Next WingNuts Chapter Meeting: ***Sat. Jun 11, 2022 1:00 PM – Hunter International Air-Field2***

Next VMC Club Meeting: ***Tues. Jun 27, 2022 6:00 PM - Hunter International Air-Field***

WINGNUTS PLANE TALK

Chapter 1321 / South Middle Tennessee

Our Chapter Home Page: https://chapters.eaa.org/eaa1321

INSIDE THIS ISSUE

Editors Note: For those that attended, Last Month's "Fly The Members Day" was a resounding success!!!

Thanks to

Bob Johnston for the use of his Hangar
Glen Smith and Bob for coordinating and supplying tables, food, etc.
Paul Redding for his time cooking the Burgers

Plus, A Special Thanks goes out to the following members that provided the Rides in their Airplanes

Mike Bishop -	Piper PA12, Super Cruiser
Paul Redding -	Russ Sandstead's Piper TriPacer
Thomas Scott -	Cessna 172
John DeYager -	Grumman Cheetah

PRESIDENTS CORNER:

Hi All,

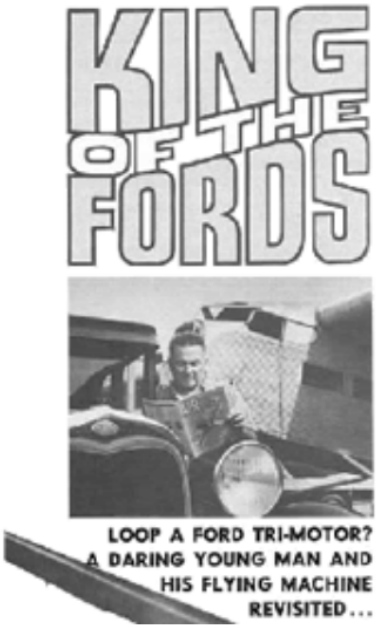
Last month's meeting at Lewisburg was an enjoyable day. We had pleasant weather and the event was well attended. I would like to thank Bob Johnston for opening up his hanger for us to use. I would also like to thank those pilots that either flew in our had their plane out for display.

A special thanks to Paul Redding, Mike Bishop, John DeYager, and Thomas Scott for flying our members. I believe they flew ten members that day. Also Paul had his Blackstone griddle out there and cooked up some wonderful burgers. I wish I would have gotten more; I know they would have been eaten up. Hope everyone that came out had as much fun as I did.

This month we'll be back at Hunter Field, so I'll be looking forward to seeing you all Saturday the 11th at noon.

Glen Smith
President

Airmanship – The Early Aviators



To some it may be a surprise that the…. Ford Tri-motor is capable of aerobatics. ***Click the Link for the video***

https://www.youtube.com/watch?v=c6dWtDk_rOI

That is unless it is in the hands of the right pilot anyway! Harold Johnson looped, spun and snap rolled Ford NC-9610, a 4-AT-B #53, in the 1930's. Johnson reportedly performed 17 consecutive loops during one demonstration.

So, Who was Harold Johnson?

He was an air show performer during aviation's Golden Age in the 1930s and 1940s, Johnson is the only pilot to have flown aerobatics in the monstrous Ford Tri-Motor.

A Chicago native and one of the air show community's earliest sponsored performers, Johnson was renowned in the aviation community for both his skills as an aerobatic pilot and his participation in air races, flying his Continental Special racing biplane.

During ten years of his life - from 1932 to 1942 he became known to millions as the "King of the Fords."

Born in Chicago, Illinois in 1910, his first solo flight was made in 1929. The ship was a Waco and not long after soloing, Harold formed the Aerial Transit Company and became a dealer for the Waco Airplane Co. Still, he wanted to travel and decided that a dealership was just too pedestrian for him. As a result, he launched himself into the barnstorming business, but with one important reservation. He knew that if he went into an already overcrowded occupation, he had better come up with something different . . . enter the Ford Tri-motor.

This was a real first. It had never been done, much less attempted. He figured that stunting the big bird for air shows would really knock their eyes out. So in 1932, Harold purchased a 4-AT Ford and set about learning how to wring it out. Rolling a six-ton, multi-engine airplane was a job that required more than guts. It also demanded new skills, new insights and new muscle coordination, as well as brawn.

Harold formed National Air Shows and with the Ford and other birds, started zooming and looping over the towns and cities of the East and Middle West.

He soon discovered that wingtip scraping cost him a new tip every six months, and other maintenance problems also plagued the fledgling company. So, Johnson established a traveling certified CAA repair station using a Ford truck bed that followed the show.

For the next seven years Johnson, sponsored by SOHIO Oil, starred at the National Air Races, stunting his Ford before thousands. And in 1931, he placed 2nd in the Bendix Cross Country, flying a Lockheed Orion.

However, he wanted a swift, maneuverable biplane to work in the shows and no factory built craft suited his fancy, he built his own.

In 1937, he rolled out his Continental Special NR-10537.

In this nimble, Continental powered biplane, he would aileron roll straight for the ground, fly upside down and generally warm up the crowd for the main event. Then he would land, taxi up to the Ford, hop out of one plane and continue the show in the other.

He never let the people relax. His usual procedure would be, do a loop on take-off, just to get everyone's attention and, at times, Johnson would shut off one engine and do his routine on two mills only.

Johnson liked the Ford and the Ford liked Harold. Once, when he came through Dearborn, Michigan, Henry Ford himself came out to see him perform and went away amazed at his skill. The crusty old gentlemen considered Harold "a most talented and daring young man."

Looping the Ford was Johnson's favorite maneuver and on one sortie before a crowd of 15,000, he made 17 graceful loops, breaking his own world record of 16.

One of the more interesting brain-storms Harold devised, was to mount the Continental Special atop the Ford, so that both aircraft could be flown to various air shows by one pilot. Somehow, this project was put aside and never reached completion, although the feat was accomplished later both by Great Britain and Germany.

Pearl Harbor brought the National Air Races to an end.

Harold sold the Ford and started ferrying Lockheed Hudson's (a light bomber aircraft) across the stormy Atlantic to England. These missions were hairy and most were bedeviled by malfunctions of major proportions. The loss rate on those wartime delivery routes was nearly 50 percent.

After a year of this incredible type flying, Johnson took on the less hazardous job of testing B-24's at Ford's Willow Run plant. These fat birds were a far cry from the kind of ship he liked to fly and he soon transferred to sunny California and Lockheed.

In 1944, he checked out in P-38s and began testing planes for delivery to the combat zones. It was interesting and demanding work, with his day filled by 7 plus G pullouts. Johnson also tested the Lockheed L-1049 Super Constellation and found, to his delight, that the rate of roll was better than the P-38's.

Toward the end of the war, Lockheed was developing the P2V (a new anti-submarine patrol plane) and there was a rush to complete tests to prove to the Navy that the P2V was the bird they wanted.

One day over Burbank, Johnson was flying the prototype, when the bomb door came loose, wrapped itself around the tail, smashed the rudder and ripped three fourths of the vertical fin off the aircraft. Johnson fought for control of the big ship, headed out over the desert, where he successfully landed the aircraft at Edwards AFB. Thereby not only saving the plane, but the entire P2V program.

With hostilities over in the Pacific and military planes no longer being built in quantity, test pilots went looking for other areas in which to apply their specialized talents.

The King of the Ford became a Beechcraft distributor in the east. After a few years he decided he liked California better, so he moved back and opened a shop at Van Nuys Airport where he restored another Ford Trimotor.

"Safety Quiz: Collision Avoidance"

Question 1:
Under which of the following conditions do most midair collisions occur?

- Visual; Nighttime
- Visual; Daytime
- Instrument; Daytime
- Instrument; Nighttime

Question 2:
According to the Aeronautical Information Manual (AIM), roughly what percentage of the time should a pilot spend scanning for traffic while flying in visual conditions?

- 30%
- 40%
- 50%
- 70%

Question 3:
Most midair collisions occur head-on.

- TRUE
- FALSE

Question 4:
The hemispherical rule establishes IFR and VFR cruising altitudes to help pilots avoid other traffic. At what altitude does the hemispherical rule begin?

- Flight level 290
- Above 3,000 feet AGL
- Above 3,000 feet MSL
- At all times in Class E airspace

Question 5:
In visual meteorological conditions (VMC), pilots on an instrument flight plan are not required to see and avoid other traffic.

- TRUE
- FALSE

Question 6:
Empty-field myopia is a tendency for the human eye to relax and lose focus of distant objects when there's insufficient detail in the field of view. The danger is that pilots may not be able to identify distant traffic when empty-field myopia sets in. To counteract this tendency, we must ____.

- Scan the instruments more closely
- Periodically refocus our eyes on the most distant object in sight
- Keep our eyes closed for several seconds at a time
- Wear sunglasses

Question 7:

On VFR sectional charts you may find areas designated as "alert areas." What are alert areas?

- Areas where law enforcement and the military conduct unmanned aircraft system testing (i.e., "drones")
- Areas that may contain high volume of pilot training or an unusual type of activity
- Airspace used primarily for Air Force pilot training
- Used for separating certain non-hazardous military activities from IFR traffic

Question 8:
Assume you're on flight following when ATC calls you and says "Mooney 123AB, traffic 12 o'clock, 4 miles, opposite direction of flight, 3,500 feet, Cessna Skylane, report in sight." You start looking for that traffic but see nothing. What is the correct phraseology for letting ATC know that you do not have the reported traffic in sight?

- "Negative contact"
- "We have them on our TCAS"
- "We're looking"
- "No joy"

Question 9:
When parachute operations are taking place in the vicinity of an airport, pilots of jump aircraft are required by FAR 105 to announce jump information on the Common Traffic Advisory Frequency (CTAF).

- TRUE
- FALSE

Question 10:
On approach to a non-towered airport, you hear no other aircraft on the CTAF and see no returns on your ADS-B traffic display. It is therefore safe to assume that the pattern is empty.

- TRUE
- FALSE

Click this link to take the quiz and receive a score
https://elearning.aopa.org/client/app.html#/quizzes/100047?embedded

boldmethod

What Makes an Airplane 'Airworthy?'

Understanding airworthiness is one of the toughest parts of becoming a pilot. Do you know how to make sure you're legal to fly a particular airplane?

There Are Three Pillars Of Airworthiness

Understanding what makes an airplane "airworthy" is one of the toughest parts of passing your first few checkrides. If you don't have a mechanical background, this topic might seem intimidating, so we'll break it down into three parts. Keep in mind, there's a lot that goes into making an airplane airworthy, and we can't cover it all in one article.

So, what does it mean for an airplane to be airworthy?...

1) It meets approved type design
2) It's in a condition for safe operation
3) Maintenance and alterations are performed in accordance with 14 CFR parts 21, 43, and 91.

Failing to comply with ANY of the above three criteria automatically makes an airplane not airworthy.

Maintaining vs. Determining Airworthiness

There's a big difference between who's responsible for maintaining vs. determining airworthiness. Here's what the FAA has to say about who's responsible for maintaining airworthiness under 14 CFR 91.403:

The owner or operator of an aircraft is primarily responsible for maintaining that aircraft in an airworthy condition, including compliance with part 39 of this chapter.

But who's responsible for determining that an airplane is in an airworthy condition? 14 CFR 91.7 says:

The pilot in command of a civil aircraft is responsible for determining whether that aircraft is in condition for safe flight. The pilot in command shall discontinue the flight when unairworthy mechanical, electrical, or structural conditions occur.

Understanding Airworthiness Certificates

Airworthiness certificates are valid forever, as long as it meets the 3 pillars of "airworthiness" we first discussed. They must be displayed "at the cabin or cockpit entrance so that it is legible to passengers or crew" (14 CFR Part 91.203).

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION—FEDERAL AVIATION ADMINISTRATION

STANDARD AIRWORTHINESS CERTIFICATE

1 NATIONALITY AND REGISTRATION MARKS	2 MANUFACTURER AND MODEL	3 AIRCRAFT SERIAL NUMBER	4 CATEGORY
N2631A	PIPER PA-22-135	22-903	NORMAL

5. AUTHORITY AND BASIS FOR ISSUANCE
This airworthiness certificate is issued pursuant to the Federal Aviation Act of 1958 and certifies that, as of the date of issuance, the aircraft to which issued has been inspected and found to conform to the type certificate therefor, to be in condition for safe operation, and has been shown to meet the requirements of the applicable comprehensive and detailed airworthiness code as provided by Annex 8 to the Convention on International Civil Aviation, except as noted herein.
Exceptions

NONE

6 TERMS AND CONDITIONS
Unless sooner surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator, this airworthiness certificate is effective as long as the maintenance, preventative maintenance, and alterations are performed in accordance with Parts 21, 43, and 91 of the Federal Aviation Regulations, as appropriate, and the aircraft is registered in the United States.

DATE OF ISSUANCE	FAA REPRESENTATIVE	DESIGNATION NUMBER
08-10-95	MARION W. WILLIAMS	SW-FSDO-OKC

Any alteration, reproduction, or misuse of this certificate may be punishable by a fine not exceeding $1,000, or imprisonment not exceeding 3 years, or both. THIS CERTIFICATE MUST BE DISPLAYED IN THE AIRCRAFT IN ACCORDANCE WITH APPLICABLE FEDERAL AVIATION REGULATIONS.

FAA Form 8100-2 (8-82) GPO 892-804

Required Maintenance Inspections

The annual inspection of the airplane must be completed no later than every 12 calendar months. You can find a list of what must be inspected in Appendix D of 14 CFR Part 43. Once an annual inspection is completed, the aircraft must be granted a return-to-service by an A&P with an Inspection Authorization (IA).

What about if you're flying for hire or flight instruction, if given for hire? You must now complete a 100-hour inspection under 14 CFR 91.409. You can overfly this 100-hour limit by up to 10 hours, but only to reposition the aircraft for its required 100-hour inspection.

An annual inspection can be completed instead of a 100-hour inspection. While the inspections are nearly identical, the only tangible difference is that an annual inspection must be given by a mechanic with IA qualifications.

Alternatively, your operation might be approved to complete a set of "phase inspections." These allow less maintenance time for each individual inspection. And while the entire aircraft is inspected each time, mechanics focus on specific portions of the aircraft per each "phase."

There are a few other inspections that must be completed on a rotating basis:

Emergency Locator Transmitter (VFR/IFR every 12 calendar months or when the ELT has been used for 1 hour or 50% of useful battery life) - 14 CFR 91.207

Transponder (VFR/IFR every 24 calendar months) - 14 CFR 91.413

Static System (IFR every 24 calendar months) - 14 CFR 91.411

Each Altimeter (IFR every 24 calendar months) - 14 CFR 91.411

Automatic Pressure Altitude Reporting System (IFR every 24 calendar months)

As a follow up to last month's Density Altitude Articles, here are the….

3 Factors That Affect Density Altitude

If you're a pilot, you know that a higher density altitude means less performance. And, you know that on hot days, density altitude works against you.

But, how much do temperature and pressure actually affect density altitude, and what role does humidity play? Take a look...

Density: Why It Matters

Pressure, temperature and humidity all affect air density. And you can think of air density as the mass of air molecules in a given volume.

More air mass flowing over your wing allows you to generate more lift, and more oxygen mass in your cylinder allows you to burn more fuel - meaning more power.

Increasing air density increases your engine, propellor and wing's performance.

Decreasing air density decreases performance.

The Starting Point: Pressure

You can think of pressure as the weight of a column of air. And, as the amount of weight increases, you cram more air molecules into a given volume. So, for a given volume of air:

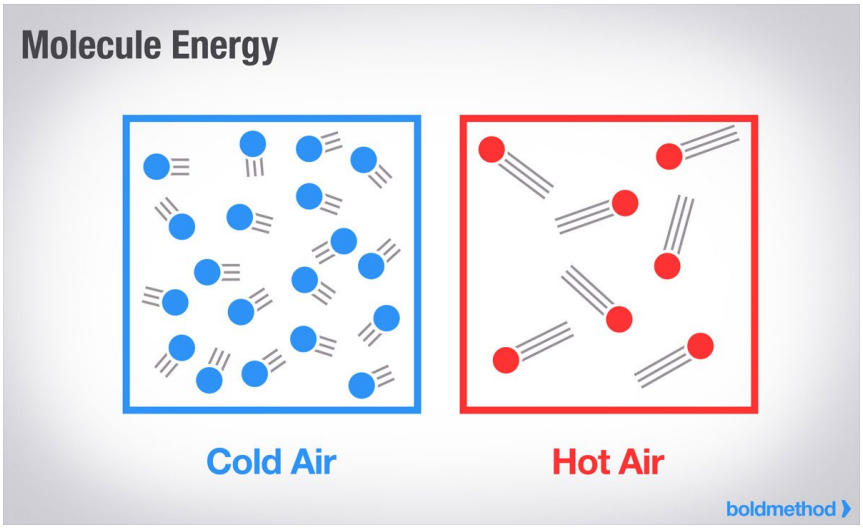
*When the pressure is **greater than standard**, you have **more air molecules** in the volume than you would on an standard day, and*

*When the pressure is **less than standard**, you have **less air molecules** in the volume than you would on a standard day.*

In fact, increasing the pressure by one inch of Mercury (inches Hg), or 33.9 millibars (mb), decreases your pressure and density altitudes by 1000 feet - so your airplane performs like it's 1000 feet lower.

The sea level pressure usually ranges from 28.9 inches Hg to 31 inches Hg (980 mb to 1050 mb), which means that your aircraft often performs as if it's 1050 feet below or above your actual altitude.

The Summer Factor: Temperature
Temperature also affects density altitude. When you heat the air, the air molecules have more energy. And, when they have more energy, they spread farther apart.



When the air is warmer than standard, it's less dense and performance decreases. The standard temperature at sea level is 15 degrees Celsius, or 59 degrees Fahrenheit. As you climb, the temperature decreases about 2 degrees Celsius per 1000 feet. But how much of a factor does non-standard temperature play?

Imagine you're in Miami, Florida during July, where the average temperature is 83 degrees Fahrenheit (28.3 degrees Celsius). Miami's essentially at sea level, so on average during July, the temperature's 13.3 degrees Celsius above standard. *How much does your density altitude increase?* **It increases 1535 feet - that's on an average day!**

How about Denver, Colorado? Denver International Airport sits at 5434 feet, and its average temperature in July is 88 degrees Fahrenheit (31.1 degrees Celsius). *On an average day in July, Denver's temperature is 27 degrees Celsius above standard!*

What does that do to Denver's density altitude? On an average July day, **the temperature increases Denver's density altitude by 3012 feet to 8446 feet!** That's why every one of Denver International's runways is at least 12,000' long - and one is 16,000' long.

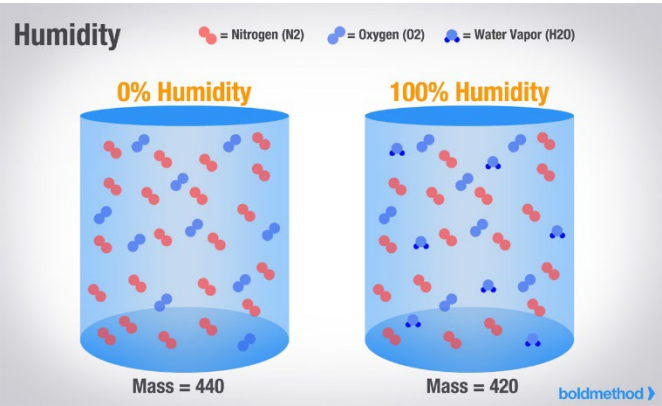
Humidity: The Factor You Don't Compute

Did you know that humidity also plays into density altitude? Air is made up of 78% Nitrogen, 21% Oxygen and 1% other gasses. The amount of water vapor in the air varies, but it can contribute up to 1%.

In the atmosphere, Nitrogen usually exists as a N_2 molecule - which means two Nitrogen atoms are bound together. Since Nitrogen's atomic mass is 7, one Nitrogen molecule weighs 14 units.

Oxygen in the atmosphere generally exists as a O_2 molecule, which means two Oxygen atoms are bound together. Oxygen's atomic mass is 8, so one O_2 molecule weighs 16 units.

Water molecules are made up of two Hydrogen atoms, each of which weighs one unit, and one Oxygen atom, which weighs 8 units - so a molecule of water vapor weighs 10 units.



What's with all of the chemistry?!? *Water vapor weighs less than the Nitrogen or Oxygen molecules that make up the rest of the air.* And, water vapor takes up about the same amount of space. So, **when you have more water vapor in the air, the air has less mass - which means it's less dense.**

How much of an effect does humidity have?

During July in Denver, the average daily low relative humidity is 22%, and the average daily high relative humidity is 72%. Unfortunately, factoring humidity into density altitude is complicated, but there's a great calculator for it here.

Lets use an average July day in Denver when the temperature's 31.1 degrees Celsius. Adding 22% humidity increases the density altitude by 146 feet to 8592 feet. At the average high humidity of 72%, **the density altitude increases by 480 feet to 8926 feet.**

You can see that humidity doesn't have as much of an effect on density altitude as temperature and pressure do, but it's something to consider. *If the humidity's high, your aircraft could perform like it's several hundred feet higher.*

What's It All Mean?

Density altitude's always a factor you should consider - no matter when you're flying. And when the weather's hot and you're at a high altitude, it can make a big difference in performance.

LOL

Editors Note: In last months Newsletter I provided a discussion on using the aircrafts Attitude and engine RPM to determine Airspeed in the event of a Pitot Static Failure.

Since a failure of the Pitot Static System may also affect the accuracy of the Altimeter, this month we'll discuss a process that can be used to determine aircraft Altitude (Height) that allows you to properly fly the pattern to a landing.

What to do in the event of "Pitot-Static Failures"

If you attended last April's VMC Meeting you will recognize the following information

Question, if your Altimeter is providing erroneous indications, how will you tell when you are at pattern altitude, then fly Base and Final at a safe altitude without being too high or too low?

One Answer may be to look for COWS!!!! I read somewhere that you can begin to see the legs of a cow at 800' AGL

The more correct answer is - understand the principles of **TLAR — "that looks about right."**

Flying by TLAR (pronounced "T-LAR") is known and used among the Soaring Community. But, isn't discussed much for us Powered Guys.

But, you may be already subconsciously using it. TLAR, is a teaching method for performing an approach and landing that is based on angles as opposed to elevations and distances.

Using angles automatically compensates for variations in altitude. Understanding and using TLAR is the key to our questions -

How will we know when we are at or at least close to Pattern Altitude?
How will we know our height as we Descend to the Runway?

As you probably know, we aren't able to accurately "judge" our Altitude when we are high (above approximately 2,500 feet). That is because we judge distance (Height) using visual clues

Such as, our depth perception based on the relative sizes of familiar things

Houses, Trees, Animals, and People all appear smaller or larger as we get higher or lower

AND

The angle to a reference points on the ground

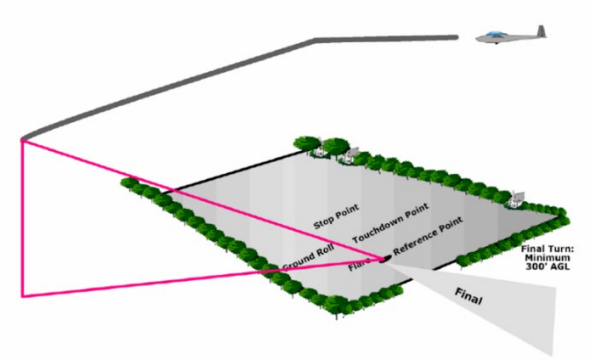
When between 2500 and 500 feet, angles are the most important in determining our height because our depth perception is only accurate below 500 feet.

TLAR works best the closer you are to 800 - 1000 feet above the ground on Downwind.

As you approach the airport and get within 1/2 - 1.0 nm from the runway on downwind, your sight picture needs to transition to looking across at the runway at a 30-45 degree angle

This is the "dip angle"

The dip angle is the Angle between (1) an imaginary line drawn from the pilot's eye to a chosen point on the surface and (2) an imaginary horizontal line drawn from the same chosen point on the surface to the point on the surface which is directly below the glider.



Surprisingly our brains are automatically Judging Angles and determing our height above the ground. So, we are already subconsciously aware of our height. As you begin to apply TLAR to your flying you will be surprised how close your altitude guesses really are

To become accustomed to using TLAR

First, begin by paying special attention to what 1,000 feet agl looks like out the window.

Once established 0.5 - 1.0 nm distance from the runway on downwind, the angle between your Aircraft and the Runway should be 30 – 45 degrees

NOTE: The judgements made on the downwind leg are the most important for setting up for a proper Base and Final

When on Downwind, remember your Attitude Flying numbers. Such as, for a 172

Reduce RPM to 1900, Maintain your nose on the Horizon in Level Flight, this will result in a given Airspeed

As you continue on the downwind leg, be aware if you are high or low by using the angle between you and the runway.

IF, the angle is Less than 30 degrees
You are either
LOW
OR
Too Far away from the Runway

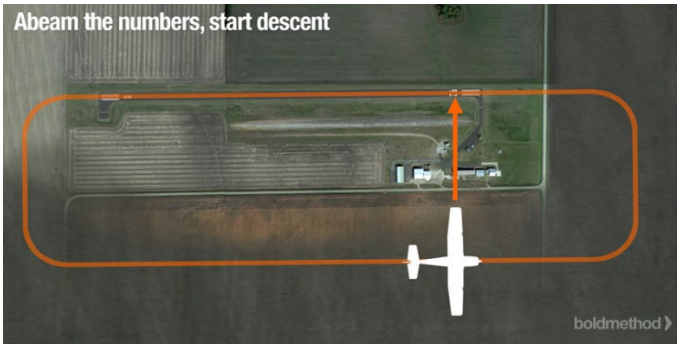
You should Adjust RPM and Ground Track as required

IF, the angle is Greater than 45 degrees you are either
HIGH
OR
To Close in, to the Runway

You should Adjust RPM and Ground Track as required

When Abeam the Touchdown Point

Change the focus point of the angle to your chosen touchdown point



Since our depth perception becomes most accurate below 500 feet, you should try to be at 500 feet at this point. Begin to descend by reducing RPM to 1500-1600, pitched for 500 FPM, Readjusted with each notch of flaps

When you are at a 45 degree angle to the Aim Point, Turn Base and maintain a proper descent attitude picture to the Runway using RPM

Base Leg

The base leg needs to be long enough to allow adjustments in your Glidepath to the Runway

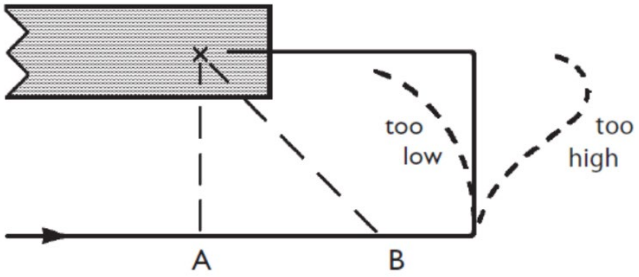
As soon as possible, after the turn to base leg, look at your intended touchdown point and make a determination if you will be high or low when you make the turn onto final approach

Too low?

Turn early towards the landing area, cutting off some of the base leg, and add RPM

If high?

Turn away from the landing area slightly to extend the final approach, and reduce RPM



Final Approach Leg

As you approach the extended centerline of the runway, start a medium banked base-to-final turn toward the runway

Turn Final at the appropriate time

Pitch for the proper Attitude and Adjust RPM as needed to stay on Glidepath

TLAR is also Useful in the event of an Emergency Landing

You can use the Angles to determine if you can make it to a landing spot or not

If the angle to the field is steep, you can predict the gliding distance is within reach

If the angle to the field is shallow you probably would not make it to that landing spot

Once you are ready to set up a pattern for your chosen field you can use the angles as you fly to your touchdown point

CAUTION: When interpreting the Angles, You must include many other variables that could affect them, such as

Aircraft Glide Ratio
Headwind
Tailwind

As a way to become accustomed to using TLAR, begin playing a game with yourself by guessing your height in the pattern. You will be surprised how fast you will build a pretty good sense of your height.

You will know you have mastered Attitude Flying and TLAR when you are able to fly the airplane completely around the pattern with the altimeter, airspeed indicator and maybe more instruments (Artificial Horizon) covered up

At that point You will have all the skills you need to apply Attitude Flying and TLAR to your "Bag of Tricks"

Oddities

In the “What was he Thinking” Category

JATO Rocket Strapped to a Car

It seems that a guy had somehow gotten ahold of a JATO unit. He drove his Chevy Impala out into the desert where he attached the JATO unit to his car, jumped in, got up some speed and fired off the JATO!

It is estimated that the car would have reached maximum thrust within five seconds, causing the Chevy to reach speeds well in excess of 350 MPH continuing at full power for an additional 20–25 seconds.

The driver would have experienced high G-forces basically causing him to become incapacitated at some point. However, the automobile remained on the straight highway for about 2.5 miles (15–20 seconds) before the driver applied and completely melted the brakes, blowing the tires and leaving thick rubber marks on the road surface, then becoming airborne for an additional 1.4 miles [2.3 km] and impacting the cliff face at a height of 125 feet, leaving a blackened crater 3 feet deep in the rock.

Most of the driver's remains were not recoverable; however, small fragments of bone, teeth and hair were extracted from the crater, and fingernail and bone shards were removed from a piece of debris believed to be a portion of the steering wheel.

In the "Did You Know" Category

In 1941 JPL **strapped small JATOs to a Ercoupe** and were kind enough to film this nuttery

Click the Link to watch the Video
https://www.youtube.com/watch?v=2w0mKobISt4

Editors Note: One of these Oddities is Fictious and the other actually occurred. Check for the answer at the end of the Newsletter

See Highlights Below from an article about what to do and NOT to do after an Accident

After the Dust Settles: Protecting Yourself

You slipped up—your airplane is damaged and you violated a reg. Here are tools for keeping the subsequent unpleasantness to a minimum.

By Rick Durden

Full Article can be found here:

https://www.avweb.com/flight-safety/accidents-ntsb/after-the-dust-settles-protecting-yourself/?MailingID=891&utm_source=ActiveCampaign&utm_medium=email&utm_content=NASA+X-59+Returns+To+California+For+Final+Integration%2C+Why+This+Landing+Went+Bad+Part+Deux&utm_campaign=NASA+X-59+Returns+To+California+For+Final+Integration%2C+Why+This+Landing+Went+Bad+Part+Deux+-+Tuesday%2C+April+19%2C+2022

Despite our determination to do better, we pilots are human and as such we are prone to mistakes. Fortunately, most of those mistakes damage only our self-image as steely-eyed superior beings although from time to time they result in damage to our airplanes.

Don't Panic

If the time comes that you damage an airplane and/or you realize that you've inadvertently violated one of the FARs, start by realizing that all is not lost. It really isn't. Take a deep breath, stop everything for a moment and begin acting rather than reacting.

Trauma And Stress

You've just had a traumatic event. Even if there was no visible damage to anything, your reptile brain is working full time and **you are not going to be entirely rational for the next 24 to 72 hours.** We're not kidding. We've been there.

When something happens that smacks you in the face with the fact that you are not infallible, your ability to talk objectively about what just happened goes down the tubes.

Nevertheless, there are some things that you're going to have to do right away, and some of those involve telling people that you'll talk with them later.

First and foremost, if it's an injury accident, make sure that the injured get medical attention. You're the PIC: Take charge and get the medics on the way.

After that, do everything you can to stop any sort of steamroller from flattening you. If the airplane is blocking the sole runway and has shut down the airport, don't agree to having it bulldozed out of the way. **If people are trying to hurry you, that's a huge red flag. Slow down.**

Accident Reporting

Before you or anyone who shows up out of the woodwork **rushes to call the NTSB to comply with NTSB Part 830.5's immediate accident notification, STOP.** There is a good chance that **the event does not meet Part 830.5's requirement for immediate notification.** If it doesn't, you are not doing yourself any favors because notification of the NTSB will result in it notifying the FAA and the FAA scrutinizing the event and you.

If you are the only person around that can notify the NTSB and/or law enforcement in a non-injury crash, **slow down and make sure that you are required to do so.** We suggest that you put the issue aside for an hour or so; you have more important things to do.

Secure Your Airplane

Your next step is to **take action to secure the airplane against further damage.** Don't let anyone push you into moving it if there's any risk that the move will make matters worse.

In general, you'll want to **get the airplane into a hangar or similar** structure where it is out of the rain and **can be locked up against the interests of those who wish to acquire avionics at a deep discount.**

Insurance

Next, get on the phone to your insurance and report the event. Your policy does require you to notify your insurer of an event within a limited period of time if you do make a claim. You'll have time later to decide whether you want to make an insurance claim.

Aviation Lawyer

Your next call is to your aviation attorney. If you do not have one, contact AOPA's Pilot Protection Services (www.aopa.org) to get the names of aviation attorneys in your area.

Listen to what the attorney tells you. We'll tell you right now that much of the initial advice is to keep your mouth shut. At this point believe us when we say that there is virtually no chance that you can make things better, and it's very likely that you can make things worse by running your mouth. **So, in general, shut up.**

The police will wish to speak with you. **Keep it as brief as possible—**mostly just say that you'll speak with them after you've had a chance to make sure that you are not injured and have spoken with a lawyer. **Keep it polite and keep it short.** Anything you say can be twisted and used against you. **You can't talk yourself into a legal jam if you don't talk.**

All of this means that for at least 24 hours after an incident or accident, do not talk more than briefly to an official who is investigating the accident. You are not required to do so right away. **Politely get the inspector's telephone number and arrange to call in the next day or so. Do not call until you have spoken to your attorney.**

Media

In a word, don't. No matter if you slid that gear-up landing to the most beautiful stop in history, **don't talk to the press because you cannot control the story in any fashion.**

Don't return media phone calls or emails. The risk is that you'll say something that will give the FAA something to latch on to and investigate.

FAA And NTSB

When speaking with either, **keep it short and concise and do so only after you've spoken to a lawyer.** Seemingly innocuous statements have a way of turning into violation actions.

If you are asked to provide a written statement, keep it as brief as possible, then go over it with your lawyer. **The bottom line is to make sure that it is 100 percent accurate.** Lying to a federal investigator is a felony.

If you know that you made a mistake and busted a reg—and it was honestly a mistake—it may be best that you do talk with the FAA and admit that you made a mistake. We suggest that before doing so that you take dual with a CFI and go over the area of the regs that you inadvertently violated. You want to make sure that you don't do it again. Plus, that shows your determination to comply with the regs when you speak with the FAA.

Under the terms of the FAA's Compliance Philosophy, its inspectors seek to counsel pilots regarding inadvertent violations rather than hammer them. The policy has been in force for over five years and, in our observation, it's a huge success. Speak with your attorney first, but the odds are that the FAA will, at most, spend time talking with you about how the situation might have been avoided and have you take some additional dual with a CFI before it closes the file.

Insurance

We are in a "hard" (expensive) insurance market, but we have seen no evidence that aviation insurers are actively looking to find reasons to deny coverage following accidents.

If you have lied about your experience, ratings and/or medical condition on your insurance application, such misstatements are legitimate grounds for an insurer to deny a claim. Never lie or exaggerate on an insurance application.

Bottom line: If you have an accident, your insurer will almost certainly pay under the terms of the policy if you make a claim. Your insurer will also be a resource that can help you in the process of getting the airplane repaired.

Protecting Yourself

First and foremost—take **frequent recurrent training**, especially in crosswind landings as that's where you are at the highest risk for bending an airplane. We recommend every six months. Once you pass 12 months since your last Flight Review, your accident and/or FAR violation risk starts shooting up.

More **rigorously self-evaluate before and during flight**. If you're a little tired or "just not quite 100 percent" either don't make the flight or be even more cautious in making full use of checklists, flying a little higher and making more conservative decisions on fuel needed and weather.

Finally, don't do anything dumb.

More on NTSB Investigating Non-Accidents?

True, A pilot involved in an aircraft accident must immediately notify the NTSB. By statute, the NTSB is required to investigate all aircraft accidents.

However, there is a **question that must be answered:** Is the event really an accident? **If it's not, there's no obligation to report it to the NTSB—and the NTSB doesn't want to hear about it, it has enough on its plate.**

Naturally, if an event isn't an accident, there's no reason for the pilot to report it and there's no reason for the NTSB to investigate it.

If, someone reports it to the NTSB anyway, the FAA is going to hear about it. The FAA will then question the pilot, potentially leading to problems for the pilot that were totally unrelated to the accident.

Part 830.2 of the NTSB Regulations (49 CFR Part 830) defines an aircraft accident, and sets a surprisingly high level of damage or injury before an event is an accident.

To be an "accident" under Part 830, there must be

Substantial damage to the aircraft and/or death or serious injury to a person.

When you go to the definition of "substantial damage," things get interesting because it is more substantial than people realize.

To be "substantial damage," there has to be damage that affects the

Structural strength or flight characteristics of the aircraft.

It specifically states that the following **is not "substantial damage."**

Bent fairings or cowling(s), dented skin, small holes in skin, ground damage to props and damage to the landing gear

Articles by Mike Busch A&P/IA

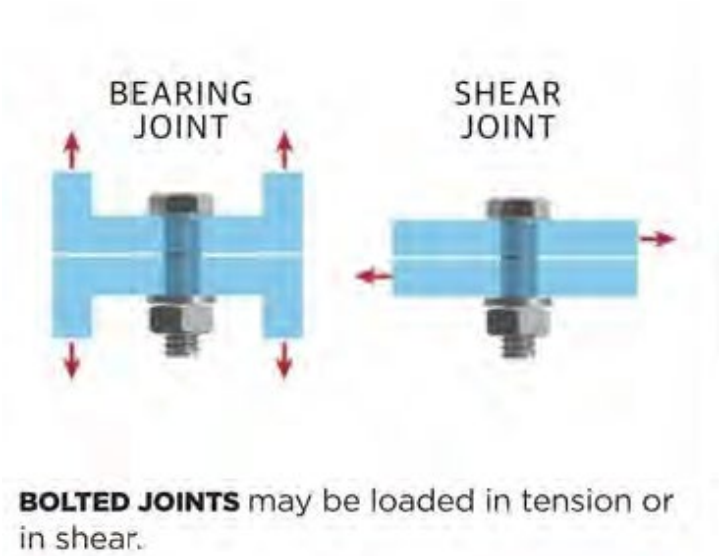
Mike Busch is a pilot and aircraft owner for more than 50 years and arguably the best-known A&P/IA, maintenance expert, in general aviation who literally wrote the books on how GA maintenance should be done—Savvy Aviation, Inc. He is also a contributor to AOPA, EAA, AvWeb, and the General Aviation News Magazine.

*His company **"SavvyAviation"** https://resources.savvyaviation.com/ also provides many Maintenance Related Services to his customers.*

Last month I included his discussion on bolted joints that are subjected to Tension. This month's discussion concerns bolts subjected to Shear Forces

Here are excerpts from - **Shear joints**

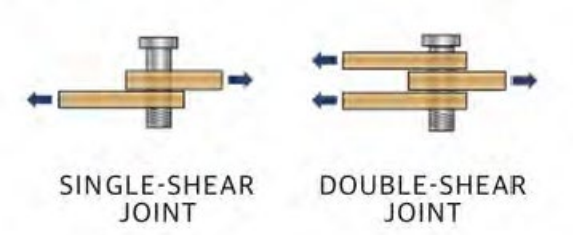
A Shear Joint is one where the fastener is loaded at right angles to the fastener's axis



SHEAR STRENGTH

The **strength of most shear joints depends solely on the shear strength of the fastener**- that is, how much force it can withstand before it is sliced in two.

Structural rivets always have a published shear strength. Common AN470AD universal-head aluminum-alloy rivets, for example, can withstand a maximum shear load of 319 pounds. That's not a lot, which is why most riveted joints consist of closely spaced clusters of rivets.



A DOUBLE-SHEAR JOINT doubles the shear strength of the fastener compared with a single-shear joint.

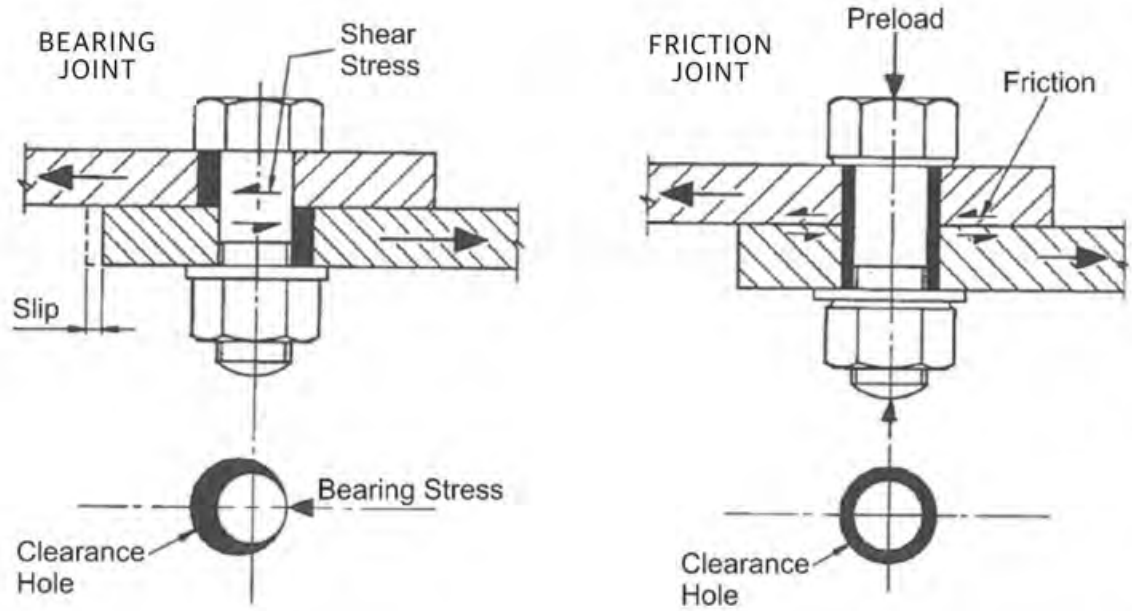
Bolts typically have no published shear strength limit, but a widely used rule of thumb is that the shear strength of a bolt is approximately 60 percent of its tensile strength.

A typical half-inch diameter steel bolt can withstand a maximum shear load of roughly 14,000 pounds. The shear strength of a bolted shear joint can be increased by using a larger-diameter bolt or by clustering multiple bolts.

Another other way to get more shear strength from a fastener is to add more layers to the joint in order to spread the shear load across multiple locations along the length of the fastener.

A fastener loaded in double shear can withstand twice the load of the same fastener loaded in single shear. Double-shear riveted joints are common.

For high-stress bolted joints such as wing attach fittings, triple- and even quadruple shear joints are sometimes used.



MOST SHEAR JOINTS rely solely on the shear strength of the fastener bearing against the side of the clearance hole. Friction joints also rely on clamping force and friction to resist joint movement.

PURE SHEAR

Shear joints that rely primarily on the shear strength of the fasteners are known as bearing joints because the joined members can slip until the fasteners bear against the side of the holes and prevent further slippage.

The amount of fastener preload is relatively unimportant in Shear Joints so long as the fasteners are snug enough so they can't wiggle. Of course, the joined members also need to be strong and thick enough that they won't fracture or tear when the joint is under load.

If the joint is subject to **repetitive stress cycles, another concern is that repetitive joint slippage could cause the holes in the members to become elongated or develop cracks.**

In such bearing joints, rivets have a distinct advantage over bolts because the process of driving or squeezing a rivet causes it to expand in diameter to fill the holes com-pletely, which eliminates most slippage.

If a riveted joint does start to slip, we say the rivet is "working" or "smoking" and will need to be drilled out and a new (possibly oversized) rivet driven into the hole.

For bolted joints, slippage can be minimized by using special close-tolerance bolts that fit very snugly in the holes in the joined members.

Another approach is to tighten the bolt to create enough preload that friction between the joined members prevents slippage and bearing wear on the edges of the holes. **Such joints are known as friction joints or slip-critical joints**.

The worse example of the failure of a Shear Joint was the April 4, 2018, crash of an Embry-Riddle Aeronautical University when the left wing of the 2007 Piper PA-28R-201 Arrow separated in flight shortly after the aircraft departed Daytona Beach International Airport.

Flying Destinations - Six Fly-In Resorts That You Should Visit

Whether you are into hiking, biking, playing golf, swimming, or just relaxing, there are many resorts, spas and lodges with inviting runways.

By Jonathan Welsh

Sometimes vacations can make you feel like you haven't left home as you encounter traffic jams on the road and crowds at the attractions you want to visit.

Perhaps the best part is that by flying in your own airplane, and given favorable weather, you may at last realize the old maxim; "Getting there is half the fun." Here are six resorts that are fine-tuned to fliers' needs.

Minam Lodge Airport (7OR0), Cove, Oregon

There is really no place for cars at the lodge. Indeed, the proprietors' information about "getting here" includes three options: hike, horseback, and airplane. Hiking in should take about four hours if you are "in reasonable shape." You can hire an outfitter to take you in on horseback. If you ride your own horse, the lodge has a shared pasture where your mount can stay. Flying in is not for rusty pilots.

"We strongly recommend that you have back-country experience before flying into Minam River Lodge," the website advises at the beginning of a long set of detailed instructions for flight operations in the area. It's time to brush up on mountain flying in time for the special Winemaker Dinner Series, when winemakers from area vineyards work with the lodge to present menus ideal for wine pairings. The series runs from June through September.

Eagle Port Lodge - Seeley Lake Airport (23S), Lindey's Landing West Seaplane Base (M35), Seeley Lake, Montana

A public 4,575-foot turf strip welcomes pilots arriving for a stay in the lodge next door. You can forget about tie-downs because there is a guest hangar—just taxi in. Guests can stay at the main lodge by the airport or in lakeside cabins. There is a seaplane base at the lake.

Wildlife enthusiasts can observe a range of birds and other species including bats, beavers, and otters. Lodge guidelines encourage "sharing these habitats with our wild friends" and remind guests that many local animals are curious about humans. "It is our recommendation that you keep all doors closed and do not open windows that do not have screens."

Nemacolin Airport (PA88), Farmington, Pennsylvania

Formerly known as Nemacolin Woodlands Resort, this 2,000-acre year-round destination is geared toward families and offers a variety of accommodation styles, from the European-inspired Chateau to Falling Rock, a hotel complex that takes architectural cues from Frank Lloyd Wright. For larger groups, there are individual homes and estates available.

Activities include skiing and snowsports, dog sledding, hunting, skeet shooting, and more. Heated pools, swim-up bars, hot tubs, and fire pits help keep outdoor festivities going through the winter. A 3,845-foot asphalt runway serves private aircraft and charter flights.

Lajitas Golf Resort and Spa, Lajitas International Airport (T89), Terlingua, Texas

Located in the Big Bend region of West Texas, Lajitas is known for its golf course and a long list of activities that includes mountain biking, horseback riding, zip lines, and shooting sports. It is also known for its food, which ranges from fajitas to prime ribeye at Candelilla Cafe. More casual and takeout fare is available from Boardwalk Bakery and Pizzeria and the General Store.

This resort has the longest runway of this group at 6,501 feet, which opens the door to a wide range of aircraft, including jets. Because of mountainous terrain, Lajitas is a daytime VFR-only airport with public access. Contact the resort 24 hours in advance to arrange your arrival and ground transportation.

Grand Geneva Resort and Spa, Grand Geneva Resort Airport (C02), Lake Geneva, Wisconsin

You can swap your wings for two wheels with the resort's scooter rentals and explore the greater Lake Geneva area on your own or sign up for a guided tour. The resort allows dogs, so if you are flying with Fido, this could be a good option. Stay in the lodge or, for more privacy, in one of the villas.

The resort is open all year, with activities including golf, skiing, ziplines, fitness classes, spa treatments, and an interactive escape room. A range of boat tours available on the lake include historical sightseeing, dinner tours and an ice cream social cruise.

Chena Hot Springs Resort, Chena Hot Springs Airport (AK13), Fairbanks, Alaska

Where else can you easily transition from flying an airplane to being pulled across the snow by a team of dogs? Dog sled tours are among the activities available on a one-day visit, but if you have traveled far to get to Alaska, you might want to stay longer.

Multi-day packages include a variety of romantic getaways and adventures that focus on a hot spring-fed lake and the frequent opportunities to view auroras. Resort staff take guests on a dog-drawn snow coach ride to the best viewing areas. The private gravel airstrip is 3,000 feet long.

Which “Oddity” was False??

The **“JATO Rocket Strapped to a Car”** In 1996, the Arizona Department of Public Safety issued a news release concerning the story. **It termed the story "an Arizona myth."** The story was also debunked in 2003 on the pilot episode of *MythBusters*,

An Illustration of The 5 Different Levels of Force

Last But Not Least

For you Aviation Movie Aficionados, The long-awaited release of Tom Cruise’s “Top Gun: Maverick” has finally arrived in theaters.

AvWeb posted this video, where Tom Cruise teamed up with Late Late Show host James Corden, prior to the film’s opening, for a legitimately funny and very well-filmed 15-minute video that opens on the ramp of Burbank Airport at 4:56 am.

Click the Link for the video

https://www.youtube.com/watch?v=v1iZtBM23bY

As for what to expect from the actual 2:17-long movie, National Public Radio reviewer Justin Chang's headline warns, "'Top Gun: Maverick' is ridiculous. It's also ridiculously entertaining."

The Good News, One thing the film is not, is computer-generated. All the characters who played pilots learned what it's like to really fly—because Cruise insisted that they actually do so.

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Interesting and useful websites on the Internet:

NOTE: You may have to copy and paste the address into your browser if the link doesn't work

I have added a few that I use.

If anyone knows of other interesting websites let me know and I will add them to the list

Our Chapter Home Page:
https://chapters.eaa.org/eaa1321

Why We Fly
www.whywefly.org

EAA: Home Page
http://www.eaa.org/eaa

FAA Safety Team FAAST
https://www.faasafety.gov/

FAA Safety Briefing
http://www.faa.gov/news/safety_briefing/

Regular links To Check out:
www.barnstormers.com

www.groundspeedrecords.com

AVweb News:
http://www.avweb.com/

This site also provides daily Newsletters that you can sign up for

Aero News Network:
http://aero-news.net/

Just for Fun Sites:
http://tailwheelersjournal.com/

Weather and flight planning sites:
https://www.lmfsweb.afss.com/Website/home#!/
http://www.fltplan.com/
www.avweather.com
www.skyvector.com
www.airnav.com
www.runwayfinder.com
www.flightaware.com

Travel:
http://www.socialflight.com/search.php
www.funplacestofly.com
www.placestofly.com
www.wheretofly.com
www.100dollarhamburger.com
www.airjourney.com

Little known & Lost airfields:
www.airfields-freeman.com/index.htm

Plane Dealing (Want-Ads, Lost & Found & Notices)