CASCADE FLYER

Website: http://co-opa.com/ **December 2008, Vol. 08, Issue 12**

President's Message:

The November meeting was a great success thanks in part to our guest speaker Eddie Bevan from Cessna. Eddie is lucky enough to be a production test pilot for the Cessna 350 and 400 airplanes made right here at KBDN. We were lucky to hear him detail how he, and his cohort, take those racehorse machines on their initial flights and get them ready for delivery to their eager customers. Thanks again for dropping by for us Eddie.

For December we have not one, but two fantastic events planned. First off John Miller from COCC will drop by to fill us in on the wonderful aviation program they have. John is director of the program that now shepherds 160 students forward toward their Associate of Science degree. Before retiring (if you can call what he does retiring) John was a Colonel in the USAF and logged more than 5,000 hours in fighters and DC-10's.

Next up we will have our nationally famous Yankee Swap! Everyone that wishes to participate must bring an aviation related gift. Items need not be new, or even useful. As a last resort there is likely some unused, but valuable item in the bottom of your flight bag that just needs a new home to be loved again? Maybe you have gotten tired of that white elephant you took scored last year? Wrap it up and bring it to place beneath our pagan Yule Tree.

So be sure to meet up with us for hanger flying at 6pm. At 6;30 pm the chapter will provide a roast turkey for the main dish and the members will provide all the trimmings for our potluck. Then at 7pm we'll start the 'formal' program. If you plan to attend on one meeting all year then this is it!

2008 events:

'Fusionman' crossing the English Channel

Calendar:

18 December - Monthly Meeting & Holiday Party
20 December - Monthly Flyout

15 January - Monthly Meeting
17 January - Monthly Flyout

19 February - Monthly Meeting
21 February - Monthly Flyout

19 March - Monthly Meeting
21 March - Monthly Flyout

16 April - Monthly Meeting
18 April - Monthly Flyout

My Inbox:

It came as quite a shock to many of us to here that our KBDN airport manager, Susan Palmeri, has abruptly left to become director of Stockton's Metro Airport (KSCK). This is a nice step up for her as KSCK is an air carrier airport.

Until Susan is replaced pretty much all plans at KBDN are on hold. Being as how we are in the midst of winters icy grip that is not much of a problem in the sort term. Moving into summer there will be the new east side taxiway, the master plan update and many other tasks that will require the attention of an airport manager so I hope the city moves quickly to fill the empty position.

Web doings:

To cut costs the OPA now only publishes their newsletter online. You can get a copy of the state newsletters by going to their website, http://www.oregonpilot.org/ then clicking on 'Newsletter' on the left nav.

The state organization is also moving to billing state dues every January instead of on the anniversary of your joining the OPA. This should help cut administrative costs even more. This is especially important in light of the large drop in membership this year. You can find more details here:
http://www.oregonpilot.org/membership/annualnotice.html

There was a 28% drop in OPA membership last year so very member counts.

To access the members only areas the username is "BDN" and the password is "123.0". There you can find the membership roster if you are looking to track down a fellow CO-OPA member.

Random Thoughts:

Last month Central Oregon had almost record highs in the '60s. Now winter had abruptly reared its ugly head. Temperatures are in the single digits, the ceiling is low and everything it seems is coated in ice.
Welcome to another typical Central Oregon winter.

Depending on which weather forcaster you place your trust in, we just might see a day of blue sky in the next week, and there is even a slim chance it may be on a weekend.

The problem is that since my plane is parked on the ramp, even if the day is clear, my plane will still be covered in something frozen.
Planes do not fly very well when the wings have even a bit of debris on them. Less obvious, but more dangerous, is that planes do not fly well when the stabilizer or elevator have debris.

The FAA and the AOPA recommend that no plane take off if there is ANY frost, snow or ice on the airframe.

Ideally you can be sure your airplane is unimpaired by storing it overnight in a heated hanger before flying. Given the shortage of hangers around here, or when traveling away from our home airport, that is not always an option.

In my ten years flying on our CO winters I have had the help of many people, with different techniques, to clear my airframe for some winter flying.

The easiest, and least effective, method has been to brush the frost and snow away with gloves or brooms. For snow that has not stuck to the wings, or light frost, these seems to work well and is easy enough. If there is ice then all you do is uncover the real problem.

Next up is the rope trick. If you have two people and a rope you can clear your wing of fairly stubborn debris in a short period of time. Just toss a rope over the wing and place one person on either end of the rope. See-saw the rope rapidly back and forth and slowly slide it sideways on the wing and watch your wing clear up to flying status.

The downside is that you will lose a bit of paint during the process.

A faster method to clear tough ice is hot water. A few FBOs have been nice enough to haul out buckets of hot water to pour over my wings and quickly melt down to my bare metal. So far it has worked out for me but I always fear that some of that hot water might puddle in some critical place and freeze as soon as I take off.

On those few times I have managed to plan ahead there is a surprisingly easy, and safe, way to clear my wings. Two gallon jugs of premixed windshield washer fluid does the trick. Pour a small stream of the fluid down the wings, wait a minute, and brush off the slush. Repeat as needed until the wings (and tail surfaces) are clear. 10 minutes is usually all it takes and I do not have to worry about the slush re-freezing in an inconvenient place.

However you manage it, be sure the important parts of your airplane are free of significant snow, frost and ice. With luck, and some elbow grease, we'll get to do some nice winter flying this year.

Gary Miller

Our November fly-out, courtesy of Mother Nature (Yes … it's Bend's Black Bear Diner)

There's no place like home.

Dorothy famously said that a long time ago, but the principle applied long before, and long after, the famous balloon trip to Oz. Epic is rediscovering the old adage.

Epic started in Bend a few years ago and after designing a few new airplane types locally they decided to move certified production to Canada. After a few go arounds in the great white north the grass no longer looked greener in Ontario. Soon Georgia was on their mind. Not the Georgia in the new south, but the former Soviet Union one. They even sent over a prototype aircraft to see if the locals at Tbilisi Aircraft Manufacturing (TAM) over there wanted to try their hand at building the speedy craft.

The prototype is still there, but the contract is off, after Russia bombed the Tbilisi airfield. Seems that they had a little war over there during the Olympics. Now the Bend Bulletin and the local TV stations are reporting that there really is no place like home. Epic plans to once again build and certify their new aircraft here in Bend. We welcome them back even though they never really left.

Gary Miller

ANNUAL XMAS CHARITY PROGRAM

HI.....ON BEHALF OF OURSELVES, THE TEACHERS INVOLVED IN OUR CHARITY PROGRAM AND ULTIMATELY THE KIDS THAT WILL HAVE A CHRISTMAS THEY WOULD NOT HAVE HAD OTHERWISE, WE WANT TO THANK YOU FOR YOUR KIND DONATION TO THE CO-OPA CHRISTMAS CHARITY FUND. BECAUSE OF YOUR GENEROSITY WE HAVE ALL MADE A POSITIVE DIFFERENCE IN SOME YOUNG PEOPLES LIVES. WE MAY NEVER KNOW BUT THIS ACT OF KINDNESS MAY MAKE A LIFELONG DIFFERENCE IN THEIR LIVES.....

THAT IS ONLY ONE PART OF THE EQUATION, THE OTHER PART IS THE GOOD FEELING THAT WE ALL EXPERIENCE FROM KNOWING THAT WE HAVE BEEN ABLE TO HELP SOME DESERVING YOUNG PEOPLE HAVE A HAPPY HOLIDAY AND THAT MAYBE WE HAVE GIVEN THEM A BOOST IN THE RIGHT DIRECTION.....

AGAIN....THANK YOU VERY MUCH AND MAY YOUR HOLIDAY SEASON AND THE UPCOMING YEAR BRING YOU JOY AND HAPPINESS.

DON AND NORMA WILFONG

PLBs versus ELT's

Both Canada and Mexico will require a 406 MHz Personal Locator beacon (PLB) on-board next year as a condition of entry.
Although not mandatory in the US, satellite monitoring of existing 121.5 MHz ELT's will cease effective Feb 1, 2009 and the following may be worth noting …

The probable circular error for triangulation of a 121.5 ELT is about a 12 NM radius. This figure is for SATELLITE accuracy, but in actual practice Civil Air Patrol aircraft are able to determine a 121.5 ELT's position down to 100 yards. On the other hand, the amount of time it would take for a rescue using [121.5] ELT's is fairly long.
It typically takes about a half hour for the Air Force Rescue Coordination Center to detect an ELT and confirm it's location (to about 12 mile radius).
They call a CAP unit, which takes up to an hour before an aircraft sortie is launched and another half hour to locate and determine the position.
Another half hour to one hour for a ground team to be dispatched and locate the ELT results in somewhere **around 4 hours** before you would be rescued using a 121.5 ELT.

The Doppler shift error for a 406 ELT SATELLITE is well under 3 nm. Now, with the 406, your position can be determined directly by the satellite and the ground team is dispatched without need for an aircrew.
Rescue time for the 406 could be in the **1-2 hour range**.

We'll have to wait and see if this is realized in practice.

Mike Bond

Pulsing digital oxygen control

Mountain High Equipment and Supply, Redmond, has unveiled its new MH EDS-02D1 and EDS-02D2 oxygen delivery systems.
Mountain High's system does not dispense oxygen during the two-thirds of the breathing cycle — exhaling and pausing before inhaling again — when oxygen is not being delivered to the lungs. This pulse demand system consumes four to six times less oxygen than a constant-flow system. It monitors oxygen consumption to prevent hyperventilation. "Consequently, it eliminates that feeling of anxiety that one gets", CEO Robert Jamieson said. Operation is automatic after the system is turned on, and adjusts automatically to any altitude up to 25,000 feet. The latest system employs new algorithms to precisely profile breathing characteristics. The single-place system costs less than $1,000, a two-place system starts at $1,089 and both can be expanded to accommodate additional passengers.

Fuel-saving with your ASI

By Dave Hirschman, from AOPA ePilot

The airspeed indicator (ASI) can tell you a great deal about how to fly more efficiently, but few pilots know how to decode its drag-reducing, fuel-saving, and range-extending message.

According to Jack Norris, an aerospace engineer and technical director for the 1986 Voyager around-the-world flight, a simple, mechanical ASI (and an understanding of the aerodynamic drag chart and an airplane's best rate of climb speed) is all we need to maximize speed vs. drag. Minimizing drag is the key to reducing fuel burn and extending range.

"The airspeed indicator tells us a lot more than just ram air pressure," said Norris, author of The Logic of Flight, a self-published book on aircraft efficiency and propeller design. "Your ASI can also tell you the most logical and efficient way to fly without being wasteful of fuel or time."

All pilots learn in ground school that any airplane's best rate of climb and longest range is found at L/D max, that point on the drag chart where the induced and parasitic drag curves meet, and total drag is lowest. Pilots seeking peak efficiency can climb as high as possible and fly at L/D max for the absolute minimum fuel burn over the greatest distance.

But here in the real world, few of us would ever choose to fly so slowly.

"No one wants to plod along at some low speed with mushy controls," said Norris, a private pilot for 60 years. "You do that if you're flying the Voyager around the world. But even then, it took nine days, three minutes and 44 seconds. What we're really looking for is flying as fast as possible with as little drag as possible."

Norris points to what he calls the "Max Speed vs. Drag" point on the chart. There, pilots can gain 31 percent more speed while paying a paltry 15 percent drag penalty. Since true airspeed (TAS) increases with altitude, at 12,500 feet, for example, pilots can obtain an additional 21 percent payoff for a total 59 percent speed gain over L/D max.

"Who wouldn't want to go 59 percent faster for 15 percent more drag?" Norris says. "Aerodynamics is full of tradeoffs—but this one's a bargain."

The best speed vs. drag point is always 1.31 times L/D max (or VY, the best-rate-of-climb speed), Norris says. Higher speeds are possible at lower altitudes and higher power settings. But since parasitic drag increases at the square of indicated airspeed, the additional speed carries a high price in dramatically higher fuel consumption and reduced range.

"Very few pilots really understand that the shape of the total drag curve is really a leaning, lazy J," Norris says. "There's a place where the curve flattens out and you can fly much faster for a very small increase in drag. You don't need any special equipment or fancy math to figure it out. All you need to know is your aircraft's VY and add 31 percent."

Max efficiency profile

Norris recommends the following profile for virtually all piston-engine, general aviation aircraft: After takeoff, simply cruise climb at (1.31 times VY) as high as possible with the throttle wide open. When you've reached the maximum altitude at which you can maintain your target IAS with the mixture properly leaned, you're done.

The pilot's operating handbook for the AOPA's IO-550-powered Beechcraft Bonanza BE36 seems to bear out Norris' IAS-based strategy.

At a total weight of 3,400 pounds, VY is 96 knots, making the ideal target IAS 126 knots. On a standard day, with the throttle wide open and 2,500 rpm, mixture set 20 degrees lean of peak, the Bonanza shows 129 KIAS at 14,000 feet, 157 KTAS, and a fuel burn of 10.6 gph.

That's about 14 KTAS less than the Bonanza's best-power setting at 6,000 feet where the airplane travels 171 KTAS at 14.4 gph. So, on a 500-mile trip, flying at high altitude and optimal IAS adds less than 15 minutes flying time and saves 8.7 gallons of avgas (or more than $52 at current prices). Put another way, optimal IAS at altitude reduces speed 8.2 percent while slashing fuel consumption 20 percent.

Norris says his IAS-based approach works equally well for planes with fixed-pitch and constant-speed propellers and all engine sizes.

"Flying is subject to the same physical laws, and the drag curves apply to all aircraft," he said. "Airplanes only know indicated airspeed. A wing doesn't know how fast it's moving over the ground, and it doesn't care. Understanding IAS allows pilots to minimize drag, fly more intelligently, and get the most efficiency and utility out of their aircraft."

Give it a try

Try Norris' IAS method and let us know how it works for you.

Environmental factors such as winds aloft and icing levels are sure to influence your aeronautical decisions. One rule of thumb is to climb as quickly as possible when tailwinds are present to maximize the time such favorable conditions can act upon your aircraft. In strong headwinds, lower groundspeeds at altitude can negate any gains in TAS or reductions in hourly fuel burn.

Also, physiological factors and the availability of supplemental oxygen can come into play at the higher altitudes Norris' IAS-based strategy suggests. Federal aviation regulations mandate that pilots use of supplemental oxygen whenever they're above 12,500 feet cabin pressure altitude more than 30 minutes, and at all times above 14,000 feet. (But studies show hypoxia can begin at significantly lower altitudes for many people, and headaches, dehydration, and fatigue are common after prolonged periods at 8,000 or 10,000 feet without supplemental oxygen.)

Are you willing to fly higher and give up some speed for better fuel efficiency?

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