Let's F4

Invitation to New Formula 4 Races in 2010

October 25, 2009

JAPAN MOTOR-RACING INDUSTRY ASSOCIATION

*An artist's representation of a new, carbon-monocoque F4 car, which the JMIA plans to develop for use in F4 races starting in 2010.

Let's F4

F4 will change in 2010

The Japan Motor-racing Industry Association (JMIA) has been proposing that beginners' formula racing cars should use a carbon composite monocoque, for greater safety, rather than a space frame or aluminum monocoque. However, there has not been any race category suitable for the utilization of carbon-composite-monocoque technologies. It was therefore essential for the JMIA to establish Formula 20 as a new category in which race beginners who desire to develop racing cars can participate.

However, in July last year, the Japan Automobile Federation (JAF) revised the F4 regulations for fiscal 2010, which has enabled the use of a carbon composite monocoque in producing F4 racing cars.

While the regulations limit the prices of F4 racing cars, they allow relatively large freedom in technology development. Accordingly, we find it no longer necessary to go ahead with introducing F20.
Though we have invested a great amount of time, effort and money to set up F20, we find it more reasonable to participate in F4, which has already been established. F4 is the only category that is useful to train engineers, another of our objectives, so we have reconsidered our position and decided to join F4 instead of newly developing F20.

Nevertheless, F4 racing has been stagnating. Unless the JMIA makes great efforts, F4 might fade away. We hope that JMIA members will participate to reinvigorate F4 racing.

JMIA will develop the new era's F4 races

During the 1960s and 1970s, many car constructors competed intensely in the Formula Junior races; FJ was a gateway to success for many competitors. Drivers such as Shinji Nakano and Ryo Michigami, in the generation that preceded today's top drivers, competed aggressively. The situation was like a "big bang" in the Japanese motor racing world: resources that would support Japanese car racing in the future, such as human resources, companies and technologies, were nurtured through the FJ races in those days.

The essential cause of FJ's success was the desire of those concerned to participate in higher-level, major racing events, such as the Japanese Grand Prix. Novice drivers such as Minoru Kawai and Sachio Fukuzawa participated in FJ races successively to become big stars.

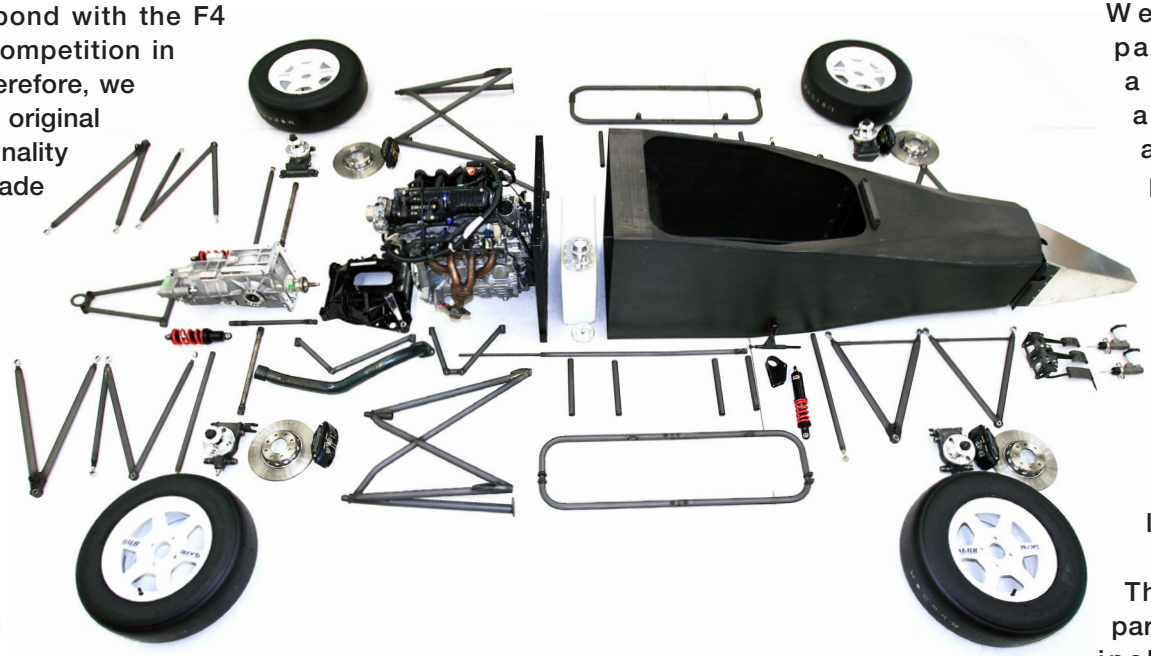
Today there are no such big races or big stars. No matter how energetically we try to energize junior-level races, no one would be enthusiastic without such goals. We therefore need to rebuild top-level races in addition to developing understructure systems, including F4. The whole project will not be easy to carry out. While reestablishing top-level races, we intend to develop and expand F4 races as the understructure, replacing conventional car races, where only drivers compete in their techniques and Japanese technologies and industries are not considered. We plan to build a base on which to build a healthy car-race domain, in which an independent auto racing industry will develop. Thank you in advance for your cooperation.

You have two options for participation: as a constructor, or as a racing team

As an instant racing-car constructor

JMIA member companies, including Dome, Tokyo R&D, Toda Racing, and Tom's can currently produce all the components required for an F4 car, which can be created easily, simply by assembling the components supplied by them. In this case, however, there may be no difference between you and a team that purchases a ready-made chassis. In addition, it would not correspond with the F4 concept, which is to trigger competition in technological development. Therefore, we hope that participants will build original cars incorporating as much originality as possible while using ready-made components.

You might wonder from where you could create a racing car. How about producing a car by assembling an original cowl and using ready-made components, giving the car your preferred name? You will feel like upgrading the car in the future and modifying it then. While you make further modifications, the car will become entirely original.



As a part or owner of a racing team

We will welcome your participation very much as a part of, or as an owner of, a racing team, even if you are not interested in car production. Multiple JMIA member companies will release new F4 cars, and you can purchase one and participate in races. If you do not have a specific team to support, package services including race operation are also possible. If your budget is low, a constructor might lease a car to you.

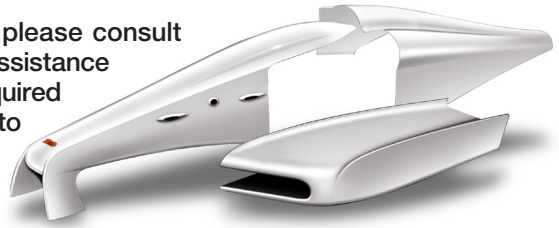
The JMIA offers a variety of participant assistance services, including the garages and mechanics that will take charge of race operation.

Producing an original racing car

Body cowl production

Using an original body cowl is the most effective way of producing an original car because it will be clearly distinguishable from other cars. An F4 car cowl cannot use carbon fiber reinforced plastic (CFRP) and uses fiber reinforced plastic (FRP) instead. Many car constructors can use FRP.
There are various options for car design. You can hire a car shop and specify the image of the car you desire. You can also hire a designer or racing-car constructor.

In the case of any questions, please consult the JMIA, which offers many assistance services, such as to supply required papers including drawings or to introduce companies. We are certain that you will greatly enjoy producing your own original car.



Engine production and tune-up

You can use a standard engine, but you might want to add original touches to it. The JMIA includes top engine producers and tuners such as Tom's, Ken Matsuura Racing, and Toda Racing. Not only tune-up but also the development of an original engine is possible. If your budget allows, you can mount an F1-level engine in your car.

The JMIA can perform all the engine production processes to order, including planning, designing, development, and production. We can also assist in any part of these processes.

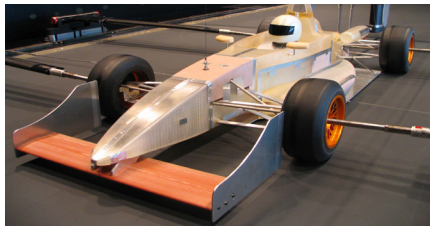
Suspension system production

The performance of a suspension system can be known in detail only after the car is driven. It is wise to use a standard suspension system at first. As you continue to participate in races, you might come to want to upgrade it. The F4 JMIA monocoque design is rather spartan and flexibility in positioning suspension pickup points is limited, which reduces design freedom. Nonetheless you can pursue upgrading in many respects, such as the brakes and uprights. We will be pleased to answer your questions about the creation of an original suspension.

Production of other components and aerodynamic development

Most F4 car components are available from JMIA members, including monocoques, engines, electronic control units, gearboxes, and dampers. You can produce your F4 car entirely of original components.

Four JMIA member companies own a moving-belt wind tunnel (a 50% tunnel, two 25% tunnels, and a 20% tunnel). These tunnels can be used according to a required level of aerodynamic development.



Budgets

"Racing car constructor from today" option

The prices of completed cars sold by the constructors are capped, as listed at right. However, the prices of original cars are unlimited—you could invest as much money as you like and there is no specifying the highest possible price. One cowl can cost more than 10 million yen, which is actually a rare price in the F4 category, if you want it designed precisely by computer-aided design and the mold machined by numerical-control machine tools. The following price figures are based on common performance levels required in the F4 category.

A participant planned to join F4 using a car whose cowl alone would be original. He purchased a completed F4 car from a JMIA member, excluding the cowl, for about 7 million yen (prices differ depending on the constructor).

He had his own blueprint of how his car should look; he liked to draw car illustrations and had a collection of formula-machine photographs. Therefore he negotiated with a body shop, which was introduced by the JMIA.

His ambition was to hire a designer to determine the style of the car, but according to the JMIA, a styling design alone would cost 300,000 yen to 500,000 yen, and if it was drawn by CAD and molded by NC tools, it would cost more than 8 million yen. Accordingly, he decided to hire a body shop, which created everything manually.

The estimate was about 3.5 million yen, including the services and the cowl. The finished product was actually a masterpiece, produced by experts. Though there was some difference from the style he originally had in mind, the finish was wonderful.

The entire car cost 11.5 million yen in total, including the 7 million yen, 3.5 million yen, and other expenses of 0.5 million yen. He was very satisfied with his machine and named it A Special, based on his initial.

* We are preparing guidelines that will show standard development cost and production cost at various development levels. Actual prices differ depending on the companies, but the guidelines would be helpful for potential participants planning the creation of an original machine.

Racing team participation option

The F4 Association limits the prices of the car body and components as shown in the table below. In the table, car body refers to a rolling chassis. It cost 5.25 million yen, which does not include an engine, wheels, and tires.
The price includes, namely, a transmission, shock absorber and braking system.

JMIA member companies determine prices according to these standards. The price of a finished car including an engine is limited to 7.35 million yen. Companies determine prices at their discretion as long as the prices are below the upper limit. For specific prices, please consult companies directly.

Price limits by F4 Association

Car body	5,250,000	7,350,000
Engine	2,100,000	
Transmission	787,500	Included in the car body price
Shock absorber	84,000	〃
Brake caliper	63,000	〃
Brake rotor	26,250	〃

(JPY)

Annual race cost for both options

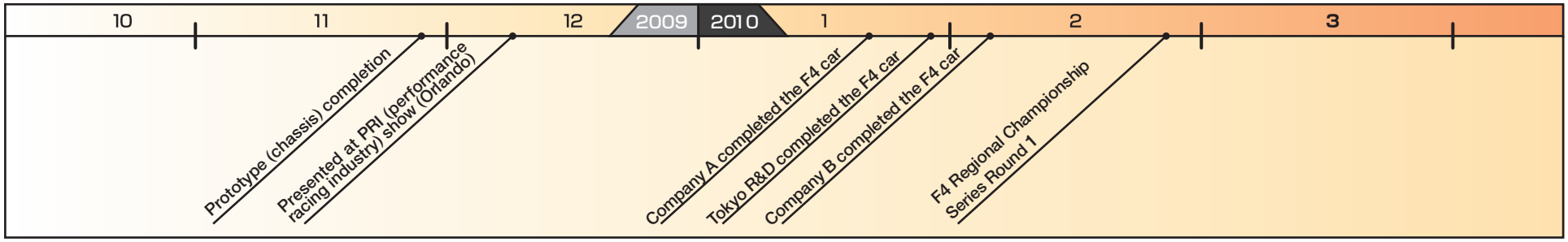
Expenses involved in current F4 racing are fairly reasonable. Its selling point is low cost and many cars use a long-life chassis. A great number of participants' budgets for the expenses directly related to race participation, excluding transportation and travel, are about 0.6 million yen per race.

F4 races are divided into the West Japan Series and East Japan Series. Machine transportation cost is necessary depending on where you reside. Setting up a gorgeous hospitality booth with promotional girls incurs additional costs.

If you live in the Kinki region and transport your car to race venues using your own truck, the cost will be about 3.6 million yen to participate in all the West Japan Series races.
If you want to strengthen your mechanic team, or if you arrive at the race venue on the previous day and lodge at a hotel, additional expenses are incurred.

Many participants use rented F4 cars. They spend about 0.9 million yen per race.

Schedule



2010年 Race Calendar

■ F4 Japan Championship Race Outline

Details unknown F4 Japan Championship Race

■ West Japan Series

Rd.1	Feb. 28	Okayama
Rd.2	Apr. 11	Suzuka
Rd.3	May 23	Okayama
Rd.4	Jul. 10–11	Suzuka
Rd.5	Aug. 21–22	Suzuka
Rd.6	Oct. 10	Okayama

■ East Japan Series

Rd.1	Mar. 7	Motegi
Rd.2	May 9	Sugo
Rd.3	Jul. 4	Tsukuba
Rd.4	Aug. 28–29	Fuji
Rd.5	Sep. 5	Motegi
Rd.6	Nov. 7	Motegi

F4 Association's Profile

F4 races were originally started by the industry of beginners' formula races, as a way to increase popularity. The F4 Association was committed as the main body of its activities. The JMIA intends to join the F4 according to the F4 Association's regulations. The companies whose names are written in red below are JMIA members.

President:	Shuji Suzuki, Tomei Powered Inc.
Vice President:	Osamu Hatagawa, Japan Scholarship System
Accounting:	Yasuhiro Ogawa, Ogawa Automobiles
Director:	Kiyoshi Oiwa, Tom's Co., Ltd.
Director:	Yoshinori Yamaguchi, R & Sport Co., Ltd.
Director:	Takafumi Yoshida, Mobility Land Corp. Suzuka Circuit
Director:	Makoto Doi, Okayama International Circuit, Co., Ltd.
Director:	Yoshihiko Saito, Mobility Land Corp. Twin Ring Motegi
Director:	Yukio Toda, Toda Racing Co., Ltd.
Secretariat:	Koichiro Furugori , Tokyo R&D Co., Ltd.
Secretariat:	Seijiro Kamitani, West Racing Cars Co., Ltd.

JMIA Official Components

The F4 components produced by JMIA member companies are accredited as Official JMIA Components based on independent standards, which were established based on longtime experience, the latest technologies, and the data collected by experiments conducted where necessary. Other components can also be used.

Conclusion

The JMIA strongly hopes that F4 races will operate as the basis for recovering the popularity of Japanese automobile racing.

Today, F4 races represent a small seed. However, I am excited by imagining myself standing next to a circuit, in which the machines I develop compete aggressively. We JMIA members are certainly going to enjoy ourselves by becoming involved in F4 racing.

We will publish drawings and prepare readily understandable guidebooks. People will be able to participate in the races with a car produced just like a kit car. They will easily be able to upgrade it into a completely original car.

F4 races will provide car racing fans who have only enjoyed watching races with the opportunity to enter the real car-racing world. I hope that many car-racing fans will decide to participate in car races as an arena of competition of technologies.

Minoru Hayashi, President, Japan Motor-racing Industry Association

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