The Oil Report

Feb. 2003

"Oil the News That's Fit to Print!"

Welcome to The Oil Report!

This is the first edition of The Oil Report, Blackstone Laboratories' new newsletter. We plan to publish this newsletter three times per year. The next edition will be published electronically.

BLACKSTONE LABORATORIES

If we have your e-mail address on file, you will receive the newsletter automatically. If we don't, please send it to us with your next sample! For those without e-mail, this will also be available on our website, at www.blackstone-labs.com. We hope you enjoy this newsletter!

Spotlight on...

Oil Brands

by Jim Stark

No matter who you are or what your oil analysis needs are, you have undoubtedly faced the question on everyone's mind these days: What brand of oil should I use?

Many people have very strong loyalties to certain brands of oil. They'll swear by their favorite brand and assure you that anything else is bound to ruin your engine. But we're here to dispel that myth. After nearly 20 years of testing oils from gasoline and diesel engines, aircraft engines, and industrial machines, we have discovered a simple fact: it doesn't really matter what brand of oil you use.

But wait! Before you dismiss us as heretical, listen to what we do recommend. We always suggest using an oil grade recommended for your engine by the manufacturer and a brand that fits your budget. The grade of oil is much more important to performance than the brand of oil.

We performed an in-house test, comparing the wear produced by Lycoming O-360 engines on three major brands of aircraft oils. We wondered if one brand of oil would produce significantly more or less wear in an engine than another. What we found was, the range of metals produced by the oils differed by only 4 ppm. How significant is that? You could have 4 ppm of a metal in your eye and not even feel it.

Many aircraft owners wonder if they should use an oil additive. Like the various oil brands, oil additives have loyal followers who swear by them. But think about this: When the FAA approves an additive for use, they are not saying it will do your engine any good. They are merely saying it won't do any harm to the engine.

If you want to see for yourself which brand of oil is going to perform better in your engine, we recommend a test: run Brand A in your engine for a set number of miles or hours and have a sample analyzed. Then run Brand B in your

engine for the same amount of time, and have that oil analyzed. (You can perform this same test with an oil additive.) Then you can compare the results for yourself, side by side, to determine which oil is best for you.

Report of the Month

This Franklin engine was overhauled at 2122 hours. So why does it look so bad? See the caption below for an explanation. Don't look right away -- take a good look at the report first.

(To learn where the various elements might be coming from, click here.)

MI/HR ON OIL	25	UNIT/ LOCATION AVERAGES	20	6	21	27	UNIVERSAL AVERAGES
MI/HR ON UNIT	2148		2122	2102	320	299	
SAMPLE DATE	1/16/03		9/30/02	8/23/02	4/13/02	11/04/01	
ALUMINUM	27	29	**30**	38	19	15	4
CHROMIUM	55	26	34	12	3	4	4
IRON	264	222	251	178	193	240	39
COPPER	22	15	17	12	8	8	10
LEAD	621	594	969	641	143	653	2152
TIN	5	6	10	6	3	3	2
MOLYBDENUM	0	1	1	1	10	0	1
NICKEL	5	4	4	4	3	4	2
POTASSIUM	0	0	0	0	0	0	0
BORON	0	0	0	0	0	0	0
SILICON	35	37	41	43	27	22	8
SODIUM	2	2	2	2	1	0	0
CALCIUM	3	8	6	21	2	0	0
MAGNESIUM	2	3	2	4	2	0	0
PHOSPHORUS	101	174	355	26	214	253	254
ZINC	10	8	8	9	4	3	2
BARIUM	0	0	0	0	0	0	0

TEST	cST VISCOSITY @ 40 C	SUS VISCOSITY@ 100 C	cST VISCOSITY@ 100 C	SUS VISCOSITY@ 210 F	FLASHPOINT IN F	FUEL %	ANTI-FREEZE %	WATER %	INSOLUBLES %
VALUES SHOULD BE				74-85	>450	1.0	-	<0.0	<0.7
TESTED VALUES WERE				74.8	480	<0.5	-	0.0	0.5

This Franklin was rebuilt at 2122 hours. Wear should be decreasing, but instead the meals show excessive and increasing wear at the rings and related parts. Critical tolerances may have been improperly set. This engine will wear out rapidly and could even fail eventually if it's not repaired.

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