

Next WingNuts Chapter Meeting: Sat. Jan 8, 2022 12:00 PM - Hunter International Air-Field

Next VMC Club Meeting: Tues. Jan 25, 2022 6:00 PM - Hunter International Air-Field



Chapter 1321 / South Middle Tennessee

Our Chapter Home Page: <https://chapters.eaa.org/ea1321>



WISHING EVERYONE A GREAT YEAR

PRESIDENTS CORNER:

Happy New Year everyone, 2021 was a great year for the chapter and I don't see why 2022 shouldn't be any different. That doesn't mean we can't change and become even better. Sometimes to move ahead and improve a change in leadership can be what's needed. This might be a little early to say but I want you all to think about that change. Elections will be held this year in October unless we decide to hold them earlier. So I want the membership to start thinking about who you might want to lead the chapter moving forward. I feel I'm getting pretty stagnant, and a change might fix that. Other ideas are welcome since I know it's hard to find someone that is willing to take over the office. Please think about it, I feel it is vital to keeping the chapter going.

Now for some yearly business. Jim will let us know how the funds are going with a quick report this Saturday. Of course he will be ready to start collecting the yearly dues of \$20.00 so come prepared. I'll have Jim put out an email for alternate ways to pay yearly dues. Rest assured that if you have paid ahead Jim has that recorded.

Looking forward to a wonderful year,

See ya all Saturday.

Glen Smith
President

In Case Anyone is Interested



Join us on January 24-28, 2022, during the second-annual EAA Homebuilders Week online event. Experts from every corner of the homebuilt aircraft community will bring their knowledge and information to builders everywhere through free and interactive webinars. Topics covered include workshops on sheet metal, welding, and wood; aircraft designs from a variety of industry leaders; part selection when building; buying secondhand; and more.

Follow This link to the full Schedule and to Register

https://www.eaa.org/ea/aircraft-building/homebuilders-week?mkt_tok=OTEwLVNFVS0wNzMAAAGBeOVe-D00cHprQYuaACT30SS1sToM6NDJcuJDi05b96uHICaiSkZCCHYFleZ67t7n2iqA4moC07OIGhjIvd8mQi4QG0K0pO_wgmBGoOBI35M



Self-Insuring or Risking Everything?

With rapidly increasing insurance prices some owners are telling us that they're self-insuring. Are they "going bare," and risking financial disaster?

https://www.aviationconsumer.com/aircraftreviews/self-insuring-or-risking-everything/?MailingID=AC-132&st=email&sc=WU20211231-Sub&utm_source=ActiveCampaign&utm_medium=email&utm_content=Self-Insuring+or+Risking+Everything%3F&utm_campaign=WU20211231-Sub

We get it. Until two years ago, aviation insurance rates were at historic lows due to overcapacity in the market. A few insurers bailed out because, as we understand, they couldn't afford to keep losing money. Now supply and demand has swung the pendulum the other way and the price of insurance premiums has shot upward.



You couldn't get the gear down but you did well on the subsequent, noisy landing. The follow-up would be a routine matter if you're insured. If you are self-insuring, have you set aside the funds to repair or replace the airplane or are you going to end up trying to sell the wreckage to recoup whatever you can from what had been your pride and joy?

Owner-flown turbines and high-performance piston airplanes have taken the biggest hit—as much as 50 percent rate increases over 18 months. The rate hikes for piston singles haven't been as dramatic, but insurance price sticker shock has hit all of general aviation.

Not surprisingly, the reaction of the pilot community to insurance price hikes has not been friendly, although the vast majority have grumbled and paid the new premiums. However, we're hearing from a number of owners that they are going to “self-insure” rather than continue to buy insurance.

We've also observed that if a pilot has the financial wherewithal to own an airplane, the odds are the pilot also has some other assets that would be at risk following an injury accident, so insurance generally makes sense to protect those assets.

There have always been pilots who refused to buy any sort of insurance for their airplanes for various reasons and we've heard a few—only a few—horror stories of lawsuits cleaning them out after an accident.

Self-insuring is ordinarily a carefully calculated plan engaged in by large corporations where the company faces an annual level of risk of loss for its activities that can be reasonably predicted.

GRIM REALITY

Going to self-insure? Plan to take regular recurrent training to avoid what happened in the below photo.

Most individuals don't have the financial wherewithal to truly self-insure. They don't put aside a pile of money each year to cover their risk of loss in that year.

Don't believe us? Check around to see how many owners you know who set aside money each hour they fly their airplanes in anticipation of the engine and prop overhauls. We're human, we're pilots—yes, tightwads. In reality, what we do is tell ourselves that something bad won't happen to us so we're not going to spend the money on insurance or set aside money to have a nest egg to cover a potential loss.

The vast majority of owners who don't buy insurance are going bare—they are risking their financial well-being if they have an accident.

ANALYZING RISK

Stripped to the essentials, the risks that an aircraft owner faces when owning an airplane are twofold: First, that the airplane is damaged and needs to be repaired or replaced; second, the owner, as pilot, rolls the airplane into a ball and gets sued.

THE HULL

Let's start with damage or destruction to the aircraft itself. To protect against the cost of fixing or replacing their airplanes, owners typically buy what the insurance world calls hull insurance. (When aircraft insurance started up insurers borrowed a lot of terms from admiralty insurance.)

When you buy the insurance, you and your insurance company agree on the value of the airplane—and you adjust that value each year as the market changes or you add equipment to your bird. If you tear up the airplane, your insurer either pays for repairs or, if it cannot economically be repaired, sends you a check for the agreed value of the airplane and keeps the wreckage.

When it comes to what owners tell us is self-insurance, we have found that it is most commonly done only on the hull—the aircraft itself. In our experience, owners who don't buy hull insurance do so on airplanes that are modestly priced—if any may be so described.

Our recommendation to an owner who is considering self-insuring the hull of her airplane is to ask herself two penetrating questions and give honest answers.

1. Am I willing to set aside some percentage of the value of the airplane in a dedicated bank account until I have enough money in it to replace the airplane?
2. If the answer to the above question is no, am I willing to walk away from my airplane, and every cent that I have in it, if a sudden windstorm or I, screwing up when flying, total it?

We think the second question is the telling one as we have had no “self-insuring” owner tell us that he has been putting money into a self-insurance bank account.

We also don’t believe owners when they tell us that they are perfectly willing to walk away from the \$60,000 an owner has sitting in his hangar in the form of a Beech Musketeer if things go south in a crosswind.

In our humble opinion, we think that most “self-insuring” owners believe deep down inside that “It can’t happen to me, I’m way too cool to wreck my airplane.”

We’ll add it as an aside right here. If you hangar your airplane, there’s a good chance that your aircraft hull insurance covers at least some of the hangar and its contents. If you self-insure, you give that up.

We fully recognize that owning an airplane is expensive and we are constantly looking for ways to cut down on the cost. Nevertheless, we are of the opinion that an owner should spend some quality introspective time considering risk and visualizing the pile of cash her airplane represents before making an informed decision to not buy hull insurance.

LIABILITY RISK

Want to self-insure? Airplane selecting matters. A vintage tailwheel twin such as a Beech 18 might not be ideal while a Cessna 150 (below) might be.

The more significant risk to an aircraft owner is that of having to defend a lawsuit alleging that the owner is liable for damages following an accident.

The second half of aviation insurance is for liability coverage—and, yes, you can buy liability insurance even if you decide not to buy hull insurance.

If you’re thinking of self-insuring for your liability risk consider that, first of all, whether a lawsuit has any merit, it must be defended. Figure on dropping on the order of \$15,000 to hire an attorney just to get started, to get up to speed on the facts, research the law—especially in a specialized area such as aviation—and file an answer to the complaint.

Again, that’s just to get started. It goes up from there. Way up.

So, if you are planning to self-insure for liability, do you have that kind of money that you are willing to spend even if you had nothing to do with the cause of the crash?

NO SILVER BULLET

We've had pilots tell us that they don't have to worry about getting sued because of some legal dodge that they are certain will insulate them. The two most common are that they put their airplane into a corporation (or LLC) or that they set up a corporation (or LLC) and do everything through it. Their logic is that someone who gets hurt can only sue the corporation. Of course it doesn't have any assets.

It won't work.

If you are the one flying the airplane, you will be held personally responsible for injuries caused if you were negligent in the operation of the aircraft. That's it. It's a cold, hard fact.

There aren't any silver bullets to allow yourself to dodge legal responsibility for messing up when flying an airplane. Remember, the FAA puts it on your shoulders in FAR 91.3 with its "directly responsible for" and "final authority" in describing *you*, the PIC.

EXPOSURE

If an owner has thought long and hard about liability insurance and decides to forgo it, we do have a few suggestions to reduce the exposure to getting sued.

- Don't carry passengers. If you don't hurt someone in the accident, you won't get sued. There's the risk that you'll hurt someone on the ground but, in reality, that's pretty low. We've heard of oddball accidents such as a non-passenger walking into a prop on a busy ramp but they are, thankfully, rare.
- If you carry passengers, limit them to family. While some of the worst legal fights we've seen have been between family members, historically this may reduce the risk of being sued following an accident.
- You'll need to consult with an attorney to see if it will work in your state, but having your passenger(s) sign a waiver of liability may help.
- Don't fly over or in congested areas or airspace and do constantly scan for other aircraft. If there are fewer aircraft in your area of the sky or on the airports you use, you're less likely to bump into one of them. If you don't fly over populated areas, you're less likely to hit something valuable if you have a forced landing.

In putting together this magazine we look at hundreds of accident reports every year and we peruse accident data in detail. What we see is consistent in one regard:

The general aviation accident rate may be slowly decreasing but mistakes made by human pilots stubbornly remains as the cause of at least 80 percent of the crashes.

RECURRENT TRAINING

Accident data also show that the longer it's been since the pilot had recurrent training (usually a flight review), the higher the chance of the pilot being involved in an accident.

That being the case, we firmly believe that whether you are going to self-insure or not, that you will substantially decrease the odds that you'll wreck an airplane if you regularly take dual—especially in the highest risk flying that you face, landings.

Pilots who fly for a living have to take training every six months—and their accident rate is miniscule. There's a direct cause-and-effect relationship.

Based on our accident research over many years it is our firm opinion that having a standing appointment with an instructor to take an hour of dual every six months (and actually doing it) will knock your risk of tearing up an airplane down dramatically.

WINGS

We have also seen some statistics for accidents for pilots who are current in the FAA WINGS program. Their accident rate is astonishingly low—in some years it has approached zero. While that may be attributable in part to the type of pilots attracted to the program, the low rate can not be ignored.

If you do insure for hull and/or liability, we suggest talking with your insurance broker to see what premium reductions are available if you are current in the WINGS program or otherwise take regular recurrent training and can show proof.

TYPE OF AIRCRAFT

Think about the type of airplane you fly. Bluntly, if it's a tailwheel airplane your risk of a landing accident is two to three times higher than if it's got a nosewheel. Tailwheel pilots may be more macho than nosewheel pilots, but they also wreck airplanes at a higher rate.

Does your airplane have retractable gear? If so, your risk just went up. If you're going to self-insure, consider only doing it in a fixed-gear, nosewheel airplane.

How easy is the plane to repair if you bend it? Are parts available?

How many seats? Fewer passengers—fewer people to get hurt and sue.

Consider your age—once you get past your 30s, your accident risk starts going up. Insurers start getting uncomfortable once you're in your 70s—maybe they know something. Time to stop flying?

Consider getting an advanced rating. The stats show that it will reduce your risk of an accident. Then again, the cost of the rating might pay for a few years of insurance.

RUTHLESS DISCIPLINE

If you're self-insuring, this isn't a pristine, polished aluminum Globe Swift, it's a very tall stack of \$100 bills, that you must be completely willing to watch vanish if the airplane is wrecked in a windstorm.

Anytime we look at the matter of an aircraft owner self-insuring, we consider what author Richard Bach did when he set out to barnstorm with a 1920s era Parks P-2A biplane in the late 1960s and found that he couldn't buy insurance at any price.

Bach's solution was to make training his insurance—get to know his airplane intimately, frequently practice every emergency he could imagine and resolve to only fly out of fields where he could make a forced landing if the engine quit.

Bach had emergencies with the old beast and its Wright engine, but he never scratched a passenger. The airplane got torn up a number of times, and he spent his money and time fixing it. He self-insured, and he had the ruthless self-discipline to train hard and refuse to operate where the risk was above his personal threshold so that when the worst did happen, no one got hurt.

CONCLUSION

We may be jaded, but we've seen many accidents involving a good pilot who made an error and people got hurt where the insurer did as it had contracted to do. It paid to repair the airplane (or paid the agreed-upon value if it had been totaled) and paid for the defense and settlement of the ensuing lawsuits.

We've seen self-insured aircraft owners lose a bunch of money when their airplanes were wrecked in storms or after loss of control in a crosswind. Sadly, we're aware of widows and kids placed into bad financial situations when husbands were killed, along with their passengers, in accidents where the husbands had erred, there was no insurance and the families of the passengers sued.

Our bottom line: Don't self-insure unless you've done your risk analysis homework and are willing to ruthlessly take training, refuse to fly in anything but excellent conditions and keep your airplane in top shape. We think that an

owner's self-insurance should be limited to the aircraft itself and almost never used for the liability risk.

Complaining that lawyers are driving up the cost of aviation or that insurers are rip-off artists and that you won't buy insurance to spite them won't protect your financial well-being if you have an accident and tear up your airplane and hurt someone. That's not self-insuring, that's **going bare—and way too much risk for a sensible owner.**

EDITOR'S NOTE:

As I strive to find stuff for the newsletter, I peruse through numerous email Newsletters, Aviation Groups Websites, Websites relating to Aviation, etc. Once in a while there is actually something new.

But, certain subjects - Midairs, Airport Procedures/Traffic Patterns, Decision Making, Risk Management/Personal Minimums - always seem to be rehashed on a routine basis. And, always with the same basic information.

So, let's see if I can present it with a slightly different slant while using the information presented from all the "established" sources.

Information portraying my thoughts will be in bold italics

Established Information taken from web sources will be in normal text and I'll include links to the website sources. With some important thought highlighted in green

Aeronautical Decision Making and Risk Management

Let's face it -- there's a degree of risk in everything we choose to do. Flying involves risks. The drive to the airport entails risks. Getting out of bed in the morning -- or, for that matter, choosing to *stay* in bed -- has an element of risk.

Risk management is defined as "the part of the decision making process which relies on situational awareness, problem recognition, and good judgment to reduce risks associated with each flight."

<https://www.aopa.org/news-and-media/all-news/2005/june/flight-training-magazine/risk-management#:~:text=Managing%20the%20inherent%20risk%20is%20a%20key%20to,judgment%20to%20reduce%20risks%20associated%20with%20each%20flight.%22>

The FAA and the “Aviation Industry” determined that steps had to be taken to decrease general aviation accidents. They then determined that managing the inherent risk was a key to flying safely and to further reducing the number of accidents.

"What we have to do is teach pilots a systematic procedure to identify risks that they have not anticipated or experienced, and manage them."

As a result, You probably have noticed that all the current discussions concerning the topics stated above include any number of Acronyms, Risk Assessment Matrix's, etc that for most of us - do nothing more than confuse the subject, make these topics overwhelming to some, appear to add to the time it takes to plan your flight, and cause others to disregard the topic all together.

I'M SAFE checklist

Illness -- Do I have any symptoms?
Medication -- Have I been taking prescription or over-the-counter drugs?
Stress -- Am I under psychological pressure from the job? Worried about financial matters, health problems, or family discord?
Alcohol -- Have I been drinking within 8 hours? Within 24 hours?
Fatigue -- Am I tired and not adequately rested?
Eating -- Am I adequately nourished?
-- *From the FAA's Pilot's Handbook of Aeronautical Knowledge*

Use CARE in the air

Consequences
Alternatives
Reality
External pressures

PAVE your way to a safe flight

Pilot
Aircraft
enVironment
External pressures

DECIDE model

Detect the fact that a change has occurred.
Estimate the need to counter or react to the change.
Choose a desirable outcome for the success of the flight.
Identify actions which could successfully control the change.
Do the necessary action to adapt to the change.
Evaluate the effect of the action.
The DECIDE model, from the Pilot's Handbook of Aeronautical Knowledge, can provide a framework for effective decision making.

The article goes on..... Proactive thinking is the key. "Situational awareness doesn't have this proactive aspect of considering problems before you get into them," John King said. "This concept has not been formalized in flight training. That's what we hope to provide to the industry."

The Kings have been working with the FAA to write a handbook on risk management for the agency. It will discuss practical application of their risk-management methodology. "The purpose of having a risk management handbook is that it becomes an official FAA document," John King said. As a result, risk management questions can be asked of students during both knowledge and practical tests. Publication of the handbook is expected this summer.

"When you think about it, it's stunning that we don't have a systematic risk management process as a part of the aviation culture. We're hoping to change that, so that pilots will go through a mental checklist before every flight," he said.

"Our goal with the Practical Risk Management series is to give pilots takeaways that are easy to remember and easy to use," Martha King said.

(It may have been a surprise to you, but as you can see from this article the majority the subject material and acronyms were created by John and Martha King. Question from by jaded side. Do you think they just donated their time in working with the FAA writing a Handbook and creating their Practical Risk Management Series, because they are just philanthropist's interested in our flying safety?)

Flight Risk Assessment Tools

https://www.faa.gov/news/safety_briefing/2016/media/SE_Topic_16-12.pdf

According to the FAA, because every flight has some level of risk, one of the most critical components to aid a pilot in making the no-go decision is to have and use a Flight Risk Assessment Tool (FRAT). *They come in all shapes and designs*

Risk Assessment Matrix				
Likelihood	Severity			
	Catastrophic	Critical	Marginal	Negligible
Probable	High	High	Serious	Medium
Occasional	High	Serious	Medium	Low
Remote	Serious	Medium	Medium	Low
Improbable	Medium	Medium	Medium	Low

Risk probability	Risk severity				
	Catastrophic A	Hazardous B	Major C	Minor D	Negligible E
Frequent 5	5A	5B	5C	5D	5E
Occasional 4	4A	4B	4C	4D	4E
Remote 3	3A	3B	3C	3D	3E
Improbable 2	2A	2B	2C	2D	2E
Extremely improbable 1	1A	1B	1C	1D	1E

RISK ASSESSMENT

Pilot's Name: _____ Flight From: _____ To: _____

SLEEP

1. Did not sleep well or less than 8 hours 2

2. Slept well 0

HOW DO YOU FEEL?

1. Have a cold or ill 4

2. Feel great 0

3. Feel a bit off 2

WEATHER AT TERMINATION

1. Greater than 5 miles visibility and 3,000 feet ceilings 1

2. At least 3 miles visibility and 1,000 feet ceilings, but less than 3,000 feet ceilings and 5 miles visibility 3

3. IMC conditions 4

Column total

HOW IS THE DAY GOING?

1. Seems like one thing after another (late, making errors, out of step) 3

2. Great day 0

IS THE FLIGHT

1. Day? 1

2. Night? 3

PLANNING

1. Rush to get off ground 3

2. No hurry 1

3. Used charts and computer to assist 0

4. Used computer program for all planning Yes 3
No 0

5. Did you verify weight and balance? Yes 0
No 3

6. Did you evaluate performance? Yes 0
No 3

7. Do you brief your passengers on the ground and in flight? Yes 0
No 2

Column total

LEFT COLUMN TOTAL + RIGHT COLUMN TOTAL = TOTAL SCORE

0 Not Complex Flight 10 Exercise Caution 20 Area of Concern 30

It is critical that pilots are able to differentiate, in advance, between a low risk flight and a high risk flight, and then establish a review process and develop risk mitigation strategies.

A Risk Assessment enables proactive hazard identification, is easy to use, and can visually depict risk. It is an invaluable tool in helping pilots make better go/no-go decisions and should be a part of every flight. *So, why does the FAA think we as pilot's can't do this mentally "Without an Assessment Tool"?*

As mentioned again below, when discussing "Personal Minimums" the problem is that much of the FAA/Industry's approach to risk management is that it requires quantifying that which often doesn't lend itself to quantification.

Applying objective values to subjective situations can create a conflict.

Personal Minimums?

https://www.avweb.com/flight-safety/risk-management/personal-minimums/?MailingID=790&utm_source=ActiveCampaign&utm_medium=email&utm_content=FAA+Issues+5G+ADs%2C+Rolls-Royce+Hybrid-Electric+PGS1+Reaches+Megawatt+Milestone&utm_campaign=FAA+Issues+5G+ADs%2C+Rolls-Royce+Hybrid-Electric+PGS1+Reaches+Megawatt+Milestone+-+Friday%2C+December+10%2C+2021

When considering the industry's take on risk management, one of the arrows in the quiver is something called personal minimums. One idea behind personal minimums is that the FAA's regulations are minimum standards—we're free to exceed them:

Examples –

If VFR requires three miles and 1000 feet, why not bump that up to five miles and 2000 feet, at least when we're inexperienced?

An ILS takes us down to 200 feet AGL, but as we reach decision height, the localizer and glideslope are much narrower, and can require greater finesse. So how about adopting 500 feet instead?

Adopting greater-than-required standards can be a good way for a less-experienced pilot to resolve various dilemmas arising from the knowledge he or she isn't up to the task—whether it's low ceilings, stiff crosswinds or fuel requirements.

Much of the FAA's approach to teaching risk management concepts assigns values—even color coding—to various aspects of planning and executing a flight. The basic idea seems to be that a decision reached empirically is more effective than one reached through some other means.

The implication is that pilots can't properly weigh likelihoods and outcome severities without math.

The problem is that much of the FAA/industry's approach to risk management is that it requires quantifying that which often doesn't lend itself to quantification.

Applying objective values to subjective situations can create a conflict.

As you may begin to see, all the "Formal Risk Management Processes developed" have been put into place as "aids" for a pilot to use in making decisions.

Some may also ask, "So, Why do they think that I as a pilot needs to use all these acronyms, matrix's, etc. and jump through all these hoops in making my Aviation Decisions?"

I think the answer may be; that the FAA considers that most people DO NOT make GOOD Decisions!!!! Which is borne out by the causes of accidents found during the NTSB/FAA investigations.

Maybe, all these formal processes, acronyms, etc were created so we as pilots don't have to think about and mentally take into account all the variables needed to make a Good Decision.

Obviously, decision making, and risk management are important in making each of your flights as safe as possible and in decreasing the number of accidents!

BUT, to do that do you have to reference all the Acronyms, Matrix's, make a Personal Minimums Card, etc for each and every flight??

I would say it may depend on

The Complexity of the Fight.! i.e. weather, destination, sleep, fuel, length of flight, etc

How mentally prepared you are for the upcoming decisions you need to make.

The more complex and the more variables that may need to be considered for a flight; using "these tools" to aid your decision-making may be useful.

So, What should you do to ensure your decisions are good ones?

Take the time to “Teach Yourself the Art of Making Decisions.” Learn about Decision Making and Risk Management using all those acronyms, metrics, assessments, etc so you can understand the principals.

Once the process is understood, then you can begin applying what you have learned to making decisions during planning and monitoring the progress of your local flights.

As you continue to use the principals of Good Decision Making, slowly increase applying them when planning and conducting your more complex flights. But, Keep those “Tools” available, and use them if things really start to snowball!

Take the time to think about and implement the steps that work for you to be a good decision maker!!!!

Sometimes you just need to: Know When To Call It A Day

Sometimes it's just not your day. And sometimes that's not obvious until you're in the middle of it.

<https://www.planeandpilotmag.com/pilot-training/proficiency/lessons-learned-know-when-to-call-it-a-day/>



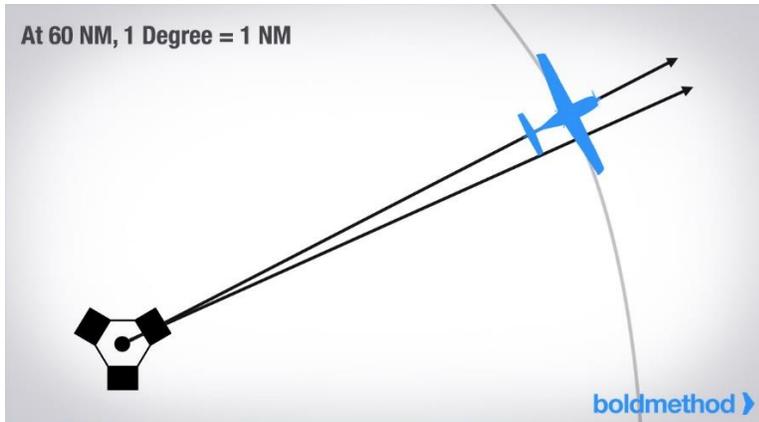
7 Rules-Of-Thumb Every Pilot Should Know

Flying gets a lot easier once you know some basic rules-of-thumb. Here are 7 of the best rules, and how to use them.

1) Course Corrections

The 1 in 60 rule states that if you're off course by 1NM after 60 miles flown, you have a 1-degree tracking error. **Time to correct that heading!**

Another tip: If you're 60 miles away from a VOR, and you're off course by one degree, you're off course by one mile. Last thing: if you fly a 60-mile arc around the VOR, you'd fly a total of 360 miles...talk about a long instrument approach!



2) When To Abort A Takeoff: The 50/70 Rule

A general rule for GA aircraft is if you haven't reached 70% of your takeoff speed by the time you've reached 50% of the length of the runway, you should abort your takeoff. [Read the full article here.](#)

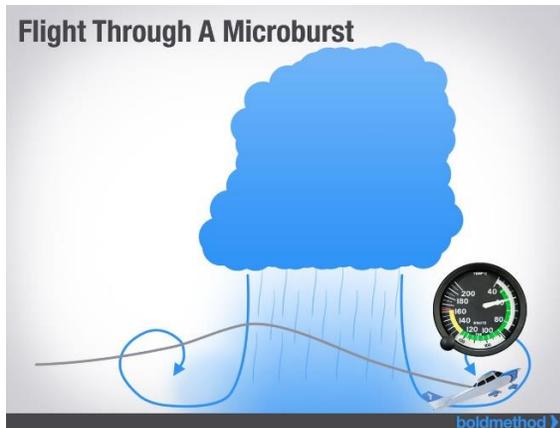
Why do you need 70% of your takeoff speed by 50% of the runway? As you accelerate down the runway during takeoff, you start chewing up more feet of runway for every second you're rolling down the pavement. **If you haven't achieved 70% of your takeoff speed by the time you're halfway down the runway, you may not have enough pavement left to get to rotation speed and lift off.**



3) How To Calculate Windshear

Rule-of-thumb: the total shear is double the peak wind. If the outflow speed of a microburst is 30 knots, you'll experience about 60 knots of shear as you cross the microburst. And it all can happen in a very short period of time.

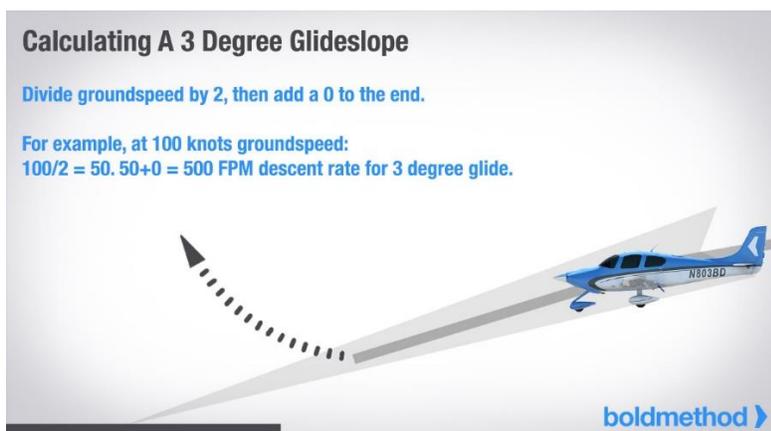
Think about what would happen to your Cessna 172 if you went from 100 knots to 40 knots in the matter of a few seconds...



4) Calculating Glideslope Descent Rates

If you're flying a 90-knot approach speed on a 3-degree glideslope, you'll need to descend at roughly 450FPM to maintain the glideslope. But how did we come up with that?

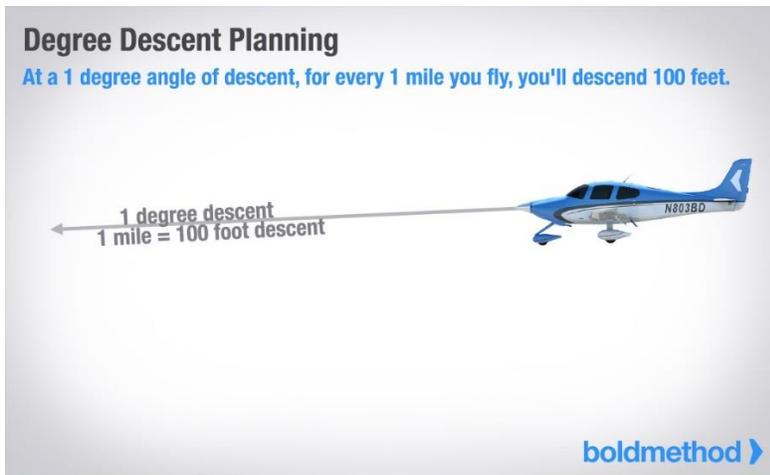
There's a pretty easy rule-of-thumb to figure that descent rate out. **Divide your ground speed by 2, then add a 0 to the end.** So if you take 90 knots / 2, you get 45. Add a zero to the end, and you get 450 FPM. There's another way to approximate this. **You can also multiply your groundspeed by 5 and you'll get an approximate descent rate for a 3-degree glideslope.**



5) More Descent Calculations

At a 1 degree angle of descent, for every 1 mile you fly, you'll descend 100 feet. This ratio can be used to determine other aspects of descent. For instance, if you have 1 mile to descend 600 feet, you'll need a 6-degree descent.

While you may be able to chop and drop in a C172, a larger jet or turboprop usually can't do that. Plus, it's not safe. Try your best to plan a 3-degree arrival into all of your airports for the safest and most gentle descent.



6) Calculating Civil Twilight

A good rule-of-thumb for calculating civil twilight is that it usually ends between 20-35 minutes after sunset. Today in Boulder, sunset is 6:05 PM, and civil twilight ends at 6:32 PM. That's a difference of 27 minutes.



7) Flying Gusty Approaches

In gusty conditions, [add half of the gust factor to your approach speed](#). If your final approach speed is 80 knots, and the winds have a gust factor of 20 knots (for example, winds 10 gusting to 30), fly the approach at 90 knots.



Mixture During Descent

Featuring [Jeff Van West](#)

Subscriber question:

"I understand leaning the mixture for cruise at altitude, but I've never been clear on what to do during descent. When do I enrichen the mixture?" — Paula T.

Jeff:

"I can't fully answer this question with the brevity of a tip. And most POHs aren't much help with 'Mixture—ENRICHEN as required.' But as long as you adopt a 'Do no harm' mantra, you have many options. Let me explain.

The discussion of the mixture knob starts with the power lever. Pilots generally fall into two categories: those who maintain cruise airspeed as they descend by

reducing power, and those who maintain cruise power on the descent to get a faster airspeed.

If you reduce throttle for descent, you're probably operating under 65 percent of the engine's rated output. There's no mixture setting that can cause harm at that low a power setting. My personal style with this kind of descent is to leave the mixture control alone, knowing the air-fuel ratio will get leaner as my altitude gets lower. I only enrichen the mixture when necessary to keep the engine running smoothly. When I level off and approach the airport, I set a full-rich mixture (or a mixture for maximum power if it's a high-altitude airport).

If you descend at cruise power, the next question is whether you were cruising lean of peak EGT or rich of peak EGT. If you were operating lean of peak, the mixture will only get leaner with decreasing altitude, and you can use the same technique: Only enrichen enough to keep the engine running smoothly until transitioning all the way to full rich (or maximum high-altitude power).

If you were operating rich of peak EGT and then descend with cruise power, as many people do, the mixture getting leaner as you descend means you could create a power-mixture combination that's harmful to the engine. That means you should enrichen as you descend, erring on the side of being too rich. If you're unsure, just go full rich (or as needed for the high-altitude destination) early in the descent and be done with it. You'll burn more gas, but you'll have a high enough power setting that plug fouling shouldn't be an issue.

Of course, all this assumes a normally aspirated engine. Turbos are a different story. Better engine instrumentation gives you more precise control. Maintaining sufficient engine temperatures could be an issue. There are many variables. Hopefully, this provides a good starting point.

Whatever you do, however, ensure the mixture is set for landing no later than downwind. Check again on final. You don't want to discover the mixture setting is still lean when you apply full throttle on a go-around."

PLACES YOU MIGHT LIKE TO ADD TO YOUR AVIATION BUCKET LIST:

Do you have a favorite Aviation place that you haven't visited yet? Or, one you have visited and you think that the rest of us would enjoy? A place you think should be put on our Bucket List of things to do/see? If so, why not share it with the rest of us? Send your Aviation Bucket List Place to me and I will put it in our next Newsletter.

This month we will visit Catalina Island.

About Catalina

Leave all the hustle and bustle behind and return to a slower pace of life, the island life. Catalina Island's rich storied history and unique charm keeps people coming back time and again.

A Tale of Two Ends

About 22 miles south-southwest of Los Angeles, Catalina Island is the southernmost island of California's Channel Islands. The Island is made up of two towns, the incorporated city of [Avalon](#) on the east end, and the unincorporated village [Two Harbors](#) on the west end. The island is just 22 miles long and 8 miles across. Outside of the two towns is a rugged wilderness of majestic beauty under the stewardship of the Catalina Island Conservancy.

Most visitors and residents get around the island by foot, bike or golf cart. The [weather](#) on the Island is described as a mild subtropical climate with warm temperatures year-round



Avalon

The only incorporated city on Catalina, Avalon wraps around beautiful Avalon Bay on the southeast end of the island.



A popular tourist destination for well over a century, this historic seaside destination has attracted film stars, dignitaries and presidents throughout the years, and it still maintains its charm and allure today.

Avalon offers numerous hotels, restaurants, beaches, spa experiences, land & ocean adventures, a golf course and a host of recreational activities for visitors to enjoy.

Those arriving in Avalon via [high-speed ferry](#) will dock at the Cabrillo Mole boat landing. From there it's a short walk to the main part of town.

Crescent Ave. is the main street surrounding Avalon Bay. Known by locals as Front Street, this scenic walkway features architectural elements like the Serpentine Wall and Wrigley Fountain adorned with authentic Catalina tile

Two Harbors

Catalina's Other Side

Located on Catalina's west end, Two Harbors is a mere 22 miles from the Southern California mainland. This rustic village sits on a narrow strip of land that separates Isthmus Cove on the leeward side of the island from Catalina Harbor on the windward side.

Guests visiting from the mainland typically arrive via high-speed ferry from San Pedro, although many come on private boats and pick up one of more than 700 moorings available for rent in the many protected coves and harbors along the coast.



Outdoor Lover's Paradise

Two Harbors offers a host of activities for outdoor lovers of all kinds. The [Dive & Recreation Center](#) has everything you need to enjoy hiking, mountain biking, camping, kayaking, boating, fishing, snorkeling, and world-class SCUBA diving in crystal clear water.

Rich Colorful History

American Indians were first to inhabitant the Two Harbors area, living off the sea and trading with Indians on the mainland. Spanish explorers, fur traders, and even pirates and smugglers followed. During the Civil War, members of the Union Army were stationed here. Their barracks still remain.

Points of Interests

	Blog	El Rancho Escondido
Webcams	Catalina Island Museum	
Itineraries	Wrigley Memorial & Botanical Gardens	
History	Civil War Barracks	
Island Guide	Airport in the Sky	
Transportation & Maps	Banning House Lodge	
Points of Interest	Catalina Country Club	
Press Releases	Mt Ada	
About Catalina Island Company		
Social Media		
Sign Up For Special Offers		

Getting to Catalina Island

You can take a [passenger ferry](#) from Newport Beach, Dana Point, Long Beach or San Pedro. You can also fly over via private plane, or sail over on a private boat. Catalina Island's Airport in the Sky sits on a mountaintop, 1,602 feet above sea level.

Catalina's Airport in the Sky

The Buffalo Springs Airport (KAVX), Catalina Island's only airport is privately owned is located at the center, and top, of Catalina Island at 1,602 feet above sea level. It is 10 miles (30-minute drive) from Avalon, and 13 miles (45-minute drive) from Two Harbors.

Its single, 3,000 X 60 foot runway is called the "airport in the sky" for good reason.

On either end, there are dramatic cliffs rolling down Catalina island into the Pacific Ocean below.



Coollest Airport Landing...Airport in the Sky, Catalina Island, California

<https://www.youtube.com/watch?v=Mf7aNr-lzbw>

Airport in the Sky is home to [DC-3 Grill and Gifts](#), a restaurant and gift shop featuring Buffalo burgers, sandwiches and world famous cookies.

Airport in the Sky was commissioned by the Wrigley family. Two mountain tops were leveled and the remaining canyon filled in to create the 3,200 foot runway. Construction of the runway began in 1940 and was nearly complete when Pearl Harbor was bombed in 1941.

Because of World War II, construction was halted and the airfield, along with the rest of Catalina Island, was leased to the United States Government for \$1 per year. The runway was covered with debris so that enemy aircraft would not be able to use it as a base.

After the island was returned to the Wrigley Family and the Santa Catalina Island Company, paving of the runway and completion of the tower and terminal building commenced. The airport officially opened in 1946.



Airport Information

Operating Hours: 8:00 am- 5:00 pm (Closed November 25th and December 25th, 2021)

Airport contact: 310-510-0143.

Airport Communications

CTAF/UNICOM: 122.7
WX ASOS: 120.675 (310-510-9641)
SOCAL APPROACH: 127.4
SOCAL DEPARTURE: 127.4

RUNWAYS

RUNWAY 4

Latitude: 33-24.157333N

Longitude: 118-25.187167W

Elevation: 1601.0 ft.

Traffic pattern: left

RUNWAY 22

33-24.442333N

118-24.705167W

1547.8 ft.

right

Landing Fees (as of 2/2021):

Aero Club - [Join Aero Club for Unlimited Landings for the Year!](#)

\$175 Piston + Conservancy Membership

\$325 Turbine + Conservancy Membership

One-Time	Landing	Fees:
\$35	Piston	single
\$40	Piston	twin
\$50	Turbine	single
\$100		Turbine twin

Overnight Fees:

\$20 for a single engine overnight

\$25 twin engine overnight

NOTES:

Runway 4/22 is a tabletop runway. The runway extends nearly to the edges of the flattened area, allowing no overrun protection.

- RWY 04 FINAL 2300 FT STEEP 2.1% DOWNSLOPE

- RWY 22 IS THE PREFERRED RUNWAY

The first 1800 feet of Runway 22 slopes uphill toward the southwest, with the remainder being level or slightly downhill.

- PILOTS CANNOT SEE ACFT ON OPPOSITE ENDS OF RWY DUE TO GRADIENT, MUST ANNC TAKING ACTIVE RWY ON UNICOM PRIOR TO DEP.

The result is that aircraft on short final for Runway 22 only see the first part of the runway, the remainder only becoming visible as the airplane approaches the crest.

This has resulted in accidents and blown tires as pilots thought they were about to go off the end of the runway.

In strong southwest winds there can be a strong downdraft at the approach end of Runway 22.

As a result of these factors, many aircraft rental agencies require a "Catalina checkout" with one of their instructors. Pilot caution is recommended.

Want to Fly into the Airport in the Sky?? Here are tips and things to be aware of thanks to



Would You Land At Catalina Island's 'Airport In The Sky'?

By [Swayne Martin](#) 12/21/2021



With cliffs on either end, this island's mountaintop airport has a series of unique challenges.

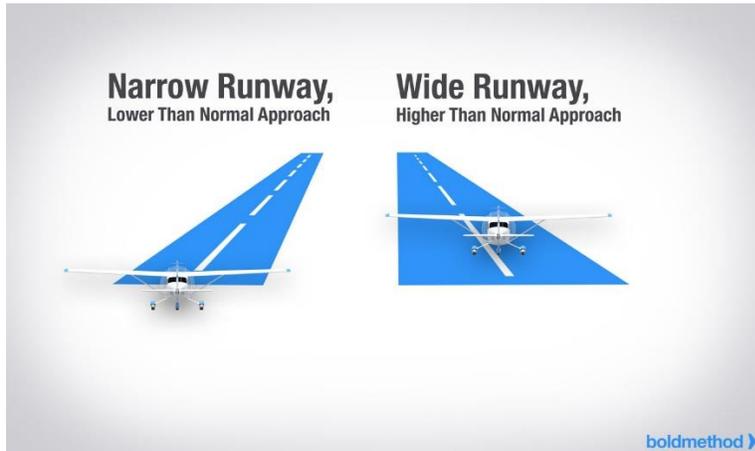
Catalina Landing

https://www.youtube.com/watch?v=rxk0rsDwK_k

Runway Illusions

There is a 2.1% [downslope](#) beginning a few hundred feet after the approach markings for Runway 04. Because of this, Runway 22 is preferred for landing with an upslope. The runway is also only 60 feet wide, which is slightly more narrow than typical runways.

When you combine the slope of the runway, narrow width, and cliffs on either end, pilots are set up for a series of visual illusions.



Updraft And Downdraft Concerns

When landing on either runway with a strong headwind, you should be aware of downdrafts caused by the surrounding terrain and steep cliffs. **Prepare for power changes to compensate for the downdrafts, and be ready to go-around.**



Other notes:

- \$35 landing fee (ouch!)
- The runway has a hump in the middle of it. This has caused numerous accidents as pilots land and think they are running out of runway, start a go-around, get over the hump and see they are only half-way, abort the go-around, and go off the end of the runway. For some reason, I don't think the hump was corrected when they redid the runway.

Because of the many challenges, most of the local school require a CFI checkout for the initial visit.

I'm a frequent visitor to KAVX. Great place to fly friends and family for breakfast or lunch. There are a few challenges as mentioned in the article. I approach high to avoid the downdrafts associated with rwy 22. The hump 2/3 down 22 is visually concerning if you are unaware of its presence. A pilot may think they are approaching the end of the rwy well before its actual end.

From the Archives of



Editor Note: This has been a very indepth, lengthy discussion so it has been presented in installments. This is the 3rd Installment of an article discussing Engine Fuel/Air Mixture

Here is the link to the full article

https://www.avweb.com/features_old/pelicans-perch-18mixture-magic/

Pelican's Perch #18: Mixture Magic

This installment discusses the use of the Engine Manufacturers Charts to explore the Relationship between

Fuel Mixture, its' effect on EGT and CHT, that results in a certain fuel consumption, which in turn creates a given amount of power.

A useful trick to help you understand this chart is to lay a clear plastic ruler vertically on the chart. Keeping it vertically oriented, move it back and forth horizontally.

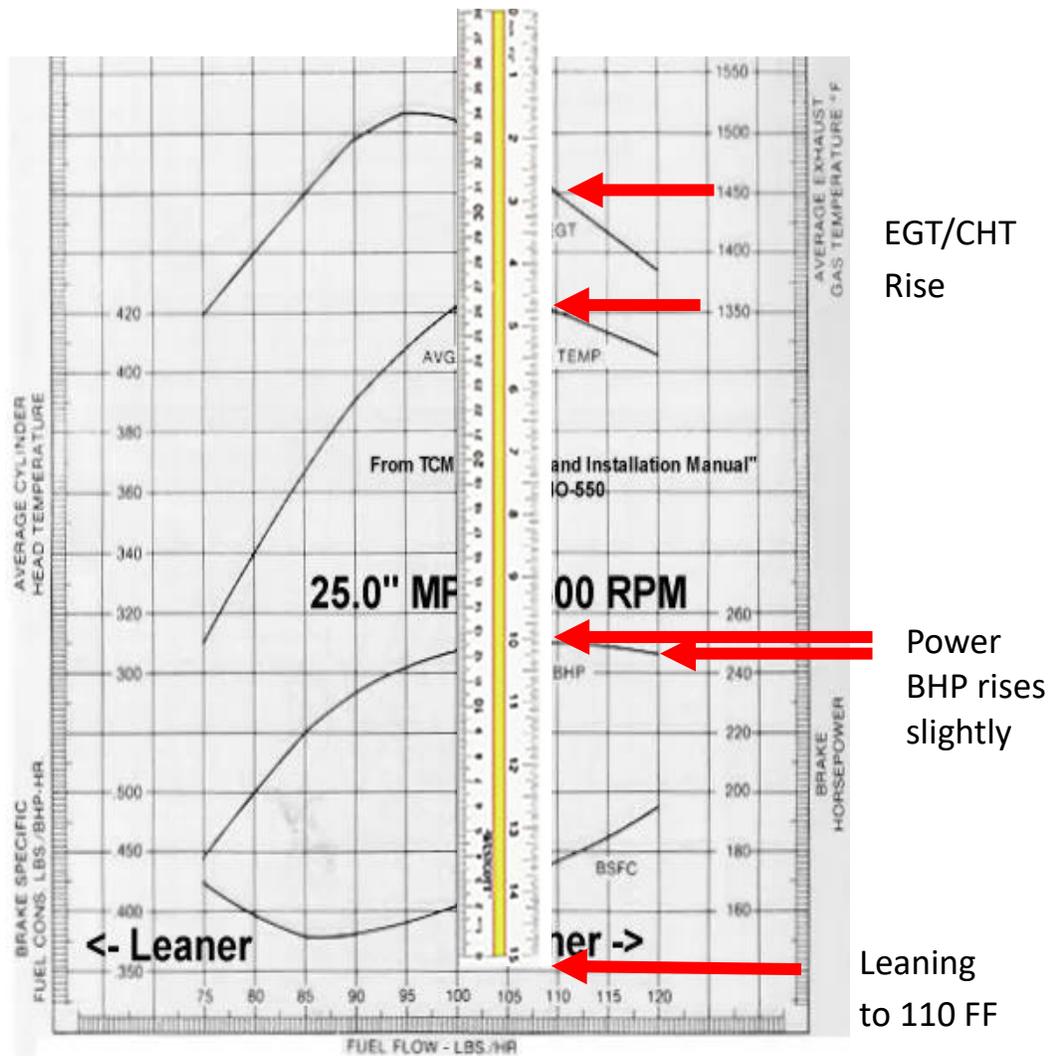
As one end of the ruler moves over the fuel flow scale at the bottom of the page, the four curves will move up and down along the ruler's straightedge, just as those parameters move up and down in the real world.

Now, here's the **crucial concept behind this chart: All four curves are carefully plotted with reference to the fuel flow scale at the bottom, and this gives us the opportunity to look at the relationships between them!**

For example, let's say we've leveled off in cruise, allowed things to settle down and it's time to lean.

Starting from full rich (perhaps well off the right side of this chart and due to the enrichment feature at full throttle), we start leaning fuel flow from 120 to 110

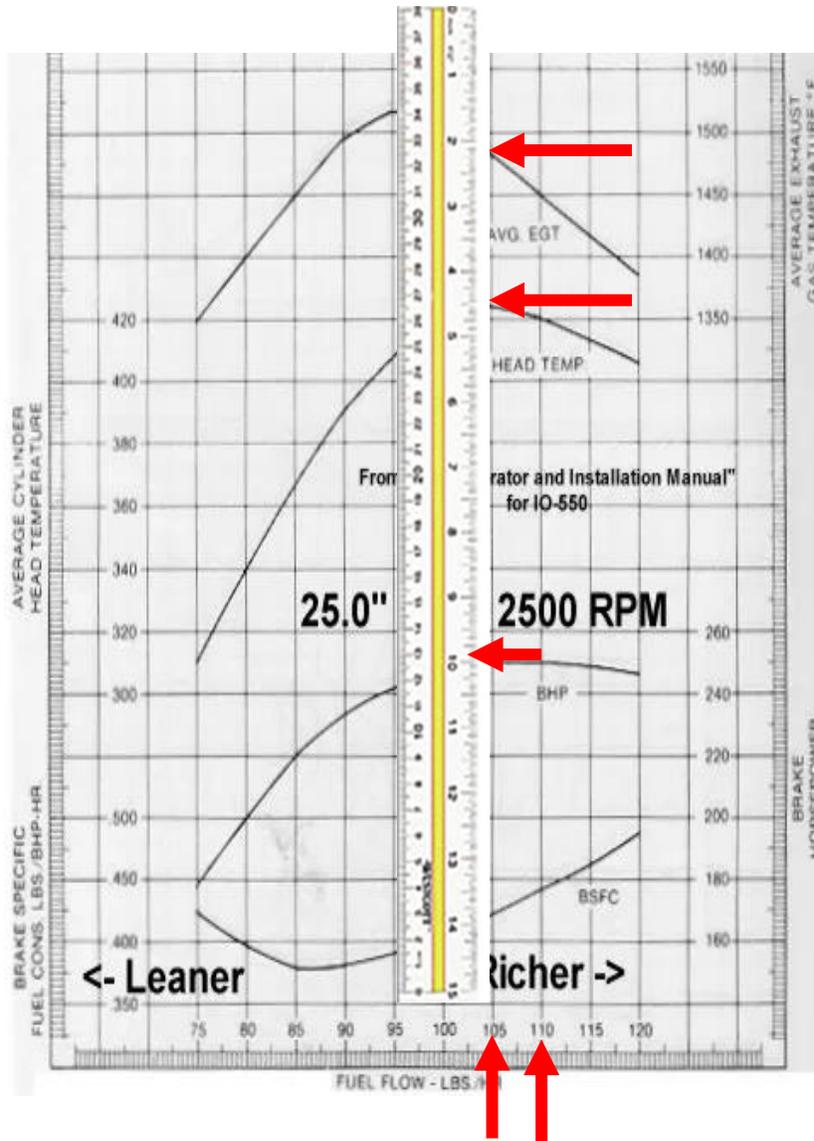
According to the chart, the EGT and CHT will rise, and we know this to be true from experience. But, notice the power rises only slightly.



As you continue to lean, Notice the BHP curve has a very flat “peak” that occurs around 110 to 105 PPH fuel flow.

This information will be very helpful if you’re making a high-altitude takeoff

Also notice the BSFC is dropping as you lean, indicating you’re getting “more efficient.”



EGT will Peak Last

CHT Peaks First

Power BHP has a flat peak

BSFC drops as you lean – indicates more efficient operation

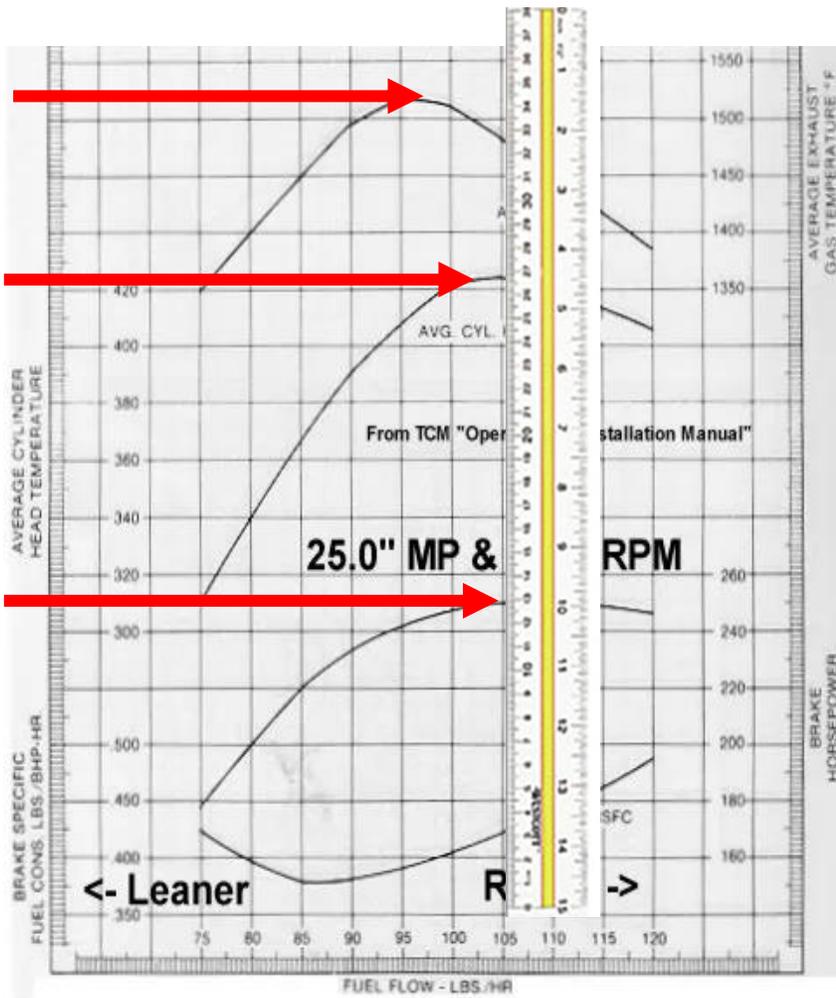
Leaning to 110 - 105 FF

As we continue to lean, power peaks first, with CHT peaking at very close to the same point.

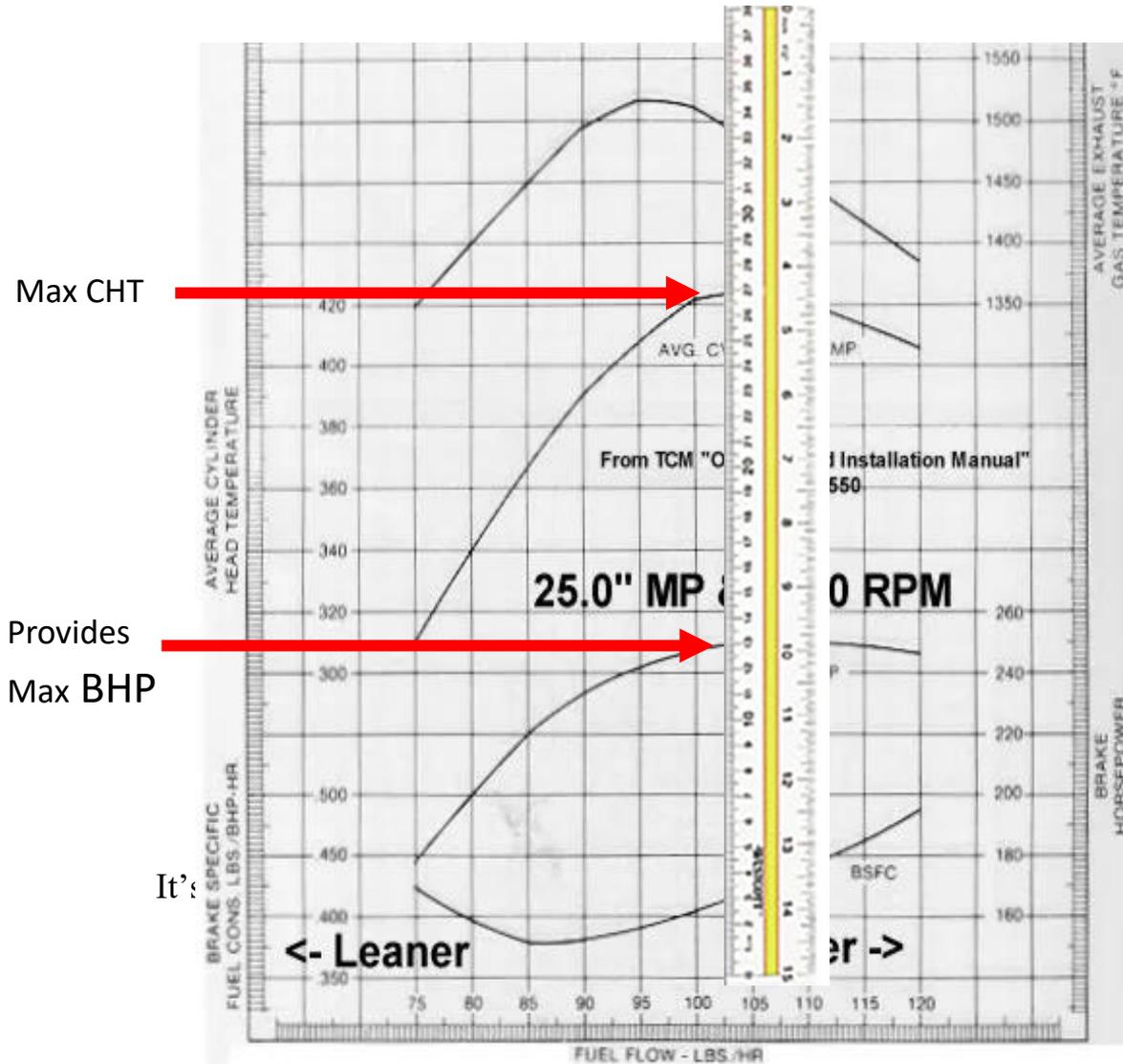
EGT
Peaks
Last

CHT
Peaks
Second

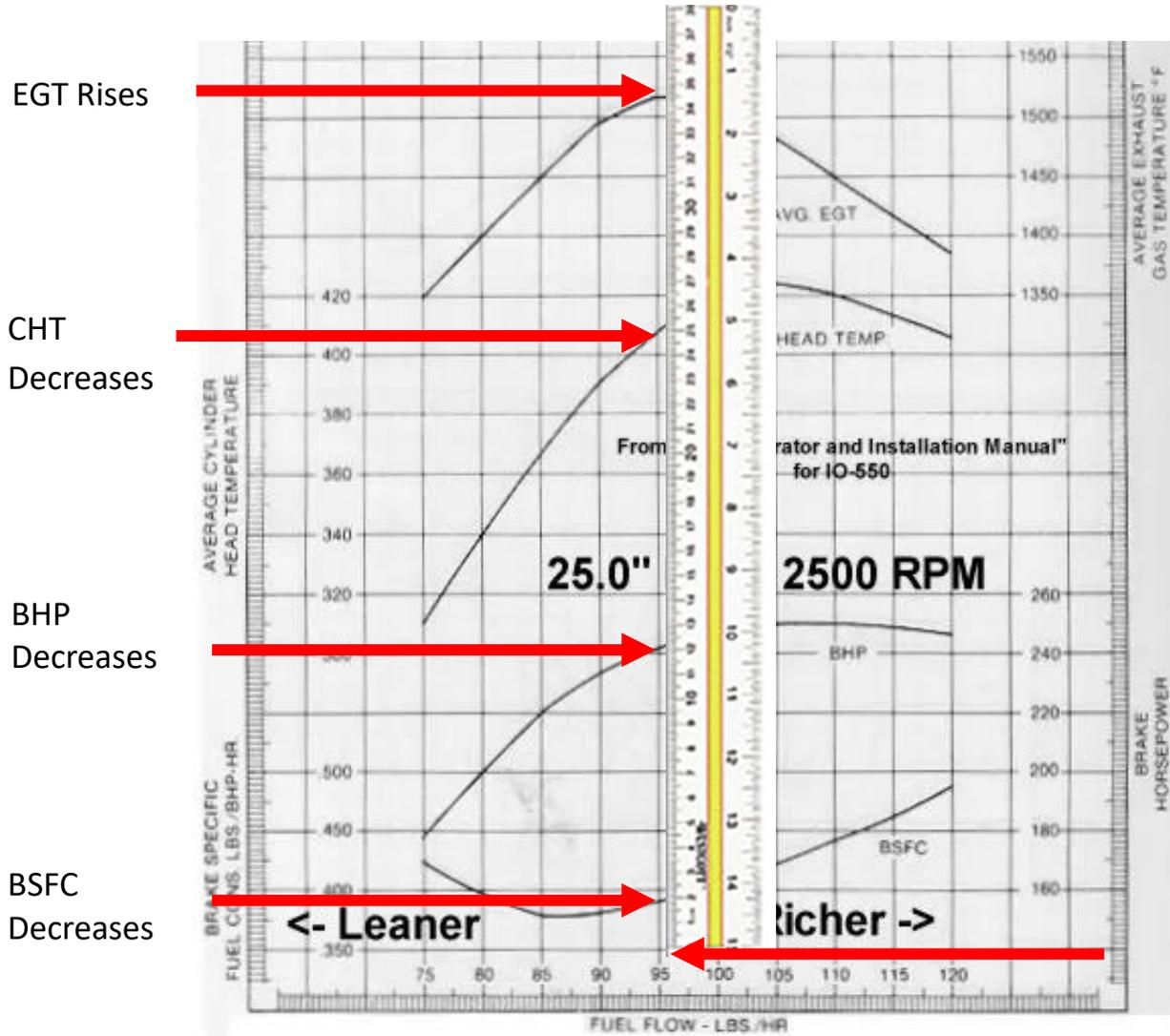
BHP
Peaks
First



In practical terms, if we lean to max CHT, we'll have max power for that MP/RPM setting. Doesn't that make sense, intuitively? Max power, max CHT?



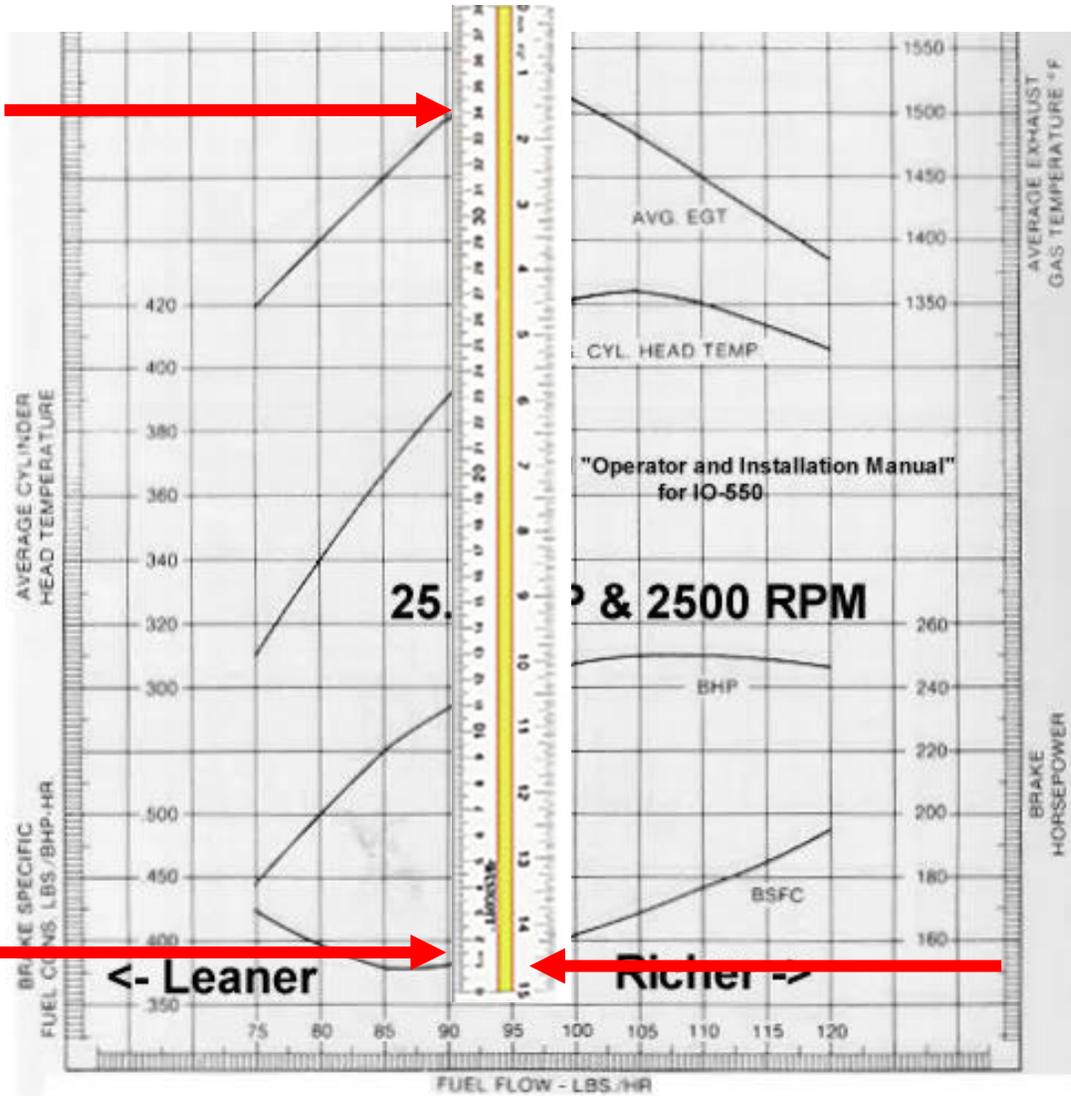
With continued leaning, power and CHT drop together – very gradually at first, then progressively more steeply – while BSFC continues to improve and EGT continues to rise.



Continue leaning, and EGT peaks and begins to fall, while BSFC continues to improve

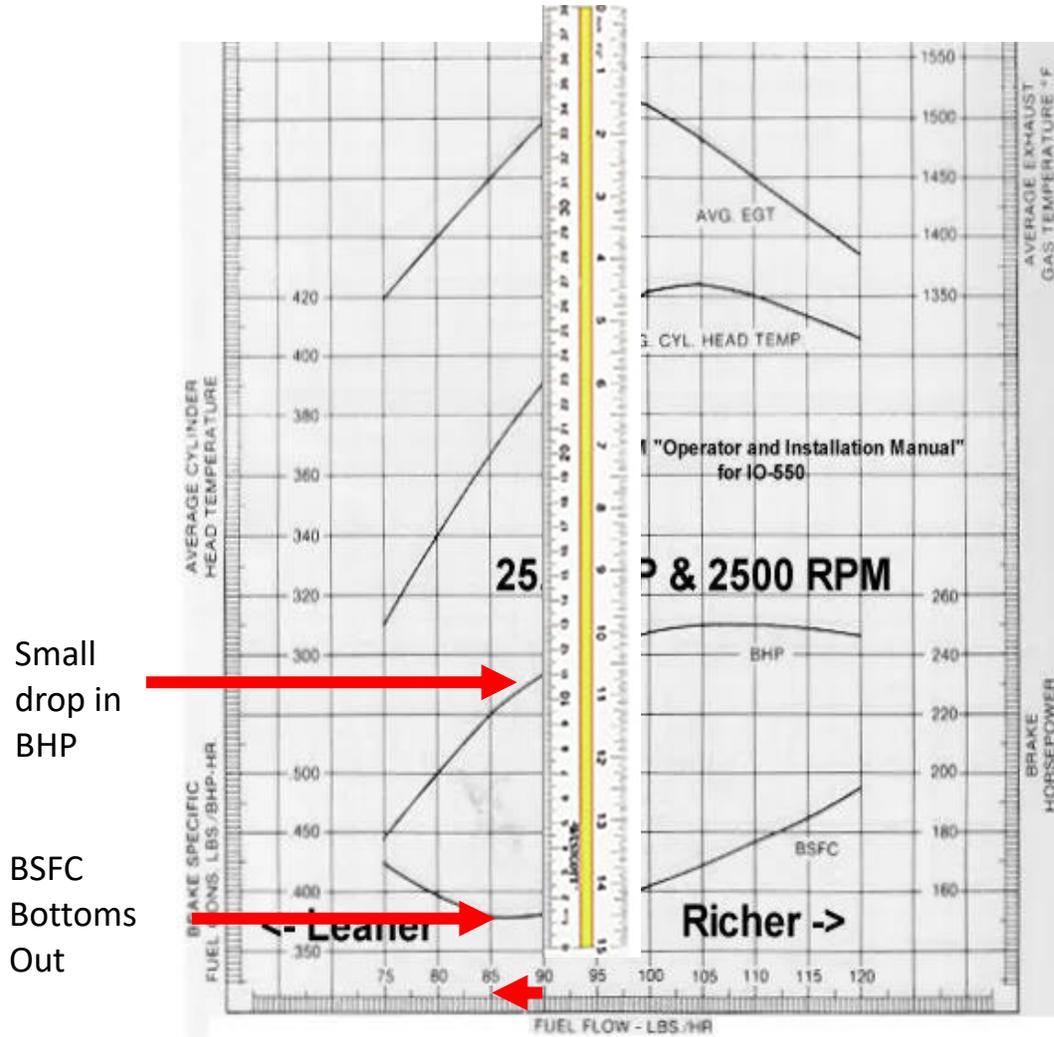
EGT Peaks
begins to
Fall

BSFC
Improves

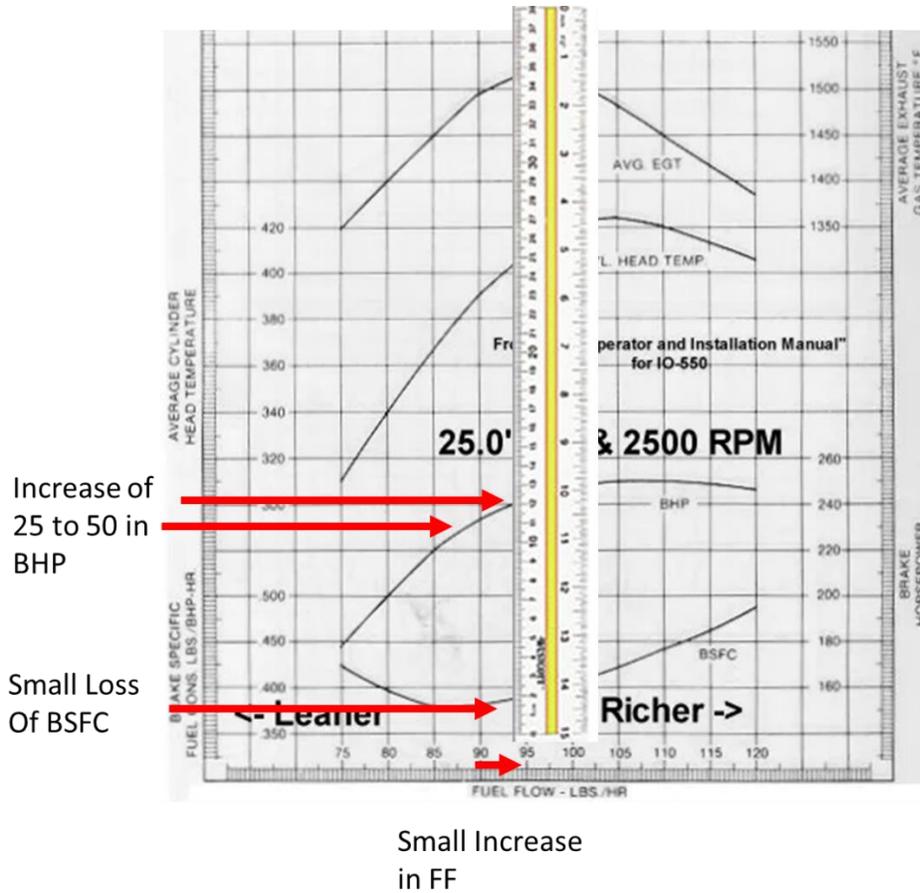


Sure, we're losing power, but fuel consumption is declining even faster, so our "economy" (as measured by BSFC) is still getting better.

Finally, BSFC bottoms out (at “best economy mixture”), and stays pretty flat between 85 and 90 PPH.



Note that if we increase Fuel Flow, it will result in a small loss of fuel efficiency, but it results in picking up 25 to 30 HP? Isn't that interesting?



So, what happens to these relationships if we change the Manifold Pressure or RPM?? Tune in next month for the 4th Installment.

NEWSLETTER EDITOR

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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/eaal321>

Why We Fly

www.whywefly.org

EAA: Home Page

<http://www.eaa.org/eaal>

FAA Safety Team FFAST

<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

www.placestofly.com

www.wheretofly.com

www.100dollarhamburger.com

www.airjourney.com

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