



PA - 28 - 161 / 181
PRIVATE PILOT AND COMMERCIAL PILOT
OPERATIONS AND MANEUVERS

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INTRODUCTION

Tech Aviation's flight training program is designed to train pilots to the highest possible standards, preparing students for entry into the exciting and demanding world of aviation. Our goal is to not only give the students the academic and flight training required by the Federal Aviation Regulations (FARs), but to go beyond the regulatory requirements and instill an "aeronautical mindset" that encompasses the traits commonly associated with the professional aviator. Some of these traits include leadership, judgment, communication skills, decision making, and cockpit discipline.

It is commonly accepted fact that anyone can be trained to physically handle and aircraft; the skills required are really not that difficult. It is an entirely different matter to develop the maturity and discipline required of a pilot who takes the lives of passengers into his or her hands. The time to develop that maturity and discipline is not sitting in the cockpit of an aircraft loaded with passengers / friends / family. It is NOW!

Two of the most important attributes of a competent pilot are consistency and flexibility. The competent pilot knows when to be rigidly consistent (follow procedures) and when it is acceptable to deviate from procedures to accomplish a task (such as during an emergency situation). The competent pilot also has the ability to integrate his or her own techniques (developed through training, practice, and experience) without deviating from procedures.

The Operations and Maneuvers Manual is designed to be used in conjunction with the appropriate flight training syllabus and Practical Test Standards (PTS). The lesson elements of the syllabus will be looked over first, followed by review of the pertinent areas in the Operations and Maneuvers manual. Finally, the PTS should be consulted to determine the completion objectives required by the FAA. Note that many of the PTS tasks do not have a specific procedure. In Such cases it is left to the instructor and student to determine the best method of meeting the PTS objectives.

To further enhance standardization, it is important that some key concepts be understood so terminology among instructors and students does not cause confusion.

POWER CONDITIONS

In order to fly an airplane in the safest and most efficient manner possible, it is important to understand the relationship of pitch and power and how they relate to controlling aircraft performance. The standard convention for explaining this relationship is to use two power conditions:

POWER CONDITION ONE: *IF POWER IS AVAILABLE AND VARIABLE, THEN POWER CONTROLS AIRSPEED AND PITCH CONTROLS VERTICAL RATE.*

Power Conditions One is used throughout normal traffic patterns, instrument approaches and maneuvers. This does not mean that the power is changed constantly, but rather set until it is determined that another setting is more appropriate. It is important to remember that neither airspeed nor vertical rate change instantaneously, but must be allowed to stabilize before adjusting the pitch and / or power setting.

POWER CONDITION TWO: *IF POWER IS FIXED EITHER MECHANICALLY OR PROCEDURALLY, THEN PITCH CONTROLS BOTH AIRSPEED AND VERTICAL RATE.*

Power Condition Two is used when either very high on the glide path and the power is reduced to idle, when practicing power off and reduced power landings, and during normal climbs and descents.

CREW COORDINATION

Although the student and instructor are not acting as a crew in the traditional sense, they are nonetheless both sitting at the controls and each is responsible for certain aspects of aircraft operations. In order to prevent misunderstandings, the following rules will be followed on all dual instructional flights:

- 1) Neither pilot will activate any system with out first stating their intention. For instance, if the instructor decides that the fuel pressure is reading slightly low and wishes to turn on the fuel pump, he/she will announce “Fuel pump on,” and then turn it on. These call-outs include flap usage. Before moving the flaps, the pilot will announce, for example, “Flaps 25” or “Flaps zero.” Ambiguous statements such as “Flaps down” or “I’m dumping the flaps” should be avoided.
- 2) When exchanging control of the airplane, the pilot flying will say “You have the controls.” The pilot taking the control of the aircraft will respond “I have the controls” and place their hands on the wheel. **THESE ARE THE EXACT WORDS TO BE USED.** Saying “You’ve got it” or vaguely waving in the direction of the controls in unacceptable.
- 3) Radio communications should be carried out by one person, not interchanged between the pilots indiscriminately. If the person handling the radio misses a call, and the other person hears it, the person hearing it should say, for example, “The

tower just called and cleared us to land,” whereupon the pilot handling the radios will transmit the appropriate response.

IN ALL TECH AVIAITON DUAL OPERATIONS THE FLIGHT INSTRUCTOR IS THE PILOT IN COMMAND OF RECORD AND HAS FINAL AUTHORITY AND RESPONSIBILITY FOR THE FLIGHT.

BRIEFINGS

During each dual flight, the student is responsible for conducting three briefings: a Passenger Briefing, a Takeoff Briefing, and an Approach Briefing.

Passenger Briefing

The passenger briefing should be conducted once everyone is seated, prior to the Before Start Checklist. It must include at a minimum:

- 1) Fastening and unfastening seat belts and shoulder harnesses
- 2) The location and method of opening doors and emergency exits
- 3) The location of fire extinguishers and other emergency equipment
- 4) Smoking rules (NO SMOKING!!)
- 5) Any other information the pilot deems necessary or interesting (such as the type of weather expected)

Example:

“Your seat is equipped with a seat belt and shoulder harness. To fasten seat belt, insert the flat portion of the belt into the open end of the buckle and pull the belt snugly. To release the seat belt and shoulder harness, pull up on the tab located on top of the buckle (demonstrate). This airplane has one door. To open the door, (demonstrate). In addition to the door, the airplane has an emergency exit... (point out and describe, if applicable). There is a fire extinguisher located under the pilot’s seat. This is a non-smoking flight. The weather is forecast to be nice along our route, although we may hit some light turbulence. Any questions??”

Takeoff Briefing

The takeoff briefing should be based on actual conditions and the performance data on the takeoff data card. The briefing may be conducted any time prior to the completion of the Before Takeoff Checklist (if workload permits, it may be done while taxiing from the ramp to the run up area). The takeoff briefing must include the following information:

- 1) Type of takeoff (normal, soft field, short field)
- 2) Runway in use
- 3) Takeoff weight
- 4) Applicable V Speeds
- 5) Departure route and altitude
- 6) Nav radio set up
- 7) Emergency procedures

Example:

“This will be a normal takeoff, runway 22. Takeoff weight is ____ pounds. Vr is ____, Vy is _____. We’ll be departing to the northwest, climbing initially to 3000 feet. Nav 1 and Nav 2 are set to LVZ. If the engine fails during takeoff we’ll land on the remaining runway. If the runway is insufficient, we’ll select a suitable landing site and proceed according to the Engine Failure Checklist. If there are any other malfunctions we’ll remain in the traffic pattern and land as soon as possible. Any Questions?”

Approach Briefing

The approach briefing must be completed prior to finishing the Approach Checklist (normally, about 10 NM from the landing airport). Prior to doing the briefing, the pilot must obtain weather information for the destination (ATIS or airport advisory). The VFR approach briefing must contain the following information:

- 1) The type of pattern entry
- 2) The runway in use
- 3) Traffic pattern altitude
- 4) The type of landing planned
- 5) Vref
- 6) Safety consideration

Example:

“This will be a left downwind entry for runway 22 at Wilkes-Barre, traffic pattern altitude 2000 feet, no flap landing. Vref is _____. The runway is wet, so I’ll minimize braking to reduce the chance of hydroplaning. Any questions?”

The IFR approach briefing must include the following information:

- 1) The name of the approach
- 2) MSA for the applicable sector
- 3) Initial of vectoring altitude
- 4) Altitude at the final approach fix, final approach point, or glide slope intercept (“Final” altitude)
- 5) MDA of DA (rounded up to the nearest 10 feet)
- 6) Missed approach procedure
- 7) Approach speed and Vref
- 8) Avionics set up
- 9) Safety considerations

Example:

“This will be the ILS runway 22 to AVP. MSA is 4000 feet. Initial altitude is 3800, final altitude is 2800, and minimums are 1560. Missed approach procedure is to climb to 4000 direct CYE NDB and hold. Approach speed will be ____, Vref is _____. Nav 1 is set to AVP ILS, Nav 2 is set to LHY VOR, the ADF is set to Crystal Lake, and DME is on hold. Both NAVs will be set to the AVP ILS during the approach. Several aircraft in front of us have reported windshear, so I’ll pay extra attention to airspeed and vertical rate.”

WEIGHT AND BALANCE CALCULATIONS

Students will perform a weight and balance calculation before every flight, using the standard weight and balance data form. There are two methods of calculating the weight and balance: 1) The moment of each station may be mathematically computed using the supplied arms, or 2) The loading graph may be used to determine the moments. Although each method is equally accepted, students are expected to be able to perform the calculations both ways.

NOTE: On local flights, the taxi/trip fuel will be calculated at 10 GPH. On cross country flights, use the data in the aircraft POH/AFM.

TAKEOFF AND LANDING DATA (TOLD) CARD

In addition to the weight and balance data, a TOLD card must be completed prior to every flight.

SINGLE ENGINE TAKEOFF DATA:

1) Weather (Wx):

Copy the weather at the departure airport, or, if it is unavailable, estimate the wind, temperature and altimeter setting.

2) Heading and Crosswind Component (HW COMP and XW COMP):

To calculate the headwind and crosswind component, use the wind components chart in the POH/AFM. The student should also be able to estimate the wind components based on wind sock indications.

3) Pressure Altitude and Density (PA and DA):

Pressure altitude is calculated by adding the difference between the barometric pressure and standard pressure to the airport elevation. Density altitude can be determined using a density altitude chart or flight computer.

4) V speed , Takeoff Distance and Takeoff Weight:

To determine V_r and T/O Distance, use the “Lift-Off Speed” (plus 5 kts) computed on the 0 Degree Flaps Takeoff Performance (normal takeoff) or the 25 Degree Flaps Takeoff Performance (short field and soft field takeoff) chart in the POH/AFM. Do not use the Ground Roll charts. V_x and V_y are 63 KIAS and 79 KIAS, respectively. The takeoff weight is taken directly from the weight and balance form.

SINGLE ENGINE LANDING DATA:

1) Landing Distance, No Wind:

The no wind landing distance is calculated using the Landing Distance (over a 50' barrier) performance chart in the POH/AFM prior to the flight (It would be very difficult to use the chart in flight). The pressure altitude and temperature of the arrival airport should be estimated conservatively.

2) Weather (Wx):

The arrival airport weather should be written in the space provided. If no weather information is available, estimate the weather based on the best available information.

3) Headwind and Crosswind Components (HW COMP and XW COMP):

Although the POH wind components chart may be consulted, this could prove difficult in the airplane, so estimate the wind components based on the arrival airport weather, or if the weather is not available, from the best available information.

4) Airport Info:

Information for the airport of intended landing should be placed in this space (com/nav frequencies, airport diagram, runway lengths, etc.).

5) Vref:

Vref (reference speed) is the final approach speed of the aircraft. The aircraft should be established in its final landing configuration at Vref no later than 400' AGL. Vref is determined as follows:

Flaps 0-10: $V_{ref} = 68 \text{ KIAS} + \frac{1}{2} \text{ gust factor}$

Flaps 25-40: $V_{ref} = 65 \text{ KIAS} + \frac{1}{2} \text{ gust factor}$

NOTE: The TOLD card is completed for the first takeoff and landing only.

CHECKLIST PROCEDURES

Checklists are designed to aid the pilot in remembering flight critical and /or easily forgotten items, and to ensure that those items are performed in a systematic and timely manner. The check list is neither an operating manual nor a panacea for poor airmanship! In order to be useful, however, the checklist must be used properly and in conscientious manner. Checklist use is Mandatory for all Tech Aviation flight operations, and its use will be graded accordingly.

The Normal Checklist uses a standard challenge and response format.

Although in-flight problems that result in immediate danger to the crew and aircraft are rare, it is imperative to study and practice emergency procedures on a regular basis. More specifically, since emergencies result in increased pilot stress, these procedures must be overlearned. Overlearning has been accomplished when the pilot can immediately perform the procedures without hesitation, cues or guidance. This does not mean that non-normal procedures should be done at a frenzied speed, since trying to perform them too quickly could result in making the situation worse. Non-normal procedures should be carried out at the same smooth, steady pace as normal procedures.

The Non-Normal Checklist uses both memorizations backed up by the challenge and response format.

PREFLIGHT PREPARATION

INITIAL AIRCRAFT ACCEPTANCE: (CANISTER CHECK)

- 1) Verify that the aircraft Hobbs time and Tachometer are completed and correct
- 2) Review past discrepancies, deferred items and assure that no open discrepancies exist
- 3) Verify all aircraft and equipment inspections are current including:
 - a. 50 hour events
 - b. 100 hour events
 - c. Annual events
 - d. Transponder Certification
 - e. Altimeter Certification
 - f. Altitude Encoder
 - g. ELT Battery
 - h. VOR receiver check (if IFR)
- 4) Check oil and fuel first to avoid any delays on departure

CERTIFICATES AND DOCUMENTS

Private Pilot Practical Test Standards, Area of Operation 1, Task A
Commercial Pilot Practical Test Standards, Area of Operation 1, Task A
Private Pilot Manual

WEATHER INFORMATION

Private Pilot Practical Test Standards, Area of Operation 1, Task B
Commercial Pilot Practical Test Standards, Area of Operation 1, Task B
Private Pilot Manual

CROSS COUNTRY FLIGHT PLANNING

Private Pilot Practical Test Standards, Area of Operation 1, Task C
Commercial Pilot Practical Test Standards, Area of Operation 1, Task C
Private Pilot Manual

NATIONAL AIRSPACE SYSTEM

Private Pilot Practical Test Standards, Area of Operation 1, Task D
Commercial Pilot Practical Test Standards, Area of Operation 1, Task D
Private Pilot Manual

PERFORMANCE AND LIMITATIONS

Private Pilot Practical Test Standards, Area of Operation 1, Task E
Commercial Pilot Practical Test Standards, Area of Operation 1, Task E
Pilots Operating Handbook (POH)

OPERATION OF SYSTEMS

Private Pilot Practical Test Standards, Area of Operation 1, Task F
Commercial Pilot Practical Test Standards, Area of Operation 1, Task F
Pilots Operating Handbook (POH)

MINIMUM EQUIPMENT LIST

Private Pilot Practical Test Standards, Area of Operation 1, Task G
Commercial Pilot Practical Test Standards, Area of Operation 1, Task G
Pilots Operating Handbook (POH) & Commercial Pilot Manual

AEROMEDICAL FACTORS

Private Pilot Practical Test Standards, Area of Operation 1, Task H
Commercial Pilot Practical Test Standards, Area of Operation 1, Task H
Private & Commercial Pilots Manual

PHYSIOLOGICAL ASPECTS OF NIGHT FLYING

Private Pilot Practical Test Standards, Area of Operation 1, Task I
Commercial Pilot Practical Test Standards, Area of Operation 1, Task I
Private & Commercial Pilot Manual

LIGHTING AND EQUIPMENT FOR NIGHT FLYING

Private Pilot Practical Test Standards, Area of Operation 1, Task J
Commercial Pilot Practical Test Standards, Area of Operation 1, Task J
Private & Commercial Pilot Manual

PREFLIGHT PROCEDURES

PREFLIGHT INSPECTION

Private Pilot Practical Test Standards, Area of Operation 2, Task A
Commercial Pilot Practical Test Standards, Area of Operation 2, Task A
Pilots Operating Handbook (POH) & Aircraft Checklist

COCKPIT MANAGEMENT

Private Pilot Practical Test Standards, Area of Operation 2, Task B
Commercial Pilot Practical Test Standards, Area of Operation 2, Task B
Private & Commercial Pilot Manual

ENGINE STARTING

Private Pilot Practical Test Standards, Area of Operation 2, Task C
Commercial Pilot Practical Test Standards, Area of Operation 2, Task C
Pilots Operating Handbook (POH) & Aircraft Checklist

TAXIING

Private Pilot Practical Test Standards, Area of Operation 2, Task D
Commercial Pilot Practical Test Standards, Area of Operation 2, Task D
Pilots Operating Handbook (POH) & Private Pilots Manual

BEFORE TAKEOFF CHECK

Private Pilot Practical Test Standards, Area of Operation 2, Task E
Commercial Pilot Practical Test Standards, Area of Operation 2, Task E
Pilots Operating Handbook (POH) & Aircraft Checklist

AIRPORT OPERATIONS

RADIO COMMUNICATIONS AND ATC LIGHT SIGNALS

Private Pilot Practical Test Standards, Area of Operation 3, Task A
Commercial Pilot Practical Test Standards, Area of Operation 3, Task A
Private & Commercial Pilots Manual

TRAFFIC PATTERNS

Private Pilot Practical Test Standards, Area of Operation 3, Task B
Commercial Pilot Practical Test Standards, Area of Operation 3, Task B
Private & Commercial Pilots Manual

AIRPORT AND RUNWAY MARKINGS AND LIGHTING

Private Pilot Practical Test Standards, Area of Operation 3, Task C
Commercial Pilot Practical Test Standards, Area of Operation 3, Task C
Private & Commercial Pilots Manual

TAKEOFFS, LADINGS, AND GO-AROUNDS

NORMAL TAKEOFF AND CLIMB

- 1) Taxi into takeoff position.
- 2) Announce "Takeoff" and smoothly apply full throttle.
- 3) Check the engine instruments "Engine Instruments Checked."
- 4) Check RPM "RPM Checked."
- 5) Maintain directional control with rudders.
- 6) Passing 40 KIAS "Airspeed Alive."
- 7) At calculated airspeed (55-60 KIAS) "Rotate" initiate rotation.
- 8) When VSI and altimeter indicate a climb, "Positive Rate."
- 9) Adjust pitch to climb at 79 KIAS.
- 10) Passing 500' AGL pitch for Vy (79 KIAS) or En route climb speed
- 11) Passing 1000' AGL complete the Climb Checklist.

Private Pilot Practical Test Standards, Area of Operation 4, Task A
Commercial Pilot Practical Test Standards, Area of Operation 4, Task A
Private & Commercial Pilots Manual

NORMAL APPROACH AND LANDING

- 1) Complete Before Landing Checklist
- 2) Enter traffic pattern on a 45 degree entry to the downwind or as directed by ATC
- 3) Enter traffic pattern at or below 100 KIAS (~2200 RPM) and at Traffic Pattern Altitude (TPA).
- 4) One half mile from runway, turn Downwind.
- 5) Slow to $V_{ref} + 20$ KIAS (90 KIAS)
- 6) Abeam the touchdown point, reduce power (1700 RPM)
- 7) When airspeed allows (white arc) Flaps 10 degrees.
- 8) Initiate a descent.
- 9) When the runway is 45 degrees off the tail turn base.
- 10) Reduce power (1500 RPM)
- 11) Set Flaps to 25 degrees and slow to $V_{ref} + 10$ KIAS (80 KIAS)
- 12) Turn final to align with runway centerline.
- 13) Set Flaps to 40 degrees and slow to V_{ref} (~70 KIAS)
- 14) Adjust pitch and power for descent and airspeed.
- 15) At round out, reduce power to idle and continue to flare to touchdown on the main wheels first.
- 16) After nose wheel is down, gently apply brakes.

Private Pilot Practical Test Standards, Area of Operation 4, Task A
Commercial Pilot Practical Test Standards, Area of Operation 4, Task A
Private & Commercial Pilots Manual

CROSSWIND TAKEOFF AND CLIMB

- 1) Note wind direction and speed.
- 2) Taxi into takeoff position.
- 3) Apply FULL ailerons into the wind and elevator neutral.
- 4) Announce "Takeoff" and smoothly apply full throttle.
- 5) Check the engine instruments "Engine Instruments Checked."
- 6) Check RPM "RPM Checked."
- 7) Maintain directional control with rudders.
- 8) Passing 40 KIAS "Airspeed Alive."
- 9) Adjust ailerons to keep wings level during ground roll.
- 10) At calculated airspeed (55-60 KIAS) "Rotate" initiate rotation.
- 11) When VSI and altimeter indicate a climb, "Positive Rate."
- 12) Adjust pitch to climb at 79 KIAS.
- 13) Adjust heading to maintain ground track over center line.
- 14) Passing 500' AGL pitch for Vy (79 KIAS) or En route climb speed.
- 15) Passing 1000' AGL complete the Climb Checklist.

Private Pilot Practical Test Standards, Area of Operation 4, Task A
Commercial Pilot Practical Test Standards, Area of Operation 4, Task A
Private & Commercial Pilots Manual

CROSSWIND APPROACH AND LANDING

- 1) Complete Before Landing Checklist
- 2) Enter traffic pattern on a 45 degree entry to the downwind or as directed by ATC
- 3) Enter traffic pattern at or below 100 KIAS (~2200 RPM) and at Traffic Pattern Altitude (TPA).
- 4) One half mile from runway, turn Downwind.
- 5) Establish crab angle to maintain parallel track with runway.
- 6) Slow to $V_{ref} + 20$ KIAS (90 KIAS)
- 7) Abeam the touchdown point, reduce power (1700 RPM)
- 8) When airspeed allows (white arc) flaps 10 degrees.
- 9) Initiate a descent.
- 10) When the runway is 45 degrees off the tail turn base.
- 11) Reduce power (1500 RPM)
- 12) Set Flaps to 25 degrees and slow to $V_{ref} + 10$ KIAS (80 KIAS)
- 13) Turn final to align with runway centerline.
- 14) Set Flaps to 40 degrees slow to V_{ref} (~70 KIAS)
- 15) Adjust pitch and power for descent.
- 16) Use wing low method for drift control.
- 17) At round out, reduce power to idle and continue to flare to touchdown on the upwind main wheels first.
- 18) After nose wheel is down, gently apply brakes.

NOTE: Adjust final approach speed by half the gust factor
Adjust Flap setting as needed for directional control

Private Pilot Practical Test Standards, Area of Operation 4, Task B
Commercial Pilot Practical Test Standards, Area of Operation 4, Task B
Private & Commercial Pilots Manual

SHORT FIELD TAKEOFF AND CLIMB

- 1) Set 25 degrees of flaps.
- 2) Taxi into takeoff position using all available runway.
- 3) Hold Brakes
- 4) Announce "Takeoff" and smoothly apply full throttle.
- 5) Check the engine instruments "Engine Instruments Checked."
- 6) Check RPM "RPM Checked."
- 7) Release the brakes.
- 8) Maintain directional control with rudders.
- 9) Passing 40 KIAS "Airspeed Alive."
- 10) At 53 KIAS "Rotate" initiate rotation.
- 11) When VSI and altimeter indicate a climb, "Positive Rate."
- 12) Maintain 53 KIAS until clear of obstacle.
- 13) Accelerate to V_x (63 KIAS) and set flaps to 10 degrees.
- 14) Passing 500' AGL pitch for V_y (79KIAS) or En route climb speed.
- 15) Set Flaps to 0 degrees.
- 16) Passing 1000' AGL complete the Climb Checklist.

Private Pilot Practical Test Standards, Area of Operation 4, Task E

Commercial Pilot Practical Test Standards, Area of Operation 4, Task E

Private & Commercial Pilots Manual

SHORT FIELD APPROACH AND LANDING

- 1) Complete Before Landing Checklist
- 2) Enter traffic pattern on a 45 degree entry to the downwind or as directed by ATC
- 4) Enter traffic pattern at or below 100 KIAS (~2200 RPM) and at Traffic Pattern Altitude (TPA).
- 5) One half mile from runway, turn Downwind.
- 6) Slow to $V_{ref} + 20$ KIAS (85 KIAS)
- 7) Abeam the touchdown point, reduce power (~1600 RPM)
- 8) When airspeed allows (white arc), flaps 10 degrees.
- 9) Initiate a descent.
- 10) When the runway is 45 degrees off the tail turn base.
- 11) Reduce power (~1400 RPM)
- 12) Set Flaps to 25 degrees and slow to $V_{ref} + 10$ KIAS (75 KIAS)
- 13) Turn final to align with runway centerline.
- 14) Set Flaps 40 degrees and slow to V_{ref} (~65 KIAS)
- 15) Pitch for airspeed (V_{ref}).
- 16) Adjust power for descent rate.
- 17) At round out, reduce power to idle and flare to touchdown on the main wheels first.
- 18) After nose wheel is down, apply braking to stop the airplane in the shortest distance consistent with safety.

Private Pilot Practical Test Standards, Area of Operation 4, Task F
Commercial Pilot Practical Test Standards, Area of Operation 4, Task F
Private & Commercial Pilots Manual

SOFT FIELD TAKEOFF AND CLIMB

- 1) Set 25 degrees of flaps.
- 2) Taxi into takeoff position while maintaining full aft elevator.
- 3) Continue rolling.
- 4) Announce "Takeoff" and smoothly apply full throttle.
- 5) Check the engine instruments "Engine Instruments Checked."
- 6) Check RPM "RPM Checked."
- 7) Maintain directional control with rudders.
- 8) Passing 40 KIAS "Airspeed Alive."
- 9) Allow aircraft to lift off in ground effect.
- 10) As the main wheels come off the ground, lower the pitch to a level flight attitude to stay in ground effect.
- 11) At 53 KIAS "Rerotation" initiate secondary rotation.
- 12) When VSI and altimeter indicate a climb, "Positive Rate."
- 13) Maintain 53 KIAS until clear of obstacle.
- 14) Accelerate to V_x (63 KIAS) and set flaps to 10 degrees.
- 15) Passing 500' AGL pitch for V_y (79 KIAS) or En route climb speed.
- 16) Set Flaps to 0 degrees.
- 17) Passing 1000' AGL complete the Climb Checklist.

Private Pilot Practical Test Standards, Area of Operation 4, Task C
Commercial Pilot Practical Test Standards, Area of Operation 4, Task C
Private & Commercial Pilots Manual

SOFT FIELD APPROACH AND LANDING

- 1) Complete Before Landing Checklist
- 2) Enter traffic pattern on a 45 degree entry to the downwind or as directed by ATC
- 3) Enter traffic pattern at or below 100 KIAS (~2200 RPM) and at Traffic Pattern Altitude (TPA).
- 4) One half mile from runway, turn Downwind.
- 5) Slow to $V_{ref} + 20$ KIAS (90 KIAS)
- 6) Abeam the touchdown point, reduce power (1700 RPM)
- 7) When airspeed allows (white Arc), flaps 10 degrees.
- 8) Initiate a descent.
- 9) When the runway is 45 degrees off the tail turn base.
- 10) Reduce power (1500 RPM)
- 11) Set Flaps to 25 degrees and slow to $V_{ref} + 10$ KIAS (80 KIAS)
- 12) Turn final to align with runway centerline.
- 13) Set Flaps to 40 degrees and slow to V_{ref} (~70 KIAS)
- 14) Adjust pitch and power to maintain V_{ref} and Decent Rate
- 15) At round out, reduce power to idle then add 100 RPM.
- 16) Flare to touchdown on the main wheels first.
- 17) Hold the nose wheel with back pressure.
- 18) After nose wheel is down, gently apply brakes as needed.

Private Pilot Practical Test Standards, Area of Operation 4, Task D
Commercial Pilot Practical Test Standards, Area of Operation 4, Task D
Private & Commercial Pilots Manual

FORWARD SLIP TO LANDING

- 1) Power is reduces to idle.
- 2) One wing is lowered using aileron. (lower wing into wind if applicable)
- 3) Simultaneously yaw the airplane in the opposite direction with the rudder.
(Longitudinal axis is now at an angle to the flight path).
- 4) The amount of yaw required is just enough to maintain the original ground track.
- 5) The pitch attitude must be adjusted to maintain airspeed.
- 6) Prior to round out, the forward slip must be discontinued.
- 7) Align the Longitudinal axis with the runway centerline for landing.

NOTE: This maneuver increases descent rate with out increasing airspeed.

*Private Pilot Practical Test Standards, Area of Operation 4, Task G
Private Pilot Manual*

180 DEGREE POWER-OFF ACCURACY APPROACH AND LANDING

- 1) Begin the maneuver on the downwind leg in the airports traffic pattern
- 2) Abeam the intended point of touchdown close throttle
- 3) Pitch for best glide 73 KIAS
- 4) Consider the effects of the wind
- 5) Start base turn when appropriate, based on winds
- 6) Use the addition of flaps as necessary to adjust drag for your planned descent
- 7) Utilize Landing Checklist.
- 8) Turn Final and Adjust heading and pitch for descent
- 9) Touchdown on or within 200 feet past the point of intended landing

NOTE:

*Commercial Pilot Practical Test Standards, Area of Operation 4, Task K
Commercial Pilots Manual*

GO-AROUND (BALKED LANDING)

- 1) Announce "Go-around".
- 2) Apply full throttle.
- 3) If flaps are set at 40 degrees, set to 25 degrees flaps.
- 4) Verify positive rate of climb.
- 5) Set climb pitch for 53 KIAS until clear of obstacle.
- 6) Above 100' AGL airspeed V_x (63 KIAS) or greater, set flaps to 10 degrees.
- 7) Above 500' AGL and at V_y (79 KIAS) or greater set flaps to 0 degrees.
- 8) Make radio calls as necessary.

Private Pilot Practical Test Standards, Area of Operation 4, Task G
Commercial Pilot Practical Test Standards, Area of Operation 4, Task G
Private Pilots Manual

CRUISE

TRAINING CRUISE

NOTE: Training cruise is used for all maneuvering flight. It is designed to keep the airplane at an appropriate airspeed and configuration in which to begin airwork.

- 1) Level off smoothly at desired altitude by slowly lowering the nose.
- 2) Allow the airplane to accelerate to 100 KIAS.
- 3) Adjust power and trim to maintain 100 KIAS for the existing conditions. Power setting should be approximately 2200 RPM.
- 4) Complete the Cruise Checklist

EN ROUTE CRUISE

NOTE: En Route Cruise is used when relatively long periods of straight and level are expected.

- 1) Level off smoothly at desired altitude by slowly lowering the nose.
- 2) Allow the airplane to accelerate to the appropriate airspeed.
- 3) Set power according to the performance charts.
- 4) Set mixture just rich of peak.
- 5) Complete the Cruise Check List.

CLEARING TURNS

First 90 degree clearing turn:

- 1) Visually scan the area to the left and right of the aircraft.
- 2) Pick a visual landmark off the wing in the direction of turn to rollout on.
- 3) Enter a 30 degree bank turn.
- 4) Electric fuel pump on.
- 5) Mixture rich.
- 6) Fuel selector fullest tank.
- 7) Continuously scan the area above, below and ahead of the flight path
- 8) After 90 degrees of turn is completed rollout wings level on your selected landmark.

PERFORMANCE MANEUVERS

STEEP TURNS

NOTE: Minimum safe altitude for this maneuver is 1500' AGL.

- 1) Establish Training Cruise and complete the Pre-maneuver Check.
- 2) Pick a visual reference point.
- 3) Note pitch attitude for level flight (2200 RPM = 100 KIAS)
- 4) Smoothly roll into turn (45-50 degrees of bank).
- 5) Rolling past 30 degrees of bank.
 - a. Add power to maintain airspeed (2300 RPM)
 - b. Increase back pressure to maintain altitude.
- 6) Trim may be used to relieve the back pressure.
- 7) Rolling past 30 degrees of bank.
 - a. Decrease power to maintain airspeed (2200 RPM)
 - b. Decrease back pressure to maintain altitude.
- 8) Roll out on desired heading while maintaining altitude and airspeed, and immediately repeat the maneuver in the opposite direction.
- 9) Re-establish Training Cruise and complete the Post maneuver Check.

Private Pilot Practical Test Standards, Area of Operation 5, Task A
Commercial Pilot Practical Test Standards, Area of Operation 5, Task A
Private & Commercial Pilots Manual

CHANDELLES

NOTE: The minimum safe altitude for this maneuver is 1500' AGL.

- 1) Establish Training Cruise and Complete the Pre-Maneuver Check.
- 2) Pick a reference point of your wing tip.
- 3) Roll into a 30 degree bank.
- 4) After the bank is established, smoothly and continuously increase the pitch and simultaneously add climb power so as to arrive at the 90 degree point with maximum pitch up.
- 5) Upon reaching the 90 degree point, begin rolling out slowly so as to arrive at the 180 degree point with maximum pitch up, wings level, and the airspeed at approximately 1.2 Vs1 (55-60 KIAS)
- 6) At the 180 degree point of the maneuver, resume straight and level flight. Re-establish Training Cruise and complete the Post-Maneuver Check.

*Commercial Pilot Practical Test Standards, Area of Operation 5, Task B
Commercial Pilots Manual*

LAZY EIGHTS

NOTE: The minimum safe altitude for this maneuver is 1500' AGL.

- 1) Establish Training Cruise and complete the Pre-Maneuver Check.
- 2) Select a heading that will establish the aircraft perpendicular to a well defined reference line. Select visual references at the 45 and 135 degree points relative to the direction of the maneuver.
- 3) Initiate the maneuver by slowly increasing the pitch while simultaneously rolling into a bank so as to arrive at the 45 degree point with maximum pitch up and 15 degrees of bank.
- 4) Passing the 45 degree point, increase the bank and decrease the pitch so as to arrive at the 90 degree point with 30 degrees of bank and pitch attitude passing through level.
- 5) As the aircraft passes through the 90 degree point, continuously decrease the pitch and decrease the bank so as to reach maximum pitch down and 15 degrees of bank at the 135 degree point.
- 6) Passing the 135 degree point, continuously decrease the bank and increase the pitch so the aircraft is straight and level upon reaching the 180 degree point.
- 7) After completion of the first 180 degree circuit, perform the maneuver in the opposite direction.
- 8) Upon completion of the maneuver, re-establish Training Cruise and complete the Post-Maneuver Check.

*Commercial Pilot Practical Test Standards, Area of Operation 5, Task C
Commercial Pilots Manual*

GROUND REFERENCE MANEUVERS

RECTANGULAR COURSE

- 1) Establish Training Cruise and complete the Pre-Maneuver Check.
- 2) Select a ground reference that is approximately 1 square mile size.
- 3) Level off at 1000' AGL and 90 KIAS (2000 RPM). The minimum altitude for this maneuver is 600' AGL, but the altitude should reflect the traffic pattern altitude most commonly used.
- 4) Enter the maneuver an appropriate distance from the selected reference area, 45 degrees to the downwind leg, using left hand turns.
- 5) Correct for wind drift by applying an appropriate wind correction angle, maintaining a track parallel to and equidistant from the rectangular leg.
- 6) Divide attention between aircraft control and maintaining ground track.
- 7) Turn onto the next leg when the airplane is approximately 45 degrees off the corner of the ground reference.
- 8) Establish a wing correction angle suitable for the next leg, making small corrections to maintain an equidistant and parallel track.
- 9) Continue flying all four rectangular legs in this fashion.
- 10) Upon completion of the maneuver, re-establish Training Cruise and complete the Post-Maneuver Check.

*Private Pilot Practical Test Standards, Area of Operation 6, Task A
Private Pilots Manual*

S-TURNS ACROSS A ROAD

- 1) Establish Training Cruise and complete the Pre-maneuver Check.
- 2) Select a straight reference line that is at least 2-3 NM in length, such as a road.
- 3) Level off at 1000' AGL and 90 KIAS (2000 RPM). The minimum altitude for this maneuver is 600' AGL, but the altitude should reflect the traffic pattern altitude most commonly used.
- 4) Enter the maneuver downwind, perpendicular to the reference line. Passing overhead the reference, immediately begin a turn to the left.
- 5) Maintain a constant radius turn on each side of the reference line by varying the angle of bank to compensate for the wind.
- 6) Divide attention between aircraft control and maintaining ground track.
- 7) Crossing back over the reference line, immediately begin a turn in the opposite direction, repeating the maneuver.
- 8) Exit maneuver on downwind.
- 9) Upon completion of the maneuver, re-establish Training Cruise and complete the Post-Maneuver Check.

Private Pilot Practical Test Standards, Area of Operation 6, Task B
Private Pilots Manual

TURNS AROUND A POINT

- 1) Establish Training Cruise and complete the Pre-maneuver Check.
- 2) Select a suitable ground reference point.
- 3) Level off at 1000' AGL and 90 KIAS (2000 RPM). The minimum altitude for this maneuver is 600' AGL, but the altitude should reflect the traffic pattern altitude most commonly used.
- 4) Enter the maneuver downwind, approximately $\frac{1}{4}$ - $\frac{1}{2}$ NM from the selected reference. Begin a constant radius turn around the point, compensating for wind drift by continuously changing the wind correction angle (using a maximum of 45 degrees of bank).
- 5) Divide attention between aircraft control and maintaining ground track.
- 6) Exit maneuver on downwind.
- 7) Upon completion of the maneuver, re-establish Training Cruise and complete the Post-Maneuver Check.

Private Pilot Practical Test Standards, Area of Operation 6, Task C
Private Pilots Manual

EIGHTS ON PYLONS

NOTE: This maneuver will be performed between 600' AGL and 1000" AGL.

NOTE: The pivotal altitude can be calculated using the following formula:

$$\text{Ground speed squared} / 11.33 = \text{Pivotal Altitude}$$

(900' AGL is the recommended entry altitude.)

- 1) Establish Training Cruise and complete the Pre-Maneuver Check.
- 2) Select suitable reference points ("pylons") and position the aircraft so the maneuver can be entered on a heading 45 degrees to downwind.
- 3) When the pylon passes below the wing, smoothly roll into a turn using coordinated aileron and rudder so that the pylon maintains a constant position relative to the wingtip.
- 4) As the turn around the pylon progresses, make pitch changes to compensate for variations in groundspeed and maintain the pylons position relative to the wingtip.
 - a. Pylon forward- control forward- reduce bank
 - b. Pylon rearward- control rearward- increase bank.
- 5) Approximately three-quarters around the pylon, or roughly perpendicular to the original entry heading, establish straight and level flight for approximately 3 to 5 seconds and repeat the maneuver in the opposite direction around the second pylon.
- 6) Upon completion of the maneuver, re-establish Training Cruise and complete the Post-Maneuver Check.

*Commercial Pilot Practical Test Standards, Area of Operation 6,
Commercial Pilots Manual*

STEEP SPIRAL

- 1) Establish Training Cruise and complete the Pre-maneuver Check.
- 2) Select an altitude that will allow for 3 – 360 degree descending turns(4000' MSL)
- 3) Select a suitable ground reference point.
- 4) Enter the maneuver downwind
- 5) Before reaching the abeam point on down wind reduce power to idle and hold altitude.
- 6) Time maneuver so as to reach the abeam point at best glide speed (73 Knots)
- 7) Abeam the reference point roll into a bank (~45 degrees)
- 8) Begin a constant radius turn around the point, compensating for wind drift by continuously changing the wind correction angle and bank (using a maximum of 60 degrees of bank).
- 9) Adjust Pitch to maintain best glide speed
- 10) Divide attention between aircraft control and maintaining ground track.
- 11) During descent occasionally apply power to keep engine warm.
- 12) Make 3 constant radius turns around the reference point.
- 13) Exit maneuver on downwind, No lower than 1000' AGL
- 14) Upon completion of the maneuver, re-establish Training Cruise and complete the Post-Maneuver Check.

*Commercial Pilot Practical Test Standards, Area of Operation 5, Task B
Commercial Pilots Manual*

NAVIGATION

PILOTAGE AND DEAD RECKONING

Private Pilot Practical Test Standards, Area of Operation 7, Task A
Commercial Pilot Practical Test Standards, Area of Operation 7, Task A
Private & Commercial Pilots Manual

NAVIGATION SYSTEMS AND RADAR SERVICES / RADIO NAVIGATION AND RADAR SERVICES

Private Pilot Practical Test Standards, Area of Operation 7, Task B
Commercial Pilot Practical Test Standards, Area of Operation 7, Task B
Private & Commercial Pilots Manual

DIVERSION

Private Pilot Practical Test Standards, Area of Operation 7, Task C
Commercial Pilot Practical Test Standards, Area of Operation 7, Task C
Private & Commercial Pilots Manual

LOST PROCEDURES

Private Pilot Practical Test Standards, Area of Operation 7, Task D
Commercial Pilot Practical Test Standards, Area of Operation 7, Task D
Private & Commercial Pilots Manual

SLOW FLIGHT AND STALLS

MANEUVERING DURING SLOW FLIGHT

NOTE: Minimum safe altitude (on recovery) for this maneuver is 1500' AGL

- 1) Establish Training Cruise and complete the Pre-maneuver Check.
- 2) Reduce power to 1700 RPM. Set flaps to 40 degrees (if desired)
- 3) Slow the aircraft to 1.2 Vs1 (see chart below)
- 4) When aircraft is approx. 10 KTS above target add power (see chart below)
- 5) Turns, Climbs and descents should be practiced.
- 6) Recovery:
 - a. Add full power
 - b. Slowly lower the pitch to maintain altitude.
 - c. Flaps 25. Accelerate past Vx set flaps 10. Accelerate past Vy set flaps 0.
- 7) Re-establish Training Cruise and complete the Post-maneuver Check.

<u>Configuration</u>	<u>Target Airspeed</u>	<u>Power</u>	<u>Pitch</u>
Clean	60 KIAS	1700	5 degrees
Flaps Full	53 KIAS	1900	4 degrees

Private Pilot Practical Test Standards, Area of Operation 8, Task A
Commercial Pilot Practical Test Standards, Area of Operation 8, Task A
Private & Commercial Pilots Manual

POWER OFF STALL

NOTE: Minimum safe altitude (on recovery) for this maneuver is 1500' AGL.

- 1) Establish Training Cruise and complete the Pre-maneuver Check.
- 2) Reduce power to 1700 RPM. Set flaps to 40.
- 3) Maintain altitude until airspeed slows to Vref. Simulate a landing approach.
- 4) Reduce power to idle.
- 5) Smoothly increase pitch to slightly above landing attitude.
- 6) Use rudders to maintain directional control
- 7) At stall warning announce "stall warning", at stall announce "stalling."
- 8) Recovery:
 - a. Reduce the angle of attack and simultaneously apply takeoff power.
 - b. If banked, roll level passing Vs and pitch to climb attitude.
 - c. Flaps 25. Confirm positive rate of climb
 - d. Accelerate past Vx set flaps 10. Accelerate past Vy set flaps 0.
 - e. Level off at safe altitude or original starting point.
- 9) Re-establish Training Cruise and complete the Post-maneuver Check.

NOTE: The maneuver should be practiced wings level and from turns up to 20 degrees of bank.

Private Pilot Practical Test Standards, Area of Operation 8, Task A
Commercial Pilot Practical Test Standards, Area of Operation 8, Task A
Private & Commercial Pilots Manual

POWER ON STALL

NOTE: To ensure that PTS requirements are met, three different power-on stall scenarios are presented. The student should be proficient in the performance of all three power-on stalls.

NOTE: Minimum safe altitude (on recovery) for this maneuver is 1500' AGL.

TAKEOFF CONFIGURATION: This maneuver simulates a takeoff as the result of over-rotation. It is practiced with flaps 25 degrees.

- 1) Establish Training Cruise and complete the Pre-maneuver Check.
- 2) Reduce power to 1700 RPM. Set flaps 25 degrees.
- 3) Maintain altitude until airspeed slows to V_x .
- 4) Set takeoff power and slowly increase pitch to slightly higher than normal takeoff attitude.
- 5) Use rudders to maintain directional control
- 6) At stall warning announce "stall warning," at stall announce "stalling."
- 7) Recovery:
 - a. Reduce the angle of attack.
 - b. If banked, roll level passing V_s and pitch to climb attitude.
 - c. Confirm positive rate of climb
 - d. Accelerate past V_x set flaps 10. Accelerate past V_y set flaps 0.
 - e. Level off at safe altitude or original starting point.
- 8) Re-establish Training Cruise and complete the Post-maneuver Check.

NOTE: The maneuver should be practiced wings level and from turns up to 20 degrees of bank.

CLIMB CONFIGURATION: This maneuver simulates a stall during climb out.

- 1) Establish Training Cruise and complete the Pre-maneuver Check.
- 2) Reduce power to 1700 RPM.
- 3) Maintain altitude until airspeed slows to V_x .
- 4) Set takeoff power and slowly increase pitch to slightly higher than normal takeoff attitude.
- 5) Use rudders to maintain directional control
- 6) At stall warning announce "stall warning," at stall announce "stalling."
- 7) Recovery:
 - a. Reduce the angle of attack.
 - b. If banked, roll level passing V_s and pitch to climb attitude.
 - c. Confirm positive rate of climb at V_y
 - d. Level off at safe altitude or original starting point.
- 8) Re-establish Training Cruise and complete the Post-maneuver Check.

NOTE: The maneuver should be practiced wings level and from turns up to 20 degrees of bank.

GO-AROUND CONFIGURATION: This maneuver simulates a stall following initiation of a go-around. It is practiced with flaps 40 degrees.

- 1) Establish Training Cruise and complete the Pre-maneuver Check.
- 2) Reduce power to 1700 RPM. Set flaps to 40 degrees.
- 3) Maintain altitude until airspeed slows to V_x .
- 4) Set takeoff power and slowly increase pitch to slightly higher than normal takeoff attitude.
- 5) Use rudders to maintain directional control.
- 6) At stall warning announce "stall warning," at stall announce "stalling."
- 7) Recovery:
 - a. Reduce the angle of attack.
 - b. If banked, roll level passing V_s and pitch to climb attitude.
 - c. Flaps to 25 degrees.
 - d. Confirm positive rate of climb.
 - e. Accelerate past V_x set flaps 10. Accelerate past V_y set flaps 0.
 - f. Level off at safe altitude or original starting point.
- 8) Re-establish Training Cruise and complete the Post-maneuver Check.

NOTE: The maneuver should be practiced wings level and from turns up to 20 degrees of bank.

Private Pilot Practical Test Standards, Area of Operation 8, Task C
Commercial Pilot Practical Test Standards, Area of Operation 8, Task C
Private & Commercial Pilots Manual

SPINS AND SPIN AWARENESS

Private Pilot Practical Test Standards, Area of Operation 8, Task D
Commercial Pilot Practical Test Standards, Area of Operation 8, Task D
Private & Commercial Pilots Manual

BASIC INSTRUMENT MANEUVERS

STRAIGHT AND LEVEL FLIGHT

Private Pilot Practical Test Standards, Area of Operation 9, Task A

CONSTANT AIRSPEED CLIMBS

Private Pilot Practical Test Standards, Area of Operation 9, Task B

CONSTANT AIRSPEED DESCENTS

Private Pilot Practical Test Standards, Area of Operation 9, Task C

URNS TO HEADINGS

Private Pilot Practical Test Standards, Area of Operation 9, Task

RECOVERY FROM UNUSUAL FLIGHT ATTITUDES

Initiating the recovery from an unusual attitude, check the airspeed indicator first and use the following procedures:

AIRSPEED INCREASING:

- 1) Close the throttle.
- 2) Check the turn coordinator to determine if the airplane is in a bank. Roll the wings level using a combination of the turn coordinator, heading indicator, and attitude indicator. (The gyro instruments may tumble and become unreliable), so verify their operation by cross checking against the other instruments.
- 3) Slowly increase the pitch and bring the airplane back to level flight using the VSI, altimeter, airspeed indicator and attitude indicator.

AIRSPEED DECREASING:

- 1) Apply takeoff power.
- 2) Decrease the pitch and bring the airplane back to level flight using the VSI, altimeter, airspeed indicator and attitude indicator.
- 3) Check the turn coordinator to determine if the airplane is in a bank. Roll the wings level using a combination of the turn coordinator, heading indicator, and attitude indicator. (The gyro instruments may tumble and become unreliable), so verify their operation by cross checking against the other instruments.
- 4) After recovering from the unusual attitude, resume straight and level flight. Complete the Post-Maneuver Check.

Private Pilot Practical Test Standards, Area of Operation 9, Task E

EMERGENCY OPERATIONS

SYSTEM AND EQUIPMENT MALFUNCTIONS

Private Pilot Practical Test Standards, Area of Operation 9, Task C
Commercial Pilot Practical Test Standards, Area of Operation 9, Task C
Pilots Operating Handbook

EMERGENCY EQUIPMENT AND SURVIVAL GEAR

Private Pilot Practical Test Standards, Area of Operation 9, Task D
Commercial Pilot Practical Test Standards, Area of Operation 9, Task D
Private & Commercial Pilots Manual

EMERGENCY DESCENT

- 1) Close the throttle and simultaneously roll into a 45 degree bank, allowing the nose to drop and initiating a descent
- 2) Allow the airspeed to stabilize at V_{no} and roll wings level after 90 degrees of turn.
- 3) Stop the emergency descent no lower than 1000' AGL and prepare for landing.

NOTE: The primary reason for making an emergency descent in a non-pressurized aircraft would be engine or cabin fire. While making the descent, the pilot should make an effort to perform the appropriate non-normal checklist.

NOTE: Due to the rapid engine cooling caused by this maneuver, practice emergency descents should not exceed 1000' of altitude loss.

Private Pilot Practical Test Standards, Area of Operation 9, Task A
Commercial Pilot Practical Test Standards, Area of Operation 9, Task A
Private & Commercial Pilots Manual

EMERGENCY APPROACH AND LANDING

- 1) Pitch for best glide 73 KIAS (clean aircraft 0 flaps)
- 2) Choose the best landing area (most likely to survive)
- 3) Head to landing area
- 4) Use Restart Flow
 - a. Fuel Selector on fullest tank or one that is known to be functioning
 - b. Ignition to BOTH
 - c. Master switch ON
 - d. Fuel Prime Locked
 - e. Fuel Pump ON
 - f. Throttle OPEN
 - g. Mixture Full RICH
 - h. Carb. Heat ON
 - i. Squawk 7700
 - j. Communicate
- 5) Ensure landing in best area.
- 6) Utilize Checklist.
- 7) Prepare for emergency landing.

NOTE: During an emergency approach and landing, the pilot is expected to demonstrate positive control of the aircraft at all times and prioritize tasks. After determining the cause of the emergency and ensuring that the aircraft is under control, the appropriate checklist(s) should be utilized.

Private Pilot Practical Test Standards, Area of Operation 9, Task B
Commercial Pilot Practical Test Standards, Area of Operation 9, Task B
Private & Commercial Pilots Manual

HIGH ALTITUDE OPERATIONS

SUPPLEMENTAL OXYGEN

*Commercial Pilot Practical Test Standards, Area of Operation 10, Task A
Commercial Pilots Manual*

PRESSURIZATION

*Commercial Pilot Practical Test Standards, Area of Operation 10, Task B
Commercial Pilots Manual*

NIGHT OPERATIONS

NIGHT PREPARATION

*Private Pilot Practical Test Standards, Area of Operation 11, Task A
Private Pilots Manual*

NIGHT FLIGHT

*Private Pilot Practical Test Standards, Area of Operation 11, Task B
Private Pilots Manual*

POSTFLIGHT PROCEDURES

AFTER LANDING

*Private Pilot Practical Test Standards, Area of Operation 12, Task A
Commercial Pilot Practical Test Standards, Area of Operation 11, Task A
Private & Commercial Pilots Manual*

PARKING AND SECURING

*Private Pilot Practical Test Standards, Area of Operation 12, Task B
Commercial Pilot Practical Test Standards, Area of Operation 11, Task B
Private & Commercial Pilots Manual*