The Telegraph

Smart motorways systems dubbed ‘Die Now’ crashed three times in just four days

In an exclusive investigation, The Telegraph reveals how bugs in the UK’s road signalling systems are putting motorists’ lives in danger

By Steve Bird 28 August 2021 • 5:30pm

The dossier, obtained under Freedom of Information laws, reveals how a ‘bug’ in a firewall and then a communications system failure decimated control of the smart motorway network

The computer systems controlling signs on smart motorways have been nicknamed “Die Now” by staff after they became “unusable” three times in just four days, The Telegraph can reveal.

Signals across hundreds of miles of the M1, M4, M5 and M62 could not be changed prompting a “horrified” whistleblower at National Highways, the rebranded Highways England, to warn “someone is going to get killed”.

The insider told how the roads equivalent of air traffic control had repeatedly “gone down” last April, just as Grant Shapps, the Transport Secretary, announced the continued roll-out of smart motorways.

A Freedom of Information request to National Highways, the Government-owned company, shows two control centres covering Yorkshire, the North East and South West of England were hit by a computer “bug” and server problem disabling digital control of signs for a total of eight hours.

Dynac, the software used to set signs and signals, including the red X on overhead gantries which closes lanes in which motorists have broken down, was rendered “unusable”, according to documents.

Staff have nicknamed that software “Die Now”, amid fears in the midst of a system crash they would be unable to close a lane to prevent a stranded vehicle being hit by traffic.

However, it transpires that Dynac, the Austrian-made software programme, has not failed. Instead, two problems were found on the myriad high-tech systems running alongside it.

‘We are worried someone is going to get killed’

The source said: “We are worried someone is going to get killed. Control room staff are petrified because it feels like the whole system is a ticking time bomb.”

One document classified “sensitive” records a manager stating how that April system crash “impacts on customer and traffic officer safety in not being able to set signs and signals to protect live lane incidents”.

The manager adds how it “increases pressure on regional operations centres and on road resources to react effectively to incidents on the network.”

Claire Mercer, whose husband Jason died in Yorkshire after his car became stranded on the M1, said: “The ‘smart’ bit of smart motorways is not working. Our motorways need a real world back up plan. Software, firewalls and internet connections are not infallible, nor are drivers. We need a hard shoulder.”

Hard shoulder campaigner Claire Mercer's husband Jason (left) was killed on the M1 CREDIT: Asadour Guzelian/Guzelian Ltd

In 2019, there were 13,000 live lane breakdowns on just 200 miles of smart motorway, equivalent to 62 breakdowns per mile.

Four coroners have raised concerns scrapping the hard shoulder to create a fourth lane risks more people dying.
Jack Cousens, the head of roads policy at the AA, said motorists stranded in live lane are "100 per cent reliant" upon National Highways staff quickly signalling a red X to close a lane

"It's somewhat ironic that on the day it was announced 'smart' motorways were here to stay, key safety features of the schemes failed across hundreds of miles of the network," he said.

"While contingency plans were carried out, losing the ability to set signals and warn drivers of the dangers ahead through the gantries will have set pulses racing in the control centres. "Clearly staff are worried that if it fails again, there is nothing they can do but watch and hope.

"This only goes to prove that more emergency laybys are needed on every motorway to offer drivers a chance of getting out of moving traffic."

Mounting panic in control rooms

In the very week Mr Shapps told the House of Commons he would make smart motorways even safer with yet more technology, there was mounting panic in two control rooms running his road network.

Across a huge swathe of the country this April, the multi-million pound computer system meant to make Highways England's motorways "smart" was crashing.

Staff controlling routes in Yorkshire, the North East and the South West were repeatedly losing control of signs and signals meant to save lives.

The software that monitors and manages the network was hit by a series of catastrophic crashes that meant speed limits could not be introduced or changed and lanes could not be closed to high-speed traffic.

Staff were "horrified" when their equivalent of air traffic control went down. Gantries, the large overhead frames displaying signs above each lane, could not be set across hundreds of miles of the M1, M62, M4 and M5.

The extent of three crippling "outages" can be revealed for the first time after a whistleblower contacted The Telegraph to raise concerns that technology meant to keep motorists safe failed just as the Transport Secretary pledged his unwavering support for smart motorways, despite warnings that turning the hard shoulders into a fourth lane creates "death traps".

Using Freedom of Information laws, this newspaper has obtained a dossier of Highways England documents cataloguing system failings over four days in April that coincide with Mr Shapps' announcement that smart motorways are as safe or safer than motorways with hard shoulders.

The file reveals how a "bug" in a firewall and then a communications system failure decimated control of the smart motorway network.

Campaigners who have lost loved ones killed after breaking down in live lanes said on Saturday that the dossier was proof that scrapping the hard shoulder is a cost-cutting exercise which ignores the perils of technological failures.
The whistleblower, who spoke on condition of anonymity, said staff were "really worried about safety", particularly if a system crash means they cannot immediately close a live lane with a red X

on a gantry when a motorist fails to reach an emergency refuge area and is stuck in the path of high speed traffic.
“We have had enough,” the insider said. “The system keeps breaking down, meaning we can’t control our signs and signals on motorways, including smart motorways, in the North East, South West and Yorkshire.

“One day, we could not access signs and signals for up to seven hours. So, there was information telling drivers lanes were closed when they were actually open, and speed limits were in place when they actually were not.

“Control room staff are petrified because it feels like the whole system is a ticking time bomb. Some will quit and others will go off sick because we feel we can’t keep people on the network safe. The system is broken.”

The source added how Dynac, a computerised system that oversees and controls the network of signs, has been even nicknamed “Die Now”.

“We call it Die Now because we are worried someone is going to get killed.”

However, it transpires that invariably Dynac, an Austrian-made traffic software programme, is not to blame and the problems are often found in the myriad high-tech systems running alongside it.

The files show that at 12.04pm on April 19 – the day before the Transport Secretary’s endorsement of smart motorways – the North East operations manager sent an alert stating there had been a “Dynac crash”, meaning “no users can set signs”.

A few hours later, he wrote how “emergency services [had been] informed” and traffic officers were “actively patrolling… smart motorway sections” of the M1 and M62 to spot any incidents.

Employees off that day were offered overtime pay to try to entice them to help monitor the hundreds of CCTV cameras covering the motorways in the hope of spotting manually if something catastrophic happened.

At 3.10pm, the issue was resolved, but the manager remained perplexed about the cause of the crash.

“Work is ongoing in the background to find the root cause of the issue,” he wrote.

It emerged that the failure was caused by a glitch in the National Roads Telecommunications Services, a system connecting 30,000 roadside technology units to Highways England’s seven regional operation centres, its emergency telephone network and the national operations centre. The system website boasts how it helps “manage and operate the network safely and efficiently”.

Worse was to come. At 12.30am on April 21, just hours after Mr Shapps’s announcement, Yorkshire and the North East reported traffic managers being “automatically logged out of Dynac”, leaving them and their South West colleagues unable to control signals.

Despite being logged back in 20 minutes later, signs remained jammed showing whatever lane closures or speed limits that had been imposed before the failure.

Once again, the two operation centres were forced to use manual patrols of smart motorways and use staff to monitor CCTVs before alerting emergency services of the problems.

A few hours later, the manager wrote how “there isn’t full confidence that the system won’t failover again”, a reference to a main system failing and a back-up one kicking in.

He explained how when the software programme controlling traffic failed, its back-up also went down “due to another issue” in another system “which helps the two machines talk to each other”.

The following morning, it happened yet again across the North East and South West. At 10.23am, one manager wrote: “Dynac was running very slow and all operators suffered an uncommanded close of the application. We have no ability to set, clear or amend signals at this time.”

A “sensitive” crisis management report from that day, April 22, shows operators saying “slowdowns were… rendering the system unusable… and the application crashed… [it] is not restarting correctly… there is currently no signalling capability.”

The “crash” lasted five hours. The manager added: “The underlying fault has been traced to a bug in the primary firewall. This is currently replaced by a secondary firewall which seems to be working satisfactorily.”

One controller wrote how the crash had “impacts on customer and traffic officer safety in not being able to set signs and signals to protect live lane incidents”.

He added how the “major incident” also created “increased pressure on the regional operations centre and on road resources to react effectively to incidents on the network”.

Another report noted how the brightness of the digital overhead signs could not be changed, meaning one stuck on daytime settings could dazzle drivers at night, while those turned down to a lower night time level could be too faint to be seen in daylight.

Highways England, which recently changed its name to National Highways as part of a £7 million rebranding project, was at pains to point out how at no point during these incidents was there a fault with the Dynac system. Instead, it failed to work due to problems with other connected systems or servers.
“Well-rehearsed” contingency plans were successfully implemented “to ensure the safety of all road users”, a spokesman said.

She added how the government-owned company “recognises the pressures our employees are under performing vital tasks, which is why support systems and a range of 24/7 employee assistance options are available to them”.

She said England’s motorways “are among the safest roads in the world, designed to be so even without the use of technology, while our traffic management systems provide an extra layer of support for road users, using a range of measures including CCTV and variable speed limits to keep traffic flowing safely”.

Jim McMahon, shadow Secretary of State for transport, said: “It is staggering that the Transport Secretary continued to insist smart motorways are safer than conventional ones while such dangerous incidents were apparently unfolding.

“The Government has completely failed to take action to avert further tragedy – despite pleas from those who have lost loved ones and despite the smart motorway death toll reaching a record high recently. Ministers must give assurances that this will not happen again.”