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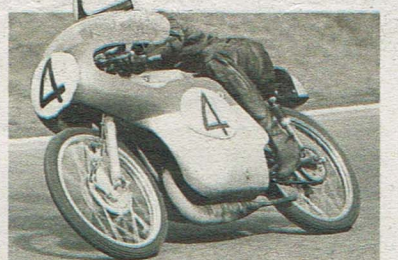
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Defection, deception & death threats!

Amazing tale of a top racer who stole two-stroke secrets that changed biking forever. P18

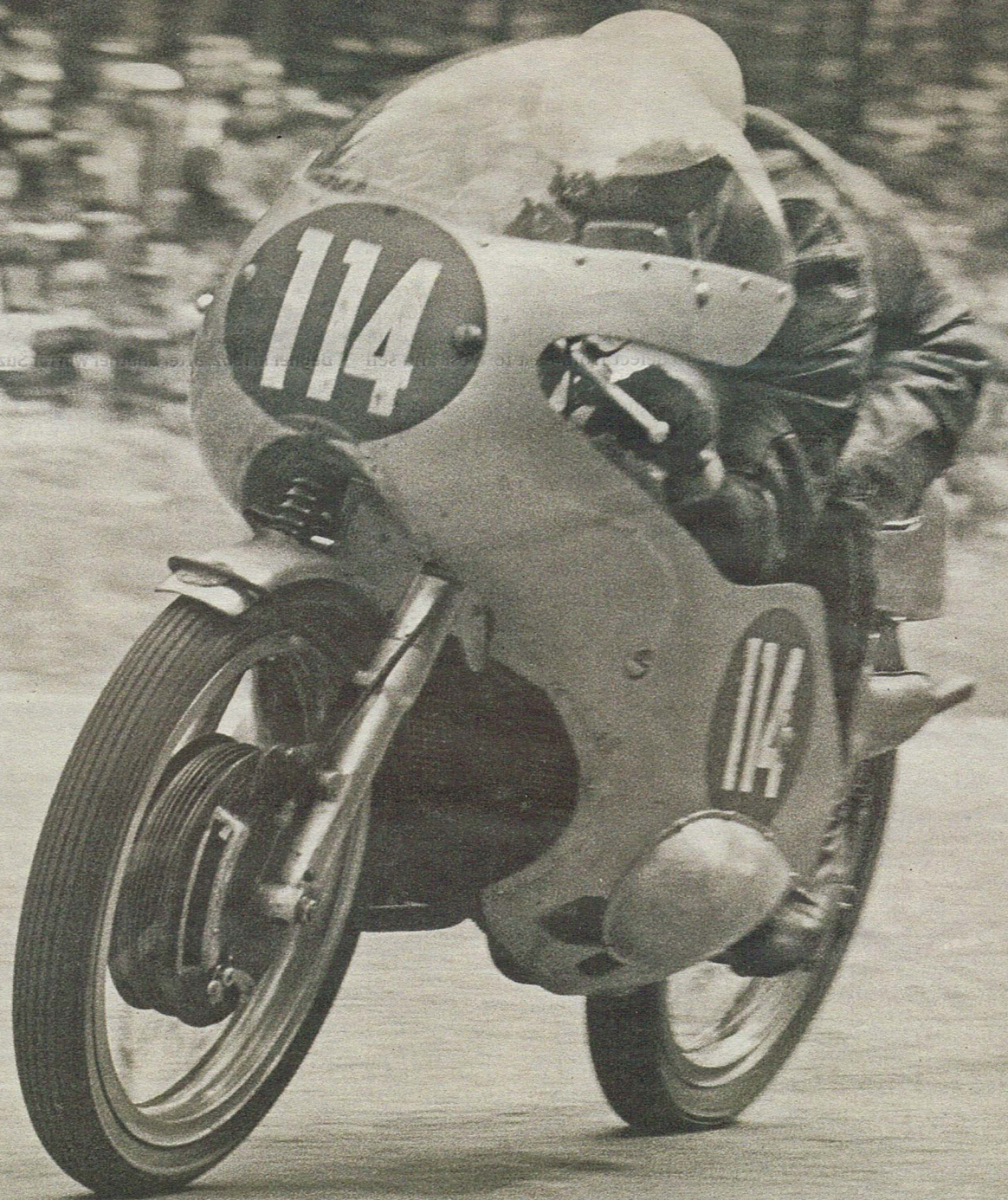
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THE JAMES BOND OF BIKES!

It's half a century since Suzuki won their first world title after stealing MZ's two-stroke secrets from behind the Iron Curtain. Mat Oxley recounts bike racing's greatest tale, an epic story of Cold War espionage worthy of 007



Degner on an MZ 250 in 1960, perhaps already planning his defection for the following summer

By Mat Oxley

Fifty years ago Suzuki won its first world championship with the rinky-dinkiest little Grand Prix bike. The 50cc RM62 that Ernst Degner rode to the inaugural 50cc title in October 1962 made eight horsepower and was good for 90mph, with a little help from a tailwind. It was hardly an awesome motorcycle, but its success was as much a historic moment for the sport as it was for Suzuki, because this was also the first world title won by a two-stroke.

Over the next few years the two-stroke would go on to utterly dominate GP racing, so much so that after 1975 not a single world title was won by a four-stroke until the rules were changed and the MotoGP era began in 2001.

That quarter of a century or so gave us some fabulous two-stroke GP bikes which in turn gave us some unforgettable road bikes. After all, machines like Yamaha's RD250 and 350LC, Suzuki's RG500 and Kawasaki's scary H2 750 triple would never have existed if it wasn't for the two-stroke's reign of terror in GPs.

Incredibly, the two-stroke's decades of dominance can be attributed to one man: a genius East German engineer called Walter Kaaden whose groundbreaking work on the two-stroke at the struggling MZ factory transformed the 'stinkwheel' from cheap, smoky moped into glistening global dominator.

Most remarkable of all, Suzuki and the other Japanese factories only built winning two-strokes after Suzuki paid star MZ rider Degner a king's ransom to defect from East to West and sell Kaaden's hard-earned secrets.

Degner's betrayal of Kaaden is a real-life James Bond story that proves that fact is nearly always more fascinating than fiction.

During World War Two Kaaden worked at Hitler's secret weapons base in Peenemunde where the so-called Vengeance Weapons – the V-1 and V-2 – were developed. After the war he turned down an offer to work with chief Nazi rocketeer Werner von Braun on the USA's NASA programme. Instead he went home to Zschopau and started tuning and racing little MZ two-strokes. He was so good at it that the Communist authorities put him in charge of MZ's very low-budget racing operation.

Three key technologies

By the mid-1950s the two-stroke seemed done for as a racing force, which is why most of the GP paddock laughed when MZ turned up at the Nurburgring for its GP debut in a scruffy little van containing a pair of medieval-looking 125 race bikes. What the more smartly attired westerners didn't know was that Kaaden had used the knowhow he gained at Peenemunde to transform the MZ into a real threat to the all-conquering four-strokes. By uniting three key technologies for the first time – the expansion chamber, the disc valve and the boost port – the MZ 125 became the world's first normally aspirated engine to make 200 horsepower per litre.

Despite the paucity of its resources,



Degner in 1962, after another win for Suzuki. That summer he paid a bodyguard to protect him – he was sure East German secret police would try to assassinate him

MZ fought Honda for the 125 world title throughout the summer of 1961 – Degner aboard the single-cylinder MZ, Aussie Tom Phillis on Honda's four-stroke twin. The avuncular, tweed jacket-wearing Kaaden knew his machine had the speed to beat the Honda, but there was something he didn't know.

Degner was jealous of his Western rivals who turned up at GP events wearing the latest finely tailored fashions and driving shiny new Jaguars and Porsches. According to the Communist way of doing things, Degner was paid no more than workers on the MZ factory floor. He did get paltry bonus money for winning GPs, so he was better off than his comrades, but nowhere near rich enough to afford Western luxuries.

Neither did Degner like living in East Germany under the ever-watchful eye of the murderous Stasi secret police who claimed they were only trying to save their people from the evils of Western imperialism. Trouble was, that's exactly what Degner wanted: smart clothes, a flash car and a nice house, and he wanted to hang out in jazz clubs, dancing the night away to decadent Western music.

So there was only one thing for it. Degner would have to risk his life by defecting. During the summer of '61 Degner sneaked away from his Stasi minders to have secret meetings with Suzuki personnel. Suzuki had entered their first GP the previous year with

WHAT'S THE STORY?

■ When Suzuki first went GP racing in 1960 their two-strokes were very slow, so they used industrial espionage to get up to speed. They paid rival MZ rider Ernst Degner to defect from East Germany, bringing with him the secrets of genius MZ engineer Walter Kaaden, who had worked on Hitler's secret weapons programme.

woefully slow 125s. The 1960 125 TT was won by Carlo Ubbiali on an MV four-stroke at an average speed of 85mph. Suzuki's best finisher crossed the line 15 minutes later, having averaged just 70mph.

Suzuki went away, worked hard, then returned to the Isle of Man a year later and performed even worse! Company president Shunzo Suzuki realised the only way he was going to prevent his company from becoming a paddock joke was by getting hold of Kaaden's top-secret formula. Degner was their man; he wanted out of East Germany and he had exactly what Suzuki wanted.

A deal was struck – Degner would help Suzuki build competitive two-strokes and then he would ride them. Next came the difficult bit. Degner

had to spirit some of Kaaden's technology out of the MZ race shop, then spirit himself and his family into the west. The Stasi made this particularly tricky. Whenever Degner raced abroad his family had to stay in East Germany, to make sure he always came home.

Escape to the West

So Degner devised a plan. With a little luck, his wife and two young sons would be able to travel from East Berlin to West Berlin using the only surviving chink in the Iron Curtain – a busy train line between the Soviet and British sectors. Their escape was planned for the morning of August 13, the day after Degner had raced at the Ulster GP at Dundrod.

It was Degner's misfortune to be overtaken by history. The Cold War was at its height in 1961, with US and Russian troops massing on the borders while president Nikolai Khrushchev threatened John F Kennedy with obliteration by a dozen hydrogen bombs.

When Degner's family awoke on the morning of August 13 they discovered to their horror that the border was impassable. At midnight Communist forces had begun the construction of the notorious Berlin Wall; or as East German leader Erich Honecker called it, his "anti-Fascist protection barrier". There was no way out.

The escape was delayed while Degner devised a new plan with his West German sidekick Paul Petry, who bought a Lincoln Mercury, a vast American car in which he made frequent trips across the West/East German border, posing as a businessman keen on Communist produce. Next, Petry constructed a secret compartment inside the Lincoln's boot.

During the weekend of the Swedish GP Petry drugged Degner's children, placed them in the Lincoln's boot, then drugged Gerda Degner who climbed in with them. Petry drove the car through the border, fully aware that it would be the end for him and Degner's family if they got caught.

Meanwhile, Degner was with Kaaden at Kristianstad racetrack in Sweden, on the verge of winning the world championship. Before the race had even begun the East German state newspaper had completed its front page, declaring MZ's victory over those decadent capitalists. The Communists were ready to milk this success just like they were milking Russia's victory in the space race. In April that year Yuri Gagarin had beaten the Americans into orbit, delivering a huge Communist propaganda boost.

If all went well at Kristianstad, Degner would leave Sweden as world champion, then slip away from his MZ comrades during the long trip home to Zschopau. Instead, disaster struck. Kaaden's two-strokes were fast but they were also fragile, and just when Degner needed it most the MZ blew up.

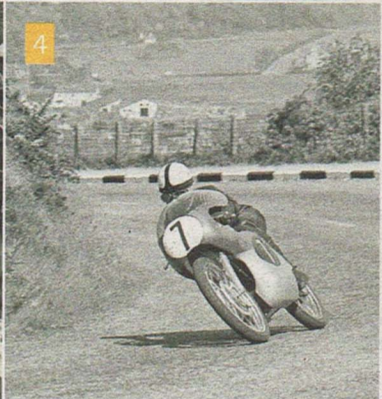
Never mind, his freedom was more important than a world title. That night, while the MZ team drowned their sorrows, Degner made his escape. A Suzuki staffer drove him and a suitcase full of vital MZ engine parts and drawings into Denmark.

The world championship wasn't over yet, however. Degner made it to the UK, where he arranged to borrow



Every time you build something good, someone steals it. I have to accept it. I cannot change it

Walter Kaaden



1. Kaaden (in tweed jacket), Degner (right) and MZ engineers do the maths with the MZ 250 twin 2. Degner collects the silverware after winning Suzuki's first World Championship event, the 1962 50cc Isle of Man TT 3. Degner and a Suzuki mechanic working on the 50 single 4. Degner at Waterworks, on his way to TT victory in '62 5. Degner lies unconscious as his 250 square-four goes up in flames at Suzuka, 1963 6. A marshal saves Degner, who suffered severe facial burns 7. Degner aboard the Suzuki 125 twin in 1964

a British-built EMC two-stroke for the season finale in Argentina where he could still beat Phillis and Honda to the title. But the bike never made it to Buenos Aires.

Degner was convinced there'd been a conspiracy to make sure the bike didn't arrive, either between the East German authorities and Argentina's left-wing government or between hardcore Communists who had made contact with Nazis hunkering down in South America. Paranoia? Possibly.

Two-strokes conquer world

Thwarted once again, Degner travelled to Japan where he spent six months toiling in Suzuki's race department – an engineer's paradise compared to MZ's rotten little workshop. His main task was to help create a new 125 that had to make at least 22 horsepower if he

was to receive his £10,000 golden hello (£200,000 in today's money). Suzuki's Kaaden rip-off RT125 was a mirror-image copy of the MZ single and made 24 horsepower. At the same time Suzuki applied Kaaden's genius to its new RM 50 single and RV62 250 twin.

Back in Europe for the 1962 GP season, Degner was fearful that the Stasi would assassinate him, just as they did other defectors. So he hired a muscled bodyguard who went with him everywhere.

Despite his fears the Stasi left him alone and the season was a triumph for Suzuki. The little 50 scored Suzuki's first-ever World Championship point at Barcelona in May 1962, then won the company's first World Championship race at the Isle of Man, where Degner averaged a dizzying 71mph – faster than the factory's 125 had managed

just two years earlier. Four months later Degner secured the 50 world title in Argentina, where team-mate Hugh Anderson won the company's first 125 GP. Suzuki were no longer the joke of the paddock.

Once Kaaden's genie was out the bottle an extraordinary race developed between two-stroke and four-stroke. In an effort to keep the Suzuki and Yamaha two-strokes at bay Honda built fabulous multi-cylinder four-strokes that were capable of sky-high engine speeds. Honda's twin-cylinder 50 and five-cylinder 125 both revved beyond 20,000rpm which gave them power-per-litre outputs of over 270bhp.

Suzuki and Yamaha responded with two-stroke multis capable of similarly outrageous performance. Yamaha built 125 and 250 V4s while Suzuki built a 150mph 250 square-four, nicknamed

'Whispering Death' because it had a habit of seizing solid and hurling its riders into trackside walls. Most of these ultra-high performance two-strokes weren't much safer.

Dream turns to nightmare

Meanwhile, Degner's life twisted into a downward spiral. The 250 square-four flung him off during the Japanese GP at Suzuka in 1963 and caught fire. Knocked unconscious in the accident he suffered facial burns that required more than 50 skin grafts. No sooner had he recovered from that nightmare than he shattered his right leg during the 1965 Italian GP at Monza. The following year he suffered serious head injuries in practice for the Japanese GP.

Degner was in a lot of pain and doctors at that time had a way of helping him escape it: the very effective and

highly addictive painkiller, morphine.

Degner's career was at an end and his marriage was over; bit by bit his life was falling apart. His death in Tenerife in 1981, at 53, was followed by a flurry of rumours: the Stasi had finally caught up with him, murdering him and making it look like suicide. In fact, Degner died of a heart attack.

And what about Kaaden? His life got considerably worse following Degner's defection. He was taken to Berlin and interrogated by the Stasi who suspected that he was involved in the disappearance. Then MZ's foreign racing activities were curtailed, in case anyone else had ideas about following Degner through the Iron Curtain.

As his two-strokes took over the world, Kaaden received barely a word of acknowledgment. Even in the 1970s the Japanese weren't above building

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wholesale copies of Kaaden's two-stroke engines. The Kawasaki KR250 and 350 that won eight world titles was a straight rip-off of the MZ 250 that Kaaden had created in 1969: same tandem twin layout, same bore and stroke, same porting arrangement, same geared-together crankshafts. Likewise Suzuki's RG500 square-four that took Barry Sheene to the 1976 and 1977 500 world titles. The RG was essentially four disc-valve MZ 125s in a square format.

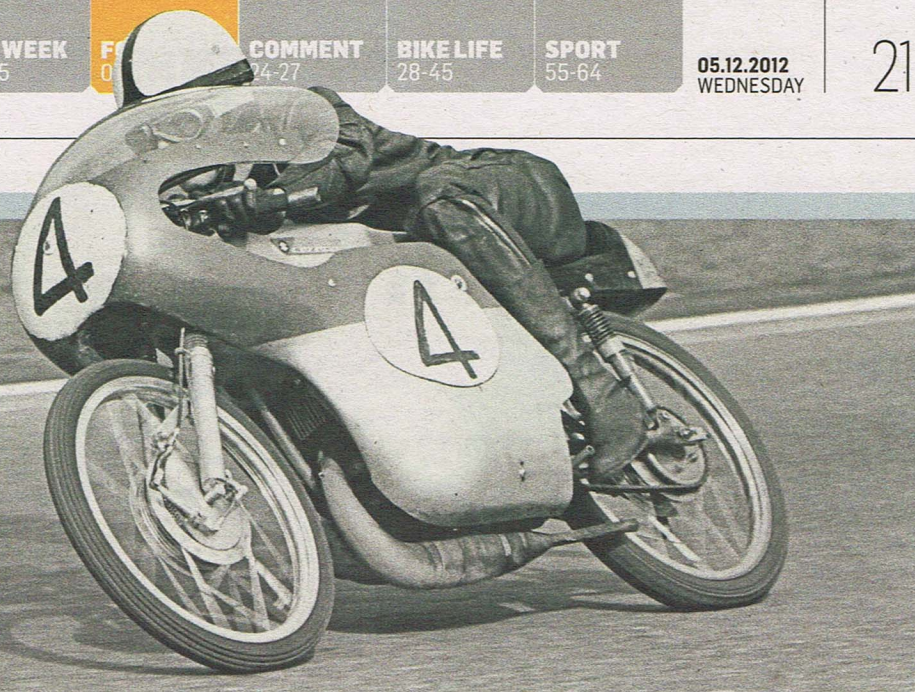
Kaaden forgave Degner for betraying him and was philosophical about how the Japanese used his life's work to build an industry that helped make the country a global economic power.

"Every time you build something good, someone steals it," he said a few years before his death in 1997. "I have to accept it. I cannot change it."

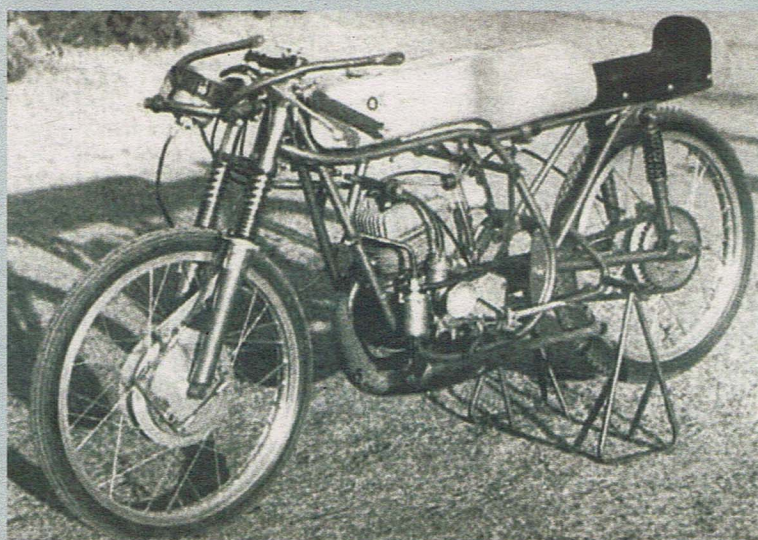


■ The full Kaaden/Degner, Suzuki/MZ story is told in Oxley's acclaimed book, *Stealing Speed*, published by Haynes and available in paperback and as an e-book.

Degner working through the RM's eight-speed gearbox. Later versions had 12-speeders!



The RM62: buzz-box extraordinaire



An exercise in minimalism: RM62 made eight horsepower and weighed 60kg

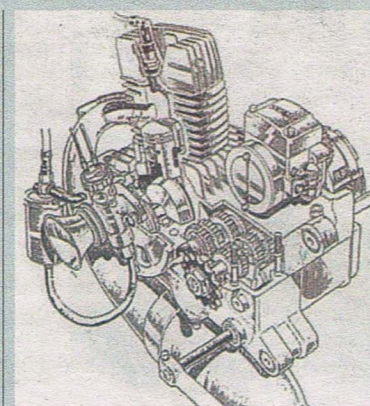
The FIM added 50cc racing to the World Championship programme in 1962 in response to a huge growth in European sales of mopeds. Suddenly, everyone had a 50, so it was only right that manufacturers should be able to race the things, to accelerate development and advertise their engineering prowess.

Suzuki's RM62 wasn't much but it was the best 50 of 1962. It sucked in fuel/air through a tiny 19mm carburettor and screamed out a razor-edged eight bhp at 10,500rpm. The bike weighed 60kg and rode on

skinny two-inch Avon tyres.

Ernst Degner's main concern wasn't just going as fast as he could on the RM, he spent a lot of his time struggling to keep the engine in its 700rpm-wide powerband by dancing through the eight-speed gearbox. And off the bike his main concern was dieting – he took regular saunas to burn off excess weight and forbade friends to eat chocolate in his presence, lest he succumbed to temptation.

Honda's four-stroke RC111 never stood a chance, despite Honda



The RM62 engineered was built by Suzuki, using Kaaden's knowhow

throwing considerable resources at the bike. The 17,000rpm RC started the season with a six-speed gearbox, which by TT time had grown into a 10-speeder. Still it was no match for the two-strokes.

The Honda/Suzuki duel for 50cc supremacy produced fabulously over-the-top exotica. Honda built a twin that revved to 22,500rpm, then Suzuki made a twin stroker that made 16.5bhp at 17,000rpm and needed a 14-speed gearbox. Suzuki then built a two-stroke triple with a bore and stroke of 28mm x 26.5mm that made 18bhp (360bhp per litre) at 19,000rpm. At this point the FIM stepped in to stop the madness – banning multi-cylinder 50s.

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