The Pilot’s Manual

Commercial Pilot Syllabus

Fifth Edition

A Flight & Ground Training Course for Commercial Pilot Airplane Certification based on The Pilot’s Manual: Ground School

ASA-PM-S-C5-PDF
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Stage 1
Introduction to the Commercial Certificate

Objective
The objective of Stage 1 is for the student to become proficient in, and have an understanding of the following:

Ground Training
• Course objective
• School requirements, procedures, regulations
• Grading criteria
• Forces acting on an airplane
• Stability and control
• Airframe
• Flight instruments
• Basic flight maneuvers
• Flight information
• Flight physiology
• Regulations

Flight Training
• Flight training process
• Training airplane
• Preflight
• Certificates and documents, including minimum equipment list
• Steep Turns
• Steep Spirals
• Chandelles
• Lazy Eights
• Eights-on-Pylons
• Maneuvering During Slow Flight
• Power-off Stalls
• Power-on Stalls
• Spin awareness
• Normal and crosswind takeoff, climb, approach and landing
• Soft-field takeoff, climb, approach, and landing
• Short-field takeoff, climb, approach, and landing
• Power-off 180° accuracy approach and landing
• Go-around procedures
• Aeromedical factors

Completion Standards
Stage 1 is complete when the student achieves the objective of each module, and can list or describe the correct process or reference for accomplishing elements, exercises and activities. Student shall score at least 80% on the Stage 1 Exam, and all deficient areas shall be reconciled to 100%. Student shall have a second-class medical certificate upon completion of this stage.
Stage 1 / Module 1

Ground Training

Objective:
For the student to be introduced to the Commercial Pilot Certification program, and learn the flight school requirements, procedures, regulations, and grading criteria. Student shall also review stability and control and the forces acting on an airplane.

Content:
- Review course and objectives
- School requirements, procedures, regulations
- Grading criteria, expectations of student
- Review objective of Stage 1

The forces acting on an airplane
- Weight
  - Bernoulli’s Principle
  - dynamic and static pressure
  - airspeed
  - airfoil shape
  - aerodynamic force
  - pressure distribution and CP movement
- Drag
  - total drag
  - parasite drag
  - skin-friction drag
  - form drag
  - interference drag
  - induced drag
  - angle-of-attack
  - wing design
  - lift and drag ratio
  - wing flaps
  - leading-edge devices
- Thrust
  - propeller motion
  - forces on a propeller blade
  - propeller efficiency
  - controllable-pitch propellers
  - takeoff effects of propellers
  - propeller torque effect
  - gyroscopic effect
  - P-factor

Stability
- static and dynamic stability
- stability vs. maneuverability
- airplane equilibrium
- pitching moments
- longitudinal, directional, and lateral stability

Control
- elevator
- ailerons
- rudder
- control effectiveness

Completion Standards:
This module is complete when the student has successfully completed all review questions following the assigned reading.

Assignment:
The Pilot’s Manual: Ground School, Chapters 1 and 2

Flight Training

Minimum 141 Requirements:
Dual, Local 2.5 hours flight (.4 instrument)
Solo, Local 1.0 hour flight(s)
Ground instruction 2.0 hours

Objective:
For the student to be introduced to the commercial course and training airplane, and gain proficiency in preflight, Steep Turns, Steep Spirals, Slow Flight, Stalls, and normal and crosswind takeoffs and landings.

Content:

Dual Flight (2.5 hours)
- Discussion of the flight training process
- Introduction to the training airplane
- Preflight, including certificates, documents and minimum equipment list
- Checklist use
- Normal/Crosswind takeoff and climb
- Steep Turns
- Steep Spirals
- Maneuvering During Slow Flight
- Power-on Stalls
- Power-off Stalls
- Normal/Crosswind approach and landing
- Postflight procedures
- Instrument cockpit check

Solo Flight(s) (1.0 hour)
- Preflight
- Checklist use
- Normal/Crosswind takeoff and climb
- Steep Turns
- Steep Spirals
- Maneuvering During Slow Flight
- Power-on Stalls
- Power-off Stalls
- Normal/Crosswind approach and landing
- Postflight procedures

Completion Standards:
This module is complete when the student can maintain flight within ±150 feet altitude, ±15 degrees heading, and ±15 knots airspeed while demonstrating the maneuvers listed in the content of this module.

Recommended Reading:
The Pilot’s Manual: Flight School

Stage 1 / Module 1

Date of Completion: __________________________

Signature: __________________________

Time Flown: __________________________
Stage 1 / Module 2

Ground Training

Objective:
For the student to review the airplane’s airframe and flight instruments.

Content:
Airframe
- Fuselage
- Wings
- Empennage
- Flight controls
- Landing gear
- Engine and propeller

Flight instruments
- Pressure instruments
- Pitot-static system
- Airspeed indicator
- Altimeter
- Vertical speed indicator
- Gyroscopic instruments
- Turn coordinator/turn indicator
- Attitude indicator
- Heading indicator
- Magnetic compass

Completion Standards:
This module is complete when the student has successfully completed all review questions following the assigned reading.

Assignment:
Ground School, Chapters 4 and 7

Minimum 141 Requirements:
Dual, Local 2.5 hours flight (.4 instrument)
Solo, Local 1.0 hour flight(s)
Ground instruction 1.5 hours

Flight Training

Objective:
For the student to review the aeromedical factors of flight, gain additional experience in Steep Turns, Slow Flight, Stalls, and soft-field takeoffs and landings, and be introduced to Chandelles.

Content:

Dual Flight (2.5 hours)
- Discussion of aeromedical factors of flight
- Preflight
- Checklist use
- Soft-field takeoff and climb
- Steep Turns
- Steep Spirals
- Maneuvering During Slow Flight
- Power-on Stalls
- Power-off Stalls
- Chandelles
- Soft-field approach and landing
- Postflight procedures
- Instrument approach procedures

Solo Flight(s) (1.0 hour)
- Preflight
- Checklist use
- Soft-field takeoff and climb
- Normal/Crosswind takeoff and climb
- Steep Turns
- Steep Spirals
- Maneuvering During Slow Flight
- Power-on Stalls
- Power-off Stalls
- Chandelles
- Soft-field approach and landing
- Normal/Crosswind approach and landing
- Postflight procedures

Completion Standards:
This module is complete when the student can maintain flight within ±150 feet altitude, ±15 degrees heading, and ±15 knots airspeed while demonstrating the maneuvers listed in the content of this module.

Recommended Reading:
Flight School