Go-Kart Overturns Causing Flash Fire

INCIDENT

An accident occurred in Invercargill, on 9th March 2002, in which a go-kart overturned and caught fire, resulting in serious burns being sustained by the 13-year-old driver. The victim still remains in a serious condition in hospital with extensive third-degree burns and internal respiratory system damage. The go-kart he was driving was a registered indoor go-kart amusement device.

CIRCUMSTANCES

The two main causation factors were:

- Overturning of the kart (which should not have occurred); and
- The type of fuel cap fitted allowed fuel to escape and ignite.

The conditions of operation contained in amusement device certificates of registration for go-karts have predominantly focused on passenger restraint and safe operation issues, together with the minimisation of hazards associated with such matters as collision and overturning.

Although the hazards associated with karts overturning are well known, this is the first instance of serious injury coming to DoL's attention that has occurred as a result of a flash fire following such an event.

INVESTIGATION

The motor involved in this accident was a Honda GX 160 petrol motor commonly used in New Zealand to power go-karts used in an indoor setting. The fuel cap on the petrol tank can be either a plastic or metal vented cap as supplied.

The owner's manual warns that these motors should not be tilted more than 20 degrees from the horizontal as doing so may result in fuel spillage. Following the kart tipping in this instance, fuel spilt from the fuel cap vent and ignited. Tests to date show that the plastic petrol cap used allowed petrol to escape freely when tipped greater than 20 degrees. Metal fuel caps also spilt petrol after a short delay but not as freely.

Other go-karts are known to operate in New Zealand under the same conditions, with no fuel security system in the event of a tip-over.

RECOMMENDATIONS

In the interim, known go-kart amusement device operators should have this accident brought to their attention and, where standard vented petrol caps are in use, shall be required to take the following immediate action:

- Check with their suppliers on the availability and practicality of fitting a sealed fuel cap and make such changes; or have a registered mechanical engineer design and fit a failsafe vented system that vents fuel away from the kart in the event of a cart overturning; and
- Ensure appropriate safety measures are in place in relation to the track to ensure overturning type incidents are prevented.

PROSECUTION

The company owner was fined $20,000 under the HSE Act, at the time this was the highest total fine for an individual. John Pannett, DOL service manager for Southland at the time said that go-karts are vehicles which, like all machinery, require maintenance. "In this case, Mrs Ladbrook has never had the karts, let alone the fuel caps, serviced by a mechanic." Also, she has altered the configuration of the track but had not had the new layout certified as safe for public use.

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