Microsoft Flight Simulator

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# Learn To Fly

## *Flight Lesson 2*


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# Flight Lesson 2

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## Introductions

- Instructor
- Students
- Airplane
- Airfield

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# Flight Lesson 2

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## Cessna 152

## The Training Airplane

Description:

- All metal, 2 place high wing
- Popular training aircraft at most flight schools
- Easy to fly, easy to learn
- No auto-pilot – No GPS
- Fixed pitch propeller
- Keep training costs low
- Tricycle landing gear
- Flight training and personal use.

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# Flight Lesson 2

## The Airfield

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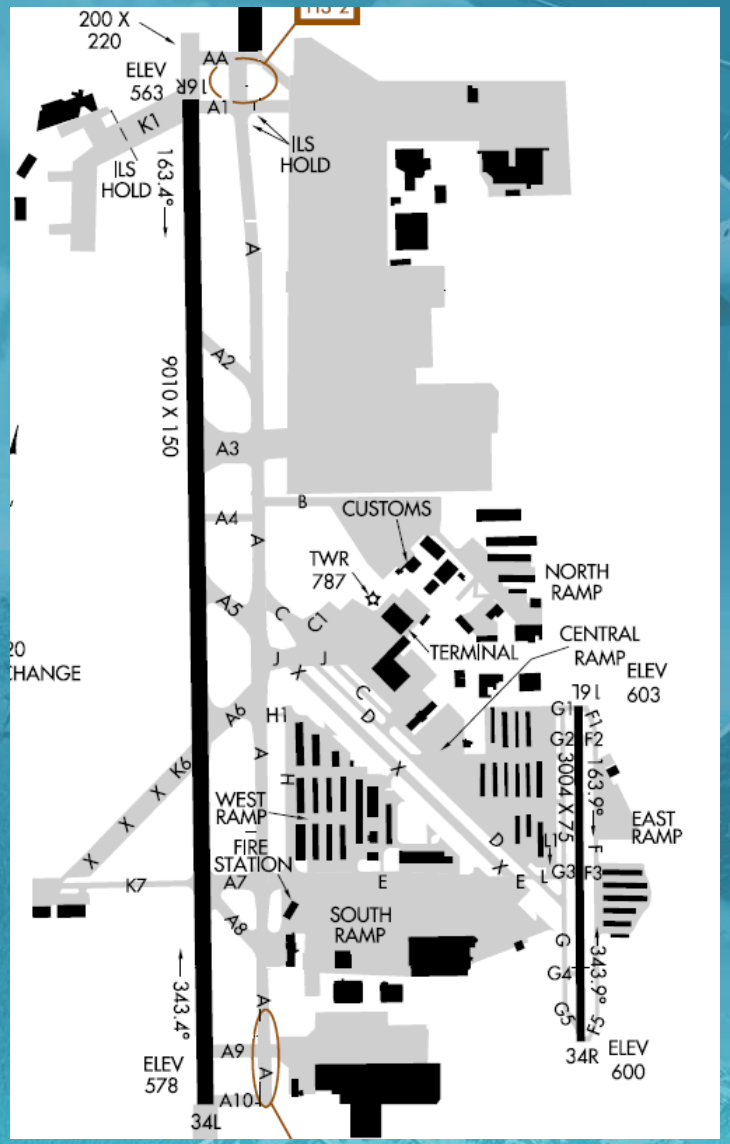



(KPAE) Everett, Washington

PAINE FIELD
SNOHOMISH COUNTY AIRPORT

# Flight Lesson 2

# Lesson Plans

## All flight lessons follow this three part structure:

1. **The Lesson for the flight at the flying school.**
   - What you will learn
   - Motivation
   - Reference documents
   - Topics

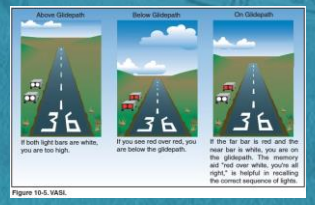

Figure 10-5. VASI.


2. **The air exercise in the training aircraft**
   - Demonstrations by the instructor
   - Practices by the student
   - From cold and dark using checklists

3. **Post Flight**
   - Review lesson, re-brief as necessary
   - Assign reading for the next lesson

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# Lesson Plan #1 (Dual)

The lesson last week is available for you to view on the MSFSofficial twitch channel



## LESSON PLANS

**Lesson Plan #1 (Dual)** Class Time .5 hours

**FAMILIARIZATION** (Exercise 1, page 33)

### GENERAL

This lesson is an introduction to flying. 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 stress the importance or preparation for each briefing as a requirement for progress.

### REFERENCE

(1) Aeroplane Flight Training Manual
(2) Pilot's Operating Handbook

### TOPICS

(1) Preparation for flight
(2) Aircraft familiarization and documents
(3) Pre-flight inspection (walkaround)
(4) Cockpit familiarization
(5) Engine start and run-up




**Lesson Plan #1 (Dual)**

Air Time .8 hours

## AIR EXERCISE

(1) Instructor will assist the student with the external check, start check and after start check.
(2) Taxiing demonstration and practice; demonstration of yaw.
(3) Instructor assists student in run-up and pre-take-off check.
(4) Demonstration of take-off and climb.
(5) Demonstration of reference points, effects of controls, and range of normal attitudes.
(6) Student practices pitching and rolling through the normal attitudes and controlling yaw.
(7) Demonstration of trim.
(8) Student practices straight and level flight.
(9) Demonstration and practice of transition from straight and level flight to straight and climbing flight and levelling out (APT)
(10) Demonstration and practice of transition from straight and level flight to straight and descending flight and levelling out. (PAT)

## POST FLIGHT

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

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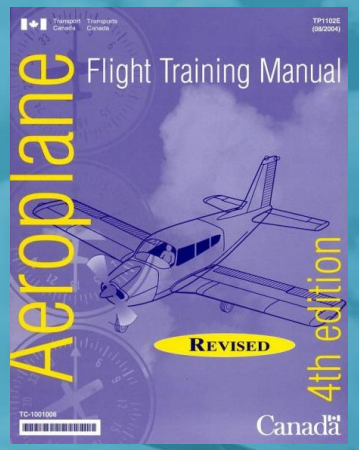


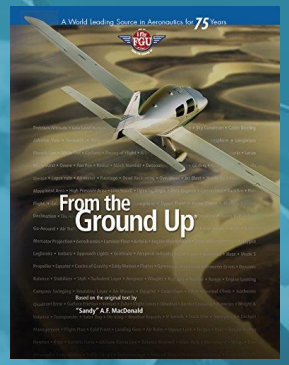




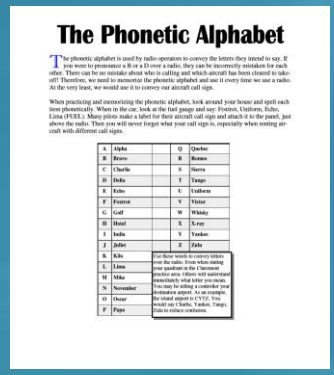


# Preparation

Books

Maps

Ground School

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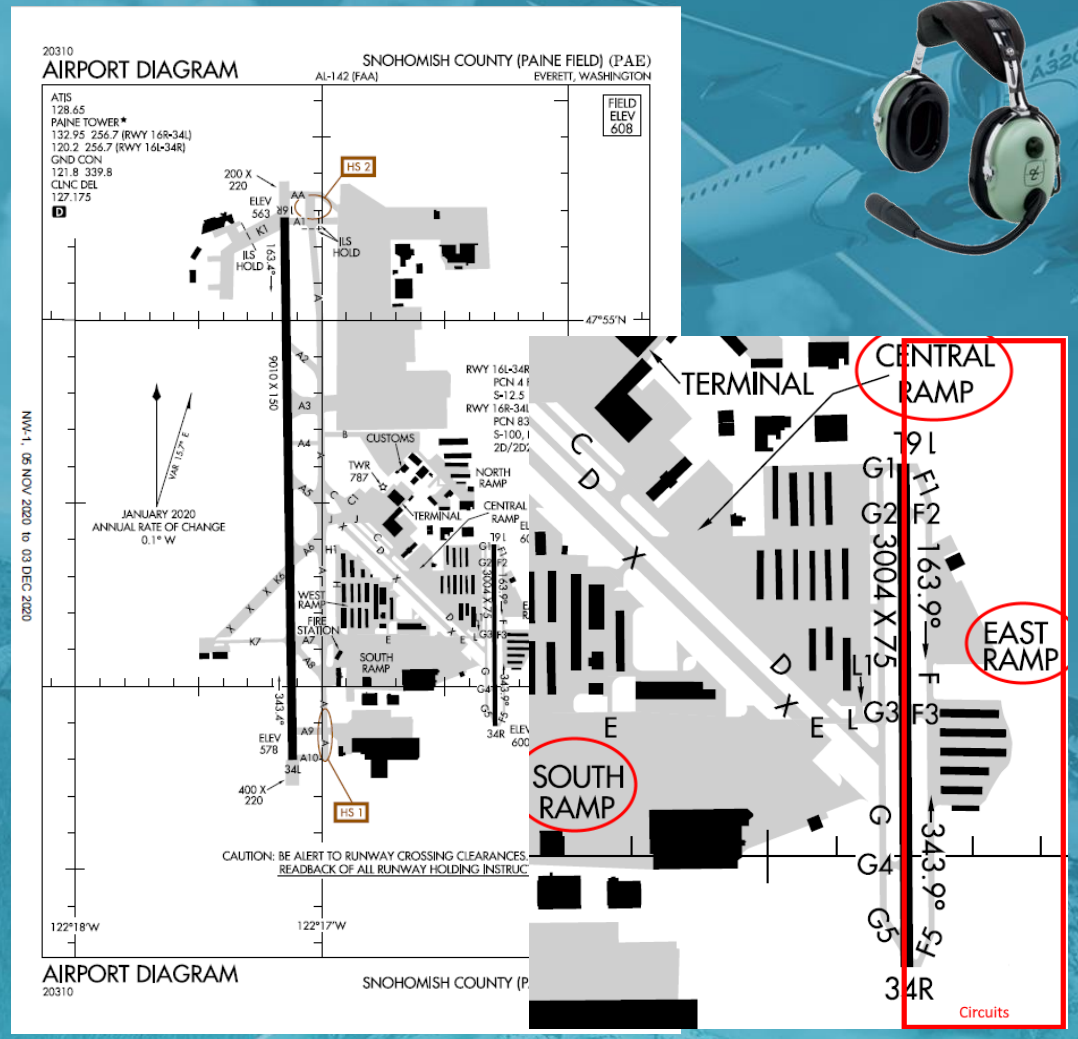





# Flight Preparation

Ensure you grab your student training materials kit with the links in chat.

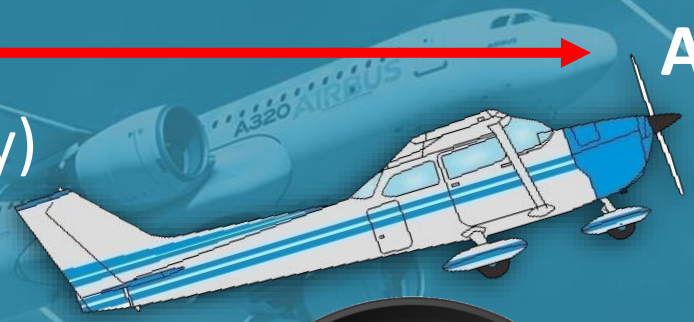
One link for a group of materials: **!studentkit**

The flipbook of the important flight training manual: **!manual**

# Reminders from Last Lesson

**A.P.T.** to climb.

1. Adjust **A**ttitude (Vy)
2. Add full **P**ower
3. **T**rim hands-free



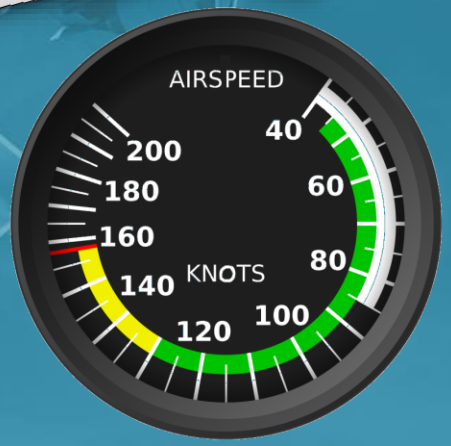
**A.P.T.** to resume cruise.

1. Adjust **A**ttitude (to level)
2. Reduce **P**ower (75%)
3. **T**rim hands-free

**RUN UP** (into wind)

Parking Brake — ON
Fuel Quantity — CHECK
Elevator TRIM check set for T/O
Throttle to 1700
- Mags CHECK - not to exceed
150 rpm on either
or 50 between both

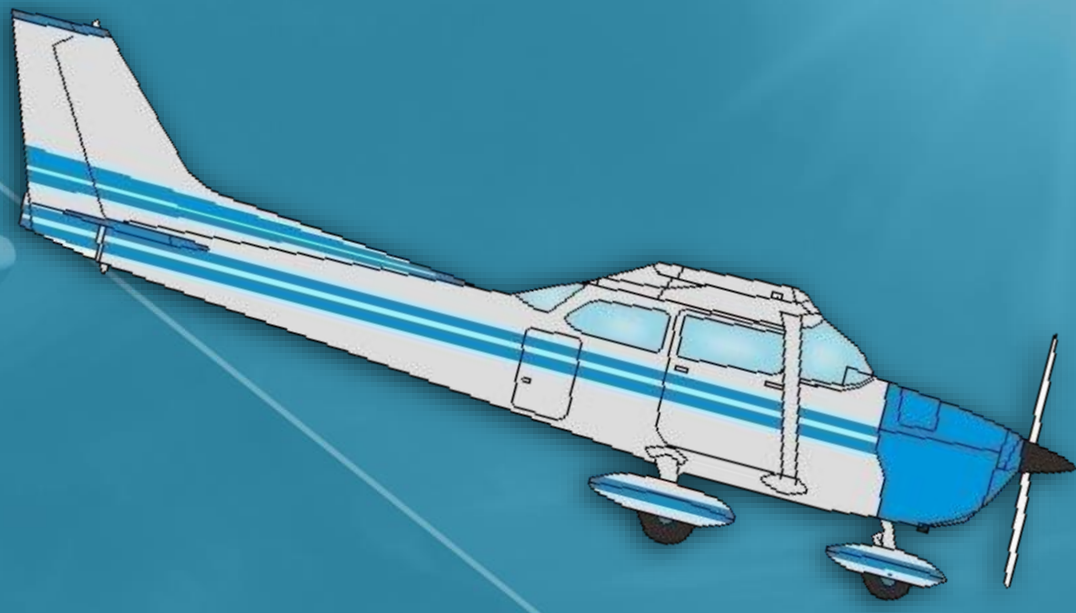
Carb Heat — ON (small rpm drop)
Engine Instruments & Ammeter CHECK
Suction Gage CHECK green
Idle RPM, then 1000
Radios and Avionics SET
Controls Free





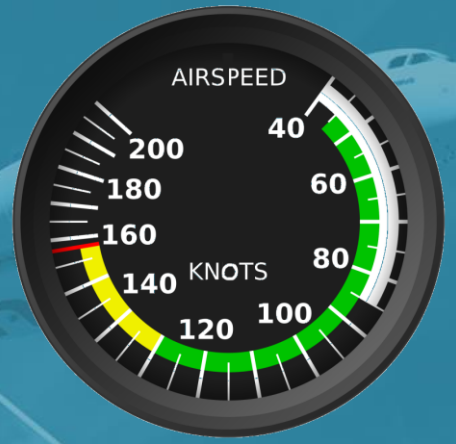

- You always want full power to climb,
- Less power to cruise.
- Even less power to descend.

# Descending & Trimming



**P.A.T.** to descend.

1. Reduce **P**ower
2. Adjust **A**ttitude
3. **T**rim hands-free




You always want less or no power to descend, or your engine and rpms could increase way too high.

A good memory aid:

**PAT down** at airport security.


A “Cruise Descent” means to keep your cruise airspeed constant but descend to a lower altitude, then level out.

A “Landing Descent” is a slower airspeed within the white-arc flaps range and eventually with flaps extended.

# Some Notes from Last Lesson

1. Taxiing: A comment about fast taxiing. General rule, a running pace.

As long as your airspeed indicator doesn't come alive, you are good.

Harder to tell in the sim but remember to always pull power to idle before braking.

2. Controller didn't tell me to "hold short". I did anyway. All pilots know.

I am speaking to ATC slowly, intentionally, for learning. I am not here to show off that I can speak "cool" on the mic.

3. Yes, we lean the engine above 3000 feet, just like the 172. I was surprised to read in a POH that we lean above 5000. I stand corrected.

# 2nd Flight Lesson Briefing

Skills to learn in the first flying lesson:

1. Taxiing around the airport
2. Observe take-off & climb
3. Climbing & Descending
4. Straight & level flight
5. Gentle and Medium turns
6. Circuit joining and radio

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**Lesson Plan #2 (Dual)** — Air Time 1.0 hours

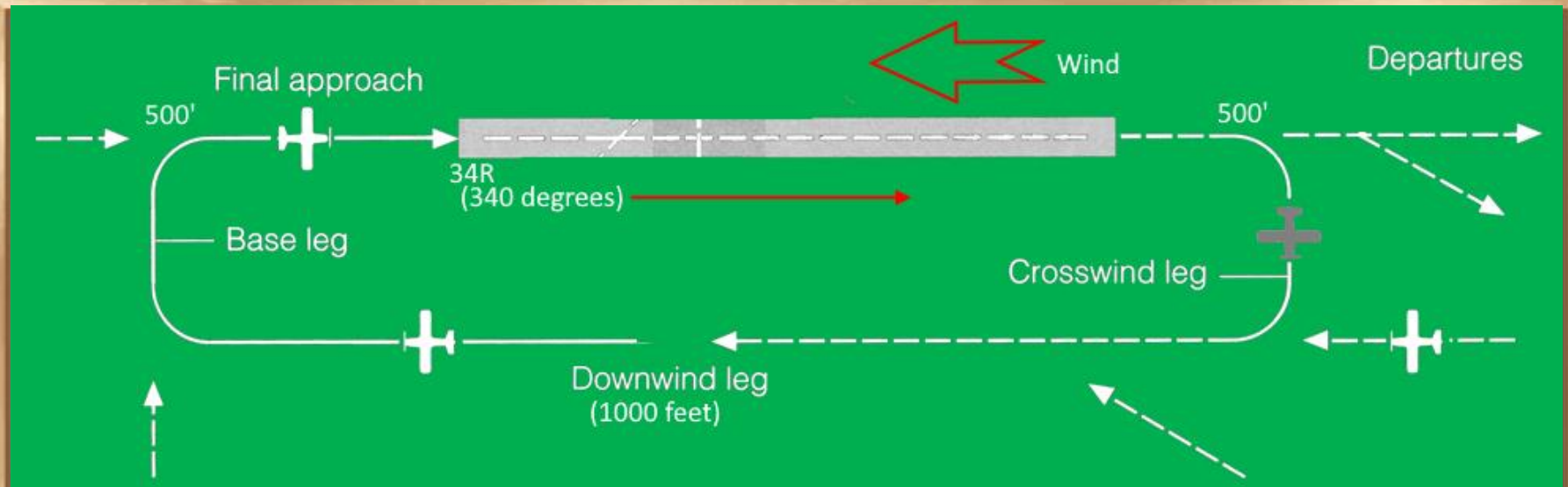
**AIR EXERCISE**

(1) Student does all ground checks, including radio-communication and taxiing with assistance, where necessary.
(2) Student follows take-off and initial climb.
(3) Demonstrate and practice attitudes and movements
(4) Demonstrate and practice straight and level flight
(5) Demonstrate and practice gentle and medium turns
(6) Demonstrate and practice climbing and descending turns
(7) Demonstrate use of trim
(8) Demonstrate proper circuit joining, include radio communication.

**POST FLIGHT**

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

# Flight Lesson 2




In the last lesson, we were asked to join the "right base for 34Right"

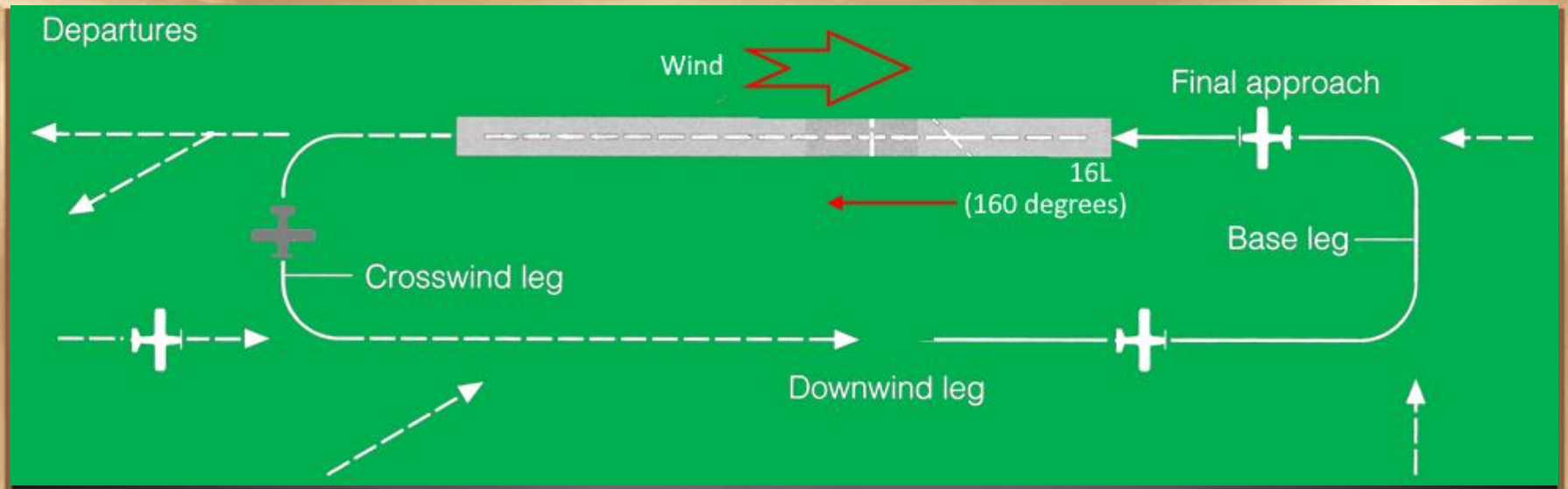
**34Right**

We could be asked: "right downwind for 34Right"

We will be at circuit height (1600') or 1000' AGL (above ground level)

Downwind is 180 degrees opposite of runway heading.

# Flight Lesson 2




We could be asked: "left downwind for 16L"

We could be asked to join the "left base for 16Left"

**16Left**

We will be at circuit height (1600') or 1000' AGL (above ground level)

Downwind is 180 degrees opposite of runway heading.

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# Flight Lesson 2

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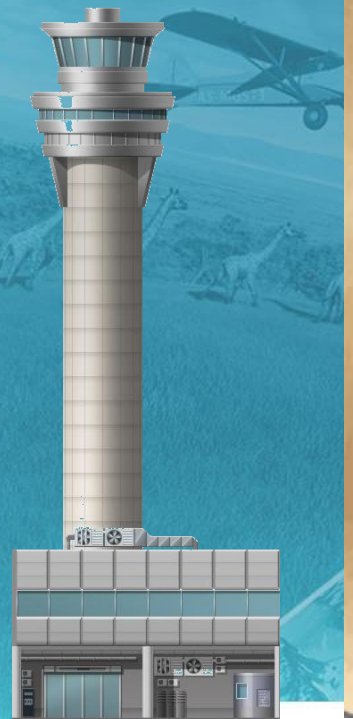

When joining the airport circuit, the controller needs to know this information to clear you to the circuit.

1. Identify the controller you are calling (Paine Tower)
2. Identify your airplane callsign (N67991)
3. Where you are, distance, direction, altitude.
4. You have ATIS (phonetic letter)
5. Your intentions

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# Flight Lesson 1

# Let's go Flying!

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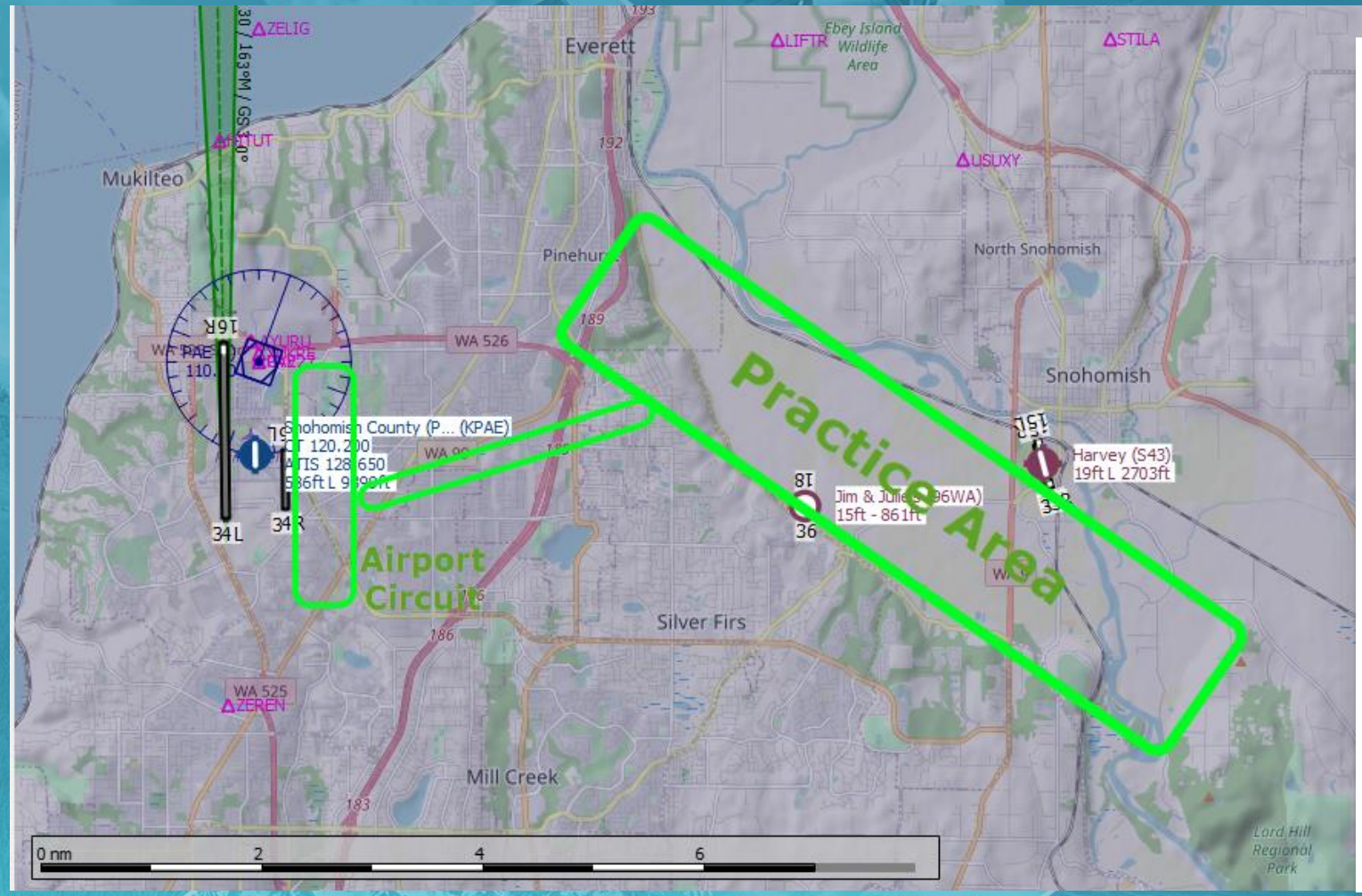


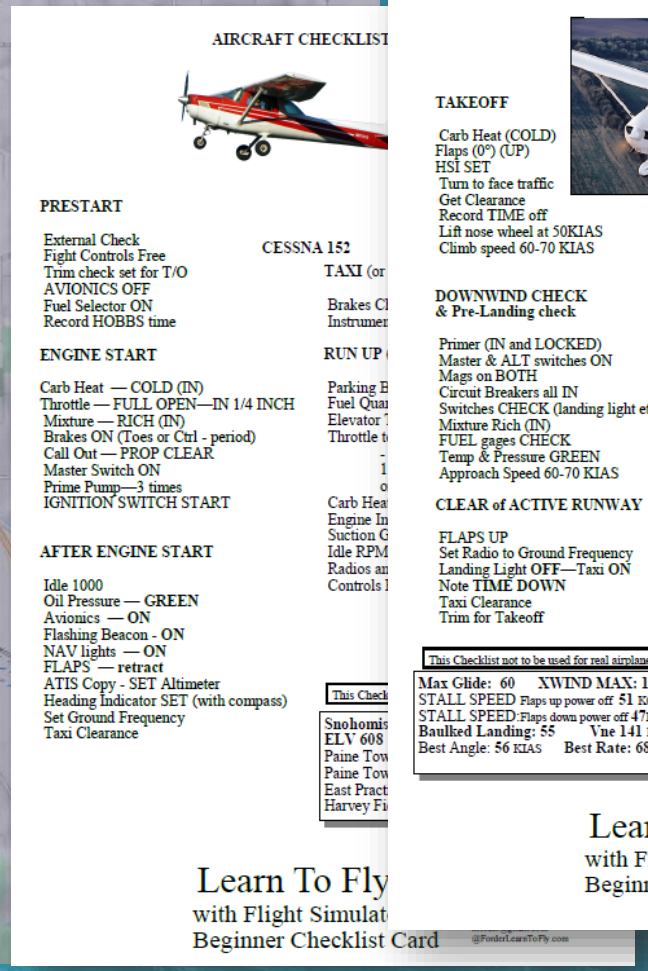

AIRCRAFT CHECKLIST

CESSNA 152

PRESTART

External Check
Fight Controls Free
Trim check set for T/O
AVIONICS OFF
Fuel Selector ON
Record HOBBS time

ENGINE START

Carb Heat — COLD (IN)
Throttle — FULL OPEN—IN 1/4 INCH
Mixture — RICH (IN)
Brakes ON (Toes or Ctrl - period)
Call Out — PROP CLEAR
Master Switch ON
Prime Pump—3 times
IGNITION SWITCH START

AFTER ENGINE START

Idle 1000
Oil Pressure — GREEN
Avionics — ON
Flashing Beacon - ON
NAV lights — ON
FLAPS — retract
ATIS Copy - SET Altimeter
Heading Indicator SET (with compass)
Set Ground Frequency
Taxi Clearance

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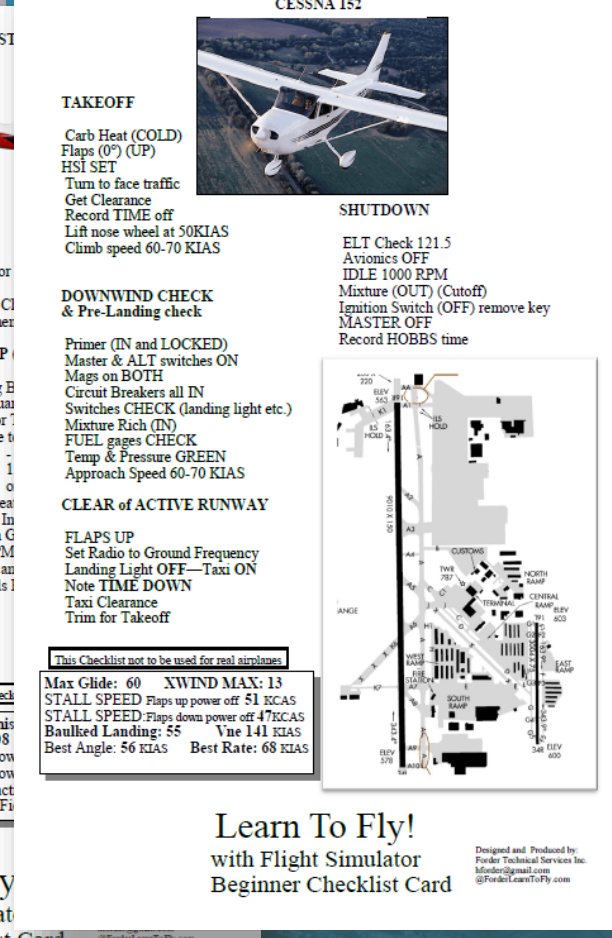
with Flight Simulat
Beginner Checklist Card



CESSNA 152



TAKEOFF

Carb Heat (COLD)
Flaps (0°) (UP)
HSI SET
Turn to face traffic
Get Clearance
Record TIME off
Lift nose wheel at 50KIAS
Climb speed 60-70 KIAS

DOWNWIND CHECK
& Pre-Landing check

Primer (IN and LOCKED)
Master & ALT switches ON
Mags on BOTH
Circuit Breakers all IN
Switches CHECK (landing light etc.)
Mixture Rich (IN)
FUEL gages CHECK
Temp & Pressure GREEN
Approach Speed 60-70 KIAS

CLEAR of ACTIVE RUNWAY

FLAPS UP
Set Radio to Ground Frequency
Landing Light OFF—Taxi ON
Note TIME DOWN
Taxi Clearance
Trim for Takeoff

SHUTDOWN

ELT Check 121.5
Avionics OFF
IDLE 1000 RPM
Mixture (OUT) (Cutoff)
Ignition Switch (OFF) remove key
MASTER OFF
Record HOBBS time



This Checklist not to be used for real airplanes

Max Glide: 60 XWIND MAX: 13
STALL SPEED Flaps up power off 51 KCAS
STALL SPEED: Flaps down power off 47 KCAS
Baulked Landing: 55 Vne 141 KIAS
Best Angle: 56 KIAS Best Rate: 68 KIAS

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with Flight Simulator
Beginner Checklist Card

Designed and Produced by:
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# Let's go to the airplane

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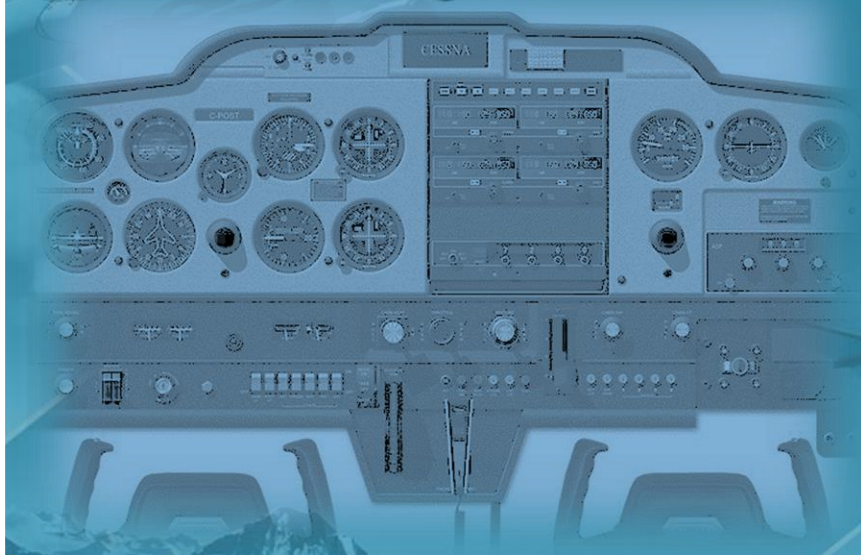
pilotedge

Professional
air traffic control
for flight simulators

YOUR CONTROL



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

## Let's go Flying!

While Jayne and Howard head out to the airplane please direct your questions in chat to the fellow students on live mics.

They will convey your questions upon their return.

# Flight Lesson 2

## The Walkaround

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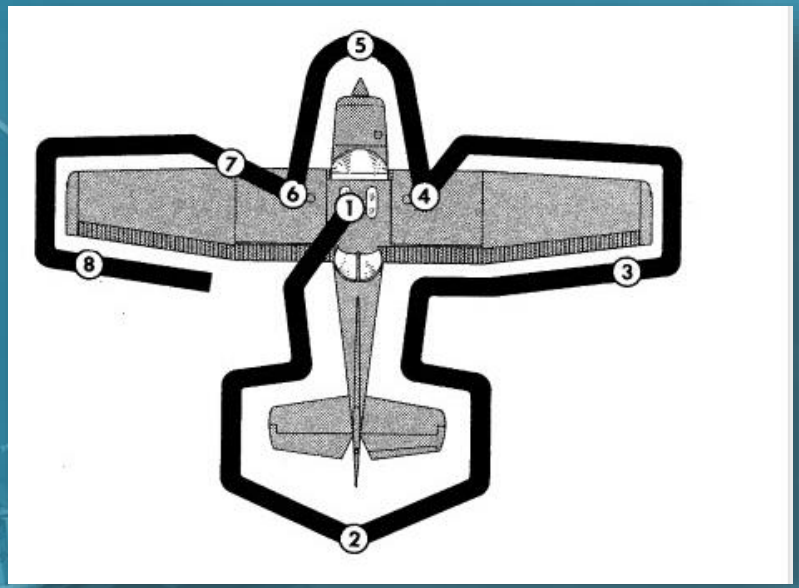


Jayne has done this already to save us some time in the stream.

# Flight Lesson 2

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Private Pilot Training (Flight Simulator)

**Lesson Plan #2 (Dual)**

Air Time 1.0 hours

**AIR EXERCISE**

(1) Student does all ground checks, including radio-communication and taxiing with assistance, where necessary.
(2) Student follows take-off and initial climb.
(3) Demonstrate and practice attitudes and movements
(4) Demonstrate and practice straight and level flight
(5) Demonstrate and practice gentle and medium turns
(6) Demonstrate and practice climbing and descending turns
(7) Demonstrate use of trim
(8) Demonstrate proper circuit joining, include radio communication.

**POST FLIGHT**

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

## Review Lesson

# Flight Lesson 2

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## AIR EXERCISE

(1) Student does all ground checks, including radio-communication and taxiing with assistance, where necessary.
(2) Student follows take-off and initial climb.
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Review Lesson

# Flight Lesson 2

# Summary Questions

1. What elevation should we be at when joining the circuit?

Answer: 1600 feet on the altimeter (1000 feet above the airport)

These are directed questions at the 6 student pilots in this session.

Chat questions will be addressed after this.

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# Flight Lesson 2

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# Summary Questions

2. When joining the airport circuit, what does a controller need to know to clear you to the circuit.

1. Identify the controller you are calling (Paine Tower)
2. Identify your airplane callsign (N67991)
3. Where you are, distance, direction, altitude.
4. You have ATIS (phonetic letter)
5. Your intentions

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# Flight Lesson 2

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# Summary Questions

3. How do you know which direction to turn when joining the circuit?

Answer: The controller will clear you to a leg of the circuit. You need to know the active runway to determine the direction of each leg.

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# Flight Lesson 2

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# Summary Questions

3. How do you know which direction to turn when joining the circuit?

Answer: The controller will clear you to a leg of the circuit. You need to know the active runway to determine the direction of each leg.

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# Flight Lesson 2

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# Summary Questions

4. What is “carb heat” for and when do we use it?

Answer: Carburetor heat is applied when your engine rpms are below the green range on the tachometer (rpm gauge). This prevents ice buildup in the engine’s carburetor.

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# Flight Lesson 2

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# Summary Questions

5. What is the ALT switch used for? (beside the Master switch)


Answer: It turns on the alternator, like in a car, to keep the battery charged and power all electrics in the airplane.
Without it, the battery eventually dies.
This is checked during runup…..

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# Flight Lesson 2

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# Summary Questions

6. In a medium turn, why do we have to adjust our pitch when we were already trimmed for straight and level?

-Answer: As you tip your wings, you loose some lift and you need to adjust for that.
You also need to adjust when straight and level again.

# Flight Lesson 2

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# Summary Questions

7. How do you find your way around in the practice area when you have no GPS?

Answer: Observe landmarks out the windshield while leaving the airport and identify them when returning. Reference your maps before you go for a flight lesson.

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# Chat Questions?

Our voice students can relay chat questions or we can all monitor the chat questions and discuss as a group.

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# Flight Lesson 2

## Practice

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- Normally, flight lessons should be at least twice a week for retention of new skills. You can do that in the simulator as many times as you wish before the next lesson.
- You can press escape anytime and quit the flight.
- Without multiplayer, you can focus on your skills.

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## Homework

Jayne will need your feedback if we should continue with more lessons in January.
If we are continuing, you will need to do some homework in preparation.

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# Homework

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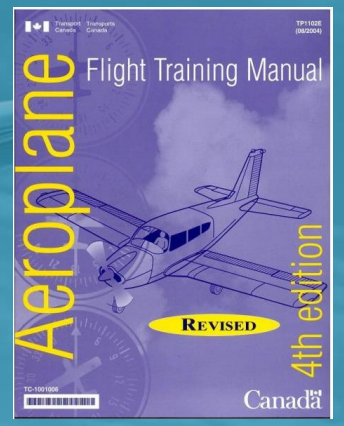
Specific homework for Lesson 3 would be:

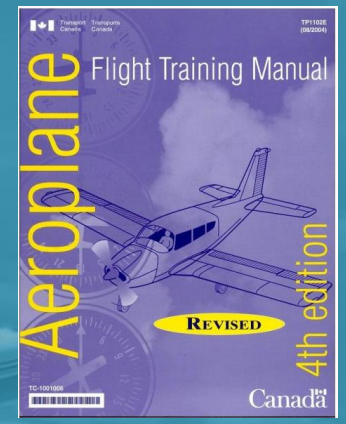
1. All skills covered so far in Exercises 2 through 8 in the Aeroplane Flight Training Manual.



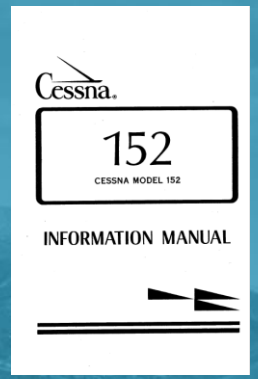
# Flight Lesson 2

# Homework

Specific homework for Lesson 3 would be:
New skills we will practice: Lessons 9, 16, 17, and 18 in the Aeroplane Flight Training Manual.




Ground school questions Howard may ask you next week could be:
-What do we do with the mixture knob?
-When do we use Pitot Heat?



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STUDENT JAYNE