

Airflow



Basics

by John Heimerl, Club Historian

Kansas City was a lot of fun! Steve and Sharon Fannin placed us in a really nice downtown area in the midst of good shopping and eating. The meet was not far with shade trees along the sidewalk, and a nice long row of Airflows to compare. So, of course, we found new differences. Judging the undercarriages with **John Tuthill** of Colorado (*he had the hardest part of the job due to my back having locked up the week before*), we discovered

that DeSoto's seem to have tie rod ends with the grease fittings facing forward, and Chryslers were the opposite. Or was it the other way around? Hmm...makes you wonder. We did confirm that the "Silent U" rear shackles at the back of the rear springs faced to the right on most of the cars, not opposing like is sometimes seen. Assembly line changes? Who knows! But interesting things show up when you get almost twenty cars together.

For example, three of the DeSoto's present had replacement heads. These DPCD heads were cast iron, and designed to work for either Airflows or Airstreams. They are cast with the letters SF-SG. The repair shop had the challenge of opening whichever outlet was needed (top or side) and drilling and tapping for the studs or bolts. It was a bit of a judging challenge; are these heads as authentic as an original aluminum Bohalite head? Well, yes and no. They are authentic and correct to the cars, but like in ice skating, you have to allow room for someone with just a little better performance, which the original aluminum head is – if you are to go for absolutely original. What to do? Well, it didn't cause too much of a problem for Chief Judge Don Mitchell this time because the best DeSoto's all had the replacement heads!

Back at the hotel, the tech session was standing room only. And the subjects of lubrication (both what kind and how to keep it in), cooling (*or should I say overheating!*) and parts sources (good, bad and ugly) dominated the discussion. **David Schultz** and **Bill Butler** both contributed to an animated discussion on whether overdrive transmissions and non-overdrive transmissions used the same oil. And I never seem to bring enough reference material, so when I got home I dug out the original owners packet that came with our CU. It still has the DPCD lubrication chart in it, so I'm going to take it as gospel over all of the aftermarket lube charts out there.

For non-O/D transmissions (summer), it calls for S.A.E. 110 above 40 degrees Fahrenheit, (winter) S.A.E. 90 for 0 to +40 Fahrenheit, and for easier shifting during basic cold weather, described as +15 to 0 Fahrenheit, mix 80% of 90 weight with 20% of 20 weight "low pour or cold test motor oil" or 95% 90 weight with 5% Kerosene, or 80 weight. I guess S.A.E. 80 was hard to find! And there you have your early multi-weight transmission oil.

Now for overdrive transmissions: while the non-O/D was described as Fluid Gear Lubricant, the O/D lubricant is described as Refined Gear Oil. Any guesses here, folks? Well, here's what the footnote says: "Refined gear oils that are not corrosive are required. Lubricants containing solid materials or heavy compounded soaps must not be used. For further information, consult your dealer. The lubricant level in both the overdrive and the transmission should be inspected each time the engine oil is drained."

And get this! For overdrive transmissions in the summer, S.A.E. 110! Winter (minimum of 0 degrees F.) – S. A. E. 90 low cold test. 80 weight below 0 degrees F.

And for those of us who have been putting S.A.E. 90 in the rear axles, well, oops! The DPCD lube chart calls for S.A.E. 160 in summer and 110 in winter, and 90 weight below zero.

OK, so either lubricant has changed a lot, or many of us have been using oil which is too light in our drivelines. For my part, I have been running a synthetic multi-weight in the OD transmissions, 50W-90. Did I do wrong? Well, someone more versed than I in viscosities will have to comment. Drops into O/D very smoothly and quietly, though. And if you are tired of losing your oil out the speedometer

An open letter to all Eastern Region members

I've had the privilege of being your Eastern Region Director ever since being asked to fill the position by David Askey during the 1995 meet in Stratton Mountain, Vermont. I cherish the memories of the meets I've hosted and I'm pleased that my efforts have been appreciated. I've had fun, I've learned a great deal, and in the process I've had the chance to get to know many more of the members than I would have as a regular member.

In the recent elections the club members have honored me with a new position, National Director. Once again I want to thank you for the trust you have placed in me. I will do all I can to honor that trust. I will continue to serve as Eastern Region Director for the time being, but it is in the best interests of the club that no one person should have more than one job.

The purpose of this letter then is to place an open call to all Eastern Region members who would like to become Eastern Region Director! Here is your opportunity to put your personal touch to the way the ACA operates!

It is only fair that you ask "What would I have to do?" A Region Director in the ACA is NOT a voting member of the Board of Directors, but he or she is given the chance to voice opinions to the board. A Region Director is encouraged to organise local meets and to get involved with the National meet in your region. One of my favorite jobs is organising and hosting the annual Hershey meet. These are only a small number of the ways a Region director can get involved.

If you would like to get involved, here is what you can do. Contact any of the other club officers or contact me directly and place your name in the "hat."

The next Eastern Region meet will be held during the annual Hershey Banquet. At that time I will present your name and a brief introduction to the assembled members and we will hold a vote. If the attending members accept your nomination your name will be submitted to the board for final approval and you will be EASTERN REGION DIRECTOR.

I am happy to answer any questions you might have about being a Region Director and I look forward from hearing from some of you. In the meantime, enjoy your summer and I'll see you at HERSHEY!

Best Wishes,
Kevin Williamson, ACA Eastern Region and National Director

cable, Ray Jackson has been working with several members testing his newly designed speedometer drive seal. So far, our DeSoto has quit dripping there. Yea!

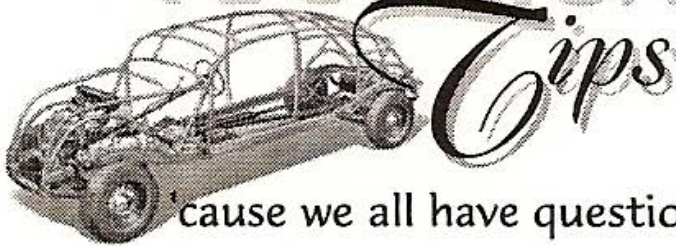
BTW, your comments are always welcome here, both kudos and raspberries. My address is in the front of the NL, and although I am sometimes hard to find due to the huge amount of work going on in digital TV right now, I do eventually get to it all. Well, almost. To those of you waiting for months or years, the raspberry section is open.

Next time, overheating (the first of many, I bet), and fun at the Eastern Regional!

Basically, it's the Airflow that makes the difference!

John Heimerl

TECHNICAL



cause we all have questions!

SAE 70 Aircraft Engine Oil for the Overdrive Transmission in S-2 Airflows

I read in the June 2003 issue of the Newsletter, the question from **Peter Wiltgen** about where to find SAE 70 oil. I had the same problem and found a small company in Brussels, Belgium, blending oils for special purposes. The "oil doctor" told me SAE 70 engine oil can't be obtained anymore. The highest viscosity still obtainable for engine oils is SAE 50. He told me that the same viscosity rating for engine oil and for gear oil do not have the same SAE number.

The "oil doctor" looked in his tables, where the secret recipes for making different oil types and the different viscosity ratings for different uses are revealed. He found out that SAE 140 gear oil with GL-1

specification would be a proper replacement for the elusive SAE 70 engine oil. (The equivalent to SAE 50 engine oil for winter use would be SAE 90 gear oil). GL-2 and GL-3 types can be used too, but not GL-4 or GL-5 which have too many additives. The problem with oil additives in old overdrive transmissions is that they can separate from the oil itself by centrifugation because of the higher velocity of the spinning gears. Also some types of EP additives can corrode the bronze bushings. So I put SAE 140 GL-1 oil in my S-2 transmission. I hope this information can be helpful to **Peter Wiltgen**.

Patrick Van der Stricht, Genval, Belgium



CONFIDENTIAL BULLETIN

SERVICE

DE SOTO MOTOR CORPORATION

DIVISION OF CHRYSLER CORPORATION

June 2, 1934

No. 252

TO ALL DIRECT AND ASSOCIATE DEALERS:

Correcting the instructions outlined in the Maintenance Manual, the following grades of lubricants should be used in the transmission and overdrive units on all cars equipped with this combination:

For Winter-Temperatures below freezing -

S.A.E. Viscosity #50 Aircraft Highly Refined Oils

For Summer-Temperatures above freezing -

S.A.E. Viscosity #70 Aircraft Highly Refined Oils

In the event Aircraft oils are not available it is satisfactory to use engine oils of these S.A.E. ratings.

IMPORTANT: - LUBRICANTS CONTAINING SOLID COMPOUNDS OR HEAVY COMPOUNDED SOAPS MUST NOT BE USED.

These Highly Refined Oils circulate freely and insure thorough lubrication.

The oil level in the transmission and overdrive should be checked each time the engine oil is drained as outlined in the Maintenance Manual. Seasonal oil changes should be made to the proper grade, as outlined above.

B. R. Secord
Director of Service

TRANSMISSION

OVERDRIVE

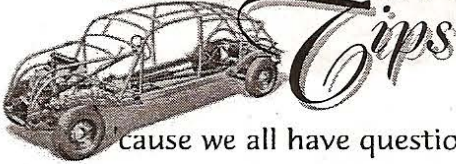
LUBRICANTS

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DE SOTO SIX

CODE "SE"

TECHNICAL



cause we all have questions!

Taking off the door handles

I've got an S-2 and I need to replace some cracked window glass in the doors. How do I remove the handles? Is it the traditional Mopar slide-in tool or something else? Also, are the inside panels removed just by prying out the spring clips? Any help would be appreciated! Thanks, Craig Miller

Craig, the handles for 34-35 have a small pin, you press in the extrusion plate, locate the pin and use a thin punch or small nail to press it through. Hopefully '36 is the same. The door panels have spring clips, a flat blade with a 1/4-1/2" slot in the center will slide around each one and a gentle pry should pop it out. A few models (our SG) came from the factory with one screw in the upper panel corner. Some spring clips are wire, some flat metal, slightly different prying required...

Hope that helps...John Heimerl

SAE 70 Aircraft Engine Oil for the Overdrive Transmission in S-2 Airflows...more input!

I am an Airflow Club Member here in Phoenix, AZ. I am also a member of Packards of Arizona, a Region of Packards International Auto Club. One of our Packard club members is a Bill Cutter, who runs *Cutter Aviation* here and in Albuquerque, NM. Theirs is a 70-year old family business of selling and servicing private aircraft. Bill has a 1941 Packard that has been in their family since new.

About your question about 70-weight aircraft oil for your overdrive...I have a reprint of the owners manual for the 1934 DeSoto and 1935 Chrysler and so I know exactly what you are looking at.

Bill says that you can get any quantity of Aircraft Quality Motor Oil from any airport service facility. He says that some of the designation descriptions have changed over the years, as has auto oil descriptions, but that you can find 60, 70, or 80 weight AQ oils at any airport.

I hope this will be of assistance, but I do not know how far you are from an airport.

Cordially, Lou Brehmer

Let's Roll Out the Welcome Mat for Our New MEMBERS

Mike and Nadine Cain, Fort Collins Colorado, were referred to the club by **Bob Merit, Gary Knight and Walter Knight**. (Walter Knight is currently a member). Mike and Nadine own a 1935 DeSoto 4-dr which he repurchased after selling it in 1992. He is restoring it now. They also owns several other vehicles.

From the archival files of Chuck Cochran

A sharing of the collection from staff meeting minutes...to customer complaints and design problems...to the hand written measurements of **Scott McKibben**, who was employed at Chrysler Motors Co. for about two years in the 1933-1935 era as a "bench engineer."

No. 6

Airflow BENCHMARKS

from the workbench of Scott McKibben

		CF	CV & CX	CU	SE	Date of last issue:
COIL	Make	DelcoRemy	DelcoRemy	DelcoRemy	DelcoRemy	7-20-34
	Model					
	Location	Body	Body	Body	Body	
DISTRIBUTOR	Make	DelcoRemy	DelcoRemy	DelcoRemy	DelcoRemy	Engine - Ignition
	Model	661-Z	665-B	665-B	664-W	
	Type	8 Lobe Cam	8 Lobe Cam	8 Lobe Cam	Lobe Cam	
MAX. AUTO. ADV.) (@ Engine R.P.M.)	Alum. C.I.				28° @ 3200	520.5
Breaker Gap		.018	.018	.018	.020	
*SPARK TIMING) in Degrees)	C.I. Alum. <i>High Comp</i>	<u>2° A.T.C.</u>	<u>5° A.T.C.</u>	<u>6° A.T.C.</u>	<u>3° A.T.C.</u>	
FIRING ORDER		1-6-2-5- 8-3-7-4	1-5-2-5- 8-3-7-4	1-6-2-5- 8-3-7-4	1-5-3-6- -2-4	
SPARK PLUGS	Make	AC	AC	AC	AC	With 661-T Distributor Timing T.D.C.
	Type: Std.	KL-9	KL-9	KL-9	KL-9	
	Size	14 mm	14 mm	14 mm	14 mm	With 661-S Distributor Timing 50 A.T.C.
Recommended Gap		.025	.025	.025	.025	
*NOTE: Spark Timing for Standard Engines Underlined						

Dear Jim,

In response to the inquiry from Mr. Blumgren concerning #70 weight oil for Airflow transmission / O.D. units:

Find a Kendall Oil Dealer and ask for part #527-7137. This is "Kendall GT-1 Nitro 70 High Performance 70 Weight Motor Oil". It is a SAE 70 SF/CC API service oil.

If any member cannot find it they may call or write me; it is available in my area.

David Askey
1000 E. Tallmadge Av.
Akron, OH 44310
(216) 633-6373

Anyone wishing to contact the factory directly may write or call:

Kendall Refining Co.
Witco Corp.
Bradford, PA 16701
(814) 368-6111

Dear Jim & Paula,

I just responded to Emmett Blumgren's inquiry re: transmission oil for Airflows (and other 'old' cars). #70W motor oil is obsolete. The proper oil to use is SAE 90 EP. I have used this oil for years (I have owned and driven a C-17 since 1958) with no trouble. There is a heavier version, SAE 110, I believe, but do not use this as it is too stiff and will affect the overdrive function.

Now, I have a research question(s): What are the proper tools, besides the T-wrench for seat adjustment and skirt removal, and jack for the Airflow C-17? Does anyone, even the chief judge, know? How is a car judged? Do we have a list of criteria so we can see where we stand? Do original documents such as owners' and shop manuals count (I also have a sales brochure for 1937)?

Best regards,
Larry Peterson
Tacoma, WA

TRANSMISSION OIL is not obsolete. I looked up Kendall in the yellow pages under "oils-lubricating" and called the distributor. They make 70 wt. oil for turbo-charged engines now, cost \$1.80 a quart. I had to buy the case as there isn't that much call for it. Order part #527-7137 as Dave Askey suggested.

OIL FILTERS - Wix WF $\frac{1}{2}$ is a replacement for Fram PB $\frac{1}{2}$ and Purolator PER $\frac{1}{2}$ which fit our cars. Wix STILL MAKES their filter! Call (704) 864-6711 and ask who your local distributor is. Order # 51035, should cost \$13.84 each.

TECHNICAL Tips



New S-2 owner requests help in replacing transmission oil; ACA member assists! (via Yahoo/discussion group.....)

Hi,
My name is Denny Malinky and I have a 1936 Desoto Airflow I recently purchased from Bob Schofield. I just changed my transmission fluid to Mobil 1 75-90 weight synthetic gear oil. Will this be okay, or should I change to something else? My plan is to drive the car frequently. I have read that synthetic is the way to go, but wasn't sure if the gear lube was the correct lubricant. Bob said he had been using a Harley-Davidson 70 weight oil, but I called my local H-D dealer and they told me 60 weight was the heaviest viscosity they carried. I would like to hear what others have used successfully. Thanks!

Denny

Denny,
I have wrestled with this same question and it has been discussed in this forum in the past. Just do a search in the Yahoo group site. I know there are plenty of 70 wt. oils out there as; RevTech, Red Line, Penn Grade 1, Lucas and Bardahl. I posted

an image that is from the Airflow Technical CD that explains the reasons for what. <http://groups.yahoo.com/group/Airflow/photos/album/2100589525/pic/915987830/view?picmode=large&mode=tn&order=ordinal&start=81&dir=asc>

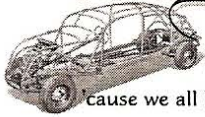
Most all of these products listed have additives, It would be up to you to decide which would be the best application. Some Airflows stress the importance of using Aircraft oil to fill the bill, others say a good 80-90 multi wt is just fine and foaming is not an issue. Others say a 70 wt. is too thick and cooler temperatures won't allow good circulation. I have read other on line sources that claim the 70 wt. oils are unregulated so it could be anything. I feel one thing is certain, modern oils are much better than what was available in the 1930s'. The old wax buildup is detrimental to the irreplaceable overdrive parts. Overdrive Airflows should be cleaned out meticulously before you drive them. Be sure and search overdrive in the Yahoo forum.

Jon Clulow
Pasadena, Maryland

***National Meet, Durango Colorado.....
Information and registration in April Newsletter***

TECHNICAL
Tips
cause we all have questions!

**Lubrication of Transmission
with Overdrive**



There has been considerable discussion regarding the correct type of lubricant to be used in the overdrive transmission. Recommendations have been made against the use of extreme pressure lubricants in the overdrive unit. This is due to the fact that some extreme pressure lubricants contain lead soap which may separate or centrifuge out in service and cause trouble. There are some extreme pressure lubricants of the mild type which do not contain soaps or compounds to separate or centrifuge out, and which may be used with satisfactory results. In order to protect the owner against the use of the wrong type of lubricant, a refined engine or aircraft oil of SAE 70 viscosity for Summer, and SAE 50 viscosity for

Winter, is recommended. This type of product is a straight mineral oil not compounded with soaps or any added ingredients to separate or centrifuge out. It is important that the correct type of lubricant be used in the transmission with overdrive and that the unit be drained, flushed and refilled every 6,000 miles.

Airflow NEWSLETTER

JOURNEY THROUGH AIRFLOWLAND

One thing that inevitably happens when two or more AIRFLOW'RS (*) get together is an instant bull session. No exception, of course, the Seventh Annual National Meet. Yours truly participated in as many of them as was humanly possible, collected both some questions and some answers, and over the forthcoming months, will try to touch on as many items as my sketchy notes will permit me to recall.

One item of interest, continually, to all owners of overdrive-equipped AIRFLOWS is the proper lubrication medium for the overdrive transmission. Those who have been guided for all these years by the information appearing in the First Edition Shop Manuals, both DeSoto and Chrysler, dated respectively January and February of 1934, and also in the earliest edition owners Instruction Books, have unfortunately been led astray. These books state flatly that the lubricant should be "refined gear oil", and recommend S.A.E.#110 for summer, and S.A.E.#90 for winter, unless temperatures are below zero, in which case S.A.E.#80 is indicated.

The Chrysler Corporation soon had some second thoughts on this advice, probably prompted by experience, of which they had had very little at the time the books were prepared, since the AIRFLOWS were the first production cars ever to use the then new and revolutionary Warner Gear Overdrive. As of June 2, 1934, the DeSoto Motor Corp. issued to it's dealers a confidential service bulletin correcting this erroneous advice. The bulletin is reproduced herewith. While we are not fortunate enough to have the corresponding Chrysler bulletin in our collection, we feel full sure that the same information was forwarded to all Chrysler dealers also.

Most owners of overdrive equipped cars have noticed that the transmission-overdrive unit permits free flow of lubricant between the two cases, and that the mechanism tends to transfer lubricant rearwards to the overdrive case. Extreme examples have been noted, in which a leaking tailshaft seal has allowed the lubricant to become depleted to the point that the transmission case is nearly empty, while the overdrive case is still over-full. Yours truly is of the opinion that the pinion, or planetary, gears revolving around the central, or "sun" gear, and the internal ring gear act as an oil pump, drawing the lubricant to the rear. Even when the tailshaft seal is tight, the oil level will be somewhat higher in the overdrive than in the transmission immediatly after a brisk run.

TECHNICAL TIP

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Bradford, PA 16701
(814) 368-6111

Yours Truly,
David Askey

Note:

See the article by Matt Joseph in the February issue of "Skinned Knuckles" Magazine for further comment on the use of high pressure EP lubricants in overdrive transmissions ---don't. Ed.

TECHNICAL TIPS

More discussion on transmission lube

Dear Jim & Paula,

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Larry Peterson
Tacoma, WA

We now have at least three different opinions on the transmission oil question. Anyone care to put the question to rest? Bill Gordon had an original tool kit in his 1934 CU sedan. Do you have a picture or discription Bill. And finally before we go off to Corning, how about some comment on the judging criteria? Chuck or Ellis?? Ed.

NOTES FROM UNDER THE CL

by Don Hayes
Chelmsford, Ma.

After nineteen years of dormancy I attended my first Airflow Meet in Corning last June. I had twenty-seven questions concerning the restoration of my CL and carried a clipboard to record the answers. I ended up with fifty-four answers! My thanks to ALL of the wonderful people who shared their cars and information.

Undoubtedly, there are tohers in our club who could benefit from some of the information I gathered--especially the new members--so I have compiled that information here. I chose this name for my article because I spent so much time under Ed Patterson's CL gathering information. I have sources for most of the information but I hesitate to list them without their permission. I will list them as a group at the end of the article.

TRANSMISSION OIL is not obsolete. I looked up Kendall in the yellow pages under "oils-lubricating" and called the distributor. They make 70 wt. oil for turbo-charged engines now, cost \$1.80 a quart. I had to buy the case as there isn't that much call for it. Order part #527-7137 as Dave Askey suggested.

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ROOF MATERIALS - The fine short grain pattern that runs the length of the car is available from LeBaron Bonney at \$12.95 the yard. Write them at 6 Chestnut St., Amesbury, MA or call (617) 388-3811.

AUTOMATIC CHOKES had an asbestos and wire gasket under them, if you can find one to put there.

SPOT LIGHTS are an appropriate dealer installed tiem.

FUEL PUMPS - Several people who drive their cars long distances have a backup electric fuel pump (AC makes a 6 volt pump). It also helps fight vapor lock that these cars are prone to. The preferred location for the pump is on the crossmember near the gas tank. You can get percolation without a pressure regulator (something else these cars are already prone to) but some run them without it.

IMPROVED CARBERATOR: A Stromberg 1938 AAV2 will solve the percolation problems and give you better carberation in general. You will need to make a leveling plate.