CUSTOM BIKES

A wealth of glittering colour

Twenty years ago the motorcycle was mostly used as a means of commuting. However, today's machines are being ridden for pleasure as well as for transportation.

Now people tend to decorate their surroundings much more than in the past, whether it be their homes or their transport – two wheels or four.

Every year, during speed week at Daytona Beach, Florida, the greatest custom bike show in the world takes place. Enthusiasts come from all over the world in the month of March to admire, to envy or just to gaze at the vivied paint and shining chrome of the customized bikes, choppers and trikes that make the annual Daytona scene.

The so-called custom bike has become extremely popular in America and is slowly catching on in Europe. Customizing is done with all kinds of machines: American, English, German as well as Japanese.

The custom bike is more or less a standard machine which has been given an individual character by its owner. Customizing means applying all sorts of accessories: telescopic steering forks, hand painted petrol tanks, chrome engine parts, modified saddles and handlebars.

The suspension remains unchanged and the bikes usually remain set-up for street riding. *This is not the case with a chopper or a trike where the original construction has been changed. Choppers and trikes are show machines and are usually transported behind the owner's car.*

In Europe today, many motorcycle dealers are offering customizing. □

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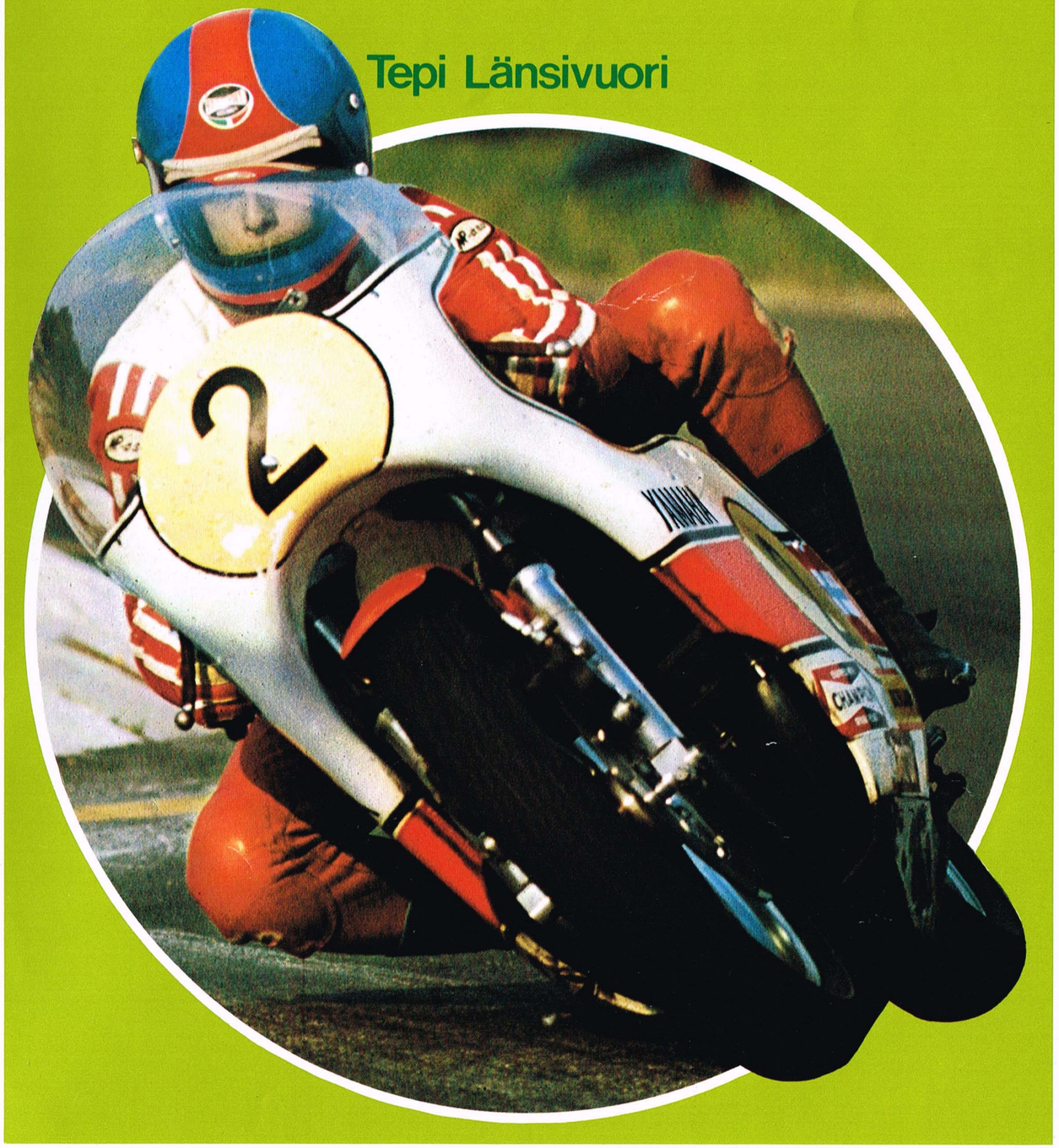
YAMAHA 1974

CIRCUIT 4

Tepi Länsivuori



Strictly Technical

For every grade of Champion plug a thermocouple version is produced so that the test engineers can determine the exact operating temperature of each type of plug while the engine is running. By connecting instruments to the four-pin terminal, engineers can check what effect variations of speed and load have on plug temperature. They then select a grade that will give the best results.

The usual procedure for a motorcycle test involves first ensuring that the engine is tuned to the manufacturer's specifications and, second, fitting the machine with instruments designed to measure various factors such as manifold vacuum, cylinder-head temperature, engine speed and plug temperature.

During the test-run, the rider has a microphone in his helmet and records his instrument readings on a small cassette unit while riding at low and high speeds. The purpose of this particular road test is to establish a set of conditions that is later simulated on the dynamometer.

The motorcycle being tested on the dynamometer is held in a frame with the back wheel driving a roller. With the aid of electromechanical devices, the machine can be driven from a separate control room while electronic instruments measure the effects of changes in operating conditions. The engine can be run from low speed and light load to full speed at maximum output. By this means, plug temperature curves can be drawn showing the temperatures that will be obtained in service and the most suitable type of plug can then be chosen.

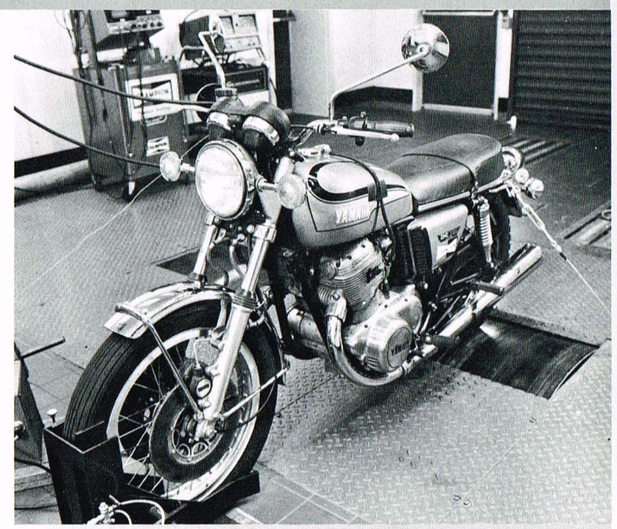
With modern engines, plug selection is critical and changing by just one grade can have a serious effect on plug temperature, possibly not noticeable to the rider, but damaging to the engine. In the same way, serious changes in operating conditions can have a marked effect on the plugs, so that it may be necessary to change the grade of plug to compensate for this. For example: a long journey over a high mountainpass can affect carburation due to the rare atmosphere. The resultant rich mixture may cause plug fouling and consequent misfiring. The correct answer is to weaken the carburation but a much simpler measure is to fit the next grade hotter plug. However, it is very important to return to the correct grade when returning to lower altitudes, otherwise the engine damage mentioned above could occur.

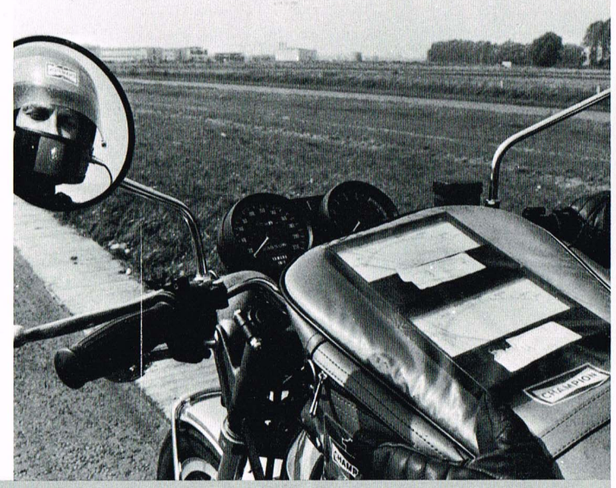
Touring and normal road bikes can generally use one plug type for all conditions but a more highly tuned engine could require one type for town and another for the open road. Check the list below, but if you have any questions write to:
Champion Spark Plug Company,
Diegem, Belgique.

Sparkplug Recommendations

The sparkplug shown above is special. Its construction is identical to that of any normal type except in one detail. This plug contains a minute temperature sensing element called a thermocouple which is located at the tip of the insulator nose close to the centre electrode. These thermocouple plugs were developed by Champion Spark Plug Company to help them select the correct grade of plug for any engine.

Yamaha Model	Normal Plug	Gold Palladium	Gap
TX450	N-4	N-4G	0.5 mm
TX750	N-4	N-4G	0.5 mm
TX650	N-4	N-4G	0.5 mm
DT360	N-3	N-3G	0.5 mm
RD350	L-77J	L-2G	0.5 mm
RD250	L-77J	L-2G	0.5 mm
DT250	N-3	N-3G	0.5 mm
CTB175	N-3	N-3G	0.5 mm
DT175	N-3	N-3G	0.5 mm
RD125	L-77J	L-2G	0.5 mm
DT125	N-3	N-3G	0.5 mm
YZ125 Cross	N-2	N-2G	0.5 mm
AT3 125	N-3	N-3G	0.5 mm
AT1, AT1EF, AT2E	N-3	N-3G	0.5 mm
LT3 100	L-81	L-4G	0.5 mm
GT-MX80	L-86	L-9G	0.5 mm
650 Street XS1	N-4	N-4G	0.5 mm
650 Street XS2	N-3	N-3G	0.5 mm
TX500	R-6	R-6G	0.5 mm
SC500	N-3	N-3G	0.5 mm
360 RT1-B, RT3	N-3	N-3G	0.5 mm
360 Enduro RT1, 360 Motor-Cross & Street	N-3	N-3G	0.5 mm
R3, R5, R5B, YR,	L-78*	L-3G	0.5 mm
*High speed	L-60R	L-3G	0.4 mm
R5F Street	L-78	L-3G	0.5 mm
TR2 Road racer	E-55	–	0.5 mm
RD	L-81	L-4G	0.5 mm
YM	L-81*	L-4G	0.5 mm
*High speed	L-78/L-60R	L-3G	0.5 mm
DT1 & DT1 Enduro	N-4/N-88	N-4G	0.5 mm
TD1-A, TD1-B, TD1-C	E-55	–	0.5 mm
DT1-G	N-57	N-57G	0.5 mm
DT2 Trail, DTB	N-3	N-3G	0.5 mm
TD-2	E-59R	–	0.5 mm
YDS-2 1/2" reach	L-81	L-4G	0.5 mm
YDS-2M & 3M	E-55	–	0.5 mm
DS-6B & YD	L-78	L-3G	0.5 mm
DS-7 Street	L-78*	L-3G	0.5 mm
*High speed	L-77J	L-2G	0.5 mm
CS3C Street Scrambler, CS3-B	L-77J	L-2G	0.5 mm
CT1-B Enduro	N-57	N-57G	0.5 mm
CTB	N-3	N-3G	0.5 mm
YCS	L-78*	L-3G	0.5 mm
*High speed	L-60R	L-3G	0.4 mm
*Town driving	L-81/L-86	L-6G	0.5 mm
YA5, YA6	L-81	L-4G	0.5 mm
AT1-B	N-57	N-57G	0.5 mm
YAS, AS2 Street, AS3 Street	L-78*	L-3G	0.5 mm
*Town driving	L-81	L-4G	0.5 mm
AT2J, Trail, AT3	N-3	N-3G	0.5 mm
YL	L-78	L-3G	0.5 mm
YL-2A	L-87Y	L-3G	0.5 mm
LT3	L-81	L-4G	0.5 mm
Enduro HT1	L-81	L-4G	0.5 mm
Trailmaster, HS1 Twin	L-81	L-4G	0.5 mm
YG	L-78*	L-3G	0.5 mm
*Town driving	L-81	L-4G	0.5 mm
80G6S & G1FD	L-78	L-3G	0.5 mm
GT-MX	L-86	L-9G	0.5 mm
70-50 cc: All Models	L-81*	L-4G	0.5 mm
*Town driving	L-86	L-9G	0.5 mm





The Repair Specialist

HORW, Switzerland–Bortoluzzi Motors is a small motorcycle garage/petrol station located in a tiny Swiss village just outside Lucerne and its owner, Luigi Bortoluzzi, specializes in repairs.

In a small building behind his combination showroom-workshop is a room filled with crashed motorcycles of many different makes, including a few Yamahas. These crashed machines come to Bortoluzzi from all over Switzerland and from a nearby mountain road where, on Sunday, many prospective racers try their luck, only to crash. Every Monday morning, Bortoluzzi takes his van up the road and collects an average of two crashed machines.

"Almost every Swiss rider thinks he is a racer and many of them end up in my repair shop," Bortoluzzi said.

Bortoluzzi, now 38-years-old, was born in northern Italy and started racing motorcycles when he was 12. Road racing meant everything to him and in 1963 he became Switzerland's 250cc champion.

When Bortoluzzi was 13 he became an apprentice mechanic and nine years ago he opened the shop in Horw. He specialized in repairs and joined a man who builds and straightens motorcycle frames from all over Europe. The frame repair department takes up a large section of the workshop.

Today Bortoluzzi repairs all kinds of machines but specializes in Yamahas. His customers prefer to go to him because his service is good and his repair prices are fair. Instead of trying to sell his customers new parts for their crashed machines, Bortoluzzi reworks or repairs the machine's original parts, if possible. This unique policy saves the customers' money while, at the same time, increases Bortoluzzi's business.

Most of the repairs are done during Switzerland's cold winter months. Bortoluzzi usually takes a crashed machine in trade during the summer, repairs it in the winter and resells it in the spring.

"It's difficult to ride or sell machines with snow on the ground," Bortoluzzi explained. "But we keep busy repairing them."

Ninety per cent of Bortoluzzi's sales are made from April to September and half of them are Yamahas. The RD250 is his best seller but he also sells Yamaha motocross and trial machines.

Racing is still his best advertising. Although he retired himself last year, Bortoluzzi sponsors two riders on Yamahas, including Swiss 250cc champion Hans Müller. □

Yamaha Circuit

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THE SAFE LINE

You and the Automobile

Ill-formed opinions from people who know little or nothing about motorcycles foster the image of motorcyclists as a group of wild maniacs who cause road accidents. However, it's frequently the automobiles driven by short-sighted, ill-mannered and aggressive motorists who are the greatest hazard on the roads, not the motorcyclists. As a matter of fact, it's up to the motorcyclists to watch out for the automobile.

Much of the information that formed this conclusion comes from a paper entitled "Motorcycle Accidents and Injuries," written for a vehicle safety conference by two research workers at the Transport and Road Research Laboratory of Great Britain. The TRRL provides information the government needs when considering legislation, and can hardly be said to be biased towards motorcycles.

The paper gives the illuminating information that of all accidents involving motorcyclists of 17 and over, the motorcyclists were considered to be at fault in some way in *only one third* of them.

What's more, in the 120 motorcycle accidents examined in detail during the period of the survey in 1970-72, 31 of them were caused by another vehicle pulling out of a minor road or driving into the path of the motorcycle.

These two very similar types of crash, which by their nature imply that the motorcyclist is completely free from blame, are together the most common incident by far, accounting for 37 per cent of the total. That's almost three times as many as the next biggest cause of motorcycle accidents, loss of control while cornering and six times greater than the number of crashes caused by motorcyclists driving out into the path of another vehicle, or turning across its path.

The paper makes the point that "a large number of accidents may have been prevented if the conspicuity of motorcycles and their riders was improved." But it doesn't comment on how many motorcyclists might survive if stringent eye tests were introduced for car drivers. Great Britain's Department of the Environment (DoE) figures show that a higher proportion of motorcyclists are killed or seriously injured in built-up areas than in rural areas when compared to car casualties. This would seem to indicate that you're far safer running along country roads than riding about town. The point is that the more automobiles there are around, the greater the risks for motorcyclists.

The percentage of car drivers involved in accidents who disobeyed junction controls is 2½ times higher than the proportion of motorcyclists who broke the law in this way – 5.1 per cent compared to 1.9 per cent. There is obviously some correlation between this irresponsible behaviour of car drivers and the number of motorcyclists who are involved in accidents at road junctions.

Motorcyclists maintain their machines better, too. Motorcycles involved in accidents show a lower incidence of vehicle defects than private cars and goods vehicles. In fact, they have the best record in this respect, apart from public service vehicles, according to the most recent detailed breakdown of accident figures prepared by the DoE.

One of the unique problems of motorcycle safety is the very high proportion of inexperienced riders. Learners in Great Britain account for 27.1 per cent of the riders involved in accidents, compared with 1.35 per cent for learner car drivers. And almost half the people killed or injured in road accidents between the ages of 16 and 19 are on two wheelers.

It is clear from these statistics that one answer to the problem of restrictive legislation is to do everything possible to assist governments in providing training schools for young learner riders. We have a duty to ourselves to educate young riders and make them aware of the future consequences of irresponsibility.

So how can you be a motorcyclist and still expect to live a long and healthy life? The answer is to treat every motorist with caution and help him to see you by wearing conspicuous clothing. □

Courtesy Bike Magazine

Teuvo "Tepi" Länsivuori

Yamaha's quiet man of road racing

In his native country of Finland 29-year-old Tepi Länsivuori is a national hero but to the rest of the motorcycle world, the shy, quiet Finn is only the shadow and teammate of Yamaha's number one works rider, Agostini.

After 12 years of racing, being number two on a team is not easy for a man like Tepi who is as fast or faster than any other rider on the championship trail.

His remarkable career began on the frozen lakes of northern Finland where Tepi won the first race he entered at age 17. Three years later Tepi became Finland's 250cc ice racing champion.

In 1967, when Tepi was 22, he converted a Husqvarna motocross machine and went road racing. He entered his first Grand Prix that same year at Imatra, Finland.

On the advice of his best friend, the late Jarno Saarinen whom Tepi met during his ice racing days, Tepi switched from Husqvarna to Yamaha.

Tepi started in the 125 and 250cc classes and by 1970 had moved up to the 350cc class. It was also 1970 when Tepi won his first Grand Prix on a Yamaha 350 in Spain.

In 1972 Tepi rode for Yamaha's Finnish importer, Arwidson and finished fifth in the 250 World Championship and seventh in the 350 World Championship.

Jarno Saarinen's tragic death at Monza, Italy in 1973 was a severe blow to Tepi. He went home to Finland and, according to a close friend, "didn't talk for a week."

Because of Jarno's death, the Yamaha works team pulled out of the 1973 season and the Yamaha importers had to bear the weight of winning the world championships.

After much soul searching, Tepi went back to racing. With unofficial assistance from the Yamaha works, Tepi and Arwidson nearly put together the 1973 350 World Championship. Tepi won the 350 West German, Czechoslovakian and Swedish Grands Prix but had to settle for second place overall. He also placed second in the 250 World Championship.

Tepi, who is as quiet in public life as he is in private is not an easy man to interview. According to his attractive wife Helena whom Tepi met and married in his home town of Iisalmi, "Tepi is a man of few words."

When something goes wrong with his machine during a race, Tepi appears to take it very calmly. He usually coasts into the pits, removes his helmet and shrugs his shoulders. "But inside it hurts," Tepi said. "Especially when I am leading and the machine breaks down."

Tepi, who prefers racing to conversation, will only reluctantly admit that he has "a lot of respect" for Agostini as a rider. However, there are no ill feelings between the two. 1974 has not included a World Championship for Tepi but he has had some important victories. His first 1974 win came in the 750 race at Paul Ricard, France in May. His first 1974 Grand Prix victory was a double-header in Anderstorp, Sweden. Tepi won both the 350 and 500 races after a crash side-lined Agostini. Tepi also captured the 500 Post-TT race at Mallory Park, England and won the 350 and 500 races at the International Holland race at Zandvoort in July.

During the off-season, Tepi trains on the ice with a Yamaha 250 motocross machine and makes 25 mile cross-country ski trips. Last year he made three 200 mile motocross rides to get in shape for the 1974 season. □

A question of style

Tepi's unusual and spectacular riding style is distinctive of Finnish riders. Most Finnish road racers began road racing on frozen road race type circuits with motocross machines as Tepi did. For these frozen circuits the tyres are fitted with short studs to prevent sliding. The sliding techniques used on Finnish style ice racing have been adapted for road racing by Tepi and other Finnish riders.

Finnish riders claim that by transferring their weight to the inside and lowering their centre of gravity, they can control the machine better. The old school of riders claim that this unusual style does not work and looks unnatural. However, with race and lap records being constantly broken by Tepi, one can only conclude that this unusual style works for him.

Ago says

By the time you read this, my first season with Yamaha will have ended. Unfortunately not as successful as we all hoped it would be, but I think I proved to those people who said I could not ride a two-stroke machine that they were wrong. I did retain the 350 World Championship title by winning in Yugoslavia. This is my 14th Championship. But I would have preferred my 14th championship to have been the 500 title. Yamaha's 500 is fantastic. It has the best brakes and the best suspension of any machine in Grand Prix racing today. We did have some mechanical problems this year, small problems, yet enough to prevent me from winning the 500 title. At the Swedish Grand Prix all chances I had of winning the 500 championship were finished when Barry Sheene fell off in front of me. After the accident, many people said I had made a mistake which caused me to crash. At the place the accident occurred, I was travelling about 170 kmh. I had only a split second to decide whether to hit the fallen machine or try to avoid the machine and rider. The unfortunate accident meant that Yamaha and I had to pay very dearly for someone else's mistake, but at least Länsivuori did win the 350 and 500 for Yamaha which proved that the Yamaha 500 can win. My biggest disappointment this year was not being able to win the 500 World Championship for Yamaha, because Yamaha and all the mechanics tried so hard. Other disappointments were having to retire from the French Grand Prix with a 9 second lead and not finishing the Italian Grand Prix after having had a long battle with Gianfranco Bonera, while leaving the third place man nearly one minute behind.

My happiest moments this year were winning the Daytona 200 the first time I raced for Yamaha and winning the Imola 200-mile race in Italy on the TZ750. My 350 and 500 wins at Assen, Holland were also very satisfying. □

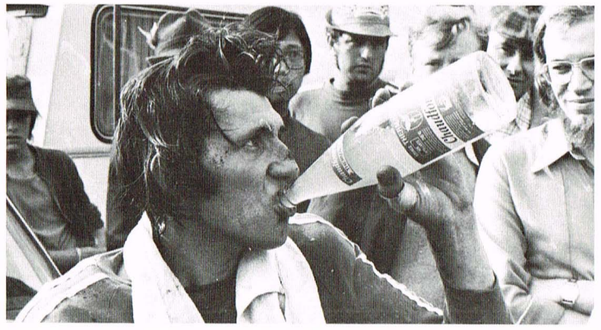
Van Velthoven, number 4, and the start of the first heat of the Belgium Grand Prix.

Motocross News

Yamaha's 500 motocrosser, Jaak van Velthoven from Lommel, Belgium, didn't win the World Championship this year but he did capture two important Grands Prix to finish fifth overall in the final standings.

After injuring his wrist in a crash at the Czechoslovakian Grand Prix earlier in the season, Jaak bounced back and surprised everybody by winning the British Grand Prix. This was Jaak's and Yamaha's first 500 motocross win of the season.

Although Jaak knew he was out of the running for the World Championship, his effort at the season's last Grand Prix in Luxembourg was commendable. Jaak didn't win a heat, but his second and third placings gave him enough points for the overall win.



Motocross and Jaak van Velthoven joined hands at an early age. When he was eight years old, Jaak was going to races and when he was only 14, he borrowed his first motocross machine and taught himself to ride. That was nine years ago and Jaak, now 23, still remembers the machine, a Dot 250, and the circumstances.

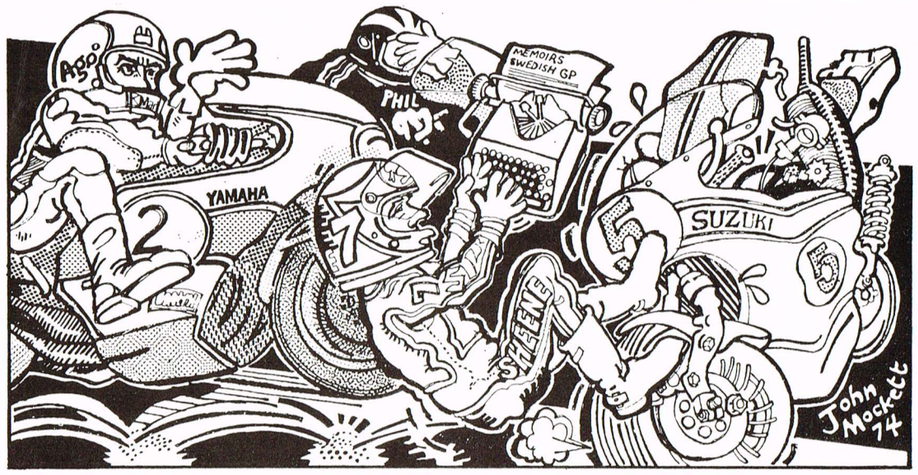
"The machine belonged to my sister's husband who was a motocross racer and he left his extra machine home one Sunday, so I just took off with it," Jaak said.

Jaak crashed that Dot once too often and his father was forced to buy it for him. Jaak then started racing although his family disapproved.

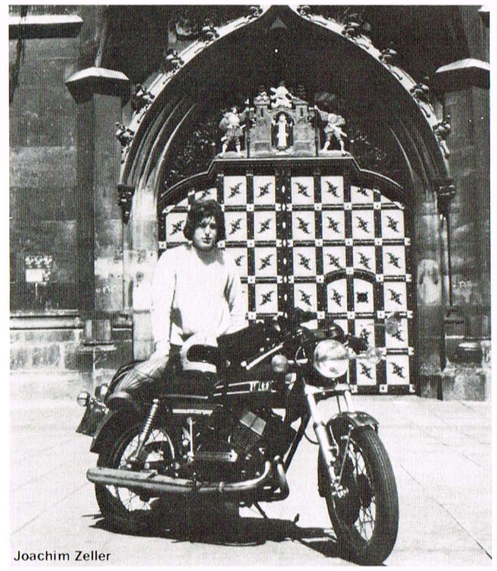
"Once my father came and watched me race," Jaak recalled. "He saw me come in second to a faster machine and went out and bought me a Husqvarna 250."

Motocross fever soon caught on with Jaak's entire family and they became the Husqvarna importers for Belgium. But after becoming dissatisfied with a new five-speed Husqvarna in 1971, Jaak switched to Yamaha.

He won his first Grand Prix with Yamaha in 1972 and went from ninth in World Championship standings to fifth. In 1973 Jaak became the Belgium 500 Champion and rose to third in the World Championship. He looks forward to making it to the top in 1975. □

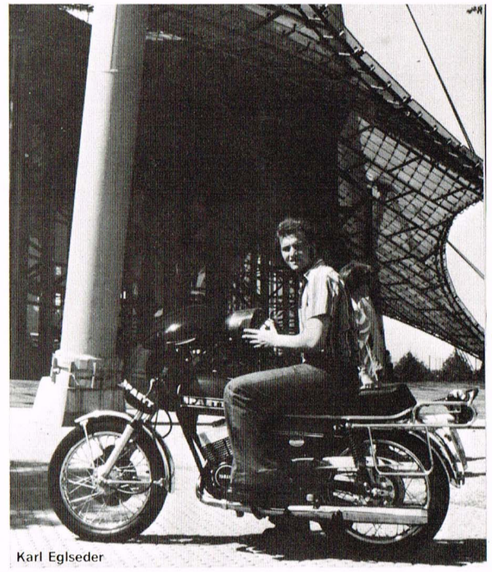


Wilhelm Schmid

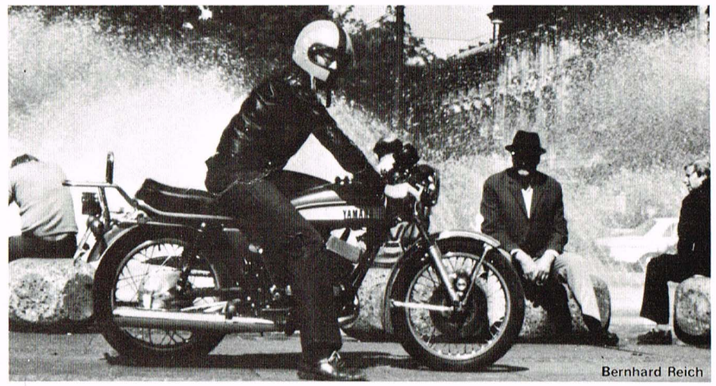


Joachim Zeller

Why



Karl Eglseder



Bernhard Reich

they bought Yamaha's RD250

For the last two years in Germany the RD250 has been Yamaha's best selling machine. Last year 4,000 RD250s were sold in Germany alone. This year, 1974, German dealers expect to sell 7,000 RD250s of a total 9,500 for sale in all of Europe.

Every Saturday from 9 am until 12 noon the pavement in front of Spaett Motors in the Bavarian capital of Munich is crowded with riders who may drop by to pick up a spare part or just mingle with friends. These motorcycle enthusiasts own many different kinds of machines: BMWs, MV Agustas, Hondas, Kawasakis and Yamaha RD250s.

On a recent Saturday Circuit stationed a reporter on Spaett's doorstep to find out why German riders have bought Yamaha's RD250 instead of competitive 250cc machines. Here is a sampling of those interviews.

Name: Wilhelm Schmid
Age: 20
Occupation: Mechanic

Four years ago Wilhelm started riding a Honda 125. Last year he took an RD250 out on a trial run with his motorcycle friends and passed all of them on the road except two big BMWs. The next day he bought the machine. Being a mechanic, Wilhelm likes to tune his own bike and he found many little things he could do to his RD250 – like carburettor and air filter adjustments – to get a bit extra out of his machine. He said the RD250's strong frame is a big help on the rugged mountain roads.

Name: Karl Eglseder
Age: 21
Occupation: Salesman

Karl is a motorcycle and parts salesman and he knows a lot about motorcycles. Karl began riding five years ago on a big BMW. Last March, after much testing and searching, he narrowed his choice down to Honda, Benelli and Yamaha. In the end he chose the RD250. Karl said the machine gives him the top speed he needs for the open highway as well as the horsepower for the mountain roads. His favourite ride is the autobahn that runs from Munich over the mountainous Brenner Pass into Italy. On his last weekend trip, Karl ran his RD250 flat out from Italy to Munich without a problem.

Name: Bernhard Reich
Age: 19
Occupation: Student

Bernhard's first motorcycle is his RD250 which he purchased almost two years ago. Before he bought his RD250 he was also looking at the 250 Suzuki but, he said, the Yamaha had more horsepower and Bernhard got a better deal on the RD250 than he would have got on the Suzuki. Bernhard plans to start production riding his machine this fall and for training he rides across the border to the Austrian Alps. He said he likes the way his machine handles on mountain roads.

Name: Joachim Zeller
Age: 18
Occupation: Machinist

Joachim owned a moped for two years before moving up to his RD250 which he bought in February. He chose the RD250 over other machines because of its sleek styling, power and low insurance rates. (A recent law passed in Germany provides low insurance premiums for machines under 250cc which may account for the increase in RD250 sales. The premiums for a 250cc machine is about 300 Deutsch Marks a year while cyclists riding machines over 250cc must pay up to 1,000 Deutsch Marks per year.) On his days off Joachim likes to ride his machine into the forests and hills that surround Munich.

All four of the riders interviewed were between the ages of 18 and 22, which proves that the RD250 is indeed a young person's machine. All the riders selected their RD250s for similar reasons. The outstanding reason was power. They liked the RD250's looks as well as its handling, and its performance in the mountains and on the open road illustrates the great all-round durability of the machine. □