

study of styling and trends in car dashboards

⊗ For database of this project, pl. see "M-MSR/96-98 PD"
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Special
project by
✓ pradeep joseph



guided by
prof. u. a. athavankar

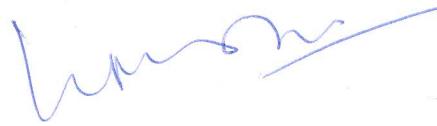
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industrial design centre
indian institute of technology
bombay

APPROVAL SHEET

✓
The special project entitled " Study of Styling and Trends in Car Dashboards " by Pradeep Joseph is approved in partial fulfillment for the Masters Degree in Industrial Design of IIT Bombay.

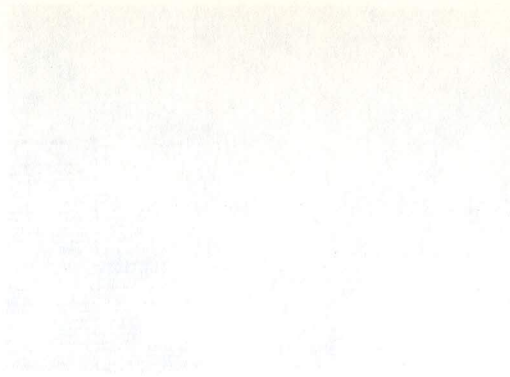
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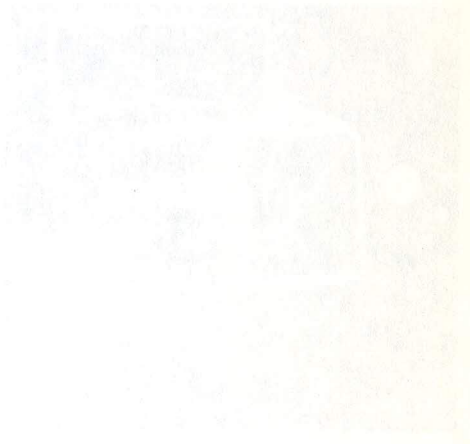
Guide



The study of automobiles is a complex task and it's easy to get lost and not reach the shore. It requires the experience and depth of a seasoned navigator to get you to the shore. Prof. Ahluwalia did that for me.



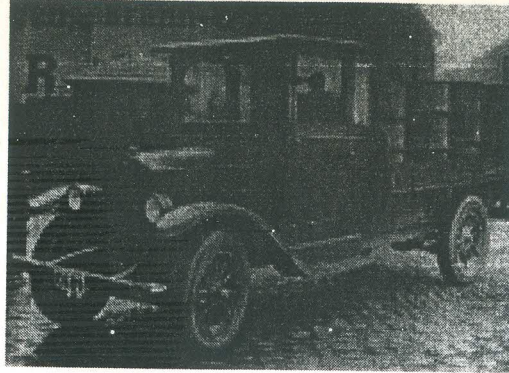
construction of the
then depended
upon the coach
industry.
cars were
much
a horse
ride



to look
along the

The study of automobiles is like an endless sea. It's easy to get lost and not reach the shore. It requires the experience and dexterity of a seasoned navigator to get you on the shore. Prof. Athavankar did that for me.

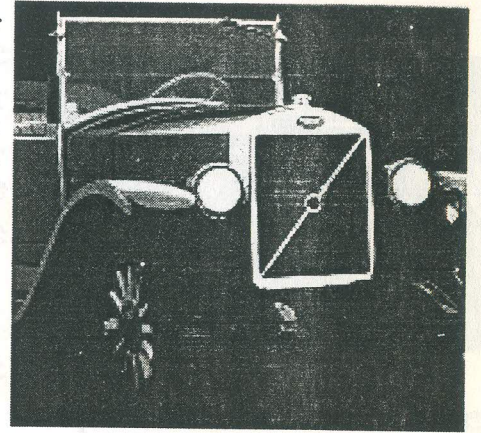




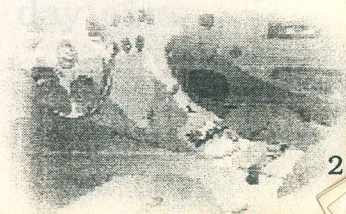
Construction of the cars then depended much upon the coach building industry. Many of the cars were custom built much similar to a horse driven carriage or a

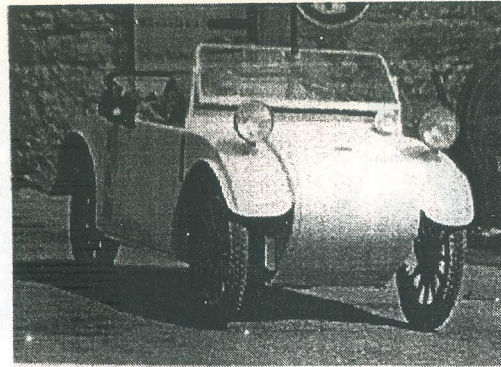
truck owing to the way of fabrication.

Wood was the chief material used during those times to construct the body shell with metal joineries. Metals like stainless steel and alloys like brass were very much used for decorative purposes.



Headlights, windshield framework, horn, rear view mirrors etc. had the shiny metallic look about them. The same was continued along the car interiors also.

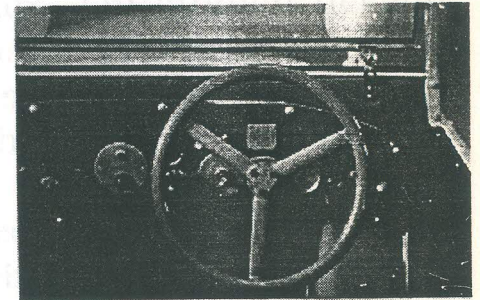




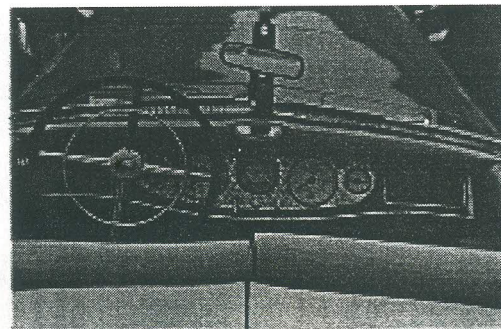
In the 1920's when custom builtcars were in demand , just as in the case of exterior, attention was bestowed on dashboards as well. They began to appear in metal and fine wood, often treated with

leather too.

The dashboards were plain and flat, with circular dials of large diameter. There was a strong sense of symmetry about the placement of dials.

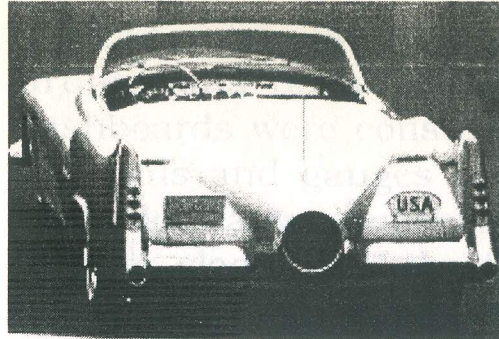


Steering wheels were



totally different and spoked and made completely of wood or wood in combination with metal. The diameter of the steering wheel was considerably large as compared to the present day cars.

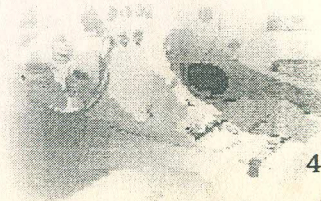
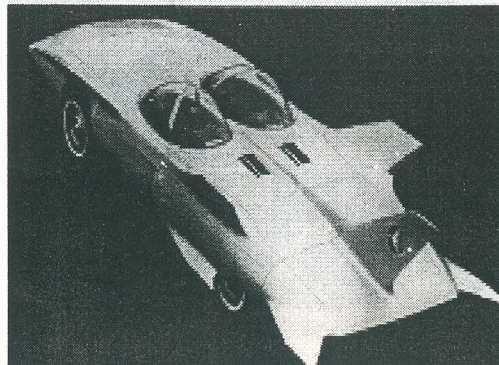
the post war era



During the post war era the Europeans in general, and the British in particular favoured wood panelled trim. Meanwhile the Americans began to simulate wood grain on metal surfaces.

The fifties and sixties saw a drastic change in the design of cars. Outlandish designs were made which symbolised the 'juke box era'. Automobiles of that era were a visual delight with each vehicle made out with a certain individuality and splendor.

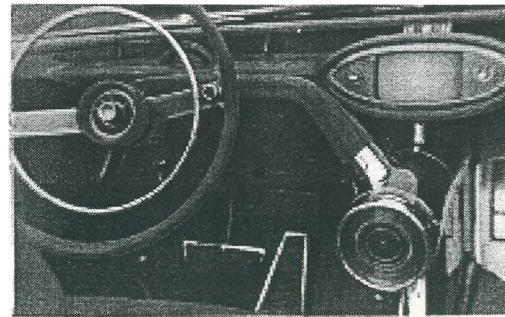
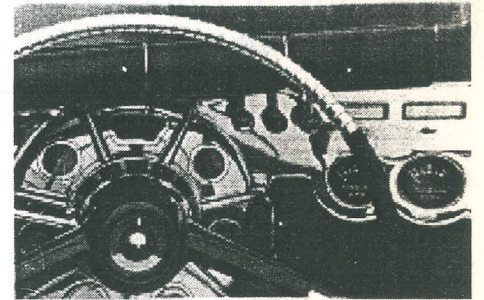
Cars of the fifties and sixties are called 'Classic cars' owing to their exquisite nature. The dashboards of this era were totally different and radical from what was being followed.



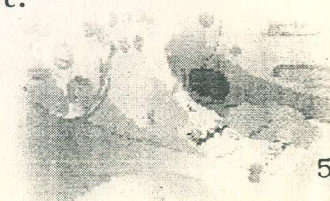
Excessive use of design elements and sharp projections became the order of the day. The dashboards were constructed chiefly in metal. Also the dials and gauges occupied little prominence while decorative elements were used in abundance. Leather cladding of the fascia was also common.

Steering wheels continued to be spoked and were made out of wood or metal and often given a leather cladding too. A concentric circle inside the steering wheel rim acted as the horn button.

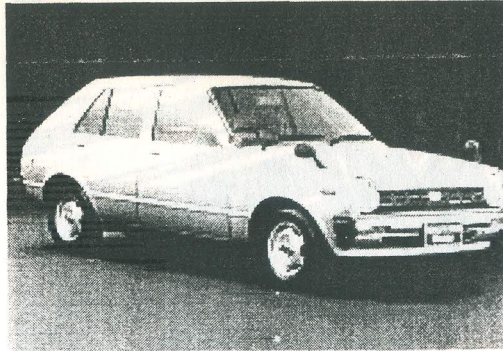
During the fag end of the sixtees, plastics began to make



appearance in a very limited manner. The styling trend began to change by this period when more sober and sleeker designs began to come out.



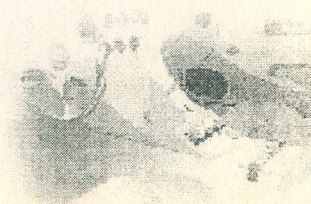
the seventies

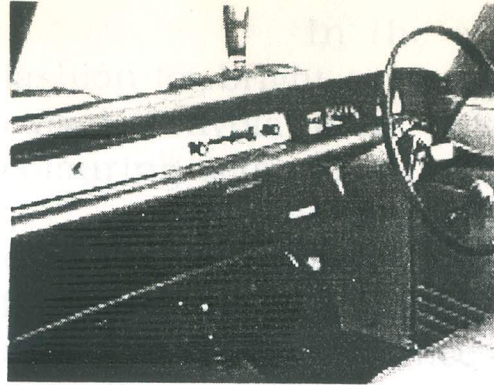


The seventies saw the dawn of sleek cars. This was the time when Japanese cars were on the vogue. They were giving the rest of the automobile world

nightmares with their compact and affordable cars. America still churned out bulky cars in the same line of their predecessors while rest of the world switched to sleeker and smaller cars.

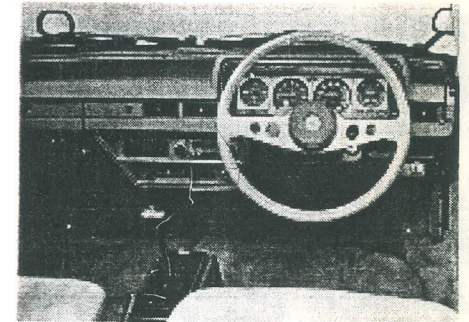
It would be interesting to note that while there were radical changes in segments like family cars, small cars and station wagons, the luxury cars still maintained their silence and stuck to their identity.





The new trend was to have plain, ergonomically planned facias where function dictated completely both layout and appearance. One piece curved instrument glass replaced

individual dials, a generally accepted standard for graphics and symbols was evolved and there were even recommendations by the International Standards Organisation on the position of the most frequently used controls. Anthropometrists developed statistical data on human dimensions which allowed seating positions, fields of view and areas of optimum reach to be developed to suit the greater part of the population.

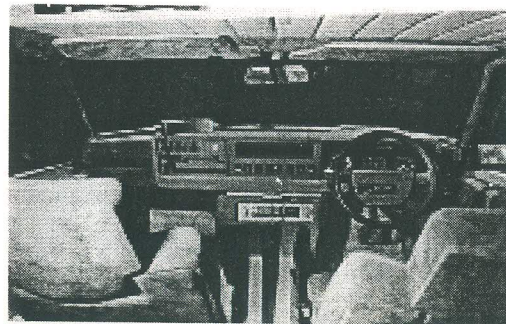
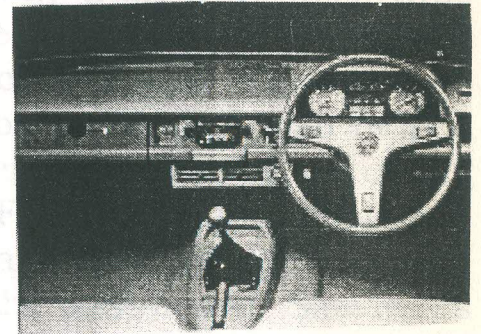


Significantly, there were many developments and evolution of trends also as far as colour was concerned.



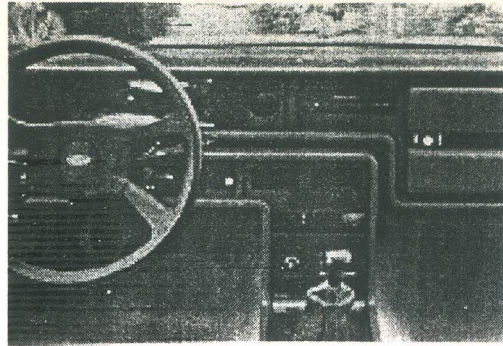
In the early 1970's there was a fashion for bright colours what GENERAL MOTORS called 'Crayola' paint colours (after the children's colouring sets). But this trend vanished quickly.

Again for brief period in the 1970's, there was a trend towards functional black, especially for facia and steering wheels, originated by the non reflective appearance of the controls in aircraft or rally car. Soon this was found too harsh a contrast with the softer interior trim colours being used, so it evolved into what became known as 'environment' colours in 'cool' or 'warm' near black shades designed to blend better with blues or browns.



So it can be concluded that during the seventies there were design revolutions and developments which proved to be trend setters.

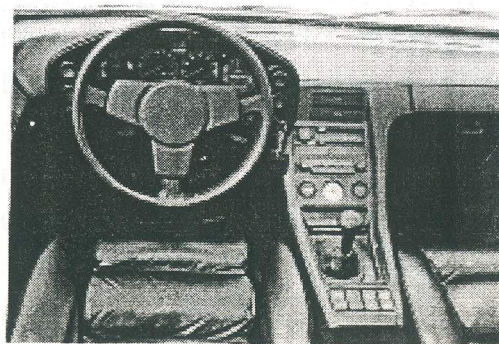
the eighties



The late seventies saw the dawn of the Plastic era. Plastics revolutionised the design of cars and in particular dashboards. The use of plastics in car bodies opened the

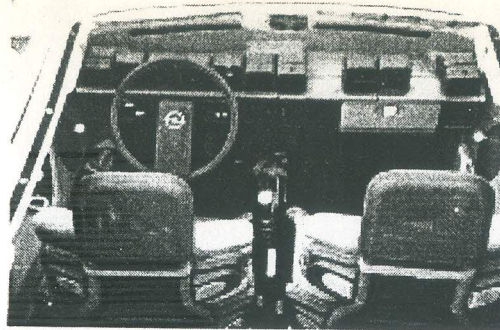
way to frequent variations on a theme, and face lifts were fast, and less costly than with steel, thus representing a typical decisive aspect of market competitiveness. The advancements in manufacturing techniques like injection moulding also helped this cause. The new design concept of using plastics was defined by FORD as "plasticsurgery".

Till now the controls and displays were placed on the horizontal face of the dashboard. Slowly, as the number of controls increased, the spill over of



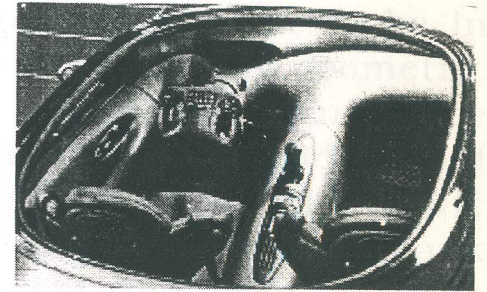
the dashboard began to take place. Also the full length parcel shelf below the dashboard began to get split up into glove compartments.





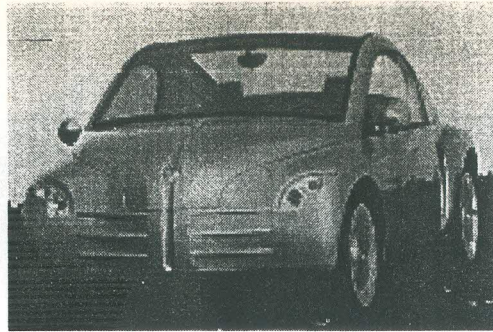
Steering wheels assumed greater significance with plastic moulded wheels, thus getting away from the monotony of wood and metal. Foam padding

was also given to the steering wheels. The spoked supports were replaced by more attractive ones like cantilevered ones and the logo of the company was displayed on the centre of the rim with pride.



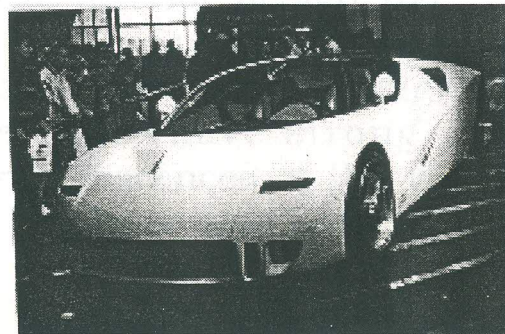
By the later half of the eighties, the driver's seat began to resemble a cockpit owing to the fact that controls and displays were placed all around the seat. Also some designs had strong influences of ship control room too. Steering wheel no longer remained circular as joystick like control gear were introduced. Many controls were shifted to the steering for easy fingertip access.

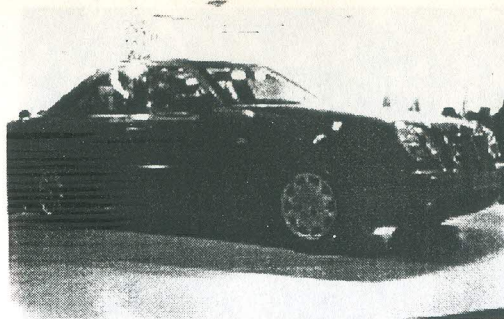
the present decade



The ninteens saw the emergence of many new styling trends. The early part of the era was marked by the 'retro styling' which was reminiscent of the forties and fifties.

Large and prominent headlights and front grills characteristic to that age was seen. Later on the new design style of 'edge design' came to be in vogue. This style is characterised by geometric shapes and sharp curves. Again the advent of the ninteens saw a major technological upgradation of automobiles with sophisticated electronic gadgetry aimed at reducing the driving task becoming wide spread. There were even attempts to deviate from the conventional driving to 'drive-by-wire' technology.





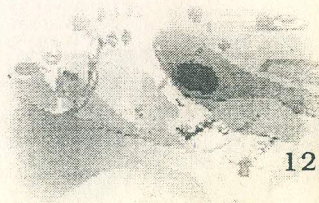
If an analysis is done on the influence of styling trends in the different categories of cars, it can be seen that the small cars, mid sized cars, MPVs

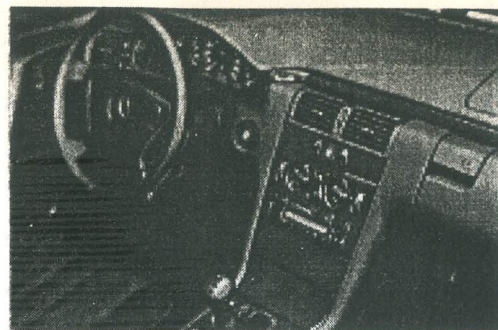
and SUVs were the ones which underwent major changes as and when the trends shifted.

The luxury cars preserved its identity and at the same time were with the times through changes that were very subtle and which would not disturb their elegance and class. The style is followed in the interior design too.



Sportscars also follows the tradition with characteristic design of headlamps, grills etc. They have strong visual and characteristic reminiscences of the yesteryear about them. Again they have also been upto date in a silent manner.



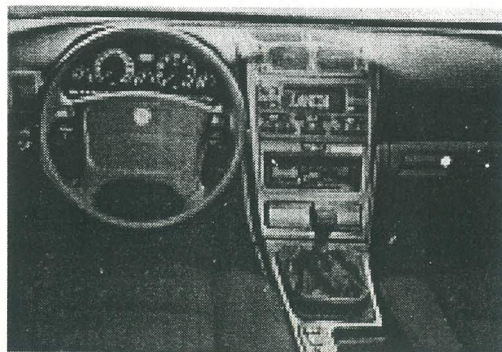


The dashboards of the luxury cars still continue to have wood and leather about them. The dashboard is made up essentially of plastic but the parent material is cleverly

covered up by traditional wooden and leather treatment. The position of the controls and displays are very ergonomic and their placement is done in groups as per the function.

Steering wheel incorporates the now standard accessory - the air bag. Gear shift lever has wooden knob. Glove boxes are well flushed with the rest of the surface.

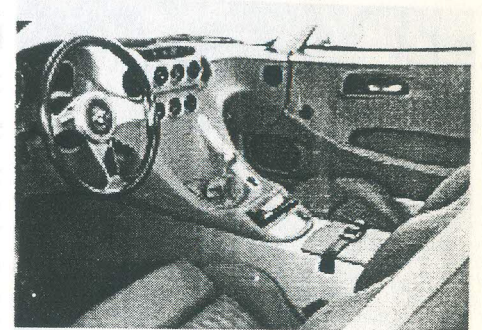
The colour of the interior remains sober with greys and blacks dominating. They are contrasted by the rich brown texture of natural wood.



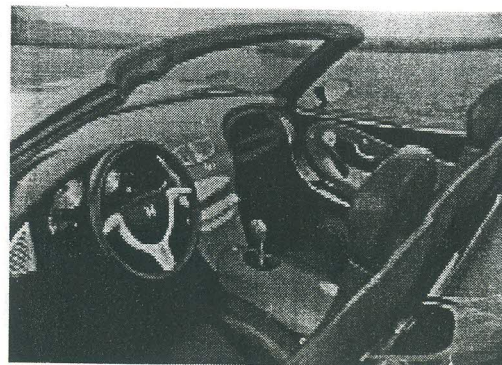
The speed machines have also stuck to their guns as far as styling is concerned. The dashboards are adorned with circular dials with metallic rims and the number of controls and displays are kept under check. The dashboards have the mixture of wood and metal typical of the sportscars of the previous era. The spill over of the dashboard is evident.

Steering wheels are made of wood with metallic spokes and gear shift knobs are either polished aluminium or wood.

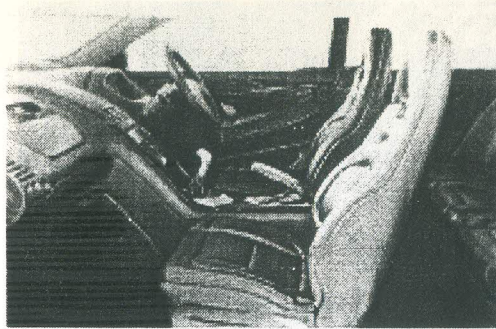
The interior colours are in line with the exterior colours, especially the upholstery. The wooden and metallic colours contrast the rest of the interior thus gaining



a t t e n t i o n .



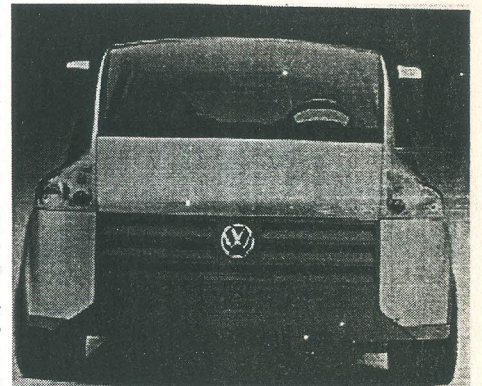
which gives a feeling that the task is pretty simple



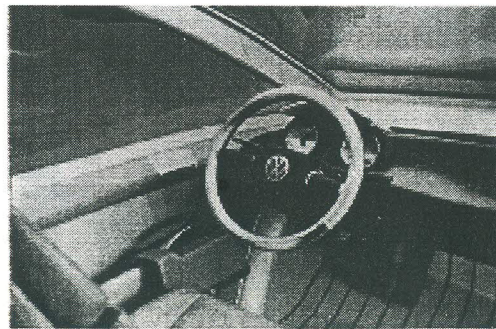
The influence of exterior styling on the interior has become an accepted design norm. The characteristic curvatures and edges on the outside continue

even on the inside.

SUVs have their typical muscular and aggressive look manifested on the dashboard as well. The overflow of the dashboard shows muscularity and the thick leather cladding on the steering wheel reflects power and



control.



The restyled cars have a simple and minimalistic kind of look about them both inside and outside. The dashboard is very plain and devoid of any fancy displays and buttons,

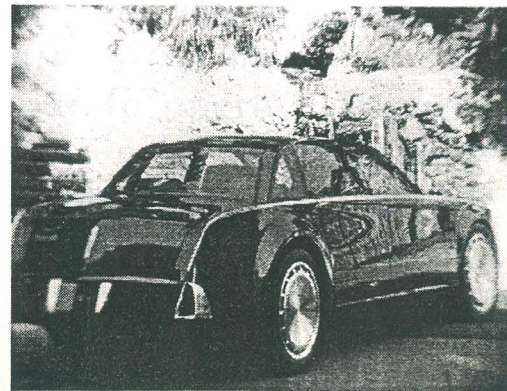
which gives a feeling that the task of driving is pretty simple.

the edge styling

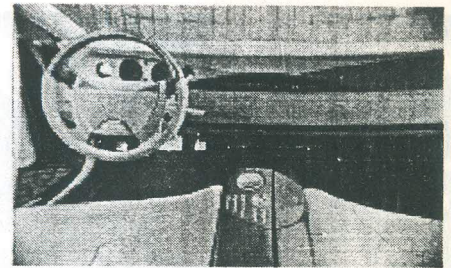


front grill. The sharpness of the outside is mirrored on the interior almost the same way. Buttons and knobs assume geometric shapes and their grouping is done much interestingly.

Steering wheel



The edge design thrives on the integration of sharp lines and curves which has replaced the soft curvilinear forms of the previous trend. Headlamps play a major role in the edge design and so does the



acquires interesting treatment and the gear shift lever is shortened and is some times just a circular dial.

The colour application done to the exterior is done in the interior also.

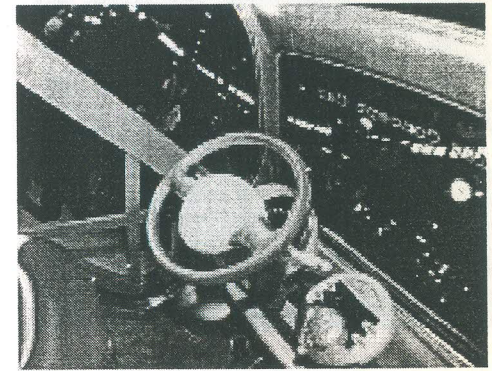


The small cars of the present era have a great element of fun about them. The interior looks bright and cheerful with pleasant colours and textures.

Significantly the

number of controls and displays have been brought down with only the bare essential ones retained.

The whole interior looks simple and comfortable. There has been a radical change in the design of interfaces as well. Buttons and knobs have assumed interesting forms which are often ergonomically easy to operate. There has been a shift in the location of controls as well. The overflow of the dashboard is often absent and the power centre is well defined and properly grouped.

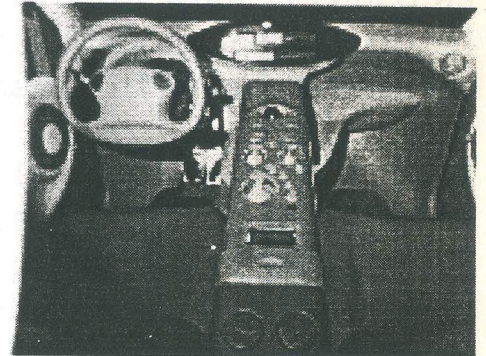


Steering wheel have also become simplistic in appearance. An interesting design feature is the placement of frequently operated buttons in a

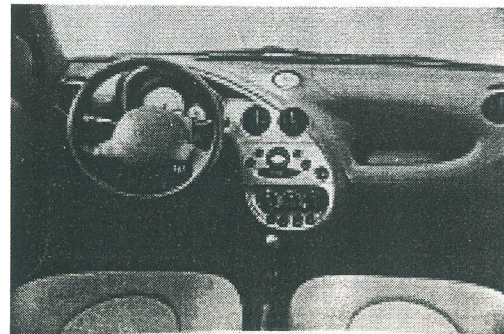
console just below the steering wheel. This would facilitate easy access of those controls. Also some controls are placed on stalks along the steering column.

Steering wheels have also undergone facelifts with the circularity often broken. No longer controls are placed on the wheel itself but are kept in the vicinity of the wheel for quick access.

Translucent plastics, synthetic fur etc. have made their way into dashboards. The playfulness of the vehicle is often enhanced by such materials. Interesting curves and depressions are created

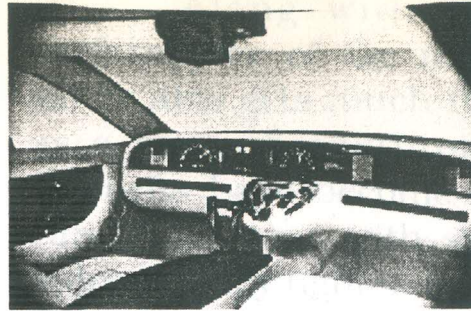


which also serve as pockets.



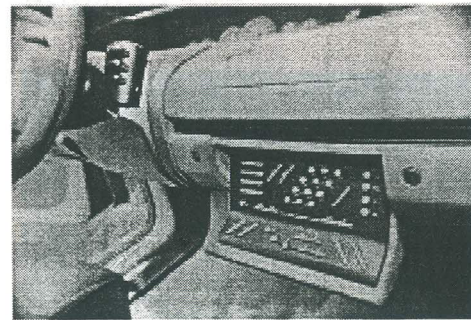
The interior as a whole, of the nineties looks a cohesive and homogeneous architecture of electronics, plastics and fabrics.

the latest technology



The last decade has seen much advancements in the technological front as far as cars are concerned. From the field of avionics latest breakthroughs like 'fly-by-wire' has been absorbed into the field of automobiles. Now there are cars which run with very limited manual effort by virtue of what is called as 'drive-by-wire' technology. Also unconventional interfaces like joysticks are taking the place of steering wheels.

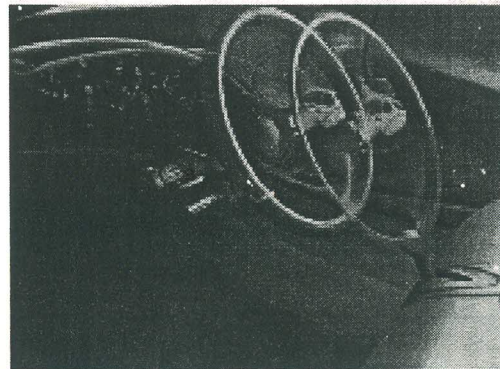
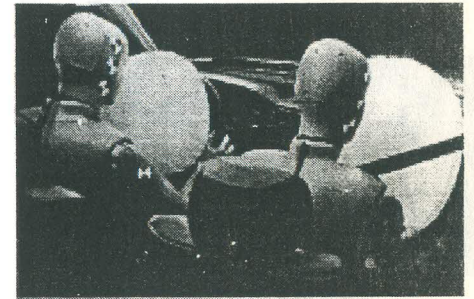
Advanced navigation systems and communication facilities have established themselves. On screen displays and reconfigurable



displays like head up displays have also come into operation. The best part about them is that they come into vision only when necessary. Rest of the time the displays go blank. All these control gears are changing the image of the dashboard itself.

safety measures

Along with the advancements in the performance of the machines, matters relating to safety also gets much thought. Seat belts were seen as a major breakthrough in safety devices. Now seatbelts have become a standard feature in many cars. They come with special tensioners which will automatically tighten in cases of an impact. Then came airbags. Airbags resulted from a long research on how to prevent fatality owing to the head hitting the steering wheel during accidents. Airbags are available for the driver and the co passenger which will inflate in under a second and deflate as soon as the impact diminishes, to prevent choking of the person. Now side impact airbags have also come to protect against side impacts.



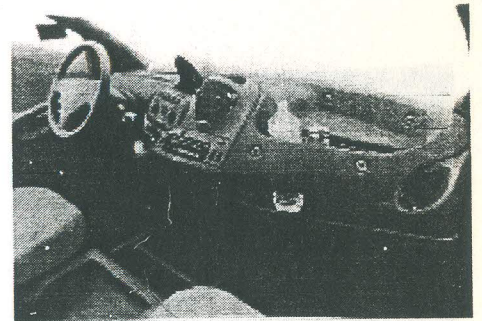
Steering column which collapses by itself in case of an accident also helps in reducing injury. Head rests which were seen as a luxury feature earlier is mandatory now in many countries to prevent whiplash injury.

the accessories

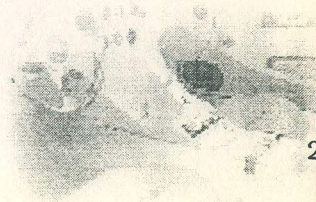
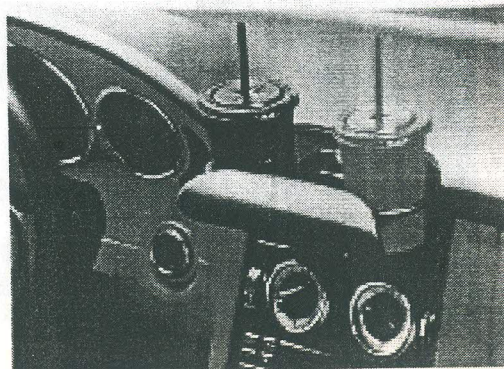
The concept of space for keeping articles originated in the forties. Initially there were open shelves and pockets which later became lockable compartments called glove boxes. Now exciting curves and depressions are created to produce a flow effect in the interior at the same act as useful pockets .

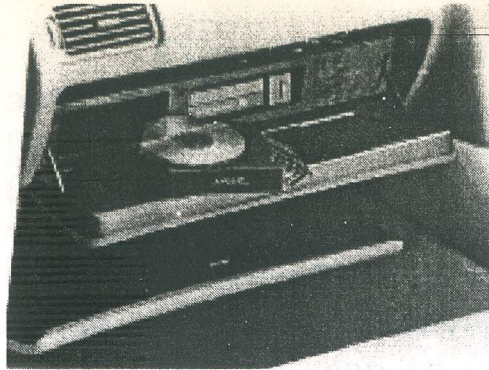
As an extension, side pockets and magazine racks along the inner side of the door panel are also common.

Later on other attractions like cup holders, telephone holders and more recently cell phone holders have also come up. Some cup holders are

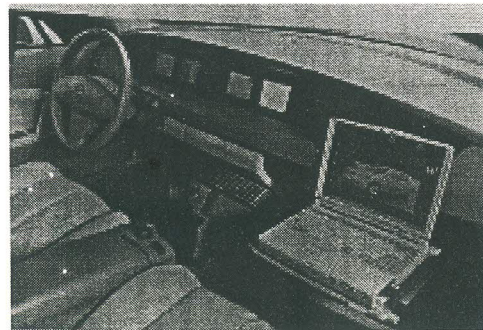


pop up type and some are even concealed inside the glove box.

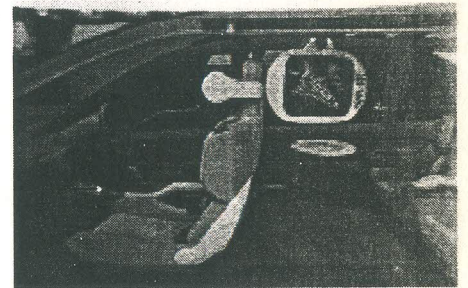




entertainment. There are onboard computers, hi tech audio visual systems and other communication systems aimed at easing out difficulties. Often there are concealed and flexible arrangements for storing



Initially when radio was a major fashion, it was a matter of prestige to have one in the car also. The situation now is that in place of the simple radio we have a host of gadgets for both information as well as

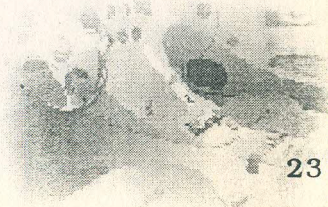


such devices and access them only when necessary.

what's next ?

The changes in trends in the case of automobiles are getting more rapid unlike the case before. Advancements in technology is a major factor behind this. Vehicles are tending to be 'smart' and are reducing the involvement of human beings in controlling them. These factors are giving automobiles an unconventional style.

But as seen so far, styling trends do come back after a period of time. Hence one can expect the future generations to get a taste of our times also.



All the information contained in this report are collected from various sources like books, journals, brochures, the internet and also from the Auto Expo 98 exhibition. On the basis of the available information, a database was created and was used for doing the analysis.

The books referred were

Evolution of motorcar shapes and design,

Geoffrey Howard

Automobile engineering, G.B.S. Narang

The magazines and journals were

Auto & Design

Car Styling

Automotive Engineer

Automotive Engineering

Also information booklets of various cars were used for the purpose.

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