PUTTING WINGS ON YOUR DREAMS

February 2019

VOLUME XVI – ISSUE 2
Editor – Jim Manley

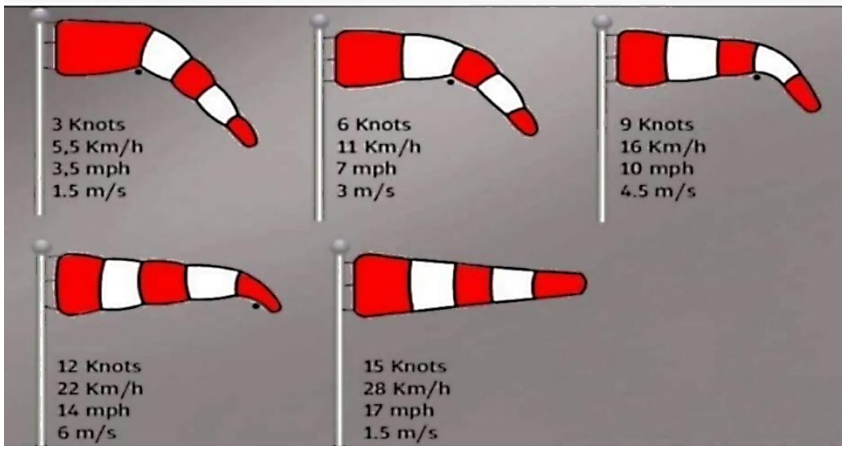
Send articles and pictures to the editor at
jim@jrmanley.com

My name is Jim Manley and I now have the privilege of editing this newsletter. I'll be playing with the format and features over the next couple of months. Let me know what you'd like to see.

Do you have pictures or stories to share? Don't be bashful. Email them to me at jim@jrmanley.com

TIPS AND TRICKS

Windsocks are actually calibrated to provide a visual indication of wind speed.



From Now On, I'll Always…

by John Zimmerman
(Reprinted from Air Facts – 24 Feb 2019 edition)

Airlines spend a lot of time crafting standard operating procedures (SOPs), which describe in exquisite detail how each part of a flight should be conducted. For the average private pilot, such formal SOPs are probably overkill and remove some of the flexibility that makes general aviation so rewarding. Instead, a few simple habits can prevent embarrassment – or worse.

Read more…

Jim Eyre, reports that a student recently experienced what may have been carb ice while on the ground at Nampa. Here's a carb ice refresher.

CARBURETOR ICE AND HEAT BOXES

by Jim Eyre, Director of Maintenance

(Reprinted from Feb 2016)

Since the beginnings of aviation and piston engines, carburetor icing has been a problem that mysteriously caused engine failure or interruptions of power. While modern engines and technology have eliminated carb icing with the use of fuel injections systems, many older aircraft engines (read t-craft) still use the time-tested carburetor to deliver the fuel mixture to the cylinders.

Recognizing and effectively dealing with carburetor ice can mean the difference between a

pleasant day at the airfield or serious injury or worse. Many pilots do not know how dangerous carburetor icing is until it is too late. Pilots never see the ice that develops in the carburetor. You can't smell it, taste it or breathe it. The single most telltale sign of this invisible demon is the way your engine starts to misbehave. Sputtering, coughing and a subsequent loss of power will make you sit up and take notice. This is a serious condition that requires evasive action before it develops into something much more serious. To what extent it worsens and causes trouble will be determined by the percentage of humidity, temperature and how much power is being applied. Under the "right" conditions, icing can begin, adhere strongly to the carburetor wall and cause fuel starvation within seconds. This is something you, as a mountain pilot, will not want to happen when you're 200 feet in the air on a backcountry strip. The conscientious pilot must understand how and why carburetor icing develops, and how to stop it before it starts.

The earliest piston aviation engines dating back to the Wright Brothers used a primitive carburetor (invented in 1882) to deliver vaporized fuel to the internal combustion engines to promote combustion. A piston engine must be supplied with a mixture of fuel vapor (not liquid fuel) within the optional ratios to operate properly. The earliest carburetor required no mechanical or electrical power, had a few moving parts and was an ingenious invention. As is often the case with new inventions there was a downside –the problem that this design promotes icing in the carburetor. The float-type carburetor (on our aircraft) contains a venturi, a float chamber to contain fuel, a discharge nozzle and throttle plate. The main disadvantage to a float-type carburetor is that the vaporization of fuel from the discharge nozzle along with the pressure drop in the venturi causes a significant reduction in temperature. This temperature reduction can vary, depending on factors such as OAT, humidity, power setting, and type of fuel being used.

If there is sufficient water vapor in the air and the temperature reduction lowers to the freezing point of water than ice forms in the venturi and throttle butterfly. The temperature of the throttle butterfly and associated metal parts can be below freezing and once moisture makes contact with these cool parts, ice forms – even in summer is possible, especially in older Cessna aircraft. Although carburetor icing can develop at ANY temperature and altitude, it is generally accepted that OATs in the 45 to 70-degree Fahrenheit range and 60 percent humidity are ideal conditions for carburetor icing. That's not to say that it can't happen at 80 degrees above or 10 below zero. A rainy night before the flight, with high humidity and temperatures between those figures is the recipe for icing. If the dew point is high, watch out!

Actual mechanics of the carburetor contribute to the problem simply by design. As the gas and air mixture are forced into the venturi, evaporation begins. It's much like pouring rubbing alcohol on your skin. It feels cold when it starts to evaporate. In the airplane's carburetor the mixture starts this process but much faster. The more power you add the faster the process. Scientist call this action "heat evaporation". The 100LL we use absorbs heat as quickly as possible in order to become a gaseous element. The venturi action then accelerates the process, and ultimately, icing develops.

Our engines depend upon air induction and proper fuel mixture to provide them with a proper "blend" of the two. When the fuel mixture hasn't been properly leaned, a greater amount of fuel than necessary is allowed into the carburetor. This creates fuel waste, possible

spark plug fouling and lowered horsepower. These problems become critical to takeoff or to the power needed for a go-around. With the changes in altitude, temperature and power settings during a typical flight there are multiple opportunities for carburetor icing to go undetected until engine power output is severely compromised. A carb heat gauge (64R & 89E for example) is a nice to have option, especially due to the induction design and carburetor location under the engine.

The signs of carburetor icing can be a gradual decrease in engine rpm (or manifold pressure) when operating at a fixed throttle setting as well as backfiring or a rough running engine. When operating w/o benefit of a carb temp gauge, full carb heat should be routinely used. However, in the case of severe icing or extremely rough running engine it may be necessary to operate at a partial heat setting, gradually feeding full heat to prevent rapid ice melting and a total engine failure.

Government regulators have required carburetor heater systems on aircraft since the early days of aviation. These systems must be fully operational for every flight (do you check carb heat during static run up). Our systems are properly maintained by Aero Services however things can go astray before inspections.

Carburetor heater box normally uses filtered ram air to supply the engine air intake system. A diverter valve or butterfly similar to a throttle butterfly is used to select hot air drawn from the exhaust manifold heat shroud or filtered, unheated air. The butterfly valve is normally in the cold position and can be moved to the heat position by means of a push-pull cable in the flight management deck (no longer PC to use “cockpit”) of the aircraft. The normal position allows for full filtered air during flight or ground operations. Our capable team of mechanics at Aero Services do a great job of carefully inspecting cabin heat shrouds, ducting and valves and repairing as necessary before returning an aircraft to service.

Carburetor heat boxes have been troublesome since the requirement to have them back in the early days of aviation. While there have been some improvements to the manufacturing processes, these boxes take a beating from vibration. If you have the chance, stand back and take a look at the carb heat box installation when the lower cowling is off. This will give you some insight as to the ruggedness needed of the installation and requirement for frequent inspections and maintenance.

The dangers of operating w/o a properly functioning carb heat system can be many, as it's not just to prevent or remove ice but to provide an alternate air source should the cold outside air ice over or plug up the air intake with trash, bugs, or dirt. We try and not wait until something breaks to fix it (hence 100 hour & Annual inspections) but rather inspect and repair to prevent failures or expensive damage to the aircraft, engine and associated equipment.

Under certain conditions carb icing can occur while taxiing. If you don't leave the carb heat on for at least 10 seconds during run-up check the ice might not melt and could cause lower power output during takeoff and possibly engine failure. It is extremely important the function of carburetor heat be checked on every preflight run-up to ensure it is operating correctly. A larger than normal carb heat drop or no drop during run up should be reported to maintenance. These squawks should be investigated ASAP.

Final Thoughts:

Our carburetor heat systems are maintained in good condition. Always use carb heat well in advance of engine power reductions such as when doing extended low power glides or when preparing to land. Clear the engine often while at low power settings to ensure that the carb heater is supplying sufficiently heated air and that the engine is still responding to throttle input. Review any specific information to your airplane or general documentation to stay informed. Remember, know your carburetor and its symptoms of ice danger. Someday it may save you.

Remember, that a good pilot is always learning. Fly safe, have fun and as Jim Hudson says – "**Don't do anything stupid**."

ELECTIONS

Election of club officers and directors were held at the January membership meeting, 29 Jan 2019.

The following are the results of the election.

- President: Ben Brandt
- Vice President/Membership: Jim Hudson
- Treasure: Dennis Wheeler
- Secretary: Jim Manley
- Director of Safety: Dave Thomas

Welcome Jim Manley and Dave Thomas as new board members.

The Board will discuss further adjustments to board member duty assignments at the next regular Board meeting on 12 March. A link to the revised duty distribution will be posted here in the March newsletter.

In addition, the board recommended, and membership passed a motion, to add a general membership meeting in August, the last Tuesday of the month.

CALENDAR

March 2019

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Calendar of Events:
See the club web page for updates

3/12/2019 - Board Meeting
3/10/2019 – Accounts due
3/20/2019 - Accounts past due
3/26/2019 – Membership meeting

If you have any ideas for safety meeting presentations or would like to arrange a presentation, contact Safety Director Dave Thomas

MEMBERSHIP STATS

Member Statistics:
110 Members

22 on wait list.
37 Class I Members (34%)
73 Class II Members (66%)

12 Inactive (voluntary suspension)
17 Suspended (BFR/Med/Attend/Billing, Including the 10 Inactive)

13 Student Pilots
72 Private Pilots
01 Recreational Pilots
11 Commercial Pilots
13 Air Transport Pilots
35 Instrument Rated Pilots

(Please report any BFR's, IPC's, Upgrades, or new ratings to Jim Hudson)

James Reed - Class II
Jason Reisinger Class II
Byron Schmidt Class I
Ken Windley - Class II

BFR's
Jeff Adams
Tadd Jones

New Ratings / Accomplishments

New Members
John Barsness - Class II

T-CRAFT STATS

2018 Totals

Top Flyers:	**Hours Flown**
Bill Howard	109.7
David Thomas	106.7
James Patterson	96.7
Jiyun Li	75.0
David Nejely	68.1
Slay Windham	67.9
Stefan St. Marie	65.9
Kent Murri	64.9
Tad Jones	64.7
Elizabeth Carter	61.3

Aircraft	**Hours Flown**	**Dollars Billed**
N13686	576.3	$42,338
N4464R	387.7	$27,610
N67375	334.4	$20,380
N9989E	311.1	$38,898
N1293F	302.3	$25,478
N7593	214.1	$26,527
N1891X	179.9	$21,483
Totals	**2305.8**	**$202,715**

January Billing Period
Top three flyers:

Chris Nebrigich	20.2 hours
Bill Howard	12.9 hours
Wade Spradley	10.3 hours

The top three aircraft flown were:

N13686	52.1 hours
N67375	33.4 hours
N9989E	13.8 hours

The top billing aircraft were:

N13686	$3,908
N67375	$2,017
N9989E	$1,766

FUEL REIMBURSEMENT

$4.70 per gallon

REMINDER-We receive a significant discount from the AV Center published prices. PLEASE REMEMBER TO REMOVE YOUR FUEL RECEIPT from the fuel pumps so others will not see our fuel price. Also, please do not broadcast our price to non-members.

HOURLY RATES (New Rates Effective 1/31/2019)

N64375
$65.00

N4464R
$73.00

N13686
$75.00

N1293F
$90.00

N1891X
$125.00

N9989E
$128.00

N7593S
$128.00

SQUAWKS

375: Annual scheduled 18-22 March. Ammeter to be addressed. Radio squawk still pending.

64R: Engine break-in has started. Will continue as weather permits. Annual was completed. New seat rails on pax side. New lower instrument panel.

686: Getting an oil change. High use aircraft. Doing 50-hour oil change more often than every 30 days

93F: Squawk on cowl heater not working however it does work if safety switch on heater is engaged. If you don't know how system works, ask for help.

89E: Fuel bladder leak on right side. Replacement bladder on order and will be installed when possible. Safe to fly, but limit right-side fuel load to 20 gal max.

93S: Engine is ready to be installed along with new prop and governor. Break-in will commence when able. Top cowling being repainted. Due for IFR recertification.

NEW HANGAR UPDATE

- The electrical permit has been received

- The bolt inspection is pending
- The final occupancy permit should be issued a week after the bolt inspection.
- Thanks to member Jay Gooden for supporting the club with labor discounts to make the hangars affordable for the club

Final cost about $280,000 (impacted by a little less than $15,000 due to steel tariffs), of which a large component was asphalt. This is over our initial budget, but we expect to recoup the difference over the next two years with adjusted lease payments to compensate for the higher costs

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REMINDERS

HANGER SECURITY

- Please check to make sure you don't have the airplane keys or fuel card in your pocket.
- Make sure the plane and hanger are locked and secure; hanger door pins in, doors locked, hanger locked.
- Gust Lock installed, pitot tube cover installed. It gets windy at times in the hanger when the doors are open.

COLD WEATHER OPERATIONS

- If you did not read the article in the previous month's newsletter, please go to the following link on the club web page. If you did read it, it wouldn't hurt to read it again.

  http://www.t-craft.org/Reference/ColdWXOps.pdf

- As noted in the article, the tape on the bottom over the safety switch on some of the heaters may loosen up and need to be tightened for the heater to operate. If the heater doesn't turn on, check this out.
- Ben Brandt has offered to stop by the hanger the night before your flight and put the heat on.
- Note: In cold WX the circuit breakers may trip on some of the power posts when the heaters are on. Check the circuit breaker panel, its in the office, on the right as you enter the door. If you find it tripped, let Dave Thomas know.

WINTER FLYING HOURS

The club policy on winter flying hours is set out below. Winter flying hours ended February 25th at midnight.

> *5.4.3 "Use it or lose it" hour: In addition to monthly dues, members will be charged one of hour of 152 time at the scheduled rate if they don't fly the*

equivalent to that time during the month in any of the club planes. The "use it or lose it" hour is intended to encourage members to fly at least monthly to stay somewhat proficient.

5.6 Winter flying hours: During the months of December, January and February the monthly "use it or lose it" minimum flying charges may be combined in any of these three months. For example, if a member did not fly in December or January but flew the equivalent of three hours of 152 time in February, the December, January and February "use it or lose it" dollars would be applied to the February billing period. The same is true if the 3 hours were flown in any of the three winter months. If a member did not fly in any of the three winter months, they will be charged for three hours of "use it or lose it" time in the February billing period.

MAINTENANCE TIP

When we are pilots in training our CFI's instill in us good habits on how to care for our birds. As time passes, occasionally we all forget and become rusty pilots in relation to care and maintenance of our aircraft. The Maintenance Tip for today is simply, when cleaning the windscreen, use only vertical strokes. Do not use circular strokes. Over time, circular movement of the cleaning towel will leave a corresponding mark in the screen that will require replacement.

CARE OF YOUR AIRCRAFT

Take Time After Your Flight

We are continuing to see many instances of lack of care and taking the time to make sure that you're (and our) planes and hanger are put away properly. Gust locks, pitot tube covers not installed, flaps left down, doors not locked, seat belts not put away, master left on = dead battery, avionics master not turned off, lights not turned off (except its advisable to leave the beacon light on as a warning the master was left on), bugs not cleaned thoroughly from all leading edges, windows streaked, dirt and trash not cleaned out (plane and hanger), fuel card or keys missing from the key bag, key bag not zipped or put away, hanger door pins not fully secured, hanger doors left open, hanger lights left on, the hanger itself not locked, lock code not returned to 0000. There should be no need for any such reminders, as a matter of common courtesy we should leave an aircraft in a clean condition after we have flown it. We learned as early as first grade, if we create a mess, we clean it up. That's the grown-up thing to do. PLEASE take you time when ending your flight and be vigilant on taking care of these items.

Oil Usage

Fellow members/owners - in the big scheme of things OIL is relatively inexpensive. However, over time we have established a norm for each aircraft on how much oil a particular engine is comfortable with. Jim Hudson has taken his time to produce a comprehensive check list for each aircraft. Included in the pre-flight section it states minimum/maximum oil to check for. Do not go by what the POH says, i.e. engine has a 12 qt capacity. 93S for example would blow oil out breather tube along belly of aircraft until dip stick reads 8. Please use checklist for amount of oil necessary for all T-Craft aircraft. As I have

repletely said, if you are determined to dump more oil into sump than necessary please present yourself at plane wash to clean the bellies. I keep putting 6-7 Qts oil on back shelf and it disappears quickly. Remember to note oil used on log program. Also putting unnecessary amounts of oil into an engine really screws up any attempt to determine what actual oil usage is. An engine has to work harder if sump is over-filled with oil. Read Aircraft Oil Usage on our web site under Site Index.

DOM – James Eyre

Check Lists

The club has developed check list for each bird which contain key information on the plane from the POH and some club specific items; oil levels, tire pressures, reminders to log in-out, and clean up items. It's not mandatory that you use a club check list, in fact many members develop their own, which is a good way to get intimate with the details. We've had laminated version in each aircraft, but over time, they grow legs and walk off. Members are encouraged to print out a copy of the club check list for yourself or download the pdf version and have it on your iPad/phone/tablet or build one for yourself. There's a word file as well as pdf version of the club website under the Fleet page. I'm in the process of updating the check-list to include some of the newer avionics, and other items that crop up. If you happen to find any discrepancies or have comments, let me know – Jim Hudson

Schedule Master – 90 Day Attendance and Day/Night Currency

Some of you, in fact most by now have probably received email notices from SM that you're 90 day T-Craft attendance will expire on a certain date. A field was set up in the Status tab to show that expiration date in. This is a way to keep track and notify you of your upcoming 90 day attendance expiration date. You'll get a notice 30 day prior to that date from Schedule Master. You will also get a message after that notice when you log on to Schedule Master. As per club policy, your scheduling and flying privileges will be suspended if you exceed this date, and any future schedules will be canceled if you're suspended. You will NOT be automatically suspended by schedule master if this date is exceeded. You will get notification by the membership director when he suspends your privileges, since there are some circumstances for exceptions.

There are also two fields that you can use to keep track of your 90-day, day and night currency for carrying passengers. You can use those two fields if you wish to enter your expiration date and receive a notice 30 days prior to that date. Students can use the 90-day currency field to keep track of your 90 day endorsement to continue to solo.

BILLING

There have been a few mistakes made with the Flight Log System logging so I am writing this in hopes of helping with the billing accuracy.

1. The Flight Log System is NOT connected to Schedule Master in that if you Log a plane out in the Flight Log System and then decide not to fly, you need to log the plane

back in. Cancelling the flight in the Schedule Master on-line system WILL NOT cancel the flight in the Flight Log System. You have to do BOTH.

2. When you log a plane in PLEASE hit the GREEN FINISH button. If you hit the cancel button, the flight will not be logged back in making it very difficult and confusing for the next member to take that airplane.
3. If the Hobbs meter is inaccurate when you fly PLEASE call the person that flew before you and work it out. We are all owners of the planes and it is important that the billing is accurate.

Logging Tips

- Log before and after flights (Make sure it actually logs your time!)
- Please check hobbs time as this is the basis for billing / reconciling accounts and also for maintenance projections
- Enter fuel and oil destination
- Request from Jim Eyre to include a specific destination so that he can continue to project 100 hour / annual inspections
- Report any issues to me at 208.861.6274 / email regluvs2fly@gmail.com

Thank you and Happy Flying,
Reggie Sellers

Please Remit Payment In Full By The 10th Of The Month.

Your account will be PAST DUE if not received by the 20th and there will be a $10.00 late fee. There will be a finance charge if your account is over 30 days past due and flying privileges will be suspended

Member News

T-Craft member, **Jim Hudson**, will present his AOPA sponsored backcountry flying seminar here in Boise in April. See the data below for details.

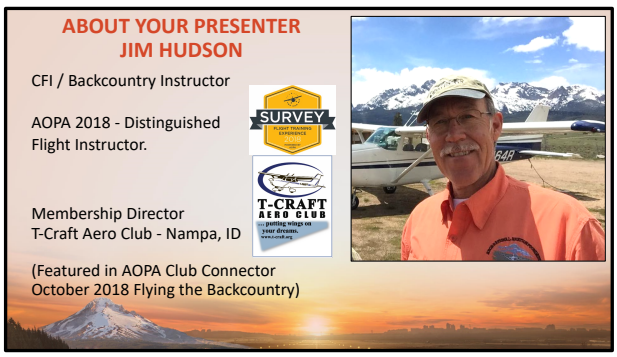
Coming April 22nd, 2019

Flying in the backcountry is an exciting and rewarding challenge with little room for error. It's an exacting environment that demands sound decision making, stellar stick and rudder skills, a thorough understanding of the weather, and an intimate knowledge of the airplane. Whether you're a seasoned backcountry flyer or flatlander, you'll enjoy this new seminar, which delves into conditions, challenges, and accidents unique to backcountry flying. Together with your seminar leader you'll examine lessons learned to fly safely in any operating environment.

The Air Safety Institute's safety seminars qualify for the safety seminar portion of the ***FAA WINGS*** program! aopa air-safety-institute/in-person-seminar

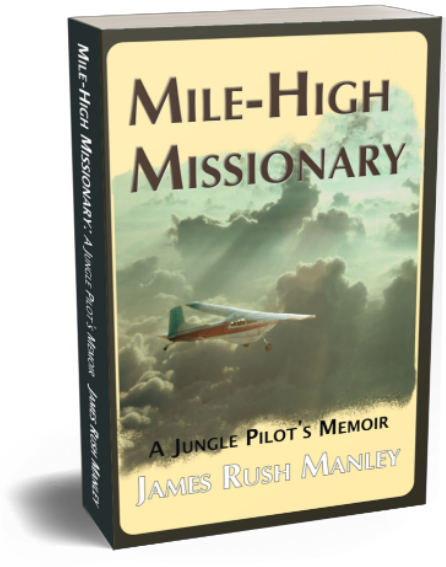
Date: April 22nd, 2019
Time: 19:00-21:00
Place: The Riverside Hotel
2900 W Chinden Blvd.
Boise, ID 83714-6629

This seminar is Sponsored by ITD Division of Aeronautics.
https://itd.idaho.gov/aero/



T-Craft member, **Jim Manley**, just published a book about bush flying in the Amazon Jungle and Andes mountains.

Mile-High Missionary – A Jungle Pilot's Memoir



The jungle pilot occupies a high visibility seat.

His role creates the convincing illusion of connection. But the truth is, he or she often leads a solitary life. He drops in from the sky, visits for 15 minutes, then goes. He touches many worlds but rarely becomes part of any.

The stories in Mile-High Missionary show how one pilot changed from hiding as a sky-creature to reentering the world of real people.

Sit in the pilot's seat as this missionary memoir flies you into the Amazon Jungle. Encounter the pilot's view. See what he saw. Hear what he heard. Meet who he met. Feel what he felt as he wrestles with his own hopes and joys, doubts and fears.

Experience bush aviation first hand as this Christian pilot asks the hard questions:

Is my airplane safe to fly?

Can I find one tiny scratch of an airstrip hidden in an immense jungle?

What if the weather changes?

Can I land and stay on the runway, then takeoff without hitting trees?

After all that, am I really helping my passengers' ministry?

Does my flying benefit the ex-headhunters I work among?

Am I honoring God, or just playing with airplanes?

Read how he juggled safety and service while doing a dangerous job, then found himself changed by the ones he served.

Amazon link: https://www.amazon.com/dp/B07KV6V54X

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