

GIOTTO BIZZARRINI – MEMORIES OF THE 250 GTO DEVELOPMENT

Text by Giotto Bizzarrini 12/2011

June 1961. We began the construction of the new prototype coming back from the 24 Hours of Le Mans. We really dominated the race: two “Testa Rossa” in the first two positions, a 250 SWB Berlinetta third overall and first in the GT group.

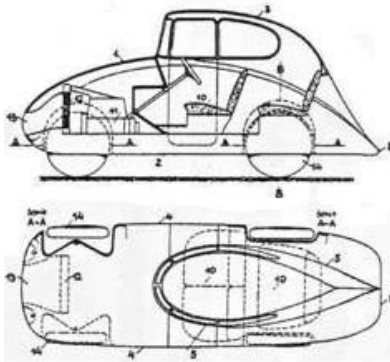
The project was top secret and had to proceed quickly. No one could enter the department with the exception of employees and the Commendatore: this was his input. Commendatore greatly feared the return of Jaguar E type model, which was said to be revolutionary, lightweight, high quality in aerodynamics. Jaguar had dominated the race in the ‘50s winning 5 times the 24 Hours of Le Mans. He wanted a car able to beat her: the perfect car. It was probably the disappointing result at the 24 Hours of Le Mans of an experimental Ferrari 250 GT prepared by the sports management, to cause him to start the project in clear competition with the technical department of sports management. It was his style.

I had joined Ferrari in 1957, coming from Alfa Romeo. I was appointed head of experimental department of production cars. Among the various tasks I had to test drive customers' cars and sports cars and GT cars ready for racing. In that department we prepared the Testa Rossa that, in 1958, had cracked the superiority of the Jaguar. Driving so many miles on those cars, I realized how difficult they were to ride: very hard to enter the corners, you had to accelerate so smoothly out of the corner to prevent rear wheels to slip and the car to spin. At 240 km / h the front of the car raised up as to take off and the steering lightened fearfully. Bad aerodynamics, in my opinion, and a weights distribution not suitable for that kind of car. The passion for aerodynamics came since I attended the University in Pisa, where I built a small aerodynamic car based on the chassis of a Fiat Topolino, able to run at 150 km / h. I presented that car as my graduating thesis. There I learned the theories of the Kammback.

Even at the end of the ‘50s sports cars suffered from an aerodynamic design 40 years old, trying to bring the car body into an airfoil, an airfoil with 4 wheels. The result was high and massive rounded front part, useful to accommodate a front engine, and low and tapered tails (see Patent Jaray).



Description: Aerodynamic car based on the chassis of a Fiat Topolino



Description: Patent Jaray, 1920s

I was convinced that I had to do exactly the opposite: a front part low and streamlined to reduce the Cd and to avoid lifting, a short and high Kammback to reduce turbulence in the wake to further improving the Cd. All existing cars could work better moving backwards!

The assignment of the Commendatore Ferrari finally allowed me to develop a complete car after the pattern I had in mind. To reduce the time and attract less attention I thought I'd to modify my personal Ferrari, a 250 GT Berlinetta Boano, on which I used to test solutions and modifications. I called that car "test pig". I installed the first disc brakes, I tried a rudimentary but effective anti-slip designed by a professor at the University of Genoa, and I tested the first high-speed belted tires I had asked Pirelli to develop. The Berlinetta Boano was a long wheelbase car (2600mm), so it fitted well to the purpose. After disassembling completely the "test pig", we started to modify the frame to move back and low the engine as much as possible. This served to lower the profile of the front and move weight to the rear. Bringing weight from the front to the rear was essential to improve cornering ability and increase traction on the rear axle. As a result of the modification the wheelbase was reduced down to 2500 mm, resulting in a distribution with more than 60% on the rear axle. For this reason I had to use wider and bigger rear tires. The frame was not very stiff, so I had to reinforce it properly in torsion.

Commendatore Ferrari followed the project on a daily basis. He loved the idea of making a completely different car. "Nose down and ass up" repeated satisfied.

The master workers could form the aluminum sheet by hammer without drawings and without any wooden mock-up. We used to work day and night, Saturday and Sunday. The nose was so low to make it difficult to open a radiator air intake large enough for the needs of the engine. So I had to open 3 air vents in front of the hood, similar to those used on fighter planes. We raised the profile of the tail as much as possible reducing at the minimum the visibility trough the rear window. The portion of the tail immediately behind the rear window was cut off to make it as short as possible, but we left rear fenders longer to form two thick side fins. This strange form was intended to stabilize the car at high speed and to increase the pressure recovery to achieve optimal Cd. The tail was the most difficult part of the work and was the subject of several detail changes between the first test of Modena and the test at Monza.

Because of this unconventional form the workers began to call this machine "the Duck". I called it rather "the monster" a little because the bodywork hammer finished and not painted was not that beautiful, a little because an "ass" like that had never seen. To lighten the car as much as possible the interior trims were virtually eliminated.



Description: Interiors



Description: Cut off back with thick side fins

In mid-August, after just two months of work the car was ready and it was very light. We ran it first in the small circuit of Modena. I did myself few laps to make sure everything was working properly, then I left the driving to Giancarlo Baghetti. The circuit of Modena had no significant references, but we agreed on one point: the car was completely different to those we had driven before. I knew Manuel Fangio was visiting Ferrari and asked him if he wanted to try the new car. We got back on track in Modena, he did a few laps to get the good feeling, then he stopped. I asked me to seat beside him. He began to push down. Where I used to brake, Fangio held down, and then with a precise steering movement he triggered the controlled spinning. The car rotated on itself along the curve, than he pushed down the accelerator, but the rear wheels did not slip. "Lack of power" he said pushing and releasing the accelerator.



Description: The Duck on the racetrack at Modena left Giancarlo Baghetti, right Giotto Bizzarrini



Description: The "Duck" on the racetrack at Modena, the tail does not yet have its final shape

But it was not a power lack, only that car could download a lot more than the 300 horses available! I understood I was working in the good direction, I also understood the difference between a test driver and a champion!

We needed a test on a significant circuit. Some problems to fix, some improvement to the car set up before going to Monza to make test the week before the F1 Grand Prix.

Willy Mairesse had to drive the car. Many F1 car were practicing on the high speed ring, while we used the road track. I did a few laps and I improved my personal best by nearly 5 seconds. Mairesse also did very fast laps, competing in top speed with F1 cars. I perfectly remember the exclamation of the Commendatore Ferrari: "Never seen a GT in front of a formula 1!"

But I needed an exceptional result. I went to say hallo to Stirling Moss sitting on the fence waiting for his mechanics to prepare his Lotus Climax. He was a little sad because his Lotus didn't give him great satisfaction. I asked him if he wanted to do a few laps. He jumped down from the wall and slid into the car. A few warm-up lap, then he began to make fast laps one after the other coming to stop the clock at 1 '45 "4, 6 seconds well below the lap record! Incredible. When he stopped and asked about his best lap he could not believe because he had some problems with the engine over revving and smoking dangerously out of the "Parabolica" corner. Calculations of the speed results in a top speed of 298 km/h. But the actual speed, taking into account tires centrifugal expansion should be at least 305 km / h.



Description: La Papera at Monza



Description: La Papera at Monza



Description: The "Duck" being tested in Monza: Moss in helmet is talking to Mairesse, Giotto Bizzarrini standing next to the windshield.

Back to Maranello after testing at Monza, we immediately replaced the wet sump engine with a dry sump engine. The grip of the car was so high that the centrifugal force pushed the oil up to the heads causing the dangerous blue smoke out of the parabolic curve.

The project stopped shortly after because I left Ferrari with other engineers. The Duck and its exceptional performance had some part in the events that led the technical staff to leave Ferrari.

However I had in mind the car that would beat the Duck.

Giotto Bizzarrini, December 2011

DEDICATION BY GIOTTO BIZZARRINI TO ALEXANDER AND DOMINIK
KUHLE, OWNERS OF SCALFARO WATCHES:

LA PAPERA

A Dominik and Alexander Kuhnle
Scalfaro Watches

Auguro un grande successo
della nuova edizione di orologi
dedicata alla PAPERA, primo
prototipo della GTO FERRARI

Giotto Bizzarini

A large, stylized handwritten signature in black ink, appearing to read 'Giotto Bizzarini', with a long horizontal stroke extending to the right.

Quercianella 19-12-2011