

## 172 RG COMMERCIAL MANEUVER SUMMARY

### V-SPEEDS (NORMAL OPERATIONS)

<b>V<sub>SO</sub></b>	<b>42</b>	<b>Stall (Full Flaps) – Level</b>
	<b>50</b>	<b>Stall (Full Flaps) – 45° bank</b>
	<b>59</b>	<b>Stall (Full Flaps) – 60° bank</b>
<b>V<sub>S1</sub></b>	<b>50</b>	<b>Stall (No Flaps) – Level</b>
	<b>59</b>	<b>Stall (No Flaps) – 45° bank</b>
	<b>71</b>	<b>Stall (No Flaps) – 60° bank</b>

**Note: Stall warning 5-10 kts above stall**

#### **Takeoff:**

<b>V<sub>R</sub></b>	<b>55</b>	<b>Takeoff Rotation</b>
	<b>63</b>	<b>Short Field, Flaps 0° Speed at 50 ft AGL</b>
<b>V<sub>X</sub></b>	<b>67</b>	<b>Best Angle, Sea Level</b>
	<b>68</b>	<b>Best Angle, 10,000 MSL</b>
<b>V<sub>Y</sub></b>	<b>84</b>	<b>Best Rate, Sea Level</b>
	<b>77</b>	<b>Best Rate, 10,000 MSL</b>
	<b>85-95</b>	<b>Enroute Climb, Flaps 0°, Gear Up</b>
<b>V<sub>LO</sub></b>	<b>140</b>	<b>Maximum Landing Gear Operating</b>
<b>V<sub>LE</sub></b>	<b>164</b>	<b>Maximum Landing Gear Extended</b>
<b>V<sub>FE</sub></b>	<b>130</b>	<b>Flap Extension 10°</b>
	<b>100</b>	<b>Flap Extension 10° - 30°</b>

#### **Landing Approach:**

<b>70-80</b>	<b>Normal Approach, Flaps 0°</b>
<b>60-70</b>	<b>Normal Approach, Flaps 30°</b>
<b>63</b>	<b>Short Field Approach, Flaps 30°</b>

#### **Balked Landing:**

	<b>55</b>	<b>Maximum Power, Flaps 20°</b>
<b>V<sub>NE</sub></b>	<b>164</b>	<b>Never Exceed</b>
	<b>164</b>	<b>Maximum Window Open</b>

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### V-SPEEDS (EMERGENCY OPERATIONS)

#### Engine Failure after Takeoff:

70	Flaps Up
65	Flaps Down

<b>V<sub>A</sub></b>		<b>Maneuvering Speed</b>
106		At 2650 lbs Gross Weight
98		At 2250 lbs Gross Weight
89		At 1850 lbs Gross Weight

<b>V<sub>BG</sub></b>		<b>Best Glide</b>
73		2650 lbs
67		2250 lbs
61		1850 lbs

**Precautionary Landing with Engine Power:**  
65

**Landing without Engine Power:**  
75 Flaps Up  
65 Flaps Down

<b>V<sub>NO</sub></b>	145	<b>Maximum Structural Cruising</b>
	62 <sup>1</sup>	<b>Minimum Sink Rate</b>

Note 1: Estimated as mid-point between V<sub>S1</sub> and Best Glide. Results in lowest sink rate, or maximum time in the air in an engine out situation.

Empty Weight:	1711	9 qts oil / 4 gal unusable fuel
Max TOW:	2650	
Max Ramp Weight:	2658	
Useful Load:	939	

## 172 RG COMMERCIAL MANEUVER SUMMARY

### STEEP TURN

GEAR UP; NO FLAPS; 17 in / 2500 RPM; LEVEL FLIGHT  
 $V_A$  OR LESS; 1500 AGL MINIMUM

CLEAR AREA

20 in / 2500 RPM ENTERING FIRST TURN

360° TURN WITH 50° BANK

WINGS LEVEL; REDUCE POWER

REPEAT WITH OPPOSITE DIRECTION TURN

+/- 100 FT; +/- 10 KTS; +/- 5° BANK; +/- 10° HEADING

### CHANDELLE

GEAR UP; NO FLAPS; 17 in / 2500 RPM; LEVEL FLIGHT  
 $V_A$ ; 1500 AGL MINIMUM

KEEP CONSISTENT ENTRY SPEED FOR MAX GW  $V_A$

CLEAR AREA

30° BANK FIRST, THEN

CLIMB POWER ( $25^2$ ) AND SMOOTH PITCH INCREASE

90° POINT; 30° BANK; MAX PITCH UP

TARGET AIRSPEED AT THIS POINT: 75 - 80 KTS

MAINTAIN PITCH AND CONSTANT RATE ROLLOUT TO  
LEVEL AT 180° POINT

AIRSPEED DECREASING TO JUST ABOVE STALL

TARGET 5 KTS OVER THE STALL SPEED – 55 KTS

ADJUST ROLLOUT TIME TO ACHIEVE STALL SPEED

180° POINT; HOLD AIRSPEED MOMENTARILY AVOID STALL

GENTLY REDUCE PITCH TO STRAIGHT & LEVEL

RETURN TO LEVEL WITH MIN LOSS OF ALTITUDE

+/- 10° HEADING

## 172 RG COMMERCIAL MANEUVER SUMMARY

### **STEEP SPIRAL (NOT ENDING IN LANDING)**

INITIATE WITH ENGINE OUT TRIM TO BEST GLIDE

ENTER ON DOWNWIND LEG – SETS STEEPEST BANK

THEN TRANSITION TO LANDING SPIRAL

GEAR UP; NO FLAPS; 17 in / 2500 RPM; LEVEL FLIGHT

AT LEAST 3 – 360° TURNS

DO NOT EXCEED 60° OF BANK

80-85 KTS AT MIN 4500 AGL TO END AT 1500 AGL

BEST GLIDE NOT NEEDED – AT POINT OF LANDING

NEED MARGIN ABOVE STALL FOR STEEP TURN

LOSE ABOUT 1000 FT PER 360° TURN

FLY AS GROUND REFERENCE MANEUVER (i.e. TURNS ABOUT A POINT)

REDUCE PITCH AS BANK INCREASES

+/- 10 KTS; +/- 10° HEADING

CLEAR ENGINE AS NEEDED

ACTUAL EMERGENCY – FOLLOW WITH 180 TO LANDING

### **LAZY EIGHT:**

GEAR UP; NO FLAPS; 17 in / 2500 RPM

110 KTS ENTRY SPEED

CLEAR AREA

ENTER LEADING WITH PITCH

VERY SLOW ROLL RATE

\*45° POINT – 15° BANK – MAX PITCH UP (70-75 KTS)

TAKE YOUR TIME FOR FIRST 45° - MATCHES LAST 45°

NOSE SHOULD BE FALLING INTO THE TURN

90° POINT – 30° BANK – LEVEL PITCH MOMENTARILY

MAX ALTITUDE TARGET

\*135° POINT – 15° BANK – MAX PITCH DOWN

(HIGHER THAN ENTRY AIRSPEED)

180° POINT – LEVEL FLIGHT

USE AS MUCH TIME AS NEEDED IN ROLL OUT

TO WINGS LEVEL TO ACHIEVE

ENTRY AIRSPEED AND ALTITUDE

IMMEDIATELY ROLL INTO OPPOSITE DIRECTION

+/-100 FT; +/- 10 KTS; +/- 10° HEADING FROM ENTRY

# 172 RG COMMERCIAL MANEUVER SUMMARY

## EIGHTS ON PYLONS

LINE BETWEEN PYLONS IS CROSSWIND

PIVOTAL ALTITUDES

91 KTS	735 AGL	
96 KTS	810 AGL	(GS in KTS) <sup>2</sup>
100 KTS	885 AGL	-----
104 KTS	960 AGL	11.3
110 KTS	1070	

GEAR UP; NO FLAPS

CRUISE POWER (20 in / 2500 RPM); LEVEL FLIGHT

V<sub>A</sub> OR LESS; OR POH RECOMMENDED

CLEAR AREA

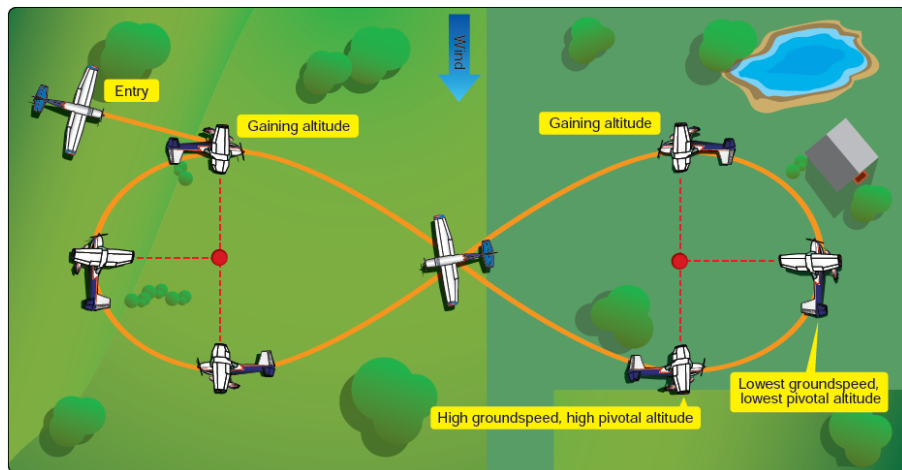
ENTER UPWIND FROM 1<sup>ST</sup> PYLON TO DOWNWIND ON 2<sup>ND</sup>

IF MOVING AHEAD OF PYLON – PITCH UP

IF DROPPING BEHIND PYLON – PITCH DOWN

UPWIND – DESCEND; DOWNWIND – CLIMB

40° OF BANK MAX



1 MI BETWEEN PYLONS

ENTRY IS 60° TO WIND, ADD 5 KTS TO GS FOR 10 KTS WIND

## 172 RG COMMERCIAL MANEUVER SUMMARY

### **180 POWER OFF LANDING**

#### PRE-LANDING CHECKLIST

1000 FT AGL MAX

ABEAM TOUCHDOWN POINT – THROTTLE CLOSED

#### LANDING CHECKLIST

HOLD ALTITUDE UNTIL:

75 KTS – NO FLAPS

65 KTS – FULL FLAPS

FLAPS ONCE RUNWAY IS ASSURED

SLIP ONLY WITH ONE OR TWO NOTCHES OF FLAPS

NOTE AIRSPEED CHANGE UPON ENTERING SLIP

#### OFF FIELD LANDING CHECKLIST

WITHIN 200 FT OF TARGET TOUCHDOWN POINT

EXECUTE AS A SMOOTH 180 DEGREE TURN

### **POWER NUMBERS**

17 in / 2400 RPM / 0° - 100 KTS

16 in / 2400 RPM / 10° - Approach Configuration –

19 in / 2400 RPM / 10° - Gear Down – 100 KTS, level flight

## 172 RG COMMERCIAL MANEUVER SUMMARY

Steep Spiral

<https://www.youtube.com/watch?v=kqLh8TMNtEM>

Steep Turn

<https://www.youtube.com/watch?v=24LySNN3SCE>

Eights on Pylons

<https://www.youtube.com/watch?v=dx3WOSqGGTY>

Lazy Eights

<https://www.youtube.com/watch?v=yJb2dYtxfpE>

Chandelles

<https://www.youtube.com/watch?v=Ml8YI7oj2Q8>