

LOTUS/WEST TIRE SURVEY

Before compiling the results, we are printing a tire primer so that everyone will be familiar with common terms.

Construction:

Basically there are three types of tires being manufactured today - bias ply, bias-belted, radial.

Bias ply passenger car tires are made by overlapping two or four piles of fabric (rayon or nylon) from bead to bead with an angle of 30°-40° to the circumferential centerline of the tire. These tires are of little concern to performance enthusiasts as they are inherently inferior to bias-belter and radial tires with respect to handling and wear. One type of bias ply tire is of interest - the racing tire. Surprisingly, the racing tire plies to the centerline is drastically reduced to around 20°. This causes an extremely stiff structure giving tread stiffness comparable to a radial but with much stiffer sidewalls. The result is greatly improved cornering at a great expense in ride quality. "Yer pays yer money . . ."

Radial tires are made by laying the plies of the carcass from bead to bead at 90° to the centerline of the tire. This causes an extremely floppy structure so a belt (steel, fibreglass, or textile) of plies at a much lower angle (about 15°) is used circumferentially to stiffen the tread. The flexible sidewalls and stiff tread allow the two to work independently and thus give the radial its characteristics. All things being equal, the radial should be the longest wearing tire due to stiff belt. However, many manufacturers use this feature to allow the use of softer rubber and stickier tread patterns. Thus handling will improve at the expense of wear. Generally, though, the radial is the best all around performance tire on the Lotus cars. Tread life is relatively long and handling (especially in the wet) is superior to other types.

Bias-belted tires are a cop-out by American tire manufacturers who realized the superiority of radials but were not willing to scrap present manufacturing equipment. The bias-belted tires can be made on the old bias ply equipment; radials require complete retooling.

The bias-belted tire has the same construction as the bias ply with the addition of a belt made of plies at an angle of 25°-30° (less stiff than a radial). The characteristics of this tire are about midway between bias ply and radials. Tread life is as good as radials but performance in the wet is not as good due to stiffer sidewalls. This type of tire is relatively new (about 5 years) and no Lotus cars have been spotted with them but they are mentioned because they exist and also there is a new size, A70-13, which will fit Elans and Europas with a bit of trouble and will give six inches of tread on the ground without resorting to facing tires. More about this tire in a future tech note.

Here are the survey results:

Michelin X and ZX

These tires will give the longest tread life due to the use of a steel belt (less tread scrubbing) and relatively hard rubber. Close to 40,000 miles can be expected if they are driven moderately hard and one report listed 58,000 miles before replacement. They are not as sticky as other radial tires (hard rubber) and breakaway is more abrupt. Also low speed driving is harshest of the other tires reported on.

Michelin XAS

Michelin has cleverly eliminated the slight time lag between turning the steering wheel and actually turning which is inherent in all radials due to flexible sidewalls. They preload the sidewalls by means of an asymmetric tread. These tires are very good high performance radials, clearly superior to X and ZX in both wet and dry. The smallest size in 13" is 165x13 which will not fit stock Elans due to their cross section and height. One report listed chronic air loss and need to exceed recommended pressures to control squeal.

Dunlop SP 41 (now SP 68)

These were original equipment on early Elans to this country. Wet cornering leaves much to be desired but dry performance is very good. Tread life is very disappointing, recording as low as 9,000 miles on one Elan. Typical life seems to be around 16,000 miles. Pronounced squeal when "pressing on". Some weather cracks noted.

Dunlop CB 73

These are current original equipment on Lotus. Tread wear is greatly improved over SP 41's as is performance in the wet. The tread has "aquajets" holes in side of the tread through which water is channeled thereby controlling the tendency to aquaplane. Slightly lower profile than others yields a bit more tread on the ground. No weather checking reported could mean that problem is solved also.

Pirelli Cinturato

A very popular tire for good reason. The trade-off between tread life and handling seems about ideal. Tread life should be around 30,000 miles. The tread disperses water well but is a bit narrow for the size of the tire. Still, dry handling is adequate. Breakaway is not too abrupt due to textile belt. This also reduces low speed harshness.

Semperit Super Sport

These tires are good in the wet due to a wide open block tread design. Tread life is a bit inferior to others (except SP 41's) and less than 20,000 miles should be expected. One big problem is that the lack of any tread shoulders causes them to wander at speed calling for constant steering correction.

Semperit M301

This tread design has built up shoulders which eliminate the wandering of the Super Sports, but at a great expense in rubber on the road. Wet and dry handling seem a bit inferior to the Super Sport, but tread life is superior - around 25,000-28,000 miles reported.

Wredestein Sprint

These tires have a tread design very similar to the Semperit Super Sports so all comments apply, but they seem to be less sturdily constructed than the Semperits. Their one claim to fame is that their low profile construction puts more rubber on the road without increasing ride height. The Sprint 165x13 is the only 165x13 tire found to date which will fit on the Elan without modifications. They also are the cheapest - around \$20 at your Delta dealer.

Bridgestone Super Speed Radial - 20

No member reported on these Pirelli imitations but word has it that they are very harsh at low speeds and noisy. The load rating taken from their spec sheet is the lowest on any tire reported on.

Kieber Colombe V10

Reported excellent but not available in this country.

Racing Tires

These will be all handled together due to limited appeal. The Goodyear Blue Streak 4.50/7.50x13 puts down the most rubber that can fit on an Elan without flaring the wheel wells. They are harsh and noisy and absolutely scary in the wet, but in the dry they are excellent. The Lotus cars with larger wheel wells tend toward the Dunlop racing tires. They are turning the best times so we must assume they have something on the Goodyears in the dry. But performance is much better. Firestone must look the other way where Lotus is concerned. The Indy 4.50/6.50x13 fits but does not put down much rubber; the next size up does not fit. By the way, no matter what anyone tells you, recaps do not work as well as the original racing tires. If you are on a budget you can save some money but at the expense of speed.

Conclusion

It looks like a unanimous victory for radials on the street with no one reporting on bias or bias belted tires. Dunlop CB 73's seem to run first with Pirelli Cinturatos a close second. Michelin XAS would be promising if you could get a set that fit. If there were enough demand, the manufacturers would give us lower profiles and more tread. They did for the Porsche 911 with 185/70x15 instead of 165x15. This yielded more tread on a tire of the same height.

As a teaser we mention that the Elan+2 is available in England (not here) with Dunlop 60 Series Radials. These 185x60x13 put down a full 6" of tread. If you would like this tire to be available here, write to:

Bob Bertram
Dunlop Tire and Rubber Corp.
Box 1109
Buffalo, New York 14240

Our thanks to everyone who responded in this survey. We hope it is of value. Any questions may be addressed to the tech committee at the P.O. box.

Herb Berkwits