

# UNDERSTANDING TODAY'S ENGINE OIL SPECIFICATIONS

The first in a series of BLF Fact Sheets has recently been issued, it covered AUTOMOTIVE ENGINE OILS. Its main purpose was to help end-users and the retail trade to understand today's complicated automotive engine oil specifications. Our first Fact Sheet has generated much interest from regional newspapers, as well as from specialist trade journals and more popular magazines. The Fact Sheet's secondary purpose was to highlight to the trade the existence of the British Lubricants Federation and allow the BLF to communicate with the trade and lubricant end-users, possibly offering specific Lubricants Training if there is enough demand.

This article is directed mainly at motorists and the motor trade who are without specialised knowledge of lubricants. It explains in more detail the differences between engine oils and the importance of using the right oil for the vehicle's engine.

### GENERAL BACKGROUND

The BLF's LUBE quarterly magazine has in the past been circulated mainly to BLF members and to those particularly interested in lubrication information. Technical articles have been of an appropriately specialist nature to be of interest to the majority of readers, i.e. those who already have some knowledge of lubricants. **However, the specialist may not always fully appreciate the lubricant-purchasing public's lack of lubricant knowledge.**

As cars become increasingly more sophisticated and reliable, there is less and less requirement for the motorist to become involved in the servicing and trouble-shooting aspects of his or her vehicle.

The majority of cars are now garage serviced, and reputable garages will (or should!) use engine oils of the quality stipulated by the vehicle manufacturer for that particular model. Owners of older vehicles may undertake some servicing themselves, one of the most important aspects of which is the regular changing of the engine oil.

This involves the DIY owner in making a choice from the bewildering array of engine oils available. Unlike the vast majority of consumer products, there are few clues available to the layman to gauge relative qualities when comparing one engine oil with another, apart from the information on the container. **All too often, this information is confusing to the layman, who may not be aware of the significance of viscosity grades, and is even less likely to be aware of the niceties of performance claims.**

We believe there is currently a situation of confusion, influenced by an array of products at various prices and a distinct lack of knowledge. A significant number of purchasers seem to concentrate on price rather than quality, probably through a lack of knowledge. Purchases made solely based on price, rather than a product's true quality and performance, plus the track record of the brand may lead to catastrophe. Normally one should expect an oil that costs as much as ten times the price of another will perform rather better than its 'bargain basement' priced competitor.

The motorist and probably many trade buyers mistakenly believe that cheaper brands can be just as good, even at their substantially lower price, because they don't know how to differentiate between brands. Choosing your motor oil this way can result in your engine being 'fed' on the wrong product, one which could immediately cause a massive increase in internal friction and considerably reduce the useful life of the motor.

There is also the current impression of a 'rip-off Britain' attitude portrayed by the media, sometimes with some justification, whereby the public suspect they are being over-charged.

DIY owners may well be tempted to opt for the cheapest available product, which is all too often available from established high-street retailers, on the basis that all oils are the same and that there is no justification in paying any more than the absolute minimum. We are

not decrying low prices or value for money products, that's OK, provided the purchaser wants to buy them, after making an informed choice. We are striving to help educate lubricant purchasers, so that an informed choice can be made thereby avoiding putting expensive motors at risk.

### HISTORY

The performance and longevity of passenger car and commercial vehicle engines have increased markedly over the years due to continued development and improvements in engine design, materials of construction and last, but not least, lubrication technology.

As a consequence, the owner of a typical passenger car can now expect engine mileages in excess of 150,000 without major mechanical overhaul, provided that the vehicle has been serviced according to the manufacturers recommendations, which would include the need for using oils of the correct specification.

Before the harmonisation of European legislation (Treaty of Rome), vehicle manufacturers recommended lubricants by manufacturer and/or brand name. By specifying only well-known and reputable lubricant manufacturers such as BP, Castrol, Duckhams, Esso, Mobil, Shell, Texaco etc., the manufacturer could ensure that vehicles were properly lubricated according to the best technology of the time.

With the subsequent outlawing of such restrictive practices, vehicle manufacturers who had previously nominated a specific lubricant by name had now in addition to provide details of the minimum required lubricant specification, thus providing a choice for the consumer.

The customer, whether a service workshop or do-it-yourself owner, was then free to choose any lubricant conforming to the specification stipulated in the handbook or service manual, regardless of lubricant manufacturer. The use of such specifications in fact pre-dated the European legislation requirements, but they obviously came into more prominence following the outlawing of the practice of specifying lubricant quality by manufacturer or brand name alone.

These lubricant specifications cover two areas of lubricant requirements, namely the VISCOSITY requirements and the PERFORMANCE requirements.

### VISCOSITY REQUIREMENT.

Viscosity quite simply is the 'thickness' of an oil. It is important that oils of the correct viscosity are used. If the viscosity of the oil is too thick (high viscosity), the engine will be difficult to start, particularly in cold weather. Also, because the oil is more difficult to pump, the oil will not reach all parts of the engine quickly enough after initial startup to prevent wear taking place. If the viscosity of an oil is too thin (low viscosity), there is a danger that the lubricant film will break down in bearings, allowing metal-to-metal contact to take place, which will produce rapid wear.

Multigrade viscosity motor oils are now universally used in the UK, probably the most common being 10W/40. They were introduced primarily to allow the same grade of oil to be used in summer and winter.

A vehicle manufacturer will normally stipulate a range of viscosity grades in the vehicle handbook, depending on typical local ambient temperatures in the region in which the vehicle is normally used. Oil viscosities are normally clearly displayed on containers destined for the retail market, and the identification of an oil meeting the correct viscosity requirement is a relatively straightforward process for the consumer.

More recently, developments in lubricant technology have enabled oils of lower viscosity than those normally stipulated to be safely used. In these oils, adequate film strength and low volatilities, previously unobtainable in oils of such low viscosities, are the result of advances

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