

SIERRA DESIGN

Interview with Dan Connor



The Sierra has been acclaimed as a major achievement in design technology. It is being publicised as both a family car and a 'car for the open road'. Last year a new gallery — The Boilerhouse — was opened at the Victoria and Albert Museum in London. Founded by the designer Terence Conran, the Boilerhouse will examine industrial design in this country. One of the first exhibitions looked at how the Design Division at Ford came to approve the new model and the thinking behind their decision. Here Dan Connor, convenor at Ford Body Plant (Dagenham) talks to Richard Hill and Sally Townsend about the design of the Sierra, the effects the new model has had on production, and about the problem of having exhibitions of this sort dealing with industrial design.

Firstly, what's your impression as you enter the gallery on seeing the Sierra next to all the different Victorian art objects?

I think it's totally incongruous in that sort of background although I suppose they would argue that it's a new art form, but my personal view is that it's a free show — free advertising, and I bet other manufacturers are kicking themselves that they didn't think of that first. I suppose the next thing is that we'll have a painting of a Vauxhall Cavalier in the National Gallery.

Does the Sierra differ that much from the other equivalent new models?

I think that the cars now are all basically designed in the same way — they use the same techniques — they are becoming more and more alike. The exhibition could prob-

ably have been done by any other motor manufacturer: Vauxhall probably take the same care with their models as do Ford or BL. This is a very cheap form of advertising for Ford, it creates the impression that they are the possessor of some special science; they have the actual witchdoctor that no other manufacturer has. The whole question of car advertising seems to take your mind off what's going on under the surface.

This exhibition is purely about the design of the car, not about the way it is produced. Have there been noticeable changes in the production of the Sierra compared with previous models?

They've had to design a model which is cheaper to run. Ecological reasons and the cost of oil have led to these changes. They weren't prepared to make major design and engine changes, which would have been

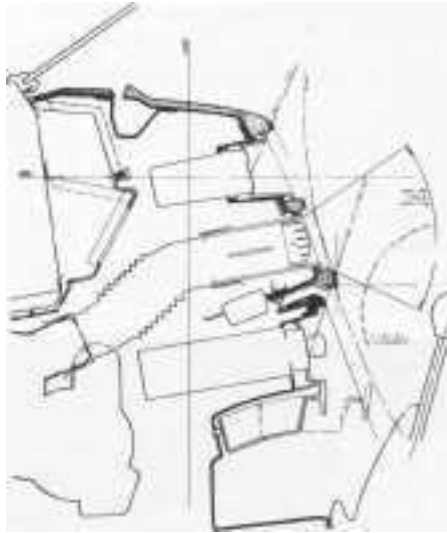
very expensive on top of what they've invested in the building of a new and aerodynamically more efficient body. That, of course, will result in some improvement in performance — both in maximum speed and in fuel consumption — but basically there's very little difference in the design of the engine. In the manufacture of the body, however, there have been dramatic changes resulting in massive surpluses of labour. The amount of labour required to produce a body shell has been dramatically reduced by the installation of automatic press lines. Previously it would have required maybe 10, 15 or 20 men to make a body side, now this is effectively done by four with half-a-dozen massive thousand-ton presses. And this means not only a reduction in the amount of labour engaged in assembly, but also in services that that labour requires: tea breaks, canteens, toilet facilities, time keepers, people to make up the wages — all those are not necessary with a robot. It's all these indirect contributions to labour that are going to be the massive savings in my opinion.

How efficiently is the new machinery working at the moment on the Sierra. Are there lots of breakdowns?

I think there are less breakdowns, though there's a lack of experience in the programme of the robots. But slowly problems will be eradicated. So we're reaching forward. At the moment there are difficulties, as I say. It's a totally new concept of having maybe 130 automatic robots working away, but nonetheless I don't doubt that given a very brief period — a few months — and the teething problems will be eradicated.

Do they use robots on the later stages of the line to instal the trim and the finishings?

They haven't been able to do that. If you take the inside of a car, the roof part of it (known as the headline) was previously some sort of cloth or plastic which would be stuck into place with adhesive and tacks. We now have the whole piece moulded. That's a total plastic moulding which fits in and therefore obviates the need for a lot of labour. The spraying of the car body wasn't the most congenial of jobs and they're now able to programme robots so that they can differentiate which motor is coming and the colour necessary for that car. The robot now effectively sprays the model and that's resulted in a fairly drastic cut in the number of sprayers. It hasn't been possible to use robots in the



other bits and pieces that go on to a car — the fitting of doors and the fitting of the trim — and it probably isn't worth their while anyway while labour is at the price it is. Even compared with Japanese labour, incidentally, our labour is much cheaper.

When you get a new model coming through, does it make a big difference for those working on the line?

I think it would be right to say that on this particular model there is a different mood about because of the current problems we've got in the industry. At the same time Ford are constantly threatening us with what their continental workers do. That they stand on their hands and apparently use half-a-dozen tools simultaneously. We have to take account of this. I think there's a recognition that maybe some of our past practices need to be reconsidered. That's the reality of the world we live in. It's very important to mention the impact of the multinationals on the individual labour force. Ford not only compare the Belgium worker with the British worker, they also use this argument against the German worker and the Spanish worker where they produce a model simultaneously in two or more countries, as they do the Fiesta in Saarlouis and Valencia for example.

Was there any consultation with the workforce over the design or safety on the Sierra before you were told this was what you were going to make?

Once the high level decisions are taken about the shape of the thing, and the tool

design is on the way, we are then told at the local level what the layout is going to be, where certain jobs are going to be, where the gangways are going... We are really brought in at the end of the design to do a bit of fine tuning. We can't change the major direction of the plan. Once we know that the layout of the job is we can then look into safety measures like the question of noise or fumes. We can raise these but only at that level.

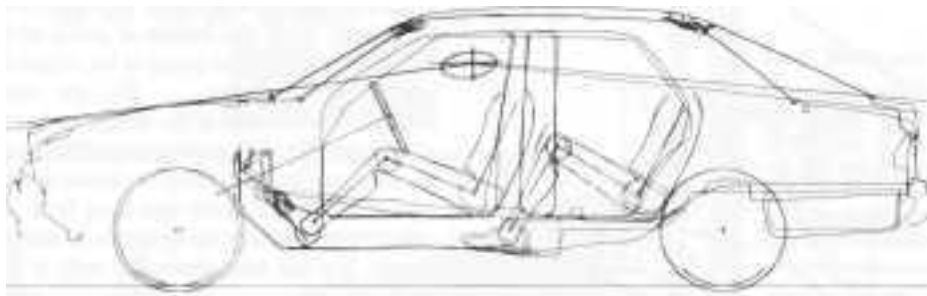
Let me give you an example here though. We have some jobs where we use a pneumatic hammer on the car body. It is extremely noisy and the vibration is very very serious and can cause 'dead hand'. If you're going to have robots in the factory why not have them do that job — the noisy dangerous job. I raised this about four months ago but we still haven't got robots doing this job. So really the design people at the top have got their ideas but don't take into account the experience of people on the floor. If you've got robots they should certainly be used on the most dangerous jobs.

If the V & A let you have The Boilerhouse to hold an exhibition about the Sierra, how would you do it differently from the way it's been done here?

If I had the opportunity to stage an exhibition about the Sierra I would certainly like to hold it in a Ford factory at Dagenham and let the public know just how a motor car is made. It is very fascinating seeing on the television Fiat and all that — these robots clipping away very happily under all sorts of circumstances. I want you to realise that they have an insatiable appetite these things — wet, cold, dry, it doesn't matter — they just keep plugging away, day after day, hour after hour.

Do you think it is possible to have an exhibition on the design of an industrial product which is not just an advertising gimmick?

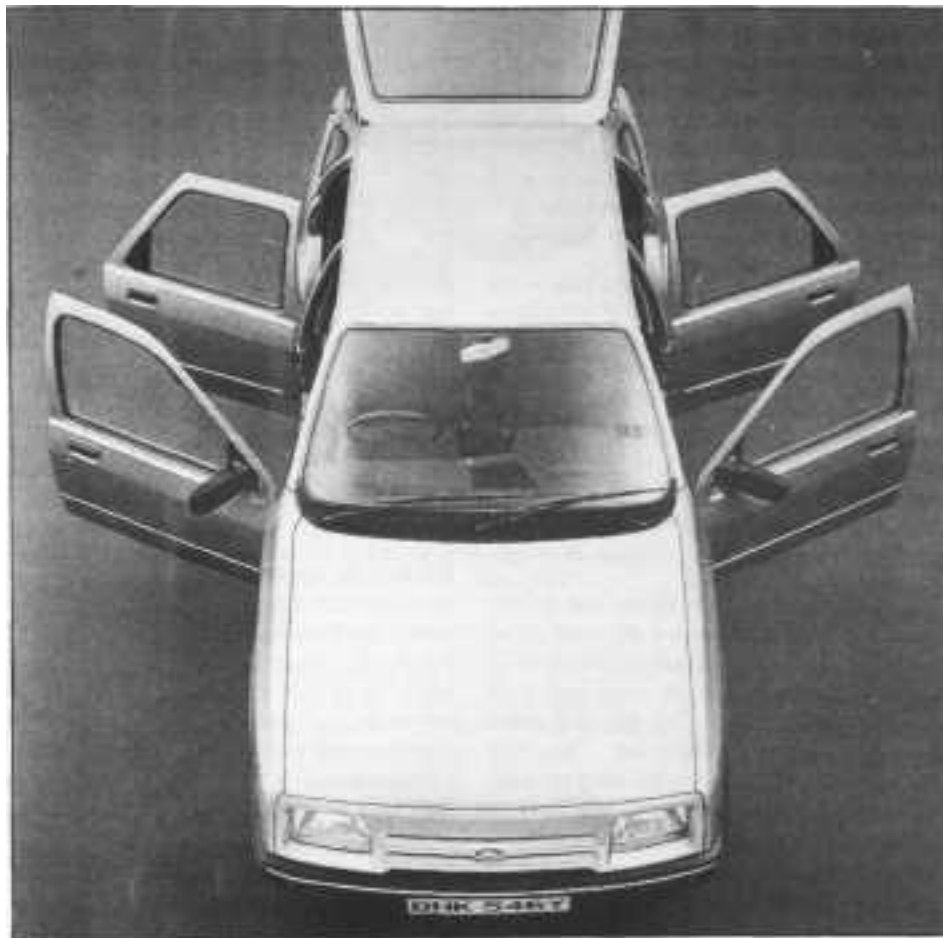
I think it's very valid and there's a need for more of this type of exhibition. Maybe had we done it in this country twenty years ago a lot of our stuff wouldn't be as outdated and badly designed as it is now. We've tended, in this country, to talk about the nuts and bolts of things. We've not really refined our design technique. I think to that degree all consumer products should be open for discussion and attention. That would include, for example, 'what is the purpose of the car in society', 'What sort of car do we want?' The one thing they haven't done with this



servative cars — at least in design terms. They never have installed anything that's absolutely new. They've always built upon well-established principles. That has been their hallmark. It does have the advantage for the consumer that when a model goes on the road, it is well and truly tested and has a good back-up service. Ford have not gone for gimmicks. Their models have traditionally been a bit middle-of-the-road, but nonetheless reliable and based on well-worn theories.

Is that reflected in the way that Fords operate as a factory — that there's more attention to detail?

Certainly the quality levels that are expected now on the body finish and detailed work is much higher than on any previous model and that's a fact. I don't think this is in order to give the customer a good deal. I don't think it's anything about that at all. Rather, the customer is very critical nowadays so what we'd rather do is wipe out the minor problems at source. But, of course, as far as the customer is concerned the end product is a very well-tested model — that's got to be said. At the same time, the slightest defect, nowadays leads to immense pressure on the lad on the floor: there is a much harder atmosphere in this respect. •



car is make it more durable than the models of twenty years ago. By changing the shape of cars you immediately date other models. The most significant thing about the Sierra if you look at the shape and design of it is the aerodynamics which make every other model look out of date. The design of clothing is very much based upon that son of thing. By setting a new style every year everyone has to throw away all their old clothes.

I take your point about obsolescence and the fact that cars aren't designed to last a long time but they do wear out and you have got to design new types of cars. In the process of doing that,

you might as well take some pains to design something which is attractive by the standards of the time.

I agree with you that you can't neglect the design but once you've got a good aerodynamic shape there isn't too much you can do with it. Once you start adding wings on motor car you are just doing it for decorative effects. Most of the design features today are not for aesthetic features — it really is about trying to do Nissan down or General Motors — that seems to be the motivating force behind it all.

Ford has never really been an innovator. Ford has traditionally produced rather con-