

OILS FOR A CLASSIC CAR

This is a copy of an article on page 15 of the CHACA Journal Jan, 2006.

{It was sent in by Graeme Tibbett, better known as Tibby, from an article by Chris Lowth, a member of the Caboolture Club. Patrick Bedard is another name to appear. It is not clear who contributed the extra comments and assumptions added to the stuff obtained from the Internet. I have only copied what was printed}.

During my weekly fill at the local Caltex station, I saw they had introduced 'Classic' motor oil for old car engines in good condition. As it was rated SG and not the current SK or SL and did not bear the words 'for older engines' or 'reduces oil consumption', I felt it was worth looking into it. A search of the Internet produced some interesting information, especially www.earthlink.net which referred to the November 1999 issue of Car and Driver magazine and a column by Patrick Bedard that is of great interest to all of us with "old cars we want to keep alive as long as possible".

It stated: The column is about engine oils. The technical information in the column came from one Ed Kollin, who was a research chemist at Exxon for many years and who now is Director of R&D for Lubrication Science in Jersey - in other words, a guy who almost certainly knows what he is talking about. Here are some of the relevant facts:

1. Remember the synthetic oil ad that showed an engine running after it had first been filled and then drained of oil? Apparently the oil contains a 'miracle molecule' that allows the engine to run for a while after the oil has been drained. The 'miracle molecule' does this by clinging to the metal surfaces very tightly, so tightly that it displaces the anti-wear additives in the oil which were put there to protect those metal surfaces. This means that for long-term use, that oil actually wears your engine faster than conventional oil.

2. Today's motor oil meets SF specs. (now SL) - the oil our older car engines were designed to meet something like SA or SB, or at most SC specs. (This is the SAE specification on the little circular label on every good motor oil sold in the USA). Usually we are told that the newer oil is better, but is it true? And if true, better in what way?

3. Engine oil contains many additives, and the primary anti-wear and anti-oxidation agent is a chemical by the jaw-breaking name of zinc dialkyl Dithiophosphate (ZDDP for short). ZDDP, while good for engine wear and reducing corrosion/rusting, it is bad for catalytic converters: as a result the modern SJ and later rated oils have about 25% less ZDDP than the old SA and SB oils.

4. New cars, to make the catalytic converters live, need lower levels of ZDDP. But this is a compromise, which results in more engine wear and corrosion. Our older pre-catalytic cars want a bit dose of ZDDP to keep engine wear down.

5. New engine oil may be good for catalytic converters, but are not as good for your engine from the point of reducing corrosion as the old oil was.

6. Fuels today often have oxygenates - MTBE or Ethanol added to them in big cities in the USA. Traces of these oxygenates get into the engine oil, and apparently these chemicals are, to quote "tremendously corrosive", and they attack gaskets, seals and certain metals. No problem for automakers, they choose new polymers and alloys which are immune to these attacks. But what's to prevent the attacks and corrosion in older engines?

7. So what can we do? Well Ed Kollin says that for a seldom driven older car, such as show cars or in fact anything but a daily driver, "corrosion is a greater problem than wear, even the wear from starting an engine that has been sitting long enough to drain oil off most of its rubbing surfaces - because only one little patch on that same rubbing surface is dooms day".

8. Ed goes on to say that while he can design a custom oil for this problem, the best off the shelf oil is heavy oil designed for Diesel trucks. Instead of SJ, look for combinations that begin with C (for compression ignition), CC-4 is the latest, preceded by CF-4, CF-2 and CF.A. Few oil blends meet both C and S requirements. While the oil part of these Diesel oils has the same lubricating qualities as passenger car oil, the most common heavy-duty viscosity is 15W040; more syrupy. But the Diesels get bigger doses of the additives---up to 50% more ZDDP (the anti-wear anti-corrosion additive) and 30 to 50% more detergent, dispersant and corrosion inhibitors.

9. The bad news: There's a very small chance, he says, that nitrogen compounds in the high dose of dispersant may cause some seals to leak. Moreover, if you've never used detergent oil before, you may wash chunks of sludge loose that could block the hydraulic filter.

10. The good news: If you have sticky rings, erratic compression and blue exhaust smoke, this high detergent oil will quickly free them up. For corrosion, Ed says, heavy-duty oil is the silver bullet solution. It's blended to neutralize the sulphuric acid produced by the high sulphur Diesel fuel. Note that sulphuric acid is also produced in car engines burning gasoline. However, the Diesel fuels contain more sulphur and consequently create more acid when burned.

That's basically all the really important information in the column. To me it contains at least three surprises:

- (i) Some synthetic oils wear your engine out faster than conventional oils.
- (ii) Older conventional oils protect your engine better than the newer ones.
- (iii) The best oil to use in the older cars is an oil designed for Diesel trucks.

It's probably getting a bit difficult to get "pure Diesel oil" in Australia. So when you buy your next lot of oil, it is worth not only looking at the SAE rating, but also looking to see it has an SG classification. Quite plainly oils ain't oils.

A follow-up to the article on page 15 of the Jan. 06 Journal

(Some further thoughts from Hutchie)

Having read the information from the experts, it is now up to us as individuals, to decide what is best for our own seldom used classic car.

I decided to see what was available. The two places which have a wide range of oils in this area are **Repc** and **Oil World**. While never having bought oil from Repco, they do have most brands and a very wide range of the different grades in each brand; not only that, but the prices are displayed, and they have a sale on now.

My first call was to visit Leigh Davies at **Oil World** in Herald St Cheltenham, who explained how the mysterious lettering distinguishes the different grades. The first set of letters has the prefix S, (eg. SF), this shows the grade as applied to petrol engines. The second group of letters start with C, (as shown in the Jan. Journal article under no. 8), C is for compression ignition, or Diesel in other words, (eg. CC).

Leigh explained that the letter following both the S and the C, advanced alphabetically each time a major change to ingredients takes place. The first oils after this system was introduced would have been SA / CA. Referring back to the previous article, the progression in the C series is explained in no. 8 for Diesel oils. It just means that oil with both S and C shown, can be used in either petrol or diesel engines.

Here is how the S system evolved. Once it got to SF, then SF2, SF4, SG, SG2 SG4, etc. The latest I have seen is SL. (It appears that only very minor changes were made at those times where the number was added).

Leigh Davies assured me that the brand is not important, as they all come from one of the three refineries in Australia. He reckons their all the same; just look for the grade.

Its no use looking for SA, SB, etc., they are just not made anymore.

The earliest still available is the one Leigh uses in his 1927 T Model Ford, Valvoline 40, which is SF / CC. This is the one he recommends. The price on the day we spoke was \$22 for 5 litres. An alternative, should you prefer an early multi- grade, is 25/50 SG/CD Leigh sells this in 5 litre containers and since it is not one of the major brands, it is only about \$15. He reckons it's good stuff. By the way, Leigh, who drives a Diesel four wheel drive, did not think much of the suggestion to use the Diesel oil. He went into details but I missed most of his explanation. But then Ed Kollin had some reservations too didn't he? Then it was off to **Repc** in Warrigal Rd. **Repc** have their own brand in large red 6 litre containers, (in small print made for them by Mobil). This was designated as SG/CC grade, on special at \$15 for the 6 litres. While the SG would indicate it could be ok (and probably the very same multi-grade mentioned above), would it be wise to go for such a cheap oil? If it is so cheap, is it rubbish? Or should one be swayed by the advertising hype over many years from Penrite, to pay over double for the 5 litre container of their HPR series? More about Penrite below.

While at Repco, I observed the many brands and grades, but recorded only some of them. For instance, the oil I have always used in my WB Statesman, is Valvoline XLD 20w/50 SJ/CF, (but not tempted to change over to the latest SL/CF). Valvoline do have a grade SG/CD in 5 litre containers on special at \$19. They also had Diesel grades, as did most of the other brands, such as Penzoil and Shell, which also displayed many grades. There are so many, the choice is difficult. Valvoline Super Diesel 15w/40 is classified API CH-4/SJ (note they put the CH first). They have it on special at \$22 for

5 litres. Should I take Ed's advice to change over to Diesel oil now that the time is approaching for Hutchies Hupp to go on the road, and buy up big at this price?

I used Penrite Running-in Oil to start with, (after completing the modifications found necessary after the so called "expert engine re-conditioner" had finished), then changed over to Penrite HPR 50, which has been good for what this engine has had to contend with, starting it up about every 3 or 4 weeks, or running it up and down the driveway to work on it. Once it goes on the road, a more suitable oil will have to be found.

The literature in my oil file contained numerous brochures on Penrite HPR 50, HPR 40, and HPR 30. In these they claim that the new multi-grade oils are too thin, (low in viscosity), for our conditions. They were designed for the -40 C degree temperatures in the USA, where 10w/30, 15w/40, 20w/40 are what are used there. They are now producing 5w/30 oils. This all sounds plausible.

Penrite maintain that all their HPR oils contain Zinc Dithiophosphate, (ZDDP), which they confirm is the chemical in oil which imparts effective anti-wear, anti-corrosion properties to the lubricant. (This is exactly what Ed Kollin said). However nobody is saying how much they use. They only say 50% more, 30% less etc. Penrite also claim in their literature, that their HPR oils are suitable for cars with a catalytic converter.

We must therefore read this with the comments from Mr. Ed Kollin in mind. He assures us that ZDDP had to be reduced to make it safe to use with the dreaded catalytic converter. Our problem is knowing if there is enough of the stuff in their oil to properly look after our infrequently used pre-catalytic engines.

Penrite HPR oils are rated SG/CC-CD for petrol engines, while their HPR Diesel is rated SG/CE. They state in their information sheets that their HPR series oils contain no friction modifier, so this could be a point in its favour, assuming that the "miracle molecule" mentioned in Ed's report, is the friction modifier chemicals added to modern oils, which Ed claims keep the protective chemicals away from the critical parts.

Sorry about this all you historic vehicle enthusiasts, just when we thought we had all the information we needed, someone comes up with information which means we have to re-think the situation. The old saying that "a little information is a dangerous thing", comes to mind. Perhaps we could invent another saying to suit a situation like this, "more information is even worse". Will all of this make you change your oil?

PS What Hutchie did.

I contacted Mobil Oil and told them what was required. They suggested Mobil Delvac 1340

Mobil Head Office in Melbourne Phone 1800-033-863.

This is an SAE 40 diesel oil API CF/SF recommended for either diesel or petrol engines. This was the lowest specification available, with no reference in the "Product Guide" to it being suitable for catalytic converters, so hopefully rich in ZDDP. There is a SAE 30 available, Delvac 1330 if a thinner oil is desired.

An alternative is Mobil Super Diesel 15W-40 API CG-4/SH (This is multi-grade & suitable for modern engines, so with the SH specification, ZDDP would be much lower). Here is what the Product Guide has to say about Delvac 1330, 1340.--

Heavy duty, high detergent/dispersant series of lubricants for diesel engines, transmissions and some hydraulic applications where mono-grade oils are specified. Designed to meet the most severe service performance needs of turbocharged and naturally aspirated diesel engines in construction, earthmoving and agricultural service.

Long service life and low maintenance costs.

Minimum combustion chamber and valve deposits.

1330 suitable for use in applications requiring API CF/SF, MB227.0 & Allison C-4 1340 suitable for use in applications requiring API CF/SF, & MB227.0

It is supplied in 20 litre plastic drums, with the threaded hole, into which the standard plastic drum tap is screwed. Oil World were able to order the oil in for me. It was delivered to them in 2 days. Cost to me was \$88. I had a tap, so didn't have to go looking for one. The oil flows freely from the tap if the screwed cap on the top is loosened a little. In fact the flow rate can be controlled with the cap.

Hupp engine oil capacity is 5.7 litres.

Source: AOMC Newsletter, page 19, August, 2007