Next WingNuts Chapter Meeting: ***Sat. Jan 14, 2023 12:00 PM – Hunter International Air-Field***

Next VMC Club Meeting: ***Tues. Jan 24, 2023 6:00 PM - Hunter International Air-Field***

WINGNUTS PLANE TALK

Chapter 1321 / South Middle Tennessee

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

Rest in Piece Joseph William Kittinger II

July 27, 1928 – December 9, 2022 served in the United States Air Force from 1950 to 1978. He held the world record for the highest skydive—102,800 feet

https://www.bing.com/videos/search?q=joe+kittinger+jump&view=detail&mid=9E65C09C7F273A429DE09E65C09C7F273A429DE0&FORM=VIRE

Editor's Note: This month I have added a new feature to the Newsletter Index. Instead of having to scroll through the entire newsletter, You can now click on the page number for the article you'd like to read and you will automatically go to that page!

To go back to the Index, select the word "page" at end of article

INSIDE THIS ISSUE	

Reminder: It is time to pay your $20 Chapter Dues. Please see Jim Tjossem!

PRESIDENT'S CORNER:

Welcome to my first "President's Corner."

I hope everyone enjoyed our Christmas Banquet as much as I did. Thanks again to Glen for opening up his hangar and for all he has done for the Chapter. To say nothing of all his work keeping Hunter Field a great place to base an airplane!!

Well, here we are, the beginning of another New Year and the beginning of a new chapter for our Chapter.

I am looking forward to working with you to ensure our Chapter continues to be the type of organization people can enjoy being part of!!!

Here are some thoughts and questions concerning the Chapter I posed in a past Newsletter. When you have time, please consider them and over the next few months we'll discuss your thoughts at our meetings to decide how we might implement some of them.

Should the Chapter be more active, Such as,

Doing Another community event?

Having a Fund-raising event? What can we do?

What have we done that we can do again and can be done better?

What can we do to keep current members and attract previous members to return?

With our limited facility, should we even consider attracting new Members and growing the Chapter?

New members may mean new ideas, more excitement

How should we approach attracting new members, Young and Old?

Once we attract young members how do we keep them engaged and excited about Aviation?

Are there specific topics you would like to see covered at the monthly meetings?

How can the Chapter help Hunter deal with the encroaching neighborhoods?
What to do?

Is there interest in making Chapter Roadtrips?
Air Force Museum, Dayton
8th AF Museum, Savannah
Space Center, Huntsville
Beech Museum, Tullahoma

As President I'm open to any and all thoughts, comments, suggestions for our meetings, chapters events, etc.

As a means of gathering information on your thoughts, I have attached a Survey


Member Survey.docx

Please complete it when you have time (You should be able to open it and type your answers into the word document, then save it) and return to me at the meeting or email to n3165e@hotmail.com

Note: Just in case the link won't open, I have also attached a copy to the email with the Newsletter. I'll have hard copies available at our meeting.

Craig Bixby

President

Secretary's Minutes from the 12/10/22 Meeting

Instead of our normal meeting for December, we held our Christmas Banquet in Glen's Hangar.

A Big Thanks to Glen, Bob Johnston for donating the Ham, and to those that helped set up and tear down!!!

A special thanks to everyone that brought all the side dishes, desserts, etc Everyone's offerings were Delicious!!!!!!!

By my best count, a combination of 40 members and family enjoyed an afternoon of camaraderie and Christmas Cheer!!!

Besides the food, our Gift Raffle is always a big hit!!! This year it raised $360.00 for the Chapter!!!!

Chapter Awards

Glen Smith receiving his Certificate as our outgoing President

Thanks to Scott Leveque for his time serving as our Chapter VP

Jim Tjossem continues doing a great job as Treasurer

Glen, surprised Craig Bixby by designating him as the Chapter MVP

In turn, Craig surprised Glen with a Certificate of Appreciation, along with a gift card, as recognition for his many years as the Chapter's President and his unending work maintaining Hunter Field.

Missing from the Banquet was our Secretary, Paul Reding. Thanks to Paul for all he does.

Here are a few miscellaneous Pictures from our get together

FAA Set to Extend Aircraft Registration to Seven Years

Is the registration certificate on your aircraft coming due soon? You may have more time—as in years to renew it. The FAA is slated to release a rule this month to extend the duration of aircraft registration certificates from three years to seven years.

In a statement sent to *FLYING,* the FAA explained, "The new rule applies to new registrations and extends the duration of current certificates. It covers all traditional aircraft and larger drones."

According to the draft of the final rule, owners will be required to confirm their aircraft registration information and renew their certificates every seven years, unless an event or circumstances require a new registration be issued before that time. In that scenario, for example, if the FAA determines the aircraft registration is inaccurate, the owner may be required to submit a new application for registration.

In addition, the direct final rule removed the requirement that the FAA issue a letter extending temporary authorization if a registration has not been issued or denied within 90 days of the application.

Here is a link to the entire article

https://www.flyingmag.com/faa-set-to-extend-aircraft-registration-to-seven-years/?utm_campaign=Newsletter%20-%20Flying%20Mag%20Daily&utm_medium=email&_hsmi=234963125&_hsenc=p2ANqtz-_rPCvtI5Xj16PuonSlmEXAgapAimwlRvr71w-8g80eIvrfpYlAm_vEtY7Yl2h7qOapsgF2JsLKy2tr-DwFjS9z3FYhVw&utm_content=234963125&utm_source=hs_email

Outlandings

Editors Note: Over the last couple of month's, we have been discussing off field landings:

The importance of selecting a suitable landing field
Things to be consider when selecting a suitable landing field
Planning and Executing the approach

As mentioned last month, Time and Height are the keys to performing a successful off-field landing

The higher you're flying, the more options you will have. So, when the engine gives out…..

How do you preserve your height (for as long as possible) so you can go the greatest distance to a safe landing field?

How, do you give yourself the most amount of time for making your decisions?

The answer is understanding the best "speed to fly" during an engine out approach. Below is a discussion of the two key airspeeds you should know:

Minimum Sink and Best Glide

Best Glide Speed and Distance

Best Glide Speed and Distance.pdf (1.03 MB)

The General Aviation Joint Steering Committee (GAJSC) has determined that a significant number of general aviation fatalities could be avoided if pilots were better informed and trained in determining and flying their aircraft at the best glide speed while maneuvering to complete a forced landing.

The best "speed to fly" during an engine out approach depends on what you need to do:

IF, you want to Stay in the air as long as possible

You should fly at "minimum sink speed"

Measured by how many feet of altitude is loss per minute.

NOTE: Will result in going the less Distance

Minimum Sink is rarely found in Pilot Operating Handbooks, but it will be a little slower than maximum glide range speed.

Note: There are two ways to Determine your aircraft's Minimum Sink Speed:

Mathematically

The calculus used in determining these two speeds is way above my math skills.

But, it has been determined that multiplying "Best Glide Speed" by a value of 0.76 will provide the "Minimum Sink Speed" for your aircraft

I.E. A Super Cub's best glide is 60 mph.
60 X 0.76 = 45 minimum sink speed

Physically, while flying

On a day you are as close to gross weight as possible.

Start at Vy, or the manufacturers recommended best glide speed with power off

Note the speed versus sink rate as you adjust pitch to reduce airspeed.

Look for the highest speed forward that will give you the lowest rate of descent. This is your Minimum Sink Speed

NOTE: For gliding with the wind, minimum sink speed will get you further than best glide.

IF, you want to Go the greatest distance for the amount of altitude lost

You should fly at "best glide speed"

Also know as best L/D (Lift over Drag) max

Measured by how many feet of altitude is loss per nautical mile

Best glide speed will be higher than Minimum sink speed.

If you maintain best glide all the way to the ground, you'll travel the furthest distance possible without power.

NOTE: Results in staying in the air for less time

On most airplanes, it will be roughly halfway between Vx (best angle of climb speed) and Vy (best rate of climb speed).

It is important to note that Manufacturers establish the best glide speed at gross weight for the aircraft.

At lower aircraft weights best glide speed will be lower

Here's a shortcut to reach your airplane's actual best-glide speed right away:

Fly Level

That's it. A flat pitch attitude will yield something close to best-glide speed in just about every piston single. Raising the nose two or three more degrees can fine-tune it.

Once you've found a level pitch attitude, full nose-up elevator trim usually keeps it there.

Try it out on an upcoming proficiency flight.

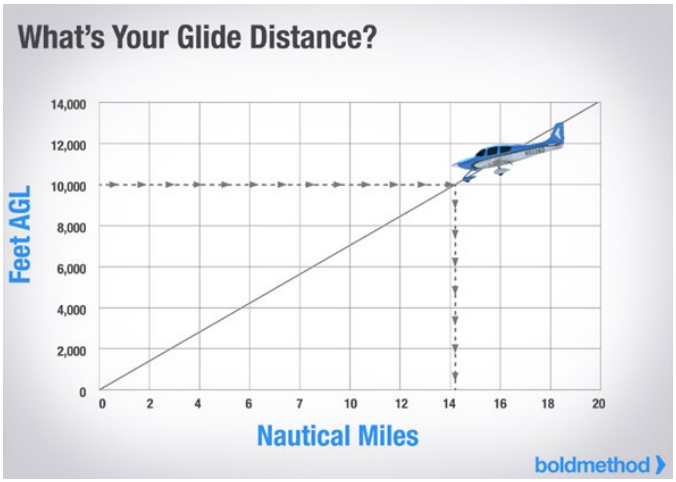
Pull the power, pitch for level flight, and watch where the airspeed indicator settles. Then roll in full nose-up trim and see how close it comes to holding the desired airspeed.

Selecting A Landing Site within glide distance

Once you've accomplished the "aviate" part of the flight by configuring the airplane, and pitching/trimming for best glide, your next step is to "navigate" and find a place to land.

When it comes to landing sites, you really have two choices. Land at an airport, or land somewhere else. Typically, your first choice is to land at an airport, if you can.

The next question is: can you get to your chosen landing field?



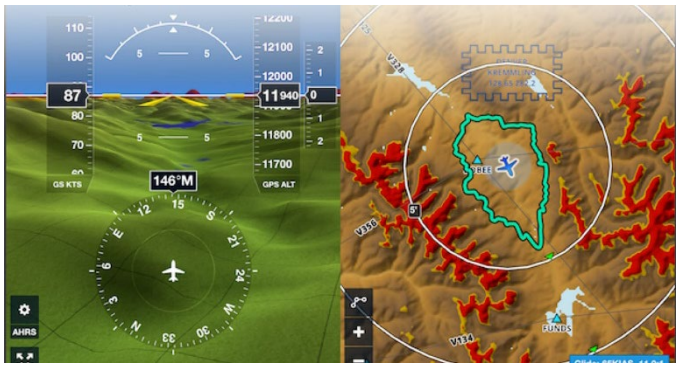
That's where some quick mental math comes in.

Most GA airplanes, whether they're a Cessna 172, or a Cirrus SR-22, glide about 1 1/2 miles for every 1,000' of altitude.

So for example, if you're 4,000' above the ground, you'll be able to glide about 6 nautical miles before your wheels are on the ground.

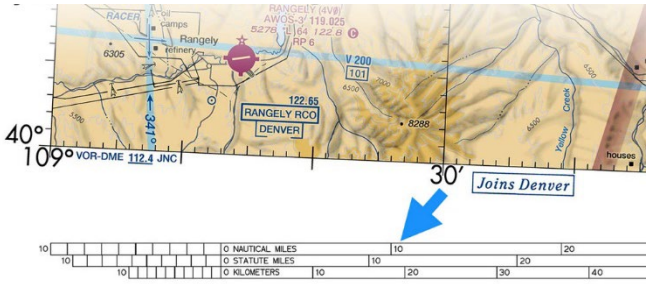
If you have GPS on board, the "Nearest Airport" function gives you a quick list of nearby airports. Once you pick an airport and select “go direct” to it, the distance to the runway will be displayed.

ForeFlight's new "Glide Advisor" feature



Will display airports within gliding distance

No GPS?
Pull out your sectional chart, if you have time.



Use a finger to get a general measurement from your position to the airport Landing Point,

Move it down to the distance measurement at the bottom of the chart

OOPS, Santa Didn't Make it Back to the North Pole

Where there is a problem, someone will find a way to solve it

Editors Note: Have you ever considered what you would do -

If you were flying with a friend or an acquaintance and you saw something that either looked flat out wrong or maybe it just made you feel uncomfortable

Would you say something?

If you observed someone continually making poor decisions

Would you say something?

Is it your responsibility to "Speak UP?"

I used information from the following websites for the following article:

https://www.planeandpilotmag.com/article/getting-pilots-to-speak-up/
https://airfactsjournal.com/2015/11/accident-waiting-happen-speak/
https://www.flyingmag.com/technique-tip-week-know-when-speak/
https://www.aopa.org/news-and-media/all-news/2013/october/pilot/proficient-pilot-speak-up

Speak up!
Failure to do so can have dire consequences

There are many instances when speaking up or keeping quite had a direct effect on a flight's outcome.

Example 1

A newly minted Private Pilot working on their commercial ticket was flying with their brother from LA to Scottsdale as part of the long cross-country requirement.

Coming home the forecasted solid overcast proved much lower than anticipated, and while trying to wander home via a desert highway in low-VFR conditions, the pilot flying began following a branch of that highway that led into mountainous terrain that the Arrow they were flying would not have been able to outclimb.

The brother spoke up. Saying this is the wrong road. Sounding like he probably knew what he was talking about. Based on that input they made a 180 while the turning was good, quickly found the right road and made it home in one piece.

Example 2

An experienced pilot who lived just down the road from his local airport departed in his single-engine airplane with his 9-year-old daughter on board.

The marine layer that visits the airport almost daily at that time of the year had yet to dissipate, and the experienced but non-instrument rated pilot must have been in a hurry, took off in zero visibility.

The flight lasted no more than a couple of minutes, because shortly after he departed, he, his young passenger and the crinkled airplane were found in the nearby riverbed.

It was revealed later, that an instructor had been sitting in the local FBO the morning of the accident, and the pilot—who was well-known at the airport—had come in to chat with a few of the other pilots who were hanging around waiting for the fog to dissipate. The accident pilot told them what he was about to do.

When he left the pilots took bets on if he would make it!

BUT, no one spoke up to talk him out of it!!!!

Example 3

A pilot's engine failed at a critical moment, and he was unable to gain control and perished.

The odd thing about that incident, wasn't that it happened. But, that people at his local airport weren't surprised when it happened. They had known that he had rarely done annuals, and his cowling and fuselage were often streaked with oil.

Apparently, no one said anything to him.

There are too many stories about pilots who've lost their lives in their planes, sometimes taking others with them, that nobody at the airport was shocked. They'd seen that guy flying for years and knew the level of risk he was comfortable with.

But, again nobody spoke up!

Editor Note: Why pilots make poor decisions such as those in Example's 2 & 3 is another seemingly endless topic, for other newsletters or future meetings.

Discussion

When posed with the above questions, most pilots would say, "I'd say something."

But, in reality, it has been found, that often we don't actually do that.

So, why don't people speak up when faced with "calling out" a fellow pilot?

Understanding the tendency for people to sit by and do or say nothing when witnessing someone about to do something potentially harmful is a complicated subject.

To some extent it is embedded in aviation culture. Most folks don't enjoy being told they need to stop and reconsider what they are about to do, especially if it is related to flying.

If, someone does attempt to give us uninvited input, our response in most cases is to become angry and defensive.

It is tough to call out others when we see a potentially hazardous situation unfolding. So, it's a difficult subject to address, partly because most pilots seem to have different personal interpretations of what might be safe or unsafe. They may also have differing opinions on their responsibility to try to put a stop to a dangerous situation they see developing.

Whether we speak up or not may depend on many factors;

How risky the situation is in our judgment.

Each of us have or own level of being comfortable with the extent of our knowledge. If we aren't confident in ourselves, we may feel that the person, exhibiting what we think is bad judgment or decisions, has more experience and knowledge than us, which could result in our mentally deferring to their perceived "greater experience and knowledge." Resulting in our not saying anything.

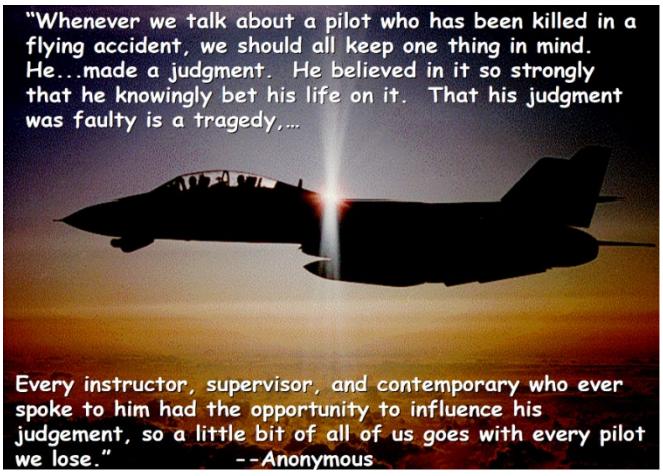
We should never be bashful about being assertive when concerned about the safety of flight. Never hesitate to speak up and state your concern with appropriate persistence until there is clear and safe resolution.

We also tend to become less likely to intervene in a dangerous situation when in the company of others. Each person in the group might expect someone else (the more knowledgeable one) in the group to intervene. If no one else does than more than likely no one else in the group will either.

To prevent errors that may lead to a catastrophic accident it is important for us to speak up when we see something amiss. Those little hairs on your neck that tell you something isn't right are rarely wrong. Be bold enough to let a fellow aviator know you care.

As pilot's, we should feel free to question any situation, free to question the soundness of the decision, free to offer alternate solutions.

We, have a responsibility, some would say a moral obligation, to call out others for their dangerous actions, whether we know them or not.



Sometimes, you just have to speak up, or you won't have the opportunity again.

You may not sway the other pilot's mind, but then again, you might.

What's the worst that could happen if you warn a pilot that something can go very wrong if he or she continues? Hurt feelings, some angry words, some bruised ego, and maybe even a damaged friendship.

There are many tragic examples where pilots were warned by others, yet continued with the flight and ended up dead.

While there may be some price to pay for speaking out, it's certainly less than a damaged aircraft or loss of a life

Wouldn't you want somebody to help you out with a gentle warning if you were about to do something stupid? I certainly would.

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Quiz: How Much Do You Know About Flying In Winter Weather?

It's getting cold out there. Are you ready for winter flying?

1. Why does your airplane have better performance on a cold winter day, as opposed to a hot summer day?
2. On average, one inch of rain is equivalent to how many inches of snow?
3. You need to fly through visible moisture to get carburetor ice.
4. Sun dogs form by sunlight passing through:
5. You just cancelled your flight because ice pellets started falling during your preflight. The temperature at the airport is 28 degrees F. What is the temperature of the air above the airport?
6. How much can frost reduce your wing's maximum lift?

Use this link to take the Quiz
https://www.boldmethod.com/blog/quizzes/2022/12/how-much-do-you-know-about-winter-weather-flying/

Editor Note: This topic has been in the Newsletter before. But, since it is winter here is a good review of the Pitot Static System and how it works

What Happens When Your Pitot Tube Ices Over?

By Boldmethod 11/24/2022

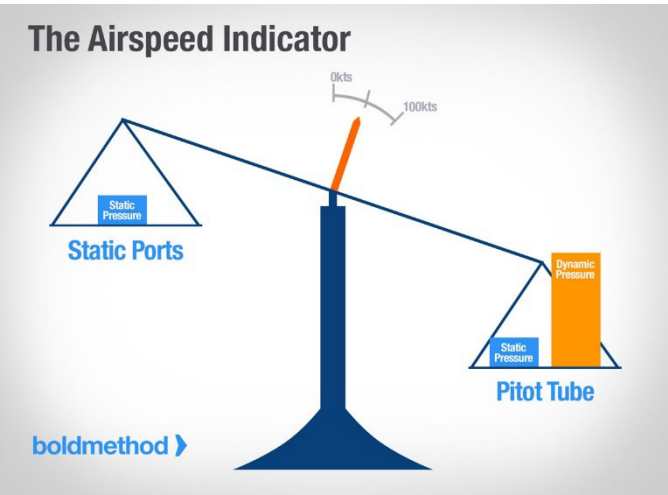
Now that it's getting colder, airspeed failures are a very real possibility, especially if you inadvertently enter icing conditions. What can happen, and how will your airspeed indicator react?

How Your Airspeed Indicator Works

Before you can understand the failures, you need to understand how an airspeed indicator works. It's an incredibly simple instrument, and round-dial and glass-panel systems both use the same principles.

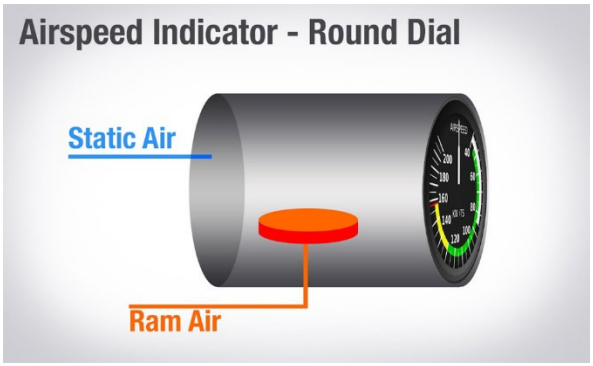
Your airspeed indicator measures dynamic pressure. That's the pressure caused by your movement through the air. However, you can't measure dynamic pressure directly, because static pressure is always in the mix as well.

Your pitot tube measures "ram pressure," which is a combination of dynamic and static pressure. If you're parked on the ramp, your ram pressure only includes the static component. As you start to move forward, ram pressure includes both static and dynamic pressure.

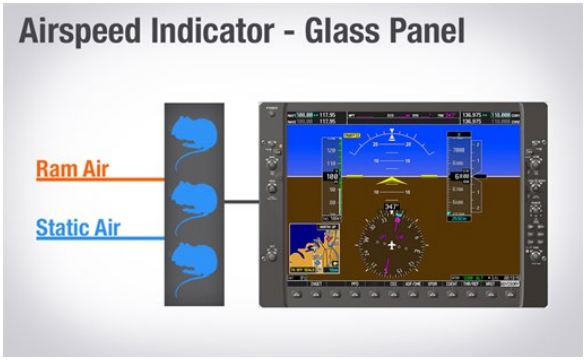


Your airspeed indicator is really a scale, which compares the static pressure from your static ports to ram pressure (static + dynamic) from your pitot tube. The two static pressures cancel each other out, and you're left with dynamic pressure.

Dynamic pressure translates into your airspeed.



The traditional round-dial instrument uses an aneroid wafer filled with ram pressure, inside case filled with static pressure.



Glass-panel systems use digital sensors, which compare the ram and static air to indicate your a a airspeed.

Either way, they both compare static to ram pressure.

The Failures

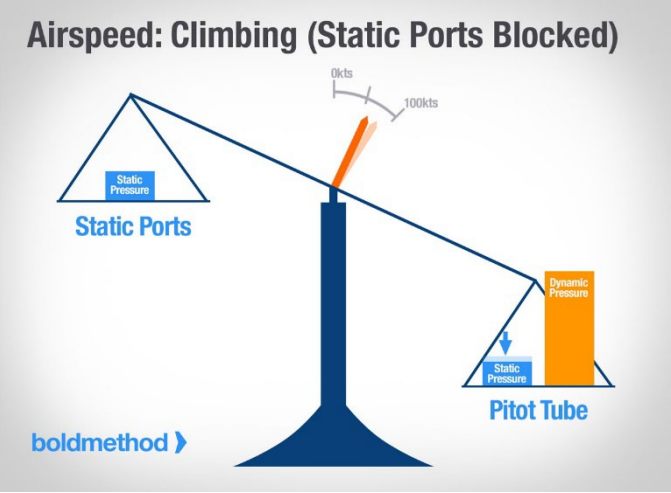
When your airspeed indicator fails, it's usually caused by a clogged pitot tube or static ports. In each case, your airspeed indicator may freeze, drop to zero, or gradually change.

You can figure out what happens by thinking about how the static and ram pressures change on each side.

Scenario 1: Your Static Ports Clog And Your Pitot Tube Is Open

This could happen if your static ports ice over. Your airspeed indicator receives accurate ram pressure, but it compares the ram pressure to the trapped, and unchanging, static pressure.

As long as the barometric pressure doesn't change, and you stay at the same altitude, your airspeed indicator indicates correctly. However, things get wonky if you climb or descend.



If you climb at a constant airspeed, your ram pressure's static component decreases.

Since your static ports are clogged, they have too much static pressure.

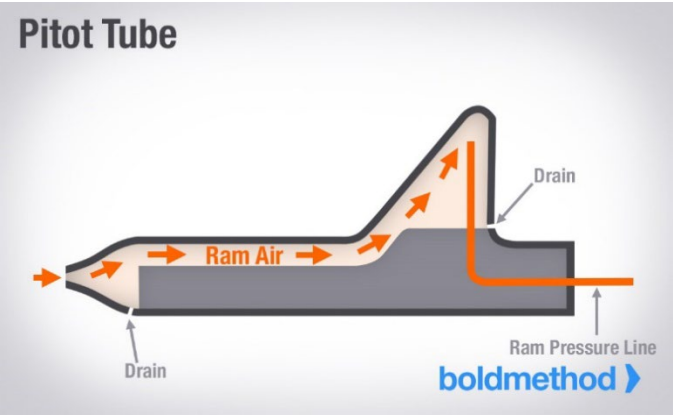
They're stuck at a lower altitude.

The difference between ram and static pressure is smaller, and your indicated airspeed decreases.

Now you're flying faster than your indicated airspeed. The opposite is true if you descend.

Scenario 2: Your Pitot Tube Clogs, And Your Static Ports Are Open

What happens if your pitot tube ices over, but your static ports remain open? There are actually a couple of different scenarios to consider, depending on what parts of the tube ice over

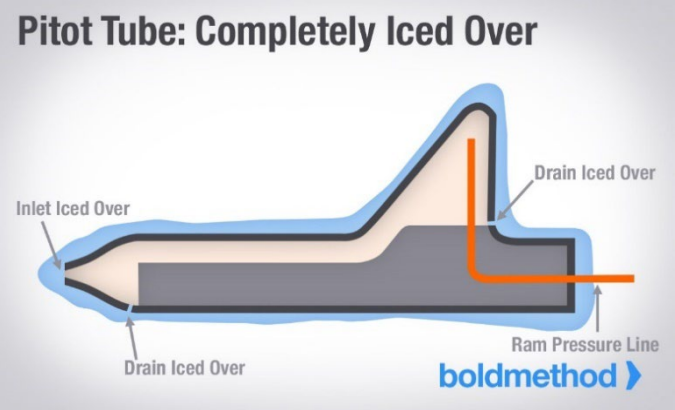


Ram air enters through the front of the tube, flows to the back of the chamber, and flows through plumbing to your airspeed indicator.

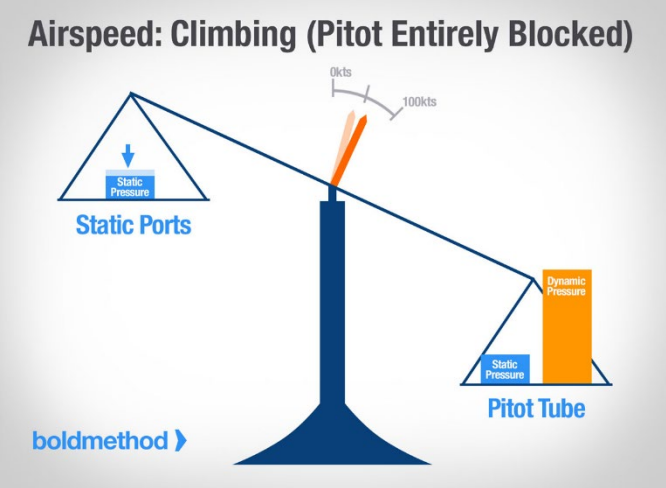
The pitot tube also has drain holes. If water enters the front of the tube or condenses inside the ram air chamber, it can drain out.

Many pitot tubes also include a static port. But, on most IFR certified aircraft, separate static ports on either side of your fuselage measure static pressure. They're more accurate, and the static port on your pitot tube is left unconnected.

What Happens If The Entire Pitot Tube Ices Over, And The Static Ports Remain Open?



In this case, the ram pressure is trapped. As long as you stay at the same altitude, your airspeed freezes as well.

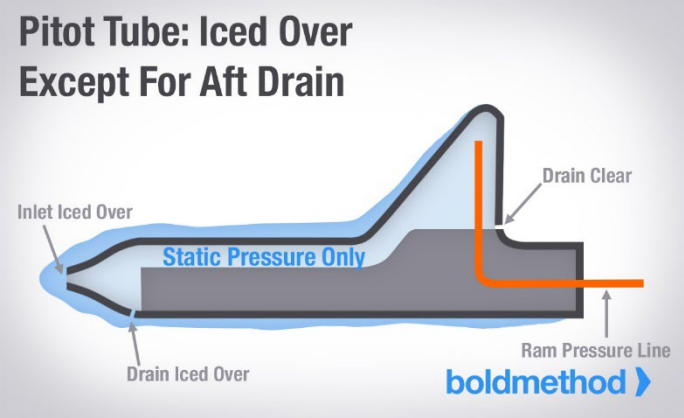


What happens if you climb? Since your static ports are still open, the static pressure will start to decrease.

The trapped static pressure in the pitot tube is now greater than the actual static pressure, and your airspeed indicator starts to speed up.

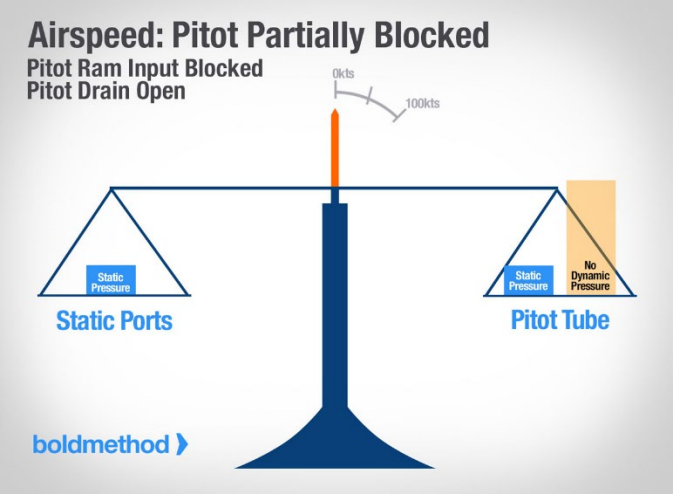
You're now flying slower than your indicated airspeed.. The opposite happens if you descend.

What Happens If The Ram Air Inlet Ices Over, But The Drains And Static Ports Remain Open?



In this situation, the pitot tube becomes a relatively inaccurate static port.

Your airspeed indicator is now comparing inaccurate static pressure to accurate static pressure, and would read nearly zero. It may read slightly below zero, or slightly above zero, depending on the drain hole's position



What happens if you climb? Since your static ports are still open, the static pressure will start to decrease.

The trapped static pressure in the pitot tube is now greater than the actual static pressure, and your airspeed indicator starts to speed up.

You're now flying slower than your indicated airspeed. The opposite happens if you descend.

What Happens If The Pitot Tube And Static Ports Completely Ice Over?

This one is easy: all of the pressure is trapped, and your airspeed indicator freezes. Whether you climb or descend, speed up or slow down, your airspeed won't change.

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Abnormal Preflight Leads To Cessna 172 Taking Off With The Tow Bar Attached

By Colin Cutler

It's fall. And every morning, it's getting colder and darker.

We'd all like to think that we spend as much time thoroughly pre-flighting on a frosty morning, as we do in the middle of a beautiful July day. But when the cold wind is whipping through your checklist (and your jacket), you tend to move a little bit faster around the plane.

Add in a change to your normal preflight routine, and you increase the chance of something getting skipped or forgotten.

That's exactly what happened to this Cessna 172 student and instructor.

Running Behind Schedule: The Preflight

I had a student meeting me for a lesson [early in the morning]. My student was running late, so I performed the preflight and got the aircraft ready to fly. It was cold out, so once I pulled the aircraft out I hopped into the aircraft to stay warm and let my student know where I was (newer student) and that the aircraft was ready to fly.

He showed up shortly after, and we got ready to go and started up and went on with the lesson. I had left the tow bar on the front of the aircraft nose wheel. I did not notice it or remember it at the time. The tow bar didn't make any noise I could hear as it scraped across the ground, but looking back it did seem a little more difficult to steer than usual, but not enough to raise a flag. Not outside of the realm of possibility for a Cessna in my experience.

On takeoff I heard a bump that sounded like a door opening. I looked around, didn't see anything unusual and continued with the lesson.

We landed, and as soon as I looked in the back of the aircraft for the bar I immediately knew what happened.

I called the Tower, they sent Operations to find the tow bar (it was on the runway), and then I went and told my Chief Pilot.

I ordered a new tow bar for the aircraft and maintenance took a look to make sure nothing was damaged. No damage occurred.

Factors that I believe led to this:

- *not getting a great nights rest beforehand*
- *I have a new job as a first officer, so flight instruction is now a side job, lack of consistency in instruction*
- *it was cold, so I rushed my preflight and hopped inside the aircraft to wait for student*
- *inconsistent chain of events (normally my student is with me for preflight)*
- *it was dark, sun was just starting to rise*

Analyzing the event:

- *steering was slightly abnormal, but still maneuverable with nose steering*
- *takeoff I heard an unusual bump*

Had I correlated these at the time it would have been evident what had occurred.

Editor Note: It appears that someone taking off with the Towbar attached has happened more than you might think.

The towbar incident? It seems to be rather common.

Rushing Leads To Mistakes

A cold morning, a behind-schedule pilot, and an abnormal preflight were the recipe for forgetting the tow bar. Fortunately, the plane wasn't damaged, and it was nothing more than a lesson learned.

I've been in a similar situation myself - preflighting on a cold morning, and hopping in the plane, waiting for another pilot or passenger.

I spent 6 years pre-flighting airplanes in North Dakota. And in the winter months, it's a real challenge to take your time, when the below-zero wind chill is driving through your hat, gloves, and jacket.

When you're in a hurry, or if you're not preparing for your flight the way you normally do - that's when you need to pay extra attention to what you're doing.

I've started a plane with the chocks still in. And it was a direct result of rushing my preflight. While it didn't cause a problem (aside from some deflated pride) it's an eye-opening experience of how quickly you can make a mistake that can have a negative outcome.

If you need to, run through your exterior preflight checklist one more time in the cockpit, to make sure you didn't forget anything. Dress warm, so you don't feel like you're taking a polar plunge while you're preflighting.

And most importantly, when you feel like you're rushing, take a second to think things through before you turn the prop. It's just the thing that might keep you from spinning your prop through the middle of a tow bar.

There is no shortage of YouTube videos showing aircraft taxiing/flying with the towbar still attached.

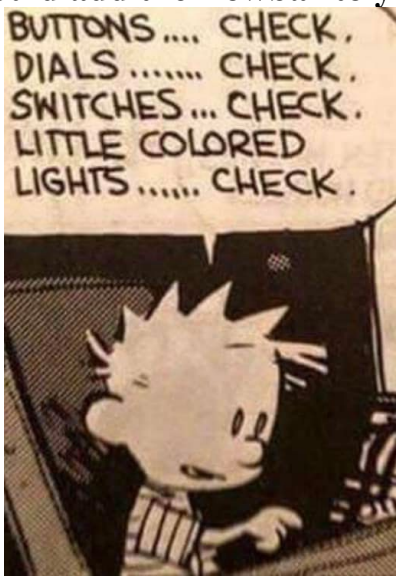
One example from September 2015 shows a Cessna 172 in the runup area with a towbar attached. The filming aircraft had a student and an instructor aboard. The instructor immediately called Ground and let them know the tail number and the issue. The offending pilot then stepped out of the plane (with the engine still running) and was going to remove the towbar. Fortunately, he stepped back in to shut it down. Tragedy averted.

Here are links to two other instances

https://www.facebook.com/100000714683038/videos/465994598857891/

https://generalaviationnews.com/2022/11/29/pilot-takes-off-with-tow-bar-still-attached/

Maybe you should add the Towbar to your Checklist!!



Recent FAA Final Rule Enables BasicMed Holders New Privilege

By Mark Phelps

With the stroke of a pen this month, Acting FAA Administrator Billy Nolen enabled an estimated 60,000 or more U.S. pilots to act as safety pilots. In the Nov. 16 signing of a new rule that focuses on requiring medical certificates for balloon pilots, other provisions were included that granted holders of BasicMed medical certificates the opportunity to fly as safety pilots, a right not previously held.

The new rule went into effect Dec. 22.

Experimental Fatals Jump

By Russ Niles

Fatal accidents in experimental aircraft jumped about 25 percent last year compared with the previous year, and EAA says “focused efforts to enhance safety even further remain essential.”

In a news release, the organization says the 56 fatal accidents in the year ending Sept. 30, 2022, was up from 42 in the previous 12 months. That’s still less than the historical average but it’s not to be taken lightly, says Sean Elliott, EAA’s VP of advocacy and safety.

“The fatal accident totals, for both amateur-builts and experimental aircraft overall, remain 30 to 35 percent below where they were just a decade ago, including when looking at the three-year rolling average on which the FAA bases its annual not-to-exceed number,” said Elliott. “While that’s good news, we never want to see an annual increase in the totals. That’s a reminder that we all must continue to work to make safety the top priority even with the small numbers we see each year.”

Of the 56 fatals, 39 were in amateur-built aircraft and EAA said the increase mirrors the increase in general aviation activity as the COVID pandemic eased.

Elliot said homebuilts crash mostly for the same reasons that certified aircraft crash and not usually because they're homebuilts. "It shows that the accidents overwhelmingly do not occur because a pilot is flying an amateur-built or experimental aircraft, but because of factors relating to pilot decision making or flight procedures," said Elliot. "Those are areas where EAA safety programs and resources can make a difference."

"THE WIND IN THE WIRES" CELEBRATION OF EARLY AVIATION & WWI AERIAL COMBAT DOCUMENTARY

"The Wind in the Wires" is a short 1970s aviation film narrated by James Mason that recounts the history of modern aviation (primarily in Britain) from roughly 1900 until the inter-war period.

The film uses both old monochrome footage of original aircraft as well as contemporary color footage of replica planes in flight, and includes a number of photographs of famous aviators.

Click the Link to watch the Video

https://www.youtube.com/watch?v=lbF5HhU0VDM

Aircraft Preventive Maintenance

This month, we will discuss another Preventative Maintenance Task we can perform,* Servicing Shock Struts. We'll begin *with a review of the operation of a typical Pneumatic/Hydraulic Shock Strut

A typical Pneumatic/Hydraulic Shock Strut

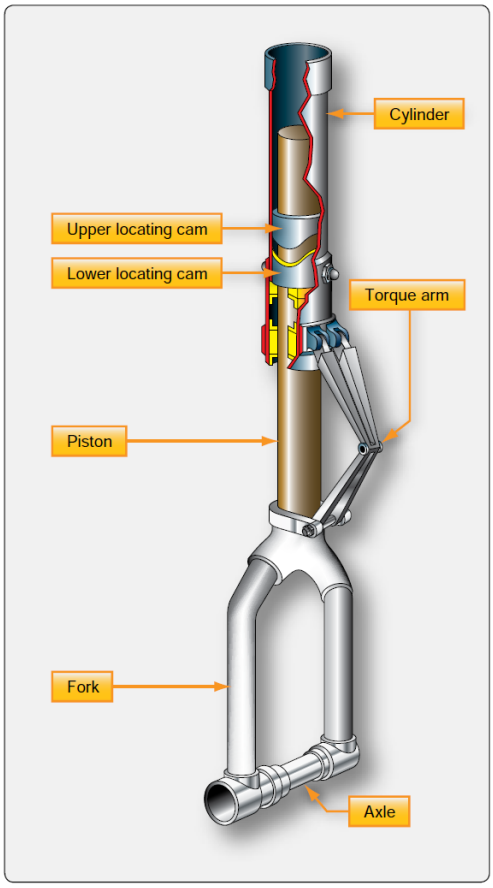


Figure 13-20. *An upper locating cam mates into a lower cam recess when the nose landing gear shock strut is extended before landing and before the gear is retracted into the wheel well.*

Uses compressed air or nitrogen combined with hydraulic fluid to absorb and dissipate shock loads. It is sometimes referred to as an air/oil or oleo strut.

A shock strut is constructed of two telescoping cylinders or tubes

- The upper cylinder is fixed to the aircraft and does not move
  - The upper chamber is filled with compressed air or nitrogen

- The top of upper cylinder contains a valve assembly
  - Provides a means of filling the strut with hydraulic fluid Inflating it with air or nitrogen

- The lower cylinder is called the piston and is free to slide in and out of the upper cylinder
  - The lower chamber is always filled with hydraulic fluid

An orifice located between the two cylinders

- Provides a passage for the fluid from the bottom chamber to enter the top cylinder chamber when the strut is compressed

Nose gear shock strut also incorporate a Nosewheel “Centering” cam assembly to keep the gear aligned straight-ahead when the shock strut is fully extended.

NOTE: Regular cleaning of the exposed portion of the strut piston helps the wiper do its job and decreases the possibility of damage to the packing gland, which could cause the strut to a leak.

Properly serviced struts should have a specific ratio between the

Fluid MIL-H-5606 (red) mineral-based hydraulic fluid

Air (Nitrogen)

Nitrogen is better than compressed air

It is drier

Doesn’t vary in pressure as much as air

Less corrosive to the inside of the strut housing

Both are vital

Struts must have the proper amount of fluid and air to work properly

Any sort of a knocking noise from the nose strut during taxi operations or upon landing

Is an indication that it is bottoming out due to either

Insufficient fluid, or air in the strut, or both

When a Strut bottoms out it may result in

Impact forces to be transferred directly to the airframe buckling the Firewall

Possible Prop Strike

NOTE: Avoid the Temptation to just Add Air to a Strut

Struts that are filled with air pressure but are low on hydraulic fluid tend to stick in place

Indications a Strut is low on Fluid

Strut stays extended after a plane has landed and then suddenly collapses

If a strut is low on fluid, it is usually because the rubber seals have gotten old and hardened.

Shock struts may have an instruction plate that gives directions for filling the strut with fluid and for inflating the strut.

The instruction plate is usually attached near filler inlet and air valve assembly. It specifies the correct type of hydraulic fluid to use in the strut and the pressure to which the strut should be inflated.

It is of utmost importance to become familiar with these instructions prior to filling a shock strut with hydraulic fluid or inflating it with air or nitrogen.

To maintain the Specific ratio between Fluid and Air

The fluid level must be verified FIRST before Servicing the Strut

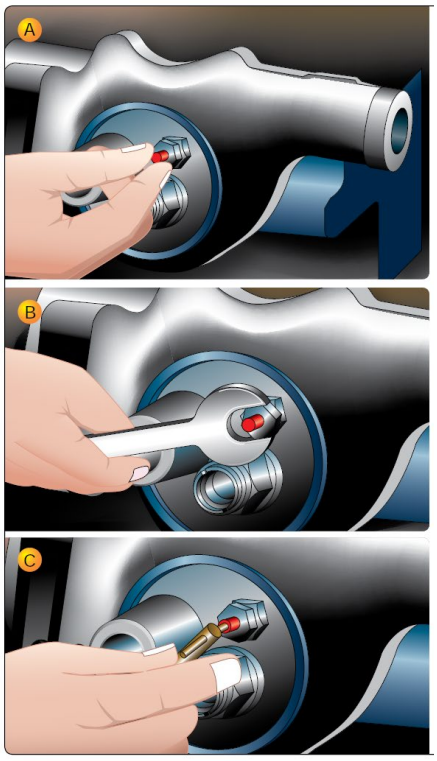
By deflating and compressing the strut to the fully compressed position

Refer to the manufacturer's instructions for proper deflating technique of the strut in question and follow all necessary safety precautions.

The following procedures are typical for Deflating the Strut

1. Raise the Nose Gear off the Floor By Lowering the Tail & Secure it

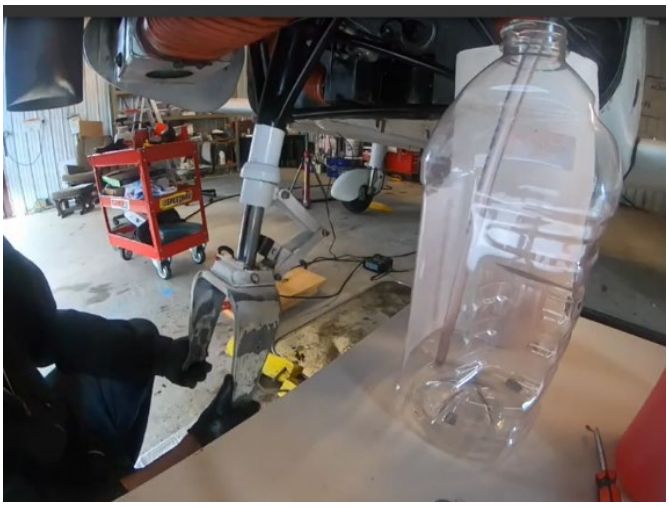
1



2. Remove the cap from the air servicing Valve
3. Check the swivel nut for tightness.
4. If the servicing valve is equipped with a valve core, depress it to release any air pressure that may be trapped under the core in the valve body
5. Loosen the swivel nut one turn (counter clockwise) or sufficiently to allow the air to escape.

NOTE: A small spray of hydraulic fluid comes out with the air pressure, so it's a good idea to have a rag handy

6. Connect clear hose or tubing To the Valve Core Stem
   Place other end of tubing into an empty container



7. Push Strut Up, pushing old Hydraulic Fluid out of the strut into the jar Cycle a couple of times

The following procedures are typical of those used for servicing the strut with Fluid

8. Connect clear hose or tubing to Valve Core Stem

Place other end of tubing to a can/jar of 5606

9. Pull the Lower Strut down sucking fluid from can

10. Push Strut back up, pushing air out of the strut – expelled air will bubble in jar

Continue to pump the strut up and down until all of the fluid comes out as a solid stream on the compression stroke

As air is expelled it will progressively get "stiffer"

NOTE: You may have to use an assister jack to compress the Strut the Final Time

11. Finally compress the strut all the way and then pull strut back 1/4 inch

12. Disconnect the Tube from the valve and Remove tube from the jar

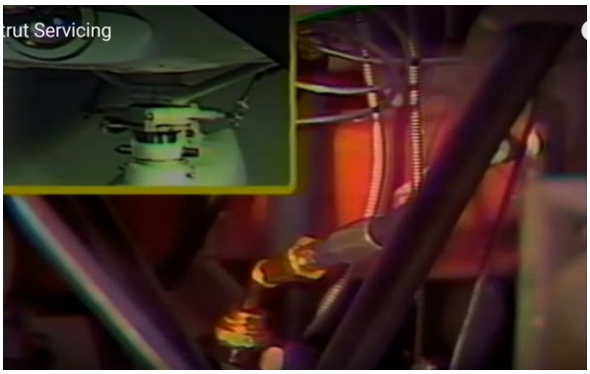
13. Reinstall Valve Core

The following procedures are typical of those used for re-inflating the strut.

14. Lower the Nose so the weight of the aircraft is on the wheel
Collapsing the Strut

NOTE: If you are using pressure from an unregulated source You should use a servicing hose with an inline Regulator and a High Pressure Chuck

Shock struts should always be inflated slowly to avoid excess heating and over inflation.



15. Attach the Servicing Hose to the servicing valve.
Control the flow with the service valve swivel nut

16. Inflate the strut
Follow manufacturer's instructions
Some aircraft the correct amount of inflation is measured in psi

Other specify struts to be inflated until extension of the lower strut is a certain measurement

Examples
Piper aircraft can require up to 200 psi

Single engine Cessna nose struts require 130 psi

NOTE: The struts should be inflated so that they are within the proper range even when the airplane is fully loaded

Generally, nose struts should be inflated so that you can see 3.5 - 4.0" of the exposed chrome of the strut

About four fingers is a good estimate.

17. Once inflated, tighten the swivel nut and torque as specified

18. Remove the fill hose fitting and finger tighten the valve cap of the valve

As a Last Step and Good Standard Practice

Apply a squirt of hydraulic fluid to the strut and wipe the strut down

This helps keep the outer wiper/seal wet and clean, protecting the inner seal from dirt etc.

Click the Link for video servicing a strut on a Cherokee

https://www.bing.com/videos/search?q=fill+shock+strut+with+5606&view=detail&mid=1E914C3AEAE45D5A8BBB1E914C3AEAE45D5A8BBB&FORM=VIRE

AVIATION ODDITY'S

Northrop YC-125

As World War II wound down, Northrop looked for opportunities to expand its aviation products. At the time, various reports forecasted a need for a rugged, low-cost, transport aircraft to serve under-developed airfields for emerging commercial routes following World War II. To meet that need, Northrop designed and built the N-23 Pioneer transport at its own expense.

The Pioneer was unlike any aircraft that Northrop had built. The N-23 Pioneer was a trimotor, high-wing aircraft of all-metal construction. Its robust fixed landing gear, with long struts, enabled the aircraft's use on unimproved runways. To allow for short-field operation, large flaps made up 80% of the wing's trailing edge.

The Pioneer was powered by three 800 hp (597 kW) Wright R-1300 engines. Each engine turned a fixed-pitch, two-blade Hamilton Standard propeller.

After a year of test flights, the Pioneer was used to test an experimental dorsal fin. During a flight on 19 February 1948, the fin broke loose and damaged the Pioneer's tail surfaces, making the aircraft uncontrollable.

Test pilot Latham A. "Slim" Perrett did what he could to steady the aircraft to allow the copilot and an engineer to parachute to safety. Sadly, there was no time for Perrett to escape.

In March 1948, Northrop was issued a contract for 13 aircraft developed from the Pioneer. The new aircraft was the N-32 Raider and was designated YC-125 by the Air Force.

The YC-125 Raider was very similar to the Pioneer. The YC-125 was powered by three 1,200 hp Wright R-1820 engines. Each engine turned a constant speed, three-blade Curtiss Electric propeller. The propellers' pitch could be reversed to shorten the landing distance to as little as 330 ft. It had a redesigned rear fuselage that incorporated a 9 ft by 6 ft 6 in ramp for loading and unloading equipment.

Six JATO (jet-assisted take off) bottles could be used to enable a fully loaded 40,900 lb YC-125 to take off in 500 ft

Two versions were produced, the YC-125A, as an assault transport and the YC-125B was intended for Arctic rescue. The two versions differed only in internal equipment.

The YC-125 made its first flight on 1 August 1949. Initial flight tests went well, and all 23 aircraft were delivered to the Air Force by the end of 1950. However, the YC-125 was found to be underpowered during service trials.

As a result, the aircraft was thought to have little use in its intended roles and were stationed at Sheppard Air Force Base in Texas and used for ground instructional training.

In 1955, they were declared surplus, and around 19 YC-125s were sold to Frank Ambrose Aviation in Florida. That company then resold many of the YC-125s to various entities in South America, where they were used as rough field transports. Some served into the 1970s.

There are two known surviving YC-125s. Both were recovered after their service in South America.

The Pima Air & Space Museum in Tuscon, Arizona has a YC-125A still in the livery it wore while serving for Triplay y Maderas de Durango, S.A., a lumber company in Durango, Mexico.

The National Museum of the United States Air Force (NMUSAF) in Dayton, Ohio has a YC-125B. This aircraft was recovered from Zacateas, Mexico by Asher Ward and Darryl Greenamyer in the early 1990s.

As an interesting note: Ward and Greenamyer had previously recovered a YC-125A for the NMUSAF. But during the Ferry Flight to the museum a corroded wire, caused the propeller of the left engine to go into reverse pitch shortly after takeoff from Tulsa, Oklahoma on 29 June 1988. The aircraft crashed but Ward and Greenamyer were able to escaped with minor injuries.

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Editor Contact info is:

Cell: 317-523-3824
Email: n3165e@hotmail.com

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

Interesting and Useful Websites:

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

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**

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http://www.eaa.org/eaa

https://www.faasafety.gov/

FAA Safety Briefing Magazine | Federal Aviation Administration

Weather and Flight Planning Sites:

https://www.lmfsweb.afss.com/Website/home#!/

FltPlan.com Free Services

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www.flightaware.com

Miscellaneous Links To Check Out:

http://www.avweb.com/

http://aero-news.net/

http://tailwheelersjournal.com/

www.whywefly.org

www.barnstormers.com

Travel:

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