



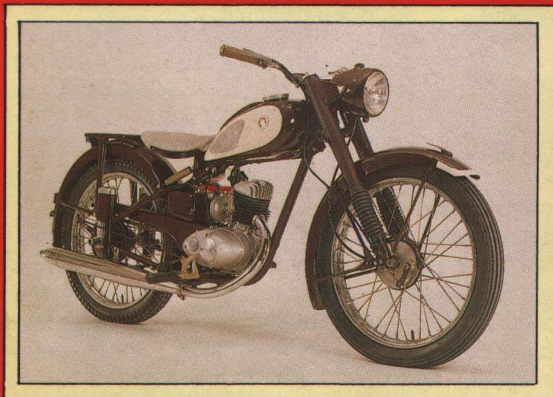
CIRCUIT



ENGLISH EDITION

SPRING 1980

1955-80



Early Days

With 1980 marking the 25th year of Yamaha motorcycle manufacturing it is an appropriate time to take a look back at the company that has for so long been one of the leaders in its particular field.

Torakusu Yamaha, whose name has now become immortalised in the industrial and consumer-goods world, was born in 1851 and acquired his knowledge of intricate mechanical devices by spending 10 years apprenticed to an English clockmaker in Japan. His apprenticeship lasted until he was 30 years old, at which point he made of the most significant decisions of his life. He had been sent to repair a clock at the Hammamatsu Hospital and fell in love with the area, deciding to leave the clockmaker's employ and make Hammamatsu his home.

This meant starting in business on his own account, a large gamble but one which he was coping with reasonably successfully until the next significant point in his career ... at the age of 36. It was at this time that the Hammamatsu Elementary School had acquired an organ ... an instrument which soon became a means of entertainment for the whole town. On certain days each month, most of the townsfolk would gather in the school grounds to listen to its melodies!

However, after less than three months, disaster struck. The American-made organ broke and no spare parts were available. Mr Yamaha was called in and made himself the hero of the town by getting the organ playing once more!

While repairing the instrument, Yamaha studied its construction and came to the conclusion that he could build one just as good. With the aid of a metal-worker friend, Kisaburo Kawai, he did just that!

Next step was to take that first Yamaha instrument to Tokyo for the necessary certification by the Institute of the Arts. There was one rather large problem, however, Tokyo was 200 miles away and there was no transport available.

The solution was a simple one ... but arduous. Yamaha and Kawai slung the organ between them on a pole and carried it all the way to Tokyo!

Unfortunately, despite their efforts, the story didn't have a totally happy ending. The instrument was hopelessly out of tune and the Institute refused to certify it!

However, the authorities were so impressed by Yamaha's determination that they invited him to stay on at the Institute and study for a while. He remained there for a month and then, armed with the extra knowledge, went back to Hammamatsu to build a second organ.

When this one was taken back to Tokyo (history doesn't record whether Yamaha and Kawai had managed to find some alternative means of transport by this time) it passed the tests easily and was highly praised by the Institute.

On the strength of this Yamaha and Kawai went into business and so was born Yamaha's parent company, Nippon Gakki. It is now one of the largest industrial combines in the world and Yamaha instruments are still rated as among the best by musicians ranging from rock and roll to classical.

Yamaha motorcycles came into being as the result of the foresight of one of the later Nippon Gakki presidents, Kauchi Kawakami. He was made president in 1926 after the company had been almost crippled by the double blows of a long workers strike and the burning down

of the Tokyo factory in the famous 1923 earthquake.

Kawakami rejuvenated the company, brought it back from the brink and then, some 25 years later, decided that it was time to diversify. The musical instrument market was a good one, he thought, but did not offer enough growth potential.

Various things were considered, from automotive parts to sewing machines. To the eternal gratitude of millions of motorcycle enthusiasts, however, the decision was taken to move on to two wheels.

The very first Yamaha in 1955 was a neat little two-stroke, the YA1 125cc single cylinder machine that was nicknamed "Red Dragonfly".

Special versions of these were entered in Japan's most famous race at that time ... the Mount Asami Volcano event where bikes raced on a surface of compounded volcanic ash. To the amazement of the established teams the new Yamaha dominated the race ... thus forging a traditional link between racing and production machines that has lasted unbroken until this day.

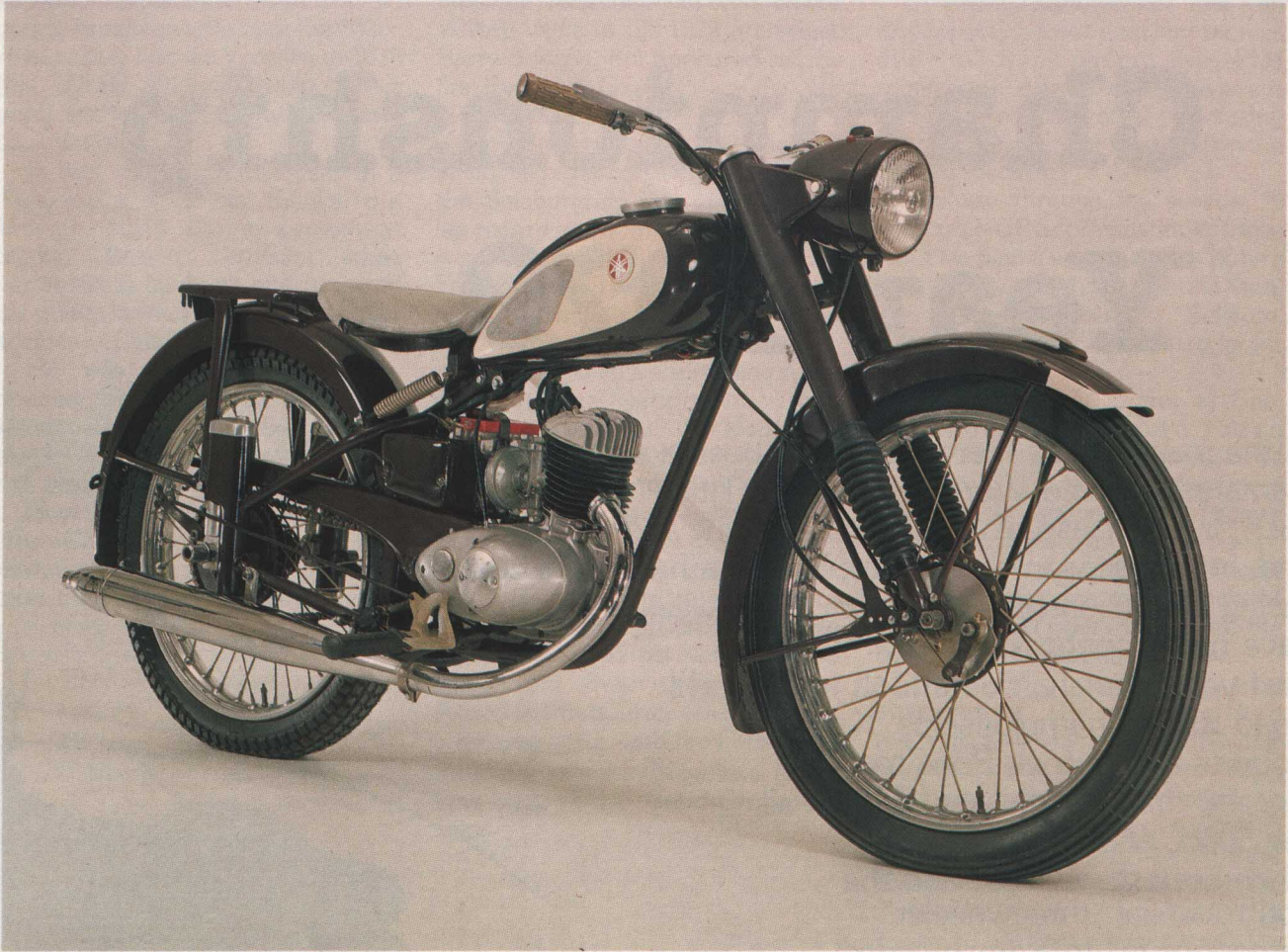
Most of the young Japanese enthusiasts wanted the bike that had won the Mount Asami race and sales shot upwards.

They have continued to rise ever since. In those early days in 1955, Yamaha had 200 workers making 200 machines a month.

Twenty five years later, almost 10,000 people work for Yamaha in countries as far apart as Holland, the USA, Japan and Brazil. The company has expanded to make motorcycles, snowmobiles, automotive engines, generators, sailboats, power boats, outboard marine engines, karts, swimming pools and even administers a network of leisure centres!

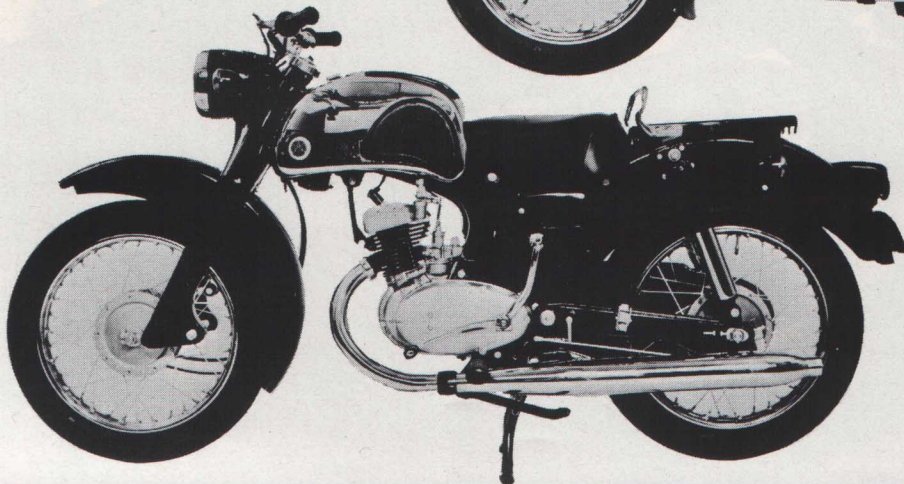
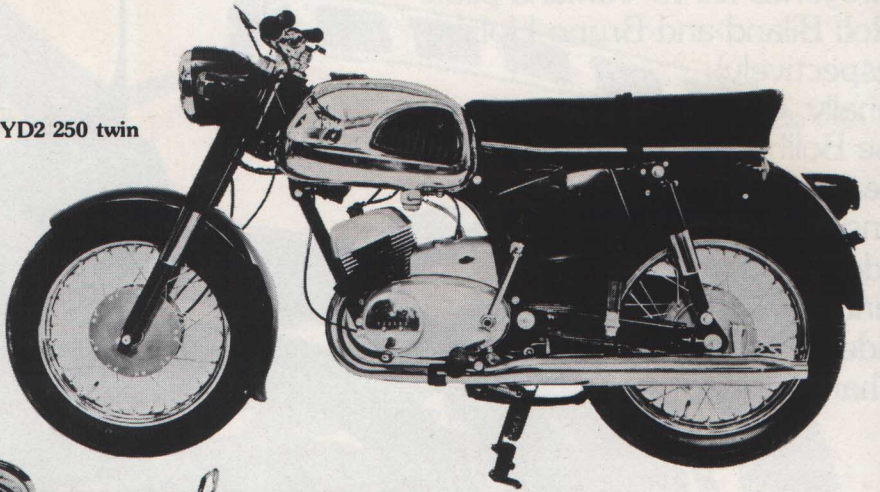
Motorcycle output is almost 2 million machines a year, with over 1 million being exported into the world markets. Approximately 100,000 outboard engines, 150,000 boats and 50,000 snowmobiles are also produced by Yamaha each year!

Mr Kawakami, the architect of all this, retired a few years ago, a man satisfied that the giant that he created continues to expand from strength to strength.



The "Red Dragonfly"

The 1957 YD2 250 twin



The 1957 YA3 125

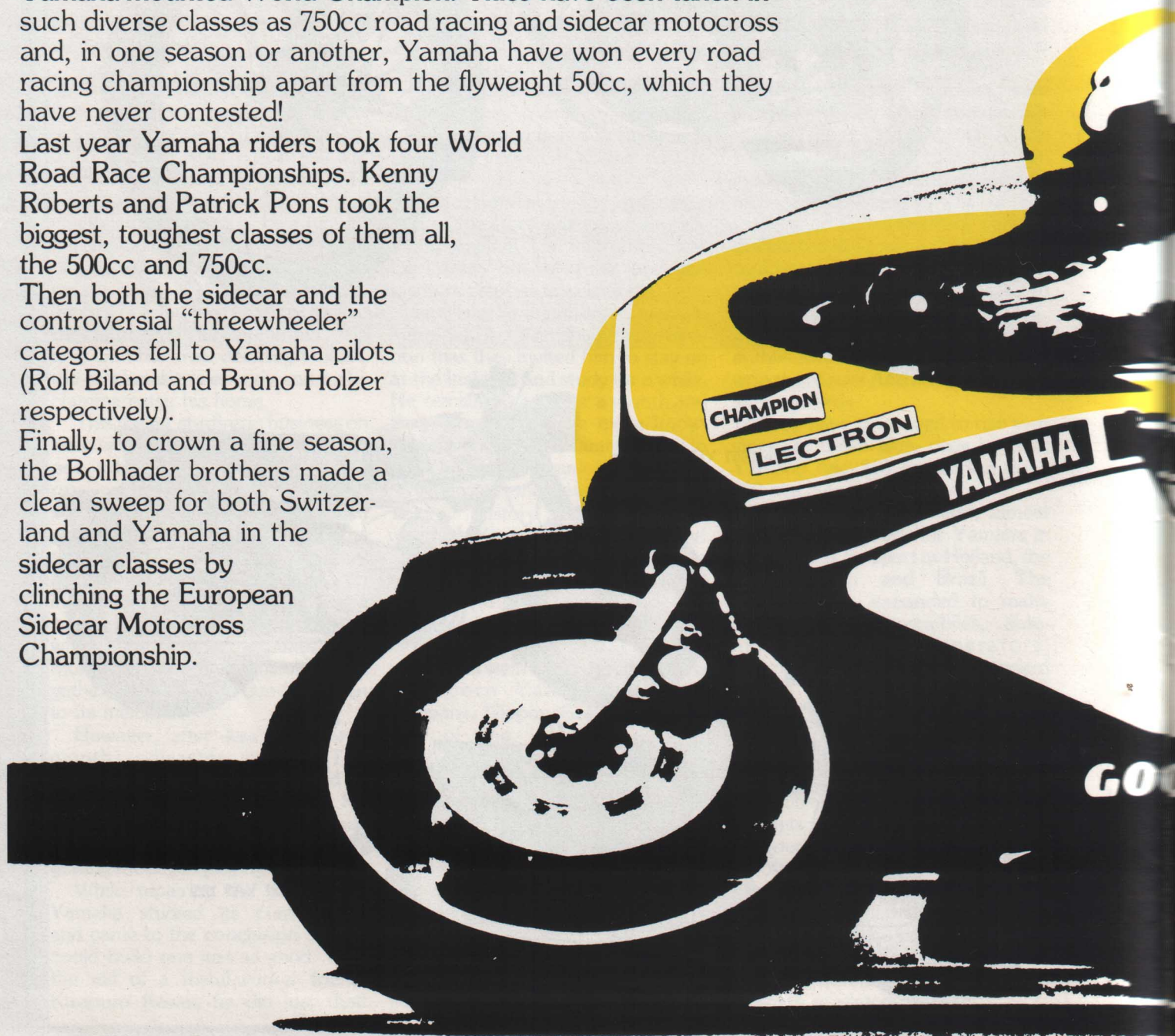
Championship Year 1979

In the past decade there has never been a season without a Yamaha-mounted World Champion. Titles have been taken in such diverse classes as 750cc road racing and sidecar motocross and, in one season or another, Yamaha have won every road racing championship apart from the flyweight 50cc, which they have never contested!

Last year Yamaha riders took four World Road Race Championships. Kenny Roberts and Patrick Pons took the biggest, toughest classes of them all, the 500cc and 750cc.

Then both the sidecar and the controversial "threewheeler" categories fell to Yamaha pilots (Rolf Biland and Bruno Holzer respectively).

Finally, to crown a fine season, the Bollhader brothers made a clean sweep for both Switzerland and Yamaha in the sidecar classes by clinching the European Sidecar Motocross Championship.



GO

KENNY ROBERTS, the forceful young American who took the 500cc road racing title for Yamaha in 1978 (his World Championship debut year) started out 1979 at a distinct disadvantage.

In fact, he began the year in a Japanese hospital bed thanks to a 150mph crash during pre-season testing. Roberts crushed some vertebrae in his back and ruptured his spleen in what was the worst-ever accident of his high-speed career.

He was certain to miss the opening Grand Prix of the year in Venezuela and many observers felt that he would be unable to overcome this early-season setback.

How wrong they were! The tough little Californian was back on a motorcycle little more than a month after the February accident. He did

miss the Venezuelan opener, where victory went to his 1978 arch-rival, Barry Sheene, but appeared for the first European Grand Prix of the year at Austria in April.

Any doubts about his comeback ability were immediately dispelled at the Salzburgring. He smashed the lap record and dominated the race to win from Suzuki men, Virginio Ferrari and Wil Hartog. Roberts was well and truly back - in fact, he had never really been away!

Then followed a scintillating string of Grand Prix performances. Still strapped into a back-support, Roberts finished second in Germany to Wil Hartog and then swept to three GP wins in succession ... Italy, Spain and Yugoslavia.

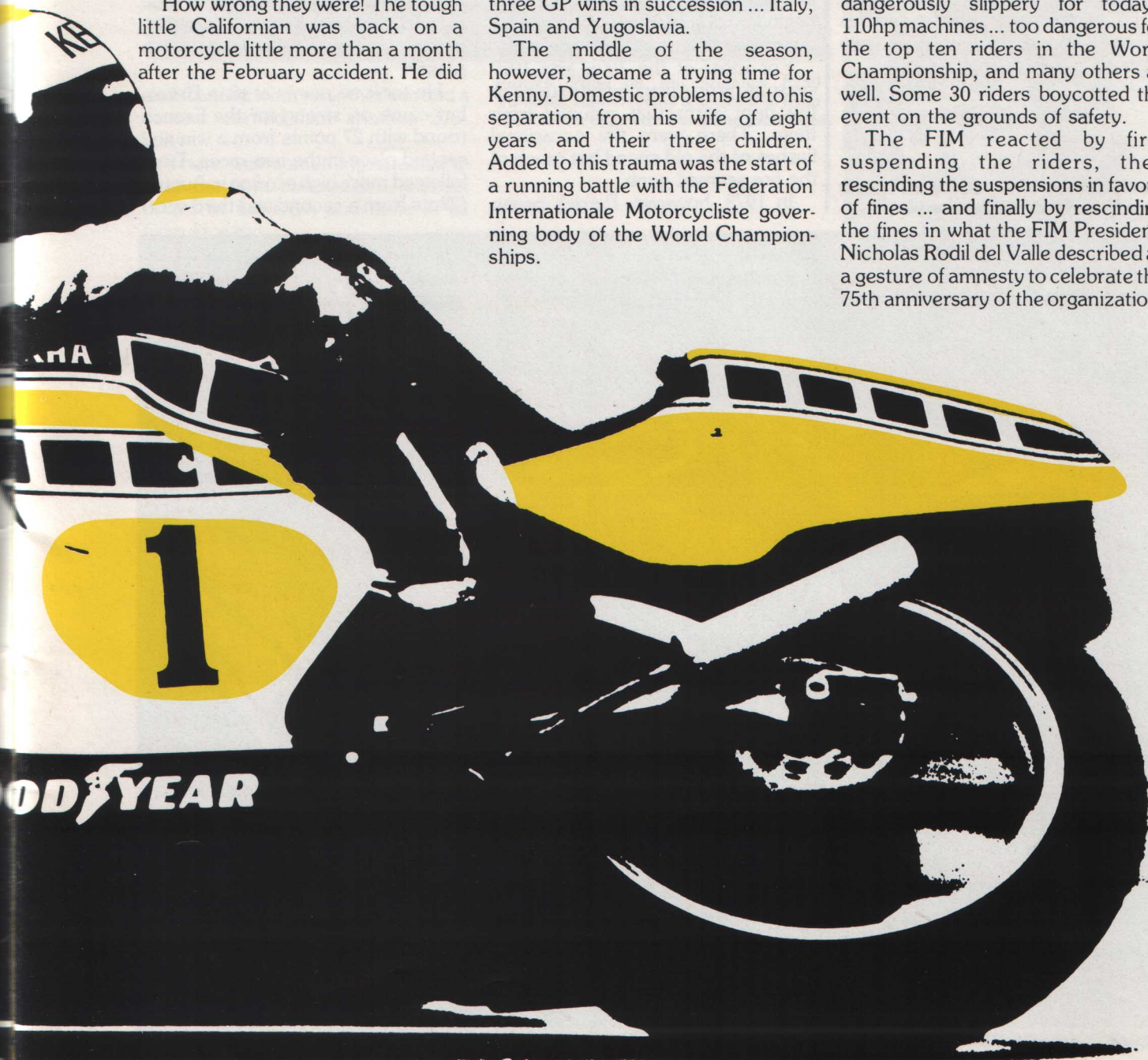
The middle of the season, however, became a trying time for Kenny. Domestic problems led to his separation from his wife of eight years and their three children. Added to this trauma was the start of a running battle with the Federation Internationale Motorcycliste governing body of the World Championships.

In Spain, Roberts felt that the organizers had not paid him monies due to him under the FIM regulations. After winning the event he registered his protest by refusing to accept the winner's garland on the victory rostrum.

Halfway through the season, in the Dutch GP a combination of these troubles plus a wrong choice of tyre kept Kenny in eighth place and then, the following week in Belgium, trouble with the FIM loomed larger than ever.

A new, shorter circuit at Spa-Francorchamps had been completed only a short time before the race. The track surface was dangerously slippery for today's 110hp machines ... too dangerous for the top ten riders in the World Championship, and many others as well. Some 30 riders boycotted the event on the grounds of safety.

The FIM reacted by first suspending the riders, then rescinding the suspensions in favour of fines ... and finally by rescinding the fines in what the FIM President, Nicholas Rodil del Valle described as a gesture of amnesty to celebrate the 75th anniversary of the organization.



Two more off-peak performances followed for Roberts. He was only fourth in Sweden and sixth in Finland.

At the British Grand Prix however, Kenny got it all back together. His mid-season slump had put both Virginio Ferrari and Barry Sheene within striking distance but, after a titanic battle, Kenny won the event by a matter of inches from Sheene. Ferrari was fourth, which meant that the title was just one point away from Roberts' grasp ... with just the French GP to go.

Kenny made no mistake in France, dicing with Randy Mamola and Barry Sheene for the lead but then settling for a safe third place, ten Championship points and his second World title in just two seasons of GP racing!

Kenny Roberts on his way to his second successive World Championship.

PATRICK PONS began racing in 1971 and within a couple of seasons the teenage ski-racer had been snapped up by French Yamaha importer, Sonauto.

At that time he had all the makings of a superstar, despite a penchant for crashing due to trying too hard in places where discretion would have been the better part of valour!

In 1973, the young Patrick was third in both 250 and 350cc World Championships and the following year placed fifth in both categories as well as second in the F750 class.

A year later he was out of the limelight in the lightweight championships but still managed a third place in F750 ratings. It was, however, the beginning of something of a slump for the personable young Frenchman.

For most of the 1976 and 1977 seasons he was plagued by injuries or the poor form that resulted from them. There were the occasional flashes of the old speed but much of the fire seemed gone.

In 1978, however, Patrick began

the climb back. Sonauto had remained solidly behind him through the lean years and were equally as gratified as Patrick when he climbed back to fifth spot in the F750 table.

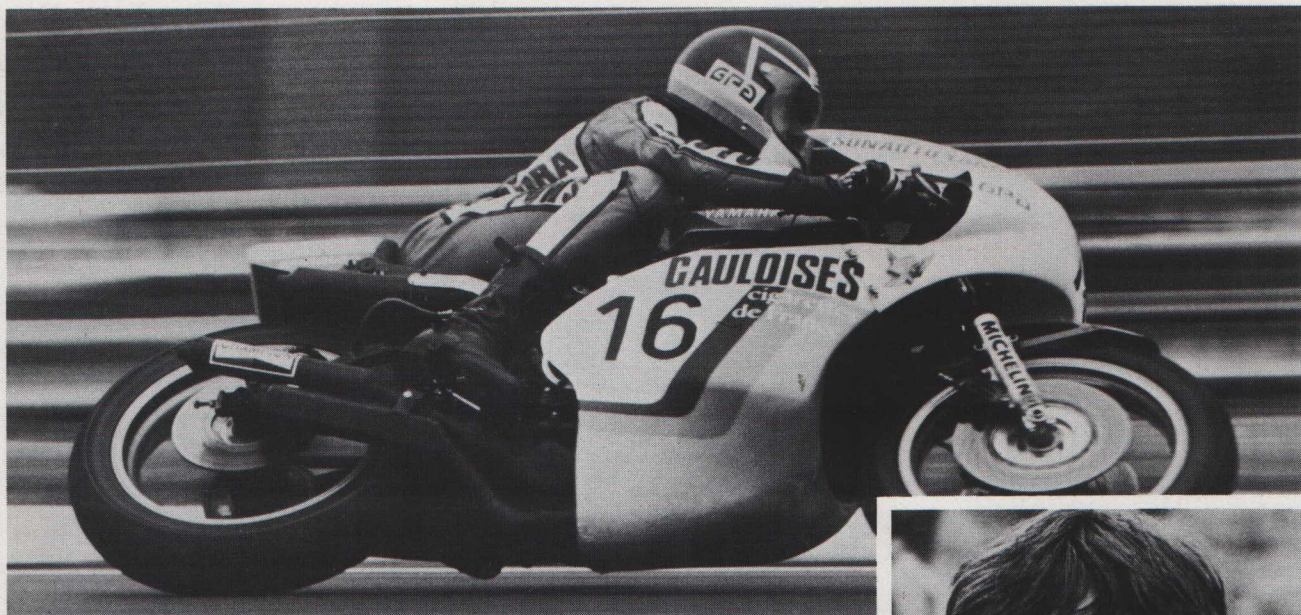
Sonauto sensed that Patrick was really ready to do business once again and put all their weight behind him in an attempt to win the Formula 750 category in 1979 ... the last year that the class would be included in the World Championships.

F750 racing is scored moto-cross style, with two races each carrying 15 championship points and victory going to the high-point scorer at the meeting.

Patrick didn't finish the first heat at the season-opener in Italy but took second spot in the other to earn 12 points ... a reasonable start to the season.

He took no points at all in Britain but came on strong for the French round with 27 points from a win and second place in the two races. Then followed more high scoring in Austria (22pts from a second and third spot)





Patrick Pons on the Sonauto F750 Yamaha, supported by sponsorship from the French cigarette company Gauloises.

and Canada where another win and a second earned him another 27pt tally.

There was something of a slump over the next two races ... just six points in the USA and none at all from Holland.

In Germany, however, there came a magnificent "maximum" ... two wins and 30 valuable points.

This practically put the title in his grasp and third place overall in Yugoslavia (with 20 points against the 27 scored by both of his

Championship rivals, Michel Frutschi and Johnny Cecotto) made it certain.

Patrick Pons had finally taken the title which had been predicted for him as far back as 1973 ... France's first-ever Champion of the World.



ROLF BILAND is the man who first tried World Championship sidecar racing with the four-cylinder Yamaha engine ... the leader in a movement which has since come to dominate the three-wheeled scene. This year only two of the top 30 sidecars in championship standings were not Yamahas, with the best position that any non-Yamaha machine was able to make being 13th! So Biland obviously started something big when he turned out that first Seymaz outfit using an F750 power unit with TZ250 cylinders reducing its capacity to the required 500cc.

Biland, in fact, is the prime innovator on the sidecar scene. He was the first driver to use the hub-centre steering Seymaz chassis to win a Grand Prix. He was the first driver to use the unique "flying saucer" Schmid chassis with success, almost winning the World title with it in 1977.

And, of course, he appeared in 1978 with the highly-controversial BEO-Yamaha that was more racecar



than sidecar. Both rear wheels were driven and passenger Kenny Williams had nothing to do except lay prone in his special compartment.

The BEO was totally within the rules but brought howls of outrage from Biland's rivals. Especially when he dominated the World Championship that year. What they

failed to mention was that Biland scored many of his Championship points with a conventional TTM - Yamaha. He won the title because he was the better driver, not because of any machine advantage.

Despite this, the protests about the BEO were so numerous that the FIM banned that and other similar hub-steering machines for 1979.

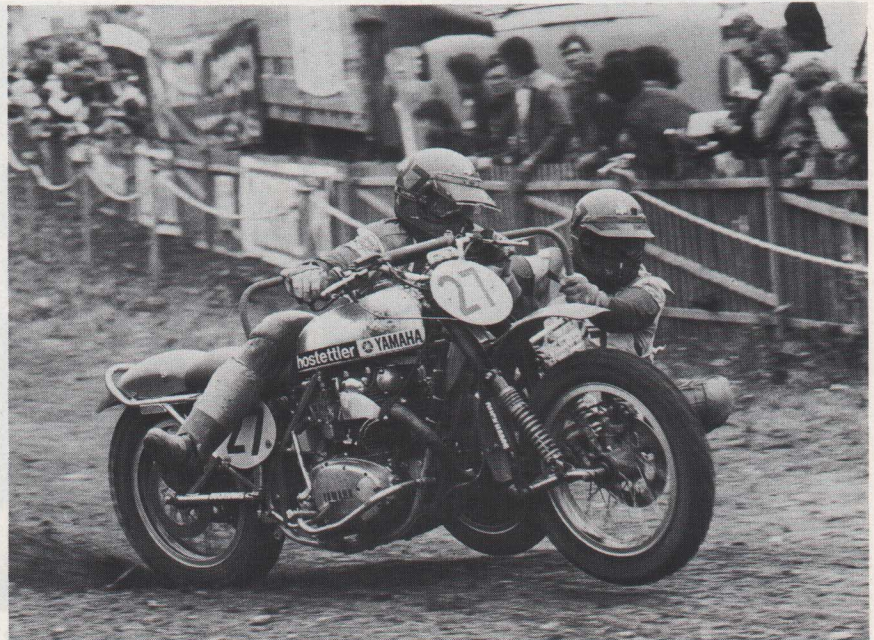
Then, in a typical about-face, they rescinded the ban and took the step of running two sidecar championships in 1979. One for hub-steering "threewheelers" and the other for conventional outfits.

Reigning Champion, Biland, and new passenger, Kurt Waltisberger, elected to try and win them both. For most of the season it looked as though they would succeed.

Though the duo took no points at all from the opening rounds in Austria and Germany, a win in Holland plus a second place in Belgium and a third in Sweden brought them into contention with leader Rolf Steinhausen (also Yamaha).

Then, with poor Steinhausen finishing the season on a dismal note - just six points from three races - Biland came on strong. He took maximum points with wins in Britain and Czechoslovakia and a second World Championship was his.

There was disappointment and pain to come, however. The Swiss star won rounds of the "three-wheeler" championship with his new LCR-Yamaha in both Austria and Sweden. He missed scoring in England but took two more wins in Germany and France. With four wins from five races and just one round to go, it seemed certain that Biland would have the unique honour of winning three sidecar World Championships in two



The Swiss Bollhader brothers brought Yamaha the European Sidecar Motocross Championship in 1979.

seasons!

On the fast swerves of the Assen circuit in Holland, however, Biland flipped the LCR and broke his arm.

The win went to France's Alain Michel, but more important, second place went to Biland's team-mate Bruno Holzer.

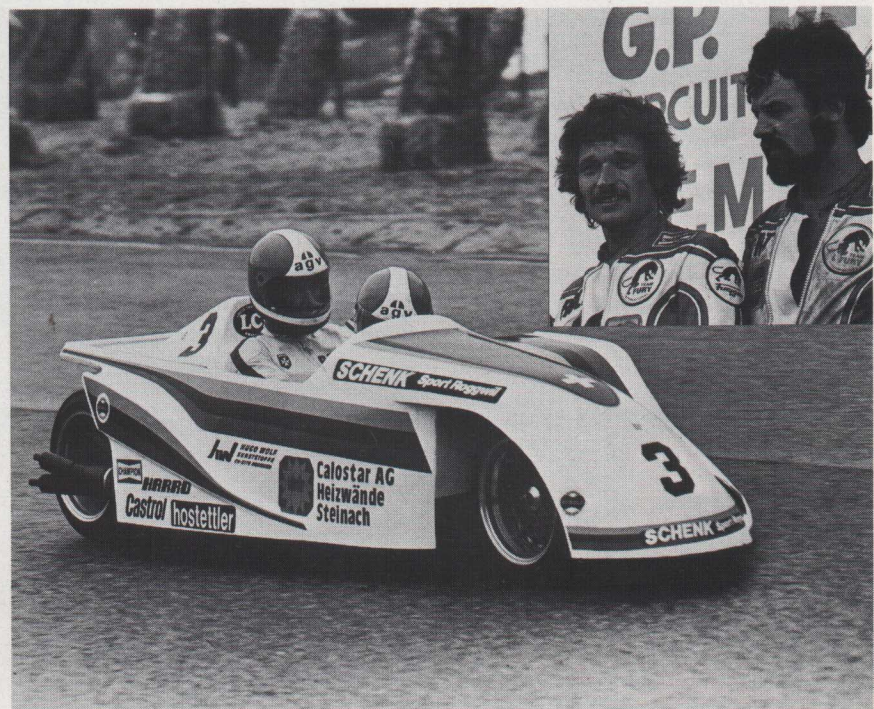
The non-finishes in Britain and Holland cost Biland dear. Running consistently all year, and scoring points in every race, Holzer pulled a last-minute surprise to snatch the

"threewheeler" title from under Biland's nose!

BRUNO HOLZER could hardly have had a more consistent season than the one which led to his 1979 World Championship in the "three-wheeler" category.

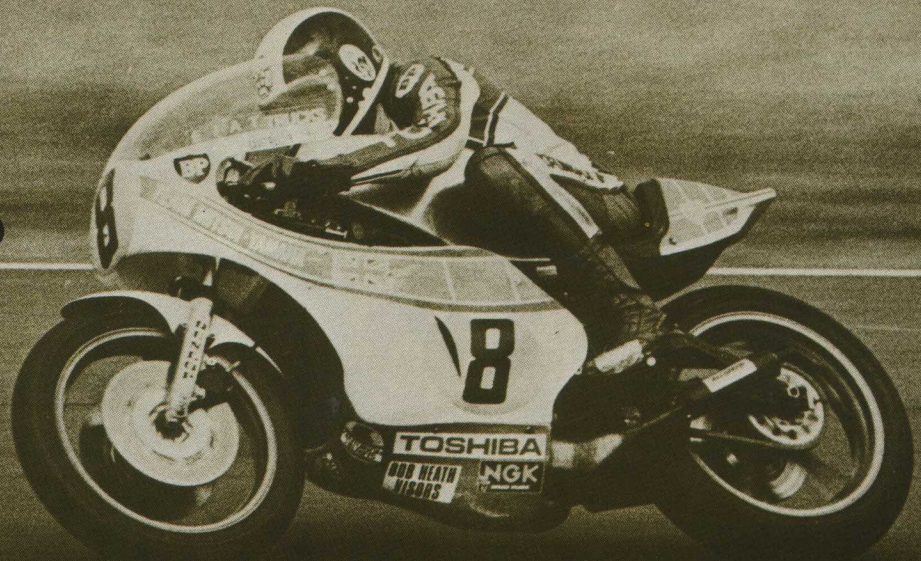
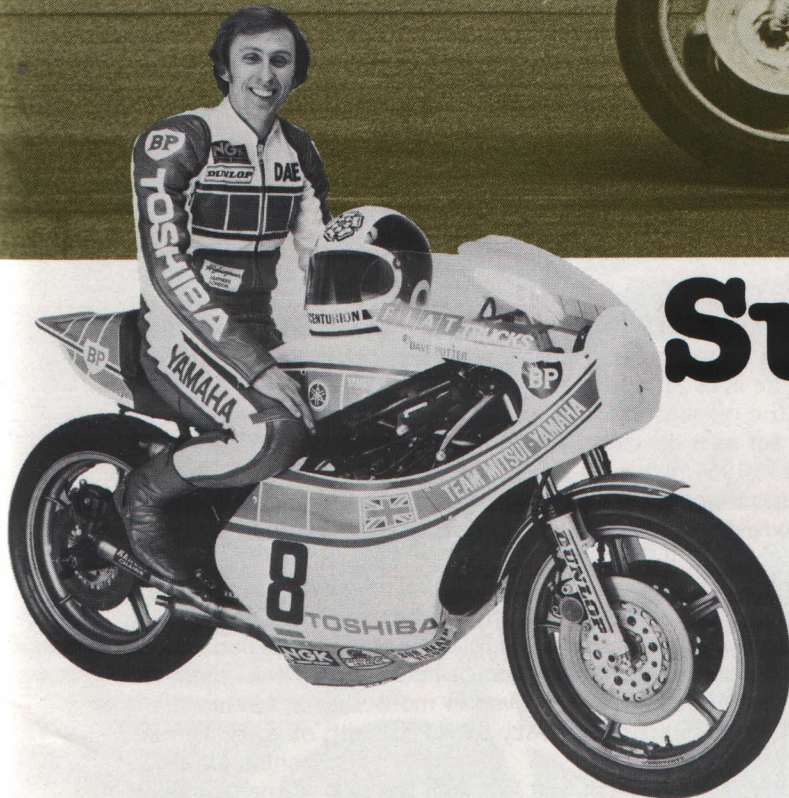
He finished second in every race of the six event series, with the aid of passenger Klaus Meirhaus!

In fact, a similar consistent performance during 1978 netted him third place in the World Championship ... though he did have a win that year in the ultra-fast Belgian GP.



Consistent Bruno Holzer and passenger Karl Meierhaus took World Championship honours in the "threewheeler" category, thus making it a clean sweep of sidecar titles for both Switzerland and Yamaha.

Dave Potter



Superbike Champ

The most prestigious Championship series in British road racing is the MCN Superbike Series, sponsored by big-selling British newspaper "Motor Cycle News" and the Duckhams Oil Company. Over the season it features rounds at all the major English racetracks - Brands Hatch, Mallory Park, Oulton Park, Snetterton, Donington, Scarborough and Cadwell Park - and attracts top international stars from the British ranks.

In past years the series has been the almost-exclusive property of Barry Sheene and his Suzuki....but 1979 was a Yamaha year.

Thanks to likeable rider Dave Potter and engine-builder Ted Broad, the Team Mitsui Yamaha 750 swept the title up in storybook fashionPotter caught and passed his closest rival on the last bend of the last lap of the last race of the series!

Even more incredible is the fact that Potter rode the whole season with a broken collar-bone pinned in place. Only after he had clinched the title did he go to hospital to have the bone properly set and the pins removed. Dave broke the collar bone in the very first race of the season, when he unavoidably hit a fallen rider at Donington Park. The doctor who treated Dave knew that he was a professional racer and gave him the choice of an immediate pinning operation or six weeks out of action for the bone to heal in the natural way.

A professional racer needs to race to earn a living, so Dave naturally chose the pinning operation. He missed the first round of the Superbike Series but just ten days after the operation was in the saddle for the TransAtlantic Trophy Series. Critics said he never should have been riding so quickly but he confounded them by being the second-best scorer on the eight-man British squad that got a drubbing at the hands of the Americans.

Then came Crash Number Two. While dicing with Ron Haslam, his season-long rival in the Superbike Series, Dave hit a patch of water at Oulton Park and slid off. One of the three pins holding his collar-bone together broke loose and it was back to hospital again ... this time for the insertion of a bracing plate and four holding screws! Throughout the season the collar-bone aggravated Dave, and more crashes at Cadwell Park, Silverstone and Sugo, Japan didn't help. Despite all this, however, he managed to pile up enough points in the series to pull level with Ron Haslam with just one round to go.

The final round was at Brands Hatch ... and everything hinged upon it. Potter sat in Haslam's slipstream for most of the event, riding a tactical race, assessing where his rival was slower than he, and vice versa.

"With six laps to go I knew that I would have to do it on the last lap" said Dave. "The shoulder was hurting me and I didn't feel that I could handle the pressure if I went by him earlier and then had to fight to hold him off. I just had to surprise him on the last lap.

"I knew that he was slower than I was out of the last corner so I decided that had to be the place. If I got him there, he wouldn't have a chance to get back. It was all or nothing".

"Get him" Dave did ... he took a tighter line than Ron, squeezed by him and cut him off from his faster exit line.

Dave shot across the finish line less than a bike's length ahead! A spectacular finish to a spectacular season-long battle between two of Britain's best.

Farewell to a motocross SUPERSTAR

Heikki Mikkola - one of the greatest riders ever to straddle a motocross machine - has retired when still at what many people consider to be the peak of his career. The tough Finn, however, has standards way above those of most people on the motocross scene and, after a season beset by injuries, has decided that time has come to retire from championship racing. Mikkola won't be lost to motocross enthusiasts, however, as he has been retained by Yamaha in an advisory capacity for the 1980 season.

Concentrating mainly upon the 500cc World Championship Series, 34 year old Heikki will act as an advisor upon team strategy and preparation. He will also scout promising young riders for future seasons and will act as a liaison man between the Yamaha team and the motorcycle press. He will base himself at home in Finland, where he lives at Hyvinkaa with his wife, ten year old daughter and five year old son. There, after spending the off-season at his favourite pastime of hunting, Heikki will also act as a development and test rider for future Yamahas.

Heikki's fifteen-year career in motocross began in 1964, when he combined the sport with enduros, ice-racing and snowmobile events. Concentrating upon motocross he was signed to the Husqvarna team in 1968. By 1974 he had hit peak form and wrested the World 500cc Motocross Championship from Roger De Coster.

The Belgian took it back in 1975, after a tough battle all season with Heikki. Then, when Mikkola felt confident of regaining the crown in 1976, Husqvarna inexplicably switched him to the less-important 250cc class. It won them, and Heikki, another World Championship but Mikkola was dissatisfied. It was the 500cc crown that he wanted, the most important motocross championship of them all.

It was at this point that Yamaha stepped in. They had not been involved in motocross at factory team level for two years and many people thought that Mikkola was crazy to pin his faith on a totally new machine for 1977.

By season's end the doubters had to eat their words. In the very first GP with the new Yamaha, Heikki got into the points with a third and fifth place in the two motos. Two weeks later in Holland he led both motos from start to finish and the die was cast. From that point until he clinched the Championship, he had just one retirement and never finished lower than fourth. Most of the time he was way out in front, collecting maximum points!

If anything, the 1978 season was even more devastating. Mikkola and the Yamaha were rarely challenged and he brought Yamaha their second World Championship in two years ... the fourth in his career.

The 1979 season brought disappointment, however, Heikki badly injured his knee just before the first race of the season and, though he struggled to complete the opening Grand Prix he was forced to quit.

All through the early part of the season the leg bothered him but, even so, he still pulled himself into contention for his third World Championship by mid-season. Just as it seemed the leg was back to full-strength, and just as he hit winning form, there came another crash, at the Canadian GP. The knee was injured again, some ribs were cracked and that was effectively the end of Heikki's bid for a third title. As it turned out, it was effectively the end of Heikki's riding career though no-one realised it at the time.

Therefore, Heikki will be spending the 1980 motocross season in the pits. It's bad news for the thousands of motocross fans all over the world but there isn't one of them who will begrudge "one of the greatest" a well-earned rest!



1980 MOTOCROSS TEAM REVIEW

Yamaha have another World Champion on their books for the 1980 motocross season, despite the retirement of double champion, Heikki Mikkola.

World 250cc Champion, Hakan Carlqvist of Sweden, is following in Mikkola's footsteps by moving from Husqvarna the year after winning the 250cc crown and pinning his faith on Yamaha in the much-tougher but more-prestigious 500cc class.

If the switch works as well for Carlqvist as it did for Mikkola, the Swede will be World 500cc Champion by season's end!

Carlqvist was born in Stockholm 26 years ago and was a Swedish professional ice hockey player before turning to motocross in 1971.

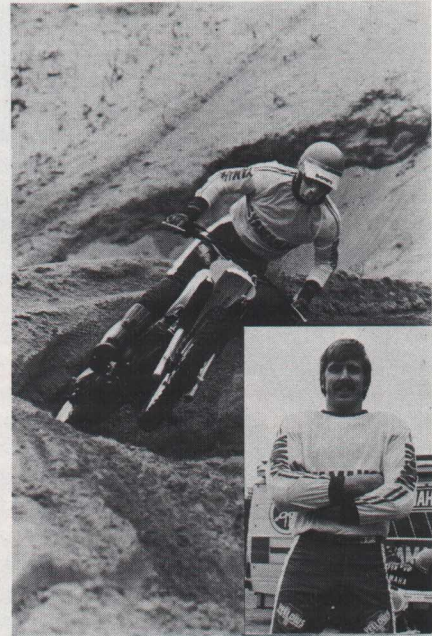
Five years after starting his motocross career, Hakan was signed

to ride factory OSSA machines for the Spanish company's Swedish importer and a year later achieved what every young Swedish motocrosser dreams of ... a place on the Husqvarna team.

In 1978 he won his first Grand Prix, the opening round of the 250cc season in Spain, and he finished that season seventh in overall standings.

Last season saw him break away from the challenge of young Britisher, Neil Hudson, in the final rounds to take the World 250cc Championship.

Hakan, whose hobbies are flying and tennis, attributes much of his success to his mechanic, former motocross rider, Tommy Jansson. Tommy will remain with Hakan for 1980, hoping that his young protegee can repeat the departed Mikkola's feat of 250cc and 500cc Championships in successive years.



Today Marc Velkeneers is being hailed by the Belgian press as the most promising young motocross rider in the country and rightly so. Since he started racing at age 14, Marc has won more than 70 races, all of them on Yamaha.

Motocross to 18-year-old Marc is his whole life and that is the key to his success. He got his first machine - a Yamaha 125 MX - when he was 10 and has ridden only Yamaha ever since.

Marc won 10 races on a 125 MX his first year as a junior and then switched at 15 to the 250cc class on a Yamaha 175. When he was 16, Marc joined the senior ranks and won the 125 MX National Championship. That was in 1978 and Marc was ready for the 1979 125 MX GP trail. At the last minute however, he was forbidden to ride for points by the FIM because of his age. He spent the 1979 season duelling some of Belgium's top riders in national races, often coming out on top. For experience, Marc entered the 125



MX Grand Prix of Belgium and finished second. Later in the season he took a third place in the 125 MX Grand Prix of Germany. Even though Marc couldn't receive points, he proved he could ride with the best.

Marc, who lives with his family in Heers, Belgium, is a protégé of Lucien Tilkens, the man who invented monoshock suspension. Tilkens believes that Marc has the talent to bring a 125 MX World Title to Yamaha in 1980.

1980 MOTOCROSS TEAM REVIEW

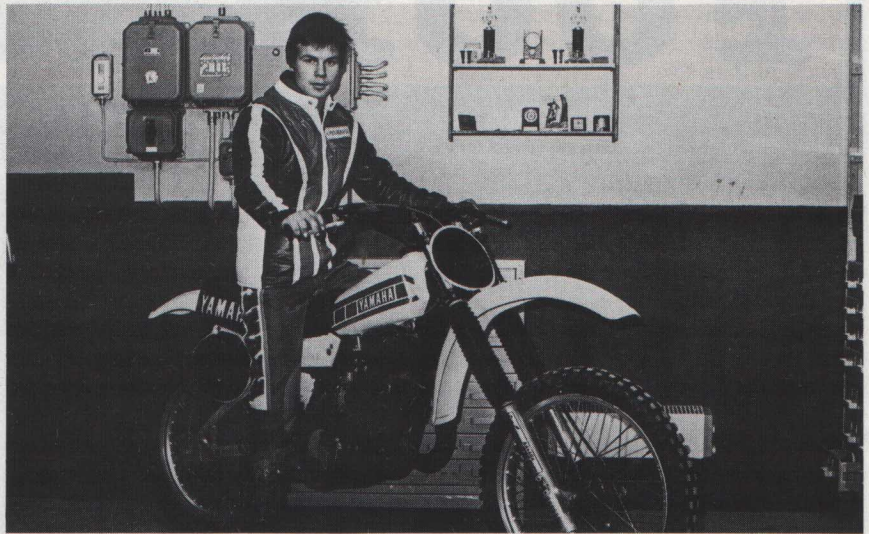
1980 MOTOCROSS TEAM REVIEW

Twenty year old Swede, Jeff Nilsson, has a lot to live up to in the world of motocross for his father is none other than the legendary Bill Nilsson, the first-ever World Motocross Champion!

Now Bill is his son's greatest supporter and would like nothing more than to see his son repeat his feat more than two decades on.

Like Hakan Carlqvist, Jeff played the tough game of ice hockey in his youth but turned to motocross in 1973.

A year later he finished third in the Swedish 125cc Junior standings. As well as motocross he was riding long-distance enduro events and in 1976 became Swedish Junior Champion in that branch of racing. Spurred on by this success he concentrated upon enduros, moving up to the senior class. In 1977 he was third in the 125cc Senior category and 2nd in the same class for 1978. He also entered the classic International Six Days Trial, winning a silver medal.



But the speed of motocross was to lure him back in 1979. He moved from the Husqvarna factory to Yamaha, entering the Swedish 125cc MX Championships. Two victories in the first two races got him off to a great start but then he was unfortunately injured in a non-Championship event. Despite this,

his early-season placings were enough to give him second place in Championship standings.

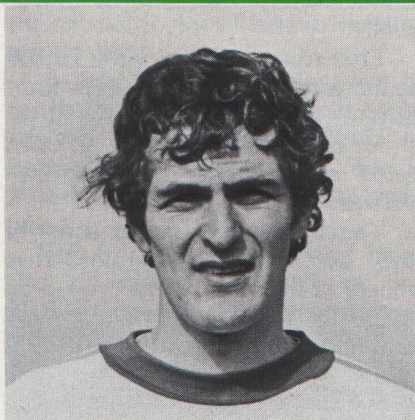
Now Jeff moves on to the World Championship trail in the 125cc class for Yamaha and many Scandinavian observers feel that he has the talent to follow in his father's illustrious footsteps.

Andre Vromans has been under the influence of motocross racing since the day he was born but football was his first love until a knee injury took him off the field when he was 16.

Andre then decided it was time to follow in the footsteps of his father, Harrie who was a top National rider until he retired three years ago.

His first ride, at age 16, was aboard a 400cc Husqvarna and his first win came that same year at Weerlé, Belgium. Andre rode two years as a junior on his Husqvarna then switched to KTM and the seniors. He was twice National Champion, in 1973 and again in 1974. In 1975 he won the Under 21-years-old European Championship and in 1976 tried his hand at two Grands Prix.

But it wasn't until 1977 that Andre tackled the 500cc GP trail full time, riding for Belgium's Suzuki importer. That year he finished 11th in the standings but moved up to 7th in



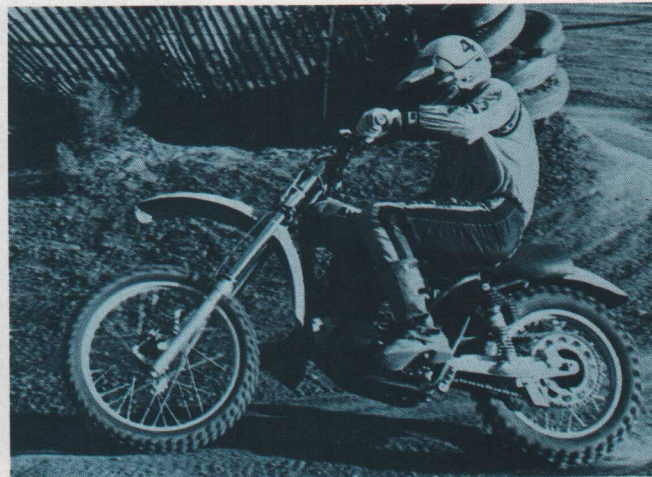
1978 and 1979. Andre also finished second in this year's Belgium National Championship.

Now 22 years old, Andre is married and makes his home with his wife Marianne in Arendank, Belgium. Renowned as a sand track expert, and winner this year of 11 races out of 47 entered, Vromans will join Hakan Carlqvist in trying to bring back the world 500cc motocross championship to Yamaha in 1980.



1980 MOTOCROSS TEAM REVIEW

FOUR-STROKE



These two shots of Pierre Karsmakers at the same spot on the Carlsbad USGP course show how much sooner you can turn on the power with the HL500. With the YZ465 (left) he has yet to start accelerating hard. The HL500, however, has the power tuned on all the way as can be seen by the fact that the front forks are fully-extended and rear shocks compressed by weight transfer to the rear under heavy acceleration.

Although all of the Japanese motorcycle manufacturers offer a four-stroke off-road machine in their range these days, there is only one of them which has dared to lay its reputation on the line in World Championship competition. That one, of course, is Yamaha. In 1977, a combination of Yamaha's basic XT500 four-stroke power unit, the engineering expertise of former World Motocross Champions, Torsten Hallman and Sten Lundin, and the riding ability of another ex-World Champ, Bengt Aberg, led to the first Grand Prix victory by a four-stroke motorcycle in almost ten years!

Torsten Hallman and his partner, Stafan Eneqvist, are the Swedish importers of Yamaha and they saw a competition potential in the XT500 power unit which very few other people recognised. Together with fellow Swedes, Lundin and Aberg, they embarked upon a project to design and build a special XT500-based machine for the 1977 Grand Prix season.

Throughout that season Aberg scored several good placings and everything finally clicked together in the Luxembourg GP just before the season's end. Bengt won the event and the four-stroke was no longer the forgotten dinosaur of the motocross world.

In 1978 the Yamaha HL500 was unveiled - an exact replica of Aberg's GP-winner. The model designation was, in fact, a tribute to the machine's creators ... Hallman and Lundin, whose initials form the HL prefix.

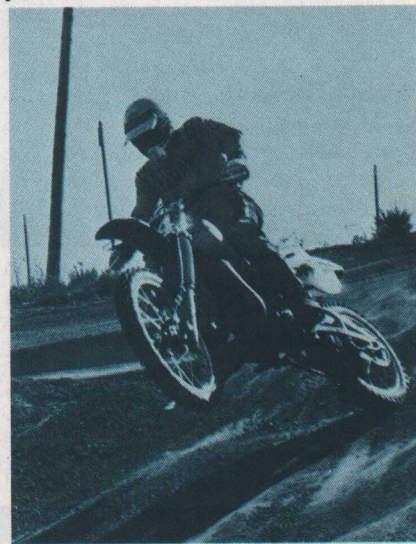
True to expectations, the HL500 found a ready market with the four-stroke enthusiasts. But what of those customers who have an open mind on the merits of four-strokes versus two-strokes.

Yamaha already builds some of the best two-stroke motocross racers in the world ... as proved by

Heikki Mikkola's successive World Championships in 1977 and 1978 and countless other Grand Prix and International wins all over the world.

The production YZ models have always been virtually identical to Yamaha's factory racers so, with such a machine as this already available, why should someone choose the four-stroke HL500 instead?

Frankly, under most conditions, the two-stroke is the faster machine and is more likely to bring success to the rider capable of handling its power.



Flying the HL500 (left) and the YZ465 downhill from a banked hairpin turn.

OR TWO?

So, why buy the less-powerful four-stroke? Quite honestly, because the very power of the YZ two-stroke can be an embarrassment rather than an advantage to less-experienced riders. In fact, there are many types of circuits where even top-line Grand Prix racers would willingly trade the outright power of the two-stroke for the smooth ride of the "thumper".

To outline the type of situation where four strokes are better than two - and vice versa - we enlisted the aid of one of the big names of motocross, Pierre Karsmakers. Dutchman Pierre has several Grand Prix wins to his credit and also has the distinction of having held both the Dutch and the American National Championships!

It was in America where we caught up with Pierre, training for the American Motorcycle Association's Four-Stroke National Championships on the famous United States Grand Prix course at Carlsbad in California.

Pierre combined his training on the HL500 with sessions on a new YZ465 model and was thus able to graphically demonstrate the advantages of one machine against the other.

Karsmakers was no stranger to the four-stroke power unit for in the



In the air with the HL500

1978/79 winter he used an HL500 to win a special four-stroke event at the Valkenswaard Eurocircuit in Holland. He was aiming to win at Carlsbad to make himself the "number one" four-stroke rider on both sides of the Atlantic.

Without a doubt, the HL500 is the finest four-stroke motocross machine available to the general public. The XT500 engine has had its power output boosted by means of a special cylinder head with 47mm inlet valve and 39mm exhaust. A special camshaft gives longer valve openings while fuel is supplied via a huge 38mm Mikuni carburetor.

All this adds up to a 38bhp power unit delivering smooth, controllable horsepower right up to the 7,000rpm maximum power point. Maximum torque is delivered midway through the rev-band, 4.15kg-m at 4,000rpm.

The chrome-moly frame utilises the large-diameter top-tube as a 2.7 litre oil tank, with a gauze filter aiding the normal engine oil filter in keeping the oil clean.

A special alloy swinging arm is terrifically strong, despite only weighing 3 kilograms. In conjunction with a De Carbon shock absorber, it gives 250mm of rear wheel travel.

The front forks and wheel from the YZ model are used on the HL500, so that front and rear suspension travel are equal to that of the YZ monoshocks.

Obviously the power of the two-stroke far exceeds that of the HL500. Peaking at 7,000rpm, the YZ465 puts out no less than 52 horsepower! It also develops maximum torque of 5.66kg-m at 5000rpm!

But, as we said earlier, this much power can be an embarrassment to less-experienced riders ... or even to the superstars on certain types of terrain.

"I would choose the HL500 for any track that had mainly hard and slippery surfaces" says Pierre Karsmakers. "Surfaces like hard clay with a coating of dust, or smooth grass".

"On this type of track, the smooth

power delivery of the HL500 would make for quicker lap times. It would be going forward all the time, whereas the YZ, with all that power, would be spending a lot of its time either spinning the rear wheel or getting sideways!"

Pierre went on, "I would also choose the HL500 for tracks that featured a lot of deep muddy sections. It would suffer a little because of its greater weight (115kg as compared to the 102kg of the YZ465) but the fact that it develops maximum torque at only 4,000rpm would enable it to pull through the mud like a tractor."

The HL500 would not be as good as the YZ in deep sand, however. "For sand you need a lightweight bike that develops its power with a rush" says Pierre. "That way you burst free of the sand and virtually float on top of it. You can't do that with mud ... which is why you need power like a tractor."

So ... if you are facing a choice between the HL500 or the YZ400 there are several factors to consider. First of all, personal preference. Many people simply prefer the roar of a four-stroke to the two-stroke's buzz-saw rattle.

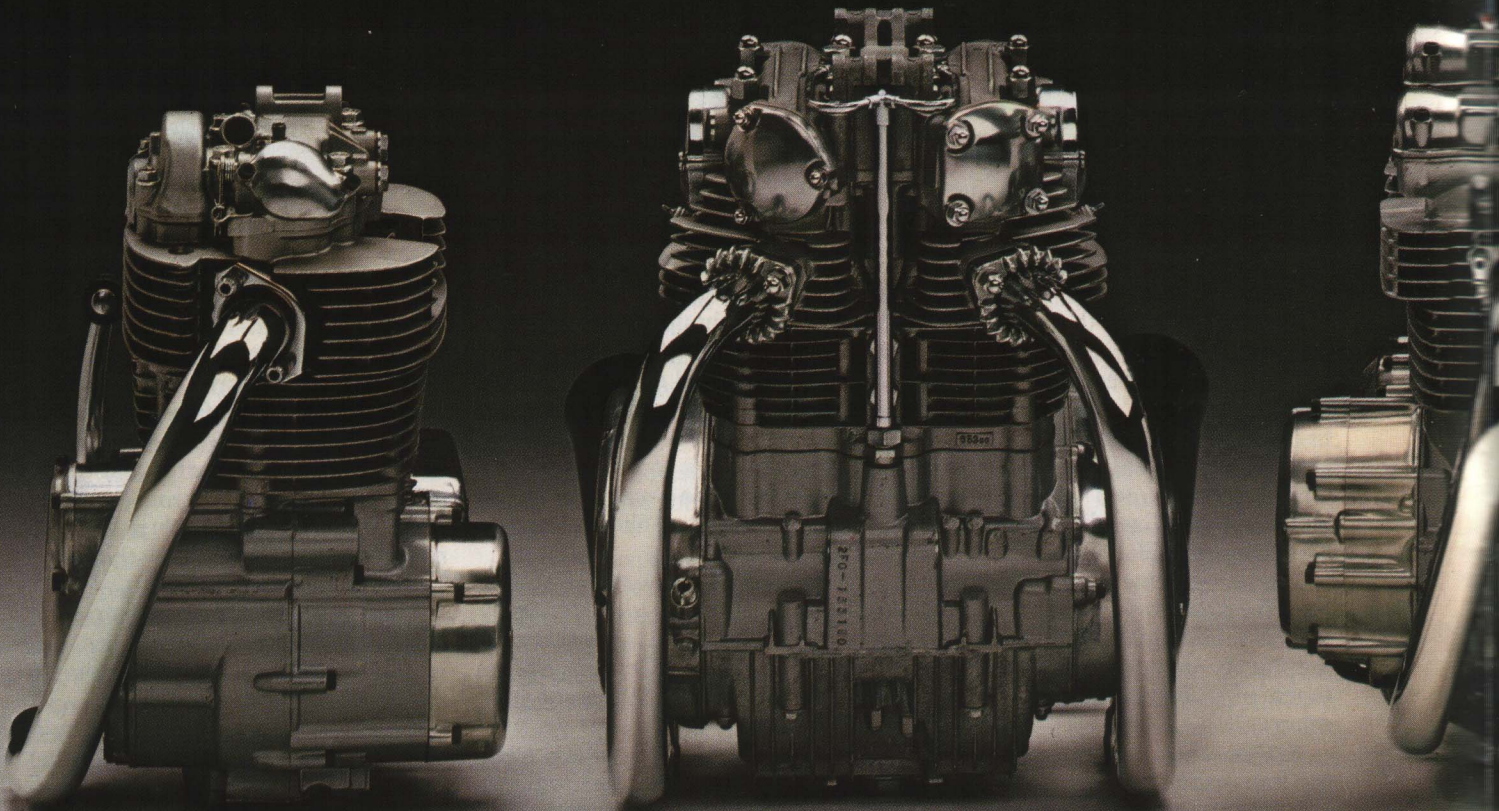
Next, consider the main types of track that you will be riding upon and match your choice of machine to them.

Finally, and this is most important of all, make sure that you choose the bike that has the power output most suited to your riding abilities. The YZ465 undoubtedly has the edge in horsepower. But it's no good to you if you can't handle all the power available. Far better that you choose the smooth controllability of the HL500.

After all, horsepower isn't everything in motocross. Pierre Karsmakers proved that by achieving his aim of winning the American Four-Stroke Nationals at Carlsbad and in the process posted faster lap times than he had ever set on factory two-strokes over the US Grand Prix course! The reason for this was that the HL500 was much easier to control on the hard, dust-covered Californian clay.

"Horses for courses" is still the name of the game in motocross!

into the eig YAMAHA



The coming year marks something more than just the start of another decade for Yamaha motorcycles. It signifies the celebration of 25 years of motorcycle manufacturing.

It is fitting, therefore, that the 1980 model year sees a Yamaha range that is unequalled by any of their competitors as far as types of machines offered to the general public.

From the lowest end of the scale - with a comprehensive range of mopeds - right through to the awesome XS1100, Yamaha offers more choice of machinery than any other manufacturer.

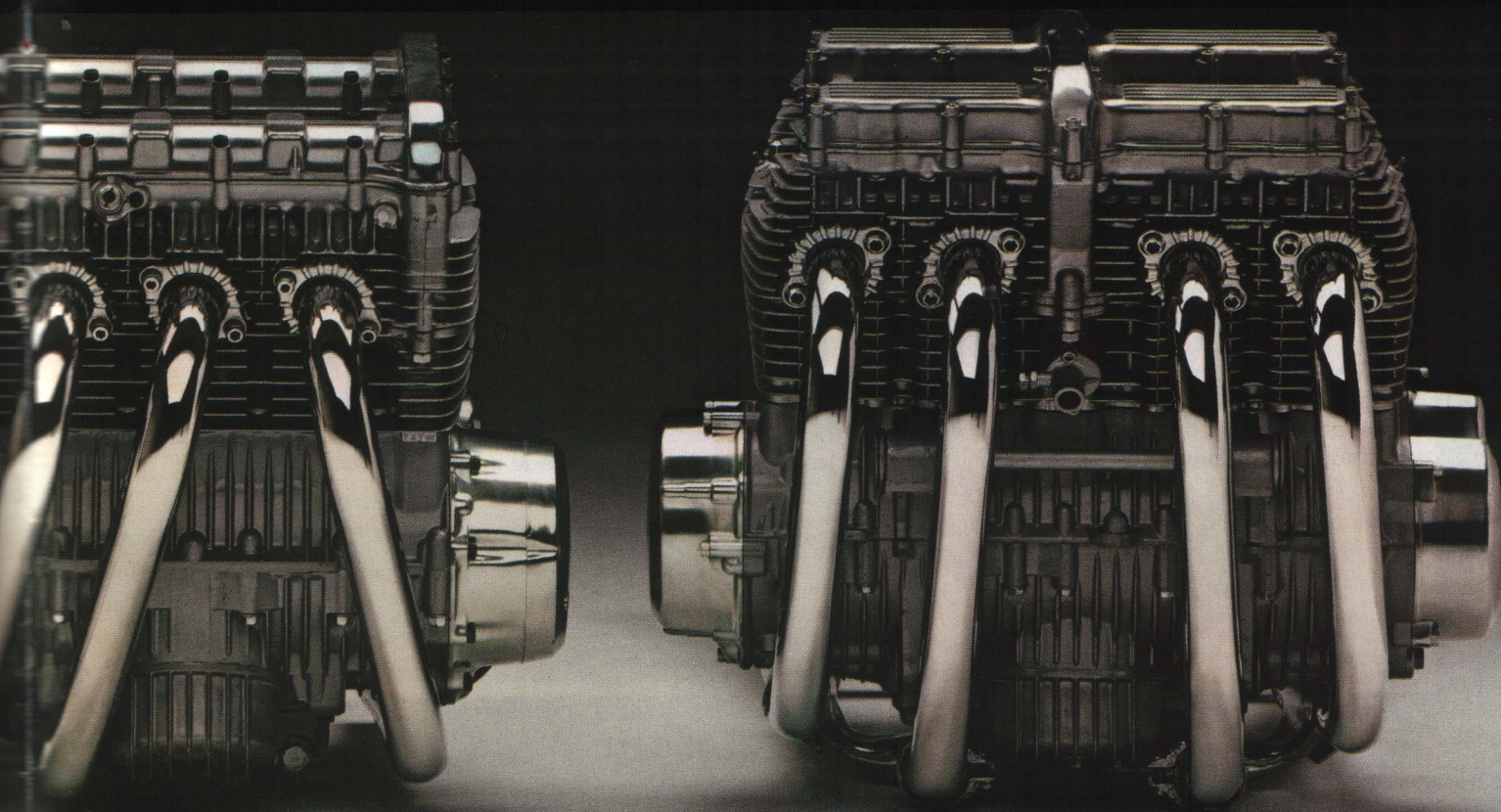
For example, one of the biggest sensations of the 1980 Yamaha range is the rejuvenation of the sporting two-stroke street machine. Yamaha has always remained faithful to the sporting two-strokes that made the company famous, even with most of their competitors turning away from this type of engine because of stringent emission and noise regulations for road-going motorcycles all over the world.

Yamaha has always maintained that a two-stroke can meet these regulations just as well as a four-stroke and the new range of super-sporting two-stroke middleweights is proof enough that they have the technology to achieve this.

Not that Yamaha ignores the four-stroke. Far from it! As the photograph on this page proves, Yamaha have the most varied four-stroke range on today's market. For 1980 they offer four-strokes from 250 to 1100cc ... with one, two, three and four cylinders! There's a new 250cc four-stroke single, derived from the hugely popular XT500 and SR500 "thumpers". There are twins in 250, 400 and 650cc sizes. An all-new four-cylinder 650 joins the big XS1100 four and the three-cylinder 750cc power unit that won "Machine of the Year" awards from several European magazines when it was introduced three years ago has now grown into an unburstable 850cc powerhouse.

However, new models aren't confined to the sporting and touring machines. For the economy-minded, or for

Eighties with YAMAHA



those young riders restricted to small machines by legislation, Yamaha offer an unparalleled range of ultra-lightweight moped and motorcycles.

There are basic mopeds designed purely with fuel economy in mind, mopeds with special features appealing to housewives who would rather ride to the market than walk, and mopeds for the young enthusiasts in both sporty street machine and trail bike designs.

As the new model review on the following pages will show you, going "into the eighties with Yamaha" means going with the largest choice of machines ever offered to the motorcycling public.

Mr H. Sawada, the new Managing Director of Yamaha Motor N.V., emphasised this point when he presided over the introduction of the 1980 Yamaha range to the European press in Hamburg at the end of October.

Following Mr Sawada's introduction was Mr Paul Butler, of the Yamaha Motor N.V. engineering and product development department, who looked back at Yamaha's progress over the last decade and gave

listeners an outline of the Yamaha philosophy for the "Eighties".

"The last ten years have been significant in several ways", said Mr Butler.

"Firstly the period coincides with Yamaha Motor N.V.'s first ten years of trading in Europe and has seen a spectacular growth in Yamaha's share of the market from 3.3% in 1969 to 25% in 1979.

"Secondly the seventies have seen a phenomenal growth in the variety of model choice available to the consumer. Yamaha's model line in 1969 comprised 15 models - all of them two-strokes. In 1979 the model line has 36 models, 12 of them four-strokes.

"In 1969 we had only single and twin cylinder two-stroke engines. We still have these in our line, but additionally we have single, twin, three and four cylinder four strokes."

Mr Butler continued, "The Seventies also saw the start of the big bike era. In 1969 90% of machines registered were under 500cc. In 1979 35% of machines registered are

over 500cc.

"The final significant point to be drawn from the Seventies" Mr Butler went on, "is the great change in social and economic conditions that has and is taking place.

"In the early part of the decade the economies of most Western European countries expanded relatively quickly. However, the rapid increase in the price of oil, in particular, has resulted in a cut back in economic activity since 1974 as well as increased concern about the high levels of unemployment. The consequent economic measures taken by governments are now having their effect on the motorcycle market.

"One influencing factor is that the size of the average household is decreasing and as a result a greater proportion of women are going to work thus increasing the need for transportation.

"Additionally the unemployment problem has resulted in a demand for a reduction in working hours. This of course will create an increase in leisure-time. Combining this with the fact that leisure pursuits comprise the fastest-growing part of consumer spending leads us to be quietly optimistic about the future role of the motorcycle in both leisure and transportation.

"Yamaha of course fully recognises the importance of the motorcycle enthusiast as the core of our market and it is an essential part of our product planning strategy that we continue to develop exciting sporting motorcycles.

However, we also recognise the need to adapt our product lines to the changing economic and social conditions in order to broaden our customer opportunities and to introduce first time buyers to the exhilarating motorcycle experience.

"We can state quite categorically therefore that as we enter the Eighties it is Yamaha's intention to develop and produce lighter, leaner, cleaner and more fuel efficient motorcycles tailored even more precisely to individual needs.

"Yamaha was the innovator in introducing the trail bike to the mass market in the late Sixties. We were also the first to introduce a line of custom bikes in America and we see the latter line as an opportunity in Europe to attract new customers who may not be ready for the speed of a super-sports machine. The "Boulevard Cruiser" with its cool, comfortable, easy-handling qualities should play an important part in sustaining the growth of interest in motorcycles in the Eighties.

Mr Butler concluded, "Yamaha is a specialist motorcycle manufacturer - we do not make cars - we do produce nearly 2 million motorcycles per year, and in the 1980's we intend to continue the success we have achieved in the 1970's. We believe this success has resulted from our determination not just to build motorcycles tailored to European needs, but to build to individual market requirements within Europe. It is our intention to continue in this direction."

MOST IMPORTANT

Specifications and availability of certain models in the Yamaha range are subject to the legal and insurance requirements of the countries in which they are sold. We advise that you check with your national importer for the complete range of Yamaha motorcycles available in your country.

Sheene & Van Dulmen go Yamaha for 1980

British superstar and former World 500cc Road Race Champion, Barry Sheene, is to switch to Yamaha for 1980 ... moving from the Suzuki brand with which his name has become virtually synonymous over the past seven years.

Barry has quit the Suzuki factory in favour of running his own private team, which will be well-financed by a large commercial sponsor, and he has chosen the new 1980 Yamahas as his mounts in both 500cc and 750cc classes.

He plans to start the season with two Yamaha TZ750 and two Yamaha TZ500 machines.

Dutchman, Boet Van Dulmen, will add strength to Yamaha's efforts in the big-capacity road race classes this year.

Boet, for many seasons a talented performer in international F750 racing, has been awarded with a contract that provides him with both 500cc and 750cc Yamahas via the Dutch Yamaha importer, I.M.N., Rotterdam.



Barry Sheene



XJ650

XJ650

ENGINE

Type

D.O.H.C., 4 stroke,
4 cylinder

Displacement

653 cc

Bore/stroke

63,0 x 52,4 mm

Compression ratio

9,2 : 1

Max. horsepower

53,8 Kw (73 HP) /9.000

Max. torque

59,2 Nm (6.0 Kg-m) at 7.500

Lubrication system

Wet sump

Starting system

Electric

Gearbox

5 speed

DIMENSIONS

Overall length

2170 mm

Overall width

730 mm

Overall height

1130 mm

Wheelbase

1435 mm

Min. ground clearance

140mm

Weight

206 kg

Fuel tank capacity

19,5 lit

Tyres: Front

3.25-19-4PR

Rear

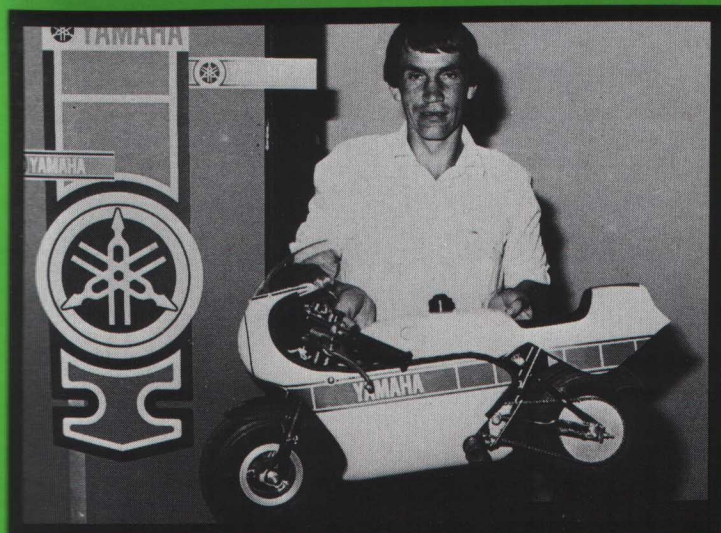
120/90-18

Brakes: Front

Dual discs

Rear

Drum



Boet Van Dulmen

New Racers for 1980

Yamaha have won more World Championships than any other make of motorcycle still active on today's scene. In addition, no other manufacturer has helped so many private riders to Championship honours.

That is why the announcement of the latest range of Yamaha competition machinery is an event awaited with heightening interest by both spectator and competitor alike.

This year there are two sensations in the Yamaha production road race range, with the "Kenny Roberts Replica" TZ500 very much at the top of the list. With 110 horsepower available, the TZ500 is even more powerful than its bigger brother, the 100hp TZ750!

Also new on the road race scene is the ultra-

lightweight (just 72kg!) TZ125 which puts over 30hp from its 123cc. The TZ125 has proved itself in Oriental races and now appears in Europe for the first time.

The consistently successful TZ250 and TZ750 continue unchanged for 1980.

There's more big news on the motocross front. Now the dirt riders can buy a Yamaha big-class model that is virtually a replica of that used by Heikki Mikkola in 1979. At 465cc and with over 52hp available, the YZ465 is the biggest, most powerful motocrosser available to the private rider. Other well-proven Yamaha motocross machines span the capacity range from the YZ50 mini-motocrosser, through 100cc, 125cc and the 40hp 250cc models. See the new race bikes on pages 24-25.

RD250LC

ENGINE

Type	2 stroke, water cooled, twin
Displacement	247 cc
Bore/stroke	54,0 x 54,0 mm
Max. horsepower	26,1 Kw (35,5 HP) /8.500
Max. torque	30,2 Nm (3,1 Kg-m) /8.000
Lubrication system	Autolube
Starting system	Kick
Gearbox	6 speed

DIMENSIONS

Overall length	2055 mm
Overall width	750 mm
Overall height	1090 mm
Seat height	785 mm
Wheelbase	1360 mm
Min. ground clearance	170mm
Weight	140 kg
Fuel tank capacity	17 lit
Tyres: Front	3.00-18-4PR
Rear	3.50-18-4PR
Brakes: Front	Disc
Rear	Drum

RD350LC

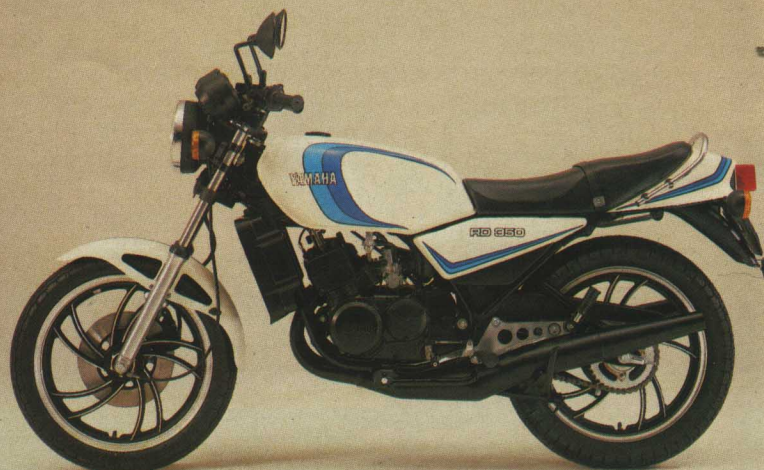
ENGINE

Type	2 stroke, twin-cylinder, LC
Displacement	347 cc
Bore/stroke	64,0 x 54,0 mm
Compression ratio	6,9 : 1
Max. horsepower	34,6 Kw (47 HP) /8.500
Max. torque	40,2 Nm (4,1 Kg-m) /8.000
Lubrication system	Autolube
Starting system	Kick
Gearbox	6 speed

DIMENSIONS

Overall length	2055 mm
Overall width	750 mm
Overall height	1090 mm
Wheelbase	1365 mm
Min. ground clearance	170 mm
Seat height	785 mm
Weight (Net)	140 kg
Fuel tank capacity	17,0 lit
Tyres: Front	3.00-18-4PR
Rear	3.50-18-4PR
Brakes: Front	Double discs
Rear	Drum

Since this colour section went to press, Yamaha have decided to match the impressive performance of the RD350LC with equally impressive stopping power by the use of double disc brakes at the front.





XT250

ENGINE

Type	S.O.H.C., 4 stroke, air cooled, single
Displacement	249 cc
Bore/stroke	75,0 x 56,5 mm
Compression ratio	9,2 : 1
Max. horsepower	15 Kw (21 HP) /8.000
Max. torque	19,6 Nm (2,0 Kg-m) /6.500
Lubrication system	Wet sump
Starting system	Kick
Gearbox	5 speed

DIMENSIONS

Overall length	2135 mm
Overall width	885 mm
Overall height	1170 mm
Seat height	840 mm
Wheelbase	1395 mm
Min. ground clearance	255 mm
Weight	113 kg
Fuel tank capacity	8 lit
Tyres: Front	3,00-21-4PR
Rear	4,60-17-4PR
Brakes: Front	Drum
Rear	Drum



XS1100

ENGINE

Type	D.O.H.C., 4 stroke, 4 cylinder
Displacement	1101 cc
Bore/stroke	71,5 x 68,6 mm
Compression ratio	9,2 : 1
Max. horsepower	69,9 Kw (95 PS) /8.500
Max. torque	90,2 Nm (9,2 Kg-m) /6.000
Lubrication system	Pressure-fed wet sump
Starting system	Electric & kick
Gearbox	5 speed

DIMENSIONS

Overall length	2260 mm
Overall width	775 mm
Overall height	1145 mm
Wheelbase	1545 mm
Seat height	810mm
Min. ground clearance	150 mm
Weight (Net)	256 kg
Fuel tank capacity	24 lit
Tyres: Front	3.50V-19-4PR
Rear	4.50V-17-4PR
Brakes: Front	Dual discs
Rear	Disc



XS850

ENGINE

Type	D.O.H.C., 4 stroke, air cooled, triple
Displacement	826 cc
Bore/stroke	71,5 x 68,6 mm
Compression ratio	9,2 : 1
Max. horsepower	58,1 Kw (79 HP) /8.500
Max. torque	69,8 Nm (7,1 Kg-m) 7.500
Lubrication system	Wet sump
Starting system	Electric/Kick
Gearbox	5 speed

DIMENSIONS

Overall length	2155 mm
Overall width	675 mm
Overall height	1120 mm
Wheelbase	1465 mm
Min. ground clearance	130 mm
Weight	236 kg
Fuel tank capacity	24 lit
Tyres: Front	3.25;19-4PR
Rear	4.00-18-4PR
Brakes: Front	Dual discs
Rear	Disc

SR250SE

ENGINE

Type	S.O.H.C. 4 stroke, single
Displacement	239,6 cc
Bore/stroke	73,5 x 56,5 mm
Max. horsepower	12 Kw (17 HP) /7.500
Max. torque	18,3 Nm (1,8 Kg-m) /5.000
Lubrication system	Wet sump
Starting system	Electric
Gearbox	5 speed

DIMENSIONS

Overall length	2025 mm
Overall height	1135 mm
Overall width	810 mm
Seat height	740 mm
Wheelbase	1335 mm
Min. ground clearance	145 mm
Weight	121 kg
Fuel tank capacity	11 lit
Tyres: Front	3,00-19-4PR
Rear	120/90-16-4PR
Brakes: Front	Drum
Rear	Drum



XS250SE

ENGINE

Type	S.O.H.C., 4 stroke, air cooled, twin
Displacement	248 cc
Bore/stroke	55,0 x 52,4 mm
Max. horsepower	49,1 Kw (26 HP) /8.500
Max. torque	20,6 Nm (2,1 Kg-m) /8.000
Lubrication system	Wet sump
Starting system	Electric/Kick
Gearbox	5 speed

DIMENSIONS

Overall length	2065 mm
Overall width	870 mm
Overall height	1140 mm
Seat height	770 mm
Wheelbase	1375 mm
Min. ground clearance	135 mm
Weight	169 kg
Fuel tank capacity	2,6 lit
Tyres: Front	3,00-18-4PR
Rear	120/90-16
Brakes: Front	Disc
Rear	Drum



XS400SE

ENGINE

Type	S.O.H.C., 4 stroke, air cooled, twin
Displacement	391 cc
Bore/stroke	69,0 x 52,4 mm
Max. horsepower	27 Kw (37 HP) /9.000
Max. torque	31,6 Nm (3,2 Kg-m) /7.500
Lubrication system	Wet sump
Starting system	Electric/Kick
Gearbox	5 speed

DIMENSIONS

Overall length	2065 mm
Overall width	870 mm
Overall height	1140 mm
Seat height	770 mm
Wheelbase	1380 mm
Min. ground clearance	135 mm
Weight	169 kg
Fuel tank capacity	14 lit
Tyres: Front	3,00-18-4PR
Rear	120/90-16
Brakes: Front	Disc
Rear	Drum





SR500 ENGINE

Type	S.O.H.C., 4 stroke, single
Displacement	499 cc
Bore/stroke	87 x 84 mm
Compression ratio	9.0 : 1
Max. horsepower	24.2 Kw (33 PS) /6.500
Max. torque	38.2 Nm (3.9 Kg-m) /5.500
Lubrication system	Dry sump
Starting system	Kick
Gearbox	5 speed

DIMENSIONS

Overall length	2170 mm
Overall width	930 mm
Overall height	1140 mm
Wheelbase	1400 mm
Seat height	810 mm
Min. ground clearance	165 mm
Weight (Net)	161 kg
Fuel tank capacity	12 lit
Tyres: Front	3.50-19-4PR
Rear	4.00-18-4PR
Brakes: Front	Disc
Rear	Drum



XS650SE ENGINE

Type	S.O.H.C., 4 stroke, air cooled
Displacement	653 cc
Bore/stroke	75,0 x 74,0 mm
Compression ratio	8,5 : 1
Max. horsepower	36,9 Kw (50,1 HP) /7.000
Max. torque	52,0 Nm (5,3 Kg-m) /6.000
Lubrication system	Wet sump
Starting system	Electric/Kick
Gearbox	5 speed

DIMENSIONS

Overall length	2130 mm
Overall width	930 mm
Overall height	790 mm
Wheelbase	1435 mm
Min. ground clearance	135 mm
Weight	212 kg
Fuel tank capacity	11,5 lit
Tyres: Front	3,5-19-4PR
Rear	130/90-16-4PR
Brakes: Front	Disc
Rear	Disc



XS750SE ENGINE

Type	4 stroke, three cylinders, air cooled
Displacement	747 cc
Bore/stroke	68,0 x 68,6 mm
Max. horsepower	50 KW (68 HP) /8.000
Max. torque	63,7 Nm (6,5 Kg-m) /6.500
Compression ratio	9,2 : 1
Lubrication system	Wet sump
Starting system	Kick
Gearbox	5 speed

DIMENSIONS

Overall length	2155 mm
Overall width	740 mm
Overall height	1120 mm
Seat height	820 mm
Wheelbase	1465 mm
Min. ground clearance	130 mm
Weight (Net)	236 kg
Fuel tank capacity	17 lit
Tyres: Front	3.25-19-4PR
Rear	4.00-18-4PR
Brakes: Front	Dual discs
Rear	Disc

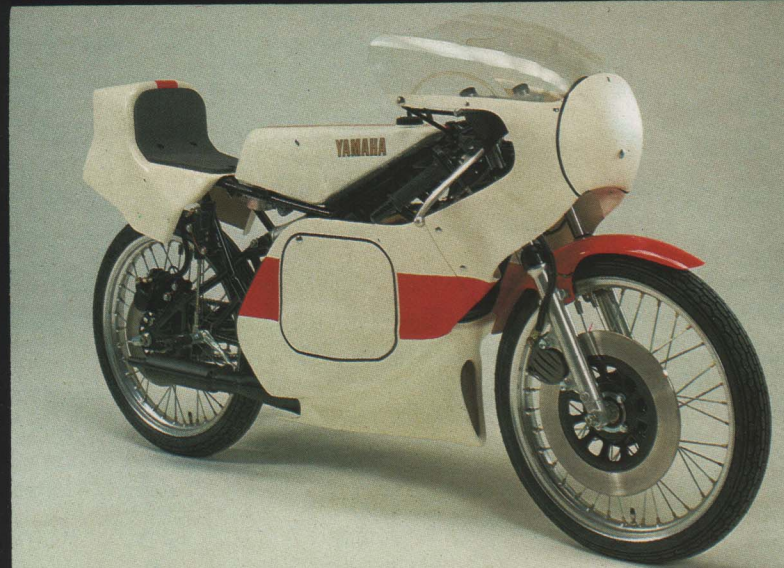
TZ125

ENGINE

Type	2 stroke, water cooled, single
Displacement	123 cc
Bore/stroke	56 x 50 mm
Compression ratio	7,9 : 1
Max. horsepower	30 bhp at 12,000 rpm
Max. torque	1.85 Kg-m at 11,500 rpm
Lubrication system	Mixture oil/fuel (15 : 1)
Gearbox	6 speed

DIMENSIONS

Overall length	1790 mm
Overall width	520 mm
Overall height	895 mm
Seat height	685 mm
Wheelbase	1205 mm
Min. ground clearance	155 mm
Weight	72 kg
Fuel tank capacity	9.5 lit
Tyres: Front	2.50-18-4PR
Rear	2.50-18-4PR
Brakes: Front	Disc
Rear	Disc



YZ80

ENGINE

Type	2 stroke, single
Displacement	79cc
Bore/stroke	49,0 x 42,0 mm
Compression ratio	8,1 : 1
Max. horsepower	12.5 Kw (17 HP) /11.500
Max. torque	10.3 Nm (1.05 Kg-m) /11.500
Lubrication system	Mixture oil/fuel (20 : 1)
Starting system	Kick
Gearbox	6 speed

DIMENSIONS

Overall length	1745 mm
Overall width	785 mm
Overall height	990 mm
Wheelbase	1185 mm
Min. ground clearance	225 mm
Seat height	740 mm
Fuel tank capacity	4,7 lit
Weight (Net)	62 kg
Tyres: Front	2,75-17-4PR
Rear	3,60-14-4PR
Brakes: Front	Drum
Rear	Drum



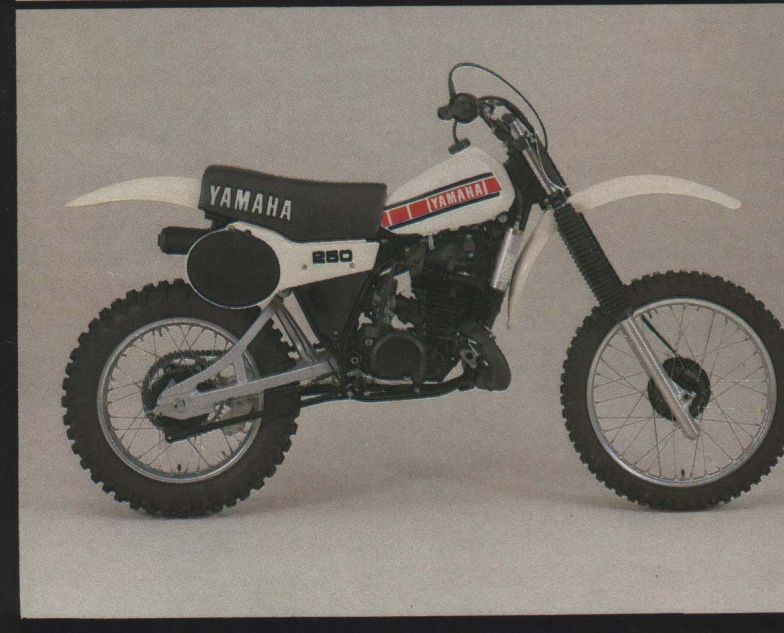
YZ250

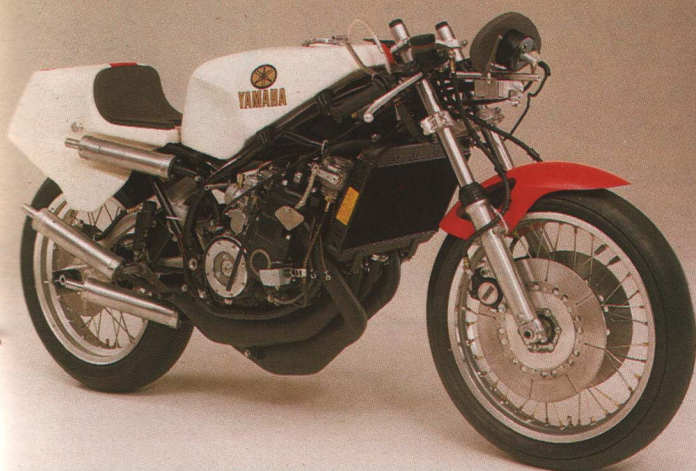
ENGINE

Type	2 stroke, single
Displacement	246 cc
Bore/stroke	70,0 x 64,0 mm
Compression ratio	8,1 : 1
Max. horsepower	29.5 KW (40 HP) /8.000
Max. torque	37.0 Nm (3.77 Kg-m) /6.500
Lubrication system	Mixture oil/fuel
Starting system	Kick
Gearbox	6 speed

DIMENSIONS

Overall length	2155 mm
Overall width	935 mm
Overall height	1195 mm
Wheelbase	1455 mm
Min. ground clearance	310 mm
Seat height	935 mm
Weight (Net)	97kg
Fuel tank capacity	7,6 lit
Tyres: Front	3,00-21-4PR
Rear	5,10-21-4PR
Brakes: Front	Drum
Rear	Drum





TZ500

ENGINE

Type	2 stroke, 4 cylinder
Displacement	497 cc
Bore/stroke	56 x 50.5 mm
Compression ratio	7,9 : 1
Max. horsepower	110 bhp plus at 10,500 rpm
Max. torque	7.7 Kg-m at 10,250 rpm
Lubrication system	Mixture oil/fuel (15 : 1)
Starting system	Push
Gearbox	6 speed

DIMENSIONS

Overall length	2020mm
Overall width	500mm
Height	965 mm
Wheelbase	1365 mm
Min. ground clearance	120 mm
Seat height	900 mm
Weight	139 kg
Fuel tank capacity	31.5 lit
Tyres: Front	3,25-18-4PR
Rear	4,00/5.75-18-4PR
Brakes: Front	Disc 298 mm (twin)
Rear	Disc 218 mm



YZ125

ENGINE

Type	2 stroke, single
Displacement	123 cc
Bore/stroke	56,0 x 50,0 mm
Compression ratio	8,5 : 1
Max. horsepower	19.5 Kw (26.5 HP) /1.100
Max. torque	17,6 Nm (1.80 Kg-m) /9.500
Lubrication system	Mixture oil/fuel (32 : 1)
Starting system	Kick
Gearbox	6 speed

DIMENSIONS

Overall length	2115 mm
Overall width	950 mm
Overall height	1215 mm
Wheelbase	1430 mm
Min. ground clearance	340mm
Seat height	940 mm
Weight (Net)	85 kg
Fuel tank capacity	6,5 lit
Tyres: Front	3,00-21-4PR
Rear	4,00-18-4PR
Brakes: Front	Drum
Rear	Drum



YZ465

ENGINE

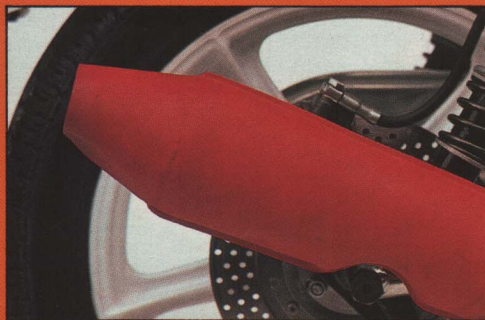
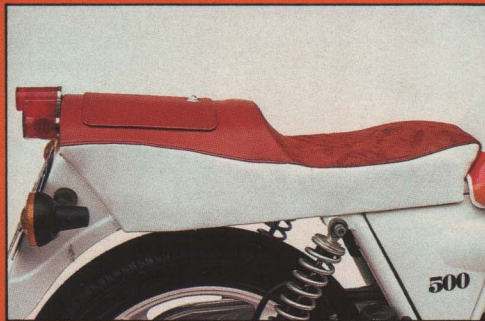
Type	2 stroke, single
Displacement	465 cc
Bore/stroke	85,0 x 82,0 mm
Compression ratio	7,0 : 1
Max. horsepower	38.2 KW (52 HP) /7.000
Max. torque	55.5 Nm(5.65 Kg-m) /6.000
Lubrication system	Mixture oil/fuel (32 : 1)
Starting system	Kick
Gearbox	5 speed

DIMENSIONS

Overall length	2175 mm
Overall width	935 mm
Overall height	1195 mm
Wheelbase	1480 mm
Min. ground clearance	310 mm
Seat height	935 mm
Weight (Net)	102 kg
Fuel tank capacity	9,0 lit
Tyres: Front	3,00-21-4PR
Rear	5,10-18-4PR
Brakes: Front	Drum
Rear	Drum

Superspe

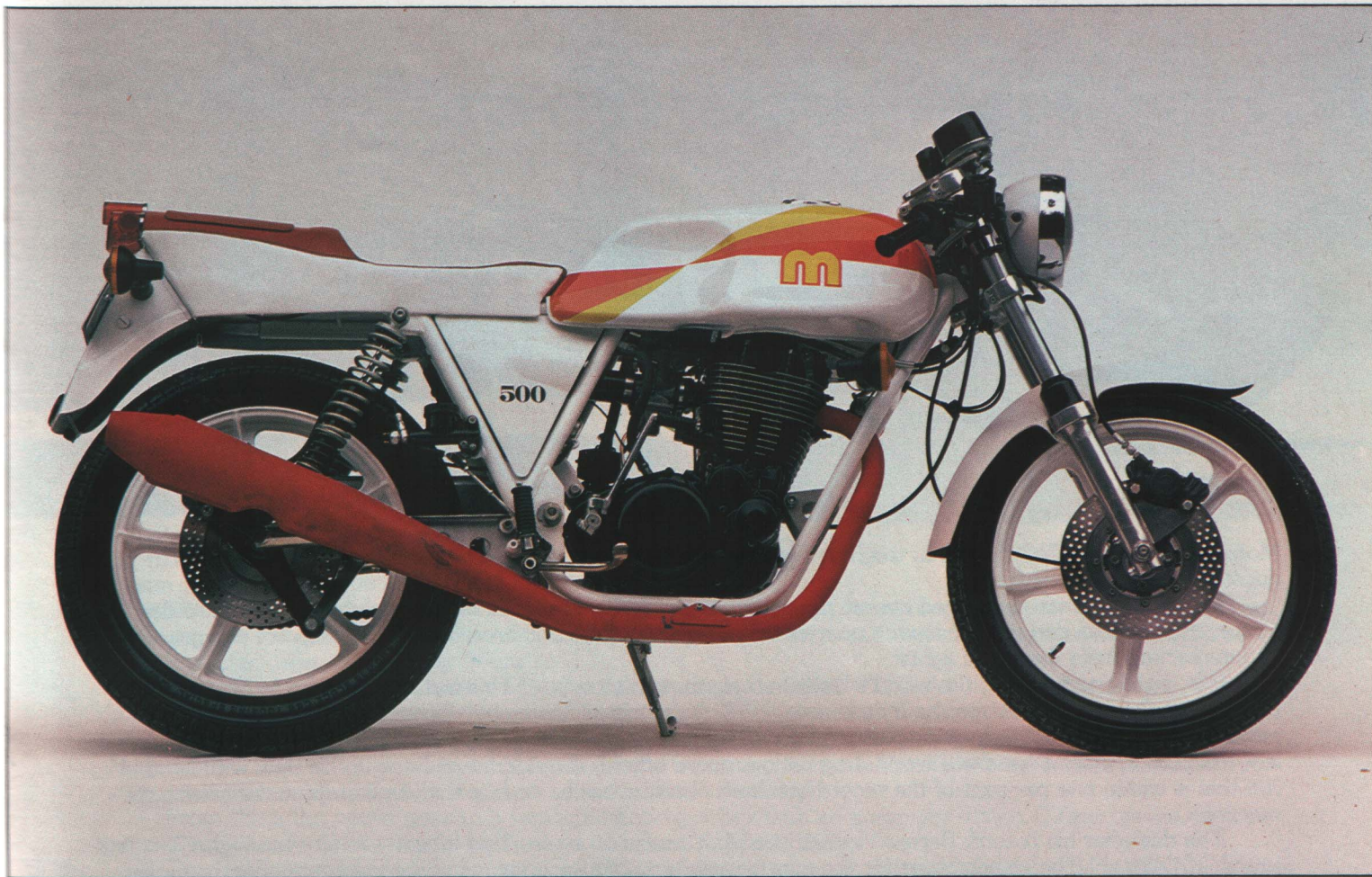
If you have constructed your own "Superspecial" based on any machine in the Yamaha range let us have details and pictures (black and white, or colour transparencies). Machines judged worthy of inclusion in Yamaha Circuit will be featured in a regular "Superspecial" section. Send details to The Editor, Yamaha Circuit, White Lion Chambers, High Street, Banbury, Oxfordshire, Great Britain. All material will be returned to the owner after publication or immediately if not selected for coverage.



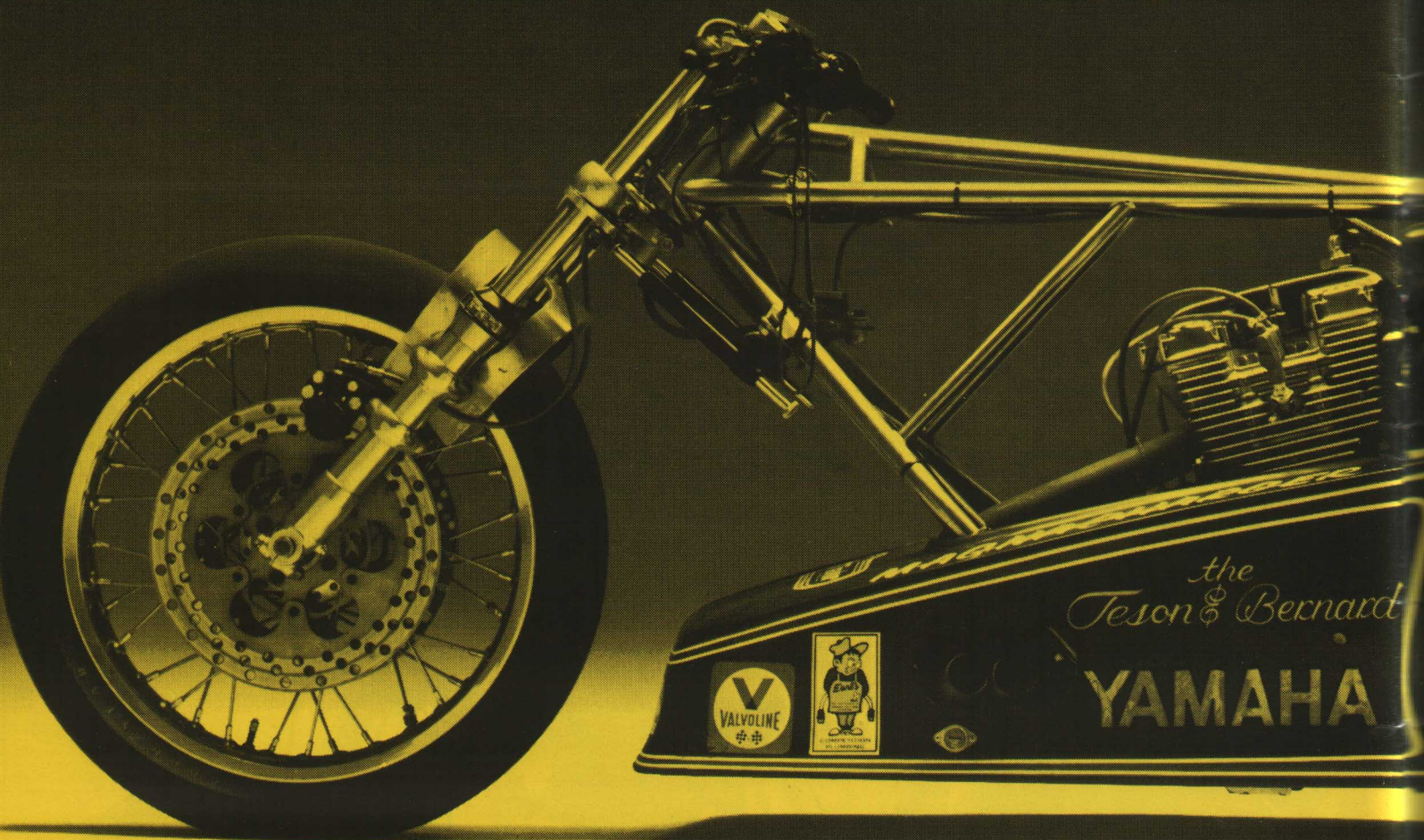
cial

Surely one of the most beautiful "specials" ever constructed must be this SR500-based sports machine built by the German magazine "Motor" as an editorial project. The SR500 power unit is housed in a twin-loop cradle frame with triangulated rear section, twin disc brakes and cast wheels.

The eye-catching styling sets off the advanced chassis to perfection, making the "Motor" effort truly a Superspecial.



MOTORCYCLE



Motorcycle or missile? One look at the Ron Teson/Jim Bernard Yamaha XS1100 dragster in action and that question has to be asked!

With rider Bernard stretched almost prone across the top of the thundering supercharged four-cylinder motor, the Yamaha can rocket down a quarter-mile drag strip quicker than a normal motorcyclist can get across an intersection from the traffic lights!

It is, purely and simply, the world's fastest-accelerating motorcycle. This fact is confirmed by the world record that the machine set on the Indianapolis, USA drag strip in September. From a standing start Bernard covered the quarter-mile in a vision-blurring 7.57 seconds. His speed as he crossed the quarter-mile mark was no less than 183.67mph! To make a world drag racing record official, the rider must back up his time with another run that is within one per cent of the record-breaker ... and he has to do it at the same strip, in the same race meeting.

The day after his record, Bernard loosed the big Yamaha off again. This time it was an even higher terminal speed, 184.42mph! The elapsed time for the quarter-mile was 7.61 seconds ... good enough to verify the earlier 7.57 seconds record time.

Ron Teson is the wizard who built the monster Yamaha. He had already achieved fame with the first motorcycle ever to break into the seven-second bracket. In an age of multi-engined drag racers, Teson started a trend back towards simplicity by getting into the "sevens" with a supercharged, single-engined 970cc Honda.

But the Honda soon became out-dated. Teson needed another power unit that had the potential for further development. That power unit was the Yamaha XS1100!

At the limit of its development, Teson's Honda put out 350hp. The Yamaha currently puts out over 400hp and Ron figures that when he has carried its development to the limits that he pushed his Honda to, the XS1100 will produce over 500 horsepower!

That's the same horsepower as a top Formula One GP car ... from about one third the capacity!

or MISSILE?



Despite the huge horsepower output, the XS1100 retains a great many of its stock features. That's why Teson chose the Yamaha as the basis for his new machine.

The one-piece crankshaft with its plain-bearing, automobile-type connecting rods is far better suited to an engine that is to be supercharged on nitromethane rocket fuel than are the roller-bearing cranks favoured by other manufacturers for their big "fours".

Apart from a special camshaft and stiffer valve springs, the XS1100 cylinder head is left standard. Valves are stock and the ports have not been touched! The crankshaft, crankcase and cylinder are also standard.

A supercharger pumps the fuel/air mix into the engine. The man who constructed the supercharger is Jerry Magnuson ... and he is also responsible for the motor's primary transmission. This is via two huge straight-cut spur gears, the smaller of which is almost seven inches in diameter!

From there the power goes to a semi-automatic gearbox with an automatic clutch. Teson carved off the normal transmission as it was obviously never designed to handle 500hp!

The clutch is operated by spinning centrifugal weights which press the plates together as engine speed rises. Bernard changes gear by simply pressing a large red button on the handlebars. This forces oil from a pressurised tank through a valving system that hydraulically shifts the gearbox into the higher of its two ratios.

Finally, the power gets to the rear wheel via a hefty drive chain and on to the road through a 12.5 inch wide rear tire borrowed from a drag-racing car.

Once Bernard is under way, it is all but impossible to steer the machine with the handlebars. He simply has to hang on and change its direction by slight shifts of his body weight!

Teson, Bernard and Magnuson only started working with the Yamaha XS1100 power unit in January 1979. By September they had the world record. What comes next?

"I'm confident that this machine will be the first motorcycle to cover a quarter-mile in the six-second bracket" says Ron Teson. "And a terminal speed of 200mph is within reach!"

LITTLE BIG BIKES - YAMAHA'S MINI MOTOCROSSERS

Most observers of motorcycle racing are of the opinion that champions are "made" rather than born. This opinion seems to be verified by the fact that for every obvious "natural" champion with an inherent talent above his fellow men, there are a score of others who rose to Championship heights by sheer hard work and determination.

That's why we like to think of the Yamaha YZ80 as "the champion-maker". It's a machine that is designed to enhance and expand any latent talent in the mini-motocrosser.

A young rider who begins his Junior career with the YZ80 is starting out the right way, for no longer are the "minis" simply bikes built for fun. They are scaled down racing machines with all of the features of their bigger brothers ... which means that by the time the junior rider is ready to step into full-size motocross, he has already learned most of the tricks of the trade.

The YZ80, for example, has the same sophisticated chassis design as Yamaha's World Championship-winning big bikes. Monoshock frame (with 170mm of rear wheel movement) and leading axle front forks cushioning out the bumps thanks to their 180mm of travel. In the engine department there's the same reed-valve Torque Induction and capacitor discharge ignition plus a six speed racing transmission to keep the little 80cc motor screaming right on the power band.

Testimony to the man-sized abilities of Yamaha's "mini" comes from two of the greatest small-bike motocross racers in the world ... former World 125cc Champion, Gaston Rahier, of Belgium, and American champ, Bob "Hurricane" Hannah.

Gaston tried the tiny Yamaha at a test day in Belgium and pronounced himself amazed by the big-bike feel of the little "eighty".

"If it wasn't for the small wheels" he said "I would swear that I was on my Grand Prix machine. And when you ride the bike, then you realise

that it's a true motorcycle and not just a toy."

Bob Hannah was just as enthusiastic. In a unique test session for Yamaha in the USA, Bob thrashed the little bike around the motocross course at Lake Whitney, Texas, for a solid hour!

And when we say "thrashed" that's exactly what we mean .. the photographs on the opposite page are there to prove it!

When the American champion finally climbed off the YZ80, his first remark was "I wish I'd had something like this when I was a kid ... I'd have been champion two years sooner".

Considering that Hannah won his first American Championship just two years after contesting his very first race, that's high praise indeed for Yamaha's "champion-maker"!

And now A Motocross Mini-Mini!

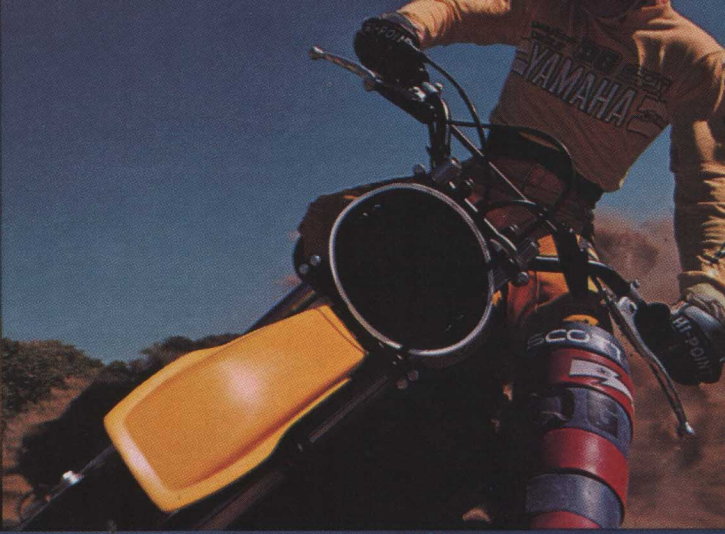
For 1980, Yamaha have opened up the mini-motocross scene to even younger or smaller riders than their YZ80 customers. They have added a 50cc version to the YZ range that still has all the equipment which has made its bigger brothers so effective.

The YZ50 features a 49cc engine with five-speed transmission, housed in a monoshock frame that allows 115mm of rear wheel travel. Genuine hydraulic motocross front forks, with leading axle mount, give 110mm of front suspension movement.

The little thoroughbred weighs in at 50kgs (110lbs) and produces 0.62kg-m (4.5lbs-ft) of maximum torque at 10,000rpm. It has more horsepower than any competitor in the 50cc class, aided by reed-valve Torque Induction and a big-breathing 20mm Mikuni carburettor.

Literally every component on the YZ50 is built with the rigours of competition in mind. When Yamaha build a racer there are no compromises ... 500cc or 50cc, it's top-quality tough all the way.







1970 Yamaha XS650

Ten years at the top - the Yamaha XS650

The move into the nineteen-eighties has a special significance for one of Yamaha's most-familiar models. It marks the completion of ten years as a market leader for the still-popular XS650.

When the machine first appeared in 1969 (originally designated the XS1), many people were surprised that Yamaha would choose a relatively simple twin-cylinder 650 as their first venture into four-stroke motorcycling. This was at a time when three and four-cylinder machines were just becoming the big-bike fashion.

However, the Yamaha decision has since been vindicated many times over. Even in the "Superbike Seventies" there were still plenty of motorcyclists preferring the combination of simplicity, reasonable power and light weight that the XS650 delivers. As a result the big twin has remained a solid seller in the Yamaha range for a full decade. In that ten year span it was without a doubt the best-selling big twin on the market.

It's basic strength has been proved in competition, with 750cc versions twice winning the European Sidecar Motocross Championship (for Ton Van Heugten in 1975 and the Bollhader brothers last year) as well as two American Grand National Championships for Kenny Roberts on the dirt-tracks in 1973 and 1974.

Now the bike has a new lease of life in its "US Custom" guise, a styling exercise which ideally suits the slim, compact lines of the twin-cylinder power unit.

So salute the XS650 ... ten years old and still going from strength to strength!



1980 Yamaha XS650SE "US Custom"