Facts of light— how to focus

Half the cars on the road today have headlights that are badly out of adjustment and need to be corrected. This condition represents loss of efficiency and contributes to hazardous driving.

Does your car fit into this category? If it does, give yourself and other motorists a break by learning the facts of light and getting your headlights on the beam.

You can properly align the headlights yourself. All you need is a garage wall or a light-colored door to serve as a screen on which to protect your headlights. The approach, however, on which you drive your car to the screen must be level.

Stop the car about 25 feet from the screen. You need two horizontal and three vertical lines to check the alignment.

The upper horizontal line should be the same distance from the ground as the centers of the headlamps. The lower horizontal line (the aiming line) should run parallel to and two inches below the upper line.

As for the three vertical lines, one should correspond with the center line of your car while the other two with the center line of each headlamp.

Use a stick to measure the distance between the center of the headlamps and the ground. Simply transfer that measurement to the screen.

To establish your vertical center line, move the car closer to the screen for accuracy. Sight with a narrow strip of masking tape the center line of the car's rear window and a small object placed at the center of the hood.

To check the alignment of dual lamps, cover the two outer lights and press the floor button for high beam. Each of the two inner lights should throw a light pattern so that the center is focused on the intersection of the headlamp center line and the horizontal line of adjustment.

Now uncover the outer lights and switch to low beam. The projected pattern should be below the top horizontal line and to the right of the vertical center line of the outer lamps.

If they don't line up this way, you'll have to make some adjustments. Simply remove the lamp doors and turn the top or bottom screw for vertical adjustment and the side screw for horizontal adjustment. When the low beam of the outer light is adjusted properly, the high beam is automatically aimed correctly.

You may notice that some cars glare at you more than others, even though their headlights have been aligned. This is because different manufacturers recommend slight variations in their alignment specs and the general two-inch dimension may not apply in some localities.

When checking and adjusting your car's headlights, ideally the gas tank should be half full, somebody should be in the driver's seat and right-front passenger seat, recommended air pressure should be in the trunk, except for the spare tire and normal tools.

If you have a headlight that is burned out, make sure you know which type of replacement lamp is needed, especially if the car has four lamps. The inner lights are the high beams, for reaching down the highway. They each have a single filament for that high-intensity beam. The two outer sealed-beamed lights have both a low beam and a high beam. Identifying numbers are molded into the glass and there are large offset lugs at different angles so that you cannot confuse the lamps.

If you notice that your headlights are not giving off their full candle power, check your battery terminal for corrosion or the alternator belt for slipping action.

If your headlights short-out when you switch to the high beam, chances are the dimmer switch is shorting on high beam. It's not the lamps themselves or the wiring or the lighting swtich, which almost every motorist who is confronted with this problem suspects the trouble to be.

If the headlights go off and then on again repeatedly without the switch being snapped, it's not a short circuit blowing a fuse. There's no fuse for the headlights. It's the circuit breaker at the lighting switch alternately breaking the current flow and momentarily closing the circuit again.

And speaking of lights, make sure your stop and turn signals are working properly. Keep in mind that a No. 1157 bulb for the rear lights has a common filament for the stop and turn lights. The other filament is for the taillight.

If one of the rear turn lights doesn't work and the stop light does, the trouble IS NOT with the bulb. If the indicator lights burn steadily or flash unusually fast when signalling for a turn, one of the bulbs has burned out.

It's good to carry a trouble light, spare headlamps, bulbs and a flare in your car at all times. Other drivers depend on your car being properly lighted both day and night.