



United States
CONSUMER PRODUCT SAFETY COMMISSION
Washington, D.C. 20207

MEMORANDUM

DATE: April 8, 1996

TO : Roy Deppa, Acting Division Director
Mechanical Engineering Division, ES

Through: Mary Ann Danello, Ph.D., Associate Executive Director
Directorate for Epidemiology and Health Sciences *M. Danello*
Robert E. Frye, Director, Hazard Analysis Div. (EHHA) *R. Frye*

FROM : Prowpit Adler *P.A.* / EHHA

Subject: Go-Cart Incidents Summary, 1995

Attached is the summary of incidents based on the 1995 NEISS hospital emergency room treated injuries related to go-carts and other sources.

Attachment

1/21/04
CPSC 610X11 CLEARER BY *[Signature]*

NO MFRS/PRVTLBRS OR
PRODUCTS IDENTIFIED

EXCEPTED BY: PETITION
RULEMAKING ADMIN. PROC DG

WITH PORTIONS REMOVED: _____



GO-CART RELATED HAZARDS
Hazard Analysis Division
Directorate for Epidemiology and Health Sciences

I. DEATHS:

There were 165 go-cart related deaths to consumers of all ages reported to CPSC from 1985 through March 19, 1996¹.

<u>Year</u>	<u>No. of Deaths</u>	<u>Age Under 15</u>
1985	12	8
1986	16	8
1987	12	9
1988	18	11
1989	24	12
1990	13	9
1991	7	4
1992	20	15
1993	11	8
1994	11	8
1995	20	12
1996 (YTD)	1	1

The investigations of the deaths of 48 children² from 1991 to present shows that tipover, hitting stationary objects/motor vehicles, and losing control of the vehicle were the major hazards. The incidents associated with these hazards based on completed investigations are described as follows:

¹Based on data collected from death certificates, consumer complaints, medical examiners' reports, and in-depth investigations. Death reporting is not complete for 1993 and 1994

² Only 26 investigations were completed because some states do not give permission to conduct an investigation or contact the victim's next of kin.

A 3-year-old boy died of multiple chest injuries after he was crushed against the steering wheel of a go-cart driven by his brother when the go-cart collided with a parked tractor. He had been sitting on his brother's lap.

A 4-year-old girl died from chest injuries sustained when a 4-wheel ATV ran over the go-cart in which she was riding with her father.

A 6-year-old girl was driving a go-cart in the front yard of her aunt's home when she lost control of the cart, went into the street, and was struck by on-coming traffic. The victim expired in the emergency room of a local hospital an hour later as a result of a fractured neck.

A 6-year-old girl died due to massive chest injuries while riding on the lap of her mother who was driving the go-cart. The go-cart struck a retaining barrier head-on at 15-20 mph. The victim was pinned between her mother's chest and the steering wheel.

A 7 year-old boy was driving his go-cart for the first time in an open field near an embankment. He accidentally drove the cart over the embankment which resulted in his death due to massive head injury.

A 7-year-old boy (driver) died and an 8-year-old girl (passenger) suffered brain injuries when their go-cart travelled down the embankment at 10 mph onto a paved highway. They went into the path of a pick-up truck travelling at about 50 mph.

A 7-year-old boy died after a go-cart collided with a bumper rail. He had been riding with his father in the same go-cart and his father's body may have pressed him into the steering wheel. The cause of death was a ruptured aorta.

A 7-year-old boy died of blunt force injuries of the abdomen when he hit a 6-8 inch curb while driving a homemade go-cart. The vehicle did not have any safety straps. The victim wore a helmet.

An 8 year-old boy sustained fatal head and chest injuries when his go-cart went out of control and struck a tractor trailer. The victim was transported to an emergency room and was pronounced dead on arrival.

An 8-year-old boy died from head injuries after the go-cart he was driving at a commercial track flipped over and landed on top of him.

An 8-year-old boy died of injuries received when the go-cart overturned and pinned him underneath. He was riding alone and unsupervised.

An 8-year-old boy died of brain damage due to anoxia when his go-cart overturned, pinning him to the ground, and spilling gasoline onto him.

An 8-year-old boy was riding as a passenger with a 25-year-old male on the go-cart down a gravel road. The driver pulled out of an intersection and struck a car. Both the driver and passenger of the go-cart were thrown onto the road. The driver of the go-cart received severe head injuries and the boy was killed.

An 8-year-old boy died due to head and chest injuries when his go-cart flipped over on top of him while attempting to jump over car ramps. The front end of the cart dug into the dirt causing the cart to flip over and land on top of the victim.

An 8-year-old boy was driving his go-cart about the parking lot and grounds of an auto facility. He lost control of the cart and crashed into a parked truck. The victim, who was under his father's supervision during the drive, died of cranial injuries after hitting the truck's steel bumper.

A 9 year-old girl was driving her go-cart near a fence. She inadvertently depressed the throttle pedal instead of the brake. She drove the cart under the fence, received multiple head injuries, and died.

A 9-year-old boy was riding a go-cart on private land when he ran into the back end of a utility trailer. He died of head and internal injuries.

A 9-year-old girl was driving a home made go-cart in the parking lot of the local school. It appears she was attempting to turn around and was leaning to her left. As she leaned, her hair got caught in the drive shaft which was located behind the seat. The drive shaft wrapped up her hair and caused her head to strike the metal assembly. She received traumatic head injuries from which she died, during treatment at the hospital.

A 10-year-old boy was attempting to ride a 5 horsepower go-cart over a mound of dirt about 3 feet high and 4 feet wide. The front bumper struck the dirt and the cart flipped forward over the mound of dirt and landed on top of him. He died of head trauma.

A 10-year-old boy died when his go-cart went over an incline and became airborne. The front end of the cart hit the ground and the cart flipped forward over on top of the victim. He died of a crushing head injury.

An 11-year-old girl died after crashing her go-cart into a parked truck. The medical official believed she may have gone under the truck and hit her chest on the truck bed.

A 13-year-old girl died of a basal skull fracture when she fell backwards from the rear of a 5-horsepower go-cart onto a blacktop street. She was riding on the cart by holding onto the cage which covered the motor while her cousin was driving at a slow speed at the time of the incident.

A 13-year-old boy sustained fatal head injuries when his go-cart went over a dirt jump at high speed. The nut holding the wheel assembly to the cart came off during the jump causing the cart to overturn upon impact.

A 13-year-old boy was killed when he drove a go-cart into the path of a truck, after he had failed to stop at a stop sign at an intersection. He died of blunt head trauma. A 12-year-old male passenger was hospitalized for a broken collar bone.

A 14-year-old boy died after he sustained a massive head trauma when his go-cart rolled over several times with the victim in it. The left tire of the cart dug into the grass as he was turning right.

A 14-year-old boy sustained a fatal blunt chest trauma injury after his go-cart flipped over and landed on top of him. The victim was wearing a helmet at the time of the incident. He was transported to a local hospital where he died in the emergency room.

II. INJURIES: (NEISS)

Estimated: 65,400 (91/01/01-96/03/19)

<u>Year</u>	<u>Estimate Total</u>	<u>Under 15 Yrs. Old</u>
1991	9,300	6,400 (69%)
1992	11,900	7,800 (66%)
1993	11,200	7,200 (64%)
1994	14,900	9,600 (64%)
1995	16,300	10,000(61%)
1996(YTD)	1,800	1,200(67%)

A. Hazard:

Based on a review of the incidents reported through the NEISS system in 1995, the hazards related to go-carts involving children under 15 years of age were identified as follows:

1. **Fell/thrown (25 %)**
2. **Collision (24%)**
(Stationary objects, other go-carts, or motor vehicles)
3. **Tipover (10%)**
4. **Hit/runover (7%)**
5. **Entrapment (2%)**
(Upper/lower limbs, clothing, or hair caught in exposed chain drive)
6. **Other (15%)**
(Burns from exposed exhaust pipe, debris in eyes, parts fell off, or cut on the sharp object on the carts)
7. **Unknown (17%)**
(A high percentage of the incidents in this category was described as "wrecked" which may have caused by tipping over or collision.)

B. Diagnosis:

1. **Contusions/abrasions (33%)**
2. **Lacerations (30%)**
3. **Fractures(17%)**
4. **Strains/sprains (10%)**
5. **Other (10%)**

C. Disposition:

1. **Treated and Released (94.8%)**
2. **Hospitalization (4.7%)**
3. **Unknown (0.5%)**

III. SURVEY

In order to obtain information on the proportion of the home-made units involved in the incidents, 25 NEISS cases were selected for telephone follow-up interviews in 1994. Fourteen of the selected NEISS cases were completed. Results from this survey show:

1. About one-third of the incidents involved home-made units. The proportion of home-made units obtained from this survey was comparable to that reported in market analysis completed by the Directorate for Economic Analysis (EC)³. EC reported that of the estimated 700,000-1,000,000 units currently in use, firms in the industry estimated that perhaps 35-40 percent of these are home-made.

2. About two-thirds of the incidents involved go-carts that were equipped with at least one safety device, such as a safety belt, steering wheel pads and/ or chain guard. Only a few go-carts were equipped with all safety devices (steering wheel pads, chain/belt guard, wheel guard, engine guard, stepboard, and roll bar) on them.

3. In more than half of the incidents, the go-carts hit a stationary object or a moving vehicle. The remaining incidents involved the go-cart tipping over or sliding, the victim falling/being thrown from the cart, or hot surface contact.

4. About two-third of the victims were children under 15 years old. All were treated and released.

³Memo from Terrance Karels, ECPA to Nancy Rytina, Ph.D.:
Go-Carts, November 1, 1994.