

10 Things you Never Learned in Flight School that All Pro Pilots Know

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My Quest

- I asked the Why Questions
- Found out they didn't know
- I then sought out the Why Answers

- Ended up with mostly WWII training materials, and current UK training materials

- FAA leaves out a lot in the handbooks

Examples

- Cycle the prop three times: Look for a decrease in RPM, Increase in MAP and decrease in oil pressure
- Don't fly the airplane over "Squared"
- You'll just get it with experience (sometimes True)

What Flight Instructors are Good At

- Describing what they are doing – Teaching is not Telling
- Flying
- Watching you practice until you get it

What Flight Instructors are NOT good at



Defining concepts



Teaching you from first principles



Showing you where to look when



Making sure you have a thorough preflight briefing and assess you are at the understanding level before every flight

Why we Don't Teach it this Way First

- Limits before we run out of time, money, patience, etc.
- We don't understand it ourselves

The 10 Things

- No More Paper Flight Planning Logs
- How to descend at exactly the right moment
- Landing is about aiming the airplane
- Planning to enter the pattern exactly on altitude/location
- The real way to enter the pattern at non towered airports

The 10 Things

- A systems approach to the emergency checklist
- Quick weather briefing tips – What to get when/how
- ATC – The thing you're missing that gets results
- Instantly improve crosswind landings applying just two things
- Staying Coordinated – If you use the ball, it's already too late

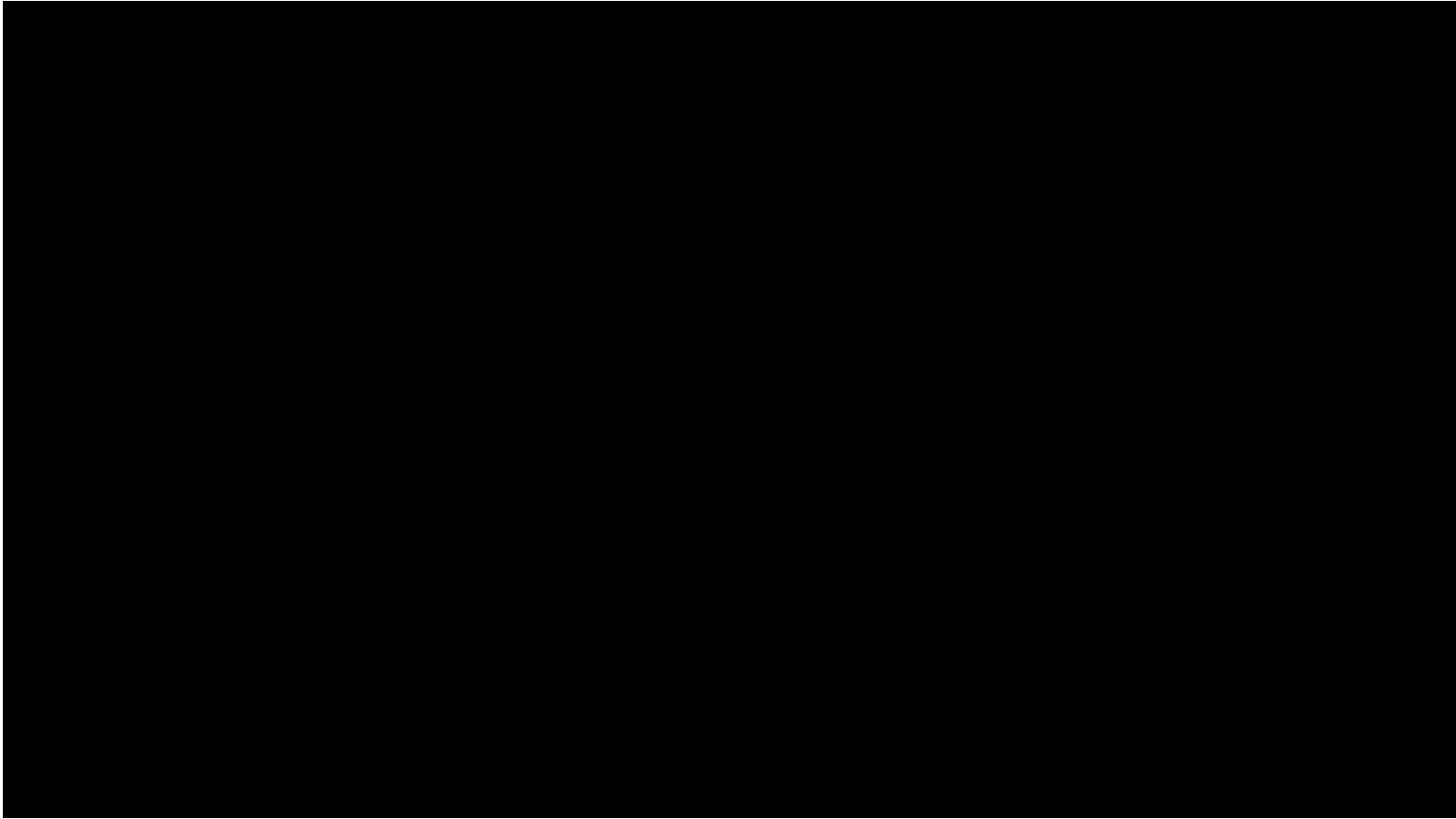
No More Flight Planning Logs

- Nav Logs take too long and are not efficient
- Electronic flight Planning has Limitations
- If you plan it, you probably won't go that way if going far
- Flying is one big diversion, learn to plan dynamically
- Get Sentry and ForeFlight (Performance Plus.)

What's ADS-B

Automatic Dependent Surveillance Broadcast

- Includes NextRad Weather
- Includes GPS
- Includes ADS-B Traffic
- ForeFlight Sentry



<https://www.youtube.com/watch?v=wqispDoOjwE>

How to Descend at Exactly the Right Moment

- It's easy geometry
- It works at any altitude you will find yourself at in light aircraft
- Catch – You must be able to see the runway/airport

When to Descend

- When the runway is touching the Horizon it's too early
- When the runway is directly below you It's too Late
- When the runway is $\frac{1}{2}$ way from the Horizon to you – descend

Descent basics you were Never Taught

- Select a speed and a POINT ON THE GROUND to descend to
- If the angle to the ground is too steep, reduce more power, apply drag devices and finally slip

Something to Practice

- Power off glide – Where are you descending to?
- Answer: The point on the ground that is not moving
- Full Flaps – Notice the new descent angle to the earth
- Slip – Notice the new descent angle – This is the steepest you can descend (Memorize this)

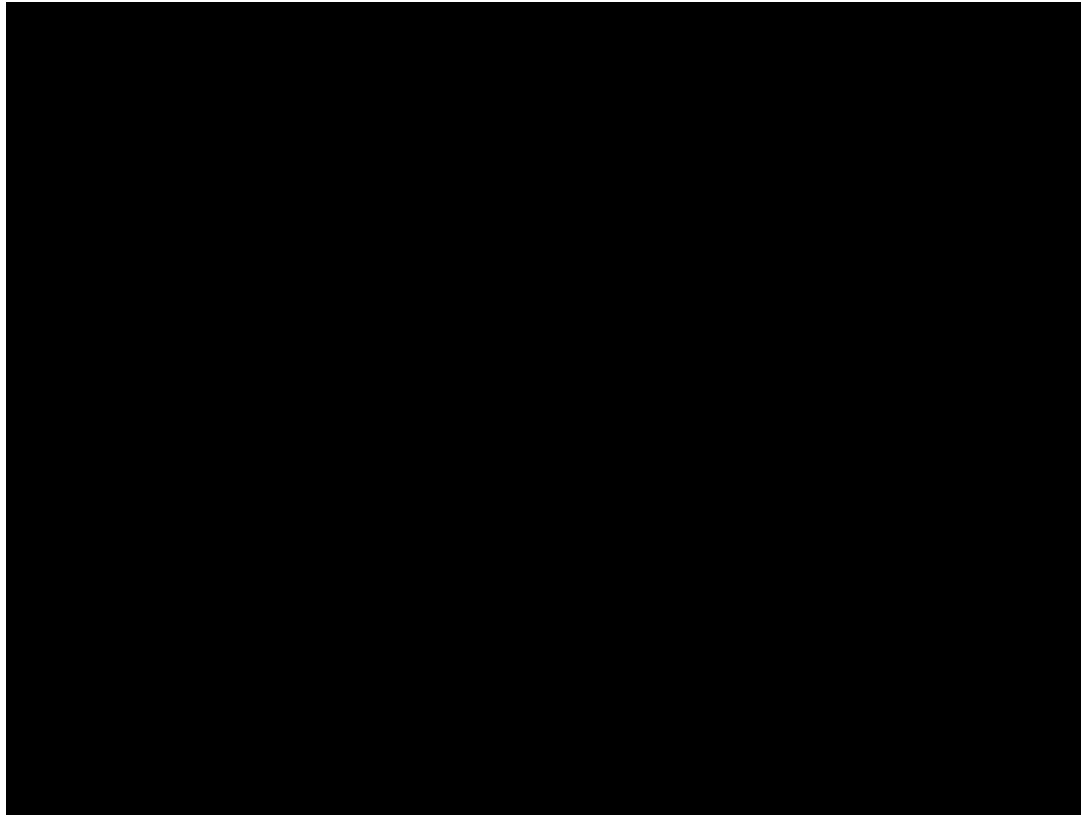
If you need to glide somewhere

- The farthest you can glide is the point that is not moving
- This works regardless of wind

Landing is about Aiming the Airplane

- The airplane needs to be pointed
- Speed is controlled with POWER – UNLESS – You get too slow
- Floating that will occur and is a function of the speed
- Obstruction free glide angle at a sustainable reference speed

How to Aim the Airplane



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

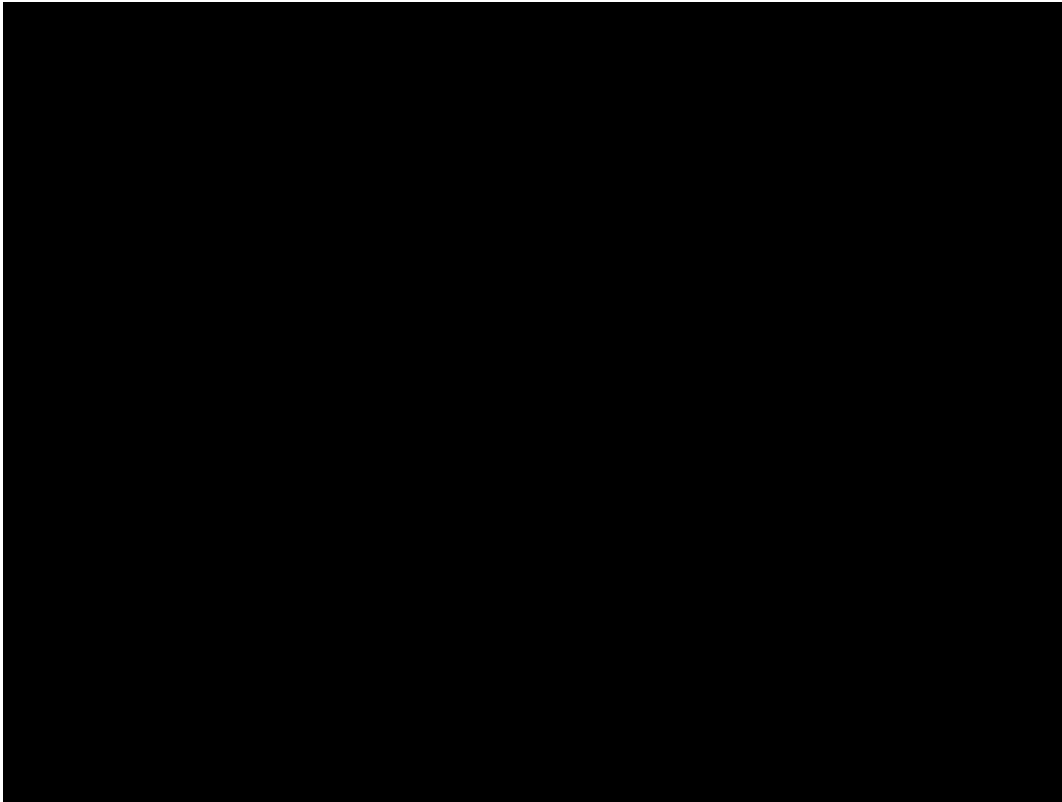
Planning to Enter the Pattern Exactly on Altitude and Location

- The airplane must be aimed
- Aim the airplane at a point that intersects the 45 several miles out
- Keep that point in the middle of the windscreen
- Use power and drag devices for airspeed

Judging the Glide Path on the Base Leg

- Turn when the touchdown point is 45 degrees behind the wing:
- Extend the runway centerline across the ground in front of you
- If the cowling touches this line you are on glidepath, if it's above you are too high and if it's below you are too low

Estimation of Glidepath on Base



<https://www.youtube.com/watch?v=KVGude4RfBY>

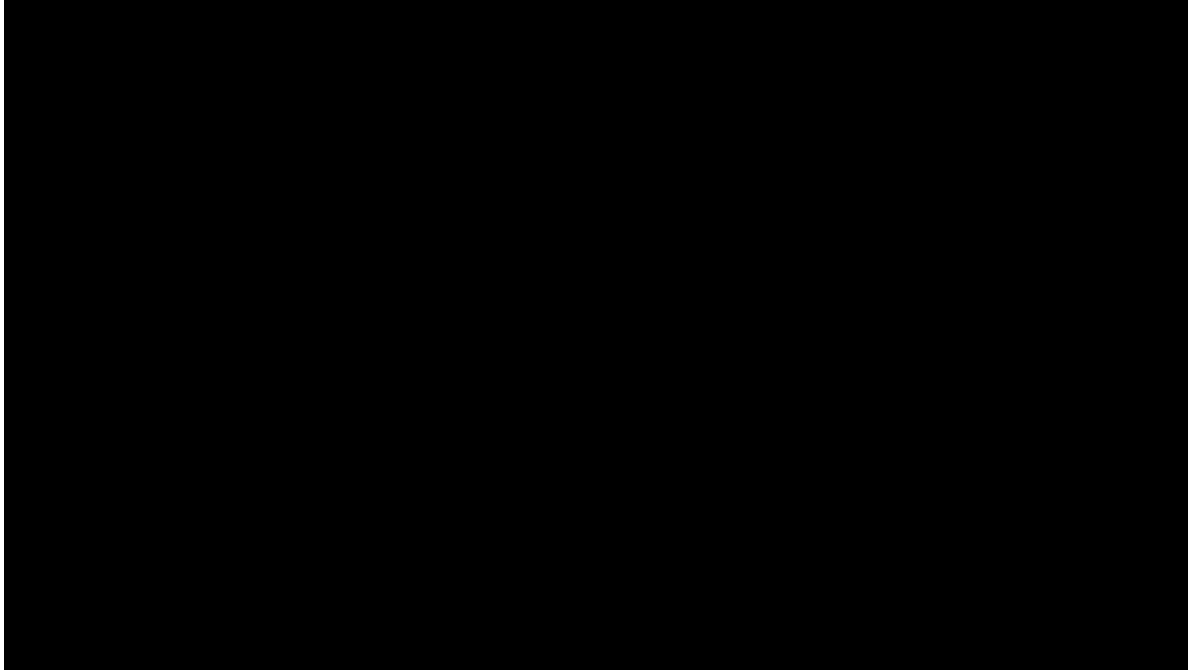
The Real Way to Enter the Pattern at Non Towered Airports

- Terrain and obstructions – Unable to join on the 45
- Listen to other aircraft and follow when you can
- Visualize the traffic pattern from a fair distance away and aim the airplane to the joining point

A Systems Approach to the Emergency Checklist

- Emergency checklist covers the most common emergencies
- Why understand the systems on the airplane?
- What is happening now, what else will be affected, what is the result, how much time do I have to correct the fault?

When Not to Use a Checklist?



https://www.youtube.com/watch?v=JDQVN_G1bM4

Using the Checklist

- Where are the memory items in GA airplane checklists?
- Why do you need memory items? Make you own
- Challenge yourself to the simple question:
- When the checklist says to do something, what it that doing –
What systems are involved

Quick Weather Briefing Tips

- The good bad and Ugly
- Briefers are not Meteorologist's, they are Weather READERS
- Know what an abbreviated briefing is and USE it

Quick Weather Briefing Tips

- Read 30 pages of DUAT weather for a 30 mile flight?
- Use Briefers to decode NOTAMS and TFRs
- ADDS/ForeFlight better present AIRMETS/SIGMENTS

Quick Weather Briefing Tips

- Check the weather using Profile View in ForeFlight
- TFR information no later than 30 minutes before your flight – Telephone Briefing works great for this
- My Strategy - Demonstration

Quick Weather Briefing Tips

- PIREPS for VFR are rare
- Icing PIREPS are no guarantee of Ice/No Ice
- Windshear PIREPS at towered airports are available

ATC – The Thing You're Missing that Gets Results

- Controller ideal workday
- Pilot's ideal workday
- These two are not coincident

What Controllers Expect from GA Pilots

- Baby sitting
- Wrong timed and long responses
- Missing calls
- Asking for the impossible (Class B across SFO Finals)
- Apparent lack of knowledge from the pilot
- The “it’s not my real voice” calls from Pilot’s

What Controller Love Pilot's That

- Know what they want and what ATC can do
- Understand what everything means
- Respond in a timely manner
- Listen and mimic professionalism and radio voice (their own)

What you didn't know

- The secret sauce –
- Match the cadence and terseness of the controller – It's why they are doing it in the first place

Instantly Improve your Crosswind Landings by Just Hearing Two Things

- What you were taught:
- Straighten out the airplane with the rudder and bank into the wind. The controls will become less effective when you are slower etc..
- Kick out the Crab (Bad Idea)
- What missing? How much of each flight control to use

The Two Things – Try These Tomorrow

- Parallel the Runway with the rudder pedals
- Maintain the Centerline with the Aileron
- Keep doing this until you need to taxi off of the runway

- Exactly how much of each control to use

Staying Coordinated – If you use the Ball you are Already TOO LATE

- The rudder corrects:
- P-Factor, Torque, Slipstream, Gyroscopic Precession, Adverse Aileron Yaw
- Apply enough rudder to eliminate these effects
- Ball leaves the middle, the YAW has already happened

On Takeoff

- When wings are level with Aileron, any turning is YAW - Use rudder to STOP the YAW
- During the level off – Wings level with Aileron and keep the airplane pointed straight ahead with the rudder pedals

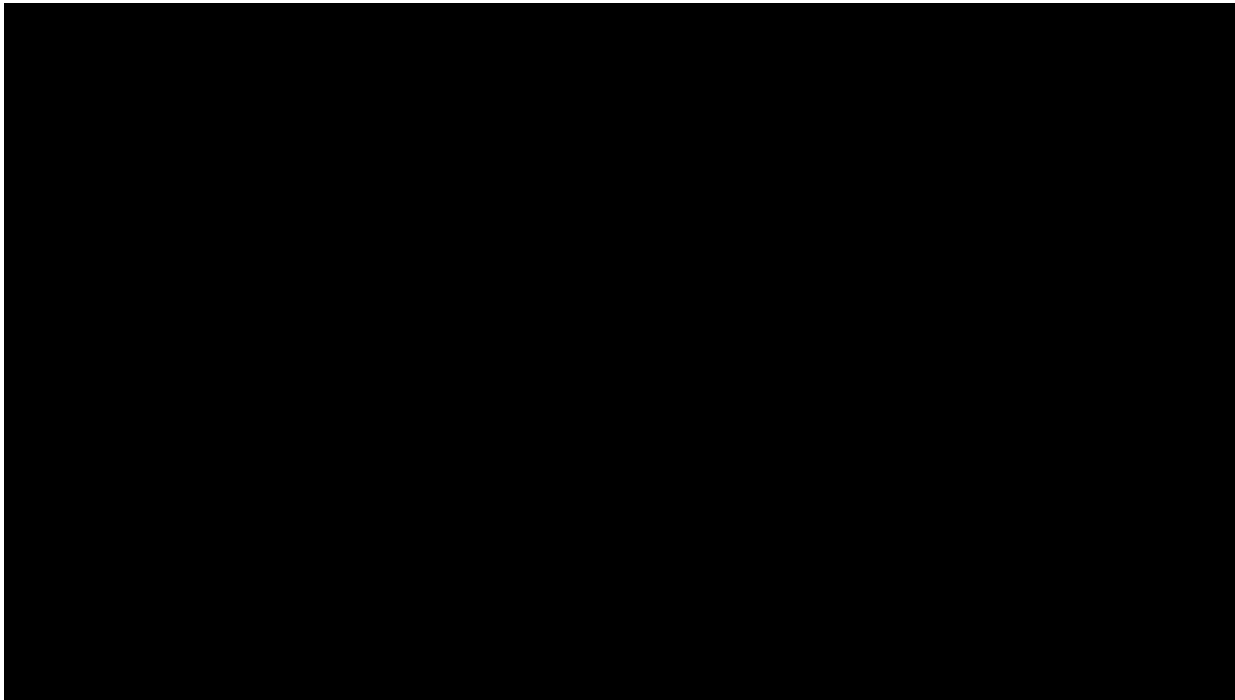
On Descents

- Power reduction causes the nose to yaw right – Keep the airplane pointed straight ahead
- Pushing down - left turning tendency - Gyroscopic Precession

For Turns

- Use rudder to keep the point ahead from moving
- Use the memory item – Aileron and rudder together – Proportional amounts of each at the same rate as the other

Adverse Aileron Yaw



[https://www.youtube.com/watch?v=UyfVh2
TM_iY](https://www.youtube.com/watch?v=UyfVh2TM_iY)

Once the Bank is Established

- Aileron is neutral or nearly so (Adverse Yaw is not present)
- Rudder eliminates the P-Factor, Torque, Slipstream and Gyroscopic Precession
- In a turn to the right, MORE right rudder is necessary

More Difficult in a Training Airplane

- Less Torque, P-Factor etc. makes the slipping less obvious

End Game

- Make control inputs upon the knowledge you just learned
- Check the ball AFTERWARD – It's a quality assurance indicator not a what to do indicator

One Extra Tip

- If you can estimate your distance to the runway:
- Use 400 ft/nm as for the desired height on the base turn