

## Understanding Wheel Bearing Loads And the effect of increased positive offset

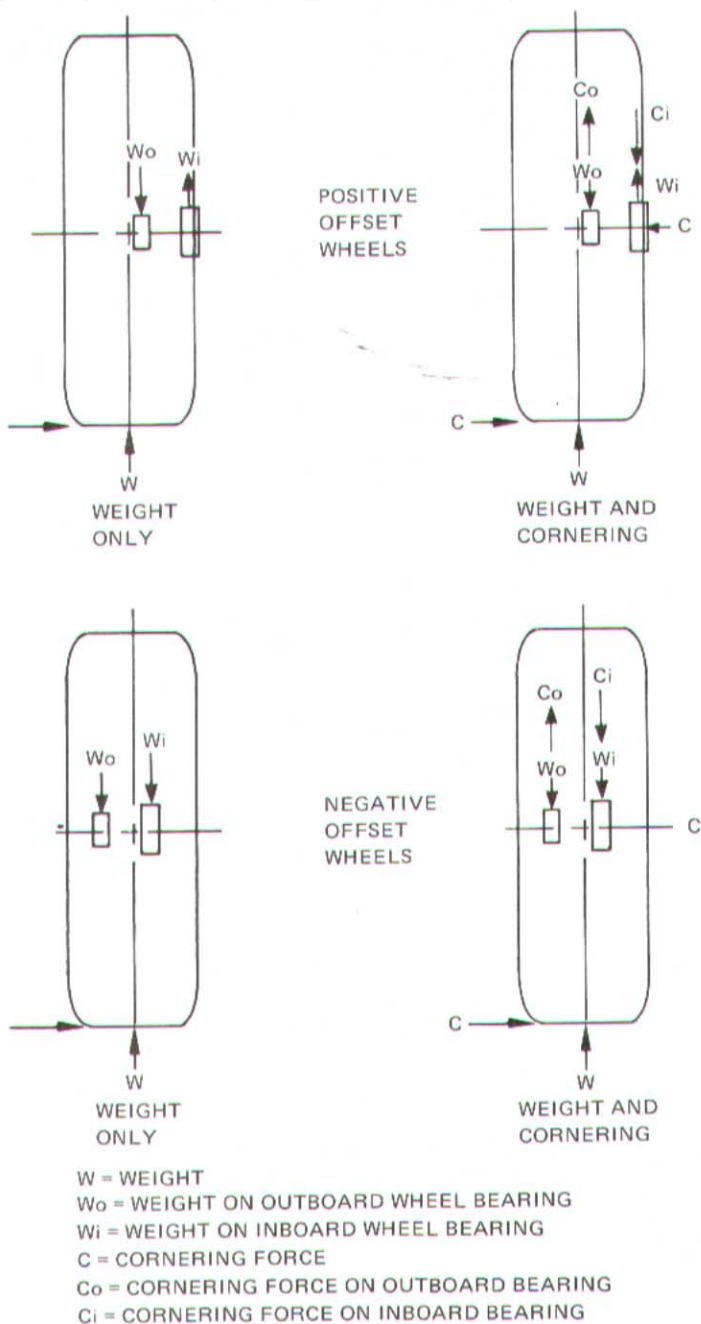


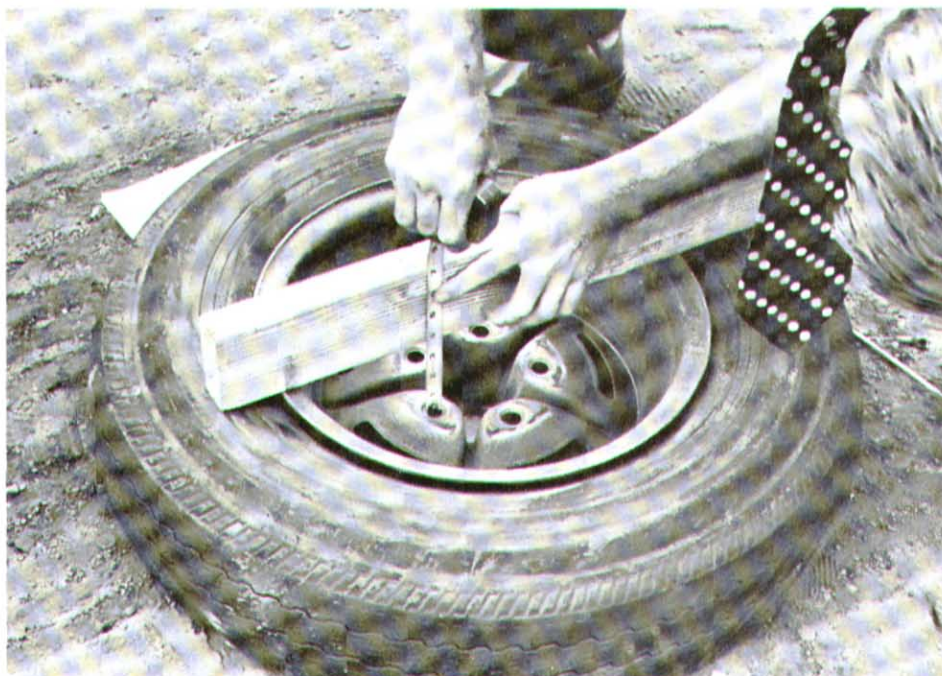
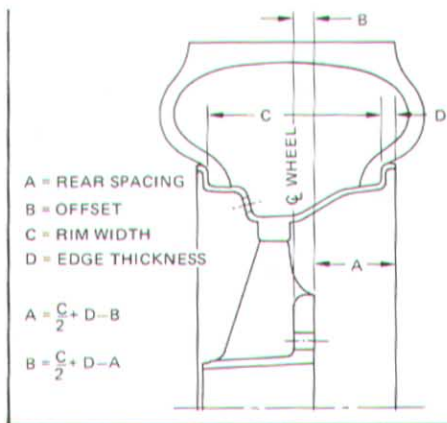
Figure 35/Wheel bearings carry weight of vehicle, "W", during straight-line running. They also carry cornering forces, "C", in turns.

With negative offset, weight loading is well distributed between inner and outer bearings. However, cornering loads upset this balance by increasing force on the inside bearing and decreasing force on the outside bearing. This makes cornering much harder on the inside bearing than straight-line driving.

With positive offset, the situation is reversed. In straight-line driving, bearing loads are uneven but the addition of cornering forces tends to even them out. Thus cornering loads are less severe than those of straight-line driving.

In these sketches, offsets are exaggerated for clarity. Small changes in offset don't affect bearing loads enough to worry about. In any event, wheel-bearing life will probably be affected more by your driving than anything else.

Figure 37/If you know offset you can calculate rear spacing and vice versa. In these formulas if the offset is negative be sure to put in a negative number for "B". If you don't change rear spacing when buying new wheels, the new wheels cannot hit the suspension on the inboard side, but watch out for tire clearance problems.



Rear spacing of this custom wheel can be measured directly as shown. This wheel has the tire pushed off the rim, so the measurement can be taken by resting the 2 x 4 on the edge of the wheel and measuring to the mounting surface. If the tire were inflated, the rear spacing is determined by measuring from the tire sidewall to the mounting surface of the wheel, and then subtract the distance from the tire sidewall to the edge of the wheel. Wearing necktie adds a little class to the operation.