
SCL Ltd. Production Voyager

When the decision was made to seek production of a 'Ford option' FF, in the early eighties, the best way appeared to be with an existing vehicle manufacturer. Such a company would have sources for all the diverse components included in modern vehicles. Considerable expertise would be available in production engineering and design. Providing these elements takes a large proportion of the costs of a 'green field' production and we expected that any company with automotive experience would find our project attractive. We were, after all, offering something costing less to make than a cheap car that could be sold for more - to the same customers.

When this approach produced no result we sought the green field option, looking for a company without automotive experience. This implied an increase in the start-up costs of the project as time is spent assembling competent teams at all levels of design and production. Inevitably the result is a reduction in the sophistication and complexity of the product.

Had our FF project needed to compete with fully developed vehicles from the major motorcycle or car manufacturers we would have been in some difficulty. Fortunately the combination of comfort, handling and safety was still unique and the arrival of computer-aided manufacture had transformed low-level production costs by the mid-eighties. This meant that a very low level of production was commercially viable and that a very simple vehicle, with quite moderate performance would be acceptable.

The Voyager production design consequently closely followed the prototype. The same price and reliability questions that led to the choice of the Reliant engine, Guzzi gearbox combination were equally relevant to the 200-off limited edition production design. The chassis system was also very similar although every effort was made to simplify and improve. Mig welding also replaced the obsolete Gas-Bronze welding used on the prototype.

A new 'double-wishbone' front suspension was designed, using Bob Taits patent, with an offset steering axis and using castings to minimise weight and cost. The production prototypes had wire wheels laced to the alloy hub but fabricated alloy wheels were considered for the production versions. The hub design provided the same essential features of low steering inertia and high structural stiffness as the Difazio unit. It also had

ample steering lock with 35 degree each side and a wheel that could be removed by releasing six bolts. The design used a forged steel 'axle' and a car suspension ball joint to achieve a very low component count and weight.

Another divergence from prototype practice was the use of a conventionally formed fibre-glass body. The original shape for this was made in the same way as the prototype, by carving foam, but once a flat polished surface was obtained a mould was taken for the production bodies instead of applying the glass fibre needed to make the shape permanent.

Under the plastic the structure followed almost exactly the same layout as the prototype. There were front and rear structures, with detachable side rails and ancillary structures for the seat and hand controls. The front 'footbox', an integral part of the prototype front structure was made separate and extended, taking note of the lessons learned in the prototype accident which pre-dated the design of this part.

The need to accommodate two '90 percentile Males', the vehicle engineering standard, also required design changes. The prototype used a standard 'Le Mans' rear fork and this was changed in the production design to the 'Californian' unit which is 3.5 (90mm) longer. To avoid this being added to the wheelbase the single radiator used on the prototype, in front of the engine, was replaced by two small radiators and the engine was moved forwards 3 inches (75mm) This allowed about 4 inches (100mm) to be added to the seat space within almost the same wheelbase as the prototype.

SCL, the Welsh electronics company that took on the project, set out to build five production prototypes backed by full jigs and drawings, with the equally important parts, sourcing and pricing lists. South Wales at that time was quite well supplied with engineering companies and there was less trouble sourcing parts in the area than expected. The attitude of traditional automotive suppliers was however an eye opener to a company with experience mainly in the new electronic industries. Companies happy to give away single items for prototype use were reluctant to deal with production orders of less than thousands. This bizarre inability of some companies, all well-known, to sell their own products to people who want to buy them is not limited to the British. Both Italian and German companies

treated requests to buy stock items with extreme suspicion. It is certainly easier to equip a prototype vehicle with parts from scrapyards than it is to buy a supply of the same parts, new, from the manufacturer.

One negative aspect of the isolated location of the factory in a small village in Powys, was the amount of travelling required to visit suppliers. The attractive rural location was preferable to anywhere in the industrial midlands but time would have been saved if there had been a higher concentration of local automotive companies. Finding staff would also have been easier, simply because of the higher population density.

Despite the unconventional location and the lack of track-record in vehicle production the production project was completed in good time for the 1989 NEC motorcycle show, with all press deadlines met. This was done with funding levels described by a Ford engineer as 'insufficient for a new door handle' and a team of seven people.

Only one vehicle was road-registered by show time and it was in a completely undeveloped state. Despite the consequent lack of a reliable tickover or balanced suspension, the basic virtues of the FF layout, comfort, handling and safety came through well enough to make a favourable impression on both press and private testers.

The five people lucky enough to be the new owners will need to complete this development but will then enjoy the most advanced 'two-wheel sports car' currently available.

Data: Wheelbase 63.5 (1.612m)
 Weight not available
 Engine 850 cc Reliant

