Piper Seminole Flight Maneuvers

North Star Aviation
Minnesota State University, Mankato

Slow Flight (Landing Configuration)

Altitude.....Recovered by 3000' AGL Minimum
Throttles.....Below 15" MP
Pitch to Maintain Altitude
Below 140 KIAS.....Gear Down
Below 111 KIAS.....Flaps 10º
Below 100 KIAS.....Props Forward
Below 90 KIAS ……..Flap 25 º
Below 90 KIAS ……..Flap 40 º
Power.....Increase to Maintain Altitude
Pitch.....Maintain Stall Speed +10/-0
(Target 60 KIAS)
Trim.....Adjust as Necessary
Recovery:
Smoothly Reduce Pitch
Power.....Increase to Max.
Flaps.....25º
Pitch for minimal loss of altitude
Positive Rate.....Gear Up
.....Flaps 10º
.....Flaps 0º
Accelerate.....V_Y (88 KIAS)

Power-Off Stall (Landing Configuration)

Altitude..... Recovered by 3000' AGL Minimum
Power.....Below 15" MP
Pitch to Maintain Altitude
Below 140 KIAS.....Gear Down
Below 111 KIAS.....Flaps 40º
(one notch at a time)
Below 100 KIAS.....Props Forward
Enter Normal Descent to Land
.....Throttles to Idle
Maintain Altitude to Induce a Stall
Recovery: (Initiated at the first indication for commercial)
Smoothly Reduce Pitch
Power.....Increase to Max.
Flaps.....25º
Pitch for minimal loss of altitude
Positive Rate.....Gear Up
.....Flaps 10º
.....Flaps 0º
Accelerate to Cruise Flight ……110 knots

Slow Flight (Takeoff Configuration)

Altitude.....Recovered by 3000' AGL Minimum
Power.....Below 15" MP
Pitch to Maintain Altitude
Below 100 KIAS.....Props Forward
Power.....Increase to Maintain Altitude
Pitch.....Maintain Stall Speed +10/-0
(Target 62 KIAS)
Trim.....Adjust as Necessary
Recovery:
Smoothly reduce pitch
Power.....Increase to Max.
Positive Rate.....Verify Gear Up
.....Verify Flaps 0º
Accelerate to Cruise Flight ……110 knots

Power-On Stall (Takeoff Configuration)

Altitude.....Recovered by 3000' AGL Minimum
Power.....Below 15"MP
Pitch to maintain altitude
Below 100 KIAS.....Props Forward
82 KIAS.....Power to 20" MP
Smoothly Increase Pitch to Induce a Stall
Recovery:(Initiated at the first indication for commercial)
Smoothly reduce pitch
Power.....Increase to Max.
Pitch for minimal loss of altitude
Positive Rate.....Verify Gear Up
.....Verify flaps 0º
Accelerate to Cruise Flight ……110 knots

Steep Turns

Altitude.....3000' AGL Minimum
Power.....18''MP and 2300-2500RPM
Airspeed.....110 KIAS
Bank.....50º
Power.....Increase to Maintain Airspeed
Trim .....Roll Aft to Relieve Pressure
Roll Out.....Initial Heading
Execute a 360º turn in the opposite direction

Accelerated Stall

Altitude.....Recovered by 3000' AGL Minimum
Throttles.....Below 15" MP
Pitch to Maintain Altitude
Below 100 KIAS.....Props Forward
Bank.....45º
Throttles.....Idle
Maintain altitude to induce stall
Recovery: (Initiated at the first indication for commercial)
Smoothly reduce pitch
Bank.....Wings Level
Power.....Increase to Max.
Pitch for minimal loss of altitude
Positive Rate.....Verify Gear Up
.....Verify flaps 0º
Accelerate to Cruise Flight 110 knots

Drag Demonstration

Altitude.....4000' AGL Minimum
Throttles.....Below 15" MP
Cowl Flaps.....As Required
Pitch to Maintain Altitude
Below 100 KIAS.....Props Forward
Airspeed - 88 KIAS
Operating Engine.....Max Power
Inoperative Engine.....Sim. Feather
(11.5" MP, 2000 RPM)
Airspeed 88kts. (V_{YSE}).....Note Performance
Airspeed 78kts.....Note Performance
Airspeed 98kts.....Note Performance
Airspeed 88kts (V_{YSE})
Gear Down.....Note Performance
Flaps 10º.....Note Performance
Flaps 25º.....Note Performance
Flaps 40º.....Note Performance
Inoperative Engine (windmilling)
Prop.....Forward
Throttle.....Idle
.....Note Performance
Flaps 25º.....Note Performance
Flaps 10º.....Note Performance
Flaps 0º.....Note Performance
Gear Up.....Note Performance
Inoperative Engine.....15" MP (warm-up CHT)
Accelerate to Cruise Flight ……110 knots

V_{MC} Demonstration

Altitude.....Recovered by 4000' AGL Minimum
Throttles.....Below 15" MP
Below 100 KIAS.....Props Forward
Airspeed – 92 KIAS
Left engine.....Throttle to Idle
Right engine.....Throttle to Full
Pitch.....Increase to Lose 1kt Per Second
Recover at the **first indication** of a stall

Or

Red Radial Line 56kts (V_{MC})

Or

Loss of Directional Control

Recovery:
Right Engine……..Reduce to Regain Dir. Control
Reduce Pitch (min. loss of alt.)
Directional Control Regained
Right Engine.....Increase power to full
Pitch for Minimal loss of Altitude
Accelerate.....V_{YSE} (88 KIAS)
Inoperative Engine.....15" MP (warm-up CHT)
Accelerate to Cruise Flight ……110 knots

Ground Reference Maneuvers

Altitude.....600-1000'AGL
Pre-Maneuver Check.....Complete
Area.....Clear of Obstructions
Airspeed.....110 KIAS
Enter Maneuver on Downwind Heading
Perform to Applicable Test Standards

V-Speeds

V_Y = 88 KIAS --- Best Rate of Climb
V_{YSE} = 88 KIAS --- Singe Engine Best Rate of Climb
V_X = 82 KIAS --- Best Angle of Climb
V_{XSE} = 82 KIAS --- Single Engine Best Angle of Climb
V_{SSE} = 82 KIAS --- Min. Intentional One Engine Inop.
V_{SO} = 55 KIAS --- Stall Speed (Landing Configuration)
V_S = 57 KIAS --- Stall Speed (Clean Configuration)
V_{MC} = 56 KIAS --- Minimum Control
V_{FE} = 111 KIAS --- Maximum Flaps Extended
V_{LE} = 140 KIAS --- Maximum Landing Gear Extended
$V_{LO\ Down}$ = 140 KIAS --- Max. Landing Gear Extension
$V_{LO\ UP}$ = 109 KIAS --- Max. Landing Gear Retraction
V_{NO} = 169 KIAS --- Maximum Structural Cruising
V_{NE} = 202 KIAS --- Never Exceed
V_O = 115 – 135 KIAS --- Maneuvering Speed (V_A)