LET'S HEAR FROM YOU!

It is our belief that you, the reader, buy MOTOR LIFE because the articles within its covers are interesting and educational. The staff of Quinn Publications feels that the average MOTOR LIFE reader is a consumer-enthusiast, a car owner who has a more-than-average interest in automobiles —and a particular interest in the car he drives. For this reason our editorial content is aimed to please a special level of motor magazine readers.

Features in MOTOR LIFE range from technical engineering presentations of timely automotive topics to basic how-to-do-its. We run the highway gantlet of product analyses, road tests, customizing, backyard ingenuity, and the latest word from Detroit.

It is sometimes difficult, however, to be sure we are satisfying a majority of the consumer-enthusiasts who purchase MOTOR LIFE.

For this reason we have prepared a questionnaire for you to fill out and return to us. In this way you will be guaranteed a continually informative motor magazine whose sincere aim and singleness of purpose is to make you—the reader—happy!

MOTOR LIFE
4949 Hollywood Blvd.
Hollywood 27, Calif.

Yes No I have marked my choices below:

- ☐ ☐ 1. Features on personalities in the automotive fields.
- ☐ ☐ 2. More technical features by engineers, designers, other authorities.
- ☐ ☐ 3. More articles about what the "little guy" can do, cheaply, to improve performance of the family car.
- ☐ ☐ 4. More auto road tests.
- ☐ ☐ 5. More on customs.
- ☐ ☐ 6. More on sports cars.
- ☐ ☐ 7. More on home-built rods for street and contest.
- ☐ ☐ 8. More news from Detroit.
- ☐ ☐ 9. Articles on interesting foreign cars (not necessarily sports cars).
- ☐ ☐ 10. An occasional humorous article.
- ☐ ☐ 11. An occasional cartoon.

My favorite feature in MOTOR LIFE is:

.....

Remarks.....

.....

Name.....

Address.....

City.....

Zone.....State.....

Make of car I own.....

My age is ..... I am a regular MOTOR LIFE subscriber (yes or no).....

ing in the charge could have any effect on flame speed; and besides, he didn't think there was any very violent gas motion by the end of the compression stroke anyway. We know today that Ricardo was closest to being right about turbulence . . . but more on that later.

Certainly Buick was all wrong with their "Turbulator" piston in 1938! Their engineers figured that, by rounding out the piston head and building it up on the side opposite the plug, the fuel charge would be more or less rolled up in a ball right in front of the plug on the compression stroke, and this would greatly speed up combustion (see Fig. 4). It didn't work. When they went to 7:1 compression on their compound-carburetor models in 1941, the octane requirement with a carbon load sky-rocketed far beyond the best pump gas available—and you couldn't tune it out with a spark adjustment. The '41 Buicks were probably the "knockingest" cars ever put on the roads!

THE EFFECT OF TURBULENCE

New laboratory techniques developed in the last few years have finally shown us the true nature of mixture turbulence and its effect on combustion. We know now that the critical period in the cycle for turbulence is just before the spark fires, and not conditions during the intake and compression strokes as some earlier researchers thought. And the key factor here is our quench area. This actually becomes a powerful "*squish area*" as the piston nears top center, and the fuel-air mixture trapped between piston and head is squirted out into the main combustion chamber at high velocity. This hastens burning and greatly reduces the octane requirement. (See Fig. 5.)

Thus our beloved quench area serves two important functions—to control turbulence and to chill the last part of the charge to burn and control detonation. Tests have shown that you can vary the octane requirement within wide limits by merely changing the size of the quench or squish area; the larger the area, the higher the gas velocity in the chamber at the time of ignition, the faster the burning, and the lower the octane requirement. Oldsmobile enlarged the squish area on their '51 Rocket model from 16% of the piston area to 30%—and reduced octane requirement four points with one blow! One OHV chamber of 9:1 compression ratio with a large squish area showed a requirement of only 70 octane. (It should be noted here that tests prove that the clearance in the squish area between piston and head must be less than .100"—and preferably .050"—to have any appreciable effect on combustion.) This all proves how wrong Buick was with their Turbulator piston and how wrong Janeway and some others were years ago to ignore turbulence as a factor in com-

(*Continued on page 54*)