ENGINEERS STUDY GASOLINE KNOCKS

New Effort Being Made to Solve Problem—Army Air Corps Helping.

DETROIT (AP)—A new effort to solve the fuel knock problem and determine the exact anti-knock relations of various blends of gasoline in both airplane and automobile engines is being undertaken jointly by the army air corps at Wright field, Ohio, and by the Ethyl Gasoline corporation at its laboratory here.

Special knock testing machines, recently developed, will be used in a mechanical check on the work here and at Wright field. Tests have been under way for several months, officials of the fuel company said, but in the new work, the first actual comparison of fuels will be made.

Through the tests army engineers hope to produce a blend of tetraethyl lead gasoline which will produce more power and eliminate the knocks in the higher compression engines. In time of war, it was pointed out, distances between fueling stations are of necessity great and the power produced by fuel may mean the difference between victory and safety.

In the automobile tests here, two cars, one with an "L" head engine and another employing the valve-in-head, are to be run eight hours a day for an indefinite time until the desired data is accumulated. Engineers will observe the reaction of various blends of fuel in the cars and then test them in the knock testing engines.

Engineers also expect to obtain considerable information as to the durability of automobile parts under the strain of high powered blends of fuel on long runs.

Durant Type Of Transmission Has Advantage

"What advantages has the Durant four-speed transmission over the three speed type in common use today."

That, and many similar questions are being asked of members of the La Grande Durant dealer organization which, with more than 750 Durant dealers in the west, is this week holding "Durant four-speed revelation week."

Answering the above, the Durantmen point out that there are a number of definite advantages offered by this type of transmission which brings about an entirely new motor car performance. Among these are:

"Greater gasoline and oil mileage. Less wear and tear on the motor, its parts, and the car by reason of the fewer number of revolutions of the engine for each mile travelled. Greater road speed at lower engine speed, with the result that the occupants travel in greater comfort and without the usual nerve strain accompanying high engine speeds, road roar and similar discomforts found in modern automobiles with 'high-speed' motors.

"A much easier shift when shifting from second to third and from third to fourth, or vice versa, has been perfected in the Durant four-speed transmission. This, together with a third-speed clutch, makes it almost impossible to clash gears when shifting from one speed to the other.

"It is the efficiency of the internal gearing that enables the four-speed transmission to do what it does. This form of gearing delivers power to the drive shaft with a loss of not over 2 per cent, while with the external spur gearing in the average transmission of three speeds, the loss is from 5 to 10 per cent.

"Drivers who have felt the heat from the transmission after a long climb in second gear realize that much power is wasted in the gears. The quiet operation of the third speed internal gear drive is a direct index of its efficiency."

New Type Brake Is Featured On 1930 Buick Car

Following several years of research General Motors corporation has introduced a new type of brake on the 1930 Buick. Buick, first among automobiles to adopt four-wheel brakes, continued with the external type until the recent perfection of this new enclosed unit, which its engineers pronounce superior to any braking system yet evolved.

Being fully enclosed the new Buick brakes exclude all mud and water and in addition afford several entirely new features eliminating all of the early difficulties experienced with enclosed brakes.

Locking of wheels at high speed, the engineers point out, has been totally eliminated in the new Buick brake, as has heating of drums and amplification of brake noises. No lining has yet been developed which will not score brake drums, but the new Buick minimizes this by substituting a lead plate for a part of the lining.

These new brakes are the two-shoe, cam operated type, but with the self-energizing front shoe attached to the hub plate by a forked link rod, the articulated mounting preventing excessive self-energizing and thus eliminating locking of wheels.

Coiled wire springs are wound around the outside of the drums, and this ingenious device not only assists in keeping the drums cool, but absorbs brake noises which otherwise tend to amplify. Buick brakes can now be used on long hills without overheating.

The lead plate used with the lining is alloyed only sufficiently to permit its being attached to the shoe and holding its shape while wearing down with the lining. It contains graphite and prevents scoring by applying this lubricating film to the drum.

There are two entirely separate sets of brakes operating on the same drums on the rear wheels, one pair being foot controlled and the other emergency.

Braking effort is divided equally between front and rear wheels. Brake rods are mounted in self-aligning bearings. All operating parts are included in the chassis lubricating system, with easily accessible grease gun connections.

Buick's new brakes are reported to be not only mechanically perfect, but to stop the cars easily and quickly under all speeds and under all conditions.

PLAN AVIATION BUILDING

FORT WORTH, Tex. (AP)—Fort Worth is to house its aviation interests in a 25-story structure of ultra-modern architecture, A. P. Barrett, president of the Southern Air Transport, has announced that the building will be a tower 50 feet square.

Ten boatmen on the Volga river were killed the other day. We knew that song eventually would get somebody into trouble.

Gear Shift On Chrysler Gives More Quietness

The popularity of any automobile can never rise above the opinion of the man or the woman behind its steering wheel.

In the final analysis, the motoring public's opinion is molded by the way a motor car acts. Whether in the congested streets of the city or on the traffic lanes of the open highway, performance, after all, is the acid test of merit.

So, in the quarter of a century of automobile building, attention of the engineering laboratories has been focused on the question of how to make the car easier to drive. After exhaustive tests and wide research by the leading engineering brains of the country, elimination of mental and physical strain comes now to the driver through innovations introduced after a long and tedious process of evolution. Driving, today, is a pleasure rather than the task it was for many years.

More than ever, the demand for quietness is making itself felt. Hotels and apartment houses are soundproof; typewriters are made noiseless; societies for the prevention of unnecessary noises have been organized every where. And, realizing how much quietness means in the operation of the automobile, manufacturers have spent millions of dollars on bodies, chassis and engines to accomplish this end.

"The multi-range gear shift on the new '77,' 'G' and 'Imperial' Chryslers not only gives increased smoothness of operation, but it solves the equally important problem of quietness," according to L. W. Weeks, local Chrysler dealer. "It has brought a new thrill to motoring.

"Someone has compared taking a golf stroke with shifting gears. If the club meets the ball with a sharp click, a good drive results and the golfer gets a feeling of satisfaction not unlike the pride of the average driver who meshes his gears smoothly and quietly. If the man on the tee drives badly at a crucial point in the game, his day is ruined. So it is with the driver whose shifts from one speed to another is accompanied by a loud, grating clatter of steel on steel that annoys him, his passengers and pedestrians at the curb. What has been needed for a long time is a fool-proof gear shift.

"Its arrival in the Chrysler multi-range gear shift is being greeted with nation-wide approval. Motorists who have tried it on the new Chryslers have been quick to realize that it has ushered in a new order of performance."

TRUCKS REPLACE CAMELS

CHANAK-KALE, Turkey (AP)—In the last five years 150 imported motor trucks have replaced 1,600 camels on the important Turkish caravan route from Ismidt to this town at the mouth of the Dardanelles.

A British poet always tries out his verses on his dog before sending them to the publisher. Have they no S. P. C. A. over there?