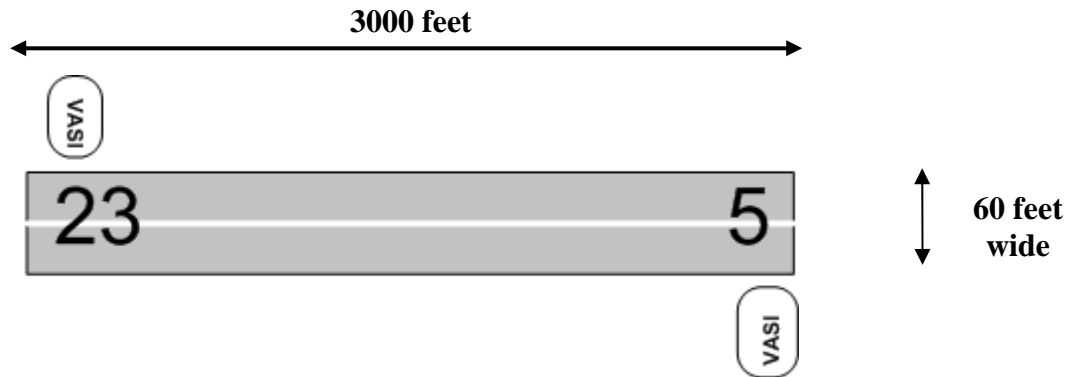


Pattern Operations at Doylestown Airport

Cessna 172 – 180 HP

Doylestown Airport Complex

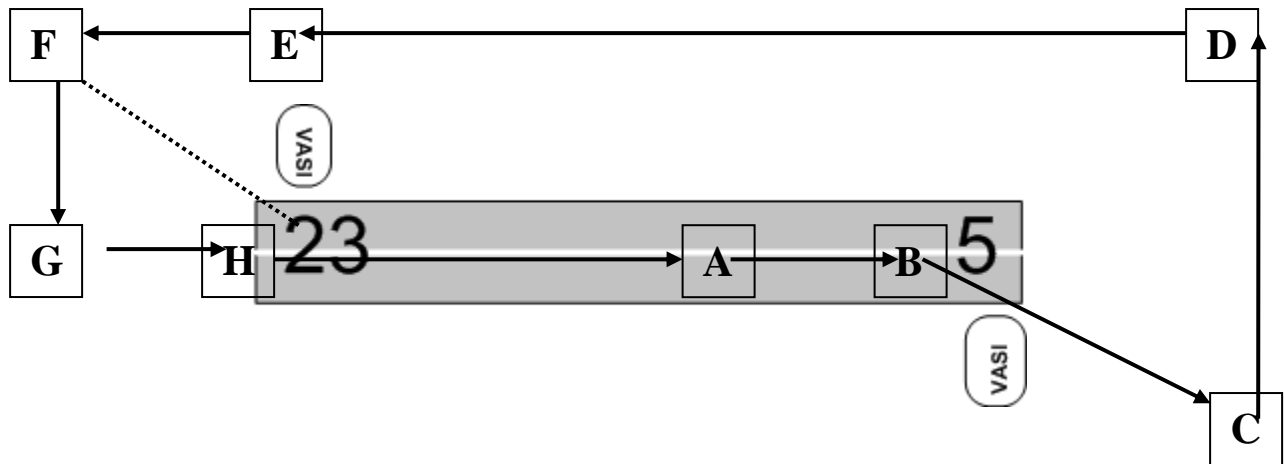
- Airport Designator: KDYL
- Runway dimensions: 3000 feet x 60 feet



- Field Elevation: 394 feet MSL
- Pattern Altitude: 1,400 feet MSL
- Calm Wind Runway: 5
- Frequencies:
 - CTAF: 122.97
 - ASOS: 118.87
- Phone Numbers:
 - FBO: 215-340-0707
 - ASOS: 215-345-0392
- Night Operations
 - Rotating Beacon
 - Lights turned at sunset, no PCL
 - Runway 23 approach-end strobe lights: seven clicks on CTAF
- Restrictions: **No Touch-and-Go**
- Noise Abatement Procedures:
 - Runway 23 Departure:
 - Runway heading (230°) to 500 – 600 feet MSL
 - Turn to heading of 250°
 - Intercept Route 611 Bypass
 - Fly Route 611 Bypass to 1200 feet MSL
 - Depart Traffic Pattern or make crosswind turn for pattern work.
 - Runway 5 Departure:
 - Runway heading (050°) to 1200 feet MSL
 - Depart Traffic Pattern or make crosswind turn for pattern work.
- Approaches: RNAV (GPS) 5, RNAV (GPS) 23; VOR 23

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Pattern Work – Runway 23 Doylestown Cessna 172 – 180 HP

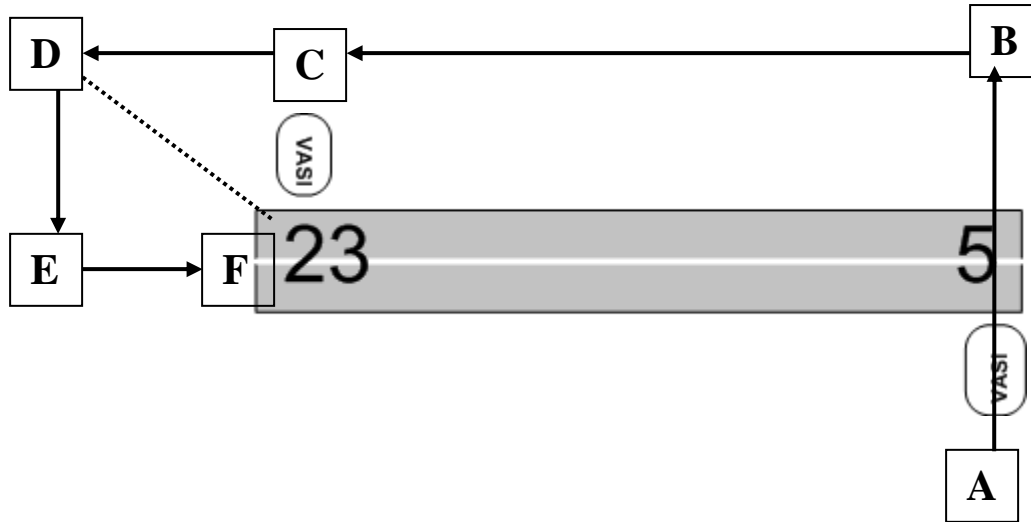


Procedures	
A	<ol style="list-style-type: none"> 1. Begin rotation at 55 KIAS 2. Pitch for 60 KIAS 3. Establish climb 4. TC = ball centered
B	<ol style="list-style-type: none"> 1. Pitch for 76 KIAS 2. Turn to heading of 250° 3. Intercept Route 611 Bypass 4. Fly 611 Bypass to 1200 ft MSL
C	<ol style="list-style-type: none"> 1. Make crosswind turn to 140° 2. Level off at 1400 ft MSL 3. Throttle to 2300 RPM 4. Adjust trim for level flight <ol style="list-style-type: none"> a. ASI = stable in green arc b. TC = wings level, ball centered c. AI = level on horizon d. HI = 140° e. ALT = 1400 f. VSI = 0
D	<ol style="list-style-type: none"> Abeam Court House 1. Turn downwind to heading of 050° 2. Carb Heat – On 3. Throttle 2000 RPM 4. Maintain straight-and-level flight <ol style="list-style-type: none"> a. ASI = 90 KIAS b. TC = wings level, ball centered c. AI = level on horizon d. HI = 050° e. ALT = 1400 f. VSI = 0
E	<ol style="list-style-type: none"> Abeam Base Numbers (23) 1. Throttle 1500 RPM 2. Flaps -- 10° 3. Push yoke forward to minimize ballooning from flap extension 4. Pitch down for 500 FPM 5. Carb Heat – On 6. Verify Instruments <ol style="list-style-type: none"> a. ASI = 80 KIAS b. TC = wings level, ball centered c. AI = level on horizon d. HI = 050° e. ALT = 1400 f. VSI = 0

Procedures

F	<p>At 45° from the runway threshold</p> <ol style="list-style-type: none"> 1. Turn to heading of 320° 2. Flaps – 20° 3. Mixture – Rich 	<ol style="list-style-type: none"> 4. Verify instruments <ol style="list-style-type: none"> a. ASI = 75 KIAS b. TC = wings level, ball centered c. AI = about 5° below horizon d. HI = 320° e. ALT = descending f. VSI = 500 FPM ↓ g. Tachometer = 1500 RPM
G	<p>When nose is about to touch extended centerline</p> <ol style="list-style-type: none"> 1. Turn to heading of 230° 2. Flaps -- 30° 3. VASI = Red/White 4. Mixture – Rich 	<ol style="list-style-type: none"> 5. Verify instruments <ol style="list-style-type: none"> a. ASI = 65 - 70 KIAS b. TC = wings level, ball centered c. AI = about 5° below horizon d. HI = 230° e. ALT = descending f. VSI = 500 FPM ↓ g. Tachometer = 1500 RPM
H	<p>Just before crossing the threshold</p> <ol style="list-style-type: none"> 1. Throttle to Idle (full back) 2. Pitch for 65 KIAS 3. At 2 – 3 feet above runway surface <ol style="list-style-type: none"> a) Begin flare b) Gently apply back pressure to the yoke 4. If flare too high, add 100 RPM 	<ol style="list-style-type: none"> 5. If go-around is necessary <ol style="list-style-type: none"> a) Full power b) Carb heat - Off c) Flaps up 10° d) Pitch for 60 KIAS e) Establish positive rate of climb f) Flaps up 10° g) Establish 500 FPM ↑ h) At 1000' MSL retract flaps i) Pitch for 76 KIAS

Crosswind Entry – Runway 23 Doylestown Cessna 172 – 180 HP

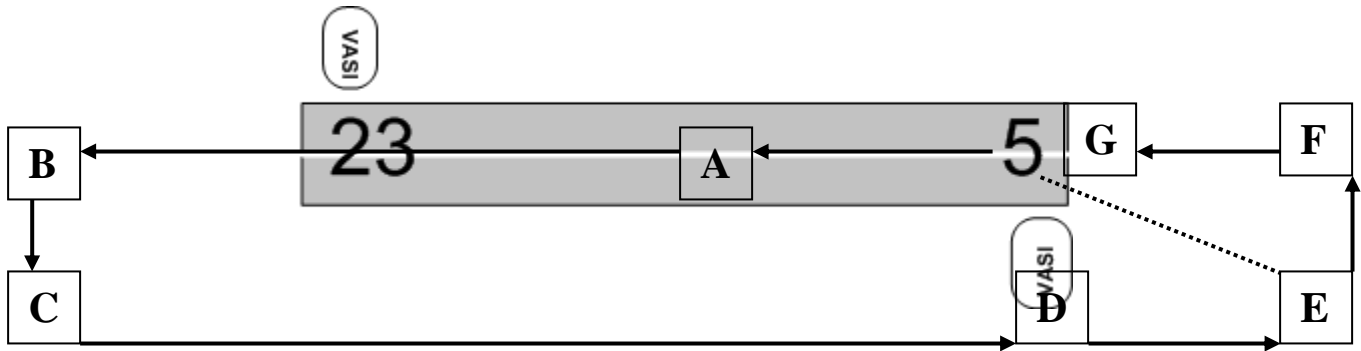


Procedures		
A	<ol style="list-style-type: none"> 1. Descend to and maintain 1400 ft MSL before entering traffic pattern 2. Make crosswind entry at 140° over base numbers 3. Throttle to 2300 RPM 	<ol style="list-style-type: none"> 4. Adjust trim for level flight <ol style="list-style-type: none"> a. ASI = stable in green arc b. TC = wings level, ball centered c. AI = level on horizon d. HI = 140° e. ALT = 1400 f. VSI = 0
B	Abeam Court House <ol style="list-style-type: none"> 1. Turn downwind to heading of 050° 2. Carb Heat – On 3. Throttle to 2000 RPM 	<ol style="list-style-type: none"> 4. Maintain straight-and-level flight <ol style="list-style-type: none"> a. ASI = 90 KIAS b. TC = wings level, ball centered c. AI = level on horizon d. HI = 050° e. ALT = 1400 f. VSI = 0
C	Abeam Base Numbers (23) <ol style="list-style-type: none"> 1. Throttle to 1500 RPM 2. Flaps – 10° 3. Push yoke forward to minimize ballooning from flap extension 4. Pitch down for 500 FPM 5. Mixture – Rich 	<ol style="list-style-type: none"> 6. Verify Instruments <ol style="list-style-type: none"> a. ASI = 80 KIAS b. TC = wings level, ball centered c. AI = level on horizon d. HI = 050° e. ALT = 1400 f. VSI = 0

Procedures

D	<p>At 45° from the runway threshold</p> <ol style="list-style-type: none"> 1. Turn to heading of 320° 2. Flaps – 20° 	<ol style="list-style-type: none"> 3. Verify instruments <ol style="list-style-type: none"> a. ASI = 75 KIAS b. TC = wings level, ball centered c. AI = about 5° below horizon d. HI = 320° e. ALT = descending f. VSI = 500 FPM ↓ g. Throttle to 1500 RPM
E	<p>When nose is about to touch extended centerline</p> <ol style="list-style-type: none"> 1. Turn to heading of 230° 2. Flaps – 30° 3. No slips with more than 10° of flaps 4. VASI = Red/White 	<ol style="list-style-type: none"> 5. Verify instruments <ol style="list-style-type: none"> a. ASI = 65-70 KIAS b. TC = wings level, ball centered c. AI = about 5° below horizon d. HI = 230° e. ALT = descending f. VSI = 500 FPM ↓ g. Tachometer = 1500 RPM
F	<p>Just before crossing the threshold</p> <ol style="list-style-type: none"> 1. Throttle to Idle (full back) 2. Pitch for 65 KIAS 3. At 2 – 3 feet above runway surface <ol style="list-style-type: none"> a. Begin flare b. Gently apply back pressure to the yoke 4. If flare too high, add 100 RPM 	<ol style="list-style-type: none"> 4. If go-around is necessary <ol style="list-style-type: none"> a. Full power b. Carb heat - Off c. Flaps up 10° d. Pitch for 60 KIAS e. Establish positive rate of climb f. Flaps up 10° g. Establish 500 FPM ↑ h. At 1000' MSL retract flaps i. Pitch for 76 KIAS

Pattern Work – Runway 5 Doylestown Cessna 172 – 180 HP

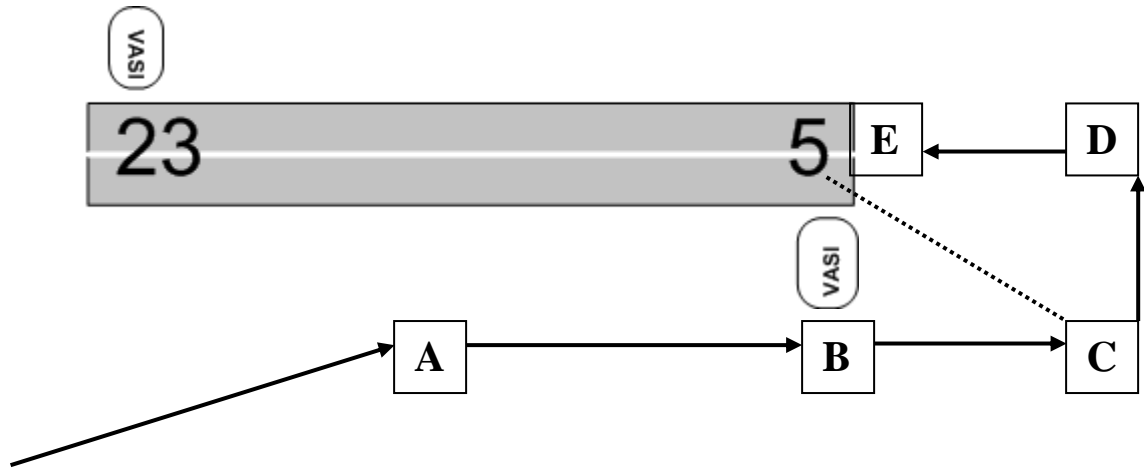


Procedures	
A	<ol style="list-style-type: none"> 1. Begin rotation at 55 KIAS 2. Pitch for 60 KIAS 3. Establish climb 4. TC = ball centered 5. Pitch for 76 KIAS 6. Hold runway heading 050° to 1200 ft MSL
B	<ol style="list-style-type: none"> 1. Make crosswind turn to 320° 2. Level off at 1400 ft MSL 3. Throttle to 2300 RPM 4. Adjust trim for level flight <ol style="list-style-type: none"> a. ASI = stable in green arc b. TC = wings level, ball centered c. AI = level on horizon d. HI = 320° e. ALT = 1400 f. VSI = 0
C	<ol style="list-style-type: none"> 1. Track Route 611 Bypass for pattern width 2. Turn downwind to heading of 230° 3. Carb heat - On 4. Throttle to 2000 RPM 5. Maintain straight-and-level flight <ol style="list-style-type: none"> a. ASI = 90 KIAS b. TC = wings level, ball centered c. AI = level on horizon d. HI = 230° e. ALT = 1400 f. VSI = 0
D	<p>Abeam Base Numbers (5)</p> <ol style="list-style-type: none"> 1. Power to 1500 RPM 2. Flaps – 10° 3. Push yoke forward to minimize ballooning from flap extension 4. Pitch down for 500 FPM 5. Carb heat - On 6. Verify Instruments <ol style="list-style-type: none"> a. ASI = 80 KIAS b. TC = wings level, ball centered c. AI = level on horizon d. HI = 230° e. ALT = 1400 f. VSI = 0

Procedures

E	<p>At 45° from the runway threshold</p> <ol style="list-style-type: none"> 1. Turn to heading of 140° 2. Flaps -- 20° 3. Mixture – Rich 	<ol style="list-style-type: none"> 4. Verify instruments <ol style="list-style-type: none"> a. ASI = 75 KIAS b. TC = wings level, ball centered c. AI = about 5° below horizon d. HI = 140° e. ALT = descending f. VSI = 500 FPM ↓ g. Throttle to 1500 RPM
F	<p>When nose is about to touch extended centerline</p> <ol style="list-style-type: none"> 1. Turn to heading of 050° 2. Flaps -- 30° 3. VASI = Red/White 	<ol style="list-style-type: none"> 4. Verify instruments <ol style="list-style-type: none"> a. ASI = 65-70 KIAS b. TC = wings level, ball centered c. AI = about 5° below horizon d. HI = 050° e. ALT = descending f. VSI = 500 FPM ↓ g. Throttle to 1500 RPM
G	<p>Just before crossing the threshold</p> <ol style="list-style-type: none"> 1. Throttle to Idle (full back) 2. Pitch for 65 KIAS 3. At 2 – 3 feet above runway surface <ol style="list-style-type: none"> a. Begin flare b. Gently apply back pressure to the yoke 4. If flare too high, add 100 RPM 	<ol style="list-style-type: none"> 5. If go-around is necessary <ol style="list-style-type: none"> a. Full power b. Carb heat - Off c. Flaps up 10° d. Pitch for 60 KIAS e. Establish positive rate of climb f. Flaps up 10° g. Establish 500 FPM ↑ h. At 1000' MSL retract flaps i. Pitch for 76 KIAS

Mid-Field 45° – Runway 5 Doylestown
Cessna 172 – 180 HP



Procedures		
A	<ol style="list-style-type: none"> 1. Intercept Route 611 and track inbound 2. Track Route 611 Bypass for pattern width 3. Descend to and maintain 1400 ft MSL prior to entering traffic pattern 4. Turn downwind to heading of 230° 5. Carb heat – On 6. Throttle 2000 RPM 	<ol style="list-style-type: none"> 7. Maintain straight-and-level flight <ol style="list-style-type: none"> a. ASI = 90 KIAS b. TC = wings level, ball centered c. AI = level on horizon d. HI = 230° e. ALT = 1400 f. VSI = 0
B	Abeam Base Numbers (5) <ol style="list-style-type: none"> 1. Power to 1500 RPM 2. Flaps – 10° 3. Push yoke forward to minimize ballooning from flap extension 4. Pitch down for 500 FPM 5. Mixture – Rich 	<ol style="list-style-type: none"> 6. Verify Instruments <ol style="list-style-type: none"> a. ASI = 80 KIAS b. TC = wings level, ball centered c. AI = level on horizon d. HI = 230° e. ALT = 1400 f. VSI = 0
C	At 45° from the runway threshold <ol style="list-style-type: none"> 1. Turn to heading of 140° 2. Flaps – 20° 	<ol style="list-style-type: none"> 3. Verify instruments <ol style="list-style-type: none"> a. ASI = 65 – 70 KIAS b. TC = wings level, ball centered c. AI = about 5° below horizon d. HI = 140° e. ALT = descending f. VSI = 500 FPM ↓ g. Throttle 1500 RPM

Procedures

D	<p>When nose is about to touch extended centerline</p> <ol style="list-style-type: none"> 1. Turn to heading of 050° 2. Flaps – 30° 3. No slips with more than 10° of flaps 4. VASI = Red/White 	<ol style="list-style-type: none"> 5. Verify instruments <ol style="list-style-type: none"> a. ASI = 65 – 70 KIAS b. TC = wings level, ball centered c. AI = about 5° below horizon d. HI = 050° e. ALT = descending f. VSI = 500 FPM ↓ g. Throttle = 1500 RPM
E	<p>Just before crossing the threshold</p> <ol style="list-style-type: none"> 1. Throttle to Idle (full back) 2. Pitch for 65 KIAS 3. At 2 – 3 feet above runway surface <ol style="list-style-type: none"> a. Begin flare b. Gently apply back pressure to the yoke 4. If flare too high, add 100 RPM 	<ol style="list-style-type: none"> 5. If go-around is necessary <ol style="list-style-type: none"> j. Full power k. Carb heat - Off l. Flaps up 10° m. Pitch for 60 KIAS n. Establish positive rate of climb o. Flaps up 10° p. Establish 500 FPM ↑ q. At 1000' MSL retract flaps r. Pitch for 76 KIAS

V-Speeds for Cessna 172 – 180 HP

Vspeed	Airspeed in KIAS
V_X	60
V_Y	76
V_A	105
V_S	50
V_{SO}	40
V_{FE}	85
V_{NO}	127
V_{NE}	158
V_{Rotate}	60
V_{Final}	65 – 70
V_{Glide}	70

Terms, Definitions, Abbreviations

Cessna 172 – 180 HP

Term	Definition
AGL	Above Ground Level
AI	Attitude Indicator or Artificial Horizon
ALT	Altimeter
ASI	Airspeed Indicator
ASOS	Automated Surface Observation System
CTAF	Common Traffic Advisory Frequency
DG	Directional Gyro or Heading Indicator
FBO	Fixed Base Operator
HI	Heading Indicator or Directional Gyro
MSL	Mean Sea Level
PCL	Pilot-controlled Lighting
TC	Turn Coordinator
TPA	Traffic Pattern Altitude
VASI	Visual Approach Slope Indicator
	White/White Above glideslope (high)
	Red/White On glideslope
	Red/Red Below glideslope (low)
VSI	Vertical Speed Indicator