



# ASSAULT ON BATTERIES

This is history in the making. It's the tale of Electric Nik and Transistor Tim and their attempt to complete 5,000 miles in 20 days in the world's first hybrid rally car. An electrifying tale of hard-charging, crashes and, er, a very quiet engine...



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THE BULGARIAN border guard readjusts his CCTV camera for a better shot, before handing back our passports.

"Racing start!" he beams. "Very fast!"  
"Sorry," I mumble sheepishly. "Hybrid car. We don't do racing starts."

The tyre smoke from the previous car, a 450bhp Holden Monaro, still hangs in the air as we whisper away in electric mode.

This is the most embarrassing moment of the Midnight Sun to Red Sea Rally so far. I've got used to our Toyota being called The Primus or The Stove. I now quite like being known as Electric Nik and when the start marshal in Poland asked if our engine was OK when it switched itself off just before the flag dropped, we just laughed it off.

But this is painful. An official with a gun is telling me to tear off as noisily as possible and I can't oblige. Our hybrid Toyota is just not designed for such joy-rider antics.

Not that it was designed for rallying either. This is eco-friendly, fuel-efficient family transport. At low speed it uses purely electric power to move along emission-free, then as more oomph is needed, a petrol engine cuts in – also recharging the car's batteries. Under

full acceleration both engines work together to give around 100bhp, but the drive is through an auto CVT gearbox making it the least likely choice for any form of motorsport. No-one has ever competed in a hybrid before. But that's why we're here – to test that the technology is robust and to make our own contribution to the annals of motoring. Some day all cars may be made this way and I and co-driver Tim Bampton will be in the history books as motoring pioneers. If we can finish...

And this is no clubman affair either, this is an FIA Long Distance rally. Starting from northern Sweden, we have 5,000 miles and 10 countries to cover, finishing in Jordan in just 20 days. And 500 of those miles are on closed-road special stages. We're up against a mix of pre-1971 Classic rally cars with anything from 1,600cc to five litres under the bonnet and modern Group N models, restricted to under two litres and two-wheel drive. It's a challenge, to say the least.

Just a few days ago it didn't look likely that we'd even reach Bulgaria. The Prius was nose-first in a ditch in an isolated part of the Czech Republic. As drivers of the world's first hybrid rally car, perhaps it was to be expected



"An official with a gun is telling me to tear off as noisily as possible and I can't oblige..."



Another first for *Top Gear*: the world's first ever hybrid rally car crash. In Turkey, they don't bother with Gatsos, they just have soldiers who shoot on sight – if you're not going fast enough

that we'd also be involved in the world's first hybrid rally car crash. In truth, it could have happened a lot earlier. We had a minor off on the very first special stage of the rally. Tim had made a couple of wrong navigating calls and as I was rebuking him, I pitched us into a ditch. We were soon out, but we'd learned not to have our arguments while racing.

Sweden also witnessed the most thoroughly unpleasant in-car accident that I have ever experienced – an incident that will forever be known as Queasy Right Over Crest. Midway through the third special stage of the second day, Tim's breakfast made a reappearance. All over the dashboard, his race suit, the road book and our Terratrip rally computer. By the time we reached the finish the car looked like a war zone and the Terratrip had shorted out. Tim spent that afternoon using every cleaning product in Sweden on the car, while I luckily found us a new Terratrip computer.

With eggs off the breakfast menu and a Magic Tree air freshener in place, the car was smelling much better by the time we had threaded our way along appalling Polish roads and reached the Czech Republic.

Our gravel tyres were swapped for more

conventional road rubber and, with persistent rain, we were fairing well compared to those competitors on intermediate/dry tarmac tyres.

Driving the Prius was a whole new learning experience. It quickly became clear that driving foot-to-the-floor wasn't the way to go. The hybrid drive gave plenty of electric boost at the start of stages, but soon ran out. Backing off on the straights or coasting on the downhill sections would bring more charge into the batteries through the regenerative braking system – enough, hopefully, for any hills. But it would take most of the rally to really work out how to squeeze the best from the car.

On the last Polish stage, the second-placed Ford Escort RS1600 had crashed heavily and its co-driver Mark Solloway rushed to hospital. He suffered a broken leg and cracked ribs. His team mate withdrew from the event and everyone agreed they'd be taking things steadier. After all, this wasn't a sprint, it was a marathon and there was still a long, long way to Jordan.

So, with that in mind, as soon as we entered the Czech Republic we crashed. Well, not immediately. We were 10 miles into the last special stage of the day. Starting one minute behind us, due to earlier technical problems,

was Keith Callinan in his monster Monaro. On the earlier stages he'd passed us almost before we'd got going, but on this greasy, undulating stage with its narrow road and trees in close proximity, there was no sign of Keith. We were flying. Long straights and downhill sections kept just enough charge in the batteries to keep us going on the uphill bits. The digital speedo recorded its highest figures of the whole event as we barrelled downhill through a series of esses.

Until now, Tim had been calling everything well. But the combination of our increased speed and his concern for the Monaro behind us meant that he lost concentration for a moment – the precise moment he ought to be shouting 'over 90 right at junction'.

With no warning of the corner, there was little I could do but brake hard and aim for the escape road – except it was blocked with spectators. So I threw the car right and aimed for the Armco barrier. Which also had its share of spectators. A final change of direction meant that we didn't make the news headlines, but launched into a ditch instead.

As we sat in the stricken car, I looked across at Tim. The expression on his face made me



realise I didn't need to say anything about the missed call. Besides, I was the one in control of the car when we crashed – well, sort of.

We watched the remaining cars go through and waited for a recovery truck. The damage didn't look too severe – but then the tow truck arrived and promptly dropped the Prius from six feet in the air onto its nose. I was ready to book my flight home on the spot.

In the event, the damage was restricted to the front suspension and a drive shaft, and after many frantic phone calls back to Toyota in the UK, an international rescue effort was launched that Scott Tracy would be proud of.

At Silverstone, Roger Dowson, who'd prepared the Prius, robbed the suspension from a second car and Toyota PR boss Scott Brownlee drove up to collect the parts. He then met *TG's* Motoring Editor Angus, who jumped on a plane to Vienna the next day.

Meanwhile, I persuaded one of the local car nuts to drive me to Vienna to meet Angus. Marc runs a garage and is a huge WRC fan. He also drives like his rally heroes and made his little Skoda Felicia fly. I met Angus with a suitcase full of suspension. We shook hands and I rushed off to JM Engineering near Zlin.

Run by former Czech champion rally co-driver Miroslav Houst, JM have a fleet of WRC Toyota Corollas that they run for privateers. Although they'd never set eyes on a Prius before, the mechanics leapt upon the car. Eight hours later, we were back on the road.

Now all that remained was a 300-mile drive through the mountains to Kosice in Slovakia. With the rain teeming down, plenty of mist and one working headlamp we finally arrived at 3.30am. After two hours sleep we were back in the rally – albeit at the back of the field.

From Slovakia, we headed into Hungary where we found that local Green Party protests had caused one of the special stages to be cancelled. They clearly didn't know that we, the eco-ralliers, were coming. The remaining Hungarian stage was twisty and slippery. So twisty and slippery that two of the Group N front-runners came a cropper.

Romania seems to be suffering from terminal concrete cancer. This really is a Third World country in the middle of Europe and I felt in parts angry that it has been allowed to end up this way and guilty that I whisked through, doing nothing to help and burning up their petrol. At least I didn't use much of it – and

the emissions from the Prius are nothing compared to all the filth that the lorries and factories pour out. As if these health hazards weren't enough, there were horse-drawn carts and cows all over the roads.

Bulgaria was, quite literally, a breath of fresh air. Unfortunately, it was largely mountain air. And the Prius is no mountaineer. The steep hills were a real struggle for us, with the battery power being quickly exhausted and the Prius reverting to petrol power alone. With only 75bhp on tap, our speed was often in the teens as we slogged up slope after slope. At seemingly random times, the Prius's five ECUs would decide that the batteries needed charging when we desperately wanted all the petrol power devoted to the wheels to keep us moving. At others – like at stage starts – we'd be itching for the system to fully charge the batteries, yet it wouldn't oblige. Spooky, but there was no way to over-ride the system.

Over the Turkish border and the motorway to Istanbul demonstrated just how much gravity affected our progress. Downhill we could top 100mph; going up the other side, we were in the 60s. By the time we reached Istanbul we were really ready for a day off.



- 1 Start of race Ostersund, Sweden
- 2 Sunne
- 3 Karlskrona (ferry)
- 4 Gdynia, Poland
- 5 Wrocław
- 6 Zlin, Czech Republic
- 7 Kosice, Slovakia
- 8 Matrafured, Hungary



- 9 Sibiu, Romania
- 10 Veliko, Bulgaria
- 11 Istanbul, Turkey
- 12 Kusadasi
- 13 Antalya
- 14 Adana
- 15 Damascus, Syria
- 16 Amman, Jordan
- 17 Petra
- 18 Wadi Rum
- 19 Aqaba, Finish



But we didn't get it. While I was updating the Tracker website that was following our progress, thanks to the satellite beacon in the car, Tim was at Turkey's biggest Toyota Dealer having the car checked over. The brakes were bled, it was washed and the body shop even pulled out our mangled bumper.

The roads in Turkey, gravel or tarmac, are superb rally material and we had a total of seven stages including one which involved closing a main coast road for several hours. The locals were the most enthusiastic we'd seen since Sweden and in the tiny town of Balikoy we were mobbed for autographs.

Too soon we left for Syria. And not without some apprehension. The all-American crew of Paul Shaver and Len Bennett had removed their North Carolina number plate and any reference to the USA on their BMW, but they were still not keen on entering a state which their president had denounced as a supporter of terror. When they skidded off a hill near the border, we all wondered whether it wasn't some elaborate ruse to avoid Syria altogether. But, amazingly, the BMW was unharmed and they carried on.

The final leg in Jordan began with a forest

stage in which the Prius' electronics contrived to prevent any power going to the front wheels. The track was severely rutted and the batteries hadn't fully charged before the start, so Tim got out to push and we finally got going. The only consolation was that the Group N Vauxhall Astra 16v of Mark Bowie couldn't get away without cooking its clutch. An engine fire also put the third-placed Ford Mustang of James Ingelby out of contention.

By now we were fighting hard for last place with Tom Hayes and Andy Vann in their 30-year-old Volvo Amazon. We'd closed the deficit to just a few minutes as we entered the toughest stages of the rally - Jordan brought intense heat, desert sand, sharp rocks, steep drops, canyons and camels.

The hazards were everywhere, but the Prius brushed them all aside and I had a ball. On one particularly evil stage we were eleventh fastest overall, beating a Mustang and several other muscular machines into the bargain.

Going in to the final special stage, the Fat Lady, we had a comfy lead over the Volvo, but there would be drama to the finish. With five miles still to run we picked up our fourth puncture of the event. We'd lose too much

time by stopping, so I drove on, finishing with a shredded tyre and a split wheel rim.

Due to another set of problems with the Monaro, we had gained an additional place by the time we reached the finish ramp by the Red Sea in Aqaba, leaving us 15th out of the 20 cars that started.

Yes, we were hours behind the winner, Joe McAndrew's Honda Integra Type-R and the second-paced Capri Perana of Richard Martin-Hurst, but we had achieved what we'd set out to do.

We'd proved that the Prius could go the distance. The technology had been completely reliable and our only problems were self-inflicted. A hybrid car really can be a rally car. At times we provided comic relief for the rest of the competitors as they roared past us on uphill sections, but at the end they were unanimous in their admiration for our occasional bursts of speed and were all hugely jealous of our near-40mpg fuel economy.

Of course, we'd have liked more power, but this is just the first generation of hybrids; in a couple of years the performance is sure to be improved - hopefully just in time for the London to Sydney Marathon in 2004. ☹