INTRODUCTION

electric release for the rear compartment, better sun visors, tinted windshield glass and radio as standard equipment. Interior upholstery is either tan and brown or a combination of grays; for 1984 the only exterior colors are red, white, black and silver.

The Fiero is a complete breakaway from previous Pontiac—or GM—technology and marketing. It is the first mid-engine mass production car from the U.S. industry, the first with all-plastic body (as distinct from fiberglass), only the second 2-seater from GM (after the Corvette) and after the Corvair the only non-front engine car. Beyond the obvious motive of opening up a new market and making money for Pontiac, its purpose is to raise public consciousness for the division's technical expertise and to develop new manufacturing methods that combine quality improvement with increased worker morale. A visit to the Fiero plant when the first pilot cars were being built showed that the latter objectives were off to a good start; under plant superintendent Ernie Schaefer assembly-line efficiency was of a high order and the employees seemed as excited about their new product as any sports car enthusiast.

Pontiac made its first press showing to a group of 30 journalists in northern California, handing over the keys to 15 Fieros for a 100-mile run on winding roads from Burlingame, across the Golden Gate Bridge, through Marin County and then to Napa. The following day the cars were put through their paces on the Sears Point race track after instruction on the characteristics of cars and course by Bill Cooper (chief instructor for the Bob Bondurant school) and Phil Hill. Present as teasers were two Fiero specials produced by Pontiac designers, one a spider with a low windshield and headrest fairings but lacking a top of any kind, the other a full race car chassis based quite freely on the Fiero layout. Although neither is a direct precursor of a production model, Pontiac wants the public to know that even more interesting Fieros are on the way.

Hulki Aldikacti. *Mill-and-drill machine ensures exact panel fit.* *Plastic body panels on test jig.* *Ron Rogers.*

PHOTOS BY AUTHOR & ED NOBLE

PONTIAC FIERO TECHNICAL ANALYSIS

PONTIAC ENGINEERS MUST have had a lot of fun with this project, which appears to have been put together in the same spirit as other American 2-seaters such as the original Corvette and the original T-bird. It's as though a bunch of engineer/enthusiasts got together and said, "Okay, let's see what existing parts we've got in the bin, and how we can rearrange them into a real sports car." This is the same procedure used for building such historical favorites as MGs, Triumphs, and others. They take an existing driveline/suspension (the hard parts) and incorporate them in a more interesting package.

In an engineering analysis I find myself comparing the Fiero to the new Corvette—not because of any similarity in size or market, but because that is America's only other sports car and they share corporate heritage. In a full road test, of course, comparative cars might be the Mazda RX-7, Porsche 944, Datsun 280ZX or even the Bertone X1/9.

A consideration of the packaging of the Fiero raises the immediate question: "Why *mid*-engine, after Chevrolet just convinced us that *front* engine was proper for the Corvette?" Because the two are aimed at different markets. The Fiero was justified in the corporation largely as a mass production economy commuter/sports car. This meant that an existing unitary driveline package was required. Then, for an aerodynamic hoodline, the low seating position, short wheelbase and light chassis, the mid engine location was justified. The fact that this creates a potentially better handling competition car may or may not have been incidental.

The Fiero is very wide and short. It has almost a 2-in. greater track than other sports cars in its class, and is about 10 in. shorter in overall length. The existing X-car driveline dictated the width (this gives us another generation of "wide-track" Pontiacs). But this makes roll and handling development easier. Given a 2-seater limitation, the width also allows room for the fuel tank beneath the console, right at the center of gravity. The mid-engine design gives a moderate 56-percent rear weight bias, partly because of a relatively short rear overhang. When the proposed V-6 becomes available, however, approximately 100 extra pounds at the tail will increase the rear bias.

The 600-lb stamped-steel and spot-welded space frame is being highly touted, although it is only a slight deviation from conventional unit construction. The primary difference is that none of the steel panels makes up the exterior bodyshell. This is comprised of easily fitted plastic outer panels, as described in the main story. The concept is very similar to the Corvette's, except for the precision-fit, mill-and-drill process. The percentage of plastic in the body structure is likewise similar to Corvette with about 175 lb of sheet molded compound and reinforced reaction injection molded (fiberglass) exterior panels.

You can't get Detroit engineers to talk about chassis beaming or torsional rigidity these days. Instead they like to refer to vibration *frequencies*, which are problems perceived by comfort-minded tourists. Still, for enthusiast drivers this chassis is solid enough. The fixed steel top (no T-top is planned) provides an efficient stiffness-per-pound structure that can't be approached by any convertible sports car made. Finite element analysis and high strength steels were used extensively to produce just about the minimum acceptable mass—from a ride comfort standpoint. So it doesn't look like there will be any major weight reduction