

# Smash the Gate: Unintended Consequences

Vehicle crashing the near gate

UK



© 2011, Cambridgeshire Constabulary, Peterborough, UK. Image from police car video camera.

Motorist knew gates are breakable

Presentation to Expert Group on Road Signs and Signals, M. Pronin, 31 May-1 June 2018, Geneva

Vehicle has crashed into both gates

UK



© 2011, Cambridgeshire Constabulary, Peterborough, UK. Image from police car video camera.

Gates do not break into pieces.  
Gates bend, swing, and often fall across rail tracks.  
Both near and far gates may land on the tracks.



© 2011, Cambridgeshire Constabulary, Peterborough, UK. Image from police car video camera.

## RESULTS

Disruption in train service and road use, sometimes for hours

Possible injury to train staff and passengers

Possible derailment

Loss of police time

Cost of cleanup, gate replacement, police overtime pay, search for and prosecution of perpetrator



© 2013, Network Rail, Leicester, UK. Image from video camera.

Car strikes near gate / Gate and boat from car roof land on both tracks



Ireland

Truck strikes near gate  
Near gate swings and  
lands across both tracks



© 2015, Irish Rail, Dublin, Ireland. Images from video camera.

# Truck strikes near gate

Australia



© 2015, Queensland Rail/Fairfax Media, Australia. Image from video camera.

# Truck strikes far gate



Australia



Far gate swings and lands across tracks



# Unintended Consequences

A sign should not solve a problem and thereby create a new problem.

- ✧ Awareness of gate breakability leads to riskier motorist behavior – more vehicles crossing tracks when trains are approaching and more vehicles smashing near and far gates, both full and half barriers.
  - ✧ **Australia:** In 2010, replacing smashed gates in Brisbane cost \$1 million plus police time and use of commuter buses; 2009-2016, 1287 gates were smashed in Queensland; in 2017, 3 separate incidents by different motorists during one day.
  - ✧ **India:** In 2013, 41 smashed gates in one locality (12% of all gates).
  - ✧ **USA:** In 2016, 329 smashed gates in state of Utah.
- ✧ Motorists intending to smash both gates may be hit by a train before they can clear the far gate.
- ✧ Swinging bent gate(s) may strike other road users behind or in front of the vehicle that hits the gate.

The statistics above are not cherry-picked; they are the only statistics easily available.

# Unintended Consequences

- ✧ Many level crossings have cross traffic beside the tracks and cross traffic has a green light when gates are down. Gate smashers may therefore hit cyclists, pedestrians, and other vehicles crossing on the road ahead.
- ✧ Before police arrive to direct traffic, road users may be crossing the tracks when it is unsafe. Police say downed gates endanger all road users and trains.
- ✧ If a sign directs trapped motorists to smash the gate, if a motorist follows this directive, and consequently if a road user is injured or killed, is anyone legally liable – the motorist, the railway, the country's government, the UNECE, its Expert Group members, the Smash Gate sign designer, all the above?
- ✧ To safeguard motor vehicle cross traffic from gate smashers, roads near gates and parallel to the tracks must be closed. Higher traffic volume will result on nearby roads, possibly increasing risk of crashes.
- ✧ To safeguard vulnerable road user cross traffic from gate smashers, footpaths, cycle lanes, and cycle tracks near gates and parallel to the tracks must be closed. Impenetrable barriers must be installed to keep these road users at a safe distance from the gates.



Courtesy of © J.-T. Egge, Røros Norway, 2011.

Note proximity to the far gate of pedestrian crossing and crossroad

The distance from the stop line to the gate appears to be about a meter and a half

It is possible for pedestrians to cross between the stop line and the gate

USA



Courtesy of the Government of Battle Creek, Michigan, USA, no year.

The road on the right is very near the gate, perhaps less than a passenger car length

Switzerland



Courtesy of D.M. Weidmann, Niederdorf, Switzerland, 2016.

# Newspaper Headlines or Leads

Australia

**Smashed boom gates and near misses climb on the state's deadly rail crossings**

**Huge train delays: Services suspended after truck hits boom gates**

A CAR ran a red light and crashed into a boom gate this morning, causing a train to hit the gate and become stuck.

India

**Damage to manned<sup>\*</sup> crossings by vehicles worries railway officials**

\* manned = guarded in India

USA state

**Utah drivers crash hundreds of railroad gates each year**

# Conclusion

- ✧ Before rushing to create signage directing motorists trapped between gates to drive into the far gate and smash it before a train passes, the unintended consequences should be thoroughly examined and solutions proposed.
- ✧ Saving lives and monetary cost due to train-vehicle crashes must not occur at the expense of endangering road users beyond the rail tracks.
- ✧ Law experts should be consulted to determine, in the event of injury to third parties, if liability might result from a sign directing motorists to enter an intersection against a red light when a crossroad abuts the rail tracks.
- ✧ Engineering and *strict* law enforcement may reduce crashes more successfully at level crossings than a smash-gate sign. A law enforcement goal should not be revenue collection. Law enforcement should address the main reason (saving time) that motorists and other road users disrespect red signals at guarded level crossings. Instead of or in addition to being fined, arresting violators would cause them to lose a substantial amount of time.
- ✧ People need jobs. Reintroducing the profession of flagger should be tested as a way to discourage misbehavior at level crossings.



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