TC99S

# COMPASS

NOVEMBER
2022

## CALENDAR OF EVENTS

**November 12, 2022 - PAST**
Shutter Effect Seminar + WINGS Credit -
Signature, North County Airport (KF45),
Guest Speaker: JD DeBoskey - (Joint with EAA)

**December 9, 2022 - UPCOMING**
Annual Christmas Party - Missionary Flights
Conference Center, Fort Pierce (KFPR)

**December 10, 2022 -**
Annual Cookies for Controllers Distribution
(Multiple Tower Locations)

***January 15, 2023 -** Joint with Goldcoast 99s
Boca Raton Airport (KBCT)
Guest Speaker: Ursula Davidson
**RSVP Required Lunch included courtesy of hosts/sponsors*

**February 11, 2023 -**
Tour of PBSO Air Operations (Homeland Security),
Palm Beach International Airport (KPBI)

**March 11, 2023 -** Joint with Goldcoast 99s
Annual Girl Scouts Day
Wayman Aviation (KHWO)

- ***EAA Young Eagles Event | Sat. Dec. 3 | F45***

*email treasurecoast99s@gmail.com to VOLUNTEER*

- ***RAF Blackwater Fly-in | Nov. 18-21, 2022 |***

*(8FD3) Munson, FL - email singuanzo@raf.org to RSVP*

- ***Goldcoast 99s Scholarship** / Holiday Lunch |*

*Dec. 3, 2022 11:00 a.m.-3:00 p.m. | 94th Aero Squadron Restaurant RSVP via email katie@wayman.net*

# NOVEMBER MEETING

**WINGS Speaker: JD DeBoskey**

***Topics: Startle Effect, Pre-take Off Brief, Spin Recovery & Engine Failure***

### I. STARTLE RESPONSE EFFECT

a) Fatal general aviation accidents often result from inappropriate responses to unexpected events.
b) Humans are subject to a "startle response" when they are faced with unexpected emergency situations and may delay action or initiate inappropriate action in response to the emergency.
c) Ex. Captain Sully landing in the Hudson (~4 s are lost due to Startle Response), needed to combat the initial feelings of "this can't be happening" and "this can't be happening to me".
d) Sully chose to take actions which were 13 steps down the emergency checklist as he knew that they would not be reached until 1/3 of the way through the time they had remaining.
e) Airlines now simulate these emergencies, among others, to ensure proper preparation.

### II. EFFECTIVE PRE-TAKE OFF BRIEF:

a) If anything goes wrong while on the runway - set to throttle to idle, ease on the breaks, maintain centerline and abort takeoff.
b) Below 500 ft - pitch for best glide speed, fly straight & land straight
c) Above 500 ft - pitch for best glide, pick a field, fly to the field and attempt a restart.
d) Redbird flight sim at EAA Oshkosh Airventure - JD teaches the impossible turn.
e) Also offered to provide sim scenarios training in Red Bird at Sky Blue (F45) 11/19.

### III. SPIN RECOVERY PROCEDURE: HAVE MEMORIZED, NO TIME TO REVIEW CHECKLIST.

a) JD recommended practicing spins with a CFI or in sim at least once a year.
b) PARE - Power to Idle, Ailerons Neutral, Rudder Opposite to Spin, Elevator forward.
c) Standup - Military pilots recite boldface procedures verbatim and must sit down / not fly if one word is incorrect.

### IV. REVIEW CH.3 EMERGENCY PROCEDURES OF ANY AIRCRAFT YOU WILL BE FLYING.

a) Fly bomber pattern (uniform & close proximity to airfield) to increase chances of making it back to the runway if emergency occurs.
b) Glide ratio & bank turns.
c) Flight test-clear your engine during every run up (details at link above).
d) CFIT - Situational awareness is critical - know your options and which are the best.

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# SPOTLIGHT

## 99S PILOT STORY | AGE 54

## CAMI SUE HUSTON | STUDENT PILOT

**Occupation:** *Retired*

**Pilot Certificate:** *Student*

**When did you know you wanted to fly a plane?**
*When I tried skydiving I realized that I prefer staying in the plane.*

**Who was your greatest influence in your path to aviation?**
*Her husband.*

**What would you do differently in your journey if you could go back and do it over?**
*Start earlier.*

**Most people don't know this about you:**
*I was named after a racehorse.*

**What are your future flying goals?**
*To get my PPL and learn to fly a glider.*

**Want to be featured in the Spotlight?**
**Go to the google form or send me an email that tells us your story!**
**seasonsteahousejupiter@gmail.com**

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# HAPPENINGS

## DECEMBER MEETING

## Holiday Party
## Dec. 9th 5:30 p.m.

*Cookie Drop off for Controllers • Pot Luck • Toys for Tots Collection*

When: Friday Night 5:30 p.m.
Where: Missionary Flights International Hospitality Park
3163 Hammond Rd., Ft. Pierce, FL 34946
Who: Treasure Coast 99s, family and friends

### *Cookie Delivery to the Controllers*

Dates & Locations are:

**Saturday 12/10 TBD**
North: KSUA 9:30 a.m. & KFPR
South: F45 & KBCT - 8:00 a.m.

**Sunday 12/11 TBD**
South: KPBI & KLNA

**Please sign-up here so we can meet and deliver cookies together.


## "Toys for Tots"

Amazon link to ship directly to Hannah at MFI

DEADLINE FOR ONLINE ORDERS.


Next door to Ft. Pierce Airport (Treasure Coast Interational)
Take St. Lucie Blvd. to Hammond Rd.
Contact Hannah Umberger with any questions about Missionary Flights International.
https://www.missionaryflights.org/

## HOW ABOUT THIS POTLUCK?!

Turkey breast with mashed potatoes & gravy
Vegetarian lasagne roll ups
Roasted vegetable salad
Vegan spinach artichoke dip
Sliced veggies for dipping
Potato salad
Green salad
Salsa, guacamole and chips
Iced herbal tea
Cooler with ice and (40) water bottles
Bag of ice for drinks

Christmas decorations
Party pack of plates, cups, napkins
Decorations for the tables

## HOW CAN YOU HELP?

Set up for party will begin at 4:30 PM
No alcohol at MFI Hospitality center
There is an oven/refrigerator

Still need some Desserts...
Hannah will have sugar cookies & icing to decorate.
Best decorated cookie will win a prize!

Jody & Ray will bring music, karaoke supplies, and Santa for pictures.

Buy a gift for Toys for Tots or bring new, unwrapped toys to the party.

SUBMIT YOUR RECENT ACHEIVEMENTS, NEWS, ENDORSEMENTS, RATINGS, SCHOLARSHIPS, JOBS, TRAVEL:
seasonsteahousejupiter@gmail.com

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# PROCEDURES

## A GOOD PILOT IS ALWAYS LEARNING

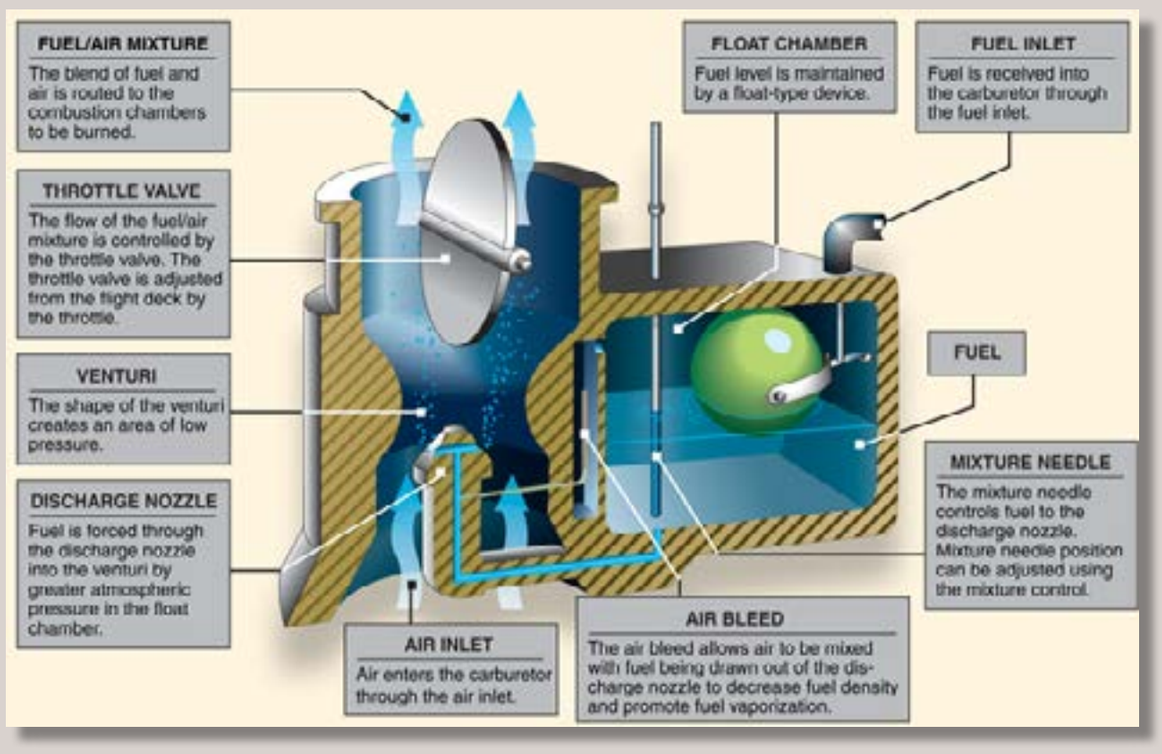
***Recognizing weather conditions and applying simple procedures can prevent avoidable accidents***

### The problem:

According to NTSB aircraft accident data, from 2000 to 2011, carburetor icing was a cause or factor in about 250 accidents. On average, carburetor icing causes or contributes to two fatal accidents per year.

Accident evidence shows that some pilots:

- Do not recognize weather conditions favorable to carburetor icing and inaccurately believe that carburetor icing is only a cold- or wet-weather problem.
- Have not used the carburetor heat according to the aircraft's approved procedures to prevent carburetor ice formation.
- Do not recognize and promptly act upon the signs of carburetor icing.





Engine Power Loss Due to Carburetor Icing

Click on NTSB image for safety alert.

*Case Study >>*

Piper Emergency Landing
Vero Beach 2021

# CARBURETOR ICING

## THERE'S A QUICK FIX FOR THIS UNEXPECTED VISITOR

*When you apply carburetor heat to melt ice that has formed in the throat, or venturi, of the carburetor, you may notice that the engine begins to run even rougher. This happens because the fuel mixture, already enriched because the ice is choking off some of the induction air flow, is suddenly made even richer by the addition of hot air.*

*This triple whammy can make the mixture so fuel-rich it will not ignite in the cylinders. The solution is to lean the mixture (and sometimes it takes some pretty radical leaning) and get a burnable mixture going to the cylinders.*

*Let's review some carburetor basics. Airflow through the carburetor venturi results in a pressure drop that draws fuel from the float chamber. The mixture control can vary the amount of fuel supplied for a given amount of air. Opening or closing the throttle actually changes the amount of air flow, and the carburetor automatically supplies (more or less) the correct amount of fuel to mix with that amount of air.*

*Carb ice forms because the pressure drop in the venturi causes the air to "cool," and draw heat away from the surrounding metal of the carburetor venturi. Ice then can begin collecting on the cooled carburetor throat. This is the same principle that makes your refrigerator or air conditioner work.*

*Meanwhile, fuel being drawn through the fuel discharge nozzle into the airflow atomizes into very fine droplets that evaporate easily. When the fuel changes from a finely atomized liquid to a vapor it, too, cools—stripping more heat from the surrounding metal.*

*The result is that the carburetor's internal temperature may drop below freezing, even on a warm day. If the ambient air contains sufficient moisture (which can be the case even in seemingly dry air), frost (carburetor ice) can form on the inside of the carburetor.*

*It's important to understand that carburetor ice results not from a decrease in airflow through the carburetor, but the change in pressure caused by the restriction in the venturi.*

*The carburetor operates according to Bernoulli's principle. This principle states, in essence, that the static pressure of a non-compressible gas varies inversely with the velocity of the gas as it flows through a tube of varying cross-section. (Due to the laws of the conservation of energy, total pressure remains constant, and because total pressure is equal to static pressure plus dynamic pressure, then dynamic pressure must increase.)*

*Static pressure decreases as a result of the increase of the velocity of the air flow, not as a result of the change in the mass of air flowing through the tube.*

*Each time a normally aspirated, four-cycle engine (which describes the engines in most trainers and simple four-place aircraft) completes two crankshaft revolutions, it draws a volume of air equal to the engine's displacement (less small losses because of throttle position and system friction) through the carburetor. Given a constant throttle position, this volume essentially remains the same whether the carburetor is wide open or clogged with ice.*

*If the carburetor venturi is constricted because of ice, the velocity of the flow must increase because the amount of air flowing to the cylinders is constant. This increase in velocity is much more significant than the small decrease in mass flow caused by the restriction in the venturi because of ice.*
*An increase in velocity, Bernoulli says, will cause a further decrease in static pressure within the venturi, which means the ambient static pressure acting on the fuel in the float bowl will push more fuel through the metering jet, resulting in a richer mixture.*

*In most cases, pilots can get rid of accumulations of carburetor ice by using carb heat. Nothing more is necessary. This proves that the system works as designed—warming the carburetor venturi and body—especially if we are conscientious in applying carb heat before reducing power.*

*Also, many of today's training airplanes use Lycoming engines, which mount the carburetor on the oil sump. This gives the carburetor another source of heat. Because of this, Lycoming engines seem to be less susceptible to carb ice.*

*Rarely do engines quit when you apply carburetor heat, so pilots have trouble accepting that it can happen. I was an unbelieving pilot until the engines in two different airplanes stopped on me in the same week. I was able to get the engines running again because I remembered to pull the mixture almost to idle cut-off in both cases. The engines generated enough heat to melt the ice.*

*Having adequate heat to melt ice becomes a real problem during prolonged low-power operations because the engine just isn't generating enough heat in the system. There are several partial solutions to this problem.*

*First, apply carb heat well before you reduce power. This preheats the carburetor and keeps ice from forming in the first place. If you do this when descending from altitude and in the landing pattern, you can push carb heat off on short final, so you won't have to worry about it in the event of a go-around.*

*Second, if you need to make a prolonged, low-power descent, "clear" the engine periodically by applying power, heating up the carb heat system, and burning out any ice that may have accumulated.*

*Finally, if applying carb heat results in loss of power, or even in significant "roughening" of the engine, you must immediately open the throttle and pull the mixture control out far enough to smooth out the engine. As the ice melts, restore the mixture gradually to the original position.*

ADVISORY CIRCULAR 20-113

https://drs.faa.gov/browse/excelExternalWindow/F5BD7904E845409D862569AE00783347.0001?modalOpened=true