Presented by:
Bryony Chamberlain
Vice President, DATTCO School Bus

DATTCO

BUS SAFETY Through Technology

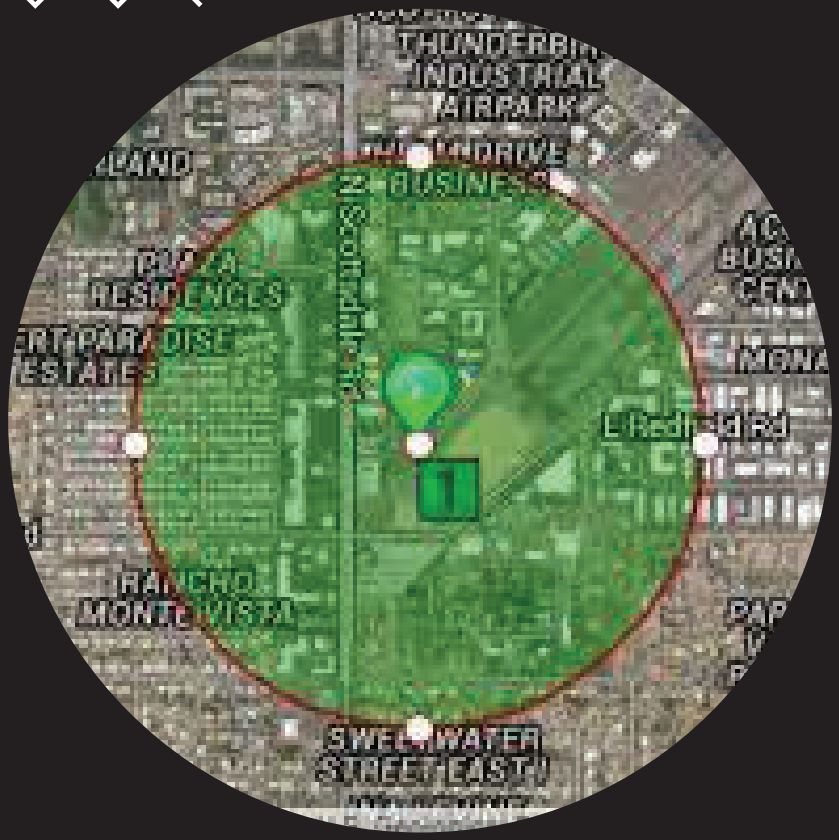
The Swinging Ride!

THE INTRODUCTION OF GPS

In 2005, I started working with large-scale GPS installations.

It was great for tracking, but what else could it do?

- GPS-tracked speeding alerts, which then created:
  - Alerts sent to an email
  - Overwhelmed managers
  - Emails were deactivated
  - Evidence was gathered of excessive speeding, but no one was reacting



TESTING GEO ZONES

The Dilemma:

We were concerned that our long-distance double-decker motor coach buses would not clear low bridges.

The Option(s):

- Utilize GeoZones as timing points …
  but could it do more?
- If the timing point can generate an event, then could that event create an alert in the bus for the driver, in addition to the portal notification?
- Install alerts in the bus/cab to warn drivers of a low bridge.

CONTROLLING THE VEHICLE REMOTELY

The Issue:

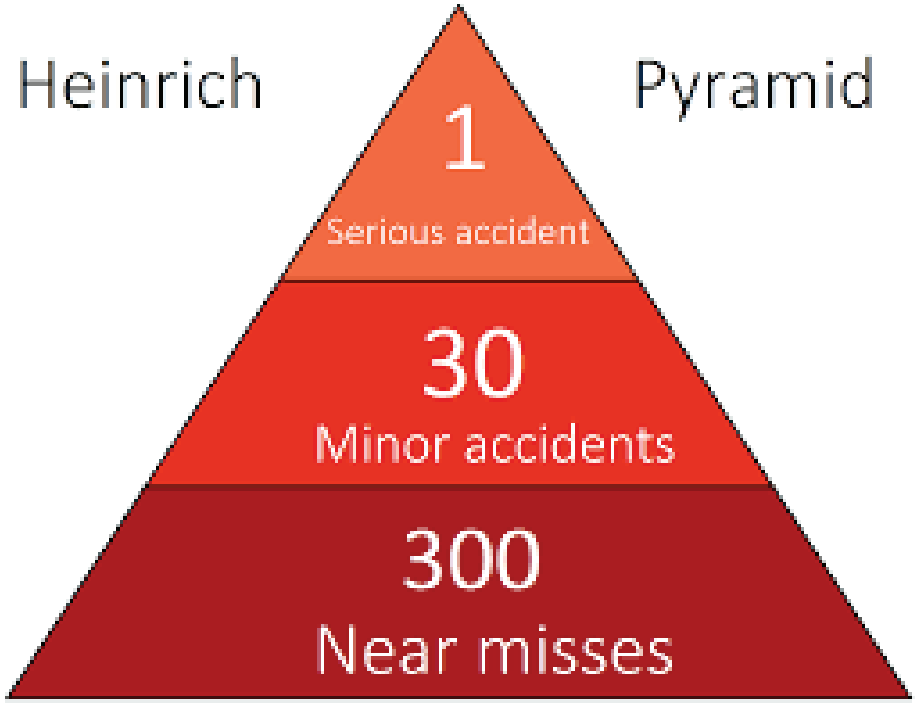
We want our buses to operate in the midtown/Lincoln Tunnel area of NYC.
The Lincoln Tunnel is 13 feet high.
Our double-decker buses are 13 feet and 4 inches high.

The Resolution:

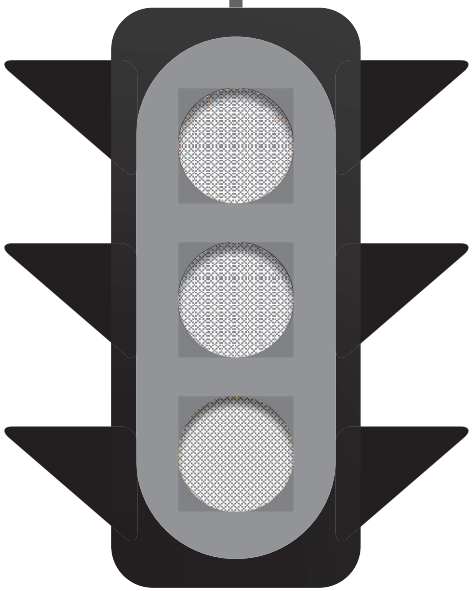
Can we ensure that GeoZone can create an alert that would be sent to the ECM and control the bus?

BEHAVIORAL MODIFICATION

In 2010 new technologies began to emerge with an all-inclusive picture of incidents.



THE FIRST GEO-SENSOR SYSTEM



INSTALLATION

Geo-sensors were installed on the dash and was calibrated to each vehicle type

ALERT NOTIFICATION

A traffic light was installed on the dash to alert the driver of hazardous driving

POINT SCORING

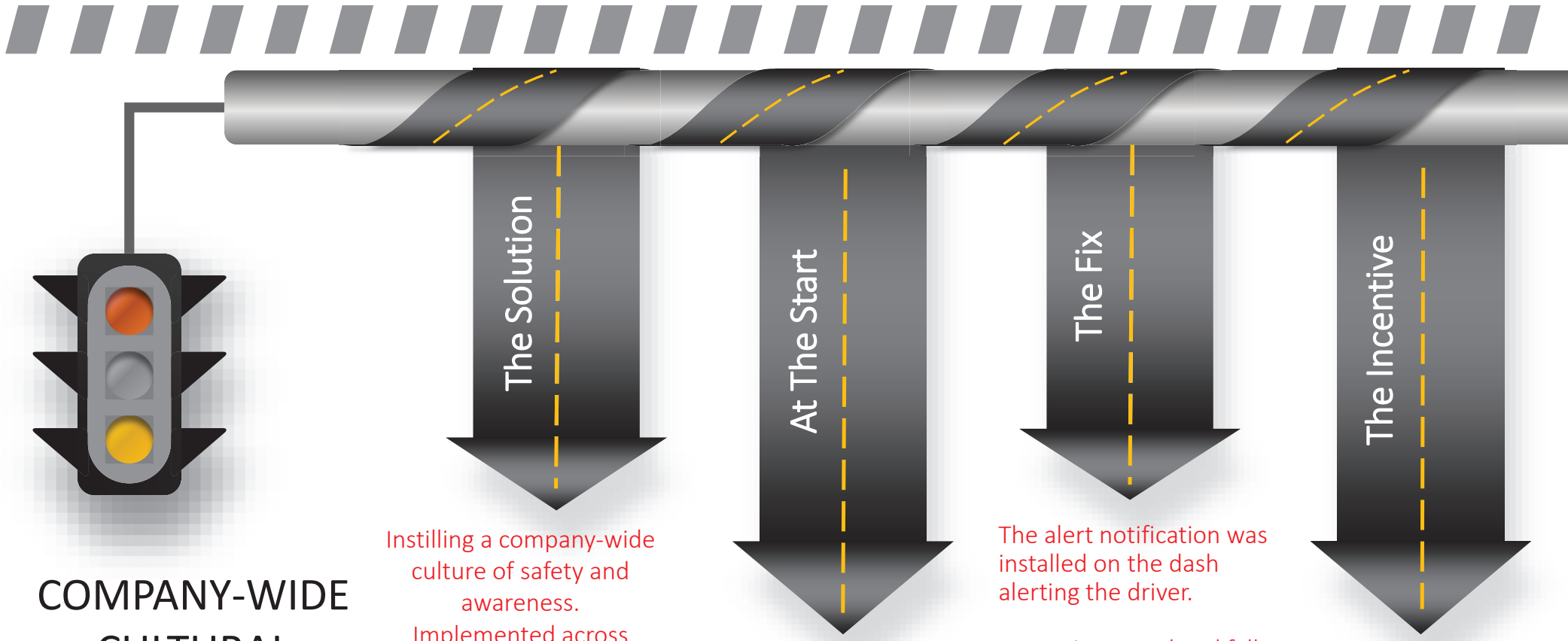
Managers kept records of the drivers' performance – scoring them on the number of hazardous incidents per hour and speeding incidents per hour

SCORE AS FEW POINTS AS POSSIBLE

It was time to deal with hazardous and speeding incidents, after compiling 5 years of data.

- Drivers were encouraged to score below 20 points
- Incentives were provided to drivers who were successful.

Points = Prizes!



COMPANY-WIDE CULTURAL SUPPORT

The Solution

Instilling a company-wide culture of safety and awareness.
Implemented across 3,000 buses and coaches

At The Start

Tracking systems were installed without the driver's knowledge.
Scores were terrible – averaging 100 incidents per hour.

The Fix

The alert notification was installed on the dash alerting the driver.

Scores improved and fell to 60 incidents per hour

The Incentive

Management posted internally the scores of the drivers. Incentives to earn prizes was offered.

Scores dropped to under 20 incidents per hour!

A CULTURAL CROSS CORRECTION

The Issue

- Six out of seven garages were successful
- One garage was stuck at 60 incidents per hour
- Complaints of difficult driving conditions were to blame

The Solution

- Challenged the manager to spend two weeks in the mess room
- Within 2 weeks their scores dropped to 30
- Within 2 months their scores dropped to 20

ARTIFICIAL INTELLIGENCE (AI) CAMERAS

- Installation of a (AI) camera in the vehicle that can track the facial movements of the driver
- Monitor if the driver is experiencing eye drooping or yawning
- Alerts will be sent to the Driver and Dispatch
- Install (AI) cameras across the entire fleet – specific for nighttime driving
- The benefit of combining (AI) cameras with the GeoZone system dropped claims costs by 3%

CONTROLLING VEHICLE SAFETY

- Bus companies have large fleets that are often parked in areas with little or no security

- A thief will always find a way if the situation appears to be an opportunity

THE SAFE START

- Manage control of how the vehicle starts

- The vehicle startup can be controlled by the driver entering a number and pin to activate

- Also create an idle shutdown feature for security reasons while the vehicle is loading

SYSTEM COSTS
MOTOR COACH VS. SCHOOL BUS

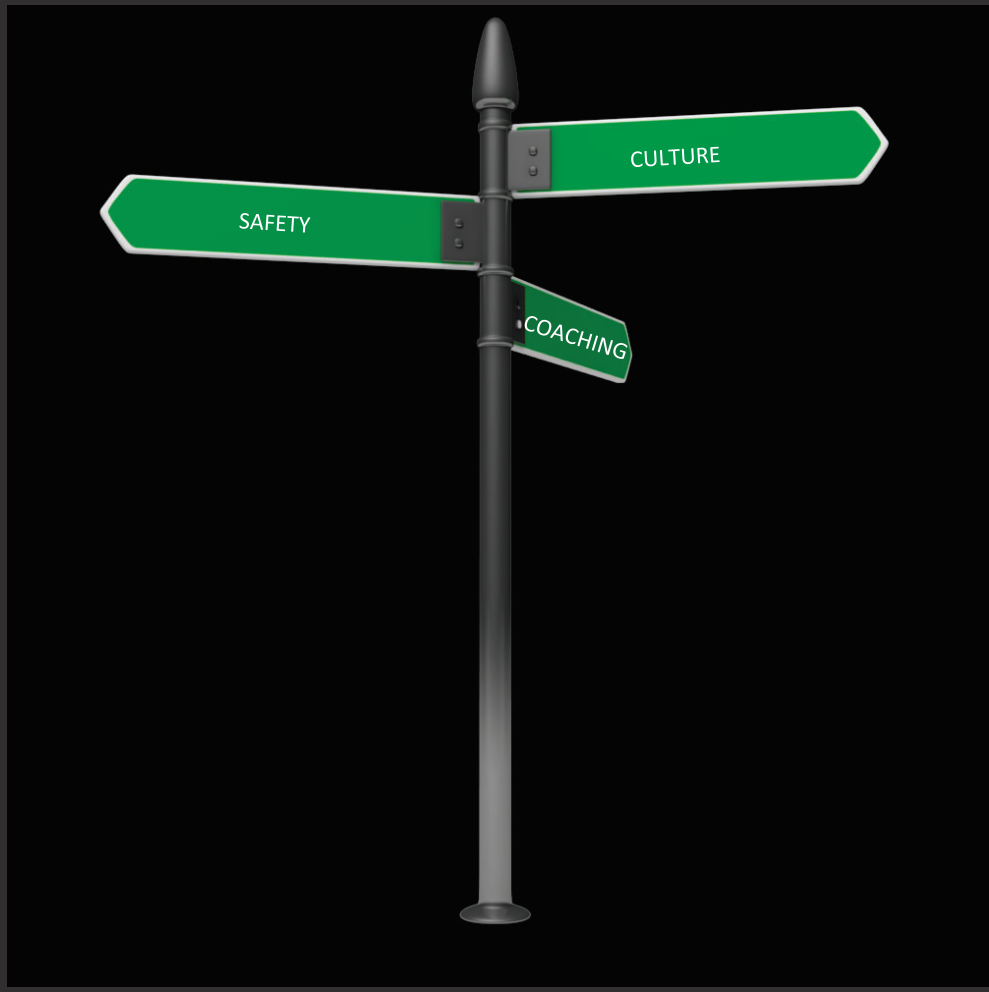
- The cost to install a safety system in a vehicle is the same cost per unit, but the miles each type of vehicle travels varies drastically.
- School bus contracts are highly competitive and are driven by cost.

Motor Coach High Mileage/annually

- 70,000 – 100,000 miles per charter
- 120,000 – 180,000 miles per each long-distance tour

School Bus Low Mileage/annually

- 20,000 – 30,000 miles annually

SUMMARY

1. We have options, there are many systems available that can improve the safety of your vehicles and drivers.
2. The systems available are only as good as the individual interpreting the information and executing their use.
3. Drivers will respond positively to real-time coaching if applied.
4. Safety can be achieved with the use of Technology and support from your company-wide culture.