



NEWSLETTER

Carb Heat

Hot Air and Flying Rumours

Vol 30 No. 7

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July-August 2000

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Next Meeting:

Saturday July 15, 2000 10:00 AM
EAA 245 Hangar, Carp Airport

Our feature topic will be
A visit to the Robinson's RV6 project

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I thought I'd do my best to fill in for Gary on the chapter news. Please forgive me if I got any of the facts wrong.

June 17th Meeting

The meeting at the Carp hangar was well attended with a good turnout of Homebuilt aircraft that flew-in that morning. Gary Palmer presented an award to Serge Boucher for completing his RV6 project. I enjoyed hearing some of the interesting stories around this project. For instance how the O-320 engine was obtained from an almost completed Zenair CH300 project out west. Quite an adventure bringing the entire kit home to harvest the engine.

There were the usual Coffee and Donuts supplied (Thanks Lars). Some of the members took the opportunity to look at the wings Peter Dawson is building for his RV Griffin project out in the chapter hangar, and some also took advantage of the opportunity to get a good look at the completed aircraft that had flown in.

Leaky Compass Repair

Meanwhile I was busy reinstalling my compass that I'd repaired the week before. It had had a slow fluid leak (i.e. apparently Kerosene is used in compasses). Of course when I took it apart and tried to find out where the leak was coming from it was no longer leaking. I got a tip from Don Taylor who suggested it probably needed to be heated up a bit (i.e. as it would be when sitting in the sun on a typical summer day). Sure enough when I brought it home and applied some heat with a heat gun the leakage source became obvious. It was coming from a crack in the rear seal. It turns out there's a rubber diaphragm on the back of the compass that acts as a seal and expands and contracts (probably to account for air pressure changes with altitude and/or fluid expansion with hot and cold temperature extremes). My guess is the daily hot cold cycles along with aging caused the rubber to decay and crack. I used some Red RTV to seal the cracks (i.e. until I get around to ordering a new diaphragm seal), topped up the kerosene and put it back together (no leaks so far).

July 1st CAM Booth & aircraft display

I had a chat with Curtis Hillier who informed me on how things went with the booth set-up out at the Canadian Aviation Museum on Canada day. There was a good member turnout to help with manning the displays (i.e. the indoor booth and the aircraft display outside). Besides Curtis, Martin Poettcker, Perry Casson and Gary Palmer helped with manning the booth. Russell Holmes brought his completed Kitfox out on its trailer (i.e. with wings folded), which attracted a lot interest and questions. Also, Dale Lamport and his wife helped with the aircraft display outside. I'm willing to bet I've missed someone here so apologies in advance. A lot of chapter pancake breakfast flyers were handed out.

Curtis mentioned that a lady from CBC radio (apparently looking to present information on various hobbies) took an interest in the display and commented "What a unique hobby". One of our members (not sure who) is signed up to do an interview about homebuilding and also talk about the Chapter.

Reminder on the upcoming meeting July 15th

Russ Robinson has graciously volunteered to host a visit to his workshop for our July meeting. This is your chance to see an RV-6 in an advanced state of construction. If you have ever thought of an RV series aircraft (an excellent choice by the way), then don't pass up this opportunity.

We will meet at the chapter hanger at 10:00 AM, then after a brief business meeting, proceed in convoy down Carp Rd. to Russ's shop.

Reminder on the Fly-in breakfast August 13th

Mark your calendars for Saturday August 12th and Sunday August 13th which are the dates for our fly-in breakfast. Contact Stan Acres to volunteer for duty. The set-up is for the morning of Saturday August 12th, normally around 9:00 AM.

Sight, Sound, and Feel
by Howard Fried

This article was obtained from Avweb (<http://www.avweb.com/>).

Flying an aircraft is a learned skill. As with any skill, we depend on our senses -- sight, sound, hearing, touch, and even the sense of smell -- to help us perform it. But which of our senses are we using, and when? AVweb's Howard Fried explores how humans use their senses to "commit" aviation.

We previously discussed the subject of [flying by "sight picture" as opposed to "flying by the numbers."](#) Now we will undertake to consider all the sensory cues that a pilot uses in manipulating the controls of an airplane and making the machine do what he or she wants it to do (or, at least keeping it from doing that which he/she doesn't want it to do).

Sight

The first of these is, of course, sight. Whether we are VFR or IFR, sight is the most important of the senses we use in flying. In VFR flying we keep the airplane upright by noting the position of the wings and nose of the airplane as they relate to the horizon. We not only control our pitch attitude by sight, but we judge our angle of bank by sight as well. And when we're IFR it is sight (the information we get from looking at the instruments) that enables us to remain upright. We simply must disregard the feeling we get through the inner ear and rely on what the gages tell us through our eyes. Also, the kinetic feeling we get from our deep muscles may be entirely wrong as a result of receiving false information from our inner ears. So much has been written about spatial disorientation and vertigo that we need not address that subject here. It is sufficient to note that a false sensation of turning when in fact we are flying straight can be almost overwhelming. It is at these times that we must force ourselves to rely on the messages from our instruments received through our eyes and interpreted by our brains.

Sound

We also gather useful information from the sense of sound. Any change in the engine sound as it drones along through the sky alerts us to a change in our flight condition. And if it gets really quiet in the cockpit, we know we're in deep doo-doo. If anybody should ask what a propeller on an airplane is for, tell 'em it's to keep the pilot cool, and if they don't believe you, just watch the pilot sweat when it stops! Adrenaline really starts flowing when a pilot hears the engine cough! When the engine skips a beat it really gets our attention. We immediately start paying a lot more attention to the engine gages. Are the manifold pressure and tachometer needles steady? Are the oil pressure and temperature needles in the green? Any unusual sound and we are instantly alert.

The sound of the wind caused by our movement through the air also tells us things we should know, but not nearly as well as it did in the days of the open-cockpit airplanes, of course. There used to be a saying that as the tone of the music caused by the wind through the wires grew deeper the pilot didn't need to worry until he started to hear "Nearer my God to Thee." Then it was time to bail out. Any major change in the pitch attitude of the airplane will cause a change in the engine and slipstream noise, and this provides useful data whether we are VFR or IFR. Of course, the pilot must process the data his senses send him for it to be useful. But even when we're IFR, a change in the engine sound may very well be the first clue we get that all is not well. At least it tells us that something has changed, and nothing we did brought about the change.

Touch

Although pilots are admonished to not trust what they feel when they are in IMC (instrument meteorological conditions -- in cloud), there are some kinds of feel (sense of touch) which are useful even then. For example, the tension (or lack of tension) one feels on the controls. Is the yoke getting loose in your hand, or does it seem to take more than usual pressure on your part to move the yoke? This kind of feel will alert us to a change in airspeed. In other words, the pilot must force himself (when in IMC) to ignore what he feels through the seat of his pants, but should pay close attention to what he feels through the yoke in his hand. Is it becoming slack, or has an inadvertent increase in speed required us to exert more pressure to move it? Of course, you really can't tell anything if you have a death grip on the yoke. You must still strive for a light touch on all the controls, particularly the yoke and the rudder pedals. If the airplane is properly trimmed, a very light touch is all it takes to command the desired response. The old saw about holding the stick as if it was a little sparrow works in this situation. If you don't have a firm grip, it will fly away, but if you grip it too hard, you'll kill it.

All Together Now

Now to expand on this business of sight, sound, and feel. With respect to sight, we've already had a lot to say about the "sight picture" by which we fly in the VFR environment. We have the whole world at our disposal, a 25,000-mile reference by which we can not only keep the airplane upright, but by which we can maneuver it and make it comply with our desires. This allows us to ignore the instrument panel except for the occasional scan to monitor the gages and see that all is well while we spend our time looking around outside, enjoying the scenery and keeping the airplane on course by reference to ground objects, and, obviously looking for traffic, which we can't avoid if we don't see. Of course seeing alone is not enough. We have to understand what we're seeing, analyse and interpret the messages we're getting and take appropriate action. And again, this is true whether we're VFR or IFR. Even when VFR, we use our sense of sight to monitor the gages that inform us of the state of health of the engine(s). If the heading or altitude should wander off, it is our sense of sight that tells us about it, and tells us when we've made just the right adjustment to correct the situation. In this situation sight is supplemented by both sound and feel.

Any change in the sound of the drone of the engine(s) will alert us to the fact that something is happening even sooner than the engine instruments themselves (manifold pressure gage and tachometer, but not the oil temperature, oil pressure, and cylinder head temp gages, as well as those instruments that advise us regarding the health of the electrical system). If the engine skips a beat we hear it do so long before we see it on the tachometer (unless we happen to be watching the tach at the instant it happens). If there is a subtle change in the pitch attitude of the airplane our ears alert us to the fact, and if we're in good VFR weather, we probably will notice the change in the sound of the engine before we catch it on the altimeter or the vertical speed indicator. So it can be seen that the sense of sound (hearing) can be quite important to a pilot. This sense may also be coupled with feeling to give us even more input. We "hear" by feeling a change in subtle vibrations.

Seat Of The Pants...

Given enough experience, we all develop an "educated rear end." In other words we feel a slip or skid in the seat of the pants without the aid of the spirit level (the so called ball bank indicator or slip and skid indicator). Some people are more sensitive than others to this kind of unusual motion. For example, my wife, who had been exceptionally prone to motion sickness all her life, could always detect the slightest change in motion, but it took many thousands of hours of flying before I became as good at it as she always was. Now, however, if the airplane isn't perfectly balanced, if there's any slip or skid at all, I can feel it in the seat of my pants. I sometimes wonder at how some pilots can fly along in a steady slight skid or slip and be totally unaware of the condition. I've sat in airplanes and sworn that the pilot must be unconscious not to feel what's happening as the airplane slides sideways through the sky.

Another kind of sense of feel occurs when we encounter turbulence. After slowing to maneuvering speed and cinching the belt and harness up tight we sometimes get a jolt that causes the head to meet the ceiling, and believe me, you feel that bump! A downdraft resulting in a sudden drop in altitude causes a sensation in the pit of the stomach similar to what is experienced in the start of a rapid decent in an elevator, or on the downside of a roller coaster ride. This, too, is feeling. Conversely, the added force of gravity ("g" load) felt with an abrupt pull-up or steep turn pushes us down in the seat and we definitely feel this, too. We know it when we get heavy. Here, too, the controls tighten up, just as they do with an increase in speed.

...And One Other Sense

In addition to sight, sound, and feel, even the sense of smell enters into the equation. And although it does not properly belong with sight, sound, and touch as one of the primary senses we use when flying, still it should be covered here. How about that faint whiff of electrical fire? Or worse yet, gas or oil fire?

I had a friend whose passengers got a strong odor of gasoline while flying at 7,000 feet, but he just kept going (he was only 30-odd miles from home and returning from a long trip). About then the engine in his Cessna 210 sputtered and quit. It died of fuel exhaustion, in spite of the fact that he was one of those guys who kept very careful records of the time in his tanks, rather than relying on notoriously unreliable fuel gages. He glided to an uneventful landing on a small, rough, sod private strip, which by happenstance was almost directly under him when the engine died.

I happened to be overhead at the time and by chance I was monitoring the frequency, so I landed behind him and flew him and his two passengers out, but not before we found the belly of his airplane full of avgas. The fuel line that runs down inside the right door post had sprung a leak and all the gas (we drained out well in excess of a dozen gallons the next day) from his right wing tank had descended to the space between the cabin floor and the bottom skin of the airplane. Any errant spark could have spelled fini to the airplane and its occupants. Thank goodness none of the people aboard had decided to smoke on that flight! I later learned that the reason nobody aboard lit up was because of the strong odor of gasoline.

Hangar Flying That Can Kill You
by Joe Penaz

This article was originally posted in the EAA experimenter.

We had gotten back from an enjoyable evening at Voyager supper Club in Wisconsin. I had rolled the plane back into the hangar. So far, this had been a beautiful and uneventful evening flight. I pulled the engine through with the prop to check cylinder compression (I had just put a new jug on it), and all four felt good. My wife and daughter were just starting to close the hangar door when I noticed the plane had rolled a few feet forward and needed to be a few feet back. I put my right hand on the prop and pushed.

That's about all I remember, until I rolled over in the grass and looked at my arm....an arm I could not feel. The next three hours were spent in the hospital. I won't get into that, but I needed morphine IV to keep the pain under control once the shock wore off.

What happened was the engine fired and ran a few revolutions, taking all 225 pounds of me with it around once, then striking my right arm, cutting almost through the extractor muscle. My wife said I was just gone! It threw me 12 feet out of the hangar.

My wife checked the ignition switch the next day and it positively was not on; the mixture was pulled lean. So how could this have happened? I spent a full day with a friend looking for likely causes. I even ordered a new ignition switch.

I own a Piper Cherokee. If you pay careful attention, the ignition circuit "P" lead runs from the magnetos to the ignition switch, then back to the mags through the shielding. When you shut off the key, it shorts or grounds out the primary circuit of the mags.

My switch tested good, but the circuit back to the mag did not. It goes through a box at the firewall and the ground lead attaches to a 10/32 bolt. That's all. It's supposed to carry the ground through the bolt to the ground shielding back to the mags.

I had a slightly loose and bad connection, which, if wiggled, would open up. We almost didn't find it because it's way up at the top of the dash, above all the radios. Apparently, pulling the prop through to check the compression sucked just enough fuel past the fuel shut-off valve to give the engine its near fatal prime.

We all get complacent about safety things around our airplanes. I see my friends do things, and catch myself doing things from time to time. We all know of fellow pilots, mechanics and improperly briefed passengers killed or injured by prop accidents.

I was spared permanent physical damage. However, the psychological damage will stay with me my whole life. I will never act the same way around a prop again. I am thankful for this lesson and hope you may learn from my mistake.

Schedule of Chapter Programs for AirVenture 2000
from Troy Toelle of eaa.org

Included is the schedule of Chapter Programs for AirVenture 2000. These programs are not just for Chapter Officers and Directors, but are intended for any Chapter Member who is interested in the future of his or her Chapter. Please include this in your July Chapter Newsletter (and or Web) if possible.

Thank you for your cooperation and we hope to see you in Oshkosh at the end of July!

Troy Toelle
EAA Chapter Office
(920) 426-6847

Wednesday July 26th

10:00am to 11:00am (Chapter House) - Chapter Roundtable Discussions --
(Deck-1) "Chapter Leadership Transition" & (Deck-2) "Attracting and
Retaining New Chapter Members"

1:00pm to 2:00pm (Chapter House) - Chapter Roundtable Discussions -
(Deck-1) "Tax Exempt Status for Your Chapter" & (Deck-2) "Chapter Aircraft
Projects"

Thursday July 27th

10:00am to 11:00am (Chapter House) - Chapter Roundtable Discussions - (Deck-1) "Chapter Flying Clubs" & (Deck-2) "Introduction to EAA Chapters" (How to form a Chapter, How to Find a Chapter etc...)

1:00pm to 2:00pm (Chapter House) - Chapter Roundtable Discussions - (Deck-1) "Chapter Insurance Program Overview" & (Deck-2) "Chapter Clubhouses and Hangars"

Friday July 28th

8:00am to 10:00am (Vette Theater in the AirVenture Museum) - Chapter Newsletter Editor's Workshop --, Come Meet the Editors of Sport Aviation, Scott Spangler and Mike DiFrisco (both former EAA Chapter Newsletter Editors).

10:00am to 11:00am (Chapter House) - Chapter Roundtable Discussions - (Deck-1) "Chapter Insurance Program Overview" & (Deck-2) "Chapter Fundraising Ideas"

10:30am to 12:30pm (Vette Theater in the AirVenture Museum) - Chapter Web Editor's Workshop --, Come learn how to create a Chapter Web Site and how to make your existing Chapter Web Site more effective.

1:00pm to 2:00pm (Chapter House) - Chapter Roundtable Discussions - (Deck-1) "How to Become a Good Chapter Leader" & (Deck-2) "How to Make your Chapter More Active!"

Saturday July 29th

8:00am to 10:30am (EAA Nature Center) - Chapter Leaders Breakfast --, Join us for a morning of interacting with other Chapter Leaders from all over the world, meet EAA Staff Members, and enjoy a great Breakfast (FREE)! Please RSVP by sending your name, Chapter Number, and EAA Number to 800-236-4800, ext. 4876, fax at (920) 426-6560, or e-mail to chapters@eaa.org.

1:00pm to 2:00pm (Chapter House) - Chapter Roundtable Discussions - (Deck-1) "How to Make Your Chapter More Active!" & (Deck-2) "Attracting and Retaining New Chapter Members"

Sunday July 30th

10:00am to 11:00am (Chapter House) - Chapter Roundtable Discussions - (Deck-1) "How to Become a Good Chapter Leader!" & (Deck-2) "Chapter Clubhouses and Hangars"

1:00pm to 2:00pm (Chapter House) - Chapter Roundtable Discussions - (Deck-1) "Chapter Fundraising Ideas" & (Deck-2) "Attracting and Retaining New Chapter Members!"

Monday July 31st

10:00am to 11:00am (Chapter House) - Chapter Roundtable Discussions - (Deck-1) "Chapter Flying Clubs" & (Deck-2) "Introduction to EAA Chapters" (How to form a Chapter, How to Find a Chapter etc...)

1:00pm to 2:00pm (Chapter House) - Chapter Roundtable Discussions - (Deck-1) "Tax Exempt Status for Your Chapter" & (Deck-2) "Chapter Aircraft Projects"

Classifieds

Place your ads by phone with Charles Gregoire @ 828-7493 or e-mail to cbgregoire@sympatico.ca
 Deadline is first of the month. Ads will run for three months with a renewal option of two more months.

Airplane for Sale:
 Davis DA2A, 295 TT, C85 90 SMOH, All Metal, Low wing, Nose gear, Flaps, ADF, KX-170 Radio \$14,000
 Jim 613-839-5542 07/2000

Garry's Parts Bin

50 ft. 1/8" galvanized aircraft control cable, 7x19, MIL-W83420D
 Dynafocal engine mount
 Wheel pants \$100.00
 Oil, break-in, 12 litres, Shell, Esso
 Wing Tip Nav Lights
 NACA air inlets
 Elevator trim assembly
 Primer
 Valves, Fuel selector
 Valve, Parking brake
 Accelerometer (G-meter) 2.25 inch
 Oil cooler - Continental 6cyl.
 CHT guage and probe
 Lycoming, Accessory case, dual take-off adapter for hydraulic and vacuum pumps.
 Piston rings for Continental E-185 or O-470.
 Light weight starter & bracket for Lycoming O320 or O360.
 two Lycoming engine-driven fuel pumps \$50.00 each
 Control wheel yoke assembly from Piper Tomahawk Engine, VW 1600cc completely rebuilt
 Garry Fancy (613)-836-2829 06/00

For Sale, Garmin GPS90 - \$500.00 (firm)
 David Clark H10-40 Headset - \$200 or best offer
 Win Cotnam (613) 592-2224 05/00
wbcotnam@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 send me an e-mail attachment at:
cbgregoire@sympatico.ca



EAA Chapter 245 Membership Application

NEW:___ RENEWAL:___ DATE: __/__/__
 EAA NUMBER:.....
 EXP Date: __/__/__
 NAME:.....
 ADDRESS:.....
 CITY/TOWN:.....
 PROV:.....PC:.....
 PHONE:(.....).....H (.....).....W
 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
 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, 300 Eagleson Road, Kanata, Ontario, K2M 2C3