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TATRAPLAN T600 RESCUE

Brilliant Czech people's car restored



In the early Twenties an aircraft engineer at the Zeppelin works in Germany established the perfect shape for a car. Wind tunnel tests of a model of Dr Paul Jaray's 'ideal streamlined form for a body close to the ground' established that a vehicle designed to his principles would be faster, more stable and use less fuel than a conventional car.

By the late Forties a car bearing almost this exact teardrop silhouette, the T600 Tatraplan, had been designed and built by Tatra in Czechoslovakia. Here was a car with a drag coefficient of just 0.32 - which mainstream manufacturers in the Eighties couldn't beat.

The T600's body wasn't the only futuristic thing about it. The Tatraplan was independently sprung and powered by a lightweight rear-mounted, air-cooled engine. It looked and drove like a car from the future.





Born in the Forties, the slippery T600 Tatraplan looked and drove like a car from the future – which is exactly what it was

SMOOTH OPERATOR

WORDS BEN FIELD PHOTOGRAPHY LYNDON MCNEIL

Unlike its cars, there was nothing smooth about Tatra's history: en route to the T600 its factory was occupied by invaders, its design ideas were stolen on the orders of a despot, and its leading light was thrown into jail.

Many manufacturers took note when Jaray published his works on aerodynamics and some built prototypes and, eventually, limited production-run cars based on his design principles. But it was car, truck and train maker Tatra that turned his original design into mass-produced reality.

To turn that shape into a car called for brilliance from Hans Ledwinka, director of Tatra's car division and a gifted engineer and designer. Ledwinka's team created the Tatra T77, the world's first mass-produced aerodynamically-styled, rear-engined car and showed it at the 1934 Berlin Auto Salon. Powered by a rear-mounted, air-cooled, 2973cc V8, the T77 had an exceptionally low drag coefficient of 0.37.

Tatra was particularly good at getting over this new aerodynamic concept to buyers using simple diagrams in its advertising. In one brochure an ethereal 'air' character was shown throwing an inescapable grip around a standard, boxy saloon while the slippery T77 proved impossible for him to grasp.

Chrysler also revealed its Airflow in 1934. With rear-wheel spats and a sloping bonnet and roofline, it looked more streamlined than boxy contemporaries from Ford, Packard and Buick, but compared with the Tatra it looked as if the Chrysler was merely paying lip service to the aerodynamic concept.

By the mid-Thirties Chrysler's flirtation with wind-cheating designs was on the wane. Poor Airflow sales had driven the company back to offering more conventional designs. But at Tatra the aerodynamic ethos was fully entrenched and Ledwinka's team had created the T77's successor, the T87. It used the same running gear as the T77 but was 430kg lighter and even more efficient through the air. Like the T77, the T87 was a luxury car and was priced accordingly. Ledwinka realised there was a market for a smaller, cheaper take on the aerodynamic concept and the T97 was designed to bring streamlined technology to everyone. Then the Third Reich got in the way.

Following the Munich Agreement of 1938 the Sudetenland area of Czechoslovakia containing the Tatra factory was annexed by Germany, and by October Nazi forces had taken control. Hermann Goering ordered an end to car production and all the company's patents were confiscated, with only spares production allowed to continue.

Germany's autobahn inspector, Dr Fritz Todt, had a high regard for the T87 and production resumed after he declared it the 'autobahn car'. But the T97's similarities in size and price to Hitler's pet KdF Wagen (the

Beetle) meant its production never restarted.

Ironically, from the early Thirties Ledwinka had been actively involved in establishing the air-cooled, rear-engine layout later adopted by Volkswagen for the Beetle. Tatra lodged patent-infringement claims against KdF-Wagen (later Volkswagen) on engine position, gearbox layout and ducted air cooling. But Hitler had given Ferdinand Porsche carte blanche to take ideas from wherever he saw fit to create the KdF Wagen, and it's no surprise that these claims were not resolved at the time. Volkswagen eventually settled out of court, paying Tatra three million marks in 1967.

After World War Two Tatra decided to pick



'Only Ledwinka could solve the problems – arrangements were made to meet him in his cell'

up on the smaller, lighter, aerodynamic theme that had started so promisingly with the T97. But with Hans Ledwinka jailed by the now Soviet-led Czech authorities for alleged collaboration with the Nazis, Tatra was missing the strong leader it needed to drive the project forward. After a false start involving modernisation of the old T97, Tatra design director Josef Chalupa, engineer Vladimir Korbel and designer Vladimir Popelar created a completely new car. The team certainly struggled without Ledwinka's genius on hand, but for all that it created a monocoque body closely matching Jaray's original 'perfect' shape.

Early tests on the future Tatra T600 were fraught with problems and the team realised that only Ledwinka had the insight to solve them. Arrangements were made through his former chauffeur for the design team to meet the one-time Tatra boss in his cell. A midnight visit in May 1947 gave its members their chance

to iron out the faults. Ledwinka advised them to increase engine capacity and suggested they re-design the rear axle assembly and engine fan-cooling, move the headlights from the bonnet to the front wings and reinstate the rear fin. With Ledwinka's improvements, five prototypes were hurriedly assembled in time for the Prague Auto Salon in October 1947. The West's post-war 'export or die' mantra wasn't lost on Czechoslovakia's new leaders – the new car had to be on show for the world to see and buy. The T600 made the show with only hours to spare, but the response was tremendous.

The T600 Tatra Plan (the 'plan' refers to the aircraft-inspired styling and hints at the Czech economic plan then in place) was eventually exported to 21 countries, selling 6342 cars worldwide. Its closeness to the original Jaray shape gave the car a drag coefficient of just 0.32, significantly better than previous streamlined Tatras (with their separate front wings, side air intakes and turbulence-inducing stick-out headlights) and stands up brilliantly to other classic paragons of wind cheating. Take the NSU Ro80 with a Cd of 0.355, the Citroën CX with 0.36, or the Ford Sierra with 0.34. All three were designed far later and all were far less efficient through the air.

Where the T87 used a large V8, the T600 had a more conservative two-litre flat-four. But despite losing 20bhp to the bigger car, the T600's improved aerodynamics and lighter weight meant it wasn't far adrift in performance and it eventually outsold the 'autobahn car' by two to one.

Its performance made it competitive in motor sport, with several early wins in Czech-based events and all four top places in the 1949 Austrian Alpine Rally. Another Tatra Plan took first in class in the tough 1953 Coronation Rally across Kenya, Uganda and Tanganyika.

Most of the T600's contemporaries looked dated and overweight in comparison. Some pretence at streamlining was obvious behind the stuck-on glitz of the Austin Atlantic, whose fared-in headlights had a Tatra-esque look. But no Atlantic could carry six people in comfort. For that kind of space you needed a Jowett Javelin or Ford V8 Pilot – plus a shoehorn. The Tatra Plan was never officially imported to the UK and British buyers had to wait for the Jaguar MkI of 1955 to enjoy a combination of streamlined looks, performance and accommodation – though even that looked dated compared with the Tatra Plan, and it was held back by a drag coefficient the size of Coventry.

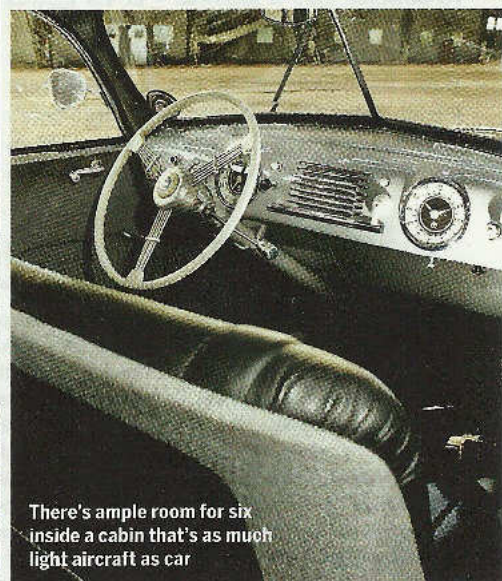
Shape and performance weren't the only forward-thinking aspects of the Tatra Plan. Today we're used to seeing variations on a single-model theme, but in the late Forties for a car to have cabriolet, coupé, pick-up, ambulance and open sports racer variants, plus a diesel option, along with the standard



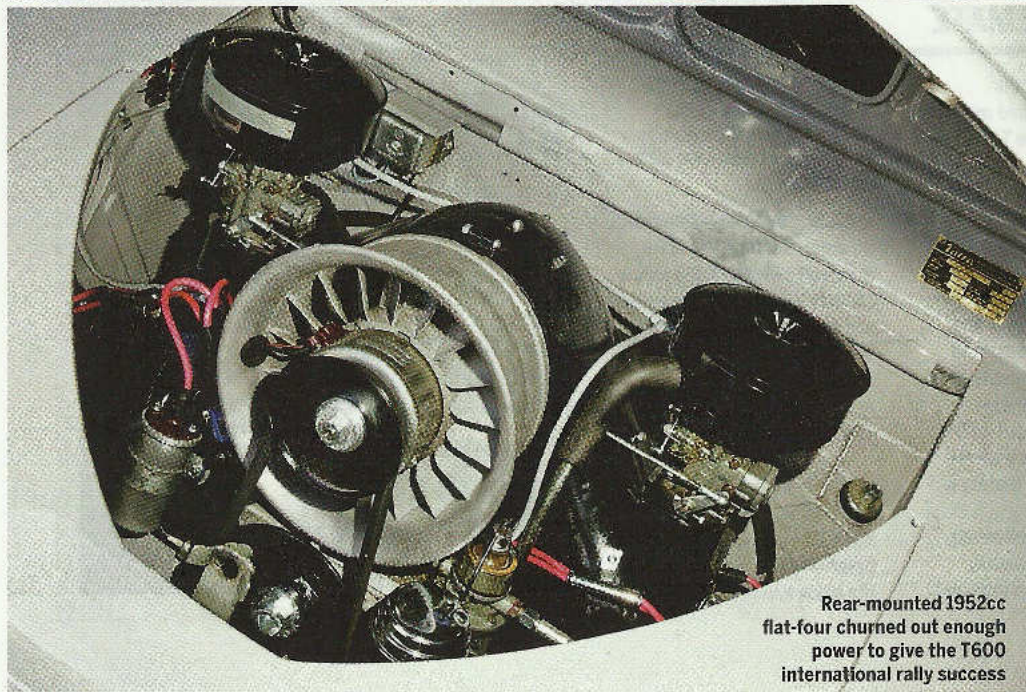
The Tatrapian - with a shape originally conceived in Germany's Zeppelin works - shows off its lines in the old airship sheds at Cardington, Bedfordshire



Rear fin was reinstated at the suggestion of ex-Tatra boss Hans Ledwinka from his prison cell



There's ample room for six inside a cabin that's as much light aircraft as car



Rear-mounted 1952cc flat-four churned out enough power to give the T600 international rally success



T600 TATRAPLAN



1949 T600 TATRAPLAN

Engine 1952cc, horizontally-opposed four-cylinder, ohv, air-cooled, two Solex carburettors **Power and torque** 52bhp @ 4000rpm; 86lb ft @ 2000rpm **Transmission** Four-speed manual, rear-wheel drive **Steering** Rack-and-pinion **Suspension** Front: independent, twin transverse leaf springs, telescopic hydraulic dampers. Rear: independent, torsion bars, telescopic hydraulic dampers **Brakes** Drums front and rear **Weight** 1200kg (2645lb) **Performance** Top speed: 80mph; 0-60mph: 22sec **Fuel consumption** 26mpg **Cost new** £934 **Value now** £40,000 (est)

saloon was virtually unheard of. Yet in Czechoslovakia there was effectively a Tatra for all tastes – though if you saw a dark-coloured T600 saloon it was likely to be ferrying state security heavies.

When Ivan Margolius found the Tatra featured here in Kladno, a mining town west of Prague, it was painted in 'state security' black, though the restoration and colour change that followed (see below) removed any sinister connotations and revealed the true beauty of the original design.

The T600 is a big car considering it was meant to be a scaled-down version of the V8-powered cars it followed – at 4.5 metres from rounded nose to finned tail it's the same length as a big Jaguar saloon. Its low stance draws its dimensions in, but open the front suicide door and its size hits you again. There's room for six in here and they'd be treated to an interior that leans closer to a light aircraft's

than a car's, with grey-fleck panelling and an aviation-like sparseness. Adjusting the rear-view mirror before setting off reveals a Tatra quirk: a strange view of the road behind that's rather like looking through a kaleidoscope. Glance over your shoulder and all is revealed – there are three layers of glass between the interior and the exterior: the pair of small rear screens, a glazed panel between the engine bay and the rear boot, and another separating the boot and back seats. If you want to see where you've been in a Tatra, use the door mirrors.

Pressing the white starter button beneath the body-coloured dash brings some familiarity back to the Tatra's other-worldliness. Instantly there's a flat-four thrum that anyone who has ever been near a Volkswagen Beetle will immediately recognise. At standstill the engine gently rocks the car from side to side. There's no

Teardrop shape pioneered in the Twenties by Dr Paul Jaray gives a drag coefficient of just 0.32

synchronesh on first gear, so you engage it gingerly with the engine at tickover and the car stock still. Behind the layers of glass and upholstery the twin Solex carburettors take a just-audible snort of air in response to the throttle and the car moves smoothly away.

You then quickly dismiss further Beetle comparisons – this car has decent acceleration and with its sharp rack-and-pinion steering you have to keep reminding yourself that it was designed and built in the Forties – until a dab on the rather poor drum brakes quickly takes you back in time. Apart from that one fault, you soon relax; there's none of the frenetic multi-tasking that many cars of this era demand just to be driven a short distance along the road. The much-touted stability of Jaray's original 'ideal streamlined form' is also evident as soon as you take the T600 above 40mph.

After the war Vauxhall Motors and other European manufacturers obtained the Tatra's forebear, the T87, from Tatra for evaluation. Despite finding the car packed 'full of interest' and giving 'effortless motoring at speed', none of its many advanced features found its way into any Vauxhall product – a gigantic wasted opportunity.

Years before, Ledwinka and his Tatra colleagues had been faced with a far less complete design in Jaray's basic streamlined shape and interpreted it into a string of highly-advanced and successful production cars. Without such brave and forward-thinking minds the motoring industry wouldn't have progressed at all, and we certainly wouldn't have cars as fine as the Tatra to show for it. **CB**

Thanks to: Ivan Margolius (www.tatraplan.co.uk), Michelle Verwey

FROM TATTY TATRA TO CZECH MATE

EVER SINCE ARCHITECT Ivan Margolius co-wrote *Tatra – the Legacy of Hans Ledwinka* in 1990 he had been searching for a Tatra of his own. He confidently set out with a car transporter to collect a 'complete' T97 in Plzeň in the Czech Republic only to find a rusted bodyshell under a tarpaulin. The next car, a Tatra, was better but had a V8 from a T603 and its owner wanted too much money.

Eventually, a friend tracked down the Tatra featured here. It needed a full restoration and Margolius delivered it to Tatra restorer Stanislav Karban, of Vapno

in the Czech Republic. Stanislav's workload meant he couldn't touch the T600 for two years, so the project didn't begin until 2002.

He stripped the body and sourced replacement parts, including the bonnet, rear engine lid and lower engine cover plus a full set of the hard-to-find white-backed dials. Other parts came from Tatra specialist Ecorra (www.ecorra.com), which is based in Koprivnice where the original Tatra factory is still located.

Restoration took seven years and cost £20,000. Margolius visited Stanislav's

Right: Ivan Margolius' T600 in original 'state security' black and (below) at various stages of its seven-year £20k restoration

workshop twice a year to check on progress. His later visits were somewhat fraught as the car was booked to carry him and his bride to their wedding in June 2009. What's more, the future Mrs Margolius had ordered a dress to match the Tatra's colour scheme.

Stanislav worked late nights for the final months of the restoration, and the Tatra arrived in Calais a mere week before the big day – much to the bride and groom's relief.

