



THRUST FLIGHT

Elevate Your Experience

Duchess Maneuvers Guide

Power Off Stall:

(Approach to Landing Stall)
Select your heading and altitude

Verbalize
Bug it

Clearing turns (90° each way; be precise)

Fuel Pumps ON

Mixtures RICH

Props FWD

Throttles MP 15"

Gear DOWN (<140kts)

Pitch nose to maintain alt (check heading)

Flaps 10 degrees (<120kts)

Pitch nose to maintain alt (check heading)

Flaps 20 degrees (<110kts)

Flaps 35 degrees

Power to idle

Initiate descent

Flare to land

Hold until stall

Recovery:

Full Power

Relax back pressure and Nose to Horizon

Flaps 20 degrees

Accelerate to Blue Line (85kts)

Flaps 10 degrees

Gear UP

Flaps 0 degrees

Cruise Checklist

(Departure Stall)

Select your heading and altitude

Verbalize

Bug it

Clearing turn (90° each way; be precise)

Fuel Pumps ON

Mixtures RICH

Props FWD

Throttles MP 12"

Slow to Blue Line 85kts (maintain heading & altitude)

Increase Power to 18" MP (maintain heading & altitude)

Increase pitch to stall (increase right rudder)

Recovery:

Decrease back pressure to break stall

Throttle FULL

Pitch to Blue Line (85 kts)

Resume climb

3 Reasons for More Right Rudder

High pitch attitude

Low airspeed

High power setting

Slow Flight:

Select your heading and altitude

Verbalize
Bug it

Clearing turns (90° each way; be precise)
Fuel Pumps ON
Mixtures RICH
Props FWD
Throttles MP 15"
Gear DOWN (<140kts)
Pitch nose to maintain alt (check heading)
Flaps 10 degrees (<120kts)
Pitch nose to maintain alt (check heading)
Flaps 20 degrees (<110kts)
Flaps 35 degrees
Right rudder (check heading, inclinometer)
Slow to 65-70kts
Power for Altitude
Pitch for Speed

Recovery:

Nose to Horizon
Full Power
Flaps 20 degrees
Accelerate to Blue Line (85kts)
Flaps 10 degrees
Gear UP
Flaps 0 degrees
Cruise Checklist

Accelerated Stall:

Clearing turn (90° be precise)
Fuel Pumps ON

Mixtures RICH
Props 2300RPM
Throttle MP 15"
Pitch nose up to maintain alt
Slow to 100kts
Establish a 30 degree bank
Abruptly pull back to induce a stall

Recovery:

At first indication of stall
Full Power
Lower the nose to the horizon and simultaneously Level Wings
Cruise Checklist

Steep Turns:

Select your heading and altitude

Verbalize
Bug it

Clearing turn (90° be precise)
Props 2300RPM
Throttle MP 20"
Establish V_A (120-132)
Roll in to a 50 degree bank
Increase throttle to ~22" MP
Add 1 swipe of nose up trim
Maintain altitude and bank angle
Roll out briskly 15° prior to heading
Bring power back to 20" MP to prevent ballooning

In the Pattern:

CLIMB:
after 500' AGL: 25"MP/2500 RPM

DOWNWIND:

CRUISE 18"MP/2500 RPM
Complete ACCGUMPS
Aux Fuel Pumps ON
Carb Heat AS REQ
Cowl Flaps AS REQ
(Gas) Fuel Selectors ON
Undercarriage Down, 3 green
Mixture RICH
(wait on prop)
Seatbelts SECURE

ABEAM Landing Point:

16"MP
10 degrees Flaps
Maintain BLUE LINE

BASE:

20degrees Flaps/Nose UP trim
Maintain BLUE LINE

BASE TO FINAL:

12"MP
Props FWD
Maintain BLUE LINE

FINAL:

GUMPS recheck
Verify 3 green
Flaps Full

Short Field Takeoff:

Use all available runway
Hold BRAKES

Throttle MP 18"
Engine gauges Green
Heels to floor
FULL POWER
Lift off lowest possible Airspeed
Climb at V_x (71kts)
CLEAR OBSTACLE
Tap Brakes/ Gear UP
Pitch for BLUE LINE + 10kts (95kts)
After 500' AGL: 25"MP/2500 RPM

VMC Demo:

Select your heading and altitude

Verbalize
Bug it

Clearing turns (90° each way; be precise)
Fuel Pumps ON
Mixtures RICH
1 Throttle Idle (simulated windmilling)
Establish Zero Side Slip
Cowl Flap CLOSE on idle engine
Props FULL FWD
Other Throttle FULL POWER (leave hand on this throttle)
Increase Pitch to decrease airspeed
1kt/sec

-Increase Right Rudder as necessary to maintain heading

-Continue increasing pitch until loss of directional control or stall indication

-Immediately relax back pressure and reduce power on operative engine

-Accelerate to Blue Line (85kts) add power on "operative engine" as necessary to accomplish this

Cowl Flaps OPEN
Cruise Checklist

Drag Demo (MEI only):

Talk throughout maneuver
Select your heading and altitude

Verbalize
Bug it

Clearing turns (90° each way; be precise)
Fuel Pumps ON
Mixtures RICH
1 Throttle Idle (simulated windmilling)
Establish Zero Side Slip
Cowl Flap CLOSE on idle engine
Props FULL FWD
Other Throttle FULL POWER
Using Pitch, Slow to Vyse and Maintain
 Note VSI
Establish Simulated Feather on idle engine (~8 in MP)
Pitch nose to maintain Vyse (check heading)
 Note VSI
Gear DOWN (<140kts)
Pitch nose to maintain Vyse (check heading)
 Note VSI
Flaps 10 degrees (<120kts)
Pitch nose to maintain Vyse
Flaps 20, then 35 degrees (<110kts)
Pitch nose to maintain Vyse (check heading)
 Note VSI
Gear UP
Pitch nose to maintain Vyse (check heading)
 Note VSI
Throttle 15" on Idle engine to warm it
Flaps 20 degrees and stabilize
Flaps 10 degrees
Flaps 0 degrees
Cowl Flaps OPEN
Cruise Checklist