

ENGINEERING

Greater Comfort and Safety Stressed in 1937 Automobiles

More Head Room Gained by Lowering Floor With Use of Hypoid Gear or Triple-Jointed Propeller Shaft

THE NEW 1937 model automobiles will be more comfortable, safer and more economical than any of their predecessors, Norman G. Shidle, editor of the *Journal, Society of Automotive Engineers*, told Science Service in giving a cross section of what's ahead in motor-dom.

The trend to lower roofs has stopped. Every effort has been made to lower the propeller shaft of cars to get rid of the raised tunnel which last year ran through the space in the rear. A lowering of the floor from one and a half to three inches has been achieved. The consumer's complaint of tripping in entering and leaving the car is removed; even if more headaches for the design and lubrication engineer have arisen.

The net effect of lowering floor height while keeping the roof at its 1936 level, is more headroom inside the car and greater seat heights that permit one to get out of, and into, seats.

Bodies are larger, in general, with increased luggage space, wider and higher door openings. The injury menace in many pedestrian sideswipe accidents has been removed in some cars by the new type safety door handles. The sharp-pointed, rapier-like handles of last year's models are few and far between. Instead, the ends of the handles are curved in toward the body so that they will not be likely to inflict painful and fatal injuries.

Last winter's severe cold, throughout the country, has led almost universally to the permanent installation of windshield defrosters which generally consist of ducts leading warmed air up to the inside of the windshield.

More Room in Front

Emergency brake levers are disappearing or are so designed that they obtrude less into the foot space of the front seat. With extra seat width, a third passenger in front becomes less a driving hazard. The shifting, in some cars, of the steering wheel to the left also provides additional front seat room.

Additional safety factors include the all-steel top, which is now almost uni-

versal, and extra padding on the top back edge of the front seat to protect rear seat passengers if they are thrown forward in a sudden stop. Silk cords generally replace the metal coat rail on the front seat for the same safety gain.

And speaking of stopping: hydraulic brakes will be practically universal on all 1937 cars. At least, every manufacturer has some product with this feature.

The problem of better radio reception has been a serious one in the 1937 designs. The all-steel top effectively shields the older-style built-in aerial in the roof. The running board is now the favored place. To be effective, it must be electrically insulated from the car and even then offers problems in gaining reception of the quality the American radio enthusiast receives in his home. Motor car radio reception will be improved over 1936, but some makes of cars offer optional, outside, attached aerials for those people who want extra-quality reception despite the possible unsightly appearance. All cars of 1937 have space designed for a radio installation.

Tilted Windshields

Windshields are generally tilted slightly more than in 1936.

While each manufacturer strives for some characteristics which bring an individual appearance, the general trend is to longer, more bullet-like heads, and wider single bar bumper. Bumper guards are turning into standard equipment, since they can frequently serve as a mounting for the maker's monogram.

Outside horns are going under the motor hood and if matched horns are used their pitch is accurately checked.

On the instrument panel, the trend away from often-meaningless calibration marks is continuing. Oil pressure gages in some cases merely say "no" when the oil pressure drops. A tiny red light or "not," in some cars, indicates when the generator is not functioning.

It is safe to predict that the leveling of the floor in the tonneau will presently enrich the layman's vocabulary with a new word spelled h-y-p-o-i-d. Hypoid gears in many cars make it pos-



COUNTING DUST

MICROSCOPY-PUBLIC HEALTH

Dust Shows Up Like Stars Under Modern Instrument

See Front Cover

NEWEST tool of science to detect conditions causing such diseases as silicosis is a special dust-counting microscope. With this it is hoped to attain more knowledge in the field of industrial health.

The illustration on the front cover of this week's SCIENCE NEWS LETTER is not a view of the heavens as seen through a telescope, but the dust in air man breathes as viewed on the darkfield background of the new instrument, which was developed by the Bausch and Lomb Optical Company. Each square in the reference microscope screen is thirty microns across, or about one ten-thousandth of an inch.

On this page is shown the instrument in use. The piston plunger mechanism sucks in air samples and traps them on moistened microscope slides.

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sible to keep the general low height of the floor and yet, at the same time, make it level.

If your new car has a hypoid gear, you will talk about it. If it does not, you will probably find yourself arguing why a two-piece, three-joint propeller