



## Yamaha Racing Highlights

# Yamaha's Triple Victory -French GP-

## Opening Round, '73 World Series

Jarno Saarinen riding a water-cooled 4-cylinder Yamaha won the 500cc race of the French GP, first of the '73 world championship road race series consisting of 12 rounds. The French GP took place on the Paul Ricard circuit on April 22, attracting a big crowd estimated at approx. 65,000. Saarinen won the 20-lap 500cc race after a high speed dice with reigning champion Giacomo Agostini on an MV works machine.

Saarinen rode his lightweight 250cc water-cooled Yamaha to victory in the 250cc race, too, in tougher bid for clinching his title for the second consecutive year.

In this 20-lap race he maintained the lead from start to finish closely followed by Hideo Kanaya, his team-mate who eventually crossed the line second.

Swedish veteran Kent Andersson also scored a win in the 17-lap 125cc race, beating Borje Jonsson on a Maico works machine.

Yamaha's sensational triple victory deeply impressed spectators.

# Saarinen Pilots Yamaha to Victory — Imola 200 —

Fresh from a brilliant victory in the Daytona 200-mile race, Jarno Saarinen riding a water cooled 350 Yamaha did it again in the Imola 200-mile race which was run on April 15. The race took place as the opening round of this year's FIM formula 750 series, watched by approx. 60,000 spectators.

Fighting many 750cc machines of other brands, Saarine's 350 Yamaha proved amazingly fast and reliable again throuout racing. Saarinen finished first in both legs, setting the fastest lap at 1m 48.9s — 103.54mph. Tough challenge came from Kawasaki, Harley-Davidson or Ducati riders, but none was successful in catching up with 'Flying Finn', eventually.



### Overall results

1st.	Jarno Saarinen	Yamaha
2nd.	Bruno Spaggiari	Ducati
3rd.	Walter Villa	Kawasaki
4th.	T. Lansivuori	Yamaha
6th.	Kel Carruthers	Yamaha



### Results

#### 500cc class

1st.	J. Saarinen	Yamaha
2nd.	P. Read	MV
3rd.	H. Kanaya	Yamaha

#### 250cc class

1st.	J. Saarinen	Yamaha
2nd.	H. Kanaya	Yamaha
3rd.	Renzo Pasolini	Harley Davidson

#### 125cc class

1st.	K. Andersson	Yamaha
2nd.	B. Jonsson	Maico
3rd.	I. Tchernine	Yamaha

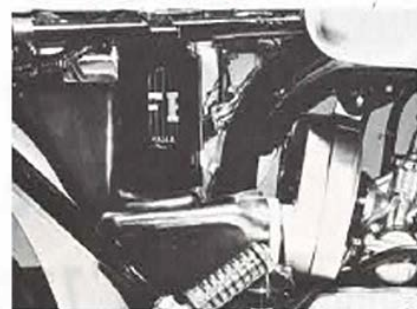


Jarno Saarinen on YAMAHA 500cc 4-cylinder in the French G.P. on April 22, 1973.



Hideo Kanaya on a YAMAHA 500cc 4-cylinder, leading Phil Read on M.V. In the French road race G.P. on April 22, 1973.





## Unique, Speciality Bike AG 100

Unique, lightweight speciality machine has been unveiled by Yamaha. It is called AG 100 (AG stands for agriculture) which is intended mainly for use on the farm lands in Australia or New Zealand, but will also prove excellently serviceable on whatever terrains, retaining all features which are required of the trail machine.

Basing on abundant technical data obtained through strenuous research and survey, Yamaha has developed and engineered this model for smoother and easier negotiation of rugged terrain or inclement weather conditions with ride-to-work motorcyclists in mind.

The machine is powered by the spirited 97cc Torque Induction 2-stroke single-cylinder engine which delivers smooth, dependable output on whatever riding surfaces.

### Ideally equipped for the purpose

Of all technical features of this model, various guards and protectors attract the greatest attention. Those devices have been almost perfectly designed and engineered with every off-the-road riding condition taken into consideration.

The lever guards of tubular steel protect the levers when falling, and also prevent hands from being injured. The guards which are placed over the cable ends protect the brake and clutch levers against dirt or water. The headlamp and meter guard provides full protection to lights and instruments from side impacts.

The full chain case which protects the chain, is in turn equipped with the chain case guard.

The well designed, rubber cover prevents mud from entering through gaps between the crankcase and chain case.

The engine guard does much for protecting

#### Main Technical Data

Max. speed range:	85 - 90km/h (53 - 56mph)
Climbing ability:	30 degrees
Min. turning radius:	2,100 mm (82.7 in.)
Min. braking distance:	15m at 60km/h
Engine:	2-stroke, 7-port Torque Induction, single
Displacement:	97cc
Bore x Stroke:	52 x 45.6mm
Compression ratio:	6.85 : 1
Max. torque:	0.9kg-m/6,500rpm
Lubrication system:	Autolube
Starting system:	Primary kick
Transmission:	5-speed gearbox
Overall length:	1,975mm
Overall width:	835mm
Overall height:	1,045mm
Wheelbase:	1,245mm
Min. ground clearance:	225mm
Weight:	95kg

the crankcase against slinging stones.

A little more attention will reveal that the exhaust pipe is equipped with the protector which is designed to prevent rider's leg from directly touching it.

Flaps, front and rear, also prove very useful in reducing troubles caused by slinging mud or stones.

The 5-speed transmission features specially selected gear ratios to suit every conceivable riding condition on rough surfaces with neutral at the very bottom. Gears from 1st to 3rd are for slow and steady riding over the roughest terrain. On the other hand, 4th and 5th are for highway cruising.

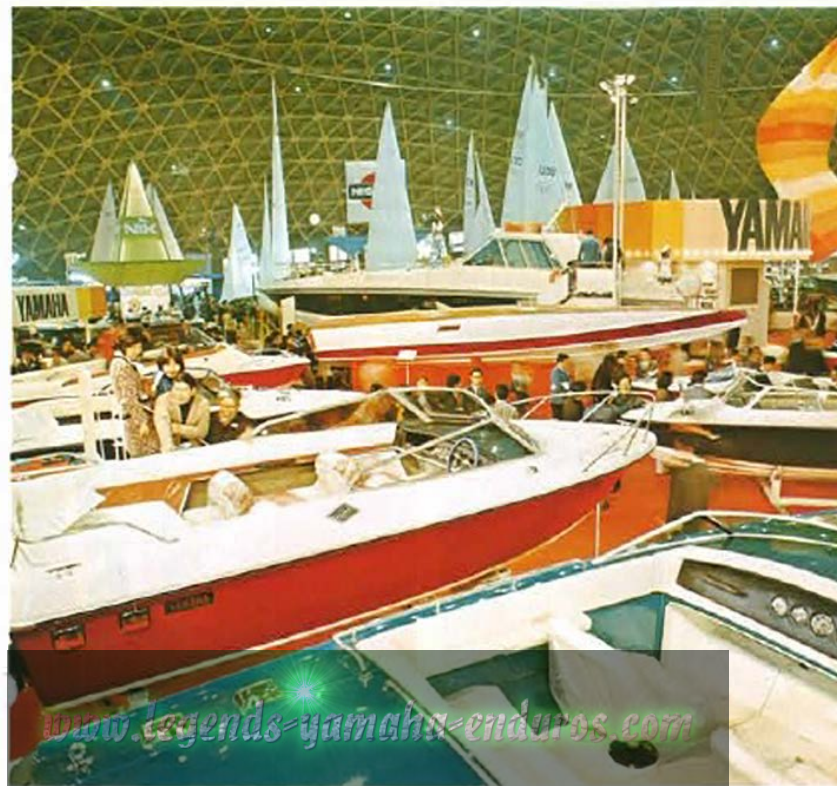
The 5-step adjustable shock absorption units, large-size air cleaner, big side stand, large carrier have been also designed in such a way that they may specially fit off-the-road riding.



## Festival of Sun & Water

The 12th Tokyo Boat Show took place on a grand scale at the Harumi seaside court during a 5-day period from March 21. The show is an annual important event which is held just before the water season opens in Japan.

This year 111 manufacturers participated in the show with 305 boats and yachts, and 239 motors on display. Those were all record-breaking numbers in the history of the show.



### Foreign Models Exhibited

This year's show featured much more internationality than before with a lot of foreign models exhibited with rapidly growing enthusiasm to water recreations here for a background.

Each manufacturer arranged its own corner in such a way that healthy, pleasurable water recreations could more widely and efficiently appeal to the public.

On the other hand, however, it also seemed that all manufacturers directed particular efforts toward the promotion of safe boating or yachting manners.

### Most Attractive Yamaha Corner

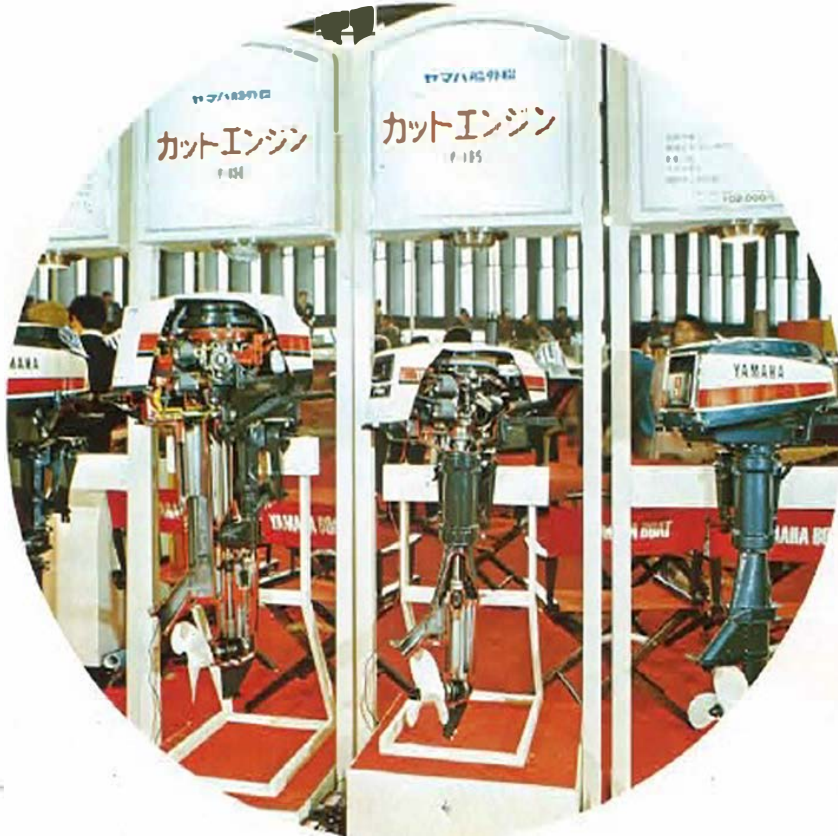
As the leading boat and outboard manufacturer in Japan, Yamaha exhibited the grandest line of new boat and outboard motor models of wide variety in size and colouring for '73. The Yamaha corner became the focus of spectators' interest each day throughout the show session. Various marine consultation corners established by Yamaha were also favourably received by boating fans. Definitely reflecting evergrowing popularity for water sports here, the sport corner attracted the largest number of visitors each day.





Rugged, Light & Easy Handling

## Yamaha Outboard Motors



A full line of Yamaha outboard motors ranging in power from 2.5 hp to 25 hp attracted great public attention for their rugged, light structure and excellently easy handling which are highly appreciated by boating fans and fishermen as well. Every feature of each model was explained by an attractive girl, and two models were exhibited in such a way that spectators could learn easily every knowhow of Internal motor mechanism. Yamaha secures some 70% of total outboard motor market in Japan.



## Long Proven FRP Fishing Boats

The large-size fishing boats were on display, too. Those boats were made of Yamaha's long proven F.R.P. which was lighter than aluminum and stronger than steel. The F.R.P. fishing boats of Yamaha have greatly improved the work efficiency of fishing operations around Japan in recent years. They always ensure larger catches of fish at much lower costs than before. F.R.P. is reputed to have various advantages such as light weight, outstanding seaworthiness, easy maintenance, and excellent durability. Yamaha has the richest experience in the development of this material for practical use in Japan.



## Yamaha's Marine Consultation Corners

Yamaha established various marine consultation corners designed to advise every boating or yachting fan how to enjoy water recreations safely. As the leading manufacturer in this field in Japan, Yamaha has been most aggressive to promote the spread of marine safety by organizing the sessions of safe boating school, sailing school, amateur radio telegraphy school, etc. throughout Japan.

## Exciting, Colorful Pleasure Boats

The corner of Yamaha pleasure boats in the widest variety ever introduced at the show in Japan provided the main highlight at the exhibition hall. Yamaha is proud of its unrivaled 80% share on the home market, and convincingly displayed a full line of row boats, motor boats and sailboats all over the corner, which aroused fresh excitement among a lot of spectators. Yamaha's new deluxe cabin cruiser STR-43CR which was the largest of the line added special dimension to the corner. The X100, Yamaha's experimental racing model which was exhibited, also monopolized the topics of water sport enthusiasts. Yamaha sailboat models enjoyed high popularity as the new trendsetter of water recreations on the sea around Japan.





# Technical Center Opens

## Higher Steps Taken toward New Goal of Safety Education

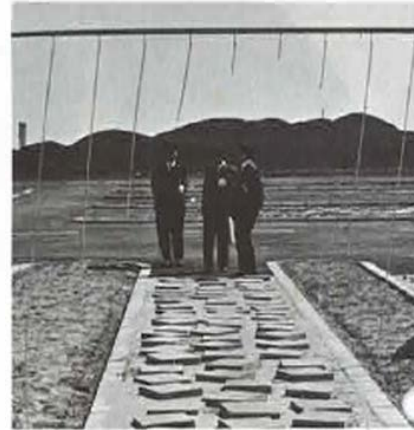
As Yamaha's new center for comprehensive safe driving education, the Technical Center Iwata opened on April 6. As already reported by this journal, the center is located at the site just facing the main office building of Yamaha, covering a total area of 9,500m<sup>2</sup>, including 6,400m<sup>2</sup> for total course area.

The opening ceremony was attended by a lot of people, public and private, concerned with safe driving education, including the representatives of police and municipal authorities.

After ceremony, Yamaha safety instructors set an example for safe driving techniques on various courses.

The center is claimed to be one of the best facilities available exclusively for training motorcyclists in Japan.

Yamaha has taken definite steps higher toward the new goal of safe driving education for motorcyclists with this new center completed.



## Under Management of Yamaha Safe Driving Promotion Center

The center is complete with all conceivable training facilities for safe driving education, such as the main course, 8-figure course, slalom course, sand course, gravel course, undulatory course, crank course, rough surfaced course, etc. together with the office, lecture room, mechanical training room, adaptability test room and observation tower, all of which are designed to let motorcyclists or prospective motorcyclists train their skills or acquire basic techniques and technical knowhow for safe and pleasurable motorcycling.

In line with rapid and tremendous increase of motorcycles on the road, driving safety is becoming the matter of growing public concern, and it has become most im-

perative for manufacturers to take the initiative in smooth, comprehensive promotion of safe driving education program on a nationwide scale in close cooperation with various public and private traffic-safety organizations.

The extreme shortage of motorcycle-specialized training facilities in Japan has long prevented this program from making any satisfactory progress.

The completion of Technical Center Iwata, a powerful, large-scale facility of the kind, is expected to make great contributions to much smoother execution of the program. The Center has the three main functions as below:

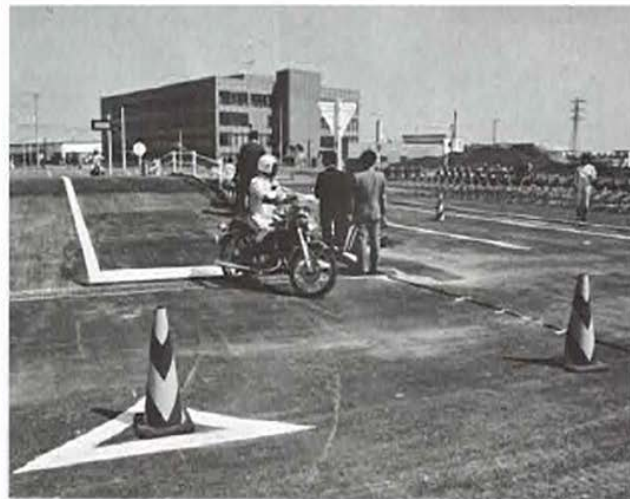
1. to teach motorcyclists how to ride

bikes safely and correctly for elimination of traffic accidents caused by novice riders,

2. to train those wishing to obtain driving licences for correct techniques and knowledge, and

3. to promote the spread of safe and pleasurable motorcycle sports through teaching motorcyclists various techniques applicable to various sport events.

The Center is placed under direct management of Yamaha Safe Driving Promotion Center, and opened even on Saturday and Sunday every week for the sake of public convenience.



# Learn-To-Ride Safety Program

## The United States

Yamaha International Corporation in Los Angeles, Calif., United States is now promoting the 65-city '73 schedule for its new 'Learn-To-Ride' motorcycle safety program.

Three school teams are bringing safe motorcycle riding techniques right to the people in a free program that will reach an estimated 250,000 persons during this year.

This program is but one more step in the continuing effort by Yamaha to improve motorcycle safety in the United States.

The course is designed to give prospective motorcycle owners their first taste of riding under carefully supervised instruction, with particular emphasis laid on safety.

Free and open to the public, the LTR is the first and only national motorcycle safety clinic in the United States.



## Favorable Public Support

No free national motorcycle safety program of this scope has been attempted before in the United States, and Yamaha's program is now receiving support of private and governmental safety organizations. It has been already commended as a "positive, action-oriented safety effort", by the National Highway Traffic Safety Administration.

Yamaha's aim is to send qualified motorcycle safety instructors into major American

cities, providing safe riding instruction to persons just learning to ride, Yamaha Motorcycle Division Vice President, Terry L. Tiernan, said. "Instead of waiting for beginners to come to us, we're taking safe riding instruction to them."

Mr. Tiernan stressed the importance of reaching beginning riders, stating that nearly 60% of all motorcycle accidents occur during a person's first six weeks of riding.



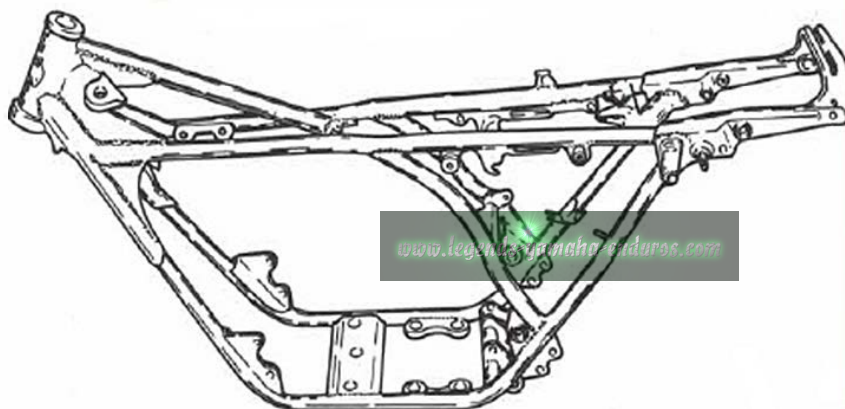


# Be Familiar with Them Now

## Frames **Part I**

The frame is the so-called 'skelton' of a motorcycle. It is designed to support the engine, wheels and all other components as well as a rider. Therefore, it must be rugged enough to withstand shocks from bumpy riding surfaces. In addition, it must be light enough to ensure smooth, easy handling. In a word, the frame is the most important factor greatly affecting the overall configuration of the motorcycle.

Frames are usually made of steel plates, tubes or plate-tube combination.



### Cradle frame

This is designed to hold the engine in its loop section. The triangular shaped structure is superior in strength, and the cradle frame is composed of a combination of such triangles or similar shapes. The cradle frame is usually adopted for engines ranging from medium to large displacement. There are two types of cradle frames, namely, single down-tube and double down-tube types.

The double cradle frame has two down-tubes, the ends of which are spaced widely apart to form a triangle. This results in improved lateral rigidity.

### Double cradle frame for road model

#### 1. Main pipe

This is composed of two tubes in order to increase the lateral torsional and deflective rigidity of the head pipe and down-tubes.

#### 2. Tank rail

It improves the longitudinal deflective rigidity of the head pipe. Being supported by the main pipe cross bar, it also contributes to the improvement of the lateral rigidity of the main pipe.

#### 3. Down-tube cross bottom pipe

The down-tube cross bottom pipe prevents the lateral deflection of the down-tubes and contributes to the absorption of engine vibrations.

#### 4. Seat pillar cross pipe

The seat pillar cross pipe improves the lateral torsional and deflective rigidity of the frame, and helps immobilize the swing arm pivot bolt area.

