



# HAZARD EXPRESS

**THE VIRTUAL INSANITY EXPERIENCE**



**LEICESTERSHIRE**  
FIRE and RESCUE SERVICE



### Callum Faint

Chief Fire and Rescue Officer

As the Chief Fire and Rescue Officer for Leicestershire Fire and Rescue Service, I am proud and privileged to welcome you to Birstall Fire and Rescue Station for the launch of our new road safety vehicle. I'd like to extend a special thank you to the Leicester, Leicestershire and Rutland Road Safety Partnership for part-funding this project. We have continued to look at new and innovative ways of delivering road safety education. The "Hazard Express" will be a big part of our ongoing road safety strategy for the foreseeable future.



### Paul Speight

Watch Manager: VR-360 and Road Safety Manager

Leicestershire Fire and Rescue Service leads the way for road safety, utilising emerging technology to engage, entertain and educate not only young drivers, but also experienced drivers. Our new, first of a kind road safety vehicle called the "Hazard Express" - The Virtual Insanity Experience, is a world first in the drive to reduce the number of Killed and Serious Injuries on the UK's roads. Funding was secured through Leicestershire Fire and Rescue Service and our road safety colleagues in the Leicester, Leicestershire and Rutland Road Safety Partnership. We started on this new journey that turned out to be a bit more of an adventure than we anticipated. The COVID-19 pandemic, unfortunately, played its part in holding up our progress. But, just over two years from the conception of the idea, we are ready to launch what will be our road safety flagship for many years to come.



### Janna Walker

Chair of the Leicester, Leicestershire and Rutland Road Safety Partnership

"The success of the Leicester, Leicestershire and Rutland Road Safety Partnership in driving down casualties is very much based on an evidence led approach delivered through collaborative working. As an important member of the partnership, Leicestershire Fire and Rescue Service play a key role in helping to reduce death and serious injury on our roads. Leicestershire Fire and Rescue Service have a proven track record of using innovative approaches, making the most of latest technology, to help engage with young people on road safety issues and, in particular, to highlight risky driving behaviour and

habits. While our 2018 Partnership Casualty Report identified a substantial reduction in the number younger driver collisions over the previous ten-year period, from 869 to 351, it is vital that the Partnership continues this great work targeting this group of vulnerable road users."



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## THE VAN

We looked at many different vehicle types, even looking at purchasing a cab and chassis, which we could build to our specification. It was a tough decision on which direction we should take, but getting the look we required building from scratch was not an option.

After a lot of measuring of the vehicles, a decision was made and the IVECO was selected. We decided to go for a panel van, which needed to be able to have the space to have six motion platforms and rally seats fitted, along with all the ancillary equipment. It needed to be needed to be a high-top long wheelbase vehicle. We still encountered problems, as not all vans would give us the required space, so after a conversation with our workshop manager Tim, we

visited IVECO in Cheshire. They had a van that met our specifications exactly. After a few discussions, the purchase was made and the project was well and truly up and running.

The van originally came in white, but we decided we wanted red to match our fleet, so an addition to the specification was made - an oversight here was that we were going to completely wrap the vehicle, so the colour did not matter!



# FLOOR PLAN

We put a great deal of thought into the internal design of the vehicle - it had to look amazing, so much so that it would draw people to us for a better look.

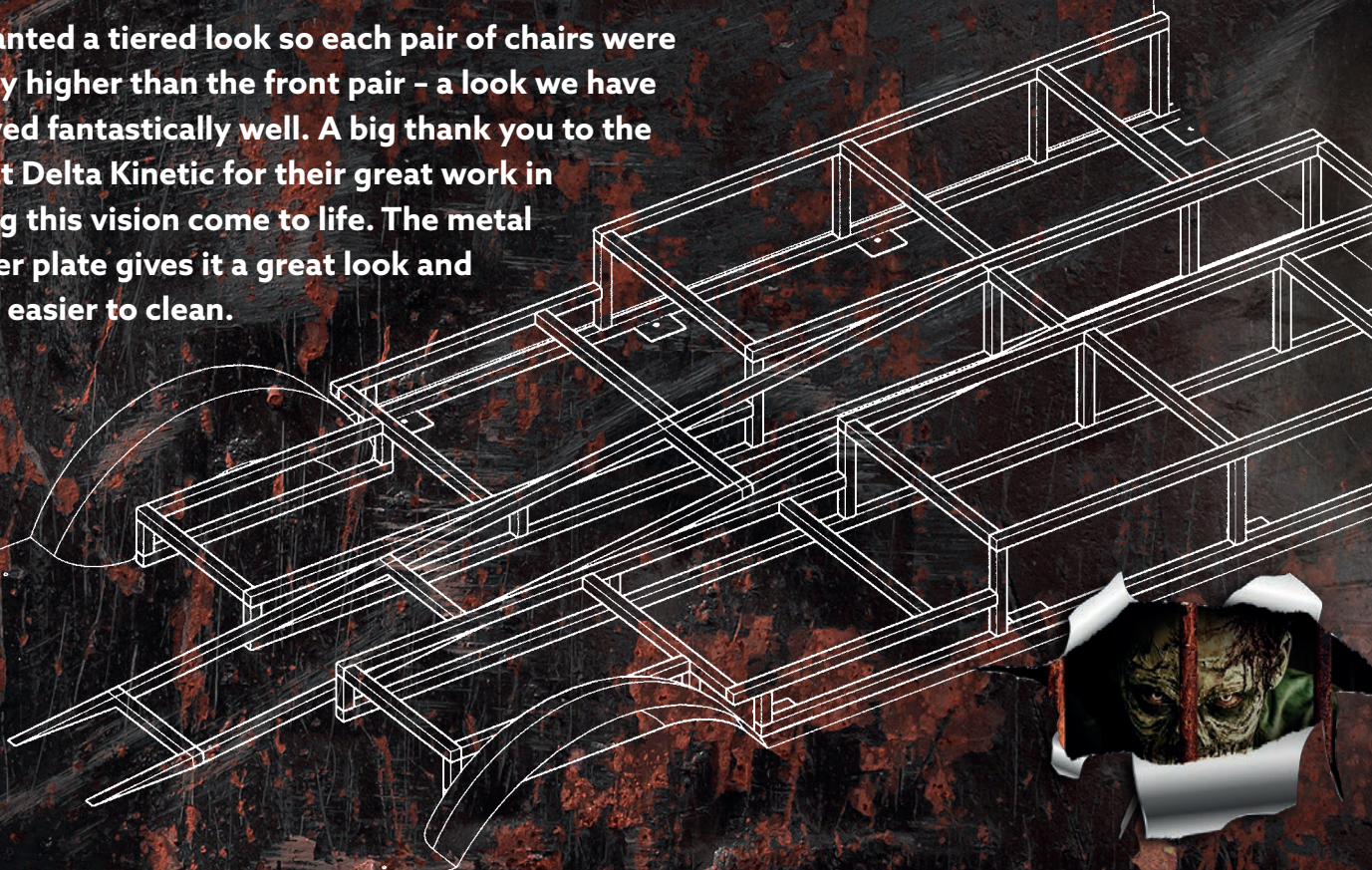
Space would be tight, so technical plans were drawn up, with only small margins for error. We decided to build the frame in three separate sections, allowing it to be built in three stages. This allowed space for movement around the van interior for installation.

The A-frame was built in three sections allowing freedom of movement inside the van at the start. Once the steel frame had the plywood flooring secured, the inside of the van started to take shape. The main transformation was the adding of the aluminium checker plate and motion platforms. The van now had the look of our original vision.



# INSIDE REAR OF VAN

We wanted a tiered look so each pair of chairs were slightly higher than the front pair - a look we have achieved fantastically well. A big thank you to the staff at Delta Kinetic for their great work in making this vision come to life. The metal checker plate gives it a great look and is also easier to clean.



# MOTION PLATFORMS

We needed the 'wow' factor, so decided to go for the Atomic A3 motion platforms supplied by Novatech and Delta -Kinetic. Due to their size, we were aware that space was very limited in the vehicle, and had to allow for the platforms and their range of movement. Whilst allowing easy access for people to move around between the platforms safely when entering and exiting the vehicle.

We wanted to use rally seats to give the vehicle that sporty look and adding a three-point harness. Although we did not need them, they give the impression that the experience is going to be fast and furious. The rally seat was re-covered to colour coordinate the interior of the vehicle.

Adding the Leicestershire Fire and Rescue Service and the Road Safety Partnerships logos really makes the seats stand out when entering the vehicle.



## INSIDE REAR BUILD:

The van was moved to Coventry Special Vehicle Solutions, where the electronics were all wired in and the van was panelled out and carpeted in black with a red stripe.

The van was starting to look the part, but we were still having hold-ups due to COVID-19 restrictions and lockdowns - we kept persevering as we could now see light at the end of the tunnel.



# HEADSETS

We wanted to immerse people so we can simulate a real-world scenario giving a fantastic experiential learning experience. The current reality is replaced with a new 3D digital environment in which the user is isolated from the real world.

We needed to purchase twelve VR-360 headsets. After trying several different headsets, we decided to go for the Pico G2, - it's a great standalone headset with an improved battery design for extended battery usage. It has improved display and resolution offering a clearer picture and display, is ergonomically designed with a cushion surrounding the headset's rim for more comfort. With a reduced weight and lower heat emission, the virtual reality experience becomes a more comfortable experience.

The headsets can be used with glasses and have built-in headphones giving the option to either stream the sound through the headset's speaker, or plug in their headphones, allowing us to change if and when needed.

The possibilities for using virtual reality are virtually endless.



# SIX FILMS



## VF4-360:

The first 360 road safety film was made in 2016, and is now being used globally. It shows four students driving inappropriately, speeding, not wearing seatbelts, and using a mobile phone - all leading to a tragic accident. You will experience this through the eyes of the passenger in the most immersive learning experience.



## Alternative Ending:

Following on from the VF4-360 film, the driver makes the right choices. He stops the vehicle and takes the phone away from the passenger who put it in front of him while driving. He makes everyone wear their seatbelt. He drives sensibly, avoiding a crash and arrives safely at the party venue.



## 90 Second Life Saver: Pedestrian.

The first of a series of three films, shows a distraction of someone walking along a road, and walking out in front of a car causing an accident. We then rewind and run through it again. This time the pedestrian is talking through what you should do to stay safe.



## 90 Second Life Saver: Push Bike.

Second in the series, shows the danger of not wearing Hi-Viz. Blending into the background and not being aware of approaching vehicles at junctions - this film is essential for bike riders and car drivers. Seen from both perspectives, using the rewind effect, which highlights and corrects the mistakes or bad habits.



## 90 Second Life Saver: Motorbike.

Third and last in the series, this film looks at not wearing correct personnel protective riding gear, witnessing the graphic after-effects of crashing a motorbike with no PPE. Rewind the scenario, but with the rider wearing correct biker gear and the injuries are less serious. Finally, watching it through the eyes of the driver, how easy it is to miss a bike when looking to pull out.



## BHS - British Horse Society:

Something completely different, is a mix of 360 film and 2D film on how to pass a horse and rider out on the roads. Some shocking overtaking manoeuvres by cars and lorries will make you hold your breath. With a commentated drive past a horse and rider explaining the do's and don'ts.

# THE WRAP DESIGN

**We wanted a completely different design, not related to the fire service or road safety. Something that would attract people to come over to have a closer look and even ask what's the point of the van - if that happens then we have got it right!**

We came up with four different designs and our friends at First Car, James and Richard, kindly put it out on their website with a questionnaire for all the designs. The feedback we received from all the replies pushed the direction we took. Arch Creative was contacted and we commissioned them to work on the design after a face to face meeting (pre-COVID-19). The conversation must have sounded weird to people who could hear in the office - talking about zombies,

skeletons, blood and broken arms and legs, and how to make a new van look like it's just come from the scrap yard!

We wanted the side of the van to look like it had holes in it, so you could look into the van, and the chain to look like its squeezing the van. With the back doors screwed shut and planks of wood with a zombie trying to get out, the aim was for people to want to photograph the vehicle - if they do, we've got it right!



*Do not look into  
their eyes*

*Do not loosen chains*





*KEEP  
BACK*

*Do not feed*





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*Torn open  
bonnet. Plus  
points; easy  
maintenance!*

*In case we are followed*

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*Please do NOT OPEN! Warning  
danger to health.*



*by a helicopter, they know who we are!*



## **HAZARD:**

A potential source of DANGER (A safety Hazard) an unavoidable danger or risk.

A potential to damage, harm or adverse health effects on something or someone. To risk doing something that might cause harm to someone or something else.

## **EXPRESS:**

Operating at high speed, fast, quickly.

## **VIRTUAL:**

Created by computer technology and appearing to exist but not existing in the physical world Simulated or extended by computer software.

## **INSANITY:**

Defined as very foolish or senseless behaviour, irrational, outrageous, an action that is stupid and likely to have extremely bad results.

## **EXPERIENCE:**

The process of getting knowledge or skill from doing, seeing, or feeling things.



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Thank you to the following organisations  
for assisting in the creation of this Vehicle:



**Blueprint Nottingham**  
[www.blueprintnottingham.co.uk](http://www.blueprintnottingham.co.uk)



**PICO**  
[www.pico-interactive.com](http://www.pico-interactive.com)



**Arch Creative**  
[www.archcreative.co.uk](http://www.archcreative.co.uk)



**blueflamedigital**

**Blueflame Digital Ltd.**  
[www.blueflamedigital.co.uk](http://www.blueflamedigital.co.uk)

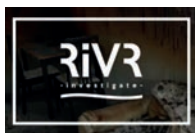


**Novatech**  
[www.novatech.co.uk](http://www.novatech.co.uk)



**Delta Kinetic**

**Delta Kinetic Ltd**  
[www.deltakinetic.com](http://www.deltakinetic.com)



**RiVR**  
[www.rivr.uk](http://www.rivr.uk)



**Special Vehicle Solutions**  
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**LEICESTERSHIRE**  
**FIRE and RESCUE SERVICE**

12 Geoff Monk Way, Birstall, Leicester LE4 3BU  
T: 0116 2105697