Arrow II PA-28R-200 Commercial Maneuver Summary

Maneuver	Initial Power	Gear mph	Flaps mph	Mixture & Props	Final Power	Procedure
Steep Turns	20" 2400RPM	-	-	-	23-24"	trim as req, 50 deg, 2 turns
Slow Flight	15" 2400RPM	@ 150	@ 125	leave alone	18-20" @ 75mph	65-70mph, maintain alt
Power-Off Stall	15"	@ 150	@ 125	leave alone	idle @ 80mph	idle glide@80, nose to Vy, stall
Power-On Stall	15"	@ 150	-	fwd @80mph	full @ 80mph	nose up to 2x Vy, stall

Stall Recovery:

Pitch down Nose below horizon - same angle as for idle power glide@80mph
Power Up: Full power, throttle and prop full forward, mixture best power
Pitch Up: Note speed increasing then pitch up to Vy attitude
Clean Up: Flaps 25 / Pos rate / Gear Up / Flaps 10 / Pos rate / Flaps up
Climb Up: 100mph

Steep Spiral

- *Select suitable ground reference, set heading bug, clear area*
- *Altitude: 5000' AGL or higher (3 turns @ 1000' per turn; 1500' AGL @ end)*
- ***Drop** (gear below 150)*
- ***Chop** (power smoothly to idle)*
- ***Prop** (fully back) (reduces stress on engine, if need to descend quickly then forward)*
- *Enter on downwind, pitch for **110mph**, max **60° bank**, three full turns*
- *Warm engine every turn on upwind*

Chandelle

- *Select suitable reference points, set heading bug, clear area*
- *Always begin maneuver at same airspeed, **20" @ 2400 RPM, 130mph***
- *Altitude: 1500' AGL or higher*
- *mixture full forward below 3000' or as needed if higher*
- ***30° bank**, start steady **slow** pitch up, prop and throttle full forward,*
- *First 90deg constant 30deg bank, increasing pitch to approx 15deg at the 90deg point*
- *Second 90 degrees of turn, constant pitch, reducing bank*
- *At 180deg point speed just above stall, hold altitude and recover to normal speed*

Lazy 8s

- *Select suitable reference points, set heading bug, clear area*
- *Altitude: 1500' AGL or higher*
- *Power: **20" @ 2400 RPM, speed 130mph***
- *Two climbing and descending 180 degree turns, one in each direction*
- *Approximately **500' altitude gain**, **30-45 deg bank** at 90 deg point*

8s on Pylons

- *Select suitable reference points, set heading bug, clear area*
- *Power: **18-20" @ 2400 RPM***
- *Establish pivotal altitude: **900'-1000' AGL***
- *Enter downwind, **max bank 30° to 40°***

Operating Notes

1. Takeoff:
Normal: V_R = 75mph, V_Y = 100mph (V_Y = 90mph with gear extended)
Short: flaps 25°, rotate 60mph, pitch 70mph past obstacle - pitch 80, gear, flap, flap
Soft: flaps 25°, nose off mud, pitch Vx, levitate into gnd effect, speed up to 80mph

2. Climb:
To 1000' AGL: FULL POWER Vy 100mph
1000' AGL: 2500 RPM / 25", fuel pump off
Cruise climb: 110-120mph
Remember to open throttle as altitude increases

V_X = 91 / 82 mph gear up/down
Vy = 95 / 85 mph gear up/down
V_G = 105mph best glide clean
V_A = 134-105mph mvring
V_{LE} = 150mph max gear down

3. Cruise:
65% power @ 2400 RPM
2000' = 22.5" / 4000' = 22.0" / 6000' = 21.5" / 8000' = 21"

4. Pattern:
downwind: 2400 RPM, 18", pitch to maintain altitude
numbers: gear down, 3 greens, power 13", flaps 25°, pitch for 105mph
base: 25°, pitch for 90mph
final: full flaps, pitch for 85mph, prop forward

5. Landing:
Normal: full flaps, props high RPM, ease power off in flare
Short: full flaps, approach @ 75mph, power off before abbr flare, brake heavily
Soft: full flaps, carry power into flare, land on mains, nose down easy
180°: abeam touch-down point: idle & prop back, pitch level, gear down, 90mph

6. Practice Gear Extend:
Speed: below 95mph, pull gear pump breaker, landing gear handle down,
Check: bulbs, panel lights, master, breakers
Emergency gear extend lever down, fishtail, check for three greens
Reset emergency gear extend lever, reset breaker, cycle gear

7. Go Around
Power up (mix/prop/throttle) flap 25, pitch for Vy, pos rate, gear, flap, flap

7. Etc.
Remember to switch tanks and record time used
If landing gear bulb(s) inop, check panel light rheostat, swap bulbs