

Defining the Identities of Motorcycle Model Lineages by Converging, Inheriting and Enhancing the Vehicle Frontal Styling

Yoshitaka SUZUKI* Masahiro MIKI*

ABSTRACT

In the development of motorcycles, Honda has been implementing the latest technologies. At the same time, the exterior designs have been kept evolving constantly to create new values. Meanwhile, to respond to the changing demands from the markets, a different vehicle front-design was sometimes adopted even though it was not fitting to the symbolic representation inherited through the specific model for generations. Such designing practices eventually diluted the succeeded identity resulting in failing to live up to customer expectations. To solve this, the issue of design identity was repeatedly discussed. The discussion was concluded that it is important to define a key feature of a vehicle front design that symbolizes a series of models having the same product name. Moreover, that design definition should be inherited while incorporating advanced technologies in time. To realize that, we delineated the direction by three key words: “convergence, inheritance and enhancement” as the guidelines for the design of a vehicle front. These guidelines were practically implemented and contributed to establishing a valuable principle of exterior design for our motorcycles.

1. Introduction

Since the establishment of our company, Honda has been producing products that satisfy various needs in different regions around the world by applying the latest and/or unique technologies and offering those products to the customers. That has been the same for our motorcycle developments as well. The latest technologies in the era have been applied at each model change and the designs have been relentlessly enhanced to a large extent to create a new value. Through those efforts, the heritage of motorcycles that have the same succeeded name, like the CB or the VFR, has been established. In those circumstances, to express an explicit feature owned by each shared name vehicle series, we have been trying to create the vehicle front design through which we can establish a consensus with our customers in its design identity being quoted like as saying “This is exactly the design of the VFR’s face!” In the meantime, with the worldwide expansion of motorcycle business, the number of models, for which an identical vehicle is marketed for both users in developed countries and in developing countries, has been increasing. However, what they expect of the exterior design differs depending on the market-specific preference even when an identical vehicle is marketed. To respond to a

different demand from a particular market, in some models, a design presenting a different design character was applied from the original one, which is succeeded through the history of that vehicle series with the same name. However, due to the application of such a different design, the signature identity succeeded through the generations of the vehicle series was diluted and didn’t fit to the customer expectation in some market regions. To solve this issue, firstly, the history and the current status of the designs of the CB, the VFR and other models were investigated and design factors to be succeeded through generations to represent the vehicle identities were discussed over and over. As a result, it was concluded that vehicle front design should be defined as a clearly distinguishing feature for a specific vehicle series that shares a common vehicle name, and the design features should be made converged into a single design norm to be succeeded from generation to generation while applying the latest advanced technologies to keep enhancing it. By setting three keywords of “Convergence, Inheritance and Enhancement” as the design guideline to determine the vehicle front design, it was considered that a vehicle front design that meets the customers’ expectation can be offered for a long time. The details of the guideline and its application example will be described below.

* Motorcycle R&D Center

2. Drawing Up Guidelines

Sometimes, a vehicle front design, which gave an impression different from the one that had been succeeded for a long time with that particular vehicle name, was applied. In that case, that design negatively affected the inherited vehicle identity and diluted its unique impression. Based on the results of investigation on the history of our vehicle exterior designs and the status quo, three key words of “convergence, inheritance and enhancement” were defined as the guidelines to solve the issue mentioned above. The principles behind each key word will be described in the following.

2.1. Convergence

Based on the knowledge yielded from the results of customer surveys (carried out by Honda), it was one of the known facts that the customers attach great importance to the vehicle front design when they are buying a motorcycle. As reported by Maruyama et al. in their paper⁽¹⁾, it is a proven fact that humans have an extremely high cognitive sensitivity to a figurative pattern that evokes an animal’s face. Accordingly, if a group of motorcycles are applied with the vehicle front designs that are sharing the same fundamental design framework, on which the design is converging, it is possible to make the customers believe that this particular group of motorcycles has a specific commonality in their temperament and features. Based on this understanding, for each of the motorcycle series sharing the same model name, a fundamental design framework was defined, as shown in Fig. 1, to establish an expression of the design commonality, on which every exterior design of headlight area was to converge. Each design framework was fabricated of the design elements extracted from the shapes and lines that appear in the recently proposed conceptual models or the models that have already established a high recognition of their identities over a long time. To be

specific, those design frameworks are described as below:

VFR series: The shape of letter X, which was applied based on the design of the conceptual model exhibited in 2008.

GL series: That includes the Goldwing as a flagship. Featuring bird’s wings, lines horizontally expanded were applied recollecting a large scale of the continent with majesty.

CB series: The traditional shape was employed emphasizing its unchallenged heritage.

CBR series: The shape of tightened narrow eyes was used to create an impression of keenly swift movements.

The basic principle of applying the common design framework was determined only for presenting the root design scheme for each design idea to converge towards that direction. It was not meant to be any restriction that would diminish the designers’ freedom of creativity.

2.2. Inheritance

It was decided to make each fundamental design framework to be succeeded from generation to generation to establish a firm unchanging impression unique to the vehicle series name. It is just like it is for a brand image to a brand name.

It was understood that the front design of each vehicle series had been recognized as a shared identity between customers and Honda, and it had become an established symbol through succession of the design for generations. To confirm this understanding of us, interviews were arranged to the exterior designers who involved in the development of the former models. In the interviews, the comments witnessed to our understanding saying “We were largely conscious of the established impressions and fundamental design scheme that the previous model was offering and reflected them to the vehicle front design of the developing model.” This was one of the proofs that Honda had been trying to create vehicle faces so that they represented their

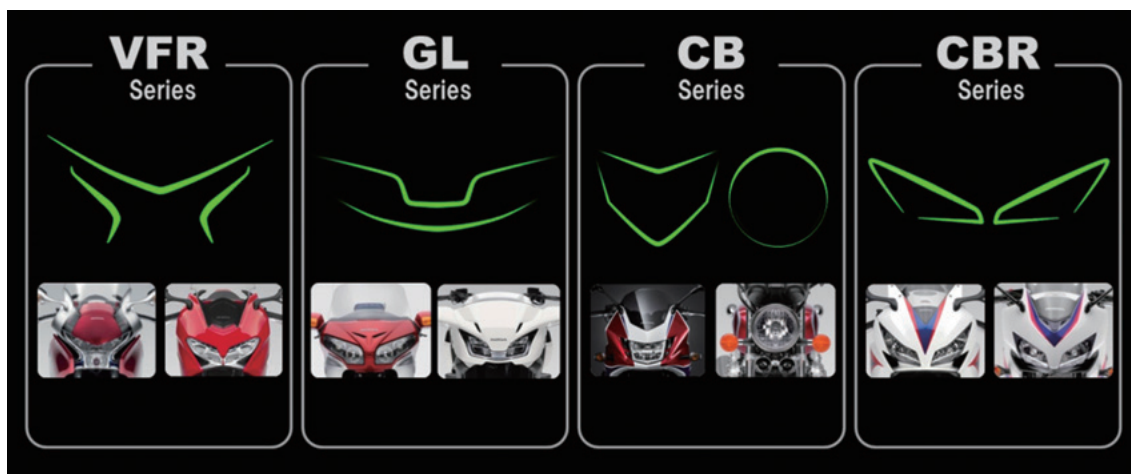


Fig. 1 Styling design motifs

own characteristics defined by the individual vehicle names. This was especially true for the designing of the CB, the VFR and other models that had long histories with their own vehicle names. Moreover, those were designed with an intention to succeed to their heritages. As a good example of succeeding product identities, there is the measure that European premium automobile manufacturers are doing to maintain their brand images. It is commonly understood that those manufactures are pretty successful in keeping their established brand images. One of the points to be noticed in their products is that they do not largely change the identities expressed by the designs of vehicle front area, including headlights, for quite a long time. This fact implies that those car companies fully understand what they should do to the customers in matured societies. Furthermore, the customers also sympathize with that principle. Honda has been responding the customers' demand, which changes to the transitions of their preferences, by markedly changing the product designs. Then, now, the efforts to respond the demand from customers in matured societies are requested to us more strongly than ever before. Accordingly, it has become more important to succeed the vehicle front designs of the motorcycle series that have long established histories.

2.3. Enhancement

Succeeding previously presented features of a vehicle front design may eventually leads to make them look old-fashioned. To prevent that, it is required to keep expressing fresh flavor of the designs as well, while letting them feel a sense of conversion on the succeeded design framework commonly shared through the vehicle series. To make it possible, it is highly important to incorporate the latest technologies to enhance design features. The example of the technologies are provided below.

Regarding the lighting devices for vehicles, new devices have been continually developed in the history. Accordingly, various lighting devices have been utilized to enhance the feature of vehicle front design. Among those devices, light emitting diodes (LEDs) have begun to be used recently as one of the latest technologies applicable to vehicle lighting components. LEDs are small-sized, of low power consumption and long lived. With these advantages, they are substituting for conventional incandescent light source devices. LEDs that have these advantages are also contributing to the enhancement of vehicle designs. In the following, this contribution will be explained describing one of the models released in 2014 as an example.

In the early stage of applications to vehicle lightings, LEDs were used for taillights and/or stoplights. In that stage, LEDs were used as single point light sources and applied mainly in the forms of separately located arrangement or a group of LEDs plurally arranged (Fig. 2). These techniques were good for exhibiting the light sources themselves. By using these techniques, it was aimed to show off the use of new light sources and their advantages mentioned above. After white LEDs became available, they started to be

used as components featuring vehicle front designs. In the CBR600RR of the 2007 year model, front position lights with LEDs were equipped. This was the first case in the models from Japanese brands. The application of LEDs made it possible for designers to create a compact styling (Fig. 3). In the CBR1000RR of the 2008 year model, LEDs were applied to front position lights and that realized the compact size of the lights. That compact size enabled them to be installed in the right and left mirror housings. Thus, the position lights were arranged at the locations away from the positions of headlights and it contributed to present a unique design together with enhanced conspicuity from surrounding vehicles. In those application examples, LEDs were adopted mainly for functional enhancement (Fig. 4).

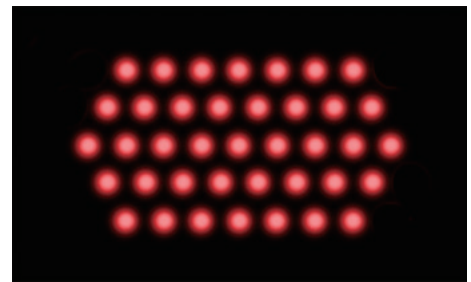


Fig. 2 Dotted arrange of LEDs in tail light



Fig. 3 Front position light (at center) in the CBR600RR, 2007 year model



Fig. 4 Front position lights (at rear view mirror) in the CBR1000RR, 2008 year model

In the next phase of LED applications, by applying advanced optical path analysis technologies, the forms of LED light sources evolved from positional light sources to light sources in various shapes, such as a line-shaped light source formed by a light guide or a surface emitting light source (Fig. 5). On the other hand, the power of white LEDs was more enhanced and become compatible with other light sources used for a headlight making a freedom enlarged significantly for vehicle front designs. By these technological advancements in LEDs, a transition was made possible, from the conventional design expressions just based on the application of predetermined parts shapes, to a new expression using flexibly designable shapes of light sources. Those evolutions in technologies provided us wide options for the methods in expressing a vehicle identity through a vehicle front design. Furthermore, this offered a large propulsion power to step forward our efforts to the implementations of the three key words, “convergence, inheritance and enhancement” (Fig. 6).

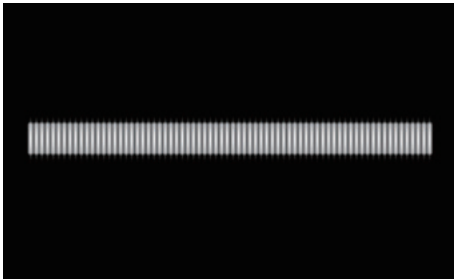


Fig. 5 Light guiding panel



Fig. 6 Application of light guiding panel in the PCX, 2014 year model

3. Example of Application of Guidelines: VFR Series (VFR1200F, VFR800F)

The VFR series is one of the important vehicle series in Honda motorcycle products. The first model of VFR series, the VFR750F, was released in 1986. Since then, the

VFR series have been receiving a long lasting preference from the customers. All of the vehicles in the VFR series have been applying V4 engines. VFR series is only the motorcycles selecting this engine configuration among all the motorcycles in sports-tourer category. The vehicle concept of the VFR series has been aiming at combining the unique vehicle packaging of hardware pursuing both high performances and high functionalities and the sophisticated styling for matured adults. Honda has kept materializing this concept by applying the latest advanced technologies⁽²⁾. The concept model of next generation VFR was exhibited at Esposizione Internazionale Ciclo Motociclo e Accessori (EICMA) in Milan, Italy in 2008 (Fig. 7). One of the design features of this concept model was the vehicle front design characterized by X-shaped framework of design. The production model of the VFR1200F, released in 2010, was designed to create the same impression as the one in the concept model (Fig. 8). However, in that model, an incandescent light bulb was still applied to the headlight and X-shaped framework was created by combining the outer shape of light lens and the shape of surrounding ducts. As mentioned before, X-shaped design was originally created in the concept model in 2008 and applied to the VFR1200F in 2010. Thereafter, the essence



Fig. 7 Concept sketch of the VFR, 2008



Fig. 8 X image representation in the VFR1200F, 2010 year model

of this X-shaped design was extracted as the fundamental framework for the VFR series and defined as X-shaped scheme.

To the VFR800F released in 2014, X-shaped design, which was created based on the fundamental framework for the VFR series, was succeedingly applied (Fig. 9). In this way, the creation of converging design to the unified framework of the VFR series was successfully achieved. The succession of inherited unique identity of the VFR series was carried out by adopting the design elements appeared in vehicle front designs of former vehicles in the VFR series. Moreover, “enhancement” by technologies was represented by applying LED headlights. The expression of the identity for the VFR series was made possible by applying an enhancement method to X-shaped form by using a pair of line-shaped illumination parts with LED light sources. Line shaped light guides were installed in the headlight unit and the shapes of illumination of these light guides were arranged to provide X-shaped scheme (Fig. 10). Consequently, the shape created by these illuminations played a significant role to show that the vehicle was given the same unique identity of the vehicle series.



Fig. 9 Image representation using LED light guiding panel in the VFR800F, 2014 year model



Fig. 10 Applied light guiding panel (shown in green color)

4. Conclusions

To enhance the establishment of the unique identity inherited by each vehicle series, the guidelines for creating vehicle front design were defined as follows:

- (1) Convergence: A fundamental design framework for each vehicle series was defined. A guideline was set the vehicle front designs of all the vehicles, which belong to the same established vehicle series, should be designed to be converged on that unique design framework.
- (2) Inheritance: A guideline was set that the defined fundamental design framework should be succeeded from generation to generation for the vehicle series sharing the same vehicle name
- (3) Enhancement: A guideline was set that the latest technologies should be continuously implemented to the design measures to avoid the succeeded design features become out-of-fashion.

The VFR800F, in which the vehicle front was designed complying with these guidelines, was put into actual markets in 2014.

References

- (1) Maruyama, K., Tsutsumi, Y., Murata, Y.: Study of FACE Design, Lighting System Design for Enhanced Detection Rate of Motorcycles, Honda R&D Technical Review, Vol. 21, No. 2, p. 143-148
- (2) Kishi, T.: Styling design of VFR1200F, Honda R&D Technical Review, Vol. 22, No. 2, p. 15-19

■ Author ■



Yoshitaka SUZUKI



Masahiro MIKI