

# GREAT PRETENDER

Icon Engineering's faithful take on the 917 short-tail boasts a key difference from Porsche's legendary racing machine: you can drive Icon's creation to the shops!

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**B**oxengasse, summer 2019. It's the inaugural Oilcooled event, hosted by the Porsche-themed venue's 911-obsessive-in-chief, Frank Cassidy. A sea of air-cooled gems pave the way to the business park's main courtyard, where the hand-picked star attractions of the day are waiting to wow. The highest number of Carrera RS 2.7s you're likely to see in one place immediately draw the eye, as does the amazing carbon-bodied Schuppan 962 CR, a road-legal version of the legendary Group C Porsche prototype. Taking centre stage, however, is an altogether different take on one of Porsche's monstrous motorsport machines.

2020 marks exactly fifty years since the manufacturer's most important competition victory: Porsche's first overall win at the 24 Hours of Le Mans, as documented in the last issue of *GT Porsche* (order a copy by pointing your browser at [bit.ly/issuesgtp](http://bit.ly/issuesgtp)). Hot on the heels of Ford's Ferrari-baiting success at Sarthe, the short-tailed 917 would also win 1971's outing at Le Mans, though the model made its debut before Attwood and Herrmann's triumphant 343-lap romp to the finish line a year earlier. Indeed, the 917 was designed by factory engineering wizard, Hans Mezger (under the watchful eye of Ferdinand Piëch

and Helmuth Bott) in 1968 and, just nine months later, Porsche's new track attacker was being put through its paces in preparation for the 1969 Le Mans test week.

Early outings didn't go well – the 917 was wildly unstable, as reported by factory driver, Brian Redman, who considered the flat-twelve layout too heavy for the super-lightweight gas-filled frame. After much head scratching and a series of urgent modifications, it was noted the original, long-tailed 917 – a car designed to produce low drag for high-speed straights, including the Mulsanne – was in desperate need of downforce, an area of race car design still in its infancy.

Concerned about the 917's behaviour on twisty sections of tarmac, Redman and his teammate, Jo Siffert, chose to campaign the 908 at the 1969 1,000km of Spa, winning comfortably. Three weeks later, at the 1,000km of Nürburgring, all works drivers registered their concern at the 917's unpredictable behaviour and opted to drive the 908, leading to the hiring of David Piper and Frank Gardner for 917 racing duties. The pair finished in a respectable eighth place, though the 908 brigade took all top five positions. Clearly, there was more work to be done if the 917 was to prove itself as a



**WHILE THE ICON 917 K HAS BEEN DESIGNED TO ACCOMMODATE A FLAT-TWELVE, THE CAR YOU SEE ON THESE PAGES IS PROPELLED BY THE RATHER MORE ATTAINABLE FLAT-SIX**



**Above** With its 917 K replica, has Icon created the ultimate race car for the road?



**Left** Wheels are custom recreations made from a 3D model of an original 917 five-spoke

competition-winning Porsche.

The 917 long-tail's instability was eventually addressed in a joint project managed by Mezger's team and Porsche's new racing partner, John Wyer Engineering. Revision after revision resulted in the introduction of a shorter rear end with an upswept tail, not inhibiting the host 917's aerodynamic prowess, but encouraging that essential missing downforce when travelling at high speed. The changes had a profound impact on the 917's handling and instilled confidence in its drivers, despite privateer, John Woolfe, dying in a crash at Maison Blanche during the first lap of the 1969 24 Hours of Le Mans. With two wheels on the grass and inexperience behind the wheel causing him to lose control of a 917 he'd bought just days beforehand, the British gentleman driver lost control and was thrown out of the car as it rolled, hit sidings and exploded. Earlier, he'd reported to friends how the 917's immense power "scared the pants off me".

**SWISS SENSATION**

With Siffert back behind the wheel, the 917's first win came at the 1969 1,000km of Zeltweg in Austria. At the same track, experiments with the model's rear end resulted in the aforementioned improved performance in advance of the 1970 season in

partnership with Wyer's team, which had won Le Mans two years on the bounce with the much celebrated Ford GT40. Now, you don't need to be a massive fan of the Blue Oval to know just how many GT40 replicas are in existence, many created from moulds based on the same equipment used to fashion the original cars, but what about the 917, a motorsport hero which has had even more impact on the design and development of race cars (more so than the far more successful 956/962, which dominated prototype racing throughout the 1980s and, with a bit of rule-bending, continued to enjoy winning well into the 1990s)? Enter aptly named Icon Engineering and the bright white 917 K (*Kurzheck*, German for short-tail) evocation exhibited at Boxengasse.

Icon founder, Dave Eaton, is a hugely experienced automotive contract design engineer, with time served for major manufacturers, including Ford, Jaguar, Mazda, Hyundai and even a spell developing modified Bentleys for the Sultan of Brunei. His business partner is supercar specialist, John Hartland, who spent many years at Le Mans as a mechanical engineer for various teams, before founding John Hartland Motorsport, specialising in the restoration of classic Lamborghinis. The pair's obsession with the 917 was forged at the 1,000km



of Brands Hatch in 1970, a race won by Mexican Grand Prix hero, Pedro Rodriguez, in a Wyer-run 917 K. "I wanted one there and then," laughs Dave. "Pedro's performance was a pivotal moment in the eyes of many of us old enough to remember the 917 racing in period, but the chances of owning one of the original cars is virtually zero, not least because so few were built and the cost of buying and maintaining an original 917 is prohibitively expensive. Even back then, it was clear the only way to own a 917 was to build your own. Trust me when I say this is a task easier said than done!"

Fast-forward forty years, beyond houses, marriage, kids and careers, and the opportunity to buy a 917 shell unexpectedly presented itself to Dave. "It was formed from moulds taken from David Piper's own five-litre 917, which he bought from Porsche in 1969, the same year he was drafted in to take on the 1,000km of Nürburgring by the works team," he confirms. When visiting Australia, two years before seeing the Piper body, Dave viewed a 917 facsimile built by an engineer from his own designs, but visually it looked 'heavy' and featured a small number of inaccuracies when compared to the real deal. In contrast, the body moulded from the Piper original (the tenth 917 built by Porsche) was everything he could have hoped for, save for minor



variations caused by suspected accident damage.

Offered by Graham Turner, who worked for Piper many moons ago, the panels soon found their way to Dave's workshop, whereupon he began the arduous task of studying every engineering diagram, blueprint, book, video, photograph and film relating to each of the 917s assembled. "With moulds from a genuine 917, I was keen to construct an accurate recreation of the original car," he continues. "I didn't want a 917 silhouette over a decidedly non-917 chassis. There could be no compromise. I was adamant the finished car should be able to accommodate a flat-twelve and be accurate to within 10mm of Porsche's original design. I'm delighted to say that goal has been achieved."

### MODERN MEDICINE

Using state-of-the-art computer aided design, bespoke chassis tubework was imagined using reduced-scale factory drawings, as well as the accepted front and rear axle positions. A wooden frame was constructed to arrange the body correctly in order for it to be scanned, a process which required the application of more than 2,000 reflective dots. The resulting scan was then converted into a surface model on CAD, ensuring the proposed steel metalwork – far more rigid than the aluminium used to form the guts of the original 917 – would sit pretty. "It worked first time," smiles Dave, proud of a job well done. Subsequently, more than 220 tubes were laser-cut from CAD models, dropping into a jig with such precision that the resulting chassis almost built itself. "It took twelve weeks to weld the lot together," he reveals. "More than three-hundred mounting brackets were involved in the procedure, supporting the body and myriad other equipment, from the interior mirror to the oil cooler, plus all suspension components, which necessitated the use of no less than six more jigs." Again, laser-cutting from CAD drawings was the order of the day.

John's input was essential when it came to chassis preparation. "He has huge experience working with different materials. It was him who proposed T45 tube as an extremely strong metal perfect for the job, as demonstrated in the same steel's use in the construction of World War II aircraft, including the Spitfire engine frame." This extraordinarily robust material, coupled with Dave's precise CAD models, meant that the 2,300mm wheelbase on each side of the car was accurate within 4mm on both sides the very first time the front and rear suspension was dropped into place.

The wheel bearings are modern Boxster/Cayman parts in bespoke hubs (917 early retirement in racing



was often caused by unmanageable pre-load on rear wheel bearings), with brakes based on Radical stoppers and custom-manufactured by HiSpec Motorsport. 320mm discs sit at the front, with calipers mounted on bespoke brackets designed by Dave. At the rear, an extension and spot caliper reside, necessary to facilitate a handbrake, thereby satisfying Individual Vehicle Approval (IVA) as a means to ensure the Icon 917 K's status as a road-legal race car. Wrapped around these awesome anchors are authentic 917 wheels produced for Dave and John by Creasey Castings from a 3D model which came about as a consequence of the most unlikely of encounters. "I'd been offered a set of replica wheels for six grand, which struck me as being too expensive, though at the time, I didn't really have a more cost effective solution at my disposal," he says. "Then, while delivering a presentation on the project to an interested BMW owners club while I was on an assignment in Detroit, I was invited to go to a Porsche meet a few miles away. While at the event, an attendee asked me about Icon Engineering work and I explained I'd hit a stumbling block with the wheels. To my amazement, he told me he had an original 917 rim in his house and was using it as a coffee table stand!" Dave couldn't believe his luck and wasted no time in spending an afternoon measuring the wheel before returning home and creating a 3D model ("I ran it through Jaguar Land Rover advanced computer-aided engineering software") for the Creasey team to work its magic.

With options of 8.5 or 10.5 inches for the front and fourteen or fifteen inches at the rear (depending on road or race use), the Icon 917 K's authentic centrelock black five-spokes are wrapped in period-correct Michelin TB15 black circles, but what about this white wonder's beating heart? "You can buy an air-cooled flat-twelve from Uwe Niermann at Scuderia M66 in Aachen, but it'll set you back \$1.3million and a further \$250k for a compatible transmission," laughs Dave. While the Icon 917 K has been designed to accommodate



Above Icon is now taking orders for its 917 K replicas as a turnkey product, and can even supply body shells for you to assemble your own Porsche racer

Left Cockpit is cosy, but comfortable





such a powerplant, the version of the car you see on these pages is propelled by the rather more attainable flat-six, this one liberated from a 964, a move designed to maintain the theme of air-cooled Porsche power, where other 917 replicas have been loaded with modern Audi V8 or V10 engines. John rebuilt and blueprinted the engine to standard specification (a requirement of IVA to meet emissions rules), before adding an RS-spec TTV Racing flywheel, a BTB exhaust system, a Varley battery, Jenvey injectors and throttle bodies, a DTA ECU and a custom map, culminating in output of 295bhp at 7,000rpm on Track & Road Rainham's rolling road, increasing to 300bhp if the IVA-friendly catalytic converters are replaced with straight-through pipes. All in, the Icon 917 K weighs less than 900kg with a full tank of fuel, meaning power provided by the 964 lump is more than adequate, though Dave is considering a further development of the car loaded with punchy twin turbochargers reaching for 450bhp.

### ON ITS HEAD

To satisfy packaging requirements, the accompanying C50 five-speed gearbox is inverted. Due to the bellhousing's four mounting points being 89.5° to one another, this was more involved than simply turning the transmission on its head, which would have also resulted in five reverse gears and one forward ratio! Similarly, the car's oil and fuel systems required careful consideration. They were modelled by John and fabricated by the aluminium artisans at Pro Alloy. The interior of the Icon 917 K was more straightforward, kitted-out with bespoke Tillett seats, Sabelt harnesses and a MOMO drilled three-spoke Prototipo steering wheel, though the unusually shaped heated windscreen threw up a challenge for Pilkington,



who custom-made the complex part from Dave's CAD surface designs. "Piper has windscreen moulds for his car. Each glass part costs more than two grand and I needed a pair!" he laughs. His own computer-generated design was bang on the money when it was laid flat over one of Piper's pieces. Phew!

Having completed its first 917 K replica, Icon Engineering is now in possession of its own fine-tuned 917 body moulds and has completed all development work on an immensely complex (and rigid) triangulated chassis. In other words, you can now buy a road-legal 917 to call your own. It'll set you back £190k for a turnkey car, but that's peanuts compared to the cost of an original 917, which you can only punish at a track. Far more usable, the Icon car is a two-seater, each Tillett bucket designed with a 40° back angle to ensure comfortable occupancy of the cockpit for long periods, with the added benefit of twin fans to pump fresh air into the cabin. The seat bases touch the floor to help occupants six feet tall from clonking their bonces into the roof and, importantly, to help with achieving optimum heel and toe positioning.

With integrated modern safety features and its road-legal status secure, Dave and John's four-wheeled labour of love returned to Boxengasse for this year's Oilcooled event. Once again, the car took centre stage and, once again, it was surrounded by admirers throughout the day. "It's very much like an original 917, but with a handy extra – this one wears a number plate!" chuckles Dave. Reassuringly, the prototype pictured here has now completed over a thousand trouble-free road and track miles without any major issue, except having the bad luck of nailing a rear tyre. All that's left for you to do is decide which famous 917 livery you want to see making its way down your local high street. ■

**Above**  
964-sourced flat-six powers the prototype, which has been designed to accommodate a flat-twelve