

The Spirit of Aviation

Young Eagles Event Handout

Skill Set Development The Basics

1. Taking off
2. Landing
3. Intro to Airports & Traffic Patterns



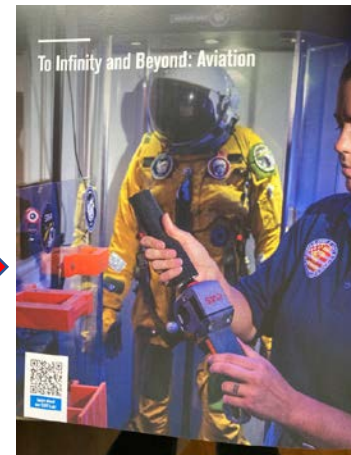
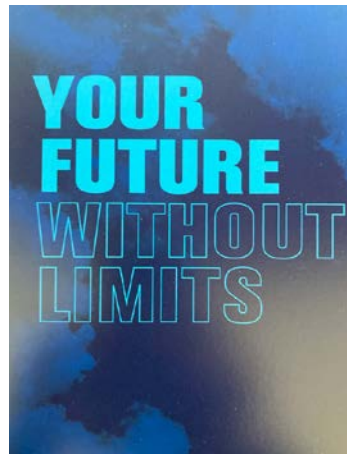
Phase II



Experimental Aircraft Association

Chapter 17 Knoxville

- Introductory Flights
- Education & Training
- Mentoring & Scholarships
- Project Workshop Support
- Industry Career Exposure



This package has been developed in cooperation with both the EAA & AOPA Organizations.. R.&G Mitchell 4/2023

Another Exciting Day

Enjoy the Ride, Discussions and Learn what Could Be Next

“A Pursuit of Aviation can lead to the unimagined”

Phase II

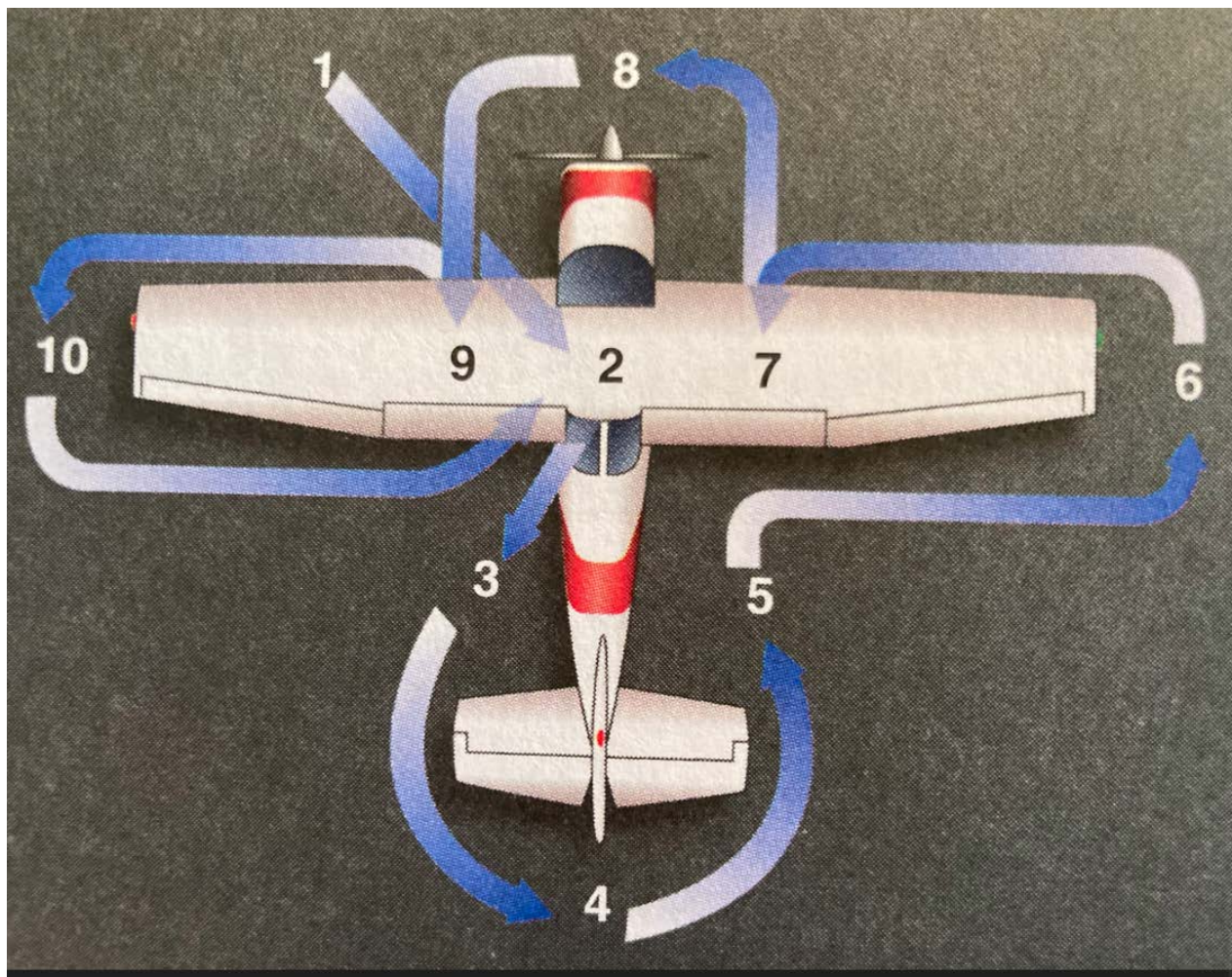
Will Deepen You're Skills Understanding with Focused Topics

Foundations from you're Introduction remain Key Elements Are Never to be Disregarded

Pre-Flight

(Review)

- **Inspection must take place each time before the next flight:**
 - Before the first flight of the day
 - Following an intermediate airport stop
 - In Accordance to the plane's "Check List"
 - Oil & Fuel Levels
 - Mechanicals - Exterior/Interior



Aviation Proficiency will build on you're Body of Knowledge

Safety First – Everyone has a job !

- New Technologies in General Aviation together with extended training in North America bring General Aviation to new levels (safer than bicycles, motorcycles & cars in most cases)..
- Each Pilot carrying passengers can still use everyone's help and knowing what, where and when it is important to speak-up...
- The Safety Briefing card on the right is important
- During take-off and landing pilots are very busy, they may be briefing the passengers', talking to the airport or watching for traffic HOWEVER – speak up if you feel the need...
- Read the attachment

Passenger SAFETY Briefing

N_____

S

Seat belts fastened for taxi, takeoff, landing.
Shoulder harnesses fastened for takeoff, landing.
Seat position adjusted and locked in place.

A

Air vents (*location and operation*).
All environmental controls (*discussed*).
Action in case of any passenger discomfort.

F

Fire extinguisher (*location and operation*)

E

Exit doors (*how to secure; how to open*)
Emergency evacuation plan.
Emergency/survival kit (*location and contents*).
Equipment (*location and operation*).

T

Traffic (*scanning, spotting, notifying pilot*).
Talking (*"sterile cockpit" expectations*).

Y

Your questions? (*Speak up!*)

Skill Sets Development – the Basics Overview

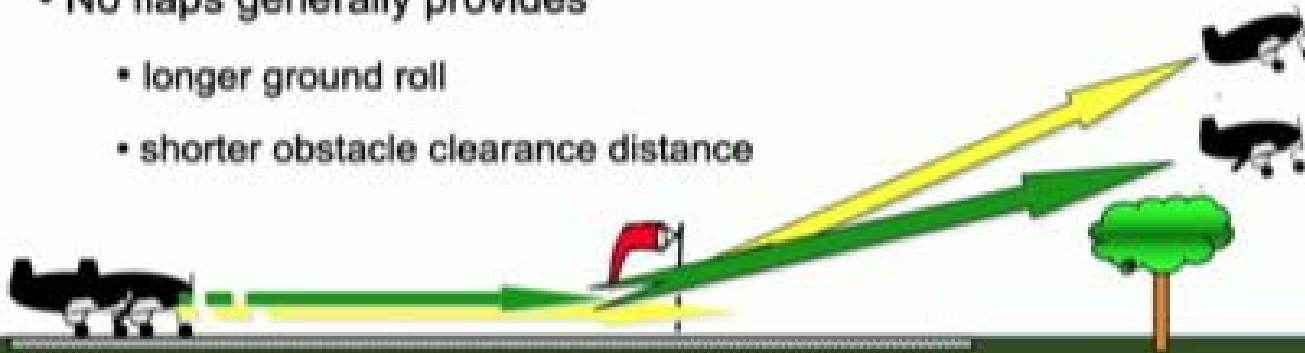
- Taking off
- Landing
- Airports & Traffic
Patterns Overview

Today's experience included Takeoffs, Landings and Views from the Cruise Mode ! The attached slides will remind you What you Saw and Learned about...

- Flaps give generally
 - shorter ground roll
 - longer obstacle clearance distance
 - ~20° flap optimal for runway distance
- No flaps generally provides
 - longer ground roll
 - shorter obstacle clearance distance

Flaps for Takeoff?

It depends on the type of aircraft and what the manufacturer & your instructor CFI recommends



The Proper Landing View



Landing Tip Themes



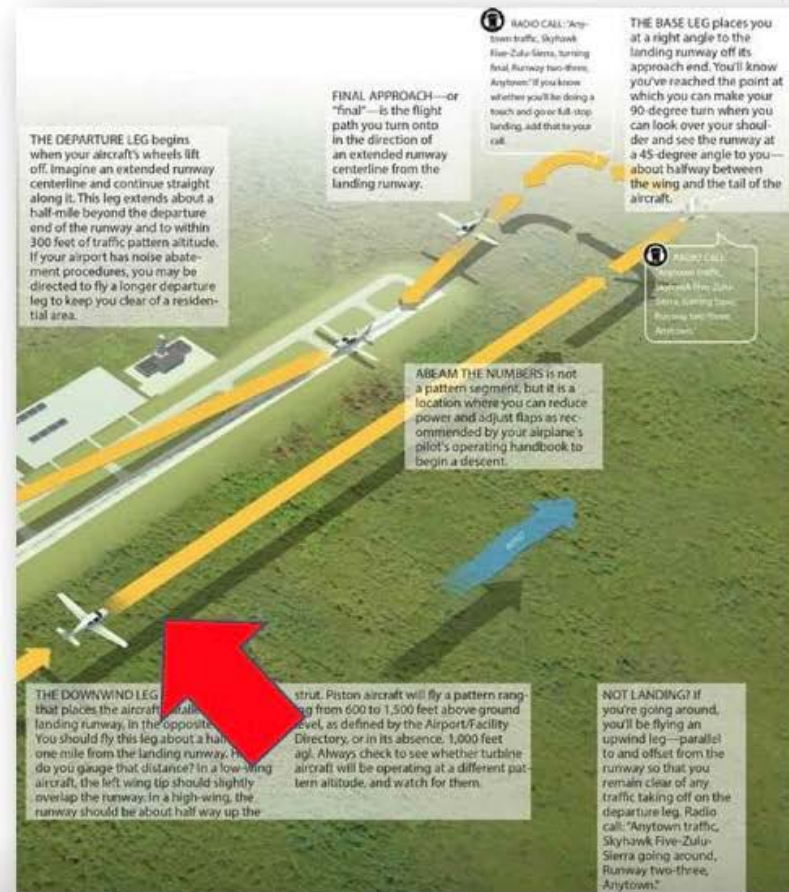
- Good landings begin way before the roundout and flare
- Know and use speed/altitude targets
- Be consistent and fix issues early!
- Note - examples based on C172



Landings Start on Downwind



- Get everything ready early
 - Flow and Checklist(s)
- Airspeed and Altitude
 - C172 ex:
 - 2100 RPM
 - 90 KIAS
 - 1000' AGL



Ace of Base

- 45° from Landing Spot
- Airspeed and Altitude
 - C172 ex:
 - 1600 RPM
 - Flaps 20°
 - 75 KIAS
- Target – lose another 300' by turn to Final
- TIP: Make corrections early!



The FINAL Countdown

- Airspeed and Altitude
 - C172 ex:
 - 1600 RPM
 - Flaps 30°
 - 65 KIAS
 - Target Alt – 400' AGL
 - TIP: Rounding this turn can help prevent overshoots
- Note: Every type of Plane may have different criteria, your Instructor CFI will guide you...



Locked On FINAL

- Aiming Spot vs. Touchdown Spot
 - C172 ex:
 - 65 KIAS
 - Third runway stripe to land on 1000' markers
- "Spot, Speed, Straight" mantra
- Personal TIP: Pitch for Spot, Power for Airspeed – TOGETHER!!



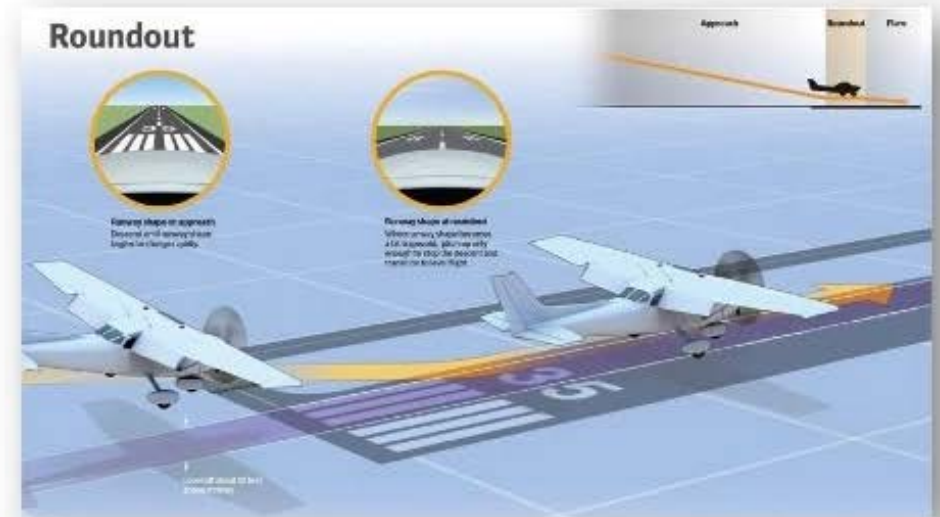
Guidelines & Practice Continued

GET RUSTY

Ease on Down

- When to Roundout
 - Runway Expansion
- C172 Ex:
 - Reduce Power to idle
 - Rivets to help with alignment
 - Glide to your spot, but...
- Focus on the landing!!
 - Height and alignment
 - Do NOT Fixate on the Spot

*Key point + sight picture Runway viewed as expanding & "flat"



*Key point + sight picture "flat" - - - "focus on the end of the runway"

* Pilots notes meant to enhance the explanation; you're CFI will guide you



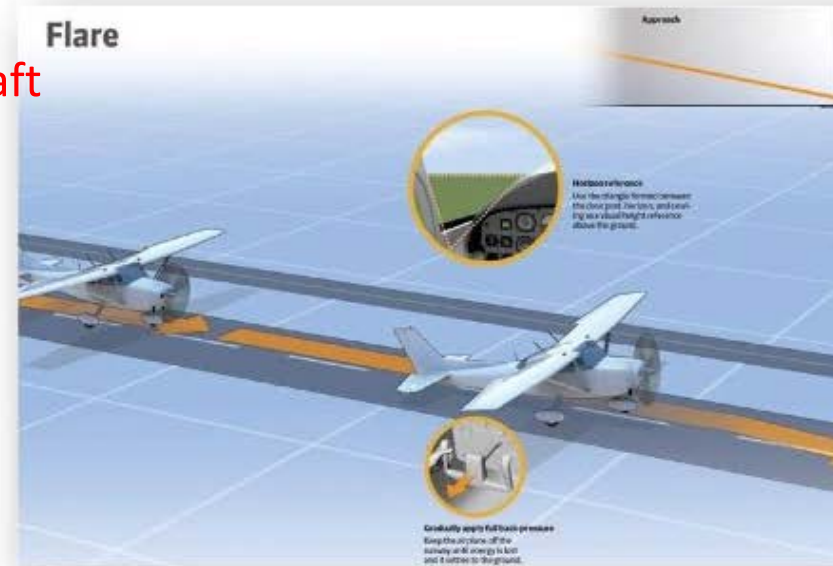
Guidelines & Practice Continued

fly often !
(proficiency skills)

Flying the Lowdown

- Flare height
 - Hold a few inches from the runway
 - "Do not let the airplane land"
- TIP: Practice with "Low Approaches"
 - C172 ex: 70 KIAS, Flaps 10°, Power as req.

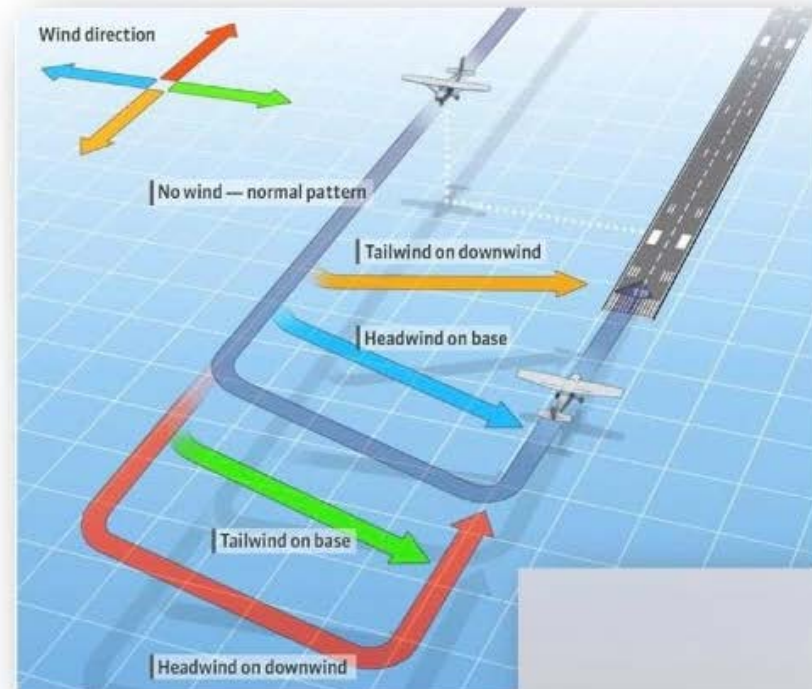
“Keep the nose of the aircraft up - as it settles”



Guidelines & Practice Continued

What if there is wind?

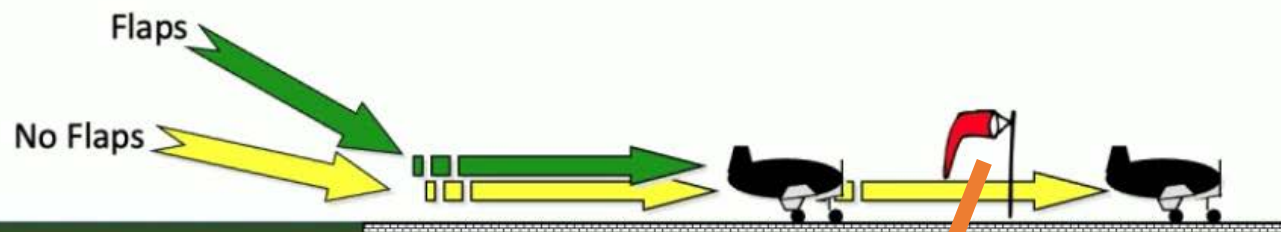
- Adjust Base and Final for effect of wind
- Float distance will change – Adjust Aiming Spot
- Crosswind
 - Rudder check for alignment on Final
 - Use as much rudder as it takes...



There are many ways that a pilot learns to land based on weather, the type of aircraft, the type and configuration of the airport, types of runways (i.e. grass or paved... All will be addressed and practiced until they are second nature).

No-Flap Landing

- Shallower approach angle
- Higher touchdown speed ($1.3 \times V_{SI}$)
- Longer landing distance



Note the windsock in the picture, always land into the wind ...

Airports and Traffic Patterns



Chart Supplement
SouthEast U.S.

GHEE TYSON (TYS)(KTYS) P (ANG ARNG) 10 S UTC-5(-4DT) N35°48.56' W83°59.72'

979 B LRA Class I, ARFF Index C NOTAM FILE TYS

RWY 05R-23L: H9000X150 (ASPH-GRVD) S-120, D-243, 2S-175, 2D-421, 2D/2D2-945 PCN 63 F/B/X/T HIRL CL

RWY 05R: TDZL REIL PAPI(P4L)—GA 3.0° TCH 50'. RVR-R Rgt t/c. 0.5% up.

RWY 23L: REIL PAPI(P4L)—GA 3.0° TCH 50'. RVR-T Thld dsplcd 400'. Tree.

RWY 05L-23R: H6005X150 (CONC-GRVD) S-120, D-239, 2S-175, 2D-439, 2D/2D2-961 PCN 71 R/B/W/T HIRL

RWY 05L: MALSR VASI(V4L)—GA 3.0° TCH 57'. RVR-T 0.9% up.

RWY 23R: REIL PAPI(P4L)—GA 3.0° TCH 45'. RVR-R Rgt t/c.

RUNWAY DECLARED DISTANCE INFORMATION

RWY 05L-TORA-6005	TODA-6005	ASDA-6005	LDA-6005
RWY 05R-TORA-9000	TODA-9000	ASDA-8600	LDA-8600
RWY 23L-TORA-9000	TODA-9000	ASDA-9000	LDA-8600
RWY 23R-TORA-6005	TODA-6005	ASDA-6005	LDA-6005

SERVICE: S4 FUEL 100LL, JET A, A++ QX1 MILITARY—JASU (A/M32A-86) (A/M32A-95) FUEL A++ (Mil), A, A+ (D865-970-3049.) (NC-100LL) FLUID PRESAIR LPOX OIL O-148(Mil)

AIRPORT REMARKS: Attended continuously. Birds on and in/ov arpt, increased Oct-Apr. Rwy slc cond not monitored 2130-1230Z+, not monitored weekends and hol. Rwy 05L-23R and Rwy 05R-23L wt brg capacity for 2S landing gear is 175. Rwy 23L, Rwy 23R departures maintain rwy hdg until passing residential area south of extd rwy cntr'n unless otherwise instructed by ATC. Hold short line for Rwy 23L lctd slightly north of Twy A-8. Portion of Twy A near AER 05R not visible from taxi.

Wide-bodied acft use care when turning onto Twy A from Ramps 4, 5 and 6.

MILITARY REMARKS: CSTMS/AG/IMG Mil customs only with 72 hr PN. ANG PPR 24 hr PN rqr, ltd to OFFL BUS, etc and mgmt DSN 266-4404/4419, C865-336-4404/4419. ANG OPS call SODA CTL 303.025. COMD POST opr H24, DSN 266-4371. C865-336-4371. Allfd Mgr does not issue or store COMSEC for tran crews. Tmptry stor of classified materials up to TOP SECRET at Comd Post. Entrances into ARNG ramp not suitable for fixed wing acft. PPR from ANG for civil acft to use Twys G1, G2, G3, G4, & G south of Twy G7, contact 865-336-4371. ARMY NG Base OPS opr 1230-2200Z+ Mon-Fri, PPR DSN 266-4601/4605.

AIRPORT MANAGER: 865-342-3088

WEATHER DATA SOURCES: ASOS (865) 981-4053 LLWAS, WSP

COMMUNICATIONS: ATIS 128.35 UNICOM 122.95
 RCO 122.2 122.3 (NASHVILLE RADIO)

Ⓜ KNOXVILLE APP/DEP CON 118.0 (051°-229°) 123.9 (230°-050°)
 KNOXVILLE TOWER 121.2 GND CON 121.9 KNOXVILLE CLNC DEL 121.65
 NG OPS 41.5 149.8 373.9 ANG OPS 303.025 (Call SODA Ctl)

AIRSPACE: CLASS C svc ctc APP CON

VOR TEST FACILITY (VOT) 112.0

RADIO AIDS TO NAVIGATION: NOTAM FILE TYS.

VOLUNTEER (OO VORTAC) 116.4 VVX Chan 111 N35°54.29' W83°53.68' 224° 7.5 NM to fld. 1290/3W. HIRL
 ILS 110.75 I-TYS Rwy 05L. Class IA. BENFI NDB no longer form, OM remains per tys 140.779.
 ILS/DME 110.75 I-0XH Chan 44(Y) Rwy 23L. Class IE. LOC unusable inside 7.2 DME above 5,300 MSL to 2,000 MSL at 1.6 DME.
 ILS 111.7 I-BUI Rwy 23R. LOC unusable byd 15 NM blo 3,000' and byd 15° right of course.
 ASR

Phase III What Could Be Next ?

Introductions to the Following topics

- Flight Planning / Go-NoGo
- Weather (Friend or Foe)
- The Crew & Proficiencies
- The Plane
- The Destinations
 - Known
 - Unfamiliar
- Other Considerations