



# Learn To Fly

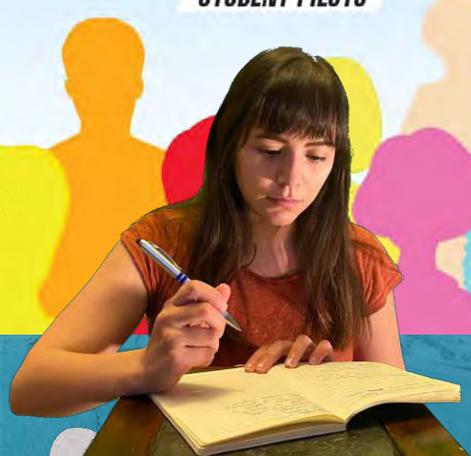
## Advanced Lesson 2



For entertainment purposes only. Not to be used as a substitute for professional instruction.



On Voice  
STUDENT PILOTS



STUDENT JAYNE



Pilot IRL and Course Designer





# Previous Homework

1. As with all new airplanes, read the POH cover to cover.
2. Start off with Section 2, specifically 2-9 to 2-12
3. Next, read section 4-5: Airspeeds
4. Then, read the whole POH.

How did it go?

Problems?

Suggestions?

Observations?

# Today's Lesson:

ForderLearnToFly.com

Private Pilot Training (Flight Simulator)

## **Bonanza G36 LESSON PLANS** **(Advanced Series)**

### **Lesson Plan #2 (Dual)**

Class Time .5 hours

#### **The Bonanza G36**

#### **GENERAL**

This lesson is a ground brief and air exercise for the experienced student. The student should be aware of the Pilot Operating Handbook, Aircraft documentation and flight authorization. The flight should be stimulating for the student without any abrupt maneuver.

#### **MOTIVATION**

To confidently handle a new, more powerful airplane.

#### **REFERENCE**

- (1) Aeroplane Flight Training Manual
- (2) Pilot's Operating Handbook (Bonanza G36 POH)

#### **TOPICS**

- (1) Review of engine handling procedures
- (2) Yoke inputs when taxiing with wind.

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Private Pilot Training (Flight Simulator)

### **Lesson Plan #2 (Dual)**

Air Time 1.2 hours

#### **AIR EXERCISE**

- (1) Student performs the external check, start check and after start check.
- (2) Student taxis with wind and departs to the southeast to 6000'.
- (3) Instructor assists student in engine adjustments.
- (4) Instructor demonstrates short field landing at an airport.
- (5) Student performs a short field landing at an airport.
- (6) Student taxis to parking with wind correction.

#### **POST FLIGHT**

- (1) Review Lesson, re-brief as necessary.
- (2) Assign reading for next lesson.

**!Student (in chat)**

# *Advanced Lesson 2*

## A Deeper Familiarity With your Bonanza



# Lesson Briefing

## A Deeper Familiarity:

- Review on yoke inputs when taxiing with wind.
- Review of the engine leaning process.
- Our objective today is to dive deeper with the Bonanza G36 and practice.

## The Beechcraft G36 Bonanza



Our checklist include retractable gear, higher altitudes, propeller de-ice and air-conditioning with a digital climate control. Aileron-trim and TOGA capable. Low wing.

Introduced in 1945, the six-seater has been in production longer than any other aircraft in history. With this long record under its belt, the aircraft has seen use in civil and military roles. This is a great aircraft to fly if you're looking to land at remote strips.

### Facts and Figures

 Max Takeoff Weight	1,656kg
 Maximum Passenger	5
 Max Altitude	18,500ft
 Range	920nm
 Cruise Speed	176 KTAS / 326 km/h
 First Flight	December 1945

### Did you know?

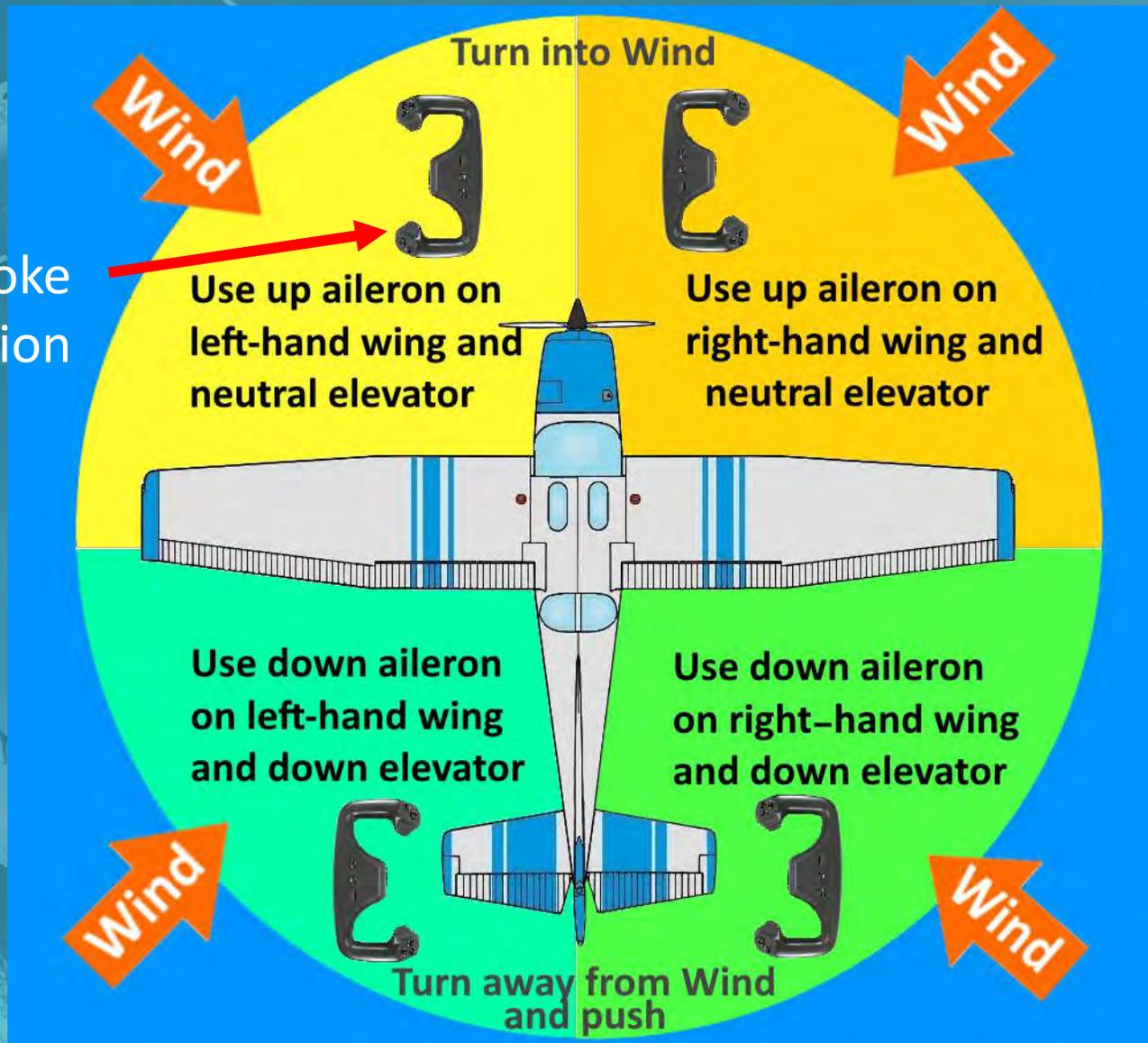
The bonanza lineage is traceable all the way to back 1945 with the G36 (2006-Present) featuring a glass cockpit update.

# Wind Correction Taxiing

Correcting for wind on the ground while we are taxiing.

Put your heading bug where the wind is coming from.

Note the yoke orientation



## Summary Notes on Taxiing With Wind

- ❖ Place your heading bug where the wind is coming from.
- ❖ As you taxi, set your yoke according to the wind. It will change as you turn to a different direction while taxiing.
- ❖ Your feet will be steering along the taxiway line while your left hand sets the yoke for the wind correction. Your right hand manages the throttle.



# Correct Leaning Procedure G36

You can reference charts in the POH or see the summary on your checklist.

CRUISE

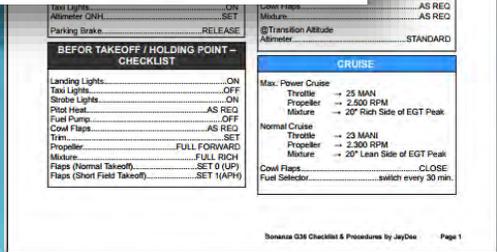
**Max. Power Cruise**

Throttle → 25 MANI  
 Propeller → 2.500 RPM  
**Mixture → 20° Rich Side of EGT Peak**

**Normal Cruise**

Throttle → 23 MANI  
 Propeller → 2.300 RPM  
**Mixture → 20° Lean Side of EGT Peak**

Cowl Flaps.....CLOSE  
 Fuel Selector.....switch every 30 min.



## LEANING USING THE EXHAUST GAS TEMPERATURE (EGT) INDICATION

A thermocouple-type exhaust gas temperature (EGT) probe is mounted in each cylinder exhaust. All probes interface with the Engine/Airframe Unit (GEA 71). The indicators are calibrated in degrees Celsius. Use the EGT system to lean the fuel/air mixture when cruising at 2500 rpm and 25 in. Hg manifold pressure power setting or less in the following manner:

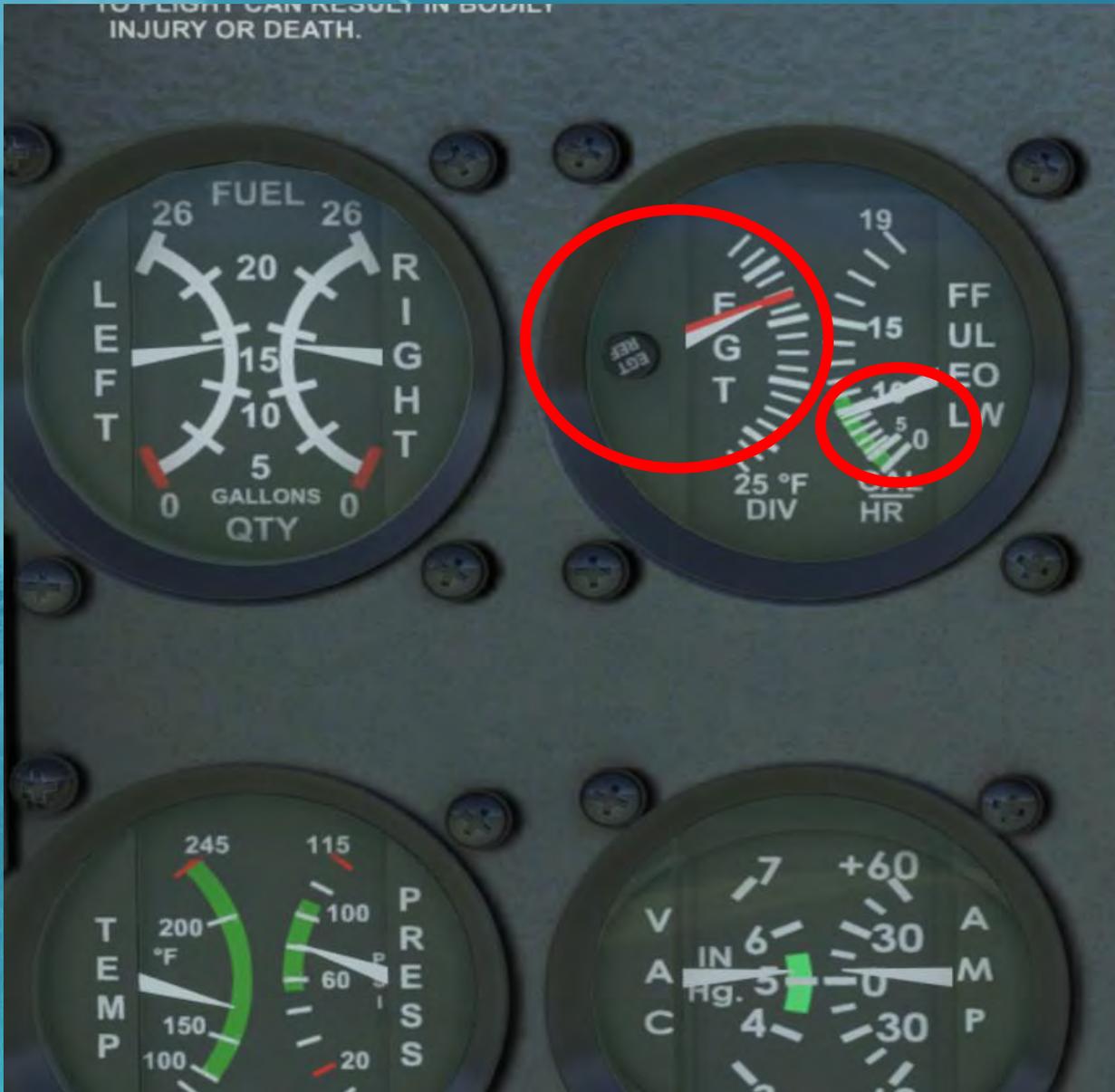
See the following information in Section 5, PERFORMANCE:

- MANIFOLD PRESSURE vs RPM graph for leaning limitations
- CRUISE POWER SETTING tables

The EIS Lean page is found on the MFD.

1. ENGINE Softkey ..... PRESS
2. LEAN Softkey ..... PRESS
  - a. **Rich of Peak:** Slowly lean the mixture and note the first cylinder EGT to peak. Then enrich the mixture to the desired cruise mixture. Enriching the mixture is referred to as operation on the rich side of peak EGT.
  - b. **Lean of Peak:** Slowly lean the mixture and note the last cylinder EGT to peak. Further lean the mixture to the desired cruise mixture. Further leaning is referred to as operation on the lean side of peak EGT.

## Cessna 172 EGT:



- ❖ Same procedure according to the POH but we have analog gauges.
- ❖ We adjust the mixture knob toward lean until max temperature, then lean 20° lower.
- ❖ Notice fuel flow lowers as you do that. You save wear on the engine and save fuel on your cruise.

# Combining All Three Levers

- Blue is RPM
- Black is MP or Manifold Pressure
- Red is GPH at altitude (over 3000)



You still use the black knob as you normally would. Here are recommended settings at various altitudes using both knobs.

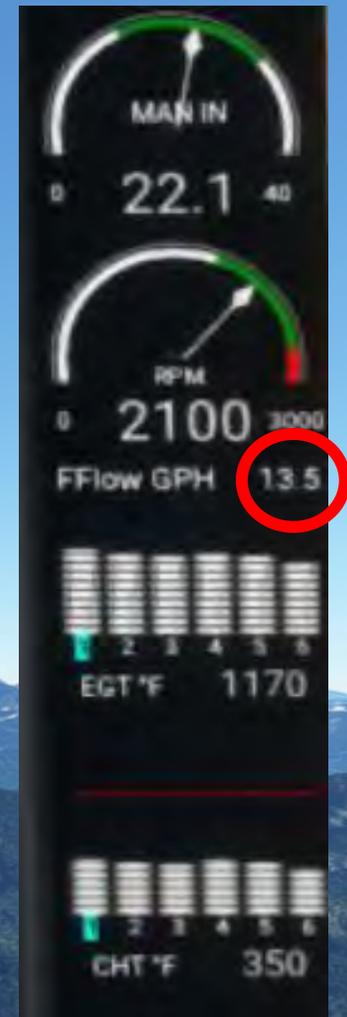


## POWER SETTINGS

	75% POWER		65% POWER		55% POWER	
Altitude	RPM/MP	KTAS	RPM/MP	KTAS	RPM/MP	KTAS
4,000 Ft.	25/23.5	166	23/22.9	154	21/22.6	141
6,000 Ft.	25/23.0	168	23/22.4	157	21/22.1	143
8,000 Ft.	25/21.7	165	23/21.7	158	21/21.6	144
10,000 Ft.	25/20.0	163	23/20.0	154	21/20.2	141
12,000 Ft.	25/18.3	161	23/18.4	150	21/18.5	134
Standard Conditions					Zero Wind	



Note RPM at 25 for all settings at 75% power.



Now fine-tune your engine while at 6000 feet with more fuel savings.

# Questions Before Departure?



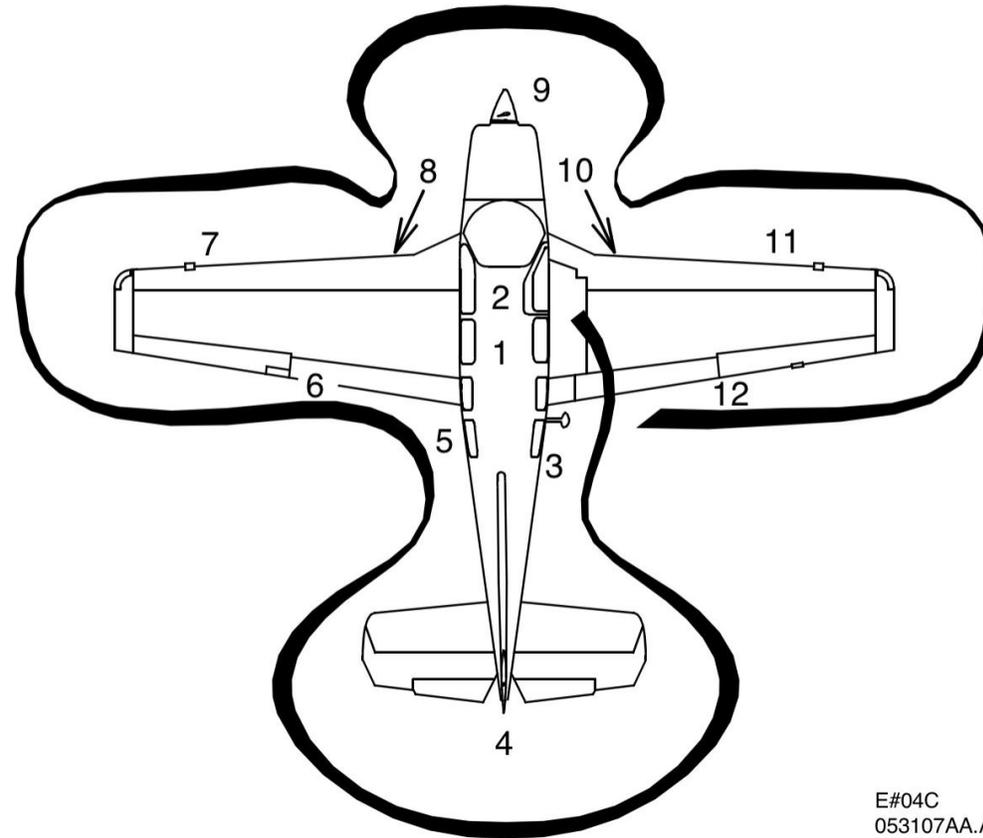
We have a low-wing plane with cowl flaps, retractable gear, manifold pressure, rpms and mixture and gas tank selector to always mind.

Notice that the walkaround starts at the exit door.

This low-wing plane has three fuel tester points; one under each wing and one below the engine.

The POH outlines the procedure on pages: 4-6 to 4-11

## PREFLIGHT INSPECTION



E#04C  
053107AA.AI

### 1. CABIN

- a. Emergency Exits.....CHECK
  - 1) Safety Wire (Beneath Cover)..... INTACT
  - 2) Windows ..... 162 of 553 .. CLOS

# Gone Flying!

## YOUR CONTROL



A 3<sup>rd</sup> party free download to pass control of the airplane back and forth.

## The G36 Beechcraft Bonanza

# Review Lesson



### POST FLIGHT

- (1) Review Lesson, re-brief as necessary.
- (2) Assign reading for next lesson

The G36 Bonanza  
Taxi with Wind  
Engine Leaning Review

!Manual (FAA online docs)

# Post-flight Advanced Lesson 2



1. On takeoff, when do you retract landing gear and/or flaps?

**Answer:**



# Post-flight Advanced Lesson 2



2. Explain “rich-of-peak” and “lean-of-peak” and when you would use them?

Answer:



# Post-flight Advanced Lesson 2



3. When adjusting EGT, why do we care about 20 degrees one side or the other?



# Post-flight Advanced Lesson 2



4. Why are we adjusting EGT at altitude and why not some other measurement, like CHT?



# Post-flight Advanced Lesson 2



5. When an ATC controller says, “check 3 in the green”, what does that mean?



# Post-flight Advanced Lesson 2



6. What would be ideal short-field take-off and landing speeds?



# Post-flight Advanced Lesson 2



7. This plane is equipped with propeller de-ice. When would you know you should use it?



# Practice

1. As with all new airplanes, take it out to the practice area and practice various phases of flight.
2. Do plenty of touch and goes with short field and soft field recommended techniques.
3. Add-in ATC



# Homework

1. Practice leaning at different altitudes and power settings.
2. Practice short and soft field operations.
3. Predict fuel consumption for each trip.





# Advanced Lesson 2



# The Student HUB

Come join the discussions and continue the conversation on the student hub for this lesson series with Jayne and Forder.

Add your thoughts, your knowledge and your enthusiasm for learning a deeper understanding of flight using Microsoft Flight Simulator.

New Xbox Flyers welcome.

We welcome CFIs, real-life student pilots, flight enthusiasts and those new to flight simulation.

**FS** [OFFICIAL] Flying Lessons: C152  
Community Community Events all-welcome free beginner-pilots recurring twitch

### Student Package

Update Checklist: [Checklist\\_152\\_Simulator2021v3.pdf](#) (429.8 KB)  
[Dropbox - StudentPackage.zip - Simplify your life](#) 635

### Lesson Archive

#### Lesson 1: Straight and Level Flight, Ascending, Descending

**MSFSofficial**  
Flying Lessons [C152] #1 - Ascending, Descending, Straight and Level Flight

WE ARE LIVE  
STARTING SOON

00:00:00 02:37:01  
twitch

[Lesson1MSFSofficial-.pdf](#) (4.3 MB)

#### Lesson 2: Taxiing, ATC/Radio Com Basics

Lesson 12

### Student Package

Lesson Archive

- Lesson 1: Straight and Level Flight, Ascending, Descending
- Lesson 2: Taxiing, ATC/Radio Com Basics
- Lesson 3: Take-off & Climb, Climbing & Gliding Turns, Circuit Joining and Radio
- Lesson 4: Slow Flight, Stalls, Wind-correction, and our first complete landing.
- Lesson 5: Traffic Patterns/Circuits
- Lesson 6: Uncontrolled Airports
- Lesson 7: Crosswinds and Crabbing
- Lesson 8: Emergency Procedures - Forced Landing
- Lesson 9: Emergency Procedures Part 2 + SUPRIRSE SOLO
- Lesson 10: Forward Slips and Flapless Landings
- Lesson 11: Short/Soft-field landings



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