



NEWSLETTER

Carb Heat

Hot Air and Flying Rumours

Vol 33 No. 10

Published by EAA Chapter 245 (Ottawa) P.O. Box 24149 Hazeldean R.P.O., Kanata, Ontario, Canada, K2M 2C3

Nov. 2003

Inside:

President's Page: by Gary Palmer

Next Meeting:

**Thursday, Nov. 20, 8:00 PM
Canadian Aviation Museum**

inside

NOTAM

"Remember"

NEW MEEETING ARRIVAL PROCEDURES

At NAM

Feature Presentation

Aviation Insurance

By Adam Hunt from COPA

And Curtis Hillier

| | | | |
|--------------------------------|---|-----------------|---|
| President: | Gary Palmer | 596-2172 | gpalmer@nortelnetworks.com |
| Vice President: | Martin Poettcker | 271-6113 | poettcker@rogers.com |
| Ops, Publishing, Tools: | Dick Moore | 836-5554 | rjmoore@uottawa.ca |
| Membership: | John Montgomery | 599-1240 | larm@rogers.com |
| Secretary: | Curtis Hillier | 831-6352 | the_hilliers@yahoo.com |
| Treasurer: | George Elliott | 592-8327 | gelliott@igs.net |
| Editor: | Rodney Stead | 836-1410 | stitttmp@sympatico.ca |
| Webmaster: | Russell Holmes | 820-8572 | Russell.Holmes@city.ottawa.on.ca |
| EAA 245 Website: | http://eaa245.dhs.org/ | | |

**President's Page
by Gary Palmer**

With typical fall weather limiting our flying opportunities, and snow unavoidably close at hand, many of us are reacquainting ourselves with our workshops, and getting down to the rewarding process of bringing life to a homebuilt aircraft. As I noted at our last meeting, the winter season is a great time to host a little show and tell to share your pride and joy with other chapter members. So don't be shy, step up and volunteer by contacting any member of the executive.

October AGM elections

The October AGM, saw a real election, and a close one at that for the position of Webmaster, with Russ Holmes, our former VP winning a close race with new member, Michel Tondeau. Russ chose to change roles with Martin Poettcker, specifically to learn more about web site management, an objective he shares with Michel, who has volunteered to help Russ where he can, exploiting his programming background. I want to thank Michel for putting his name forward, and hopefully it will encourage more new entrants at our next AGM. The renewed executive includes:

- Vice President: **Martin Poettcker**
- Treasurer: **George Elliott**
- Secretary: **Curtis Hillier**
- Newsletter Editor: **Rodney Stead**
- Webmaster: **Russell Holmes**

I would like to thank all the returning members of the executive for their continued dedication. I also want to thank Lars **Eif** for his usual masterful conduct of the nomination process.

Thursday October 16th 8:00 PM NAM: Oshkosh Memories, a digital reverie

Thanks to the benefits of modern digital cameras and our superb video projection facilities at the NAM, members enjoyed a vicarious trip through the last two Oshkosh events, along with stills and a video clip of the DC-10 arrival at Carp. Thanks to Dick Moore for his Wright Flyer and Pivotal Engine video clips which spiced up the many high resolution still shots.

Upcoming meetings/Events.

| | |
|---------------|--|
| Jan 15 | Author Garth Wallace will share the lighter side of aviation with us. He will also have copies of his various books, including his most recent, " If Clouds Could talk " available for purchase. If you haven't read any of Garth's books, treat yourself to a belated Christmas present, I guarantee you will enjoy it. |
|---------------|--|

Thursday November 20th 8:00 PM: Under the Canadian Insurance Covers" by Adam Hunt and Curtis Hillier

Adam Hunt from COPA has indicated there will be a change in the "underwriter" for the COPA Insurance in 2004. This seminar will outline the new changes, and also address key insurance issues for homebuilders such as coverage for auto engine conversions, and homebuilt aircraft in general. With insurance renewal time at hand, I urge everyone to attend, and get the facts straight.

Curtis will also explain why the EAA / Falcon program is not available in Canada and why it will not likely ever be. This session promises to be both informative and interesting; see you there!

Remember that there is no December meeting and that the next meeting after November 20th will be the **January 15th, 2004** meeting. I would like to wish all members a very Merry Christmas, Happy New Year, and a joyous holiday season.

Gary

Selecting the Right Engine Oil

By Curtis Hillier

It is finally time to start my long silenced C85 engine. I thought I knew enough about engine oils but wanted to make sure I understood the difference between SAE numbers and the more recognizable 5W-30 number we often see on the oils products we buy for our cars or the 15W-50 we can buy for our aircraft. I also wanted to learn more about what might make the Exxon 20W-50 better than the Shell 15W50 aviation oil products. In my research, I found out quite a few things I did not know, so I thought I'd pass them along.

COST OF OILS

Why does Shell charge roughly four times the amount for it's SAE 30 single weight oil than Canadian Tire charged for the "same" rated product.

As we can remember from Russ Robinson's great talk on fuels and oils, knowing what test method is used to generate a number is half the battle.

In the simple case of why we pay so much for aviation oils, next time you are tempted to pick up a vat of Canadian Tire SAE 30 oil read it carefully. It is designed to be used in a heavy equipment application like a bulldozer or large diesel engine running at near max HP all of the time. Our aircraft engines are air-cooled and only run at max HP when we take off – then we dial back. Shell makes a living by making sure engines do not seize up when it uses their oil. They are very thorough at understanding the loads, operating temperatures ranges and pressures the aircraft engine develops in it's flight. Tractor oil runs at a constant temperature and the engine is usually at near max HP for 24 hours at a time. Maximum HP can be relative as well. The same oil product in a 3.5 horse powered air cooled lawn mower developing around 2610 watts of heat (OK I admit some of the energy is kinetic...) will perform differently than in a diesel engine making 450 HP (335,564 watts). Granted there is a lot more oil in the diesel engine than in the lawnmower to carry and transfer the heat, and in fact the oil is one of the critical components in the cooling of an air-cooled engine.

Russ also points out that "The SAE number on an oil only indicates its viscosity or thickness but not its quality. For example SAE 30 oil can be correct for lubricating a diesel engine or can used as chain oil on chain saws, or to oil the forms before pouring concrete to stop the concrete from sticking to the form or to produce the smoke at air shows. All of these applications call for the same thickness of oil but obviously not necessarily the same quality".

The correct answer here is that you are flying an experimental, and under this banner you are experimenting with the unknown. Oil companies refuse to recommend or deny. Obviously you have to have oil in your engine, but should you use the automobile product? Or should you use the aviation product?

This author does not want to be incriminated any more than an oil company does so to answer this question, and it is an important one. I will reiterate that your Subaru is going to work harder and for a longer period of time that it ever did cruising down the road at 100 Kilometres per hour.

A great way to experiment with this question though is to have your oil temperature closely and regularly monitored for breakdown. Do short periodic testing of the oil of your choice under the actual flying conditions.

Next, keep in mind that your automobile engine part tolerances are quite a bit different than an aircraft engine barring some of the newer technology engines just coming out on the market today. Thinner synthetic oils may lubricate better in it than a thick aviation oil.

Oils have two primary purposes: reduce friction to reduce wear, and to cool the engine heat critical components.

STRAIGHT MINERAL VS ASHLESS DISPERSANT VS MULTIGRADE OILS

If synthetics work so well in my car, and Shell puts synthetics in their AVIATION oil products, can I just buy Canadian Tire synthetics for my aircraft engine?

This is really a tough question to answer with out having a lot of specific information about the particular example. My engine for instance, was designed and built in the late 1940's so any authentic rebuild kit (made for certified aircraft engines), would naturally include original rubber components and other seals in the kit. I found out from Russ Robinson that there are as many different types of rubber compounds as there are stars in the night sky. Ok Russ did not actually say that, but rubber compounds found in modern engines have been designed to deal with the synthetic components in the synthetic oils. Some rubbers will expand, some will contract – the bottom line is that you can either get serious leaks or oil passage blockage due to deteriorating seals. If the oil is there to lubricate and cool you are bound to have some really hot spots and seizing if the oils do not get where they are needed.

Lastly one of my logistical questions: In the designation 15W-50 what do the numbers and letters mean? Thanks to Wolfgang Weinhart, I was challenged to understand the common understanding that the first number is the viscosity of the product in the winter, and the last number is the viscosity of the product in the summer. I wanted to understand how something at a colder environment could possibly be “runnier” than at a higher temperature. This did not make any sense to me. The information is correct: the 15 “represents” the viscosity of the oil at negative 30 degrees, the W stands for “Winter, and the 50 “represents” the relative viscosity in warmer temperatures. Thus the term “multi-grade”. Russ was quick to point out that part of the apparent discontinuity was that the testing method for the winter rating is totally different from the hot temperature rating. Russ also pointed out that there are three different agencies involved in the number system: SAE (Society of Automobile Engineers), API (Association Petroleum Industry) and CRC (Co-ordinating Research Council).

I also received the following technical explanation of how multi-grades work from Tom Keogh at Shell: “When we make a multi-grade oil such as “AeroShell Oil W Multi-grade 15W50”, we start with a blend of oil with 15 weight viscosity grade. We add an additive called “VI improver” to the 15W grade. At low temperature the “VI improver has no effect; (Think of the VI improver as coiled up polymer chains). As the temperature goes up, these coils unravel and become long chain polymers that give the oil some viscosity. That is, the oil does not thin out as quickly as it would without the VI improver. Consequently what behaved as a 15 weight oil at low temperature behaves like a 50 weight oil at higher temperatures”. (The 50 would naturally thin out at the high temperature). “The overall effect is that you have an oil as thin as a 15 weight at low temperatures (40 degrees) yet the same oil is no thinner than a 50 grade gets at high temperatures (100 degrees)”.

How About Rust Prevention?

How shocked would you be to find out that your cam will start to rust after only 18 hours after you shut down the engine?

In fact in a lab experiment conducted by Exxon comparing basic aviation oils (per ASTM D 1748), (which have a Lycoming specified rust preventative in it), it was documented that ordinary oils will run off and expose the cam (as designed in my Continental), after only 18 hours. Your 15w50 oil will protect your cam for 24 hours and the Exxon 20W50 oil product will provide 144 hours of protection from corrosion. Also, during any engine run up or flight, make sure your oil reaches 190 to 210 degrees for at least 30 minutes, and make sure you run your engine regularly.

For those of you who do not fly in the winter months, Shell recommends their 2F oil (Product code 421-035). This oil is designed to coat the engine parts, (per MIL-C-6529C, a P-10 preservative), after a 30 minute warm up. This oil also acts as a fly-away oil for up to 50 hours next spring. Note: you should not turn your crank after shutting down in the fall. If you do not want your valves to corrode over the winter you are best to install some desiccant plugs over the winter. These can be dried next summer and reused for several years. An accurate weigh scale can be used to determine how much moisture they have absorbed over the winter months. Make sure you torque them in place so the air does not breath in through the threads. Desiccant bags can also be pushed up the exhaust pipes and extracted next spring by pulling on the extraction cord you remembered to leave hanging out past the plugs. The carburetor should also be stuffed with a desiccant bag to dry any air which breaths through the carburetor. One last orifice to close and that is the breather tube – since this is so oily it is normal to just use a stopper plug to eliminate any air from moving thorough this access port. Remember to plug the vent hole near the outlet at the engine as well. REMEMBER to remove all of these plugs next Spring!!!

At Oshkosh 2003, “Exxgard Aero” out of Phoenix Arizona, was offering free oil analysis so you can develop a base line of contaminants (like metal bits free flowing through your filter-less oil system). There is also a place in Toronto, which does the analysis, but I could not find the address at the time of this article. If anyone knows the location and contact information we would be happy to publish it in the next newsletter.

Also at Oshkosh 2003, several problems and possible causes of issues related to oils were reviewed:

- 1) After a rebuild, the first oil that should be used is straight mineral oil. Synthetic enhanced oils can actually deter the wear-in of the new parts like the valve guides and especially the rings. First dump should occur after only 1 hour, then 10 hours, then 25 hours and finally 50 hour intervals. The first 50 hours after rebuild should use 100% mineral oil, then you can switch your favourite synthetic blend. The time periods are relative to the sort of flying you do – remember to keep the oil hot enough to burn off the water! NOTE: the times quoted here were for my C85 and you should check with your engine owner’s manual for their recommended break-in interval.
- 2) Oil in the sump should ideally be between 180 degrees and 190 degrees Fahrenheit in cruise. At 290 degrees, the oil will break down and varnish the cylinder walls. This will close off the “feeder groves” in the cylinder wall and keep oil from getting to the upper rings. This in turn will cause excessive heat at these rings and

premature wear. Turbo engines have a larger temperature difference between the sump and the turbo so a lower temperature in the sump might be acceptable.

- 3) Aircraft engines are made to use oil! If you plan a long flight make sure you top up the reservoir. We found out that the oil reservoir is sized so that the range for the aircraft fuel will not use so much oil that the oil pump will be starved. Starvation is quite an interesting subject in it's own right. Thicker oils, or oils flowing in the start up phase of running, will run back into the reservoir more slowly than when it is hot. The oil pump can actually be starved for oil if it does not get enough flow back while cold. Keep the reservoir at the required level.
- 4) Each aircraft engine is different from another aspect, some engines of the same type seem to throw more oil out the rather than another. One remedy I have heard of is to lower the "normal" level slightly. The bottom line of this is that if the engine is throwing oil, there is a reason. Oil can be slow to drain back due to sludge, vapour lock, leakage around a particular valve guide, spray out of a cam bearing that is wearing and directing oil to the exit port, etc Find the problem!
- 5) 32 degrees is the minimum recommended oil temp when starting an aircraft engine. Some of the more significant reasons are that it flows adequately to provide lubrication and drain back at this temperature and that the engine parts will "fit" together adequately to prevent excessive blow by rings and bearing surfaces and provide non fouling starts. If you see a lot of smoke in the winter, preheat a bit longer and see if it makes a difference. Multi-grade synthetic oils lubricate better in the winter, but if the pre-heat is not high enough, the oil will get by the loose fitting bearings and foul the plugs anyway. Russ also points out here not to preheat too long – some people think they should keep the engine preheated all of the time. This has an adverse effect: since the oil is not hot enough to burn off and exhaust the water continuous heating simply creates a cycle where the water re-condenses on the colder crank and cam shaft and causes extensive corrosion.
- 6) Low oil consumption is also a problem. If an engine goes 15 hours per quart it means that not enough oil is getting to the upper rings and this could be due to the previously mentioned wear in issues. The recommended approach is to inspect and re-hone the cylinders and go thorough another break-in period. Talk to your AME for the best advice for your engine.

Our chapter now has a copy of the AeroShell Textron Lycoming "Care and Lubrication of your Overhauled Lycoming Engine". While the information is generally for the Lycoming engine the lubrication, break-in and normal operation information is applicable to all aircraft engines. Those who want to know more about oils an get the video from me – it is 30 minutes long.

I have included some Q&A information from the Shell web site that I think may answer most of our questions, I have included the web site if you want to read even more

AeroShell® Oils AeroShell® Oils are primarily recommended for break-in of most new and rebuilt 4-cycle aircraft piston engines. AeroShell single grade oils are perfect for continuous use when an ash-less dispersant oil is not required. AeroShell® oils are available in three grades: 65 (SAE 30), 80 (SAE 40), 100 (SAE 50).

AeroShell® Oil W 100 Plus

AeroShell® Oil W 100 Plus is a single grade ash-less dispersant (AD) oil that brings together the best qualities of two of the country's best selling four-cycle aviation oils. It has the ash-less dispersant single grade performance found in AeroShell Oil W 100 and the anti wear/anti corrosion additives of AeroShell Oil W 15W-50 multi-grade. Its advanced additives work against engine wear, rust and corrosion in a way no other single grade does. AeroShell® Oil W 100 Plus is especially effective in protecting critical cam and lifters in all engines.

AeroShell® Oil W Single Grade Oil

AeroShell® Oil W single grades are premium quality ash-less dispersant lubricating oils for 4-cycle aircraft piston engines. Proven to promote engine cleanliness, these single grades include carefully selected additives that leave no metallic ash in combustion chambers. Available in grades 65 (SAE 30), 80 (SAE 40), 100 (SAE 50) and 120 (SAE 60).

AeroShell® Oil W 15W-50 Multi-grade

AeroShell® Oil W 15W-50 is a multi-grade ash-less dispersant oil that provides extra in aircraft piston engine protection over a wide range of ambient temperatures. AeroShell® Oil W 15W-50 utilizes a unique blend of high quality mineral oils and synthetic base stocks combined with the AeroShell Oil W additive system and a unique anti-corrosion and anti-wear additive. This semi-synthetic blend offers high performance in a wide variety of applications and conditions.

Do AeroShell® Oil W 15W-50 and AeroShell Oil W 100 perform the same in an engine?

The oils are similar, but there are some differences. The biggest difference is in cold flow characteristics. AeroShell Oil W 100 is up to 10 times thicker at cold temperatures than AeroShell Oil W 15W-50. However, at normal operating temperatures (around 200°F), both oils will have the same thickness or viscosity. Another major difference is that AeroShell Oil W 15W-50 and AeroShell Oil W 100 Plus have an antiwear additive which is not in AeroShell Oil W 100. This additive, along with the semi-synthetic base oils, helps reduce friction and improve flow in AeroShell Oil W 15W-50. These additives improve lubrication and reduce oil consumption past the oil rings. Conversely, the improved flow can increase oil loss through leaks or loose intake valve guides. So your oil consumption may go up or down if you switch from AeroShell Oil W 100 to AeroShell Oil W 15W-50. The improved flow and reduced friction characteristics of AeroShell® Oil W 15W-50 will also help reduce oil temperatures as opposed to using AeroShell Oil W 100. This is particularly important in engines that run hot, like turbocharged, high performance or aerobatic aircraft engines. Pilots should always remember to monitor oil temps to ensure that they're not too hot. In cold weather, you should also make sure that the engine temperature is high enough to boil off the water that naturally accumulates in the crankcase. Temperatures in the 180° to 200°F range are recommended for most applications. Finally, if you have a marginal or slipping starter clutch, the antiwear additive in AeroShell Oil W 15W-50 may cause it to slip more than AeroShell Oil W 100. Understanding these differences can help you select the grade of AeroShell oil that's right for your plane.

Do all AeroShell® oils meet SAE specifications?

Yes. AeroShell straight mineral oils meet the SAE J-1966 former MIL-L-6082 specification. AeroShell Oil W single grade and antiwear, anticorrosion AeroShell Oil W 15W-50 meet the SAE J-1899 former MIL-L-22851 specification. The AeroShell containers are labelled with both the new SAE specifications and the "former" military specifications.

Will the synthetic portion of semi-synthetic AeroShell® Oil W 15W-50 harm an aircraft engine?

AeroShell® Oil W 15W-50 harm an aircraft engine?

A number of pilots have asked this question. The answer is a definite no. When Shell first started evaluating multi-grade aviation piston-engine oils over 25 years ago, testing proved that multi-grades formulated only with mineral base oils did not have adequate base oil viscosity (thickness) to properly lubricate all high load points in the engine. Then we tested and flight evaluated a formulation made with all-synthetic base oils. This formulation had excellent antiwear characteristics in all tests run. However, in the flight evaluations, some engines would reach 600 to 900 hours, then lose oil consumption control and/or compression. When the engines were disassembled, we found that the piston rings were covered with a grey tacky substance that was primarily made up of the lead by-products of combustion (from the use of leaded aviation gasoline). Although synthetics are excellent lubricants with good high temperature stability and very good low temperature flow characteristics, they are relatively poor solvents. In an aircraft engine, the lead by-products of combustion must be dissolved by the base oil so they can be carried away from the ring belt area and removed from the engine when the oil is changed. Anticorrosion, antiwear AeroShell® Oil W 15W-50 is formulated with 50% synthetic base oils to give it the excellent low temperature flow needed for quick lubrication during cold starting. The synthetic base oils, along with the unique antiwear additive system, give it antiwear protection unequalled by any other product on the market. In addition, its mineral base oils provide lead absorbency to guard against ring sticking and excessive sludge. The bottom line: The synthetic component of AeroShell Oil W 15W-50 will not harm your engine. Instead, it gives you the best of both oils.

Can I switch from a straight AeroShell® mineral oil to single grade ash-less dispersant oil, or even semi synthetic multi-grade oil?

All AeroShell oils are compatible and can be mixed with each other. Many single grade customers try AeroShell Oil W 15W-50 during the colder part of the year, then convert to using it year round. Others, however, choose to alternate between single grade and multi-grade depending on the time of year. Either system works well because AeroShell oils are entirely compatible and can be interchanged as desired. In addition, if you need to replace a cylinder on a mid-time engine, you can switch from AeroShell Oil W single grade or AeroShell Oil W 15W-50 to a straight AeroShell mineral oil for one or two changes to break in the new cylinder. Then you can switch back to the ash-less dispersant oil after the rings are properly seated. If you have a mid-time engine that has been run exclusively on a straight mineral oil and wish to try an ash-less dispersant oil, use caution. The introduction of an ash-less dispersant oil into your engine could loosen up some of the carbon deposits. So check your oil screens and filters often to ensure against oil starvation and/or oil screen collapse.

My oil temperature seems to be running low. Is this a problem?

Yes, low oil temperature can lead to excessive rusting and corrosion of critical engine parts. When an aircraft sits on the ramp or in a hangar, the engine heats up during the day and cools again at night. While the engine is cooling, some of the moisture in the air condenses on the engine walls and drops into the oil. This can form rust on internal engine components. The moisture can also react with by-products of combustion in the oil, forming acids which can lead to corrosion. The best way to remove this water is for the engine to boil it off during flight. Studies have shown that the temperature of your engine oil increases about 50°F as it circulates through the engine.

Therefore, unless the oil temperature reaches 170°F to 180°F during flight, the engine will not boil off the water that has accumulated in the crankcase. The result: rust and corrosion. Note that an excessively high oil temperature will also cause problems. Here are some tips to help avoid oil temperature problems:

- Check your oil temperature gauge for accuracy. It should read about 212°F when the sensor is placed in boiling water.
- Monitor the oil temperature during flight. It should be about 180°F even in winter. If it is lower, you may need a winterization kit. Otherwise, check with your mechanic to see what is causing the excessively low oil temperature.
- The unique additive feature in anticorrosion/antiwear AeroShell® Oil W 15W-50 can also help control problems caused by rust and corrosion.

Will oil temperature affect the oil pressure in an aircraft engine?

Yes. The thickness, or viscosity, of oil is directly affected by the temperature. Therefore, if an engine's oil temperature is increased, there will be a small, but proportional, drop in the oil pressure as well.

How can I determine which oil is qualified for my aircraft engine?

Both Lycoming and Continental recommend oils qualified under the following specifications for use in their engines.

- SAE J-1899 former MIL-L-22851 (for ash-less dispersant oils)
- SAE J-1966 former MIL-L-6082 (for straight mineral oils, intended primarily for break-in)

Military and SAE specifications are the same except for some additional packaging requirements for the military. In the future, the military specification may be dropped, although oil containers will still probably refer to the former military specification. AeroShell® straight mineral oils, AeroShell Oil W single grades and AeroShell Oil W multi-grade oils all qualify under their respective specifications. The oil requirements for other aircraft engines such as Pratt & Whitney are less defined. All AeroShell and AeroShell Oil W oils are qualified for use in P&W radial piston engines. The oils for engines no longer in production may be listed by military specification or by product name. For more information, talk to an overhaul or repair shop that specializes in a particular engine, or call the Shell Technical Information Centre at 1-800-231-6950.

Will my oil temperature be higher or lower with a multi-grade?

In most cases, the multi-grade oil will run cooler. For a hot-running engine, like turbo charged, high performance or aerobatic aircraft engines, this is good, but for a cool-running engine it can be a disadvantage. If the engine runs too cool, it can't boil off excess moisture and unburned fuel, so there can be a tendency to form acid build-up. For cooler-running engines, pilots should use a winterizing kit, or check with their mechanics on how to keep oil temperature up.

Are AeroShell® multi-grade and AeroShell single grade oils compatible?

The compatibility question covers two issues: mixing one grade of AeroShell oil with another; and the effects on the engine of changing from one AeroShell grade to the other. If you typically run on AeroShell multi-grade, and you find yourself in a place where only AeroShell single grades are available, you can safely add the AeroShell single grade to your engine. They are completely compatible.

If you run on an AeroShell single grade during the summer, but want to switch over to AeroShell Oil W 15W-50 Multi-grade for the winter, you can safely replace the straight weight with the multi-grade at your regular drain interval. The idea that you have to stick with the type of oil you started with comes from the days of unusual chemistry when the resulting oils were incompatible. All approved SAE J-1899 (former MIL-L-22851) and SAE J-1966 (former MIL-L-6082) AeroShell oils are compatible. For example, if you have a high-time engine run on ash-less dispersant oils and need to replace a cylinder, you can switch to a mineral oil for 50 hours or so to break in the new cylinder. The only time Shell recommends against switching is in a high-time engine run exclusively on straight mineral oil. Here, a switch to ash-less dispersant oil can loosen deposits left behind by the mineral oil.

I like to use multi-grade oil for better cold temperature starts, but I like the protection of a single grade oil in the warmer summer months. Which oil is right for me?

The old adage that one should never change oil types was based on problems with some oils with very “unusual” technology that were in the marketplace over 50 years ago. Present oils are compatible. So many pilots use AeroShell® Oil W 15W-50 multi-grade in the winter months and then switch to AeroShell Oil W 100 or AeroShell Oil W 100 PLUS single grade in the summer months. You may see small changes in oil temperature or oil consumption with this change, but it will not hurt your engine.

Will the Exxon Elite oil protect my engine even if I do not fly very much? What are the most important factors to do regarding oil maintenance?

There are five things that you should try to do if you do not fly frequently:

- 1) Use oil with the most rust inhibiting capability available like the Exxon Elite 20W-50. I will protect your engine components for 144 hours in a 100% relative humidity environment.
- 2) Calibrate your oil temperature gauge annually, run your oil between 180 and 185. The Elite product can run up to 190 with no danger of breakdown. (Ben Visser, who gave the oil seminar at Oshkosh 2003, recommended that the oil be run at 180 degrees for at least 30 minutes to evaporate any water that may have gotten into the oil during rest).
- 3) Sample your oil every 60 days. Take the same when the oil is hot, and seal the container, have the oil tested for water content. (While this is a great recommendation, it can be cost prohibited for private pilots).
- 4) Change you oil every four months (even if you have not flown 50 hours). Another expensive recommendation). For low time aircraft this can significantly increase the cost of operation on a per hour basis.
- 5) Change your oil immediately before any extended period of inactivity. (Rust can start as fast as 18 hours in a 100% relative humidity environment.

Visit: <http://www.aeroshell.com/faq/results.php> to see all of the questions shell has available.

Visit: <http://www.exxonelite.com> to get more info on the corrosion testing and product specifications

Cheers and happy flying!

Curtis Hillier

MEMBERSHIP RENEWAL TIME

Please bring your cheques and Oshkosh membership card to the Nov. meeting. John will have your customised membership renewal form for you.

Place your ads by phone with Rodney Stead
@ 836-1410 or e-mail to sttstmp@sympatico.ca
Deadline is first of the month. Ads will run for three
months. You may request a two month extension.

Wanted 2 six inch cleveland wheels
10/03 E-mail: acholush@yahoo.ca Gerhard Herget

For Sale: Murphy Rebel firewall back kit, many
upgrades. All pre punched skins, no jigging required.
Included is a work table and tail kit. Partially completed
must sell. Cdn \$19,250.
09/03 Email: murphyrebel@aol.com, tel : 905-432-2481

e-mail

sttstmp@sympatico.ca

Articles wanted

I am always interested in receiving submissions for this,
your Newsletter. You may bring articles to the monthly
meetings, or mail information to the post office box, or

EAA Chapter 245 Membership Application

NEW:___ RENEWAL:___ DATE: __/__/__
EAA NUMBER:.....
EXP Date: __/__/__
NAME:.....
ADDRESS:.....
CITY/TOWN:.....
PROV:.....PC:.....
PHONE:(.....).....H (.....).....W
EMAIL:.....
DISTRIBUTION Preference: email..... post.....
AIRCRAFT &
REGISTRATION:.....
.....

OTHER AVIATION AFFILIATIONS:

COPA:___ RAAC:___
OTHER:_____

Annual Dues: January 1st to December 31st. (porated after March31st for new members/subscribers).

Associate Member ___: \$30.00 Newsletter plus Chapter facilities
Full Member: ___: \$55.00 Newsletter, hangar, workshop, tiedowns. (Note: there is a one time \$200 initiation fee when you become a Full Member)

Newsletter subscriber ___: \$30.00 Newsletter
Note Associate and full members must also be members of EAA's parent body in Oshkosh WI, USA

Make cheque payable to:
EAA Chapter 245 (Ottawa)
Mail to - P.O. Box 24149, Hazeldean R.P.O., Kanata,
Ontario, K2M 2C3