

1978 Pace Car: The Final Process

by Tom Russo

NCRS Judging of the 1978-79 Corvettes began in 1998 with the first edition of the *1978-79 Corvette Technical Information Manual & Judging Guide*. While many fine examples of St Louis built Corvettes have been seen, low-mileage Pace Cars continue to be presented that serve as a study of production differences between the base coupe and that of the Pace Car. Plant workers and other visitors who witnessed production have shared their observations while photos become readily available depicting specific practices used in the plant during the waning days of St Louis Corvette assembly. By comparing photographs to Corvettes on the judging field and using the observations of late 1970s plant visitors, we can describe the adjunct factory methods used to build the 1978 Limited Edition Pace Car.

Photographs from 1978 capture specific methods used to build Pace Cars and are significant to discern originality from restoration. Many photographs were stuffed into notebooks among related Pace Car documents, filed away by buyers and left for discovery by the next curious generation of Corvette enthusiasts. Whether the foresight was intentional or casual these photos suggest the special access selected buyers had to view factory operations of the Limited Edition Pace Car, somewhat of an early version of the now popular RPO R8C National Corvette Museum Delivery option. We do not know how many photographs and other documents are packed away but those used in this study followed the first Pace Car (VIN 900003) and last Pace Car (VIN 906502) available to dealers for purchase.¹

We have learned that the final application of decals and the painted lower half occurred on the St Louis campus but not in the St Louis Assembly Plant. Due to the volume of Corvettes being built and limited production capacity, Pace Cars were moved to the main plant's Final Process (paint repair) area where Impala's were finalized for shipping. What follows is a description of the final process for completing the RPO Z78 paint scheme

1 Access to view, study and photograph the bookends of Pace Car production was granted to the author by Tom Hendricks when the Pace Cars were in the Bud's Chevrolet collection.



Figure 1: 1978 Pace Car as delivered to dealer without front air deflector installed.

and decal application and describes the special accommodation for Pace Cars to prepare for shipping via the freight trucks to dealers and anxiously awaiting buyers.

Special Two-Tone Paint

One particular photograph from 1978 (Figure 2) shows workers painting the lower half of a Pace Car with “hot” metallic silver paint (code 47). Note the masking of tires and the paint line where silver breaks with the black paint above it. At the bottom right of the photo, open steel grating within the floor is seen that reduced overspray above the level of the masking paper. The booth had blowers and suction with downdraft airflow through this grate system.² Attached to the windshield is a note to workers further on down the line to INSTALL DECALS.

Event judging of Pace Cars on the field further confirms that silver paint came after both black paint and body assembly. Observations reveal that silver paint overspray in the coves and underneath at the corners of the front stabilizer bar. On the driver's side, inside the cove, the emission canister and fuel emission hoses show silver paint. This overspray indicates paint was sprayed after body assembly and marriage of the body to the chassis.

2 NCRS Technical Board, the photo was interpreted by John Hinckley, former Chevrolet Production Engineer assigned to St. Louis plants and who contributes his recollections of factory production methods.



Figure 2: Pace Car In Final Process of main plant

Silver paint on the stabilizer bar verifies that the bottom portion of the body was painted after the body was assembled to the chassis. The patterns of paint spray on the bar are typically sporadic rather than a uniform pattern, suggesting overspray from the paint process rather than a deliberate spray pattern. The worker's posture in Figure 2 shows that workers stood while spray painting with some stooping to get the lower portion of the body.

Note the silver-painted urethane front bumper in Figure 2. The bumperettes are shown black and the nose silver. Because bumpers were made of RIM urethane (reaction injection molding), and required a flexible paint process, in contrast to the conventional acrylic lacquer used in 1978, bumpers came to the assembly plant already painted. Speculation is that bumpers were molded at the GM Guide Division, Rimir, Mexico plant and shipped to St. Louis.¹

During judging events, observations are made that paint on the nose looks like a different shade than the

sides. These photos document bumpers painted prior to the sides with paint from a different batch, at a different time and therefore accounts for paint variations.

A third paint anomaly (Figure 3) observed on a number of Pace Cars illustrates a particular worker's technique of applying the masking tape/paper protection on the nose. Note the black paint triangle form at the fender/nose seam as it wraps underneath and out of view.



Figure 3: Pace Car sports black paint triangle.

¹ NCRS Technical Board, Duke Williams and John Hinckley contributed insights into paint and production deviations from the St. Louis Assembly plant processes.



Figure 4: Application of Decals

The nose, as noted above, pre-painted and factory-installed was masked with the masking tape/paper to protect the grill, nose and side lamp lenses at the masking station as workers prepared to paint the fenders and door in the paint booth. In the process of applying the masking tape/paper mask, the worker wrapped the tape in a straight line rather than follow the curvature of the fender/nose seam. As a result, this technique captures a portion of the unpainted fender to secure the mask. A close look at Figure 1 also reveals the initial formation of the black triangle. Figure 1 features VIN 01977 and Figure 3 shows VIN 01058.

This paint anomaly noted on a number of Pace Cars, is not always as distinctive as that shown in Figure 3. Some observations show less triangle and/or various degrees of silver overspray but if looked closely the triangular pattern is notable.

Why this paint miscue? Speculative but production work of some 135 Pace Cars built per day for the production run required a defined technique to quickly and efficiently prep the Pace Car for silver paint application at a robust unit per hour rate.

Decal Application

The Final Process area of the Impala plant was used to apply Pace Car decals per the Assembly Instruction Manual. An additional instruction sheet GM# 476285 was included with decal box GM# 476282 for application by either the dealer or the owner. Only the body pin stripes, hood decals, and the “Limited Edition” under the cross flags were applied at the factory. Figure 4 shows workers applying the decals to the hood. Note the Impala in the background while the Pace Car is in the foreground, which supports the view that decal assembly occurred in the Final Process of the main assembly plant at the St Louis campus. Notice as well that the spoiler is not installed, a topic covered in the next section.

It is well documented that Corvette production exceeded plant capacity. Over one hundred Corvettes were being built each day during the late 1970s and the Bowling Green Assembly Plant was in the making with Corvette production to begin in 1981. Pace Car production began March 18, 1978 and concluded early May to ensure that Pace Cars were in the hands of dealers for the May 28, 1978, running of the 62nd Indianapolis Motor Speedway race handcuffed to the celebration of

Corvette's 25th anniversary. This meant that approximately 135-138 Pace Cars rolled off the assembly floor each day and readied for shipping by early May. Thus, additional space had to be identified on the St Louis campus where RPO Z78 paint and decal application could be finalized. The Impala plant also at capacity was used for the final process.

Shipping Preparation

In January 2014, the Roger Judski, seven-mile 1978 Pace Car was sold at auction. It was presented as received by the dealer in 1978 and sold to the buyer (Roger's Corvettes) without dealer preparation. Its MSO status had been retained since the buyer took delivery. In the rear storage compartment, in addition to the single decal box, was stowed floor mats, wheel caps, and the three-piece front spoiler in three individual plastic bags (Figure 5). The front fender was pre-drilled to mount the spoiler and silver paint is seen inside the holes. Each photo in Figures 1, 2 and 4 show a spoiler-free front fender with silver-tainted mounting holes.

Over the years, Pace Cars presented on the judging field without an installed spoiler. All three parts were stowed in the rear storage compartment wrapped in plastic. In a rare black and white photo, Figure 6 captures VIN 6502 perched on a freight truck without the spoiler. Earlier, Figure 2 showed a Pace Car in the paint booth without its spoiler. The three-piece spoiler was painted separate from the body.

Steel ramp freight trucks used could not accommodate the low-profile Pace Car with installed air deflectors. The shipping company, Anchor Motor Freight used a metal grid plate system on trucks that scrapped lower panels of low-profile vehicles.² Dealers received a fee for dealer preparation and the Pace Car's front spoiler was authorized as a dealer preparation item. A few more years would lapse before ramps were engineered and installed to accommodate low-profile vehicles. The C4 era had a black plastic spoiler that was not installed by the factory but part of dealer preparation.

Finally, in the late 1970s wind tunnels improved both high-speed stability and fuel efficiency. Application of test results also reduced front and rear lift. These factors resonate today with the C7 Corvette generation. Coefficient of drag (C_d) rated a particular vehicle's ability to cut through the wind. Wind tunnel tests of the 1978 Pace Car, revealed drag coefficient could be reduced by use of front and rear air deflectors. As a result, drag coefficient was reduced from 0.50 to 0.42

with the 1978 Pace Car the end product.³ Those C3 Corvettes from 1979-82 with air deflectors benefited from aerodynamic improvements. Aero refinements continued through each Corvette generation. Today's C7 sports a C_d of 0.27.

As a result of the aerodynamics introduced for the 1978 Pace Car that coincidentally readied it for the Indy track to ensure its success as a lap vehicle for the Indy 500, future Corvette generations would be designed with air deflectors and Corvette's signature low-profile stance.

Why is this important?

As Pace Cars are presented for NCRS Bowtie and Top Flight, judges should acquaint themselves with the effects of production anomalies used to finalize RPO Z78 and how this affects the vehicle presented for judging. Most Pace Cars are presented as original, some have obvious chassis detail work but even fewer are presented as a restoration. This study should help discern the nuances of restoration that should be studied and understood to determine how to apply the NCRS judging guidelines of originality and condition.



Figure 5: Three-Piece Front Spoiler in plastic bags



Figure 6: Pace Car on freight truck without spoiler

² NCRS Technical Board, Edward Johnson from 1976-87 was a Chevrolet dealer technician that prepped Corvettes and recalled arrival of the front spoiler in the rear compartment. He also recalls the difficulty Anchor Motor Freight encountered with backing off vehicles (low-profile) off the truck.

³ Dave McLellan, *Corvette from the Inside: The 50 Year Development History*, (Cambridge, MA, Bentley Publishers, 2002), p 76.