N750HK

Pre-Maneuver Checklist:

C = Clearing turns

H = Heading - bug (pick outside reference also)

A = Altitude (see restrictions in ACS)

P = Proper configuration (GUMPS - see maneuver for specifics)

- G: Gas (fuel selectors) – On.
- U: Undercarriage – As required.
- M: Mixture - As required.
- P: Props - As required.
- S: Switches (fuel pumps / landing light) - As required.

Cowl Flaps Open for all maneuvers except emergency descent

Transfer of Flight Controls

Positive three-step process for exchanging flight controls between pilots:

• When one pilot seeks to have the other pilot take control of the aircraft, he or she will say, "You have the flight controls."

• The second pilot acknowledges immediately by saying, "I have the flight controls."

• The first pilot again says, "You have the flight controls," and visually confirms the exchange.

Pre-Takeoff Brief

If anything abnormal happens prior to Vr, I will abort the takeoff by bringing both throttles to idle. If I have an engine failure after Vr and there is still runway left to land on, I will reduce power and land on the available runway. If I have an engine failure after Vr and there is no runway left to land on, I will maintain aircraft control and execute

single engine emergency procedures.

Takeoff ground roll distance is _____

Takeoff distance over 50' is _____

Single engine ROC is _____

Accelerate / Stop distance is _____

Any questions?

Normal Takeoff:

Pre-takeoff check and briefing complete.
Align aircraft with centerline.
Apply firm brakes (do not allow aircraft to move).
Power to 20" MP.
Check engine gauges in green.
Release brakes.
Apply full power.
Check engine gauges still green and call *"Airspeed Alive."*
Use light back pressure to let aircraft break ground, but remain in ground effect until >90 mph
Accelerate and climb at 112 mph.
Positive rate of climb with no runway remaining:
Call *"Positive Rate, Gear Up"* and select gear up.
Confirm gear in transit and gear up (amber light).

Short Field Takeoff:

Flaps **15 degrees**

Pre-takeoff check and briefing complete.
Align aircraft with centerline.
Apply firm brakes (do not allow aircraft to move).
Apply full power.
Check engine gauges in green.
Release brakes.
Check engine gauges still green and call *"Airspeed Alive."*
Use light back pressure to let aircraft break ground, but remain in ground effect until 90 mph.
Climb initially at 90 mph.
Positive rate of climb with no runway remaining:
Call *"Positive Rate, Gear Up"* and select gear up.
Confirm gear in transit and gear up (amber light).
Clear of obstacles - accelerate and climb at 112 mph.
Flaps up.

Aborted Takeoff:

If engine trouble or any other abnormality prior to Vr:

Throttles to **idle**, callout "*Abort.*"

Maintain runway centerline with rudder and brakes.

Brake as necessary to come to a stop.

1000 Foot AGL Check:

Climb Power: Set 25" MP, 2500 RPM, 112 mph.

Landing lights off (dependent upon airspace and traffic).

Fuel pumps off (one at a time, ensuring fuel flow remains stable).

Accelerate to cruise climb 130 mph

Complete Climb Checklist.

Cruise Check:

Power (MP and RPM per table).

Mixtures leaned.

Landing lights off.

Cowl flaps closed (CHT dependent).

Complete Cruise Checklist.

Descent Check:

Set power as desired for speed and/or rate.

Cowl flaps can remain closed.

Establish 500 foot per minute descent rate.

Complete Descent Checklist.

Downwind:

1000 AGL minimum

18" MP

Gear down below 150mph (125mph recommended by the Poh)

Normal Landing:

GGUMPS-

- G-gas (fuel selectors on Mains)
- G-gas (Fuel pumps on)
- U- Undercarriage down (Green light)
- M-Mixture full rich
- P-Props full forward
- S-Switches/Seatbelts/Shoulder harness

Abeam Key point:

- Power 14-15” MP
- Pitch for 115

Base:

- GGUMPS
- Verify Green light
- Flaps ½ (15 degrees)
- Pitch for 105MPH

Final:

- Flaps full (27 Degrees)
- Pitch for 95 MPH

Short final:

- Verify Cleared to Land
- Verify Green landing light

Short Field Landing:

- The same as normal
- Airspeed 90 on final

Go Around:

- Mixture- full forward.
- Props-Full Forward
- Throttle Full Forward (2700 RPM)
- Flaps-15 degrees (White ARC)
- Gear- After positive rate “Positive rate gear up”
- Flaps-retract, cowl flaps open

Approaching midfield downwind:

GGUMPS check (flow):

- G – gas (fuel selectors) on MAINS.
- G-gas fuel pump on (on good engine)
- U – undercarriage - select gear down when abeam
- landing point (performance permitting)
- M – mixtures full rich.
- P – props full forward.
- S – switches/seat belts/ Shoulder harness and landing lights on.
- Complete Single Engine Landing Checklist.

Abeam landing point: (upon decision to leave pattern altitude):

- Select Gear Down. Verify “Green light”
- Power as required (18” MP recommended).
- Pitch for 115 mph.

Turning base:

- GGUMPS check.

On final:

- Flaps- ½ (15 Degrees)
- Pitch for 105 mph (blue line) once established on final.
- On short final (before threshold):
- Verify gear down.

Single-Engine Go-around is NOT recommended (and is not allowed on training flights).

Maneuvers

Steep Turns:

- Verify at or above 3,000 AGL.
- Pre-maneuver checklist complete.
- Air speed 140 mph (below Va).
- GUMPS check:
- G - gas (fuel selectors) on.
- U - undercarriage up.
- P - props at cruise.
- S - switches (landing lights on).
- Initiate 50-degree bank (Commercial) 45-degree bank (Private)
- At 30 degrees of bank, add back pressure and increase 2-3” MP
- Initiate the roll out 20-25 degrees before reference point
- Reduce pitch and power during roll out
- Repeat in the opposite direction if directed by the DPE
- Perform Cruise Flow & Checklist.

Slow Flight (Dirty)

- Verify above 5000 feet per the POH
- Pre-maneuver Checklist
- Throttles 15” MP
- GUMPS Checklist
- Flaps (below 125 mph) set to 27° in increments.
- Maintain approximately 90 mph.
- Stall light plus 5-10 MPH - stall light should not be seen once stabilized
- Simultaneously add full power, reduce pitch (Nose to horizon). Set the flaps to 15 degrees (3-second count).
- Select gear up.
- Remaining flaps up (below 125 mph).
- Maintain level flight (maintain altitude) through recovery
- Perform Cruise Checklist

Slow Flight Clean

- Verify above 5000 feet per the POH
- Set Throttles to 12” MP
- Pre-maneuver Checklist
- GUMPS Checklist.
- Slow to 95MPH
- Stall light plus 5-10 MPH - stall light should not be seen once stabilized

Recovery

- Simultaneously add full power and pitch for the horizon
- Perform Cruise Checklist

Power OFF stall:

Verify at or above 5,500 AGL (POH requires maneuver to be completed >5000 AGL).
Pre-maneuver checklist complete.
Set throttles to 15" MP.
GUMPS check:
G - gas (fuel selectors) on.
U - undercarriage down “*Green light and mirror*”
M - mixtures set (full rich).
P - props full forward.
S - switches (fuel pumps and landing lights) on.
Flaps set to full (27 degrees) in increments below 125 mph.
Decelerate to and maintain 95 mph in a descent for approximately 100 ft.
Reduce power to idle slowly.
Pitch up until reaching first indication of stall (light or buffeting).
(Full stall prohibited by POH.)

RECOVERY
Simultaneously add full power and reduce back pressure.

Flaps - Reduce to 1/2 (15 degrees, 4 second count).

Gear - Confirm positive rate of climb.

Call “positive rate, gear up,” and select gear up.

Retract remaining flaps.

Maintain 112 mph until reaching initial altitude or altitude, heading and airspeed as specified, and level off.

Perform Cruise Flow & Checklist.

Power ON stall

(<u>Departure</u> Configuration – Gear & Flaps Up):

Verify above 5,000 AGL.
Pre-maneuver checklist complete.
Set throttles to 12" MP.
GUMPS check:

G - gas (fuel selectors) on.
U – undercarriage up.
M - mixtures set (full rich).
P - props set for **2100 RPM**.
S - switches (fuel pumps and landing lights) on.

Pitch for 95 mph.
Increase Power to 24" MP.
Pitch up until the first indication of stall (light or buffeting).
(Full stall prohibited by POH)
Control yaw with rudder.

RECOVERY
Pitch nose down to horizon.
Leave flaps up.
Establish climb at 112 mph.
Verify positive rate of climb, gear and flaps up.
Return to initial altitude, heading and airspeed.

Perform Cruise Flow & Checklist.

Power ON stall

(<u>Takeoff</u> Configuration – Gear <u>Down</u> & Flaps up)

Verify above 5,000 AGL.
Pre-maneuver checklist complete.
Set throttles to 15" MP.
GUMPS check:

G - gas (fuel selectors) on.
U – undercarriage down "*Green light and mirror*"
M - mixtures set (full rich).
P - props set for **2100 RPM**.
S - switches (fuel pumps and landing lights) on.

Pitch for 95 mph.
Increase Power to 24" MP.
Pitch up until reaching first indication of stall (light or buffeting).
(Full stall prohibited by POH.)

RECOVERY
Pitch nose down to horizon.
Leave flaps at 0.
Pitch for 112 mph.
Positive rate of climb, Call *"Positive Rate, Gear Up"* and select gear up. Confirm gear in transit and gear up.

Accelerated stall:

Verify above 5,000 AGL.

Pre-maneuver checklist complete.

Set throttles to 12" MP.

GUMPS check:

G - gas (fuel selectors) on.

U – Undercarriage up.

M - mixtures set (full rich).

P - props full forward.

S - switches (fuel pumps and landing lights) on.

Pitch to maintain altitude.

As airspeed decreases to 100 mph, enter a coordinated 45 degree bank in either direction while smoothly increasing back pressure to maintain altitude and adjusting ailerons so as not to exceed a 45 degree bank angle.

Establishing the bank quickly (but smoothly and with coordinated inputs of aileron and rudder) will ensure completing the stall in about 90 degrees of turn.

Pitch up until reaching the "onset" (stall light or buffeting) stall condition. Announce the imminent stall and recover immediately.

RECOVERY

Simultaneously add full power, pitch nose to horizon, and level the wings.

Establish climb at 112 mph.

Return to initial altitude, heading and airspeed (or as specified).

Perform Cruise Flow & Checklist.

Precision Approaches (ILS and LPV RNAV)

Normal Procedures:

Approach briefing complete.

Complete Approach Checklist.

Flaps up, 120 mph (approximately 15" MP).

Callout: "*Localizer (or Course) Alive."*

Callout: *"Glideslope Alive."*

Bottom of glideslope diamond touching line:

Select gear down, Callout: "*Green light and mirror*"

Timer set at FAF as appropriate.

Flaps 1/2 (15 degrees).

Trim for 105 mph and power as required to maintain ~500 ft/min descent for a 3 degree glideslope.

GUMPS Check (flow)

Complete Before Landing Checklist.

Callouts: *"1000 Feet to Minimums", "500 Feet to Minimums," "100 Feet to Minimums," "Minimums", "Runway in sight, Landing" or "Missed Approach."*

Single-Engine Procedures:

No flaps until landing assured.

Otherwise same as Normal Procedures.

Non-Precision Approaches

Normal Procedures:

Approach briefing complete.

Complete Approach Checklist.

Flaps up, 120 mph (approximately 15" MP).

Callout: "*Localizer (or Course) Alive."*

Approx. ½ mile prior to FAF (or established on final if no FAF).

Select Gear Down, Callout: "*Green light and mirror*"

At FAF: Complete *"5 Ts":* Turn, Time, Twist, Throttle, Talk.

GUMPS Check (flow).

Flaps 1/2 (15 degrees).

Pitch and trim for 105 mph.

Complete Before Landing Checklist.

Set power as required to maintain 700 to 1000 ft/min descent to the MDA.

Add power and pitch to maintain altitude >MDA and 105 mph.

Callouts: *"1000 Feet to Minimums", "500 Feet to Minimums," "100 Feet to Minimums," "Minimums," "Runway in sight, Landing," or "Missed Approach."*

Single-Engine Procedures:

No flaps until landing assured.

Otherwise same as Normal Procedures.

For <u>any Single Engine Approach</u>:

Don't get low

Don't get slow

ABSOLUTELY don't get low <u>and</u> slow

Minimum Controllable Airspeed (Vmc) Demo:

Verify at or above 4,500 AGL (must stay above 4000').
Pre-maneuver checklist complete (Fuel selectors ON,
Landing light and fuel pumps ON).
Set throttles to 15" MP.
Cowl flap of inoperative (left – simulated critical) engine closed.
Cowl flap of operating engine open.
Idle left engine (to initiate simulated left engine out).
Mixtures full rich.
Props full forward (prior to adding full power).
Throttle full right engine.
Maintain up to 5 degree bank into good engine and ½ ball out.
Verify gear up, flaps up.
Pitch for and maintain 105 mph.
Apply necessary aileron and rudder to maintain heading, but **stop increasing rudder pressure as 100 mph is reached**
Pitch up at steady rate (lose 1 mph per second) until **first indication** of a loss of directional control **<u>or</u>** stall warning.

RECOVERY

<u>Simultaneously</u> pitch down and reduce throttle.
Do <u>not</u> reduce rudder pressure until directional control is regained if directional control was lost.
Reduce as much power as necessary to regain directional control.
Pitch for and maintain 105 mph.
As directional control is regained, apply full throttle on the operating engine while holding heading.
Do <u>not</u> increase power on the idling engine.
After stabilizing aircraft:
Increase inoperative engine throttle to 15" MP
Decrease operating engine to 20" MP / 2500 RPM
When CHT of inoperative engine returns to normal range:
Set throttle to 20" MP / 2500 RPM and open cowl flap.

Perform Cruise Flow & Checklist.

Drag/Speed/Vyse Demo (MEI Syllabus):
Demonstrating the Effects of Various Airspeeds and Configurations
During Engine Inoperative Performance

Verify altitude at or above 4,000.

Pre-maneuver checklist complete.

Select a reference point and heading.

Set throttles to 15" MP.

As airspeed falls below 120 mph, move props slowly full forward.

Set left engine to zero thrust (2200RPM – approx. 10" MP) and right engine smoothly to max power.

Maintain 2-degree bank into the good engine and ½ ball out.

Pitch for 105 mph and note climb performance.

Pitch for 100 mph and note climb performance.

Pitch for 110 mph and note climb performance.

Set pitch back to 105 mph.

Airspeed below 150 mph, select gear down and note climb performance.

Airspeed below 131 mph, extend flaps smoothly and in increments to 27 degrees, note climb performance.

Select gear up, note climb performance with just the flaps down.

Retract Flaps to zero smoothly and in increments.

Set throttle to idle on the left engine (windmilling prop) and note climb performance.

RECOVERY to cruise:

Set throttle on left engine to 15" MP and the right engine to 20" MP / 2500 RPM.

Allow cylinder head temps to reach the green arc before going back to cruise power.

Operating Notes / Common Errors

GROUND OPERATIONS

- Always provide a taxi brief to Instructor/Examiner prior to taxi,

including after landing.

- Do not ride the brakes during taxi if less power is available (idle),

taxi too fast, or turn off the runway too fast.

TAKEOFFS

- Do not ride the brakes during takeoff.

- Use the brakes correctly at the beginning of a short field takeoff. The aircraft should not move until the brakes are released.

- Make timely and correct response to cues of an anomaly or engine failure on takeoff roll.

LANDINGS

- Short Field Landings: Retract flaps after touchdown and simulate using maximum braking after touchdown. Conduct a Go-Around if the approach is not stable or if the aim point will be missed. ACS allows Go-Arounds.

- Retracting flaps on normal landings: FAA guidance is to not touch flaps, windows or radios while on roll-out from any landing. The only acceptable time to retract flaps while rolling on an active runway is during a short-field landing. If you get used to retracting flaps on every

landing roll-out: one day you may accidentally raise the gear on rollout.

ENGINE FAILURES

- Execute the appropriate engine failure checklist. At high altitudes, and when introduced to an engine failure of unknown origin, learners are quick to perform "the drill" and then shut down the engine before attempting to troubleshoot. After the engine is feathered, they then begin the troubleshooting checklist. The time to troubleshoot is when the engine is still running, and only if you have the time and altitude to permit.

“Fix or feather” decision altitude for training is 3000AGL.

INSTRUMENT APPROACHES

- Do not descend below MDA unless the field is reported in sight. Ensure the correct mode is selected for the CDI.

N750HK- V speeds in MPH

VSO 69

Vmc 80

VS 76

VX (sea level) 90

Vxse 94

Vsse 97

VY (sea level) 112

Vyse 105

VCruise Climb 130

VFE 125

VA (Max Gross) 162

VLE 150

VNO 194

VNE 230

VR (Normal-0° flaps) 90

Vnormal approach(15° flaps / 27° flaps) 105 / 95

Vshort field approach(full flaps- 27°)90

Vinstrument approach(15° flaps)105

Max. Takeoff Wt.- 3600 lbs

Max. Wt. Baggage Compartment- 200 lbs