Airborne Elite, LLC

Private Pilot Course Materials

TABLE OF CONTENTS

Certification of AIRMEN

CATEGORY	CLASS	TYPE
Airplane	Single-Engine Land Single-Engine Sea Multi-Engine Land Multi-Engine Sea	PA-28, PA-38, C-172, B-747
Rotorcraft	Helicopter Gyroplane	Sikosrky,R-22, ELA-07
Lighter-than-air	Free Air Balloon Airship	Lindstrand 77A, Firefly 7 Skyship 500HL, GZ-19A
Weight-Shift-Control Aircraft	Weight-Shift-Control Aircraft Land Weight-Shift-Control Aircraft Sea	
Powered Parachute	Powered Parachute Land Powered Parachute Sea	
Powered Lift		
Glider		Schweizer 2-33

Certification of AIRCRAFT
(mix and match)

CATEGORY	CLASS	TYPE
Normal Utility Acrobatic Transport Limited Restricted Provisional Light Sport Experimental	Airplane Rotorcraft Glider Balloon Landplane Seaplane	PA-28, PA-38, C-172, B-747 Sikosrky,R-22, ELA-07 Lindstrand 77A, Firefly 7 Skyship 500HL, GZ-19A Schweizer 2-33

AIRWORTHINESS CHECKLIST

Aircraft is considered airworthy when:
1) it conforms to its type certificate and
2) it is inspected and maintained in accordance with Title 14 CFR.

AR(R)OW (Documents Required On-Board)

A Airworthiness Certificate – FAR 91.203
R Registration Certificate – FAR 91.203
(R) Restricted Radio Operator Permit (for international flights) – FCC rule
O Pilot's Operating Handbook or Aircraft Flight Manual – FAR 91.9
W Weight and Balance Data – FAR 91.9
S Supplements

AV1ATE

A Annual Inspection – FAR 91.409
V VOR Equipment Check –within the preceding 30 days (IFR operations only) – FAR 91.171
1 100 hour Inspection or Progressive Event (for hire only) – FAR 91.409, 91.417
A Altimeter, Static System and Automatic Altitude Reporting System Inspection – within the preceding 24 calendar months (IFR operations only) – FAR 91.411
T Transponder Inspection – within the preceding 24 calendar months – FAR 91.413
E ELT battery due date and ELT Operational Check – within the preceding 12 calendar months FAR 91.207

IS LA, CA (Is Los Angeles, California)

I Inoperative Equipment Certification – FAR 91.213
S Serial Number – External Data Plate – FAR 45.11

L Life-Limited Parts – Current Status per Type Certificate Data Sheet – FAR 91.417
A Airworthiness Directives – Current Status Listing of Applicable Ads including time and date of recurring action – FAR 91.417

C Compass Deviation Card – FAR 23.1547
A Alterations and Repairs – FAA Form 337 – FAR 91.417

- Make note about any obstacles on the approach paths to runways.

10. Plan your alternatives
- Make note of airports available en-route for diversion.
- Gather the same information for them as for the primary destination.
- Make sure they have adequate runway lengths.

11. File the flight plan with FSS

DIVERSION TO AN ALTERNATE AIRPORT

Diversion might be necessary for deteriorating weather, mechanical problem or personal needs. To perform the diversion, follow the following steps in the exact order.

1. Note the time on the NavLog
2. Turn in the approximate direction towards your alternate.
3. Draw a line from your present position to your alternate.
4. Determine the Magnetic Course by sliding a straight edge parallel to the course line to a nearby VOR.
5. Convert Magnetic Course to True Course by ADDING Eastern Variation or SUBTRUCTING Western Variation:
   TC = MC +E/-W
6. Determine Wind Correction Angle and Ground Speed on the E6B using True Course and marked winds aloft.
7. Determine the distance to the alternate.
8. Calculate Estimated Time En-route.
9. Using the time of diversion noted in step 1 and Estimated Time En-route, calculate Estimated Time of Arrival.
10. Keep track of your progress along the course. Since you haven't had time to mark intermediate checkpoints, you have to be extra vigilant to stay on course.
11. Determine communication and airspace clearance procedures as necessary
12. Determine the descend point using one of the methods described in Cross Country Flight Planning.
13. If you are in distress, use either the emergency frequency 121.5 or one of the approach frequencies to get help.

METHOD 1:

1. Select desired descend rate, for example 500 fpm.
2. Divide the difference in altitudes, for example 3,000 feet, by the descend rate: 3,000/500 = 6 minutes
3. Determine distance to descend by either multiplying the time by the groundspeed or by using values close to your groundspeed from the following list: 1 nm/min at 60 kts, 1.5 nm/min at 90 kts, and 2 nm/min at 120 kts. At 90 kts it will take you 9 miles to descend
4. Add a couple of miles for entry to traffic pattern to the calculated distance.

METHOD 2:

This method works for a 3-degree descend slope only.

1. Determine distance to descend by multiplying the difference in altitudes by 3. For example 3 x 3 = 9 miles to descend.
2. Add a couple of miles for entry to traffic pattern to the calculated distance.
3. Determine the descend rate required by multiplying the groundspeed by 5. For example, 90 x 5 = 450 ~ 500 feet per minute.

7. Calculate landing weight and balance.

Make sure you stay within CG limits at the lower weight after burning fuel in flight.

8. Calculate takeoff and landing performance

- Using A/FD, determine departure and destination airport elevations.
- Determine the takeoff distance at the departure airport
- Determine the landing and takeoff distances at the destination airport. Take into account the reduced weight after some fuel has been burned but be conservative. Don't forget to calculate the takeoff distance at the destination airport for the return trip. Remember that landing distances are shorter than takeoff distances. It doesn't make sense to land, if you are not able to takeoff.
- Write the numbers in the NavLog.
- Make sure that the runway lengths are adequate for the calculated distances required.

9. Gather airport information.

Check the following information and put it in the NavLog as necessary or mark the pages for easy accessibility in flight.

- Direction of traffic patterns.
- Traffic pattern altitudes.
- Availability of fuel and other services as necessary.
- Review availability of visual approach indicators (VASI and PAPI).
- Pay attention to noise abatement procedures. Some airports require you to fly certain approach paths to avoid noise sensitive residential areas.

PERSONAL CHECKLIST

I'M SAFE

I Illness
M Medication
S Stress
A Alcohol
F Fatigue
E Eating / Emotions

HAZARDOUS ATTITUDES

I'M AIR

I Impulsivity
M Macho
A Antiauthority
I Invulnerability
R Resignation

STABILITY

Stability	Axis	Motion	Stabilizing Method
Longitudinal	Lateral	Pitch	Horizontal Stabilizer
Lateral	Longitudinal	Roll	Wing Dihedral
Directional	Vertical	Yaw	Vertical Stabilizer

WEIGHT AND BALANCE

Licensed Empty Weight (Includes Unusable Fuel and Undrainable oil) + Oil => Standard Empty Weight + Optional Equipment => Basic Empty Weight + Useful Load (Usable Fuel + Payload (Crew, Passengers, Baggage, and Cargo))=> Maximum Ramp Weight – Fuel Used for Taxi and Run-up => Maximum Takeoff Weight – Fuel Burned in Flight => Maximum Landing Weight

1. Adding/Subtracting Weight. When adding/subtracting weight, multiply item weight by arm. Subtract/add item weight from/to the total weight. Subtract/add item moment from/to the total moment. Divide the new moment by the new weight to find a new CG.