Circuit YAMAHA

1978/3

INTERNATIONAL TEAMWORK THE WAY TO A WORLD CHAMPION

Not only is Kenny Roberts' assault on three world road racing titles an effort that is global in its scope . . . it also features a back-up team that is truly international in its make-up.

Roberts' attack on the 250, 500 and Formula 750 World Championships translates into a 26-race season covering events in the USA, Canada, Europe and South America.

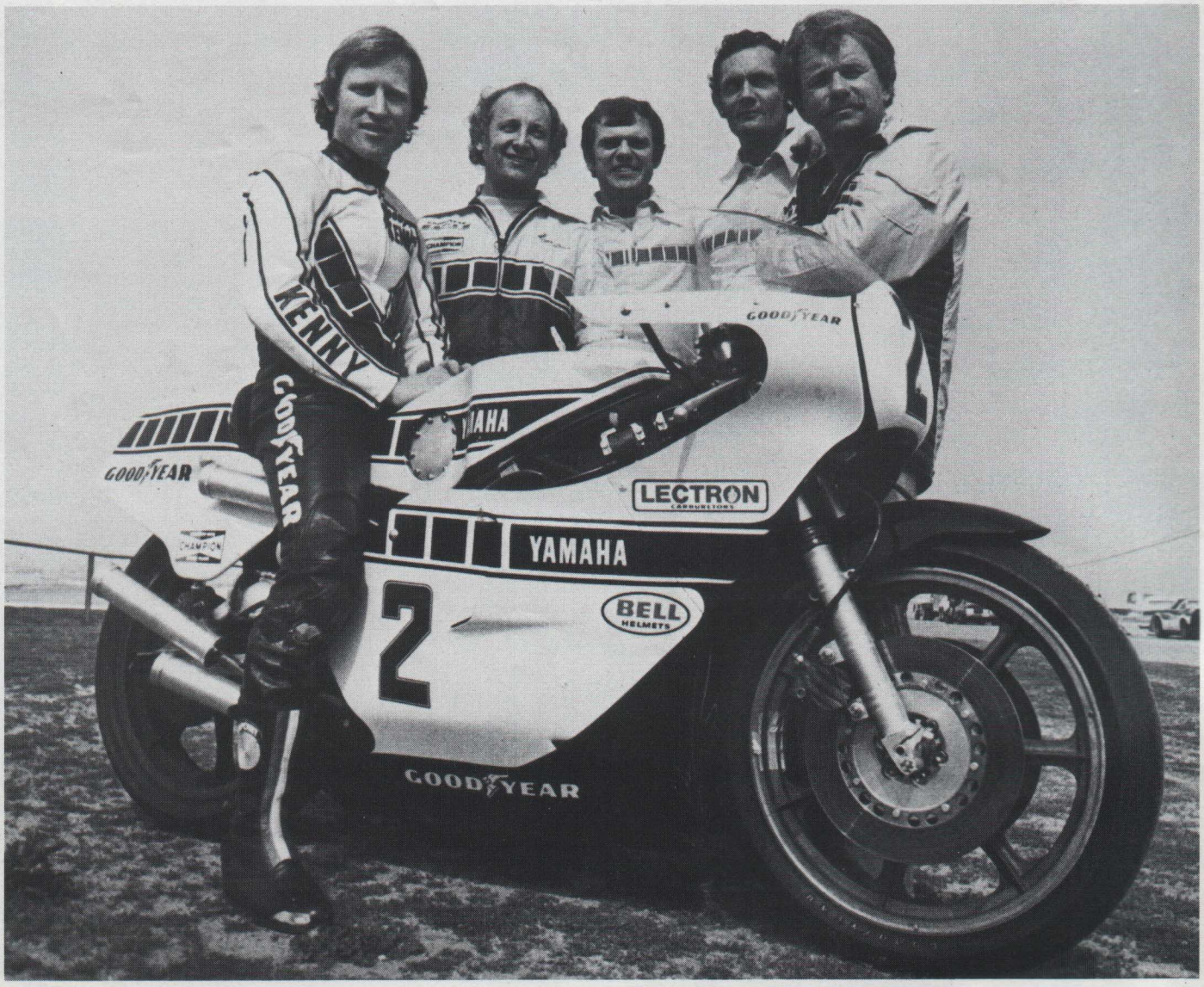
The weight behind the Roberts' spearhead is even more cosmopolitan. The 26-year-old American is aided by personnel and technical support from each of the five continents of the world . . . America, Europe, Asia, Africa and Australasia!

From America comes Kenny himself, along with heavy support from Yamaha Motor Corporation USA – support co-ordinated by another American, Kenny Clark. Additional solid support comes from Goodyear Tire and Rubber Company, Bell Helmets and Lectron Carburettors, all well-known to American and worldwide motorcycle enthusiasts.

From Europe comes the assistance of Yamaha Motor NV in Amsterdam, while from Asia comes one of the most important factors in the whole effort – the machinery. Kenny will be using exclusively Yamaha machinery (as he has ever since he was a Junior rider in the USA seven years ago), riding a TZ250 twin and 500 and 750cc four cylinder racers.

From Africa come two important members of the tuning staff, Nobby Clark and Trevor Tilbury, while from Australasia comes the man who has probably had the most significant effect on Kenny's career to date – Kel Carruthers, himself a former World Champion and Yamaha factory rider.

"The Kenny Roberts Story" is by now a well-known one to fans all over the world but we will briefly encapsulate it once more to give the background on a rider who says that he concentrated on World Championship



Kenny Roberts, Kel Carruthers, Trevor Tilbury, Nobby Clark, Kenny Clark

road racing in 1978 because he had "done everything else"!

The story began back in the farm town of Modesto, California, 14 years ago, when the 12-year-old Roberts built himself his first motorcycle by combining a lawnmower engine with a bicycle frame!

A year later, in 1965, he had his first race and in four years as a "sportsman" or amateur rider, he had amassed shelves full of trophies and even the State Championship of California's next-door neighbour, Oregon, in the 100cc dirt track class.

In 1970 he turned to AMA professional racing, winning the national Novice Championship and then the Junior title a year later. That was the year in which he first joined the Yamaha team (though he had used Yamahas for virtually all of his novice races) and so began a relationship which has been cemented over the years. Since that time Kenny has never raced another brand of motorcycle and, he says, "probably never will".

The 1972 season saw Kenny step into the American expert racer ranks, chasing the Grand National Championship. To win that title means that a rider really has to be an all-rounder. He must be a top-line road racer, be prepared to run up against the fence at 100mph or more on the frightening mile and half-mile dirt ovals, bang elbows with other riders on the crowded short tracks and even aviate big 750cc dirt-trackers in TT racing ... which is virtually moto-cross racing on a smooth, graded dirt surface!

A year later (he finished fourth in title standings during his first Expert year) Kenny, at 21 years old, had become the youngest rider ever to win the American Championship.

In 1974 he repeated his Championship win and since then placed second in 1975, third in 1976 and fourth in 1977, hampered by the fact that Yamaha's roadster-based dirt-track machines were gradually being outclassed by the "built-specially-for-racing" Harley Davidsons.

In 1975, despite the fact that he didn't take the Championship, Kenny won six races ... four more than any of his rivals. In addition, he became the only rider ever to score a "clean sweep" of wins in each of the types of racing that make up the American championship scene ... short track, half-mile and mile ovals, TT and road racing.

His last season on the American championship trail saw Kenny take his total of National race wins during his career to 25, taking him to second place behind record holder, Bart Markel.

At Daytona this year Kenny added another win to that total, putting him just three races away from becoming the most successful rider ever to have contested the American championships. And, even though he now plans only the occasional road race in America, the record must surely be within his grasp.

As well as his American efforts, Kenny also found time to come to Europe and win races such as the Imola 200, the John Player TransAtlantic Trophy Series individual honours and the 250cc event at Paul Ricard's prestigious Moto Journal 200.

So when Kenny says he's doing the World Championships because he's "done everything else", that's no idle boast!

As we said earlier, one of the biggest influences on Kenny's racing career has been his tuner and mentor, Kel Carruthers.

An Australian now based in San Diego, California, Kel himself was one of the very best racers in the world and proved this with the World 250cc Championship in 1969.

In the early sixties he dominated Australian racing in all four classes (125, 250, 350 and 500cc) with Honda and Norton machines. He uprooted his wife Jan and their two children (Sharon and Paul) from their Australian home in 1966 and the family trekked around Europe for the next five seasons. One of the best private riders on the "Continental Circus", Kel earned a factory ride with Benelli in 1969 and rewarded the Italian factory with the World Championship.

In 1970 he contested the 250 and 350 Championship series with private Yamahas bought from American dealer (and Yamaha's land speed record holder) Don Vesco. It was the beginning of an association with Yamaha that has remained unbroken till the present day.

The 1970 World 250cc Championship went right down to the last race of the season when Rod Gould snatched a dramatic last lap win in the Italian Grand Prix and with it, Kel's world title!

For the following year, Kel had an offer to race for Yamaha's American factory team ... at a period when American road racing was in an unusually healthy state with plenty of racing and big cash purses. By that time Kel was 33 and he took the big decision to abandon the European scene for the USA. It's a decision that he has probably never seriously regretted.

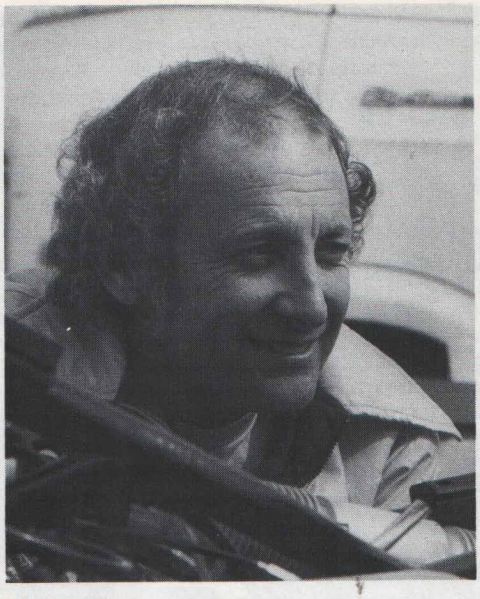
That year he dominated the 250cc class in the States and even won the Formula 750 National at Atlanta with his little 350cc Yamaha!

For the next two years Kel continued his domination of the US 250cc class and won another Formula 750 race with his 350 twin, beating all of the 750cc triple and four cylinder models of his rivals on the ultra-fast speedbowl at Talladega, Alabama.

In 1974, Kel retired from racing to concentrate on the technical and management aspects of racing for Yamaha USA. By now settled in the pleasant city of San Diego on the Pacific Ocean, Kel had added another daughter to his family and was ready to pass on some of his vast racing knowledge to somebody else.

That "somebody else" was Kenny Roberts ... and the rest is history!

Since 1974, Kel has been responsible for all of the preparation of Yamaha's American factory bikes and Kenny's



Kel Carruthers

Nobby Clark

Trevor Tilbury

successes are testimony to the quality of that preparation.

Now the two are together in Europe, where Kel's experience of the whole World Championship racing scene must surely be helping Roberts to steamroller the opposition.

Completing the tuning squad for Kenny's Championship bids are two men from the southern part of the African continent . . . Nobby Clark and Trevor Tilbury.

Nobby is one of the most famous tuners on the World Championship scene . . . his face as familiar to most fans as those of the riders themselves!

He first appeared in Europe in 1960, working on the MV Agusta racers piloted by his fellow Rhodesian, Gary Hocking. That year Gary was placed second in the 125, 250 and 350cc classes and a year later, with Nobby still wielding the spanners, he became World Champion in both 350 and 500cc classes.

Gary then switched to car racing (being tragically killed in his first season) and Nobby moved to England to tune for various British riders. From 1963 through 1965, Nobby was back with another compatriot – Jim Redman, leader of the factory Honda team and winner of a 250cc and three 350cc Championships during the three years that Nobby was working with him.

It was in 1966 that Nobby formed an association with Mike Hailwood that continues to the present day. Working on Mike's factory Hondas he helped him to 250 and 350cc Championships in both 1966 and 1967. Appropriately, it was Nobby who handled the preparation work for Hailwood's incredible Isle of Man comeback this year!

After Hailwood completed the 1968 season on private Hondas – with the understanding that he would not use them in the World Championships – he quit to go car racing and Nobby went to assist another great friend of his, Bill Ivy. Bill had won World Championships for Yamaha and for 1969 was attempting to combine car racing with Grand Prix bike racing for the Czechoslovakian Jawa team. Tragically, he was killed on the Jawa midway through the season.

Hard hit by the death of his friend, Nobby sat out the 1969 season but in 1970 worked with Kel Carruthers on his private Yamahas.

This was the start of a link with Yamaha that has remained unbroken up until now. From 1971 until this season, Nobby tuned Yamahas for such stars as Rod Gould, Kent Andersson, Hideo Kanaya and Giacomo Agostini. Now he's a vitally important part of the Kenny Roberts' Championship assault.

Completing the European squad is 28-year-old South African Trevor Tilbury, who was himself South African production bike champ in 1974.

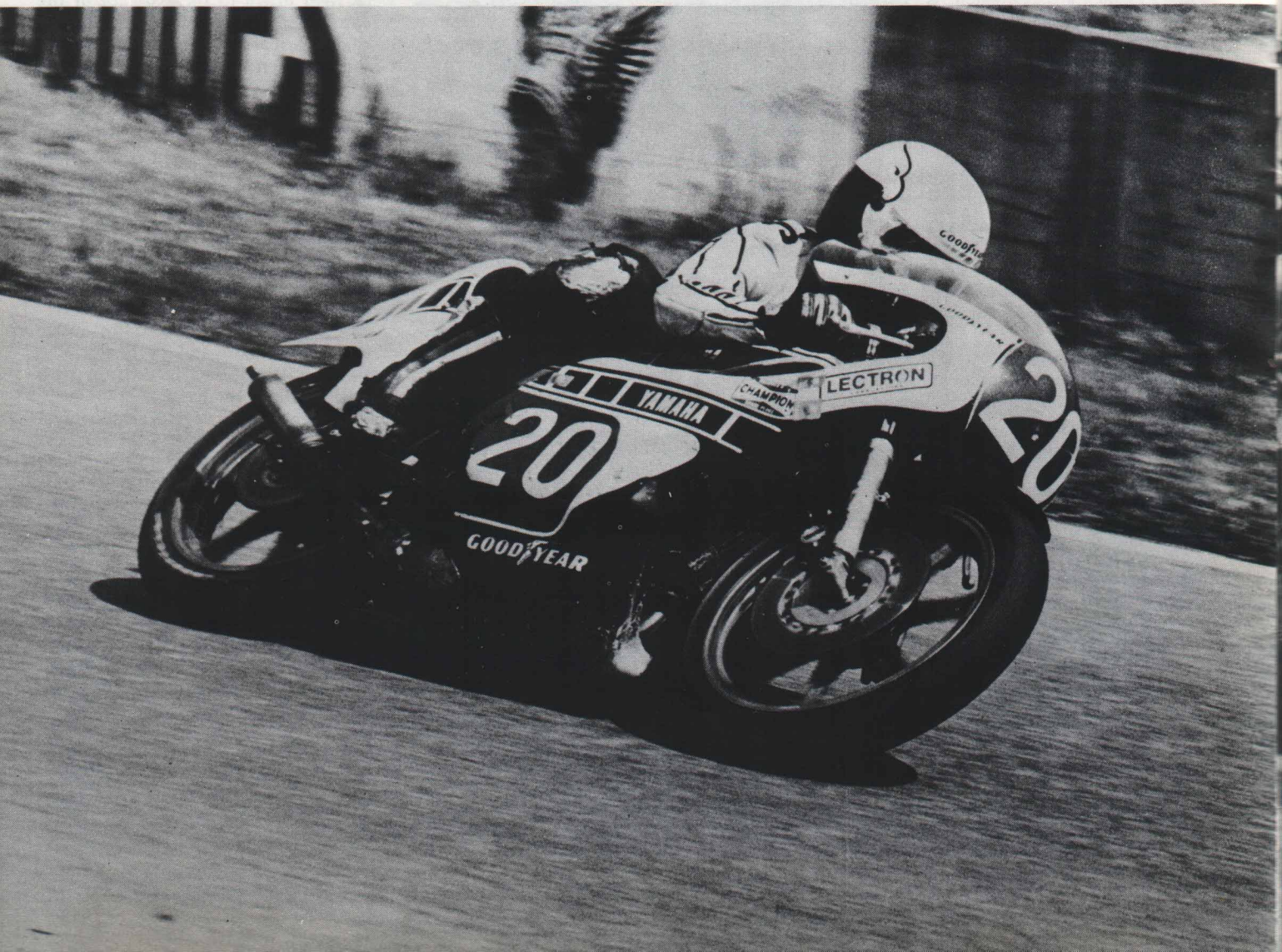
Despite that win, Trevor felt that tuning was his real forte and he came to Europe in 1975 to look after the 125cc twin ridden by Yamaha's World Champion, Kent Andersson of Sweden.

Trevor continued to work with Yamaha riders in 1966, playing a great part in the development of the 350cc three cylinder "special" that helped Takazumi Katayama to the World Championship last year.

Back in the USA, Yamaha's racing effort (including Roberts' World Championships bid) is co-ordinated by Kenny Clark, himself a former racer of everything from karts (in which he was a US Champion) to motorcycles and even the fearsome fuel dragsters that are so spectacular a part of the American racing scene!

Kenny joined Yamaha in 1972 and was team manager when Jarno Saarinen scored his historic Daytona win on a 350cc twin. He was also heavily involved with the initial Yamaha moto-cross effort which saw American Championship wins for expatriate Dutchman, Pierre Karsmakers.

After a short spell away from Yamaha, Kenny rejoined the company last year to head the US racing department. Under his management the team won five of the six Championship



road races in the States (with Kenny Roberts being the rider on every occasion) and then captured two National Moto Cross Championships. Bob Hannah won the Supercross title (for those incredible "only in America" moto-cross events that are staged on artificial courses inside giant football stadiums) while Broc Glover took the 125cc title.

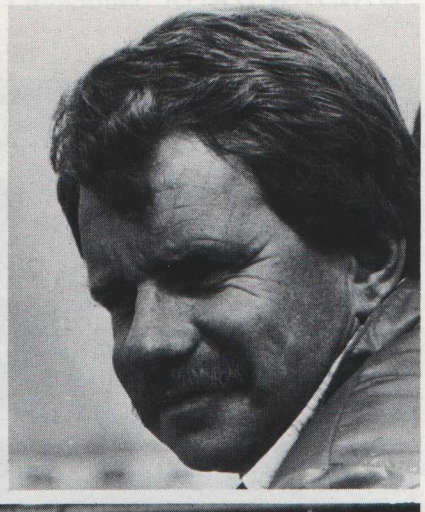
With Yamaha's American racing confined to motocross, Kenny has also been commuting to Europe this season to maintain a link between Kenny Roberts' activities on the Championship trail and home base in the States.

So there it is: to the outside eyes the Kenny Roberts' effort in the World Championships might seem simply a case of a man and his motorcycle. But behind the scenes there's a cosmopolitan support team whose combined record reads like a "Who's Who" of the motorcycle racing business.

YAMAHA

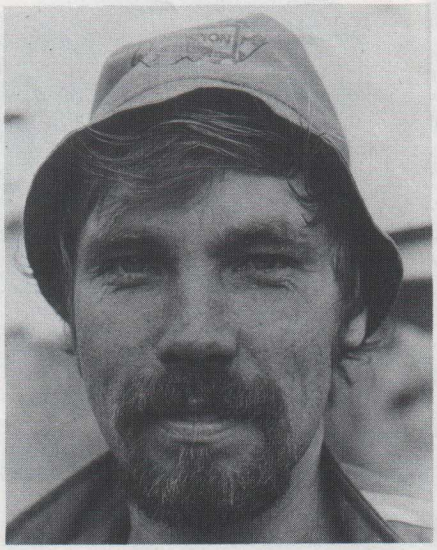
Pat Hennen & Kenny Roberts.

Kenny Clark.



SALUTE TO THE

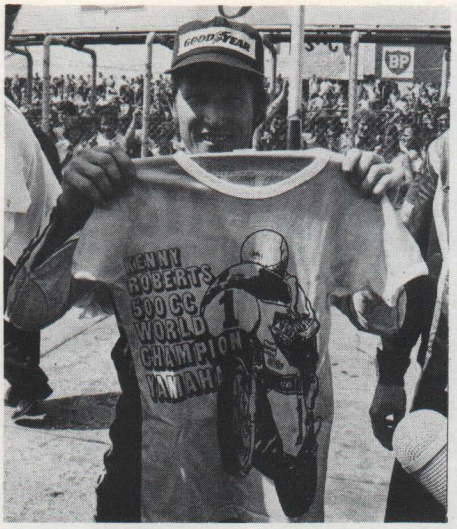
HEIKKI MIKKOLA— 500cc MOTOCROSS



CHAMPIONS—

— YAMAHA'S 1978 WORLD TITLE WINNERS

KENNY ROBERTS—500cc ROAD RACING



Kenny Roberts

SALUTE TO THE CHAMPIONS— YAMAHA'S 1978 WORLD TITLE WINNERS

ROLF BILAND/KENNY WILLIAMS —SIDECAR ROAD RACING

Heikki Mikkola

YAMAHA 1979

XS250	248cc Twin cylinder, Four-stroke
XS400	391cc Twin cylinder, Four-stroke
XS500	500cc Twin Cylinder, Four-stroke
XS650	650cc Twin cylinder, Four-stroke
XS750	747cc Three cylinder, Four-stroke
XS1100	1100cc Four cylinder, Four-stroke

XS

FOUR STROKES

XS250

IMPORTANT

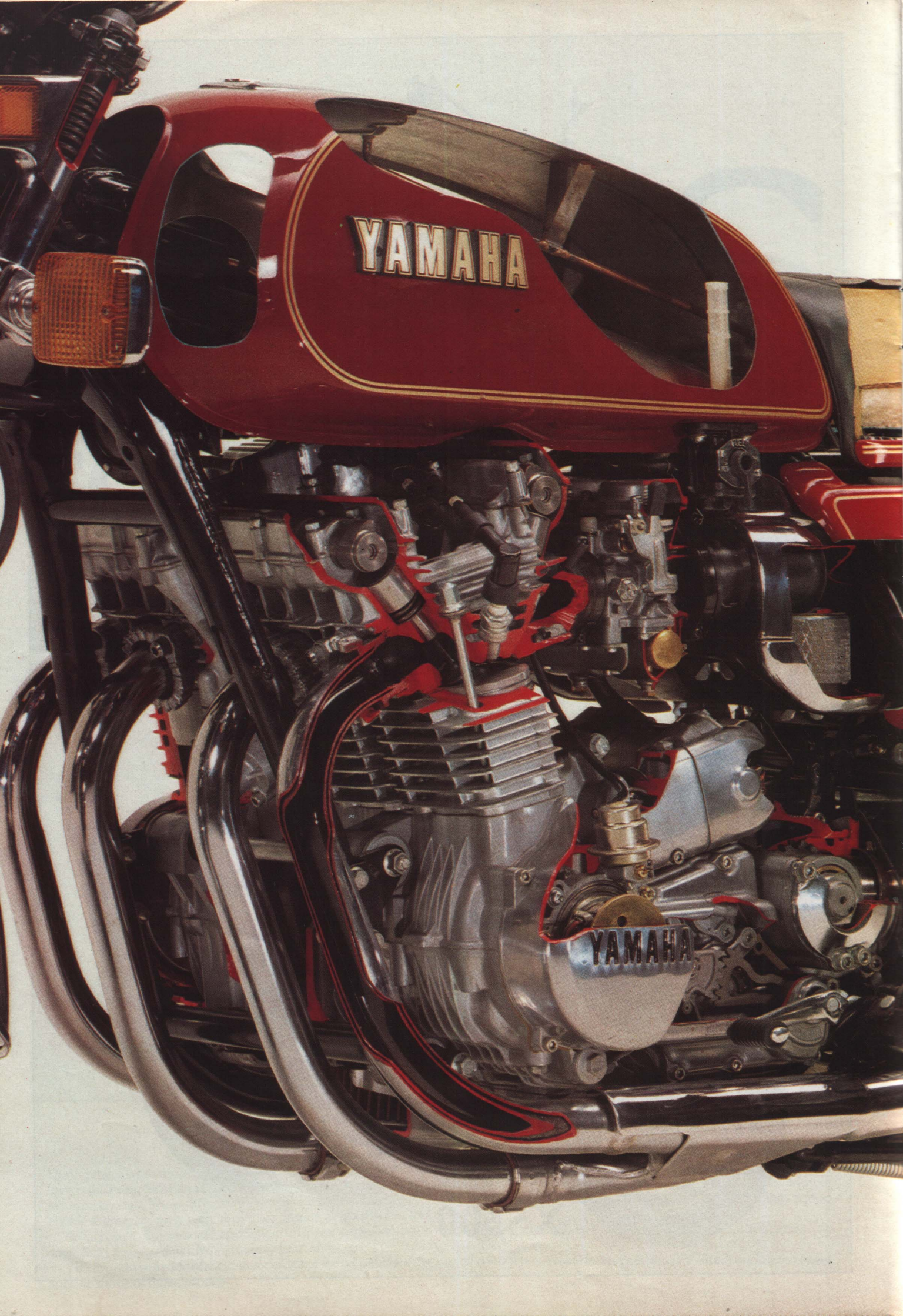
During the year to come Yamaha will produce in the region of two million motorcycles for sale all over the world. Each country has its own regulations relating to turn indicators, mirrors, mudguard lengths and so on as well as certain horsepower ratings for favourable insurance rates. Therefore, we at Yamaha produce machines to enable national importers to take advantage of these things and to enable them to comply with all of their particular governmental regulations.

As a result, the models contained in these pages do not represent the complete Yamaha range and certain machine specifications may differ from country to country.

You are advised to contact your local dealer for full details of the Yamaha models available in your particular country and for the exact specifications of those models.

XS1100

XS500


YAMAHA
YAMAHA

XS750

XS TWO STROKES

XS650

ENDURO 50

ENDURO 125

Enduro 50-M Moped	49cc Single Cylinder, Two-stroke
Enduro 100	96cc Single Cylinder, Two-stroke
Enduro 125E	123cc Single Cylinder, Two-stroke
Enduro 125MX	123cc Single Cylinder, Two-stroke
Enduro 175MX	171cc Single Cylinder, Two-stroke
Enduro 250MX	246cc Single Cylinder, Two-stroke
Enduro 400MX	397cc Single Cylinder, Two-stroke
XT500	499cc Single Cylinder, Four-stroke
TY50-M Trial Moped	49cc Single Cylinder, Two-stroke
TY50 Trial	49cc Single cylinder, Two-stroke
TY125 Trial	123cc Single cylinder, Two-stroke
TY175 Trial	171cc Single cylinder, Two-stroke
TY250 Trial	246cc Single cylinder, Two-stroke

ENDURO

XT500

SR500

SR500 ..... 499cc Single cylinder, four-stroke

HEIKKI MIKKOLA

YAMAHA

CHAMPION DU MONDE 1978
MOTO-CROSS 500 cc.

YZ80 Motocross	79cc Single cylinder, two-stroke
YZ100 Motocross	98cc Single cylinder, two-stroke
YZ125 Motocross	123cc Single cylinder, two-stroke
YZ250 Motocross	246cc Single cylinder, two-stroke
YZ400 Motocross	397cc Single cylinder, two-stroke

MOTOCROSS

YZ80

YZ400

YZ125

R

TWO ST

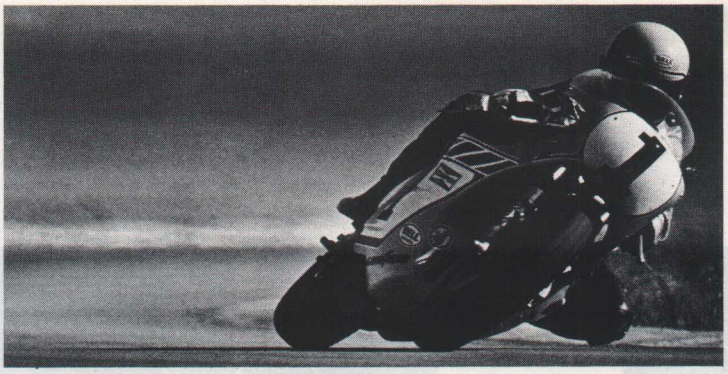
RD400

D

ROKES

RD250

RD



RD50 & RD50M Moped	49cc Single cylinder, two-stroke
RD125	124cc Twin cylinder, two-stroke
RD200	195cc Twin cylinder, two-stroke
RD250	247cc Twin cylinder, two-stroke
RD400	398cc Twin cylinder, two-stroke

RD200

TWO STROKES

V50M Moped	49cc Single cylinder, two-stroke
V80 Mokick	80cc Single cylinder, two-stroke
FS1 & FS1DX Moped	49cc Single cylinder, two-stroke
FS80	73cc Single cylinder, two-stroke
LB2 & LB2M Mokick	73cc Single cylinder, two-stroke
LB3M Mokick	73cc Single cylinder, two-stroke
YB100	100cc Single cylinder, two-stroke
RS100	100cc Single cylinder, two-stroke
RS125	125cc Single cylinder, two-stroke

RD50

FS1

ENGINES TO A HUNDRED UNIVERSITIES— YAMAHA CELEBRATE MAJOR SCIENTIFIC AWARD TO MOTORCYCLING PROFESSOR

Universities and technical colleges all over Europe will benefit this year from a unique link between an Irish professor of engineering, Professor Gordon Blair, and the Yamaha Motor Company.

Earlier this summer, Professor Blair won Britain's Trident Television Award for Communication in Science. Trident TV is one of Britain's major TV networks and their award, in conjunction with The British Association for the Advancement of Science, goes to the scientist who best combines his work with the education process.

Professor Blair is Acting Head of the Science Department and Professor of Mechanical Engineering at Queen's University, Belfast in Northern Ireland.

His work concerns the prediction, through his computerised analysis of the gas-flow performance of small - capacity internal combustion engines. With his method, the performance of an engine can be measured theoretically - before that engine actually exists. Then that "theoretical" engine can be constructed to the specifications laid down by Professor Blair's computer work.

Alternatively, existing engines can be put through the QUB computer-analysis process and modified, as a result, for improved performance in terms of power output, emission of toxic gases, noise ouptut and so on.

Using the computer for such testing and development processes is far more economical and efficient than the previous "hit or miss" methods prevalent in the industry.

Professor Blair has strong links with Yamaha, using his techniques on the company's behalf as a consultant. Additionally, he puts his ideas into practice himself by running his own team of Yamaha racers from the University - a neat way of combining business with pleasure! Rider, Ray McCullough, has won numerous Irish Championships with 250 and 350cc QUB-Yamahas, modified in the University workshops to Professor Blair's theories.

When Professor Blair won the Trident TV award, he was made the subject of an hour-long documentary film, shown nationwide on British television in July.

He and the Trident TV camera crews visited the Yamaha factory in Japan for much of the filming and, to commemorate the occasion, Yamaha President, Mr Koike, presented

Professor Gordon Blair.

Yamaha President, Mr Koike, welcomes Professor Blair and the Trident Television film crew to the factory in Japan and celebrates the occasion by presenting him with 100 cutaway engines. These will be used as teaching aids in universities and colleges all over Europe.

Professor Blair with 100 cutaway engines. These will be used as laboratory teaching aids in universities and technical colleges all over Europe, as selected by Professor Blair.

The official European presentation ceremony to hand the engines over to Professor Blair, was made by Mr Konome, Managing Director of Yamaha Motor NV, Amsterdam, at a luncheon ceremony in July at London's Churchill Hotel.

Commented Professor Blair, "There is no doubt that thousands of European students will have a far greater understanding of engine design due to the presence of these Yamaha motors in universities and colleges.

In the resumee submitted by Professor Blair for the judging process of the Trident TV award, he describes his work with the following summary: "The performance and noise characteristic analysis hinges on being able to describe the geometry of all of the engine and its silencers very thoroughly and to, as it were, "stick a label" on every particle of air as it enters the intake of the power unit. Then one follows its progress every few micro-seconds so as to predict thermodynamically its new pressure, velocity, density, temperature and position.

"It is then observed mathematically while it burns with the fuel with which it associates before being ultimately exhausted from the cylinder.

"This calculation procedure is carried out on a digital computer and from it one can determine how much power the engine will develop, how much air and fuel it has breathed, how high is the torque and how much noise the intake and exhaust systems make, either separately or combined.

"For any given design, the geometry of the engine and its ducting are varied until the correct desired performance is achieved."

Dr Rowe (Manchester University), Peter Roberts (Mitsui UK), Mr T. Konome (Yamaha Motor NV, Amsterdam), Robert Jackson (Mitsui UK) and Professor Blair at the European engine-presentation ceremony at the Churchill Hotel in London.

YAMAHA UND

A Yamaha winning one of the world's most famous races without even the use of an engine? That sounds something of a ridiculous statement, especially when one considers that Yamaha's considerable international reputation has been built to a great deal upon powered products ... either motorcycle or marine.

The race in question, however, was the 1975 running of the single-handed ocean-going yacht race from San Francisco to Japan and it was a victory which focussed the attention of the nautical world upon yet another Yamaha venture ... the manufacture of a range of high quality sailboats.

Recently introduced into Europe – after sales successes in the USA, Canada and Australian markets – the Yamaha sailboat range now includes a dozen models ranging from the 14-foot Sea Hopper to a full 36-foot ocean-going craft.

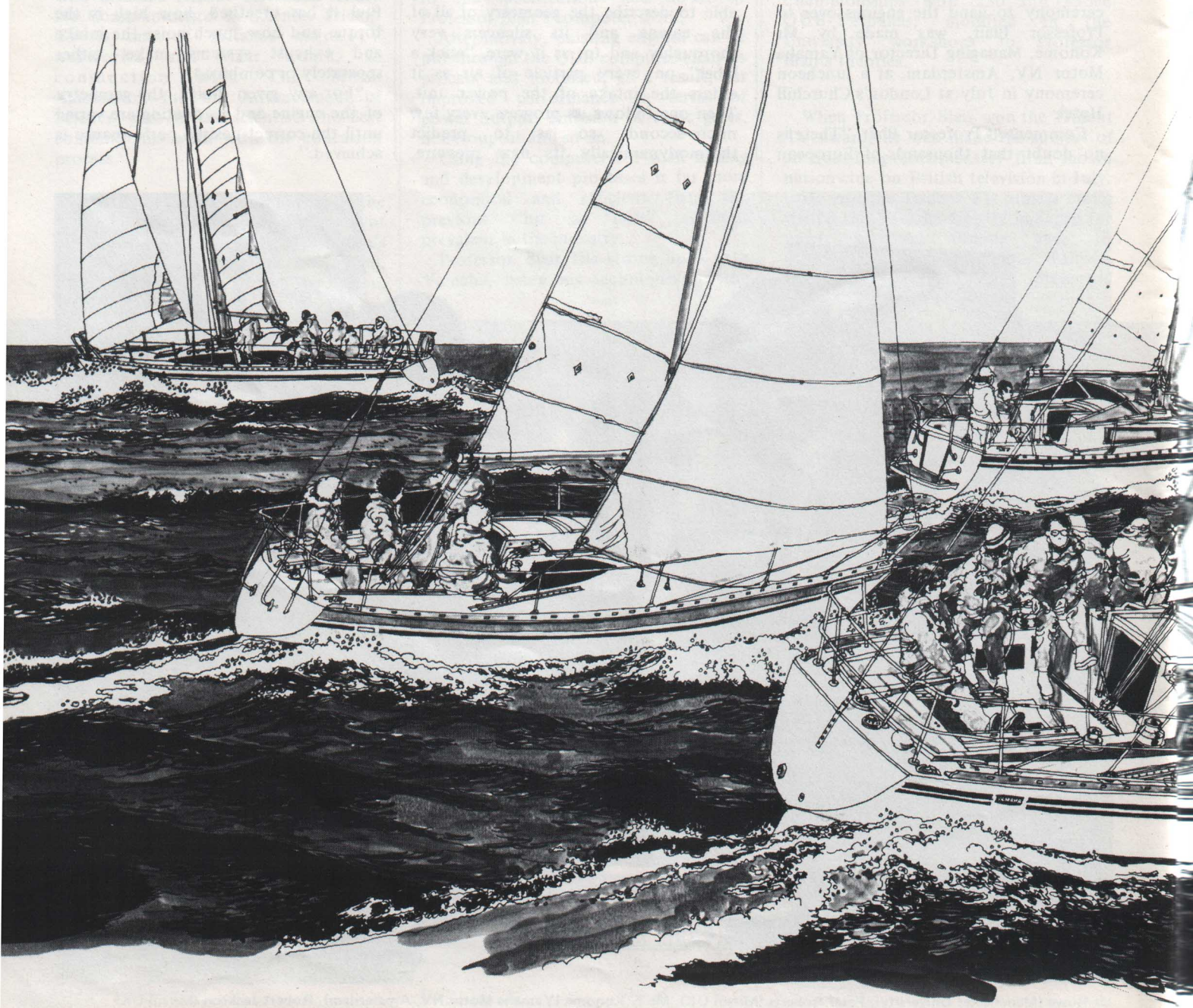
The addition of a sailboat range to Yamaha's other diverse products came as an extension of their steps into the marine world via the famous Yamaha outboard engines.

These had established Yamaha as a virtual "household name" with water sports enthusiasts and working boat owners within a couple of years of their introduction in 1965.

From there it was but a short step into the realms of boat construction itself. Especially as Yamaha's production in other areas involved the use of modern materials such as polyester glassfibres ... one of the basic construction materials of most of today's boats.

First priority in the boat business for Yamaha was the introduction of polyester construction for small fishing vessels. Japan is highly dependent on fish as a source of protein for its population and Yamaha engineers theorised that the use of glassfibre materials for hull and deck construction of fishing boats would eliminate a great deal of the constant maintenance work that is necessary on salt-water vessels. Boats could work longer, and thus be more efficient and economical for fleet owners or independent fishermen to operate.

In addition, glassfibre construction methods were much speedier than conventional boat building in wood or metal and, therefore, the fishing fleets of Japan could be quickly expanded at reasonable cost to owners.



ER FULL SAIL

Yamaha engineers tested their hulls under the most severe conditions and in 1970 put their fishing boats on the market. Their theorising was soon proved correct. Since 1970 the company has produced some 300,000 fishing boats that have proved tough, seaworthy and hard-working. Yamaha may rightly say that the company was responsible for converting the bulk of one of the world's largest fishing fleets to polyester glassfibre boats!

From fishing boats to sporting yachts was the next step. Design engineers studied the hull shapes and so on of the fastest yachts of the day and then came up with their own 21-foot design that soon started to win race after race.

The boat was so successful that the public were clamouring for a production version of it and Yamaha were thus into the sporting sailboat business!

From there the production expanded in both directions. Up to the big 36-footers which, like all of the larger Yamaha yachts, utilise lessons learned from ocean-racing and long-distance single-handed runs. And down to the little "fun boats" like the 11-foot to 15-foot range. These are little dinghy-type sailboats built purely for pleasure use offshore or on inland lakes and rivers.

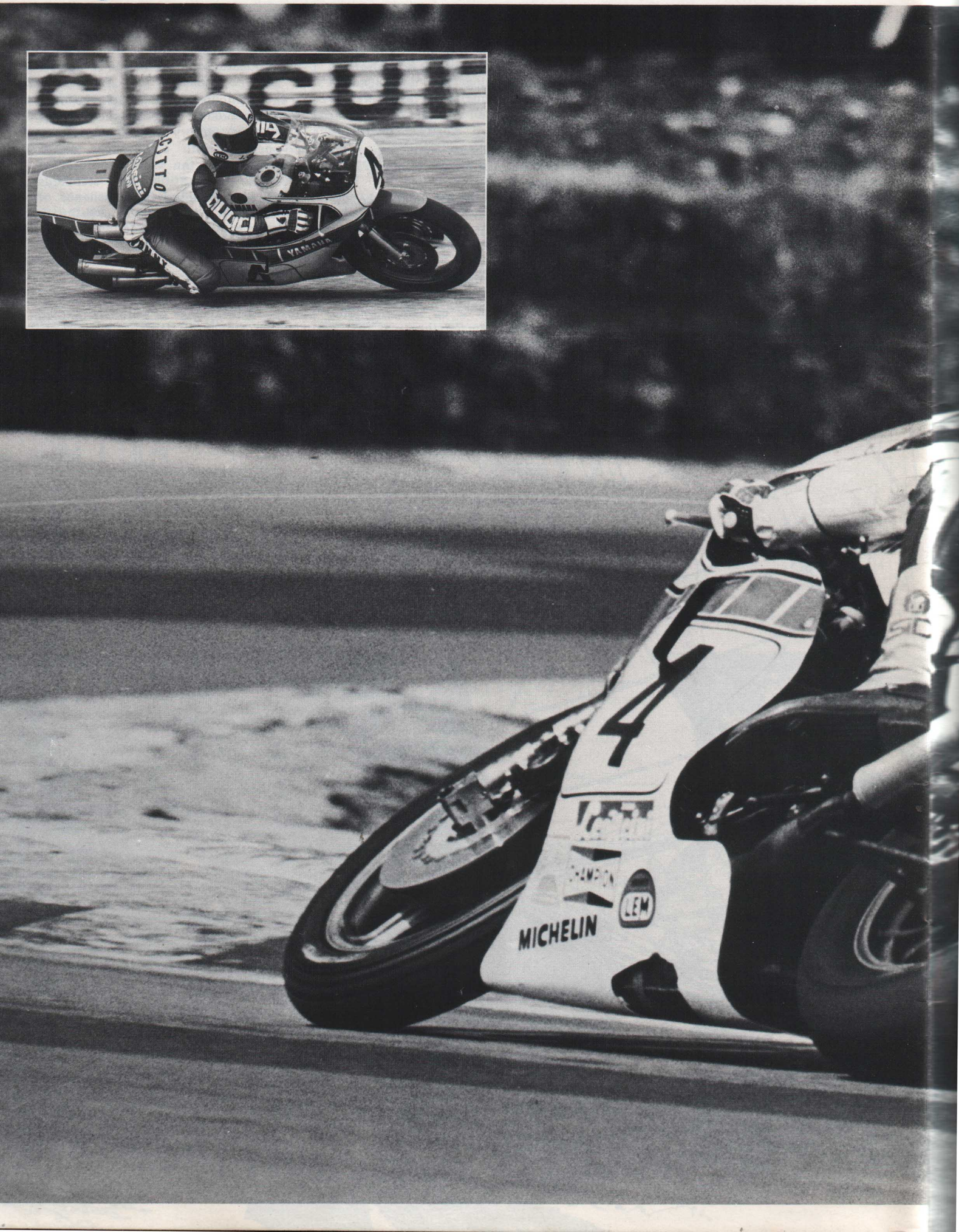
In the mid-range are boats like the 17-foot and 21-foot day cruisers with passenger compartments and plenty of storage space.

The bigger Yamaha yachts (beginning with a 21-foot cruiser) have cabins where the accent is on efficiency and comfort. The Yamaha theory is that a man buys a sailboat for the excitement of sailing and the test of his skills. But often sailing is a family sport and the wife looks for comfort and relaxation. Yamaha's yachts combine both of these pre-requisites.

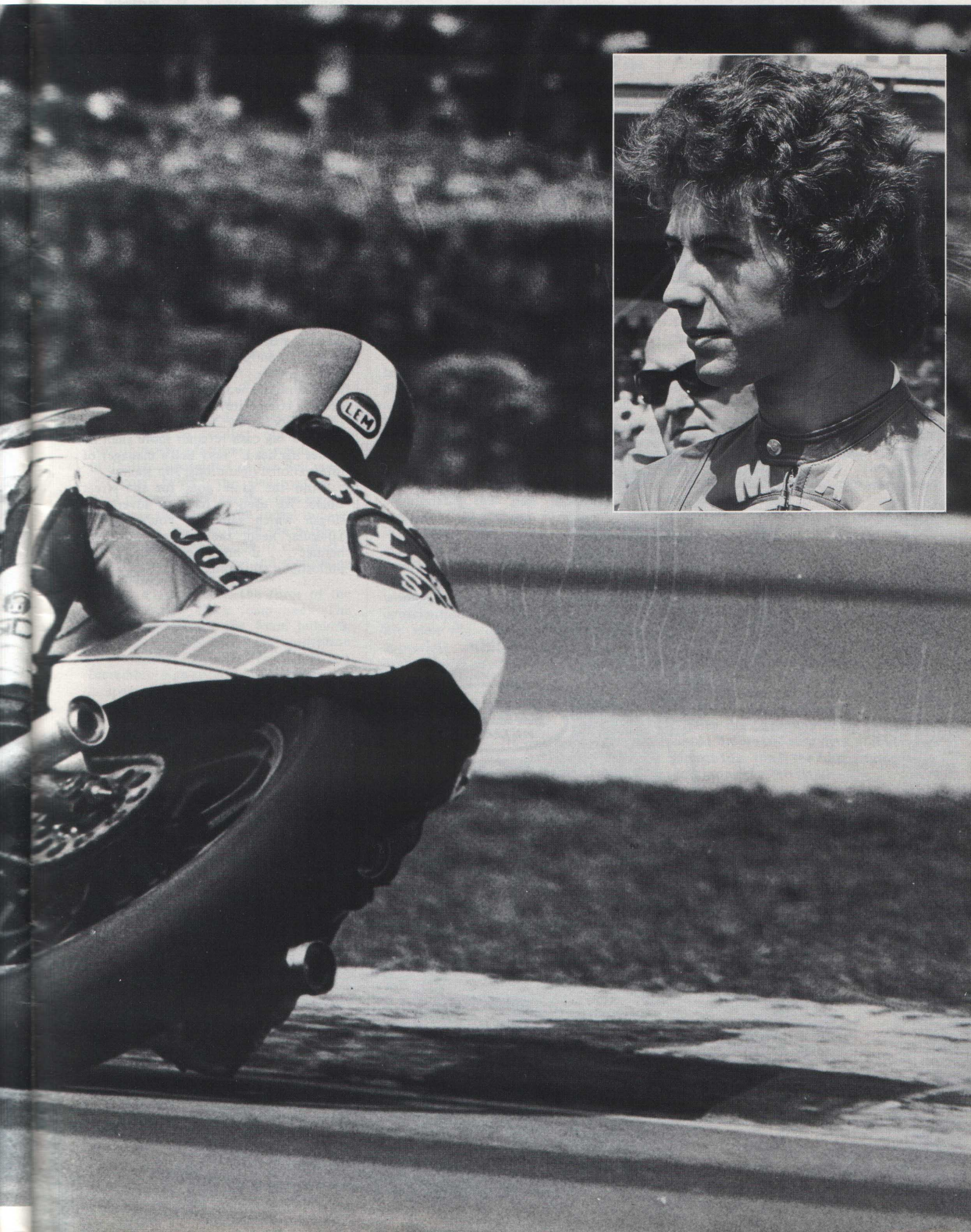
In the overall design of the first Yamaha boats, such as the 29-foot Mk. I, the factory development team co-operated with a European design group so that the yachts conform to Western specifications and standards while still retaining the excellence of construction that is a Yamaha hallmark and the superb interior design that is a feature of Japanese culture.

This inter-marriage of Western and Eastern manufacture and design has resulted in a range of sailboats that, to quote Yamaha's famous motorcycle slogan, are very definitely some of the "better machines" in their field.

JOHNNY CECOTTO—F7



F750 WORLD CHAMPION



BELL HELMETS— PROTECTION IS THEIR BUSINESS

In these days of hyper-promotion, it is most unusual to find a company whose advertising and publicity budget is one of the smallest items on their Balance Sheet ... especially when that company's product is virtually a household name in its field!

In the ultra-competitive world of safety helmet sales, this situation is still more unusual. Safety helmets are big business and promotions of the various brands in Europe run to sponsorship of racing teams, big-money sponsorship of race series, slick colour ads featuring body-painted nude models and huge sums paid to star riders.

What, then, is the reason for the success of Bell Helmets – an American brand who proudly boast that they have never, ever, paid any racing motorcyclist or driver to wear their helmets. Bell's promotional budget runs to free helmets for "name" riders, a far from excessive advertising budget in trade and enthusiast publications and contingency payments to competitors who win wearing a Bell helmet.

The reason for this success, say Bell, is quite simple. They make the finest helmet in the world and challenge any of their competitors to disprove it.

"It gets down to whether a racer values a big cash retainer more than he values his head," says Bell's manager of international operations, Jon Kailey.

"And the same goes for the street riders. We used to have an advertising slogan which said: 'If you've got a 10-dollar head, then wear a 10-dollar helmet ... if not, wear a Bell', that philosophy still holds good."

There's no doubt about it ... Bell helmets are expensive. But a tour of their huge facility in Los Angeles, California, soon shows why. The factory is big enough to house four soccer fields and thousands of helmets are shipped out daily to dealers and distributors all over the USA and in several major overseas markets.

The first thing that one notices on a tour of this building is just how much of the Bell process is done by hand.

"There are two main important factors in the building of a safety helmet," says Jon Kailey. "Firstly, there is the need for the best quality materials and, secondly, the way that those various materials are assembled into the final product.

"At Bell we use the very best fibreglass cloth and a custom-formulated quality resin that is one of the most important items in determining the final strength of construction.

"Bell helmets are constructed with extra layers of fibreglass in areas of great stress, and hand lamination is the best way to ensure this."

This cross-layering of the fibreglass was pioneered by Bell over 20 years ago, as was the expanded polystyrene foam liner which is another of the main contributory factors towards the protective capabilities of the Bell range.

Theory behind the Bell system of head protection is that the cross-layered fibreglass shell takes the initial impact. If it cracks, then so much the better as that partial disintegration of the shell is all the while absorbing and dissipating the energy of the impact.

Next to damp out the force of the impact is the thick foam liner. The impact compresses the foam bubbles, which have incredibly high absorption qualities, and this means that (in all but incredibly high-speed impacts) the force is spent by the time that it reaches the brain.

The Bell range of helmets begins with the RT (Road/Trail) open face model and the Magnum II which is another open face helmet but built to the tough Snell 75 racing-quality standards.

All of the Bell helmets meet the rigorous standards laid down by the American Department of Transportation with most of the range meeting the even more stringent requirements of the Snell 70 and Snell 75 standards.

The full-coverage helmets so much in vogue these days were invented by Bell some 10 years ago when they brought out their first Star model. Bell now have two versions of this much-copied helmet – the Star 120, which is intended mainly for street riders, and the racing-quality Star II.

Then there is the Moto-Star, which allows goggles to be worn by moto-cross and other off-road riders, while still offering the facial protection of the other Star models.

Finally, there are helmets for trials riding and even bicycling.

In all of these helmets, quality is the key word. As well as the hand lamination of the fibreglass shell, just about all of the remaining components are either made or assembled by skilled workers. These workers are paid on "piece work" rates which mean that they earn really good money, thus ensuring they take a pride in their work. Not only that, they are only paid for components that pass Bell's rigorous inspection procedures. Bad workmanship means no wages ... which is another way of ensuring the best!

Bell have found that, in most jobs allied to safety helmet manufacture, women seem to be the most conscientious workers ... which makes the men who do work at the factory appreciate their working conditions even more!

Women feature heavily in the lamination process, in the cross-stitching of the helmet straps and in assembly procedures. Men are more in evidence working the complex machinery that produces Bell's polystyrene foam liners, in application of the quality rubber edging around the helmets and in the paint shop that applies the superb finishing touches to the product.

Helmets that are finally approved for shipmet to retailers will have passed no less than 25 separate inspection processes before they reach the despatch department!

Not only that, every one of these helmets has the name and other identification marks of the worker building the shell written on to the fibreglass cloth before it receives the resin and is laminated.

Thus, the company know exactly who made the shell for each helmet that they sell!

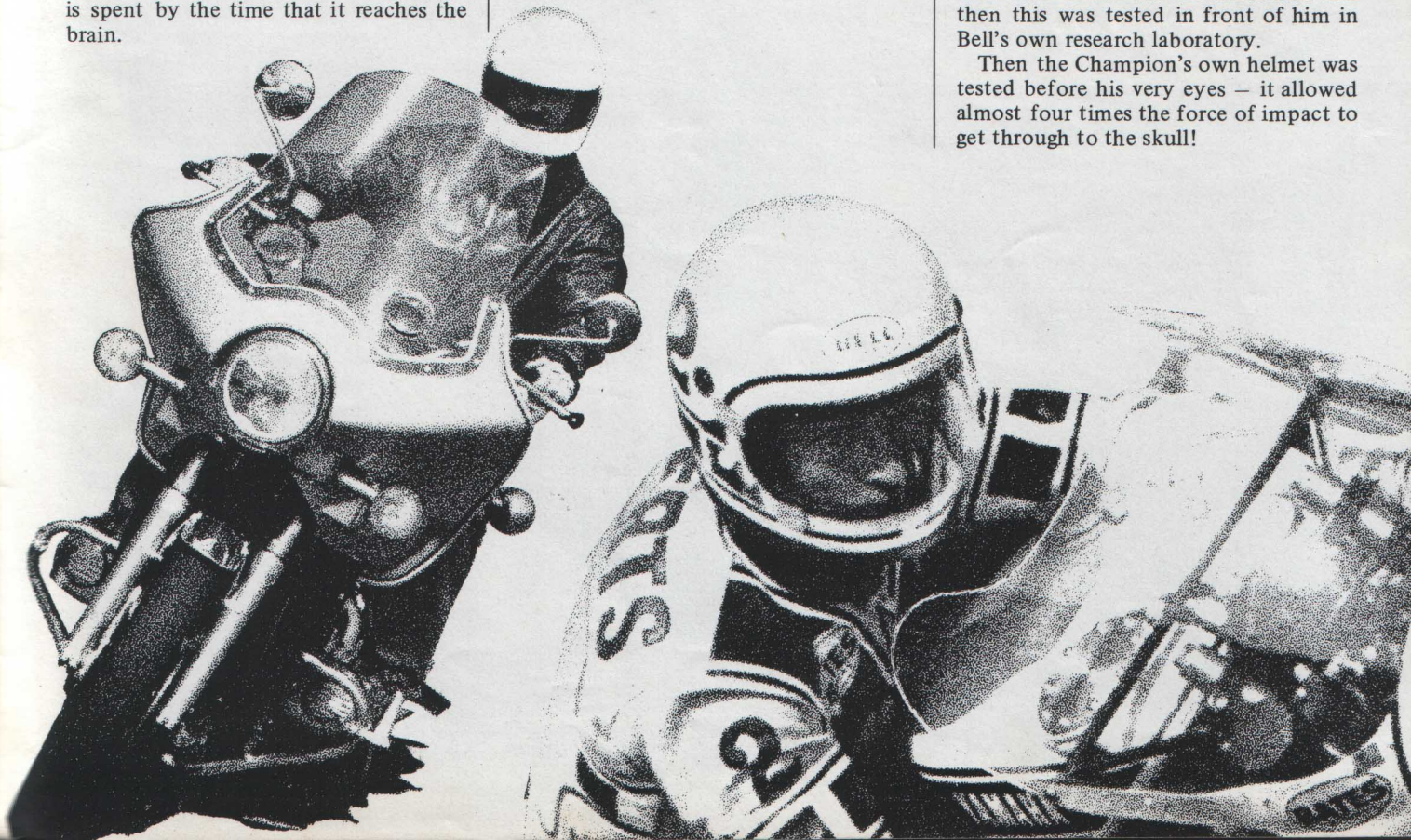
Bell, in fact, can trace back each of their helmet components to an individual worker if necessary.

A graphic example of this came after Mario Andretti had a bad crash in which his helmet undoubtedly saved his life. He visited the Bell factory to express his thanks and the company were able to introduce Mario to each one of the people responsible for the construction of that particular helmet – the woman who made the shell, the man who sewed the chinstraps and so on!

Top-line motorcycle and car racers are frequent visitors to the Bell factory ... even those who are contracted to other makes.

One former World Formula One Champion driver was being shown around the factory recently and asked Bell to prove their claims that his particular make of helmet was inferior to theirs. He was invited to take any Star II helmet from the warehouse and then this was tested in front of him in Bell's own research laboratory.

Then the Champion's own helmet was tested before his very eyes – it allowed almost four times the force of impact to get through to the skull!



Bell have so much faith in their standard product that no special shells are produced for the star riders or drivers. The company might make minor fitting alterations to the lining and padding but that's all.

They will also make special cuts to the eye openings in the Star models for racers who want a certain style of helmet. That's how the Moto Star came about and the latest in this style is the helmet built for Grand Prix driver, Jacky Ickx, who has a helmet that has two separate eye openings with a fibreglass bridge left in to protect the nose. Many other car racers are now asking for a similar helmet so we might see that as a production item at some time in the future.

As far as materials are concerned Bell have very strong thoughts upon the use of polycarbonates, hailed a few years ago as space-age materials capable of resisting terrific impact. Despite this, the Bell attitude towards polycarbonate shells for car or motorcycle helmets is totally negative.

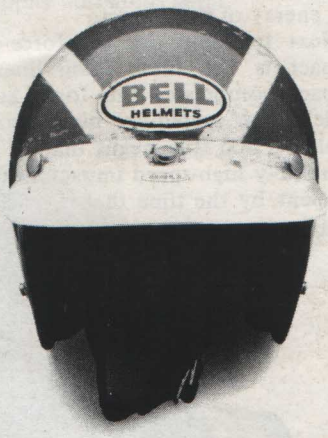
They make bicycle helmets from this material but don't expect to see polycarbonate used by Bell in motorcycle or car racing applications. What you can continue to expect to see from Bell, however, is the same quality and attention to detail that has made their name a standard for safety helmet design for more than a decade.

ROGER DE COSTER:
World 500cc Motocross Champion in 1971, 1972, 1973, 1975 and 1976.

BELL®
HELMETS

GARY NIXON:
Leading American road racer and American Grand National Champion in 1967 and 1968.

KENNY ROBERTS:
1978 World 500cc Road Race Champion and American Grand National Champion in both 1973 and 1974.



MALCOLM SMITH:
Top American Enduro rider and off-road racer plus many-time ISDT Gold Medal winner.

RUSS COLLINS:
Fastest drag racer in the world with a recent terminal speed effort of over 199mph in the standing start quarter mile!