

EAA Mount Rainier Chapter 326 Newsletter

Thun Field - November 2005

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Meeting Notice

Tuesday, November 8th, 7 PM
CAP Building, Thun Field

Program: David Thomas will give us an update on his Viperjet project followed by a visit to his hangar for a look.

Refreshments: Darrin Dexheimer

Annual Membership Dues for 2006

Dues collection for 2006 is in progress. The EAA deadline for Chapter renewal is December 15th. Makes checks payable to EAA Chapter 326. Send \$15 to our Treasurer:

EAA Chapter 326
C/O Paul Yarbrough
11133 171st St. E.
Puyallup WA 98374

From the Secretary

October 11th, 2005.

Gordy called the meeting to order.

Dennis Ward provided refreshments, with some special treats for RV builders (was hard to tell what his plan was with this one!)

Visitors: Ken Spruell – from Spanaway

2006 Dues are due. Remember that you need to be an EAA national member and give your EAA number along with your \$15 payment for 2006 dues.

Marv gave a full Reno 2005 report, detailing the adventures they had along the way. A group from the Chapter goes each year and enjoys flying together, hanging out at the races, and just doing the Reno thing. Anyone and everyone is welcome to join next year.

Don Graf gave us the inside Reno story on local hero and race pilot, Carl Gruber, racing his Pitts Special “8-ball.”

Gordy detailed a “what I learned about that” type incident. He told us a tale of a carrier landing he made with a cement arresting hook, and the follow on repairs made to his RV7! I think the gist of the argument is, don’t land on the numbers if you have 10,000 feet ahead of you.

Lance then gave a presentation on Pilot tips and tricks. It was focused on mountain flying and some of the math and considerations you need to have fresh in mind when flying. From density altitude, climb performance, ridge navigation, winds aloft, etc all covered in great detail. The materials will be up on the chapter website at www.eaa326.org

Andy

RV Service Letter from Van’s

Service Letter: October, 2005

Subject: Filtered Bypass Kit

Affected Models: All RV’s with vertical draft induction using Van’s Filtered Airbox.

Supersedes Service Letter dated May, 2003

On engines larger than the O-320 with magnetically latching filter bypass doors installed, the bypass doors may be inadvertently opening during high power settings. This type of bypass incorporates magnetic bypass door latches that may not be strong enough to maintain closure against the induction forces and vibration produced by the engine. This does not affect normal operation of the engine but was not the intent of the design. A new, pilot operated bypass door is now available for installation or retrofit to all Van’s filtered airboxes. This design uses a bowden cable for operation and cannot inadvertently open. The new design is currently being shipped in all filtered airbox kits and Firewall Forward Kits for engines with vertical induction. A similar, pilot operated bypass has been available for horizontal induction engine installations since May, 2003.

Retrofit and Installation Information:

Case 1:

Applicable to **Vertical induction** engine installations using a carburetor or fuel injection unit **that currently have a magnetic latch bypass installed.** A retrofit kit is available at no charge from Van’s. It can be ordered using the following part number:

FAB BYPASS VERT-RETRO

Case 2:

Applicable to **Vertical induction** engine installations using a carburetor or fuel injection unit **that do not have a filter bypass installed,** a retrofit kit is available at no charge from Van’s. It can be ordered using the following part number:

FAB BYPASS VERTICAL

Case 3:

Applicable to **Horizontal induction** engine installations using a horizontally mounted fuel injection system **that do not have a filter bypass installed.** A retrofit kit is available at no charge from Van’s. It can be ordered using the following part number:

FAB-HORIZ BYPASS

Case 4:

Applicable to **Horizontal induction** engine installations using a horizontally mounted fuel injection system **that currently have a pilot operated filter bypass installed.**

NO ACTION REQUIRED

Please read and retain the attached notice.

October 2005: Updated Filter Airbox Advisory of May 2003

ATTN: Van's Aircraft Kit Aircraft Builders & Pilots.

RE: FAB BYPASS

The filtered airbox kits (FAB-320/360/540 or FAB-HORIZ) were designed to filter all engine induction air with a minimum loss of manifold pressure. The filter facilitates uniform airflow through the carburetor or injection air body to better equalize the mass flow to the individual cylinders. This contributes to maximizing power output and engine smoothness.

It is imperative to remember that, unless the individual aircraft operating limitations permit, experimental aircraft are not permitted to fly into known icing conditions. Flight into forecast icing conditions is limited by the provisions of FAR 91.527. Flight into icing conditions can be extremely dangerous since the rate of ice accumulation in the induction system and on the airframe are unpredictable and may change in seconds. Pilots who foresee inadvertent flight into heavy snow, freezing rain, or icing conditions, should consider equipping their filtered air box with a FILTER BYPASS. In case of blockage, the filter bypass feature would permit unfiltered air to bypass the filter and directly enter the carburetor/injector air body throat. The enclosed BYPASS KIT kit has been developed and tested by Van's Aircraft Inc. to accomplish the above objective.

FAB-320/360/540: RV's using the vertical induction air box designed for either carburetors or vertical draft fuel injection systems are provided with a provision for pilot-controlled alternate filtered air. The design intent was that when a pilot encountered flight conditions where foreign materials, including snow and freezing rain, might be ingested into the induction air system, he would actuate the alternate air door. This would block the ram air inlet thus preventing further filter blockage and, at the same time, admit warm air from the engine compartment. The addition of the FILTER BYPASS kit simply provides a method to bypass a totally plugged filter in cases where the alternate filtered air door provided is insufficient.

FAB-HORIZ: RV's using the horizontally mounted Bendix or Airflow Performance System fuel injection units do not have an alternate air door and operators should incorporate the FAB BYPASS. The addition of the FILTER BYPASS kit simply provides a method to bypass a totally plugged filter. Should filter blockage be encountered, the pilot must open the FILTER BYPASS door so that the engine will continue to draw sufficient induction air. The pilot must land the aircraft as soon as practical after opening the filter bypass door so that the filter blockage can be cleared and to reset the filter bypass door.

The FILTER BYPASS door is not designed to be reset from the cockpit. A visual inspection of the filter bypass door must be done to verify that it has been properly reset. The FILTER

BYPASS door is designed for emergency use only and is not to be opened as part of any routine operations.

Van's Aircraft Inc. has developed and supplied this FILTER BYPASS for the purpose of enhancing safety should inadvertent flight into severe and unusual operating conditions occur. Pilots operating any aircraft equipped with a Van's Aircraft Inc. FAB system with the FILTER BYPASS feature should also be aware of other flight hazards (such as airframe and propeller icing) which may result from operating in conditions severe enough to cause filter blockage. Installation of the Filter Bypass system should not be viewed as license to operate in conditions for which the aircraft is not permitted, and/or not equipped to operate safely.

Van's Aircraft Inc. recommends that this advisory become a permanent part of the aircraft records.

Please contact Van's Aircraft for further information and availability of filtered airbox modification components.

"Author, Author"

Lovely prose undoubtedly from "Austin," an old-timer from the Langley B.C. area of Canada.

Today is a day, in my country, when, if you are a pilot, you would not normally push open the hangar door, nor for that matter, drive out to the airfield. For today we have wind and rain which beats so hard that my wipers barely keep up. But then, this was such a day when, at 17, and invincible, I completed my cross country when everyone else turned back and, upon my return, was both congratulated and vilified. What the hell did I know? It was all new to me to see rain run uphill on the windscreen, and since I only had one day off a week and had spent whole days waiting for the white light to go off on the tower, was up to the task. No radio in those days, and no need to even crane your neck to see under the wing as to what the ident for this particular ship was. All I know was that I took off on 08 and assumed to come back the same way, especially when I saw a Hurc sitting on the button of same, but NO, I found out later, they wanted me to land on 26 after skimming at 600 over the shoreline and black overcast, but the Hurc was a better indicator to me than the windsock, which I could not find anyway. And a steady green light I took to mean...OK, land!....I mean, it was getting blacker and windier and it wouldn't get better any time soon. Pleased to get their aircraft back, the office staff told me that one Owen Lloyd in the tower would like me to call. Call, I did, and got a reaming I shall treasure always....but I was 17....a virgin still, but a warrior of the sky just the same.

Which brings me back to today. For some reason, I relish a hellish day when I can sit in an airplane with wings rocking and see if I can do more than just a circuit to see if I am still at one with the elements.

Besides, I now have a metal prop and that makes a difference. Well, takeoff is a non event other than the normal thrill an RV imparts, but climbing out keeps me in practice of my dance steps as I head out East and follow my beloved river. Rain is so neat to watch steaming back in rivulets as it does with the speed that an RV pulls it. Low cloud base, but the visibility is still surprisingly good and the rivers course and sand bars with

rainy day fishermen are still where they always are. What a hoot, bending this way and that with the hills still far enough away, but the tops of them and the giant Firs in mist. Before long however, things close in somewhat and after the last bend the hills rise steeply and one enters a canyon from which decisions are best wisely and quickly made, however fun and thrilling this may be, for to fly another 5 minutes this way means very bad things be lurking and even so, to get through and land at the little grass strip where gliders live may mean that one would not get home today or tomorrow, for the sake of 5 minutes more this way.

This river wends its way from countless glacial streams with clear ice water to a torrent of brown, silt laden, rushing to the sea and creating the delta upon which I live. This silt can be seen for miles out into the gulf and as I turn to follow it, I now have the outflow winds from the mountains at my back and I am racing at 209 mph on the GPS back toward the barn. An RV is a very fast pony to race with, but also makes for a short entry time in the log unless you decide to run a while longer while vis is good and traffic is nowhere. I can see a white line where waves break on the shore, and freighters from Asia leave wakes a mile long behind them, and what great fun to drop down to about 300 along the shore and marvel at how now, I can actually see the speed which altitude cannot give you....no head in the cockpit now, just a very gentle suggestion to the right with two fingers and thumb, and we drop the wing and round the corner of the point, level off, climb back where we belong, race over the green pastures and call in for landing.

Straight ins are a bore, and no test of skill, so a short carrier approach with speed bled off sits me down with satisfaction once again. Sliding back the canopy and I get rain in the face and when the prop stops, the only sound is banging hangar doors where some other RV builder has decided that a rainy day at the airport is better than TV at home anytime, and therefore a visit makes for a nice way to top off the day. Even if it was way too poor to fly, I would still get a boot just to sit in the cabin and watch the rain beat and listen to the wind sing her song.....Rain was meant to flow uphill sometimes.

Anonymous

Oil Quantity

I had an interesting conversation with a Lycoming engineer several years ago. Q: why does a full (8 quarts in most 4 cylinder engines, 12 quarts in most 6 cylinder engines) sump either burn or blow out oil? Why mark the dip stick to a quantity that will not remain in the engine? Is there any harm in running less oil in the sump on a routine basis? Answer: regulations!

Look at the FAA certification of piston engines - FAR 33.39 (a) "Lubrication system. The lubrication system of the engine must be designed and constructed so that it will function properly in all flight attitudes and atmospheric conditions in which the airplane is expected to operate. In wet sump engines, this requirement must be met when only one-half of the maximum lubricant supply is in the engine."

It is this one-half comment that has caused most air cooled / oil cooled engine, for any manufacturer, to mark the dip stick to

an excess quantity for normal use so that this amount rule will meet certification for any given certified aircraft installation. RVs have an excellently designed cooling plenum, so they tend to keep the oil and cylinder heads well within limits.

Bottom line - you can operate any 320 or 360 Lycoming engine one to two quarts below the marked full limit. As long as the temperature stays below 245 * F and the pressure is steady, 6 quarts in a four cylinder engine is adequate to do the other functions - cushion, clean, protect, etc.

Bill Gunn

Keeping Oil off the Belly

I ended up purchasing an M20 separator from Aircraft Spruce in desperation when their "home builders" separator was on back order for over 2 months. I was planning a 4000 plus mile trip and wanted something that was really going to work. I was getting a significant amount of oil out the breather tube after any flight over 45 min or so. The oil ran from the firewall and would streak clear back to the tail after more than about 2 hours time. It might have only been a teaspoon or tablespoon full but it was annoying. Some would say that there is something wrong with the engine to get that much oil out but my compressions have always been very good and I have put 450 hours on the engine since then. Would someone tell me my engine was shot 450 hours ago? I guess it could blow anytime but so far it hasn't. I welded a stub on to the left rear valve cover and allow the collected oil to return to the engine. I didn't think of collecting the oil in a separate vessel to drain periodically as some suggest. I may get up the motivation to do mine that way someday as it seems like a good idea. Anyhow the M20 stopped all oil from coming out of the breather instantly and I had no oil on the belly for the next 25 hours even if I put 8 quarts in. About this time (after the long trip) I discovered a significant oil leak and found it was coming from two different places on the M20 unit. One leak, a pin hole at the center of a weld in the bottom cap and the other a poor weld at the oil return stub. Anyway I welded them up and it has worked fine since.

My M20 has worked well, at least for me, but sure is expensive. They are very small, simple and light compared to some I've seen. Seeing how they are made I wouldn't hesitate to make my own knowing what I know now. The RJM-AERO unit seems to be an exact copy of an M-20 for a little less. I can't imagine spending much over ten or twenty dollars to make one if you can weld. Realizing how it works by simply providing surface area to collect and trap the oil vapors, I can picture any number of ways one could be made. I saw one recently that was a vented 1 pint paint can filled with fibrous material to provide area to collect the vapors. Very light, simple and extremely cheap to make. Perhaps a couple of bucks? If you made them yourself you could afford to simply toss it at every oil change. Dah, wish I would have thought of it but I ain't smart enough.

Vincent Osburn

End

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