments of the invention described herein thus provide vehicle catch fence systems and methods to be used at motorsports facilities and other venues where vehicle projectile safety is concerned. They are generally intended to be used in place of rigid fencing that is widely installed to contain airborne race cars or other vehicles and keep them from leaving the racetrack and endangering spectators behind the fences. Current fences are a hazard to drivers because of their rigidity and tendency to cause severe damage to the car if it strikes the fencing material.

Some of the embodiments described herein move the rigid poles and other unforgiving materials back from the outer edges of the race track and provide some cushioning and catching effect before the car encounters any fixed objects. The catch systems may be designed at various angles, they may be installed in multiple sections, they may be designed to catch and cushion multiple cars or vehicles, and may have various other features described below. The general intent was to develop a compliant fence system that offers better protection to the driver and the car in the event of an accident where the car becomes airborne and leaves the track.

According to one aspect of the invention, there is provided a catch fence for halting the overrun of a car leaving a racetrack, comprising:

(a) at least two pivotable poles, each pole comprising a pivot point along the pole or at its base;

(b) at least one cable extending between the at least two poles; and

(c) at least one portion of net or fencing installed between the poles, supported by the at least one cable.

According to another aspect of the invention, there is provided a catch fence for halting the overrun of a car leaving a racetrack, comprising:

(a) at least two angled poles; and

(b) a plurality of cables extending between the at least two poles, the cables supported via forwardly positioned rolled plates secured together and extending from an upper pole portion to a ground anchor, such that the cables are strung between the plates.

According to yet another aspect of the invention, there is provided a catch fence for halting the overrun of a car leaving a racetrack, comprising:

(a) at least two curved poles; and

(b) at least one portion of a net or fencing extending from a top portion of each pole and secured to a Steel and Foam Energy Reduction (SAFER) barrier.

According to a further aspect of the invention, there is provided a catch fence for halting the overrun of a car leaving a racetrack, comprising:

(a) curved or straight main support poles;

(b) main horizontal cables terminated together or connected to energy absorbers at their ends; and

(c) vertical support cables at each pole secured to a wall or secured to a Steel and Foam Energy Reduction (SAFER) barrier at their bottom, routed through one or more pulleys at the top of each pole, down to an energy absorber at the base of each pole; and

(d) horizontal and vertical cables fastened together where they intersect; and

(e) an integral mesh debris fence fastened to the horizontal and vertical cables.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows a schematic of a first catch fence embodiment.

FIGS. 2-4 illustrate a C-fence catch fence embodiment.