



# PIPISTREL ALPHA TRAINER

## Standard Operating Procedures



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A-Z





# DEFINITIONS

**Flags:** Any annunciator lights, sign of a malfunction, concern, red X's, instrument Loss of Integrity, mechanical problems etc...

**Gust factor:** The value in "[kt](#)" added to your approach speed in order to account for the gusts.

**Profile:** SOPs are also known as "profiles". Judging if you are on "profile" is judging the relative position of the airplane in relation to our SOPs.

**RTB:** Return To Base.

**TDP:** Touch Down Point.

**TOD:** Top Of Descent.

**Vref:** Reference speed chosen for the approach and landing, given current conditions.





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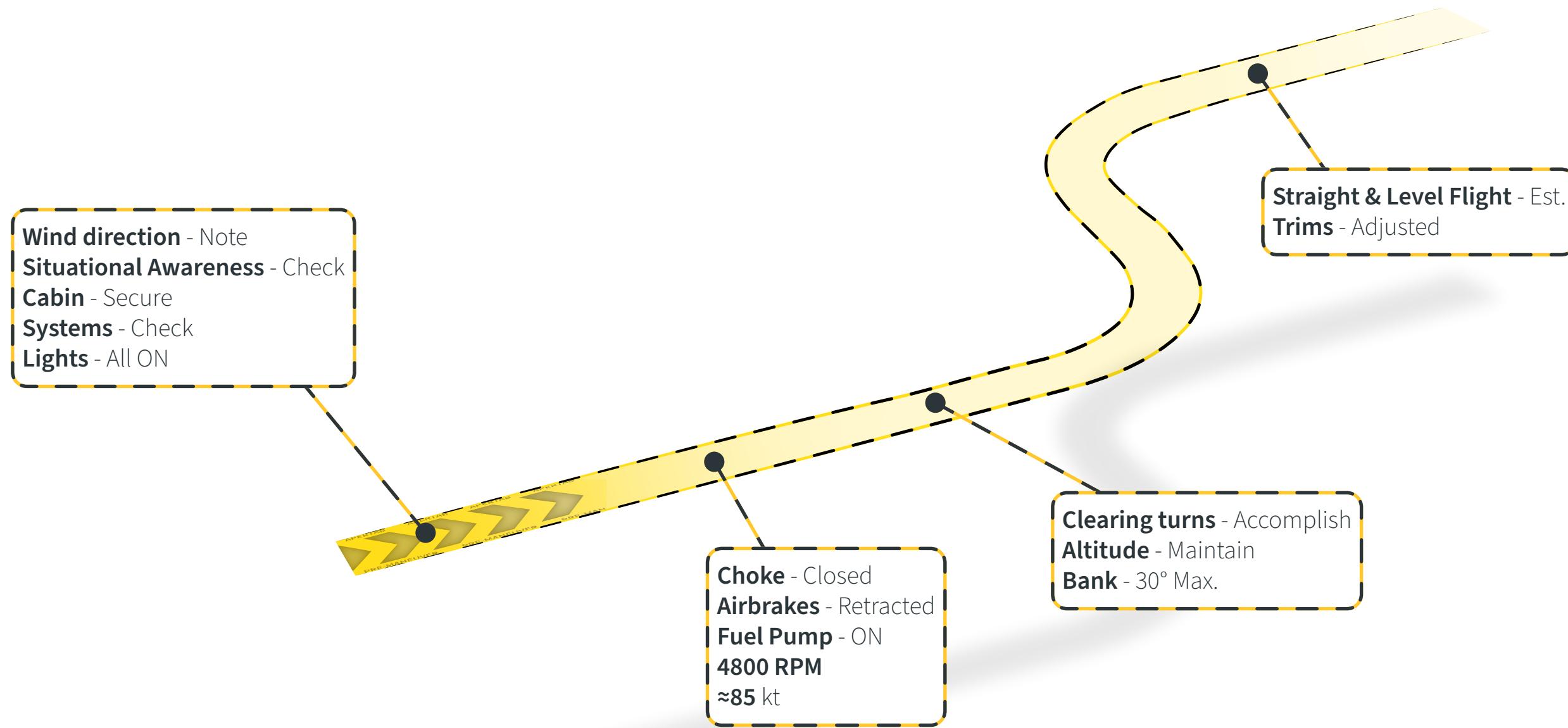
## PIPISTREL ALPHA TRAINER

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### Part I: General



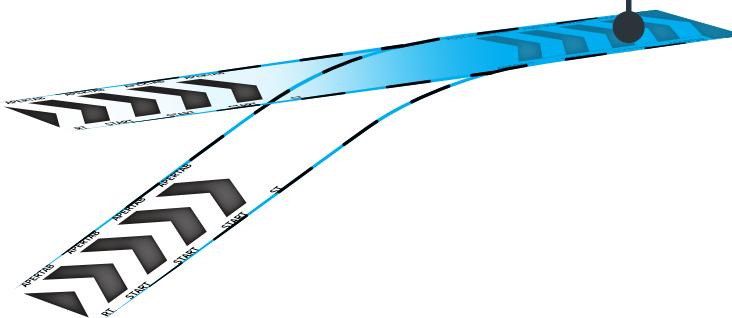
# PRE MANEUVER / CLEARING TURN





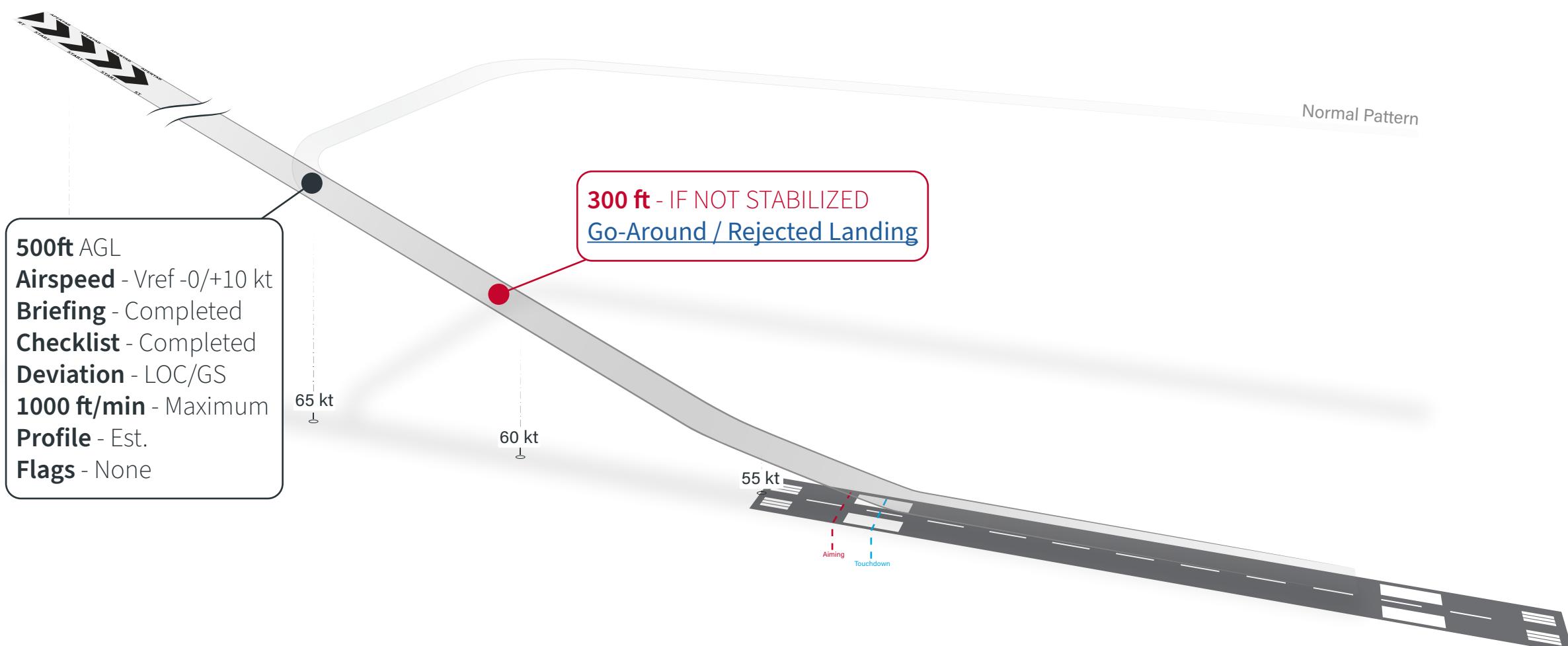
# POST MANEUVER

**Desired Alt** - State, Set, Achieve  
**Direction of flight** - State, Set, Proceed  
**Straight & Level flight** - Est.  
**4800 RPM** - As req.  
**Trims** - Adjusted  
**Fuel Pump** - OFF as req.





# STABILIZED APPROACH





# DESCENT RULE OF THUMB

The "3 to 1" rule

## Step 1: What distance from a fix do I need to start my descent?

$$\text{Dist (NM)} = (\text{Altitude to loose}) / 3$$

Scenario: You are flying a Cross Country from KSRQ to KSEF at 5,500ft. You want to overfly KSEF at 2,500ft to check for wind socks and maneuver for the correct downwind.

You have to loose 5,500ft - 2,500ft = 3,000ft

$$\text{Dist} = 3,000 / 3$$

$$\text{Dist} = 1,000 \text{ NM}$$

That is a lot of NM... remove the last two digits and see if it makes more sense?

$$\text{Dist} = 10.00 \text{ NM}$$

There you have it! You need to leave 5,500ft to 2,100ft approximately **10.00** NM away from KSEF following a **3° descent** angle.

- Proceed to Step 2 -

ft/min

## Step 2: How to establish a 3° descent?

$$3^{\circ} (\text{ft/min}) = 5 \times (\text{Ground Speed})$$

Scenario: You are on a long final showing on PAPI (3°) and the GPS reads a Ground Speed of 90kt.

$$3^{\circ} (\text{ft/min}) = 5 \times 90$$

$$3^{\circ} (\text{ft/min}) = 450 \text{ ft/min}$$

To make it easy, let's round it up: **500** ft/min

There you have it! You need to maintain approximately **500** ft/min in order to keep a **3° descent** angle and therefore stay on PAPI.



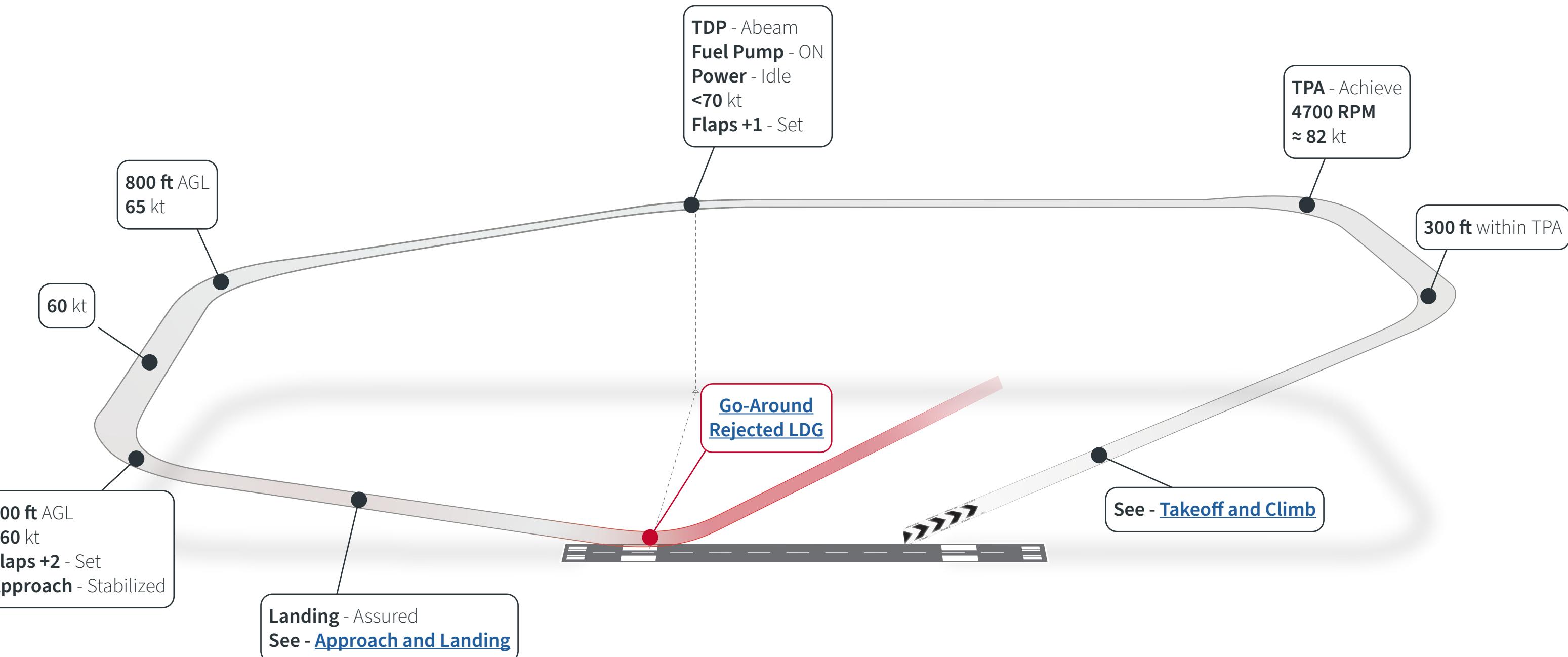


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**PIPISTREL ALPHA TRAINER**  
**Part II: Takeoffs & Landings**



# NORMAL PATTERN / GO AROUND





# TAKEOFF AND CLIMB

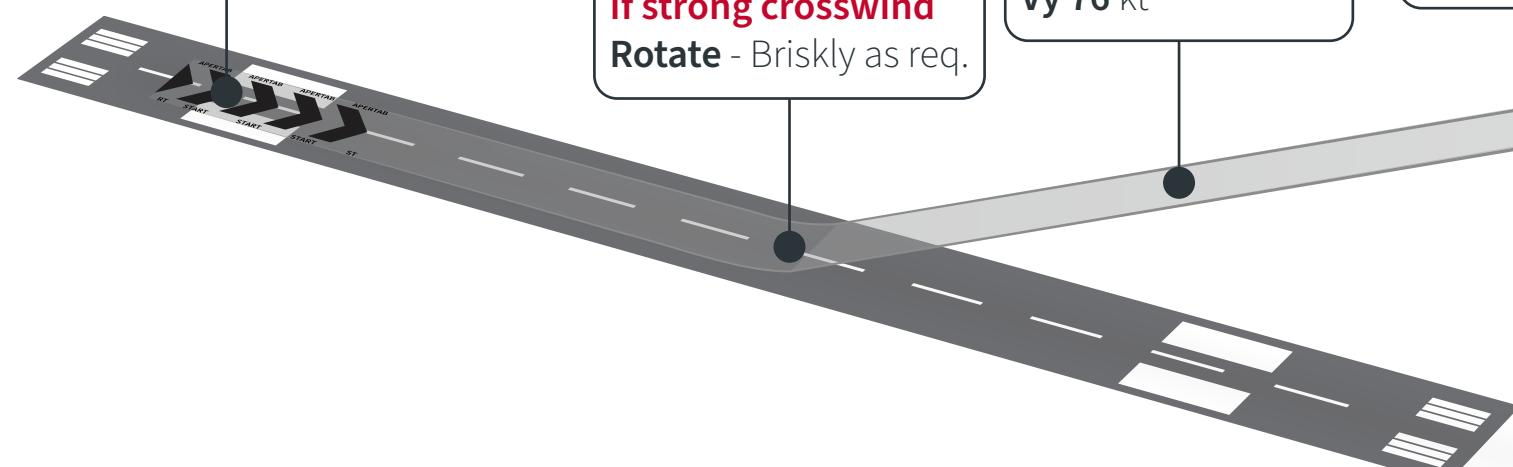
Fuel Pump - ON  
Flaps +1 - Set  
Power - Full  
Engine gauges - Check  
Wind direction - Note  
Ailerons - Partially into wind

V<sub>r</sub> > 45 kt  
**If strong crosswind**  
Rotate - Briskly as req.

**Crab** - Into wind  
Pitch 7.5°/10° - Est.  
Safe Alt - Est.  
65 kt  
Flaps +0 - Set  
Vy 76 kt

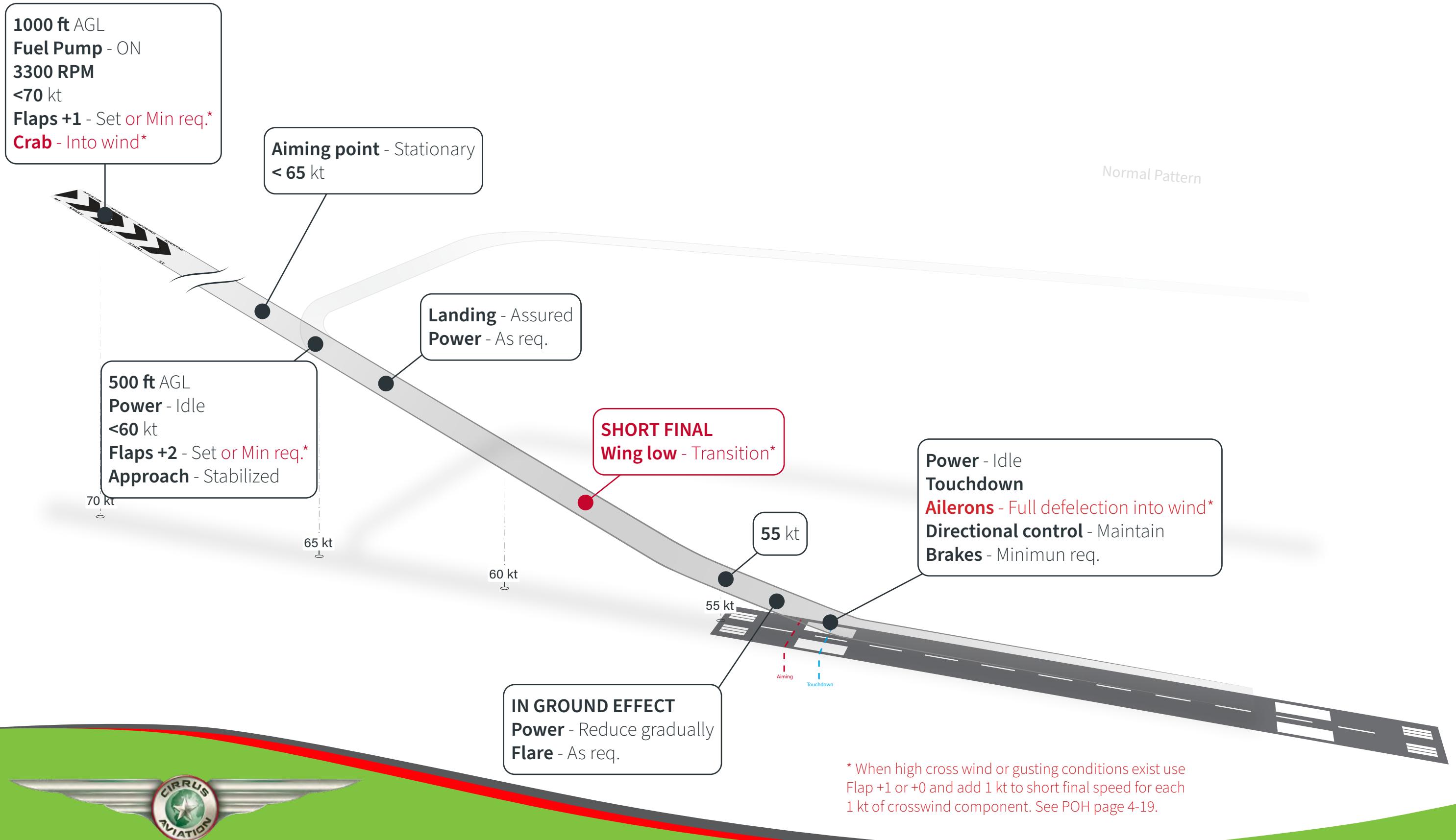
**Altitude - Per AIM**  
**HDG turn** - Execute

**CRZ or TPA**  
Fuel Pump - OFF



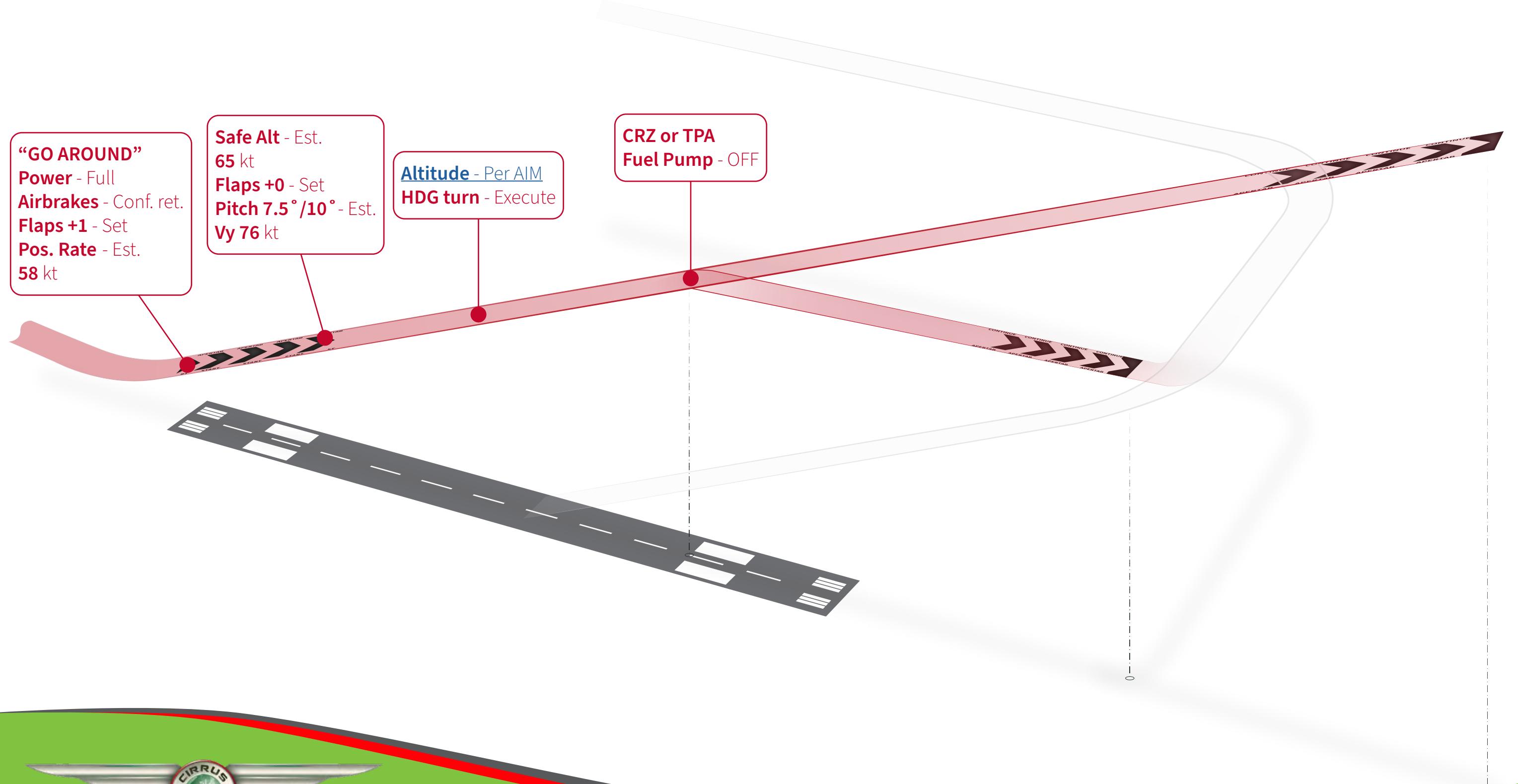


# APPROACH AND LANDING



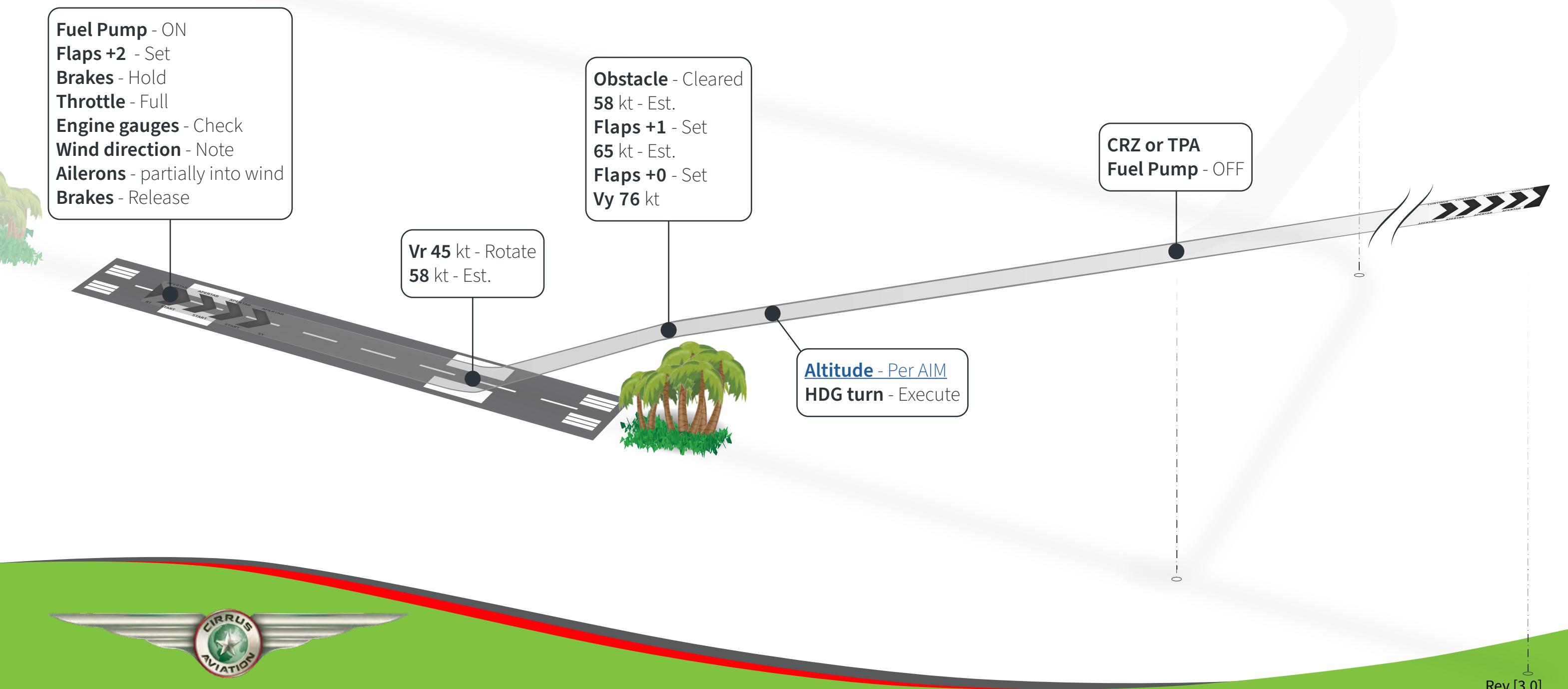


# GO AROUND / REJECTED LANDING





# SHORT FIELD TAKEOFF AND CLIMB





# SHORT FIELD APPROACH AND LANDING

1000 ft AGL  
Fuel Pump - ON  
3300 RPM  
<70 kt  
**Flaps +1** - Set or Min req.\*  
**Crab** - Into wind\*

800 ft AGL  
65 kt  
**Airbrakes** - Extend

TDP - Abeam  
Fuel Pump - ON  
Power - Idle  
<70 kt  
**Flaps +1** - Set

**Aiming point** - Stationary  
< 65 kt

**Landing** - Assured  
**Power** - As req.

**Obstacle** - Cleared  
55 kt  
**Power** - As req.

**Power** - Idle  
**Touchdown**  
**Airbrakes** - Remain extended  
**Flaps +0** - Set  
**Aero dynamic braking** - Slight application  
**Handbrake** - Apply as req.\*

**Flare** - As req.

\* Simulated only for flight training purposes





# SOFT FIELD TAKEOFF AND CLIMB

**Fuel Pump** - ON  
**Flaps +2** - Set  
**Stick** - Full back pressure\*  
**Brakes** - Released  
**Power** - Full smoothly  
**Engine gauges** - Check  
**Stick** - Adjust\*

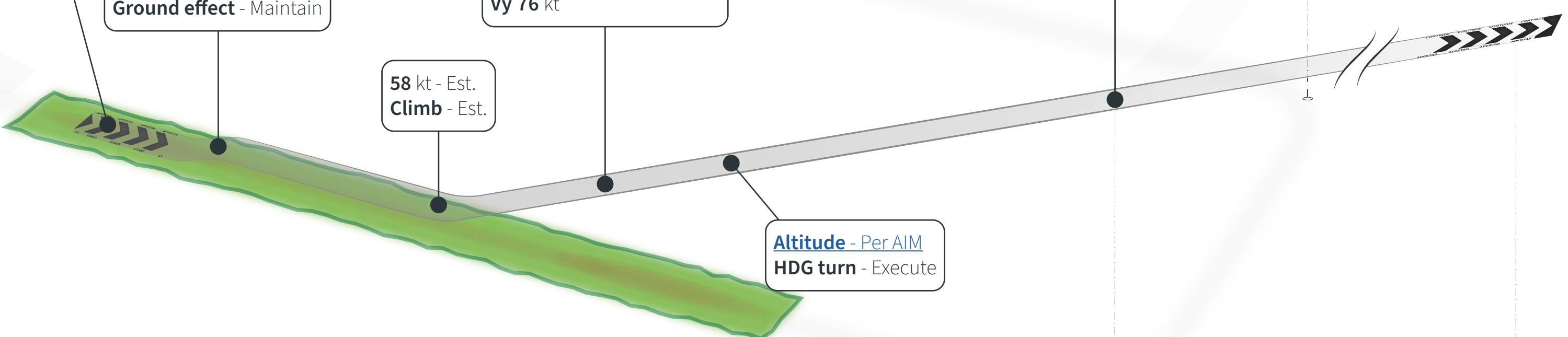
**Rotate** - ASAP  
**Ground effect** - Maintain

**OUT OF GROUND EFFECT**  
**Obstacle** - Cleared (As req.)  
58 kt - Est.  
**Flaps +1** - Set  
65 kt - Est.  
**Flaps +0** - Set  
Vy 76 kt

58 kt - Est.  
**Climb** - Est.

**CRZ or TPA**  
**Fuel Pump** - OFF

[Altitude](#) - Per AIM  
**HDG turn** - Execute

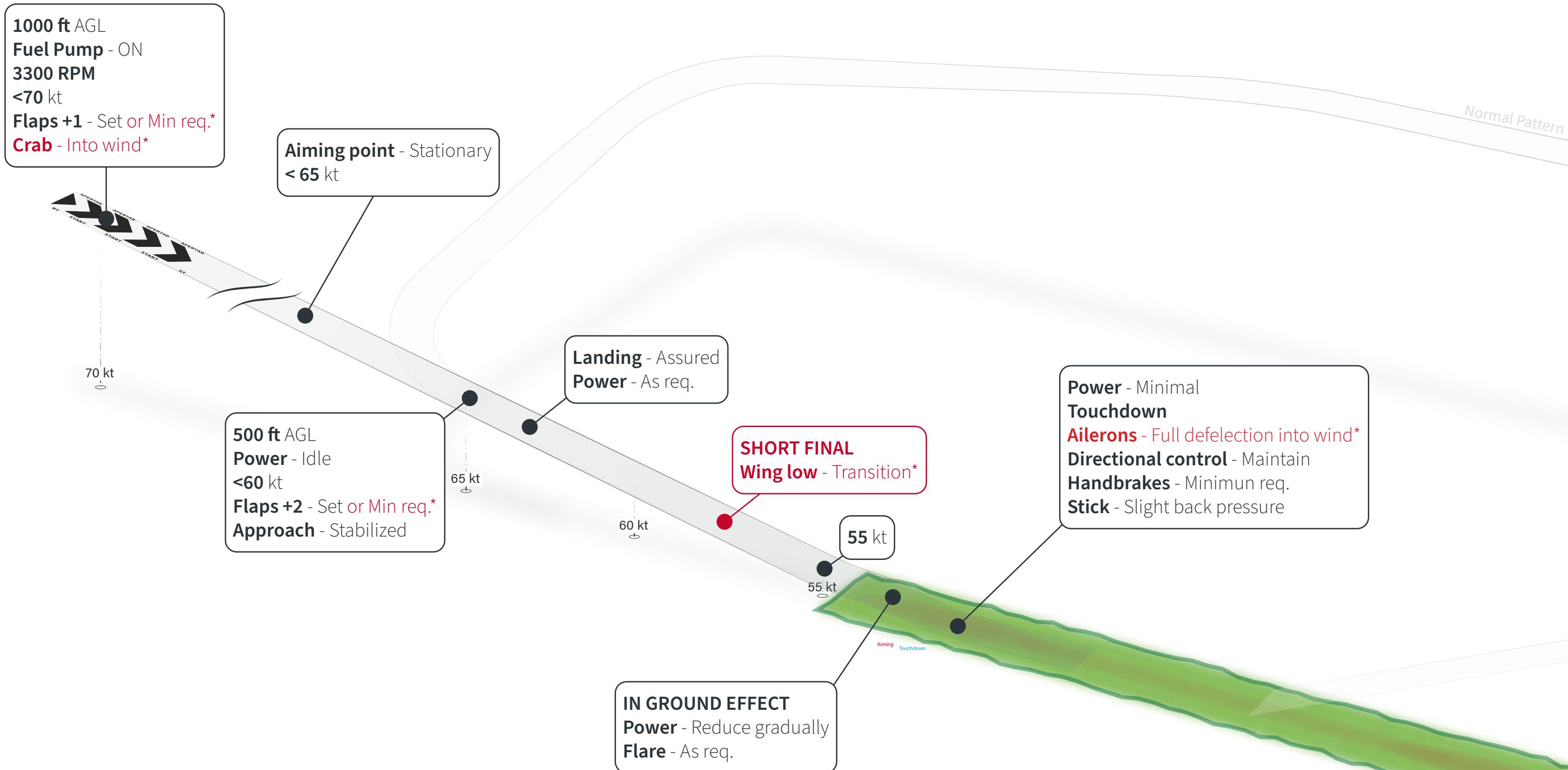


\* Excessive back pressure can cause a tail strike





# SOFT FIELD APPROACH AND LANDING

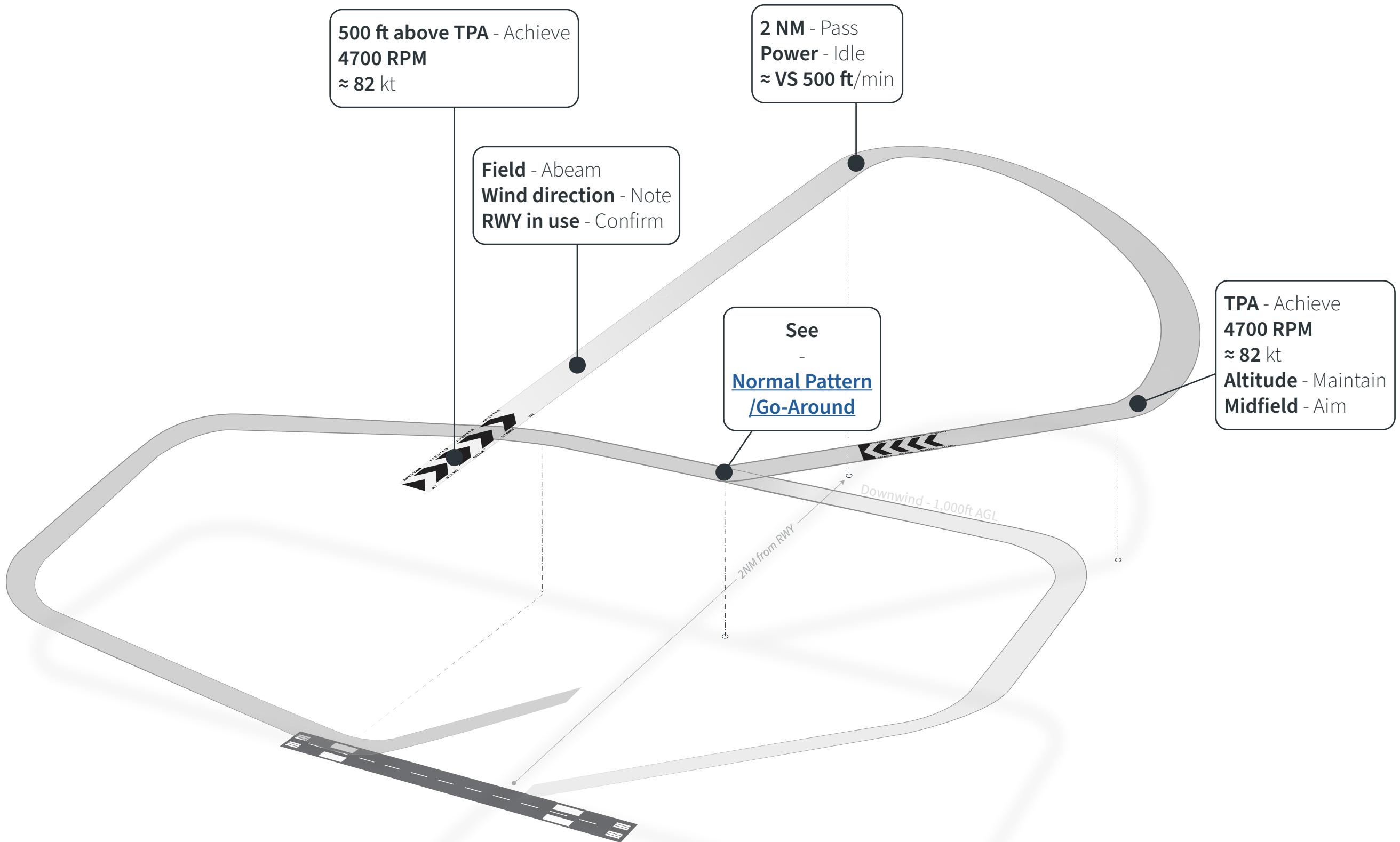


\* When high cross wind or gusting conditions exist



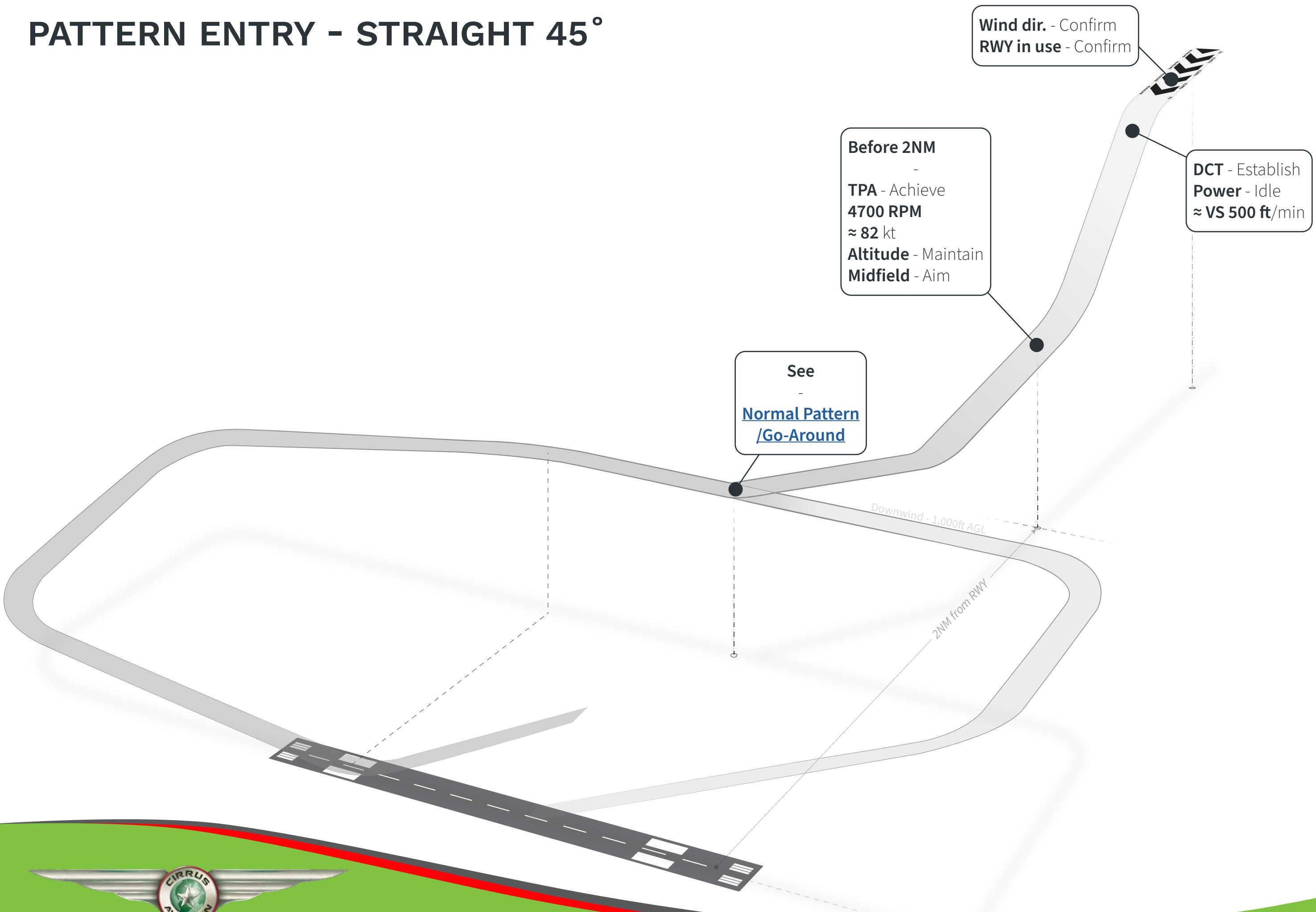


# PATTERN ENTRY - TEARDROP



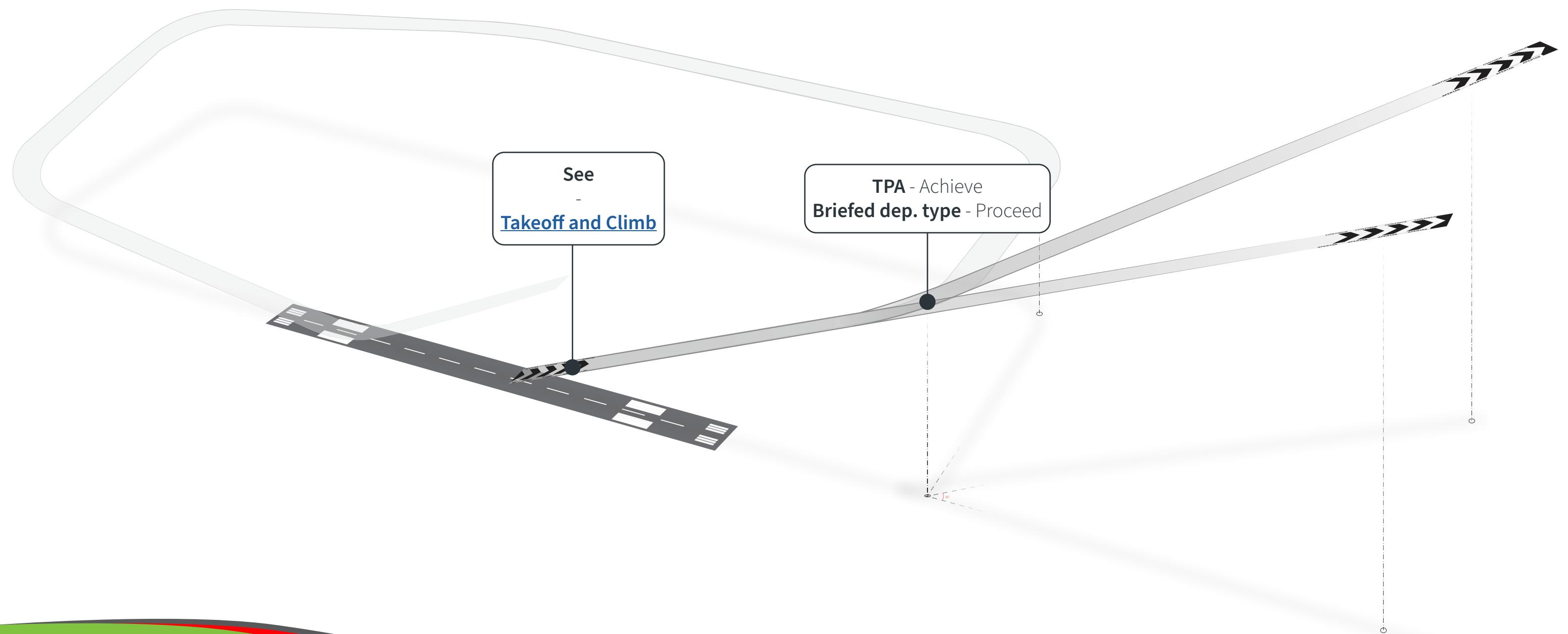


# PATTERN ENTRY - STRAIGHT 45°



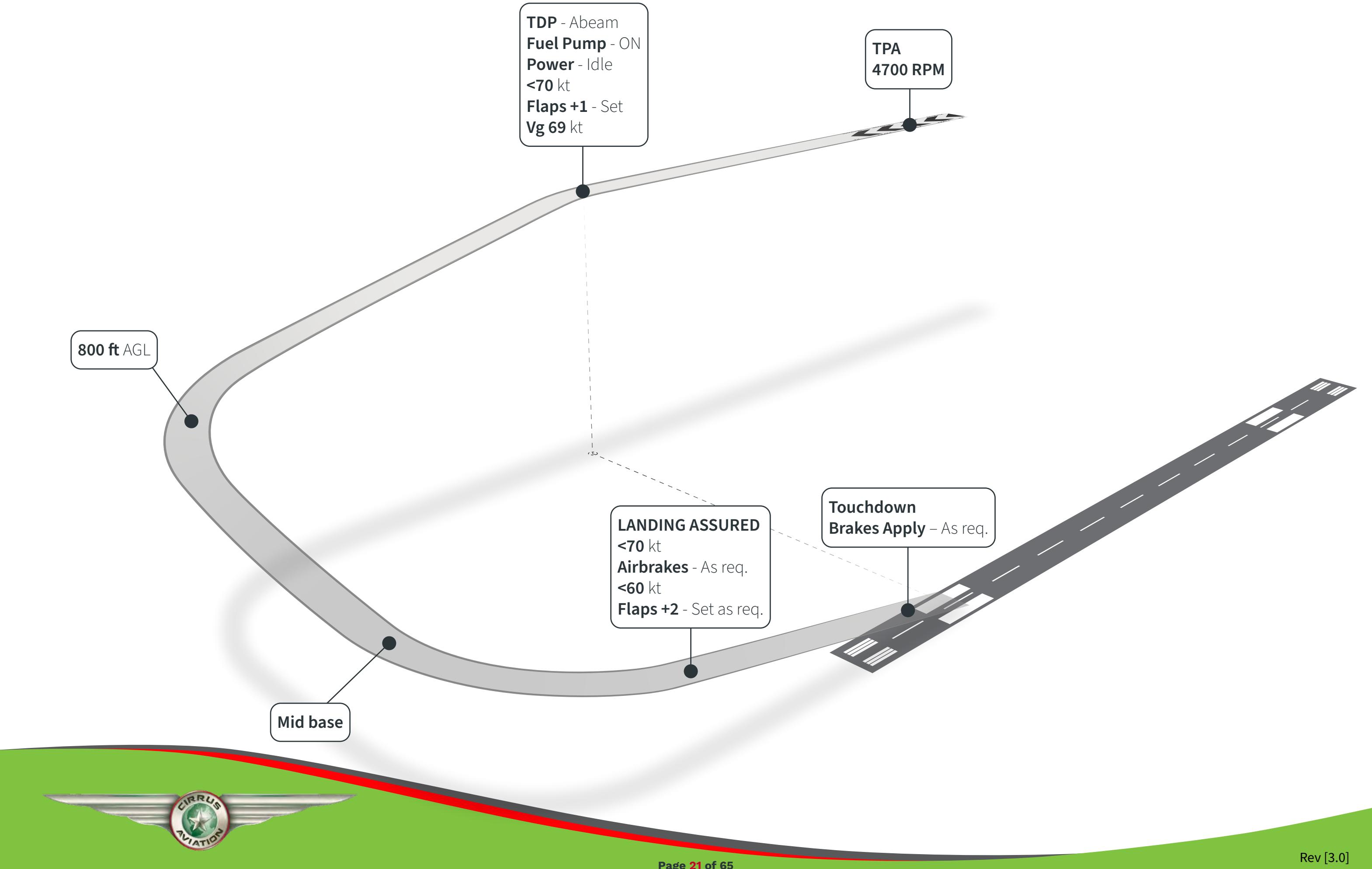


# PATTERN EXIT - STRAIGHT OUT & 45°





# POWER OFF 180





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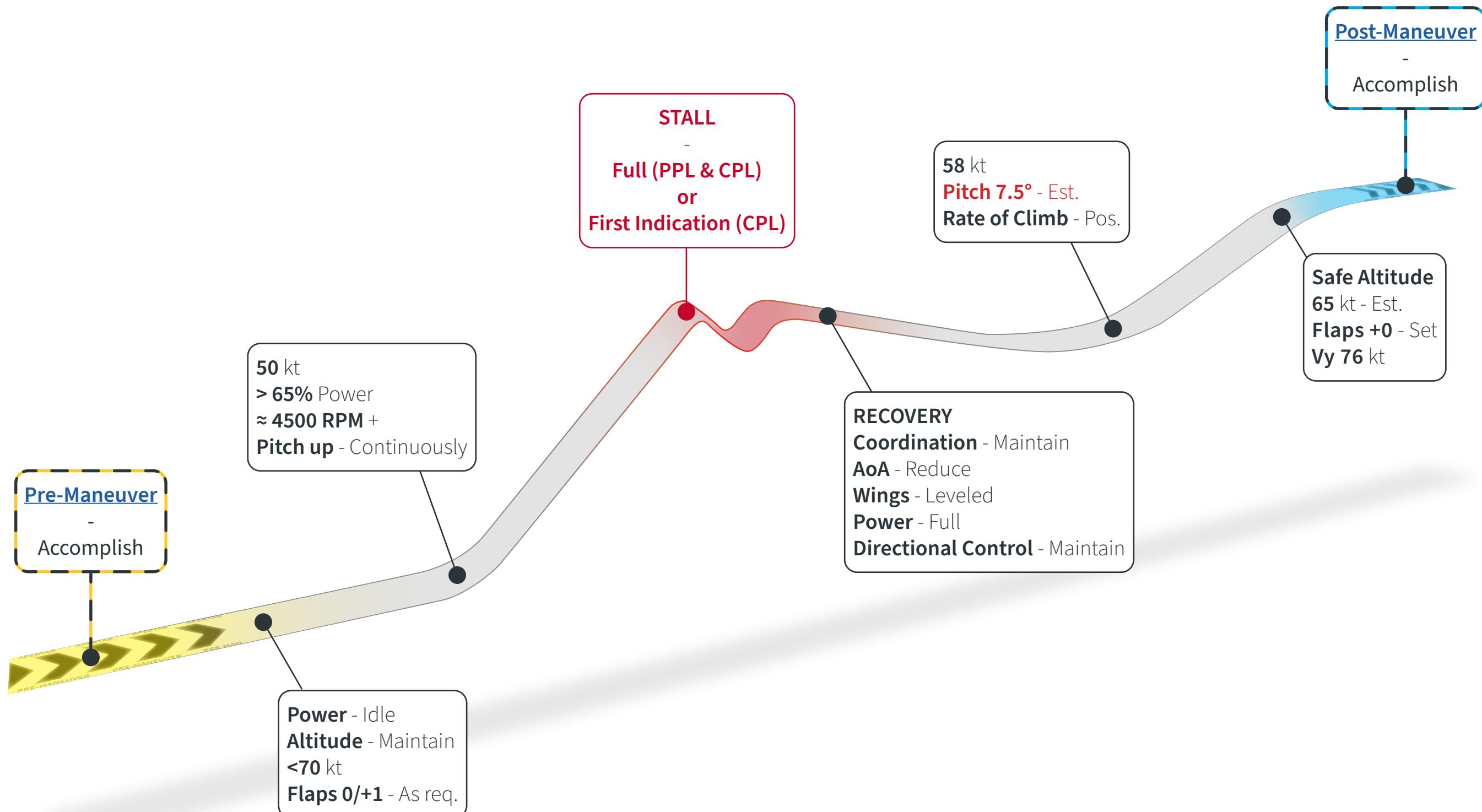
**PIPISTREL ALPHA TRAINER**

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**Part III: Slow Flight and Stalls**

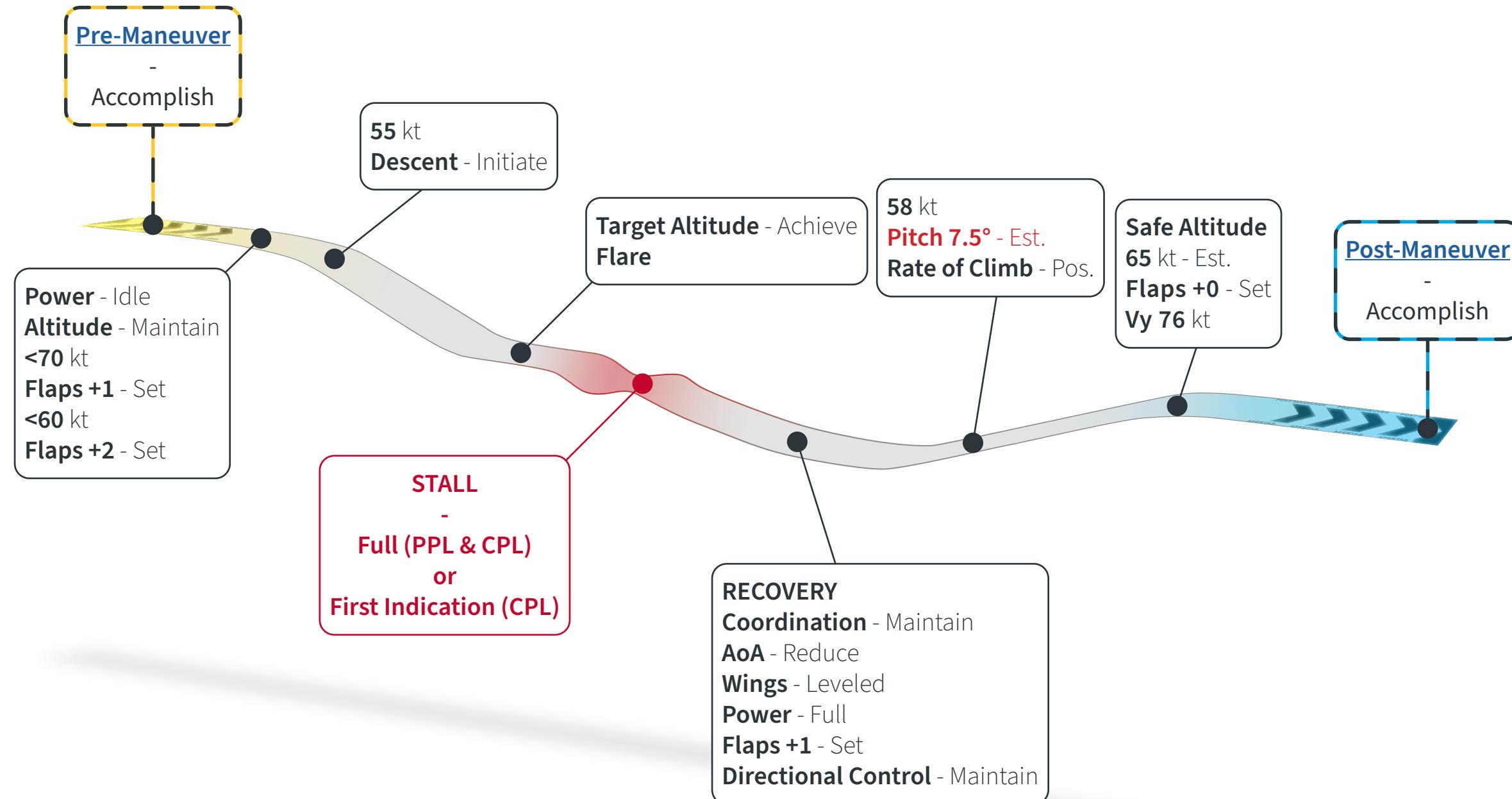


# POWER ON STALL



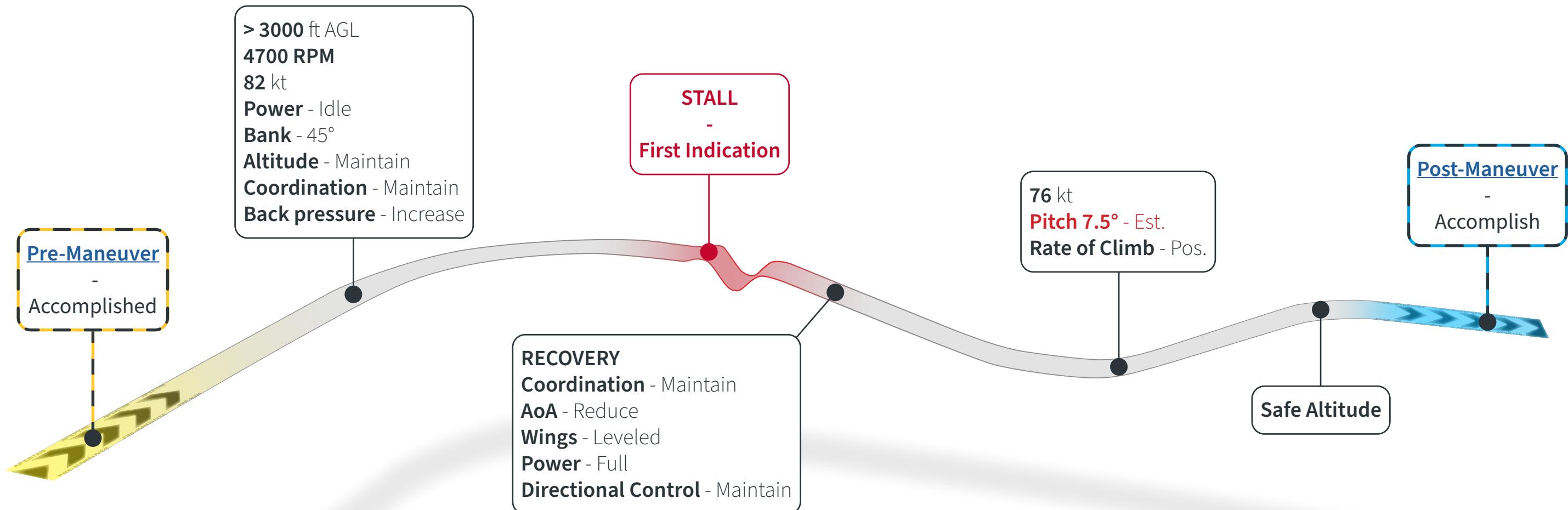


# POWER OFF STALL



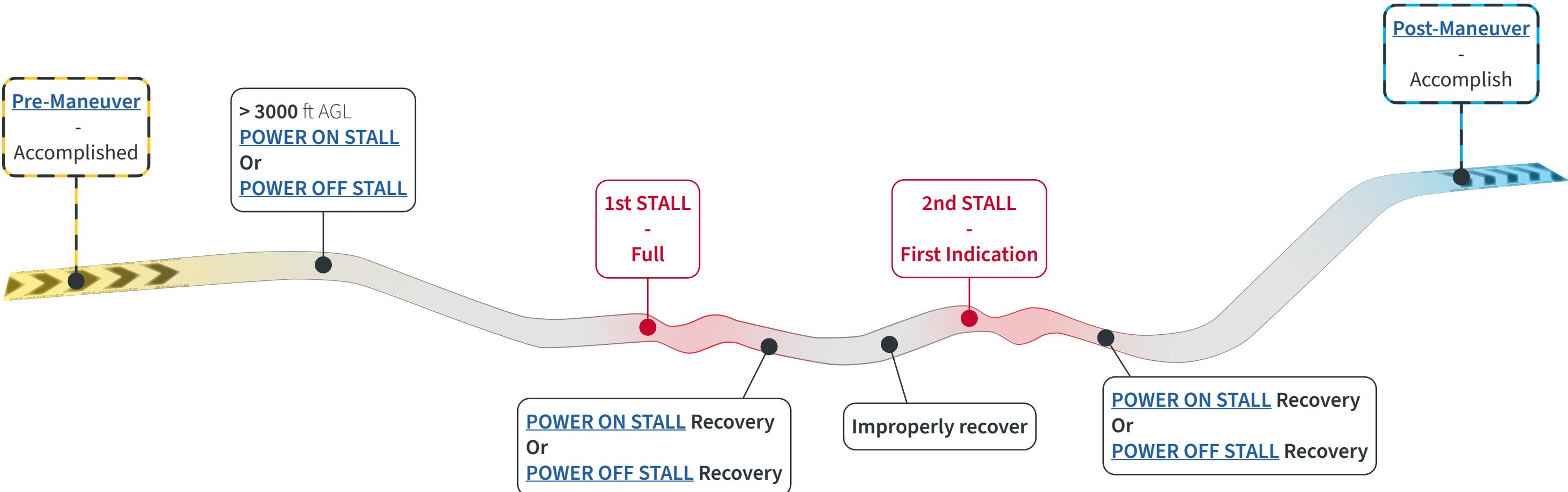


# ACCELERATED STALL



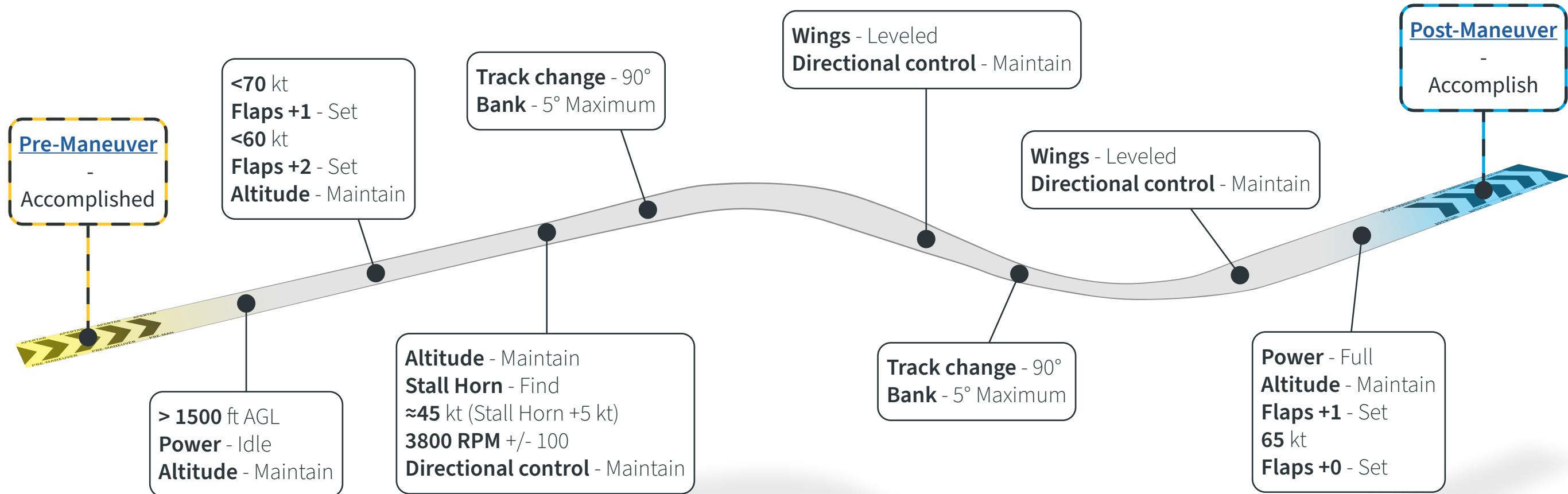


# SECONDARY STALL (CFI)



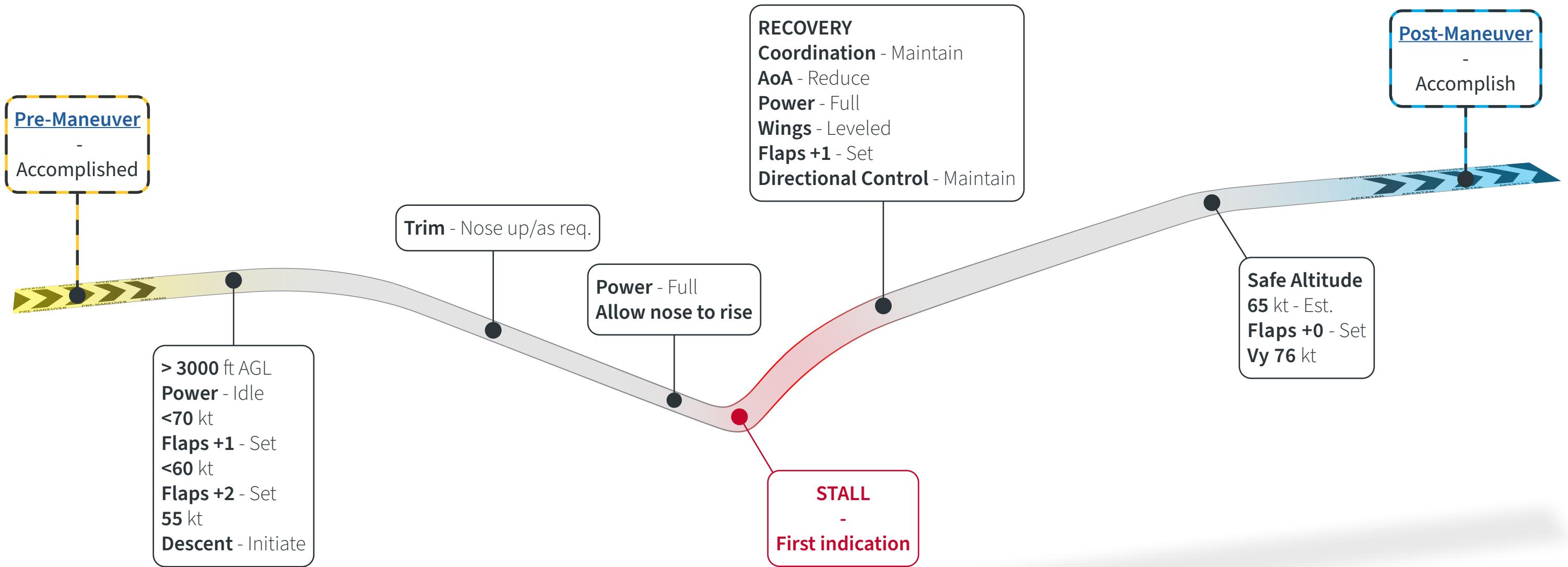


# MANEUVERING DURING SLOW FLIGHT



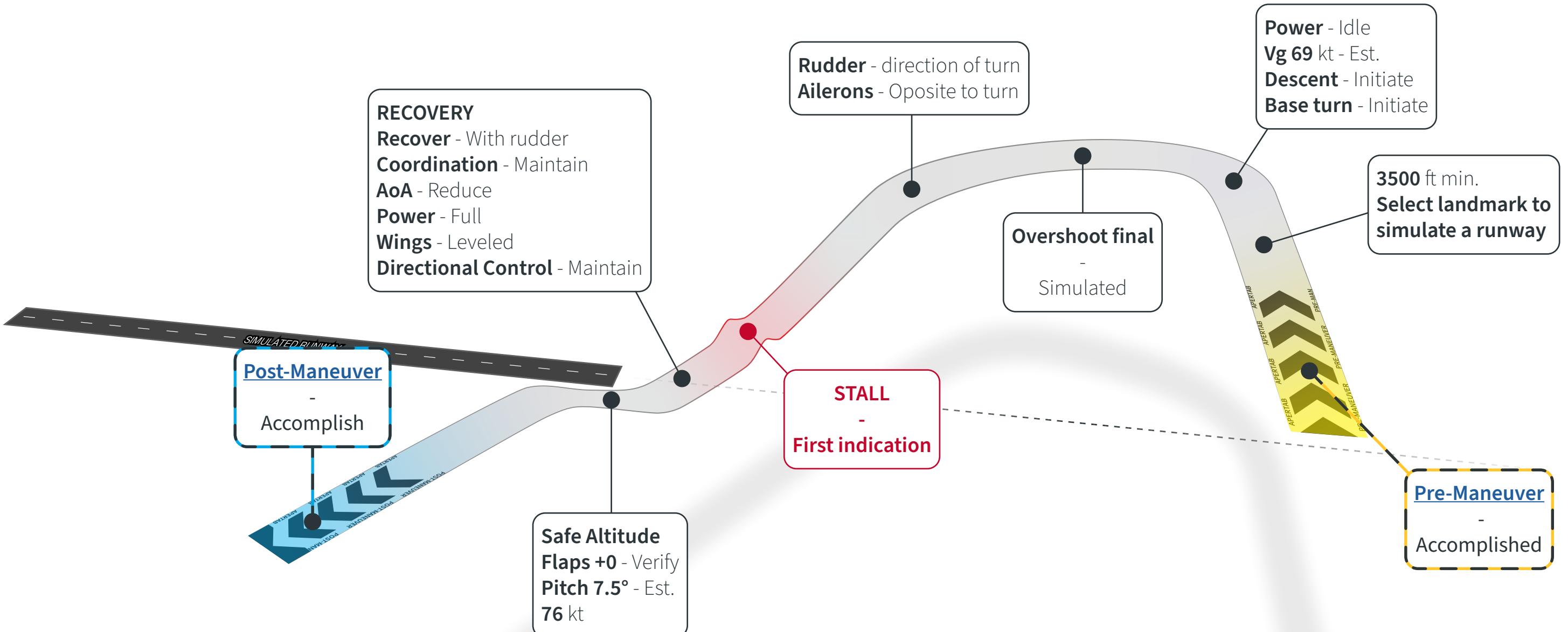


# ELEVATOR TRIM STALL (CFI)



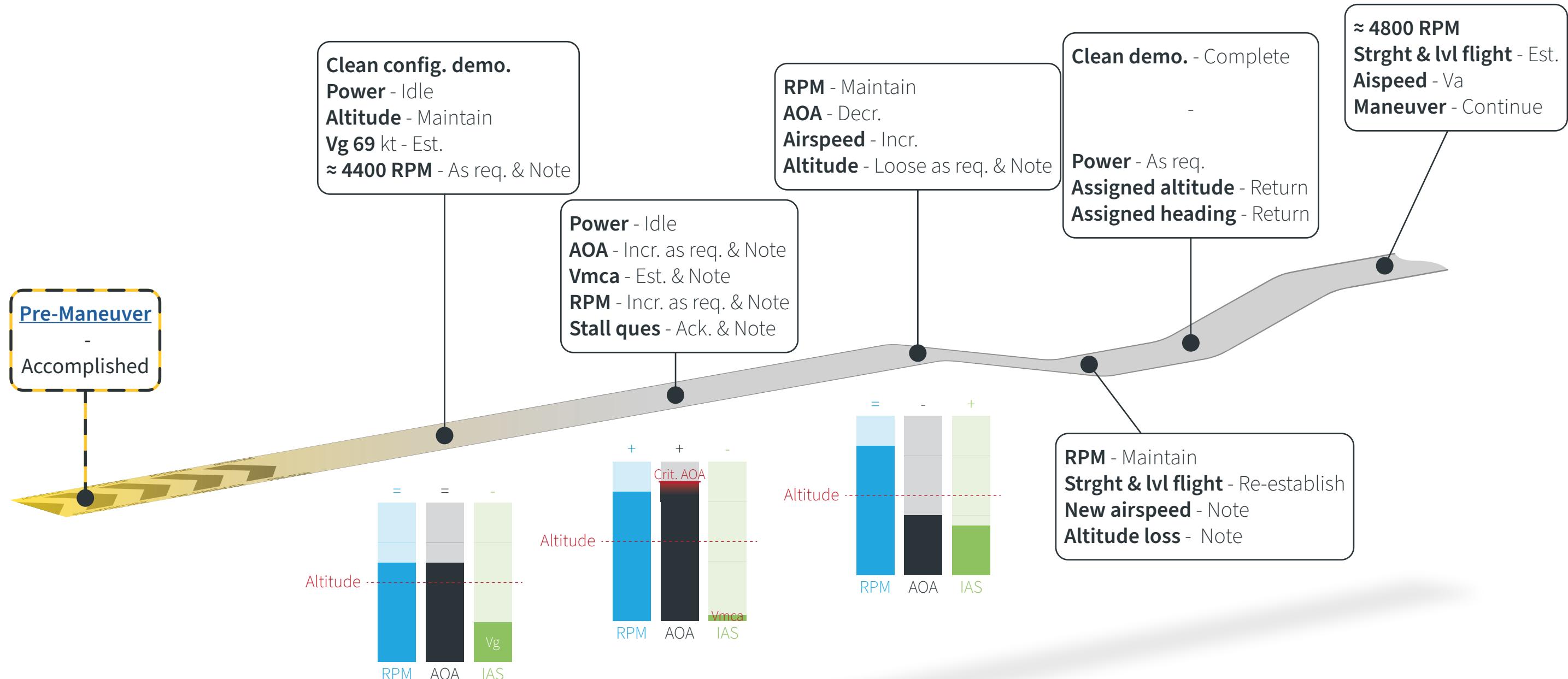


# CROSS CONTROL STALL (CFI)



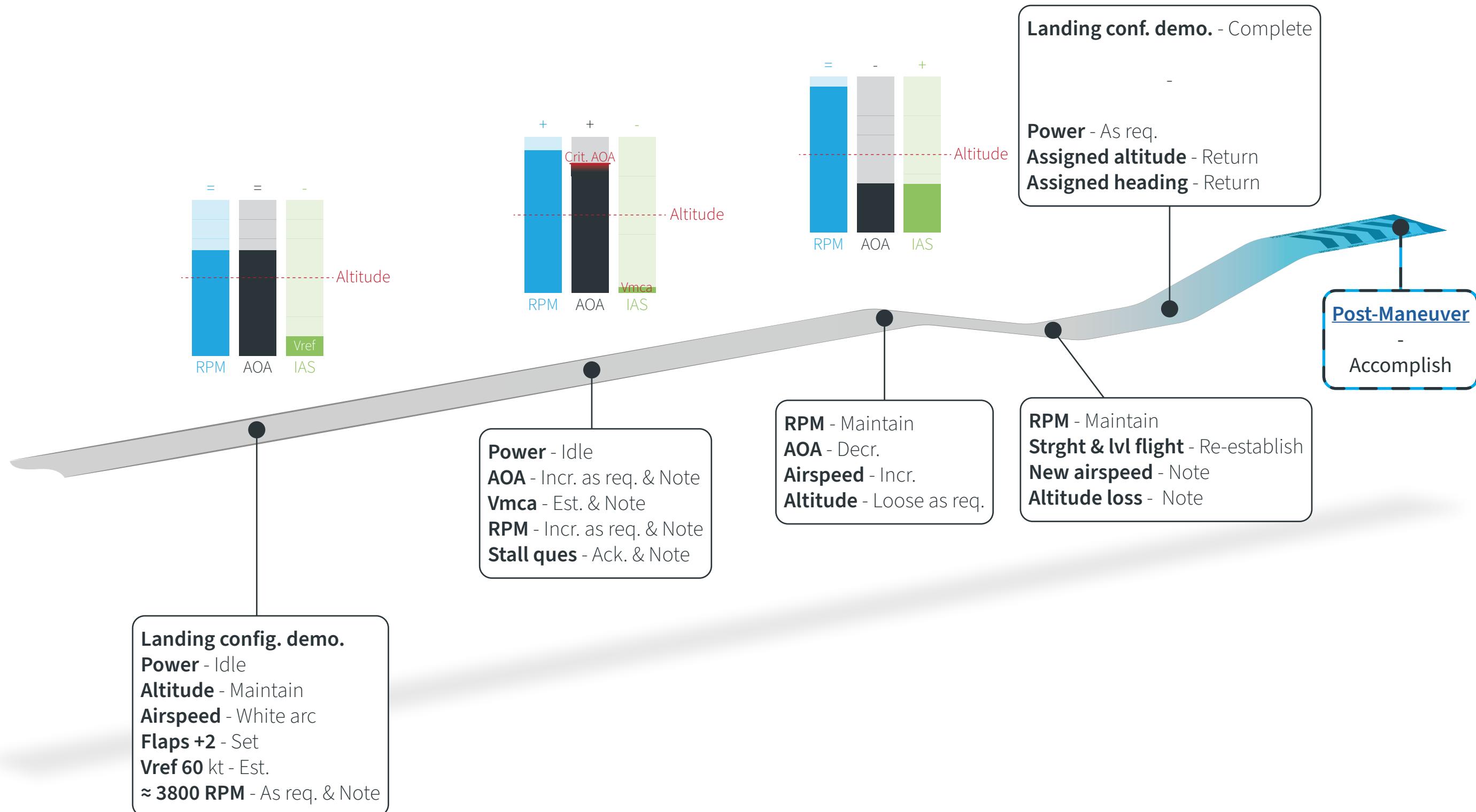


# DEMO. OF FLIGHT CHARACTERISTICS (CFI) 1





# DEMO. OF FLIGHT CHARACTERISTICS (CFI) 2



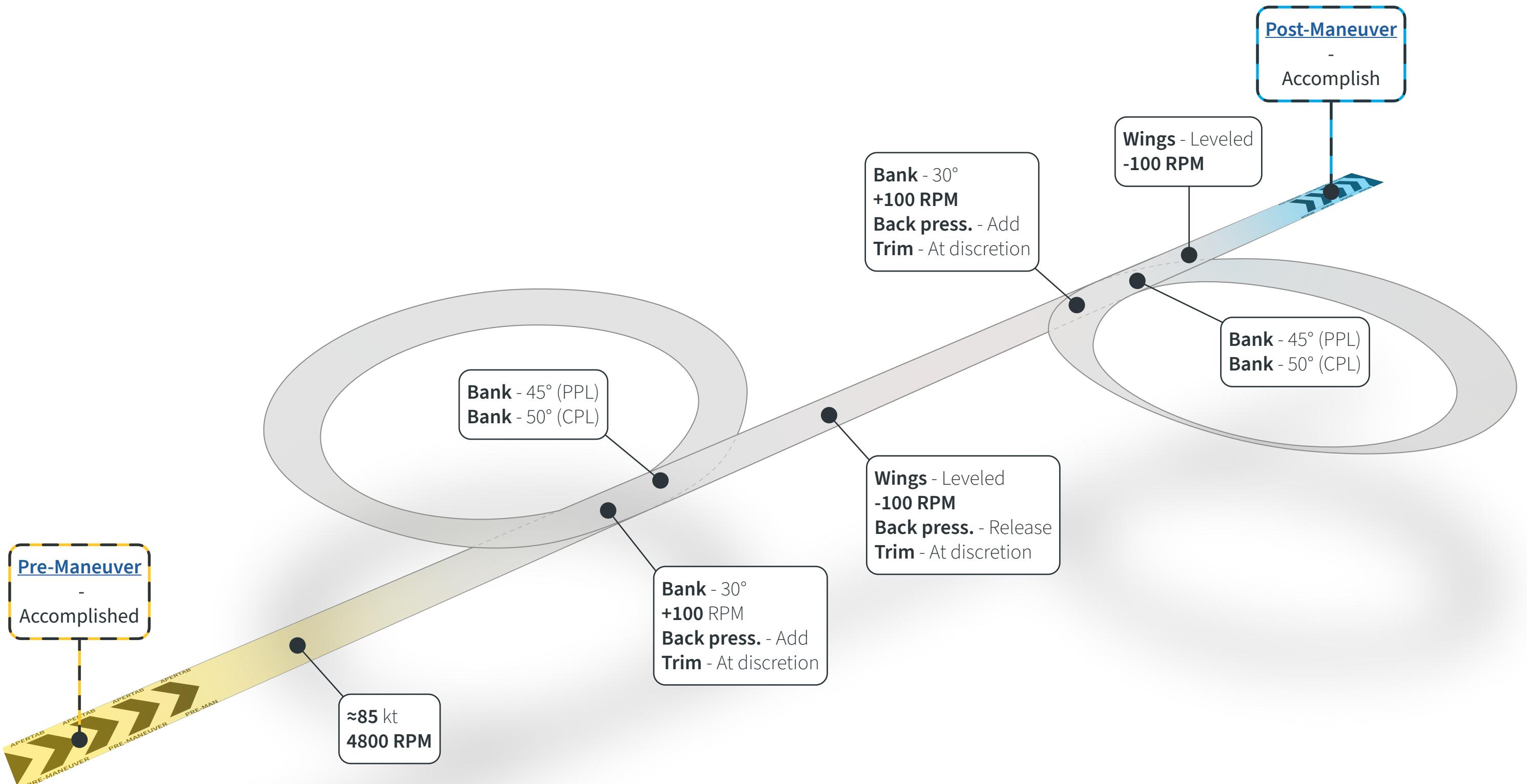


## PIPISTREL ALPHA TRAINER

### Part IV: Performance and Ground Reference Maneuvers

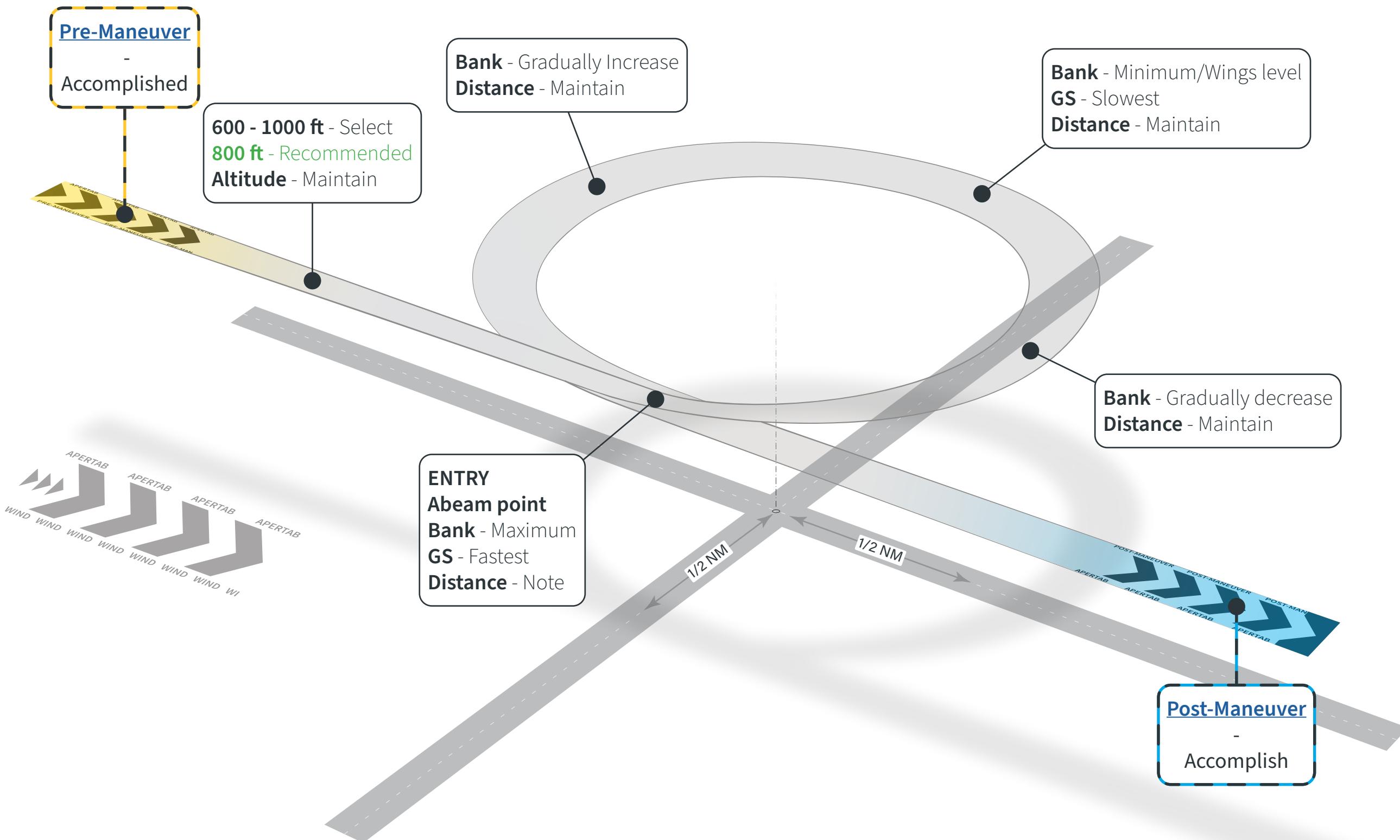


# STEEP TURNS



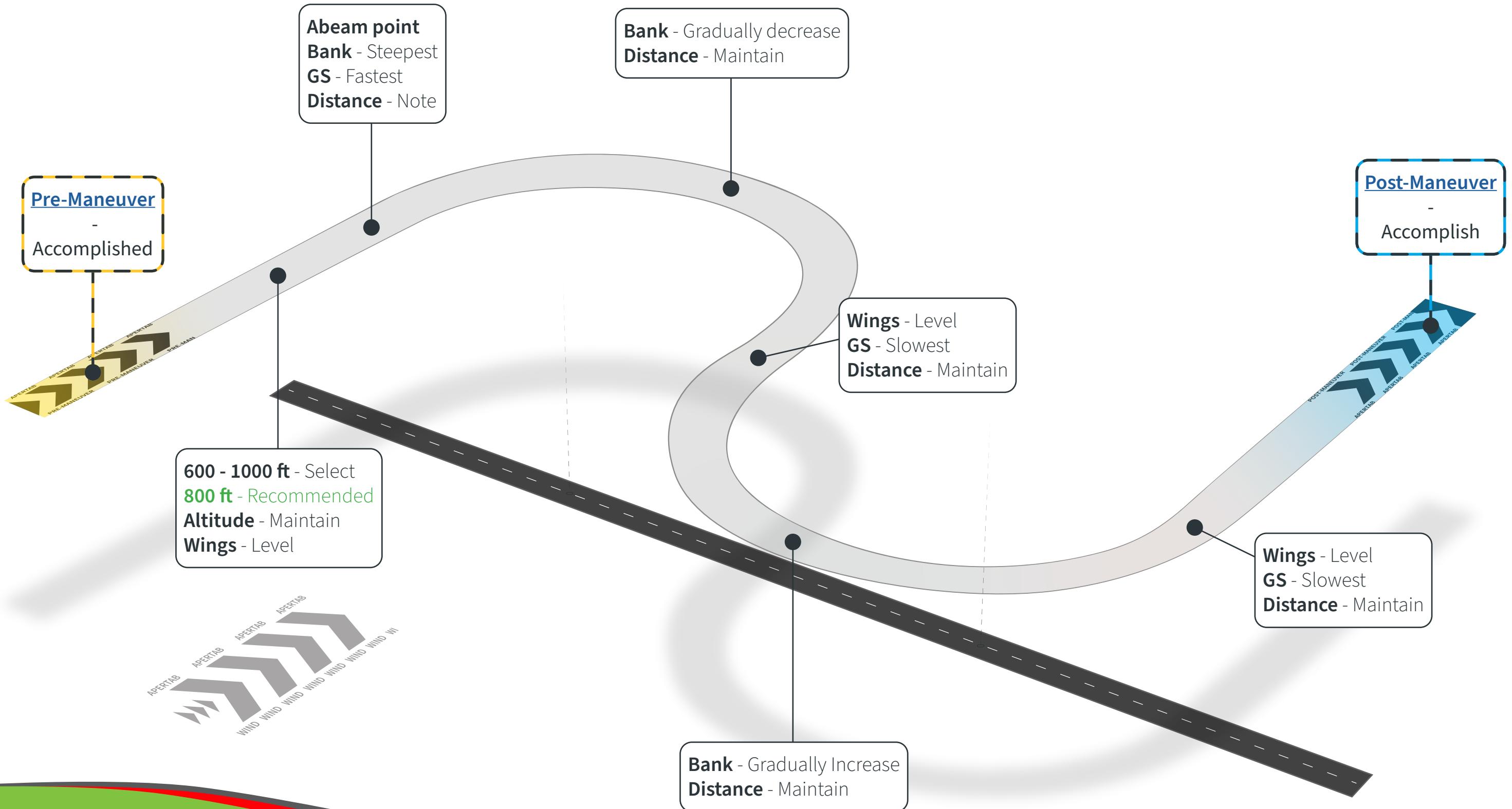


# TURN AROUND A POINT



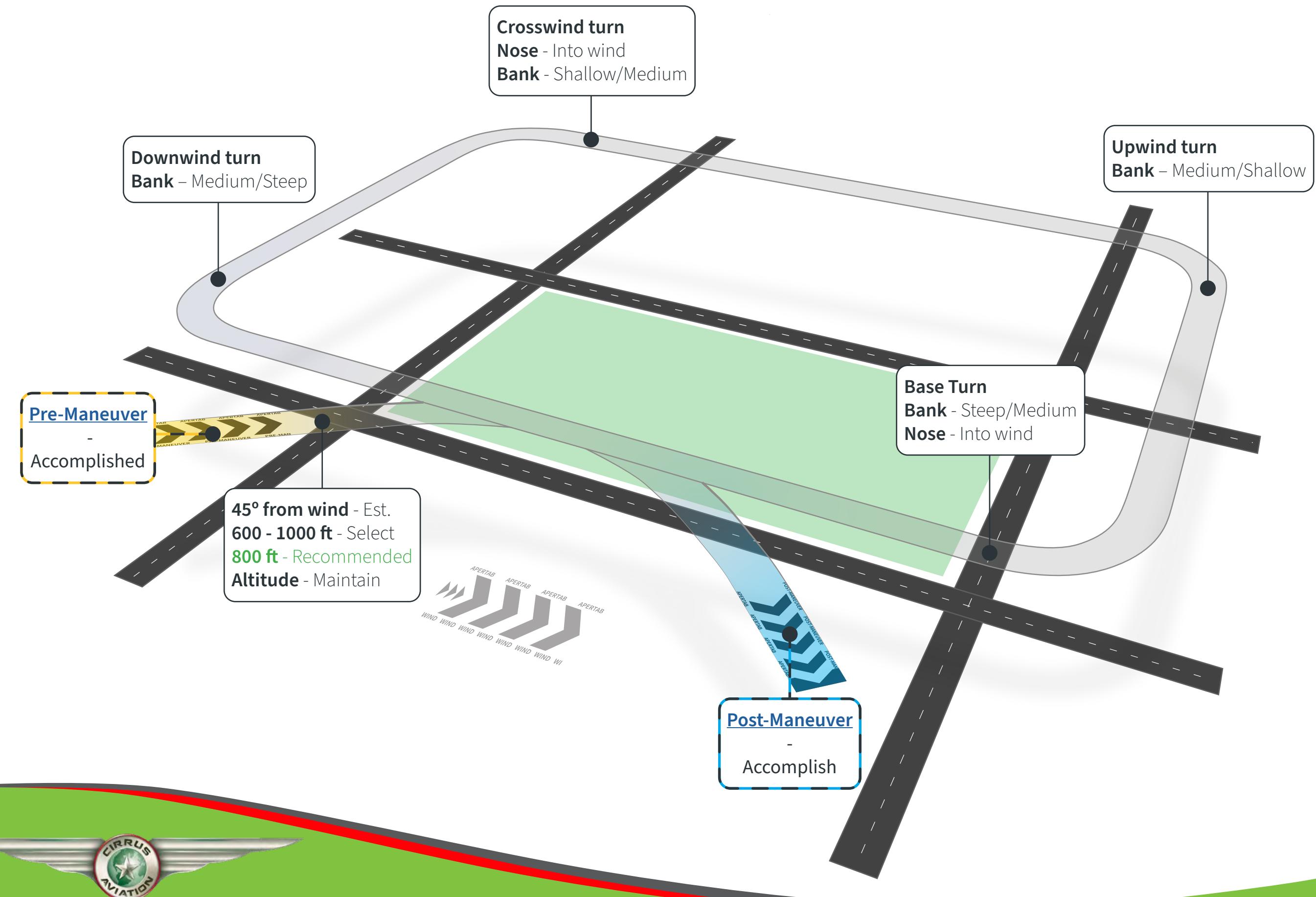


# S-TURNS



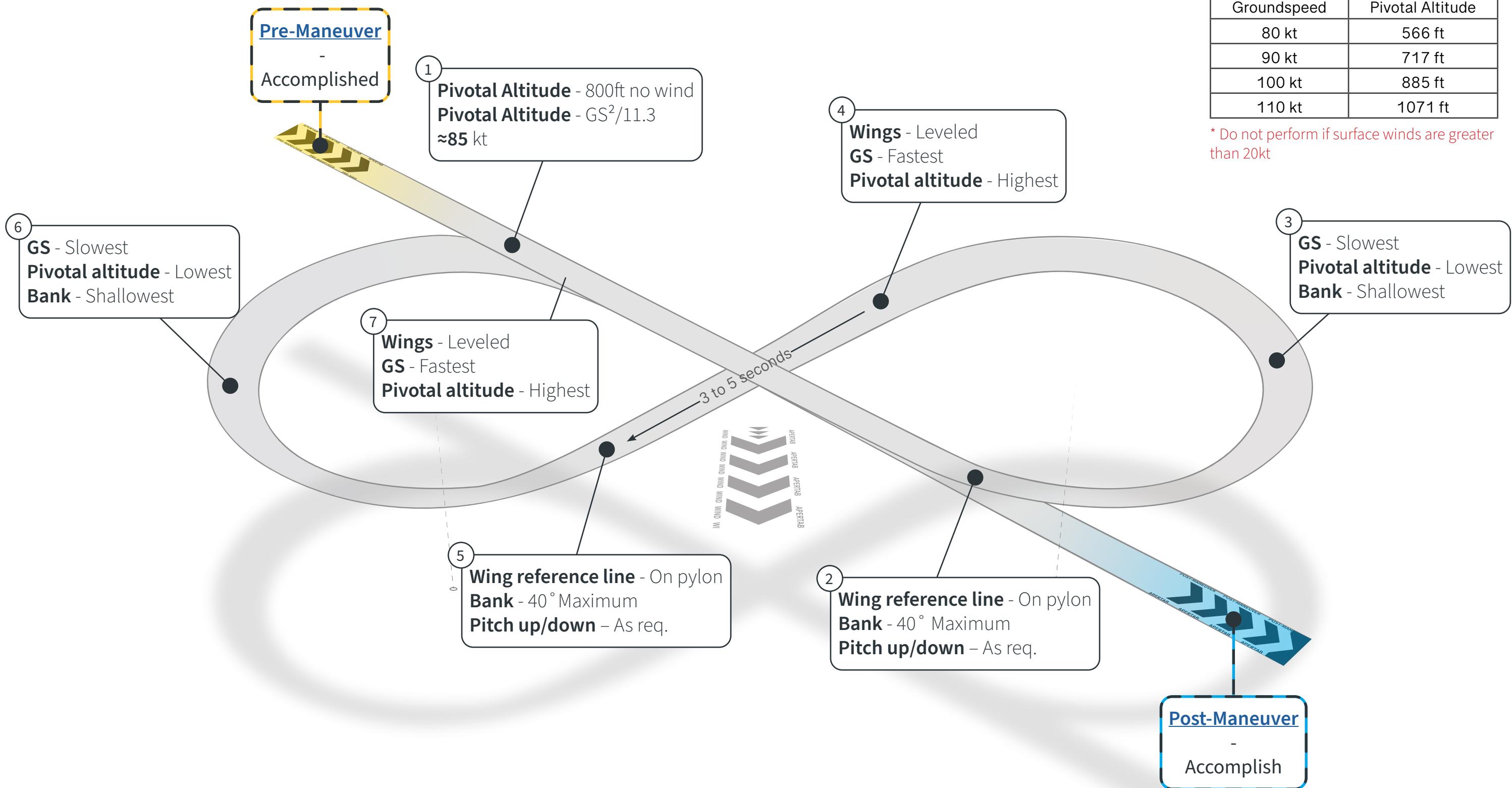


# RECTANGULAR COURSE



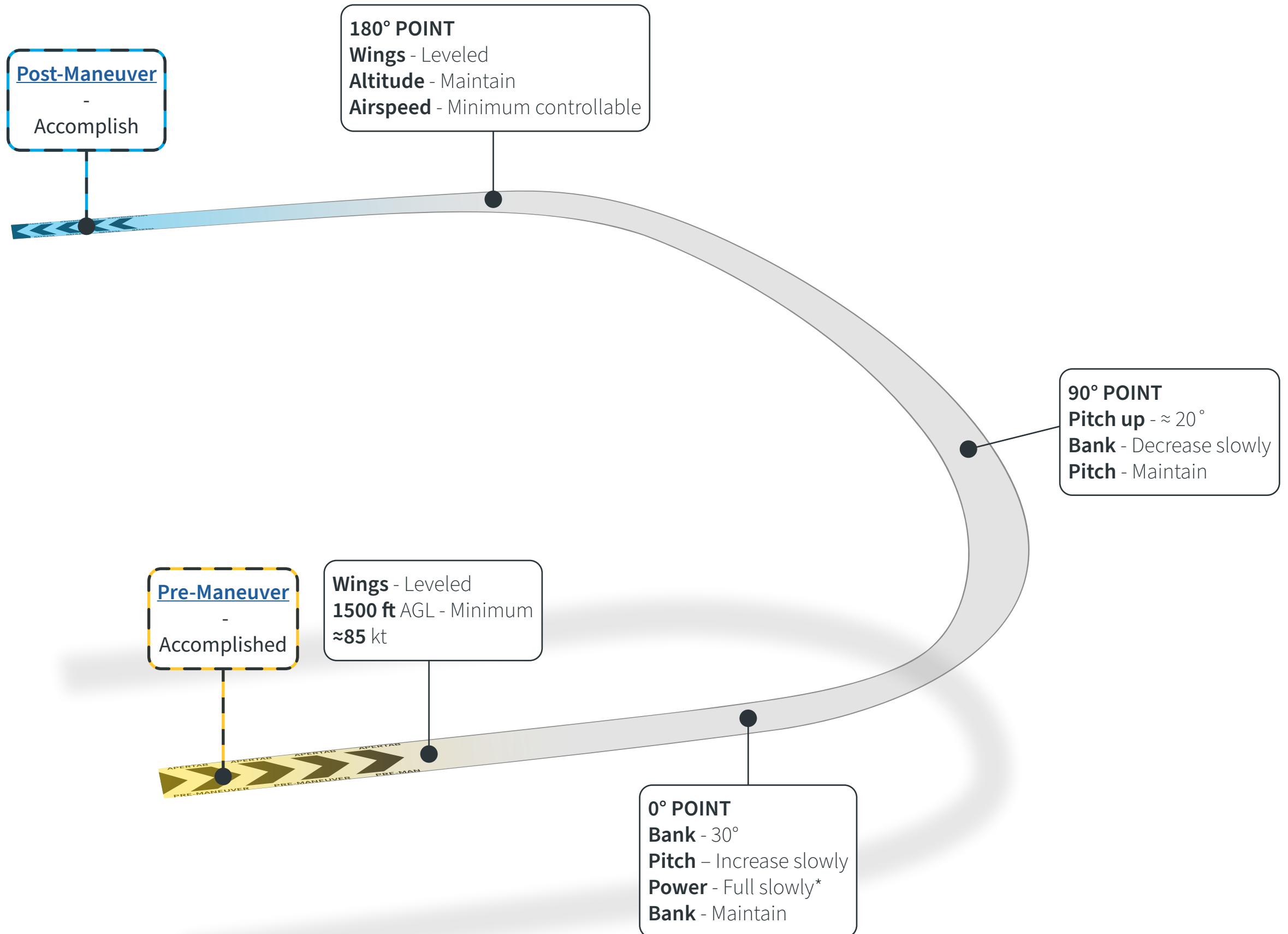


# EIGHTS ON PYLONS





# CHANDELLES

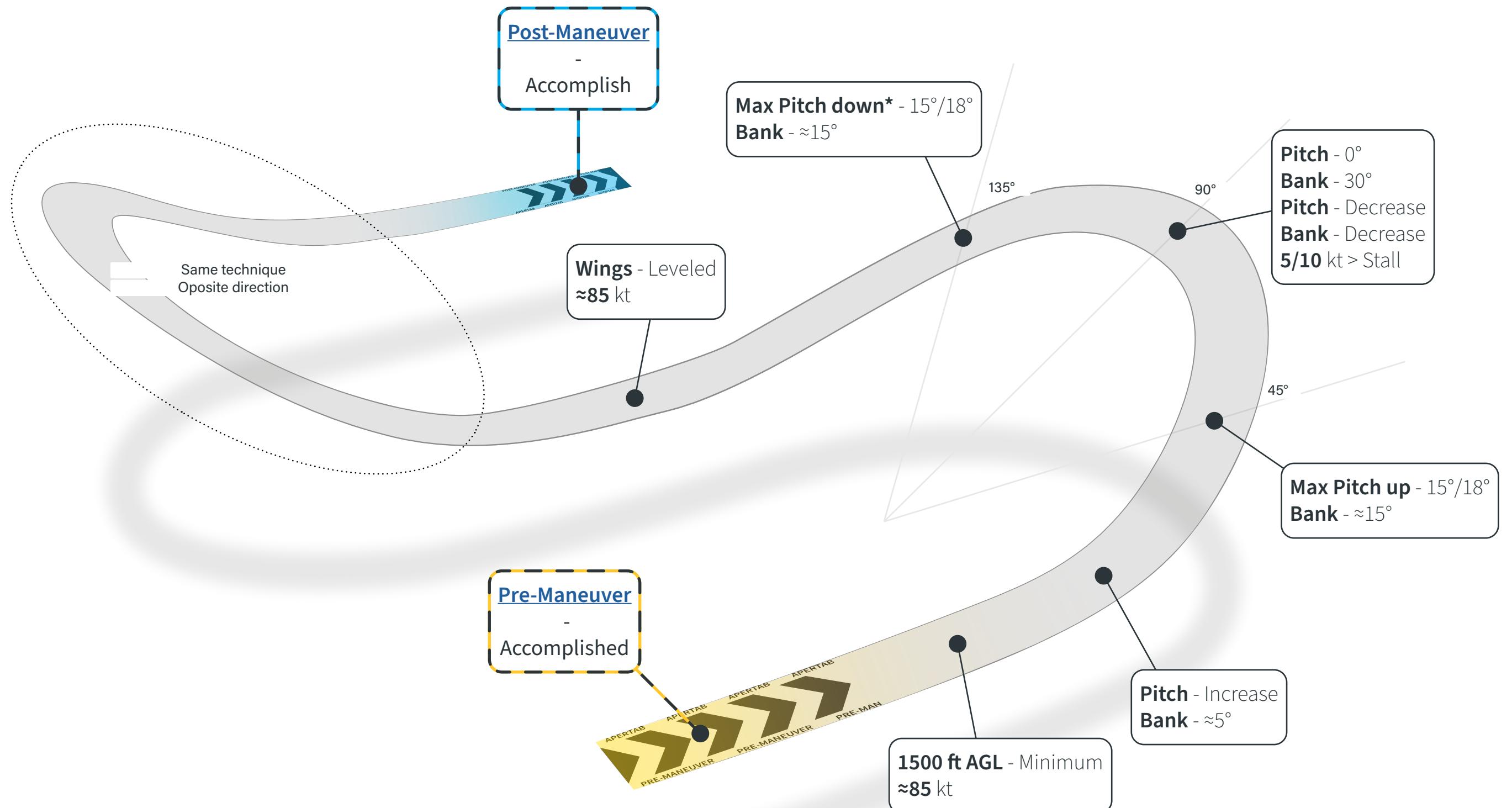


\*  $<80$  kt prevent prop overspeed



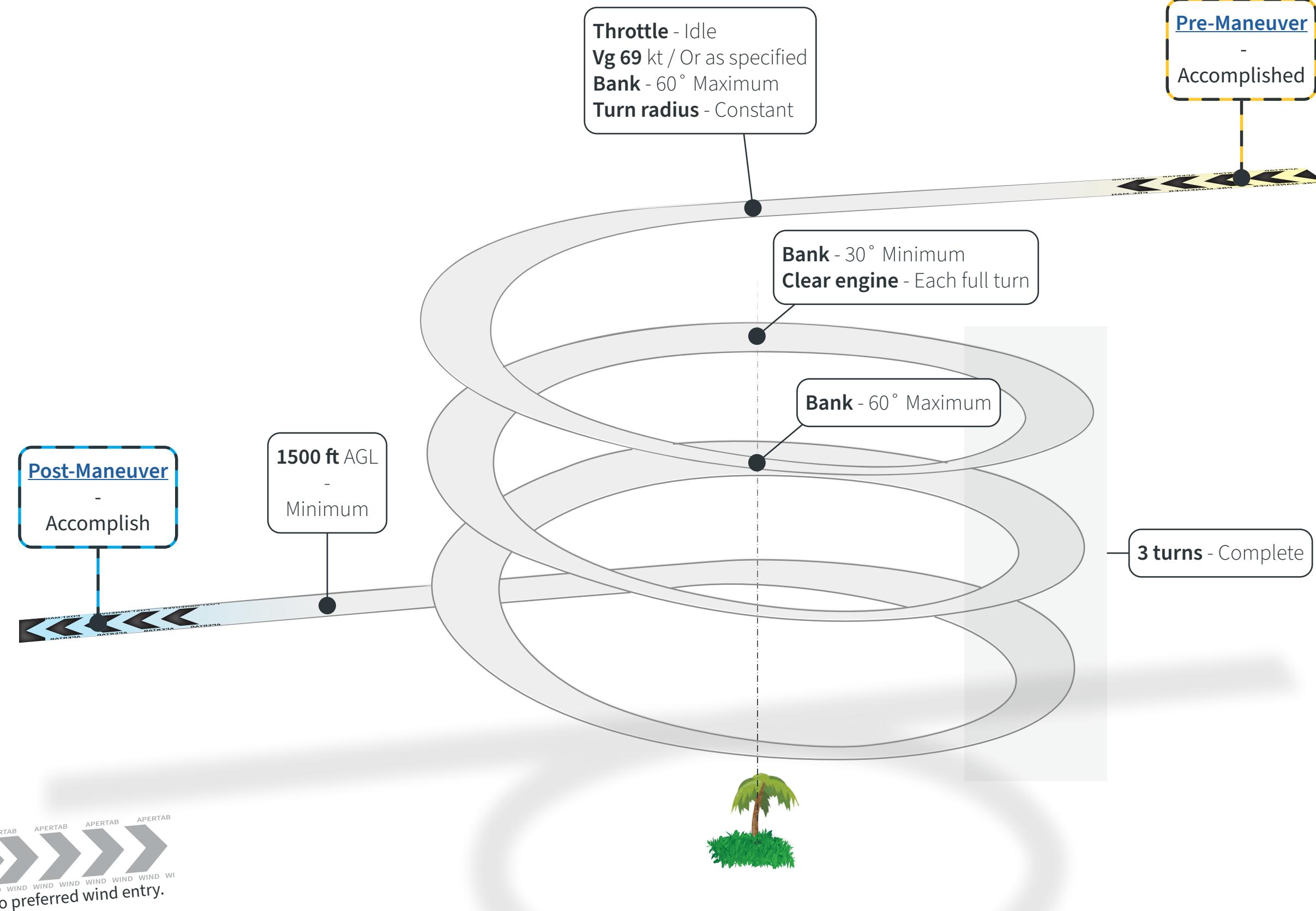


# LAZY EIGHTS





# STEEP SPIRALS



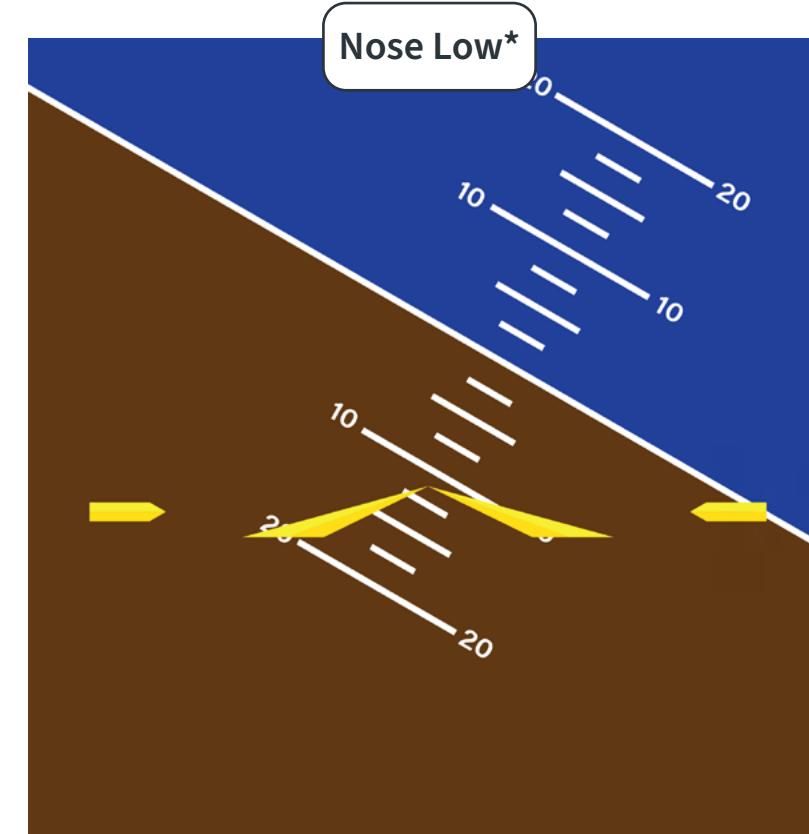
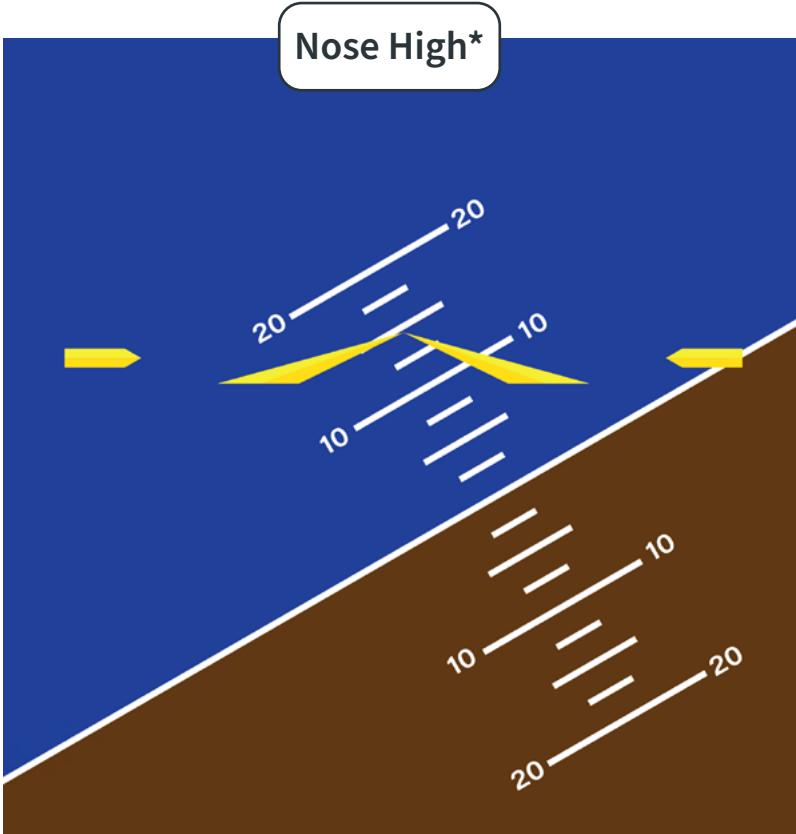


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**PIPISTREL ALPHA TRAINER**  
**Part V: Emergency Procedures**



# UNUSUAL ATTITUDE RECOVERY



- |                    |                                |
|--------------------|--------------------------------|
| <b>1. POWER</b>    | FULL                           |
| <b>2. PITCH</b>    | DECREASE                       |
| <b>3. WINGS</b>    | LEVEL WITH RUDDER COORDINATION |
| <b>4. ALTITUDE</b> | RETURN                         |
| <b>5. HEADING</b>  | RETURN                         |

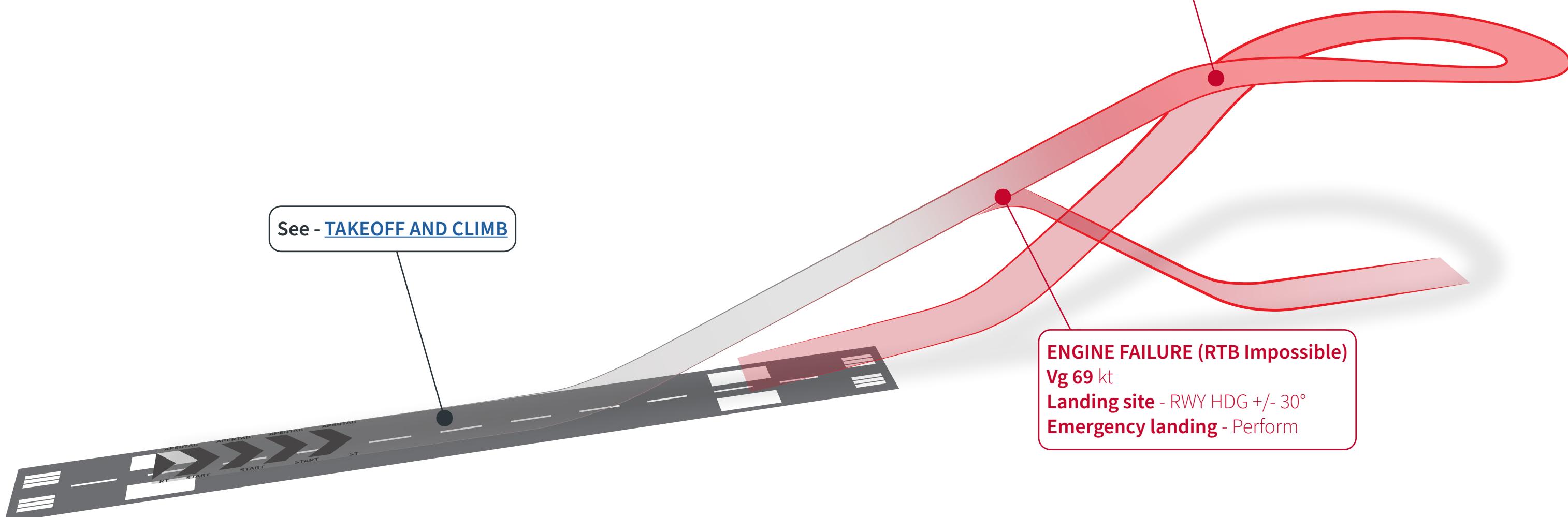
- |                    |                                |
|--------------------|--------------------------------|
| <b>1. POWER</b>    | IDLE OR AS REQ.                |
| <b>2. WINGS</b>    | LEVEL WITH RUDDER COORDINATION |
| <b>3. PITCH</b>    | INCREASE                       |
| <b>4. ALTITUDE</b> | RETURN                         |
| <b>5. HEADING</b>  | RETURN                         |

\* Nose high or nose low unusual attitudes can be made with a left, right or no bank. The bank does not change the recovery procedure





# ENGINE FAILURE AFTER TAKEOFF





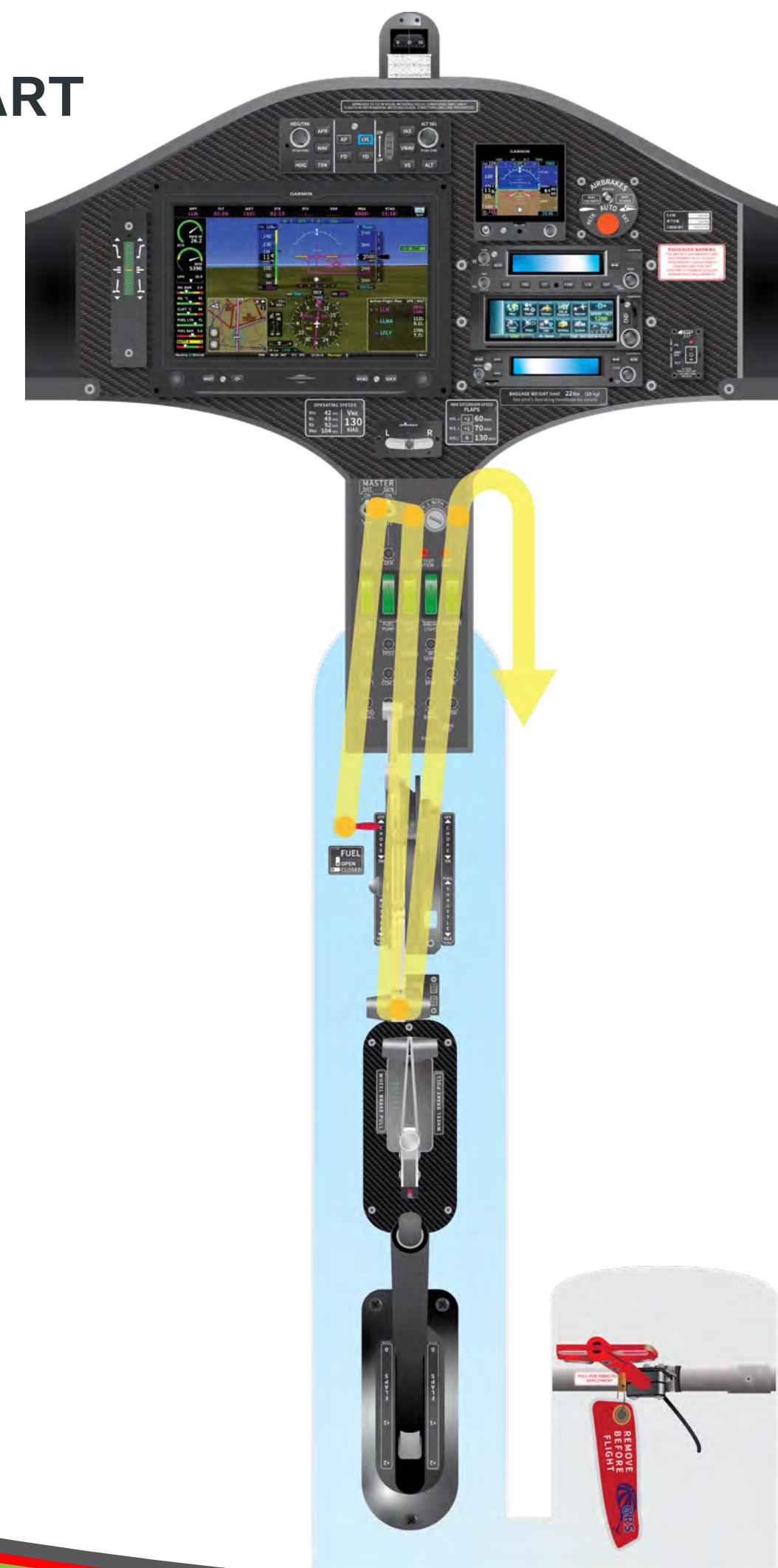
# ENGINE FAILURE INFLIGHT - RESTART

1. FUEL - ON
2. MASTER - ON
3. MAGNETOS - BOTH
4. THROTTLE - 10MM
5. STARTER - ENGAGE

\*\*If engine restarts\*\*

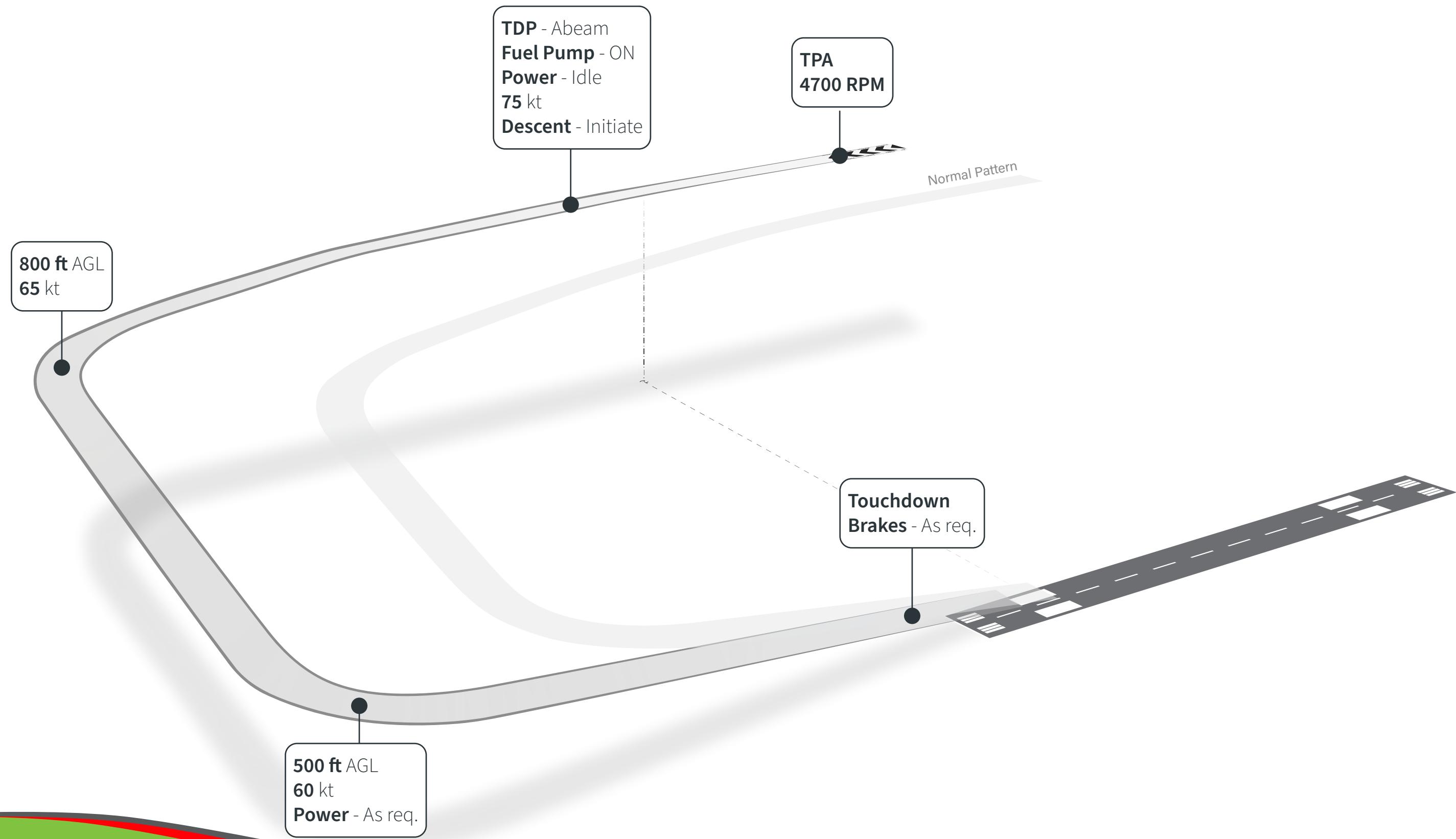
6. THROTTLE - INCREASE
7. MASTER AND GEN - ON

Verify Checklist



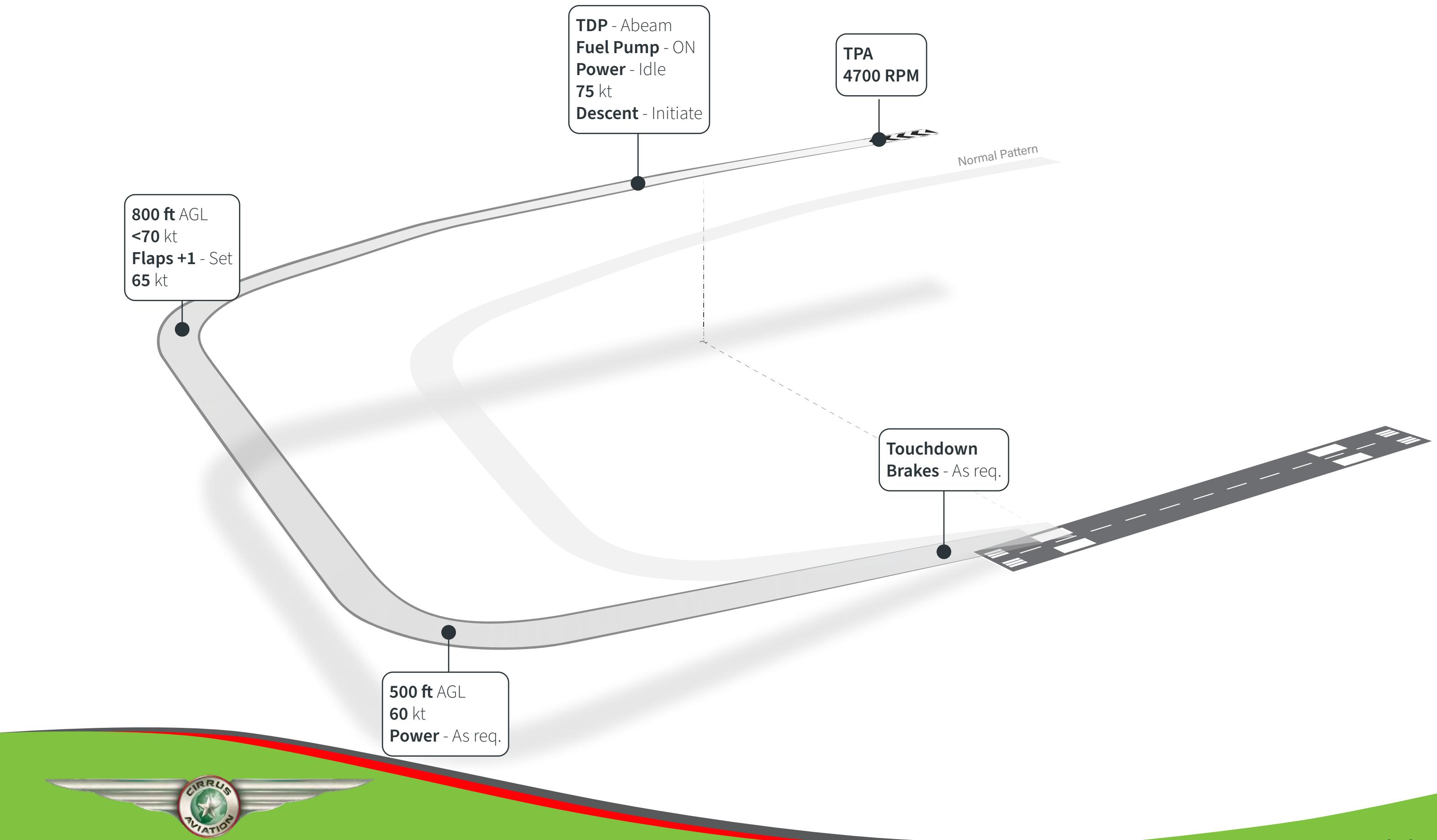


# REDUCED FLAPS LANDING - FLAPS +0



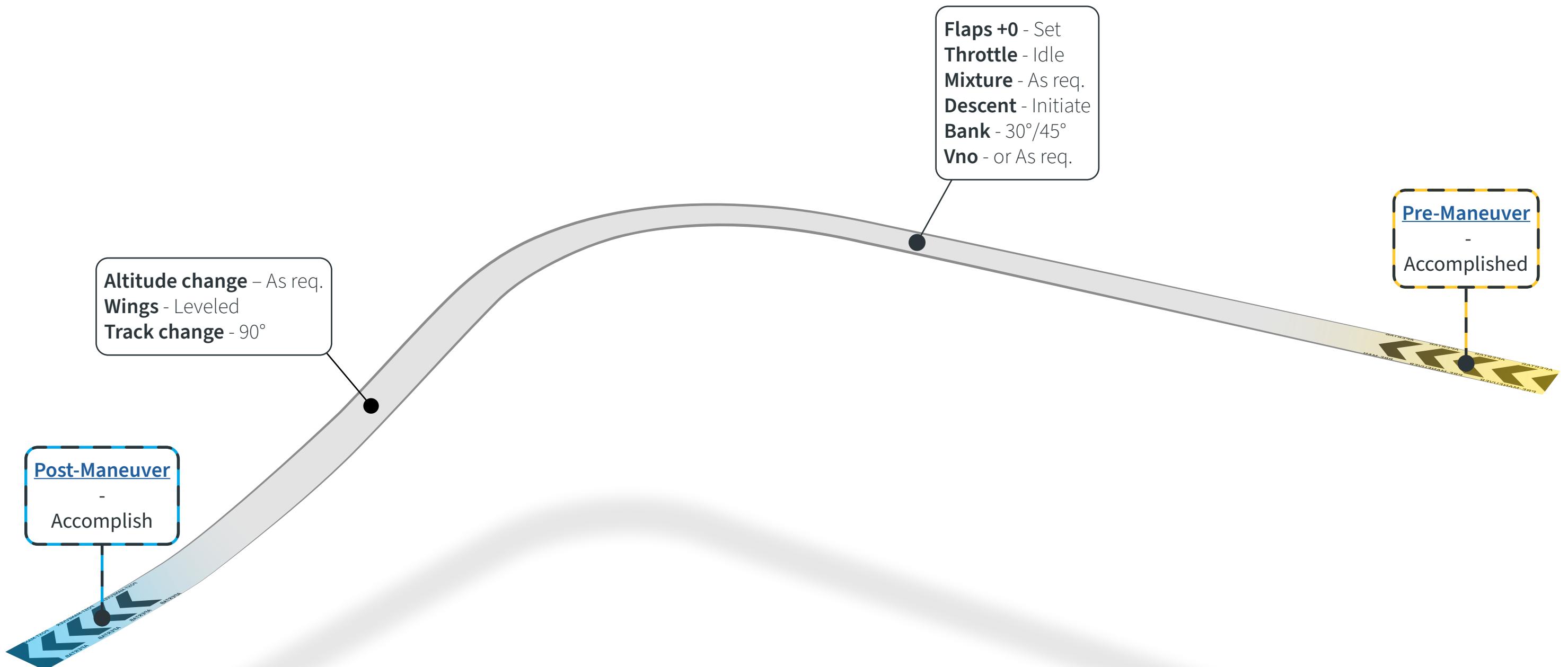


# REDUCED FLAPS LANDING - FLAPS +1



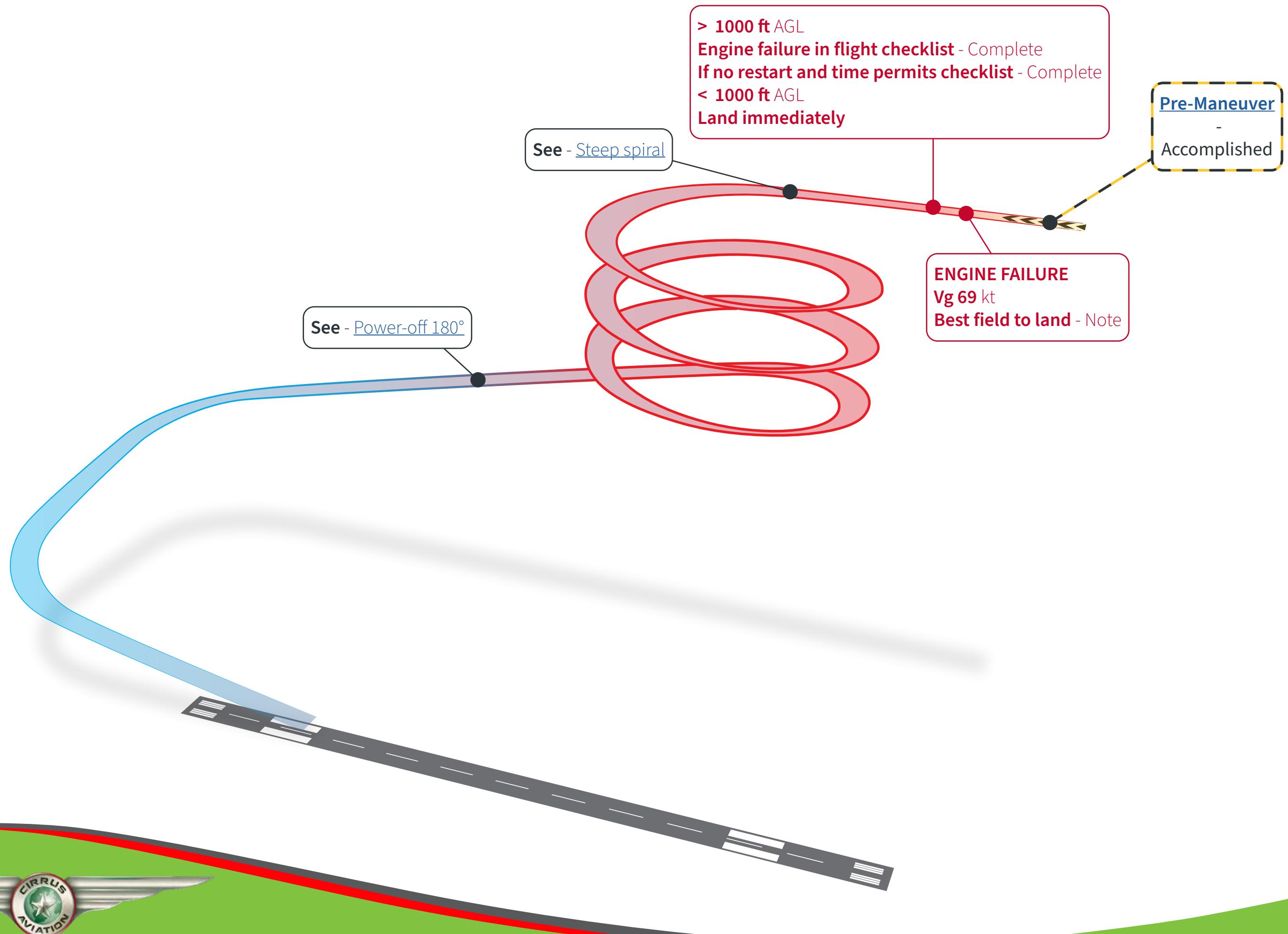


# EMERGENCY DESCENT





# EMERGENCY APPROACH AND LANDING





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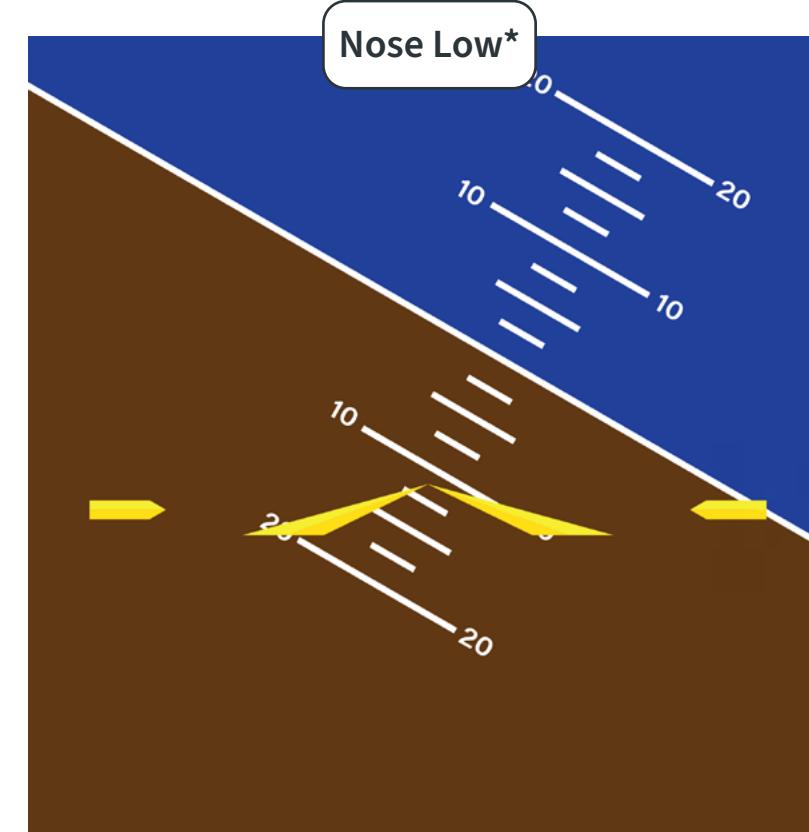
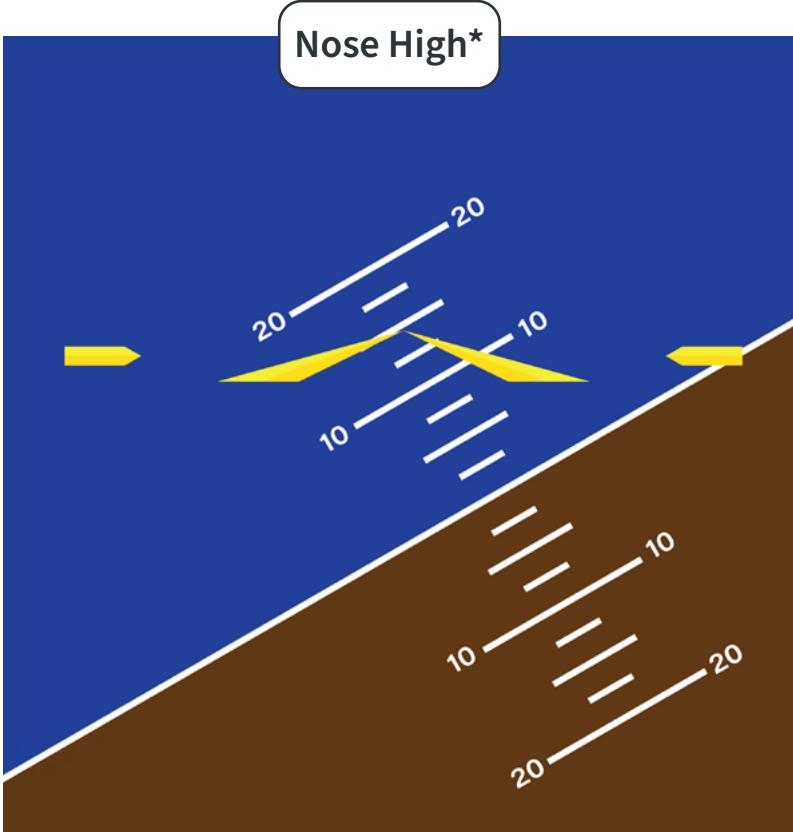
**PIPISTREL ALPHA TRAINER**

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**Part VI: IFR**



# UNUSUAL ATTITUDE RECOVERY (IMC)



- |                    |                                |
|--------------------|--------------------------------|
| <b>1. POWER</b>    | FULL                           |
| <b>2. PITCH</b>    | DECREASE                       |
| <b>3. WINGS</b>    | LEVEL WITH RUDDER COORDINATION |
| <b>4. ALTITUDE</b> | RETURN                         |
| <b>5. HEADING</b>  | RETURN                         |

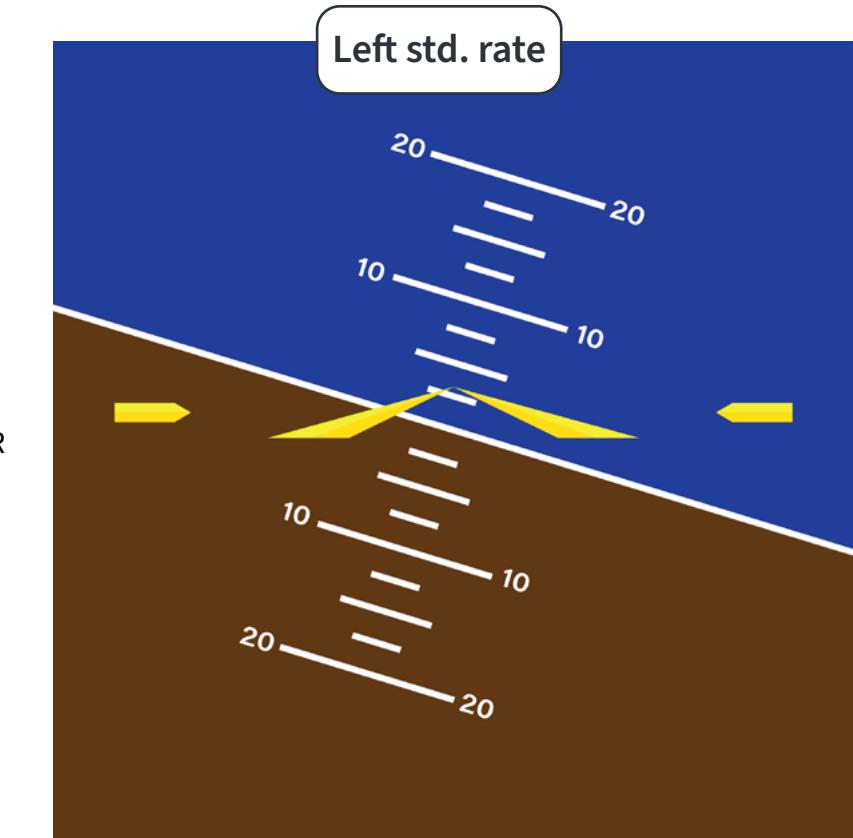
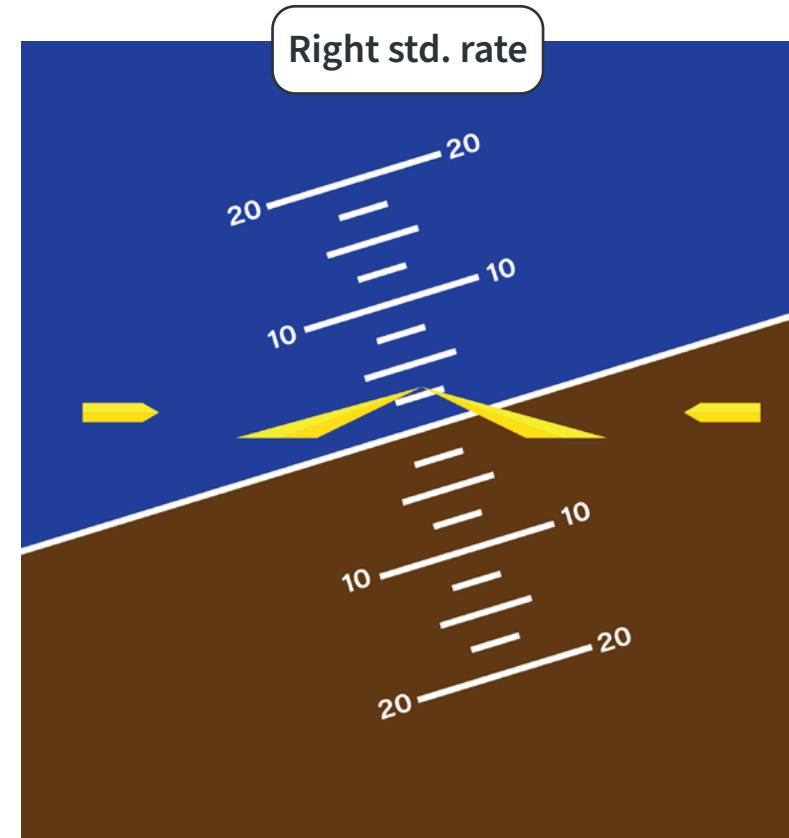
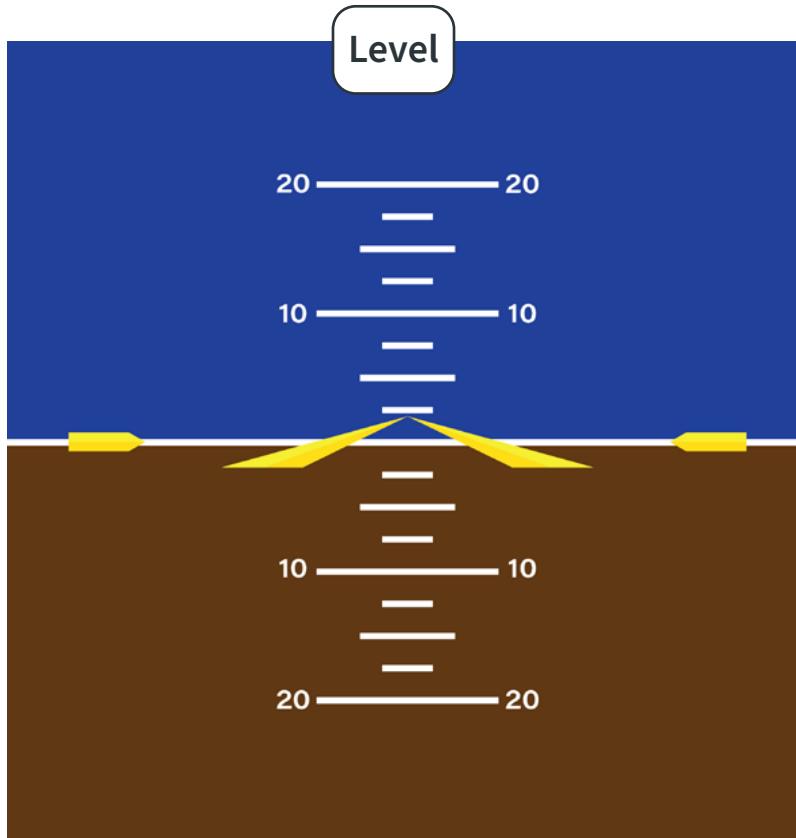
- |                    |                                |
|--------------------|--------------------------------|
| <b>1. POWER</b>    | IDLE OR AS REQ.                |
| <b>2. WINGS</b>    | LEVEL WITH RUDDER COORDINATION |
| <b>3. PITCH</b>    | INCREASE                       |
| <b>4. ALTITUDE</b> | RETURN                         |
| <b>5. HEADING</b>  | RETURN                         |

\* Nose high or nose low unusual attitudes can be made with a left, right or no bank. The bank does not change the recovery procedure





# 180 TURNS & STD RATE TURNS (IMC)



- 1. POWER** 5300 RPM
- 2. PITCH**  $\approx 2.5^\circ$
- 3. ALTITUDE** MAINTAIN
- 4. HEADING** NOTE

- 1. POWER** + 100 RPM
- 2. PITCH** + 1°
- 3. ALTITUDE** MAINTAIN
- 4. HEADING** + 180° AS REQ

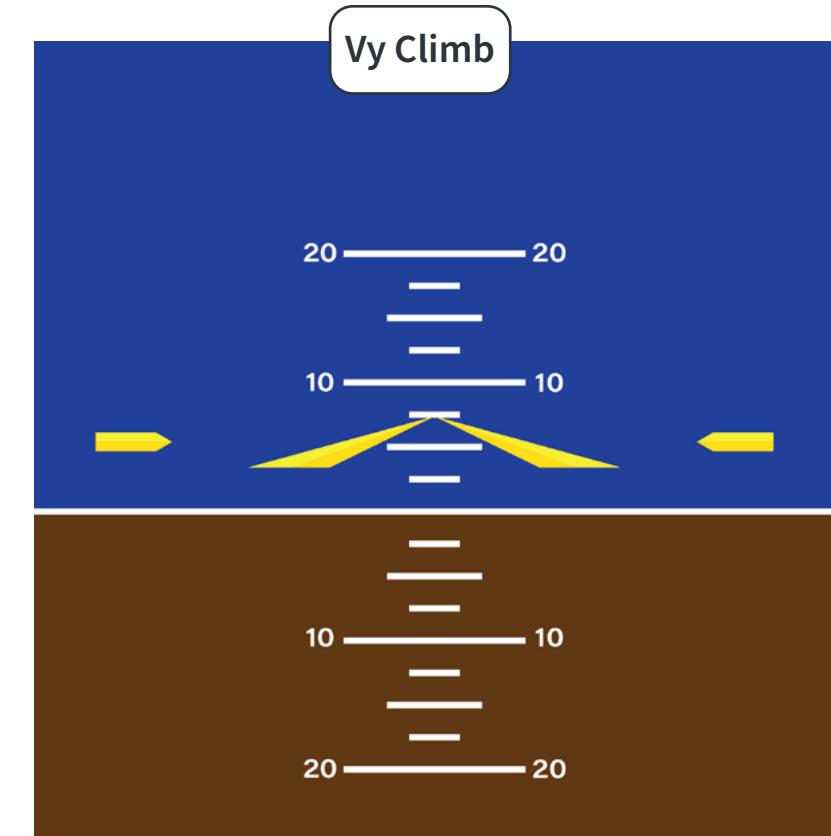
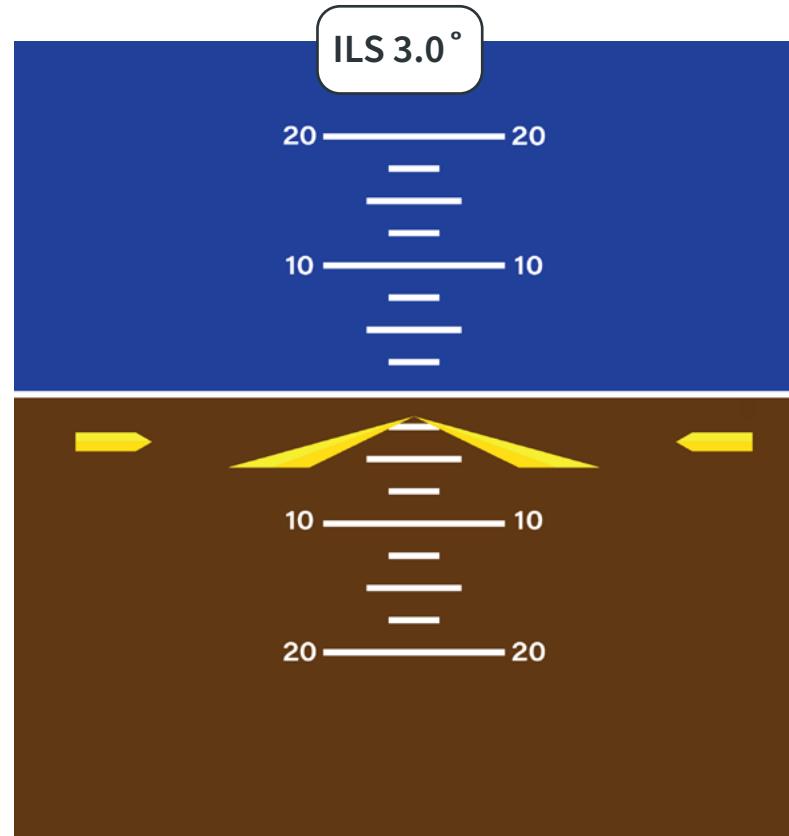
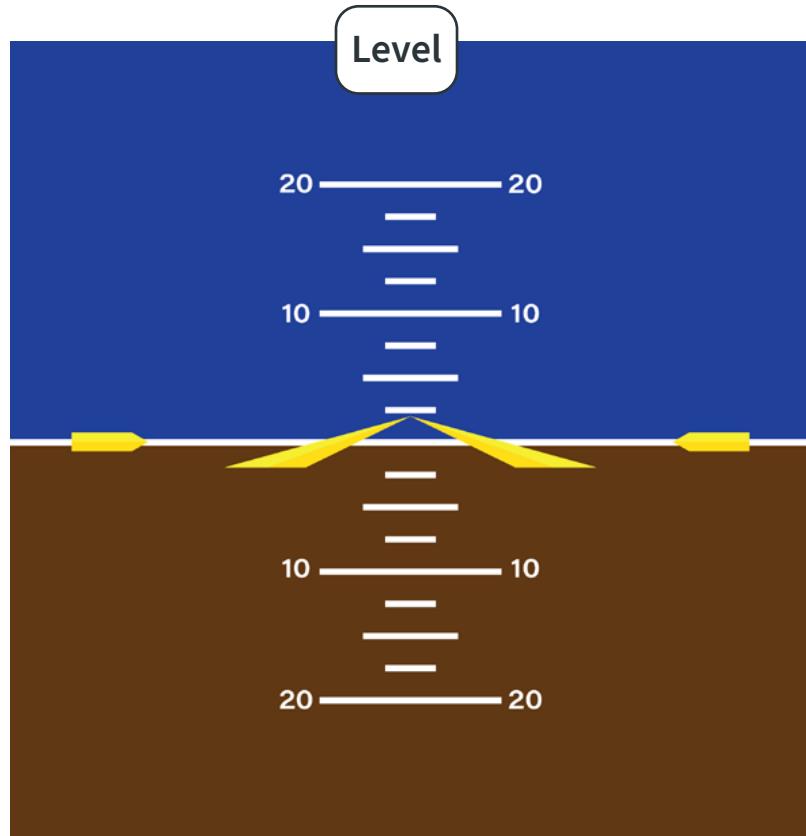
\* The bank should match a standard rate, you can use this equation to approximate it:

$$\text{Bank} = (\text{TAS} / 10) + 5$$





# IFR BASIC MANEUVERS



- 1. POWER** 5300 RPM
- 2. PITCH**  $\approx 2.5^\circ$  UP
- 3. ALTITUDE** MAINTAIN
- 4. HEADING** MAINTAIN

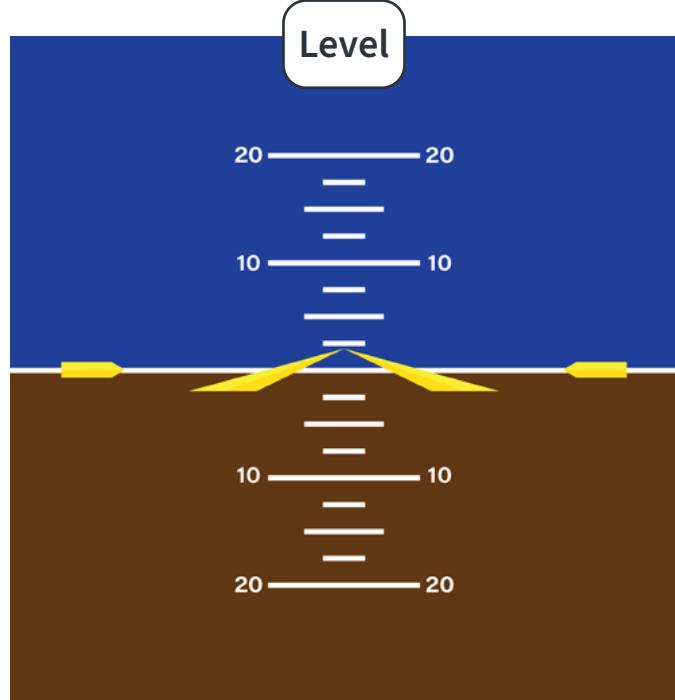
- 1. POWER** 4400 RPM
- 2. PITCH**  $\approx -2.0^\circ$  DN
- 3. FLAPS** +0
- 4. SPEED** 90 KT

- 1. POWER** FULL
- 2. PITCH**  $\approx +7.5^\circ$  UP
- 3. SPEED** 76 KT
- 4. HEADING** MAINTAIN

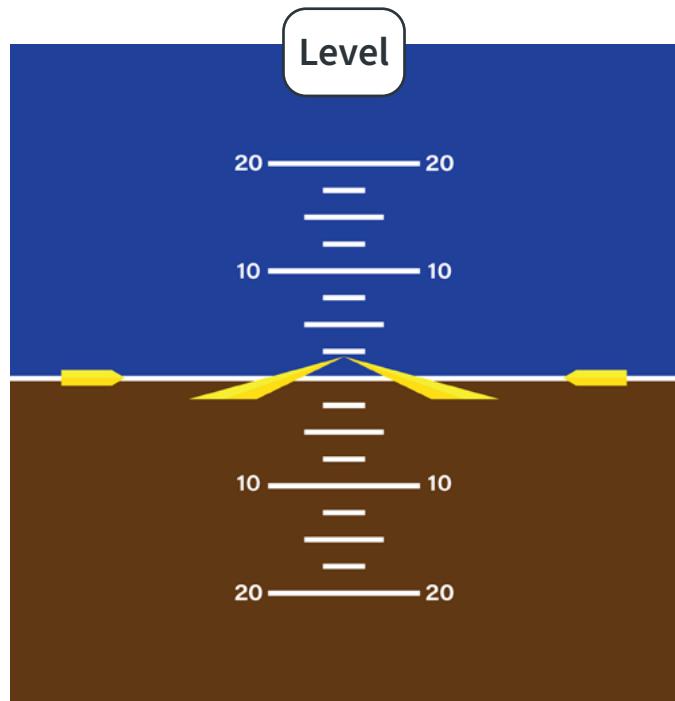




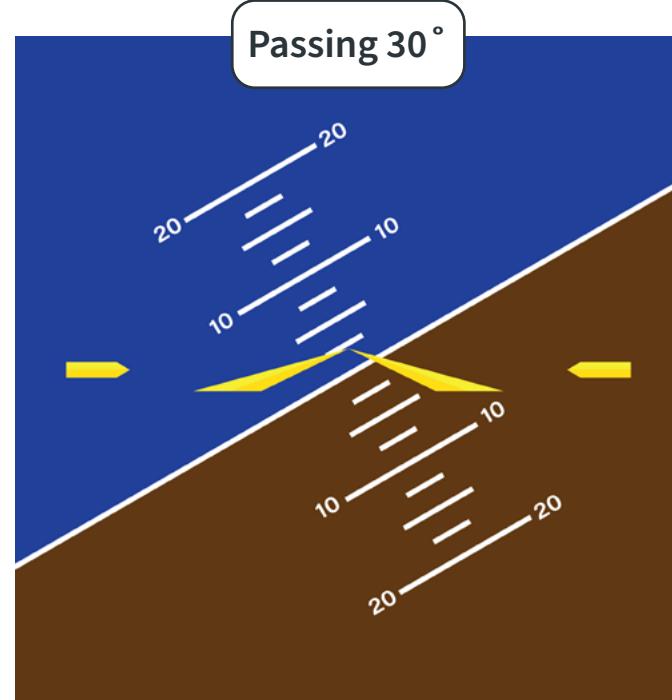
# STEEP TURNS IFR



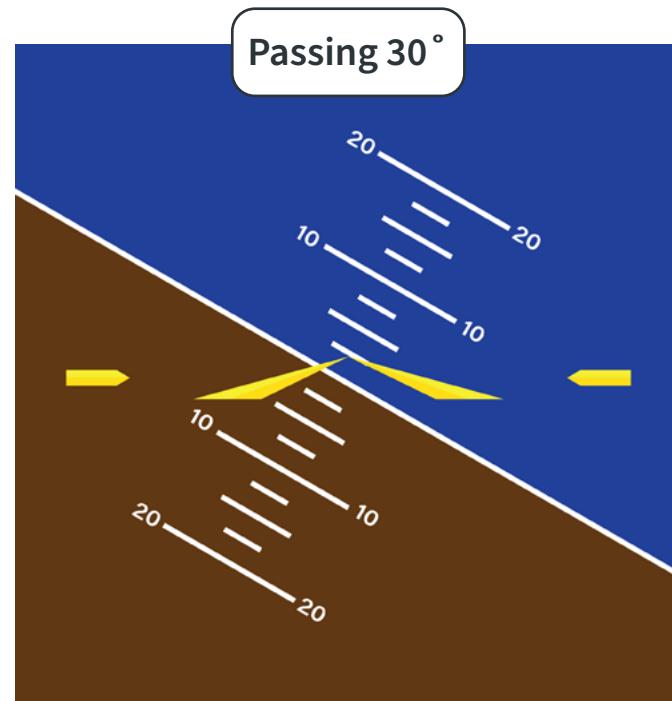
- 1. POWER** 4800 RPM
- 2. PITCH**  $\approx 2.5^\circ$  UP
- 3. ALTITUDE** MAINTAIN
- 4. HEADING** NOTE



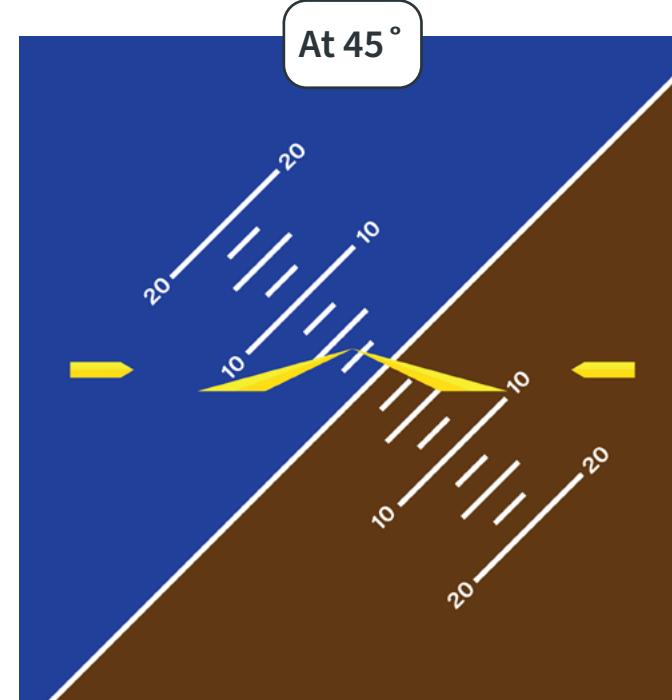
- 1. POWER** 4800 RPM
- 2. PITCH**  $\approx 2.5^\circ$  UP
- 3. ALTITUDE** MAINTAIN
- 4. HEADING** NOTE



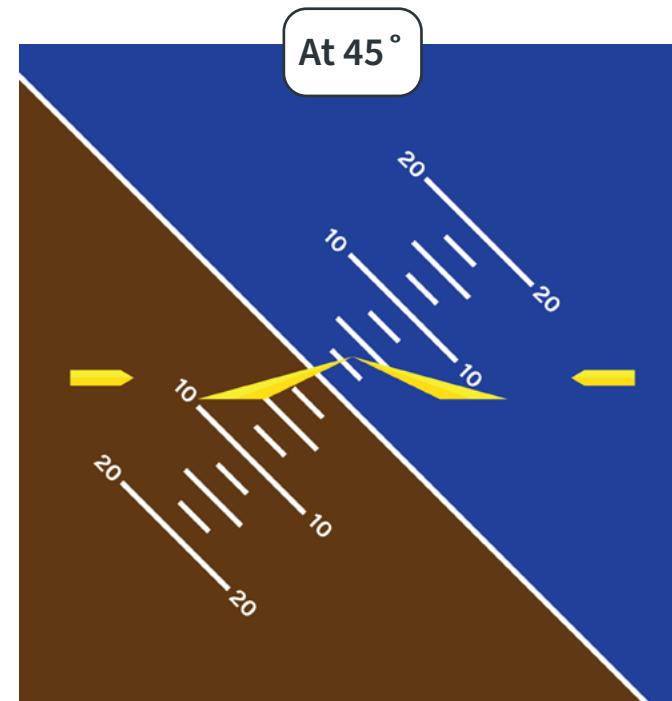
- 1. POWER** + 100 RPM
- 2. PITCH** INCREASE
- 3. ALTITUDE** MAINTAIN
- 4. HEADING** MONITOR



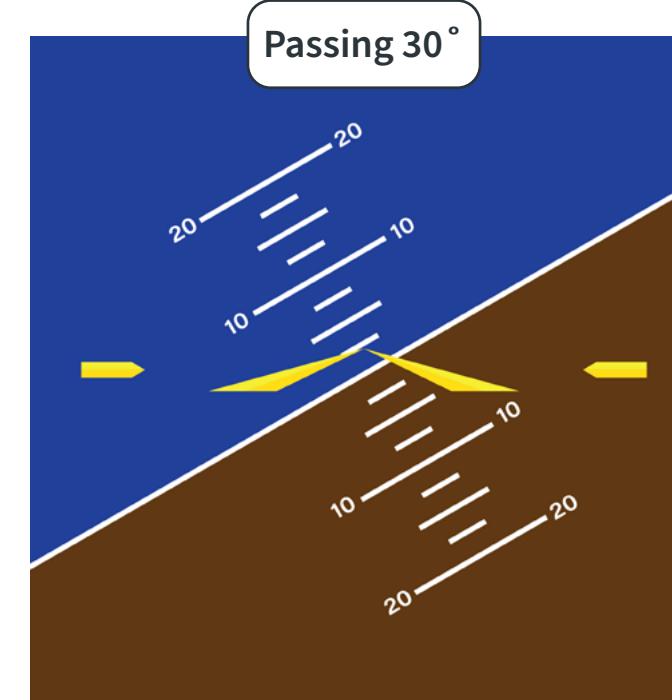
- 1. POWER** + 100 RPM
- 2. PITCH** INCREASE
- 3. ALTITUDE** MAINTAIN
- 4. HEADING** MONITOR



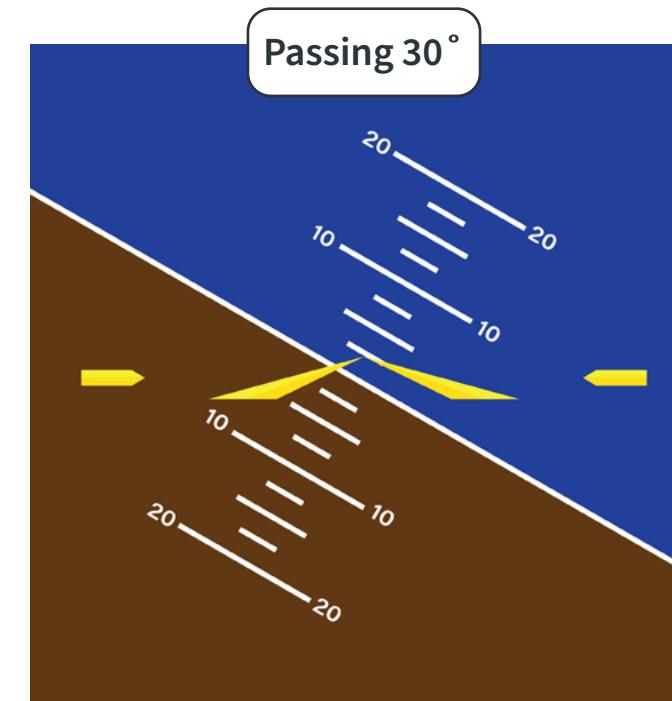
- 1. POWER** AS REQ.
- 2. PITCH**  $\approx +1.5^\circ$  UP
- 3. ALTITUDE** MAINTAIN
- 4. HEADING** MONITOR



- 1. POWER** AS REQ.
- 2. PITCH**  $\approx +1.5^\circ$  UP
- 3. ALTITUDE** MAINTAIN
- 4. HEADING** MONITOR



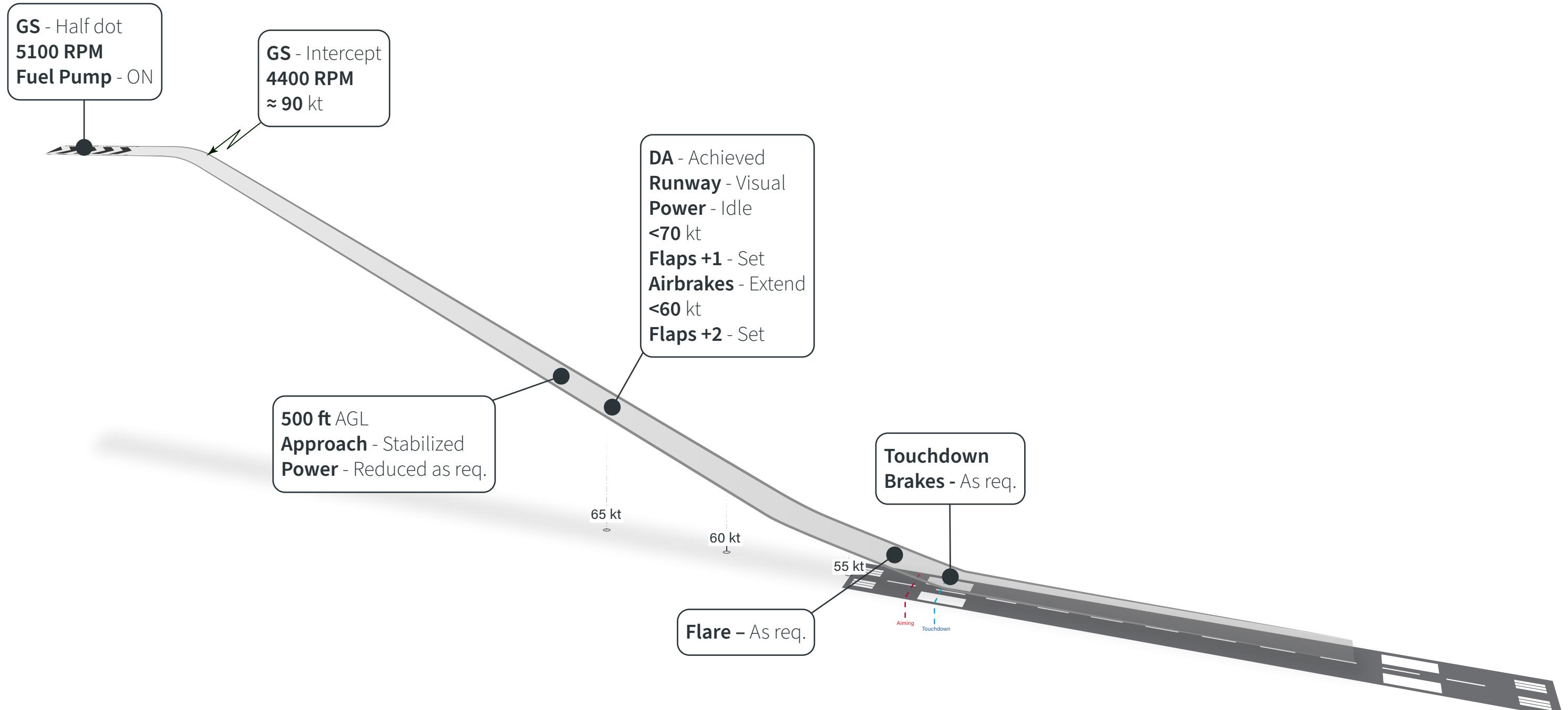
- 1. POWER** - 100 RPM
- 2. PITCH** DECREASE
- 3. ALTITUDE** MAINTAIN
- 4. HEADING** MONITOR



- 1. POWER** - 100 RPM
- 2. PITCH** DECREASE
- 3. ALTITUDE** MAINTAIN
- 4. HEADING** MONITOR

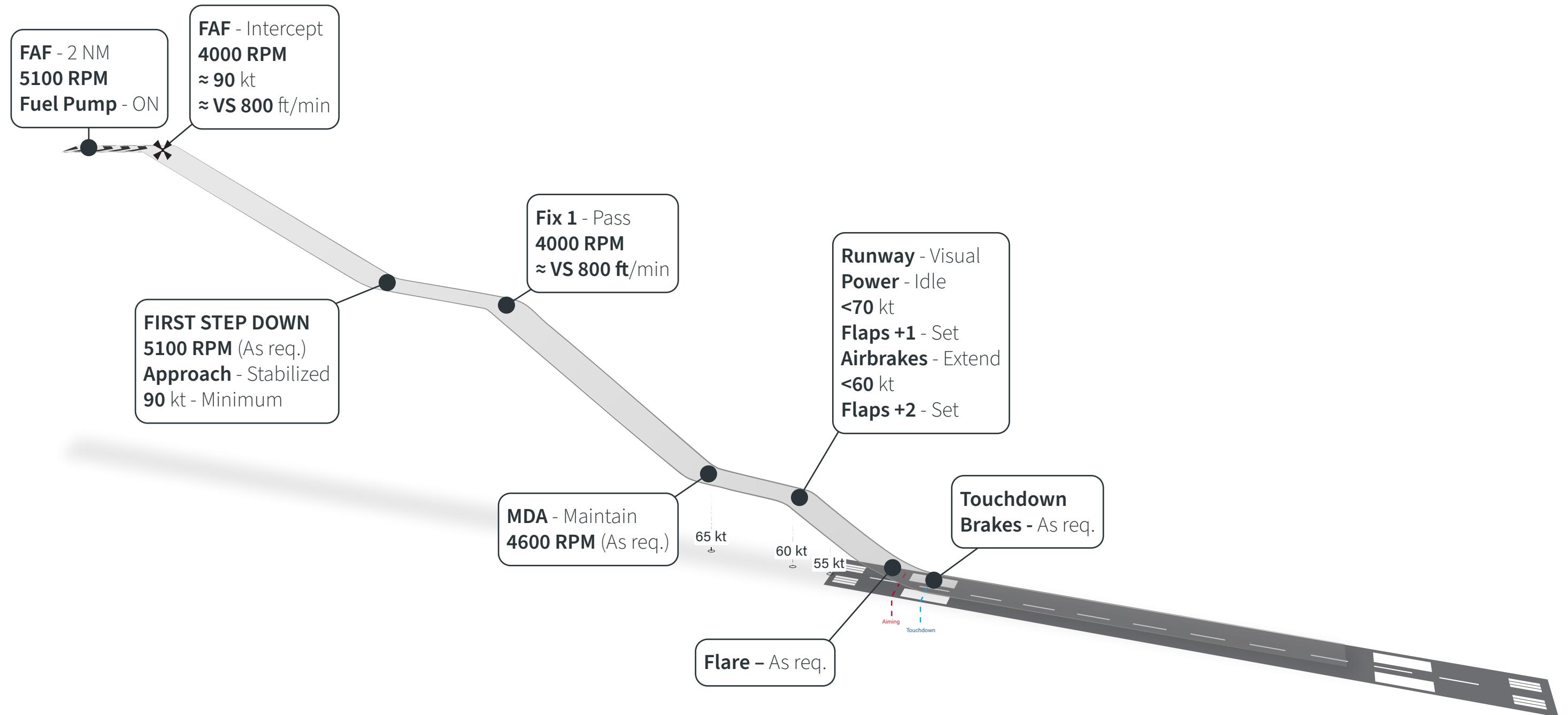


# PRECISION APPROACH



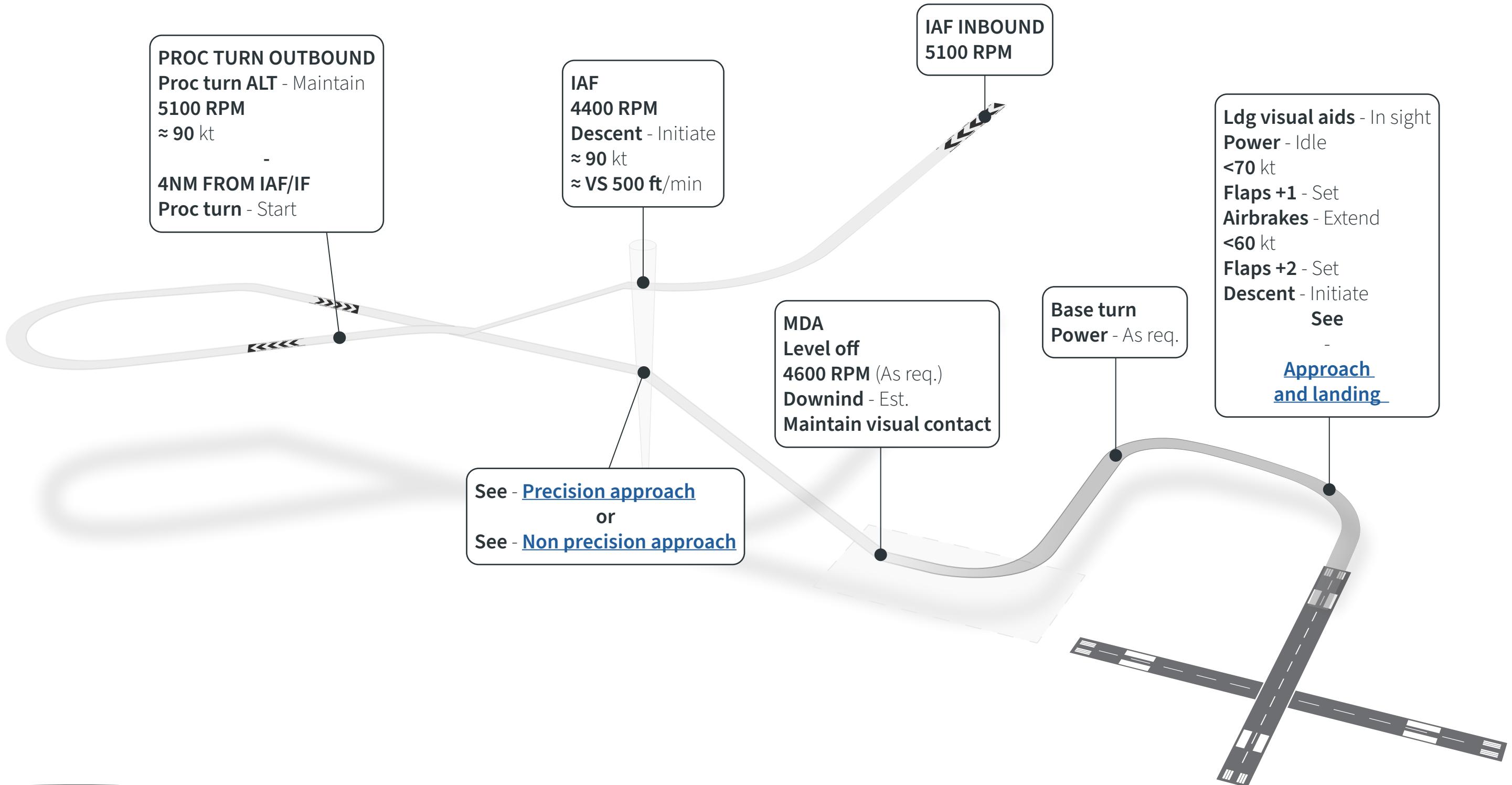


# NON PRECISION APPROACH



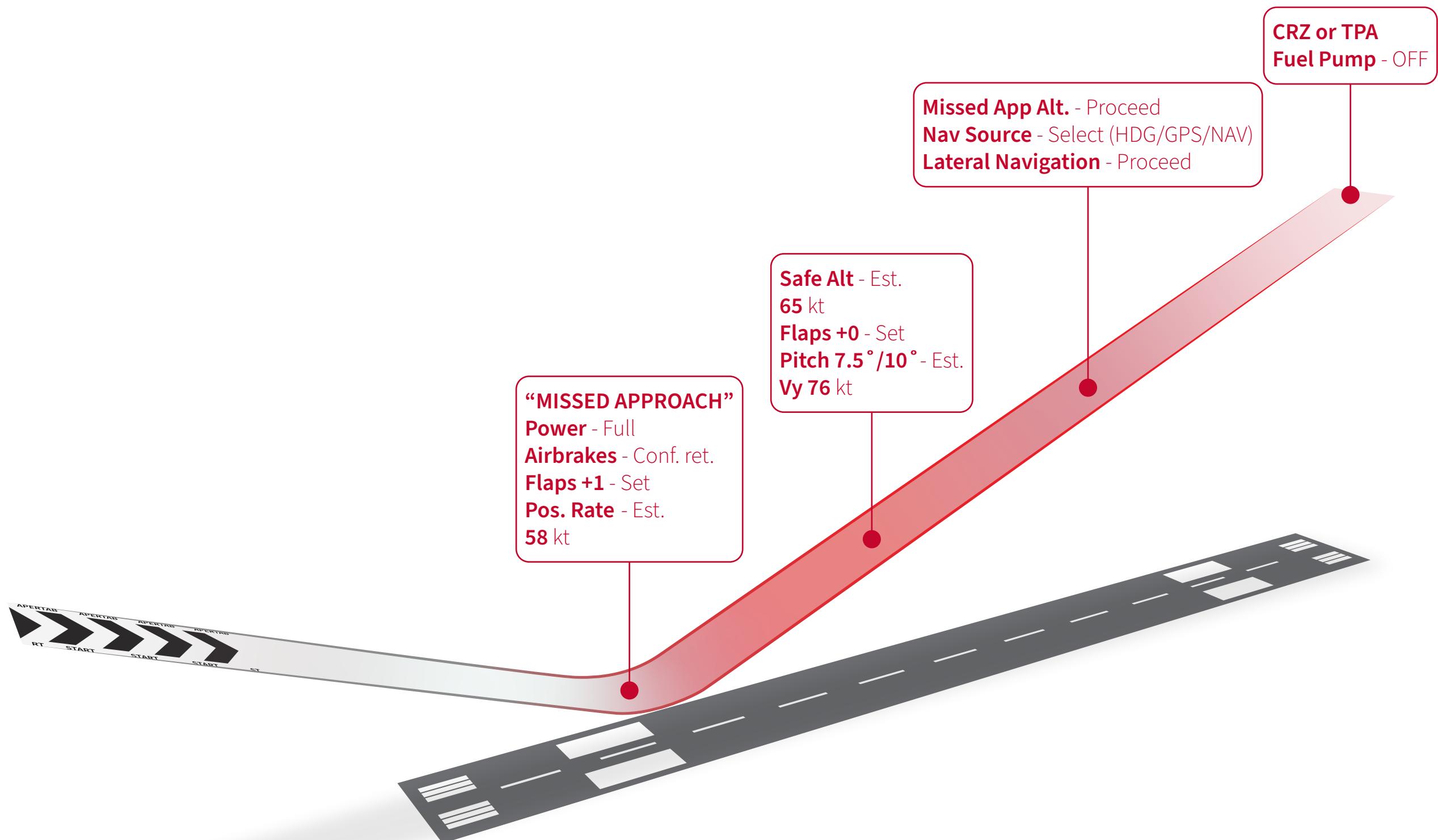


# PROC. TURN & CIRCLING APPROACH





# MISSED APPROACH





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**PIPISTREL ALPHA TRAINER**

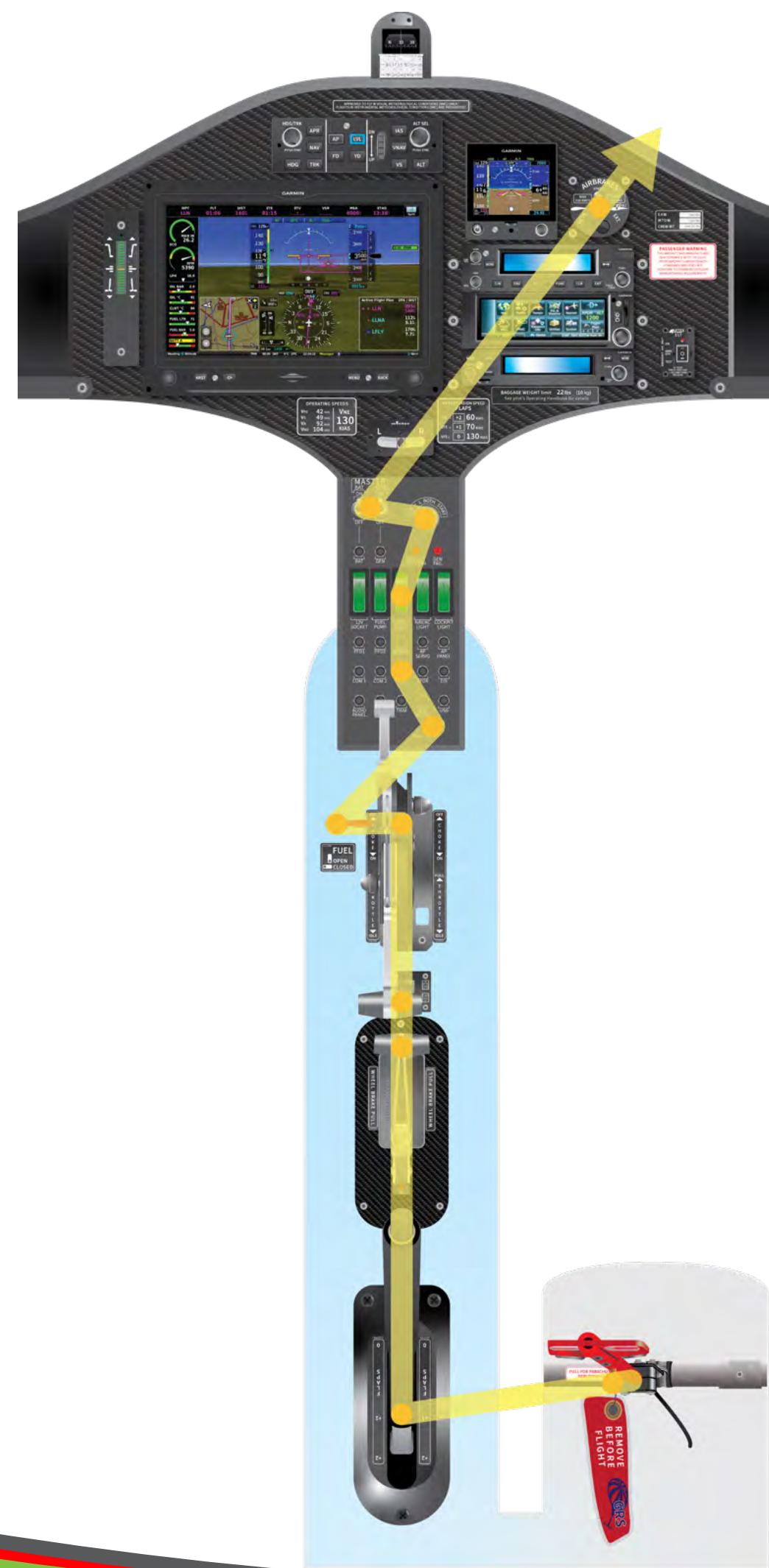
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**Part VII: Cockpit Flows**



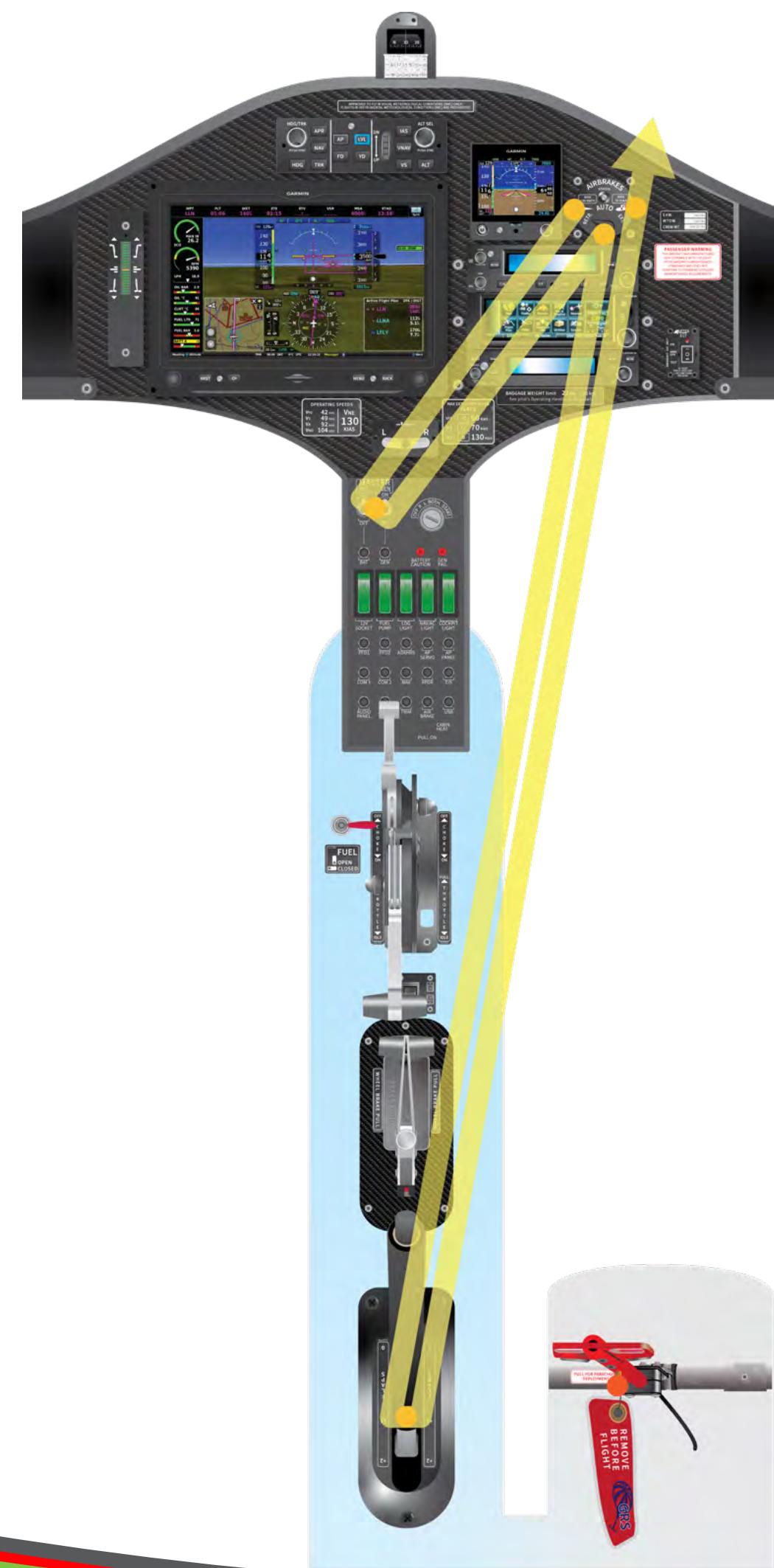
# ACCEPTANCE FLOW

1. BPRS HANDLE - PIN IN
2. FLAPS - 0
3. PARKING BRAKE - SET
4. THROTTLE IDLE
5. CHOKE - CLOSED
6. FUEL - OFF
7. CABIN HEAT - OFF
8. BREAKERS - IN
9. ELECTRICAL SWITCHES - OFF
10. MAGNETOS - OFF
11. MASTER AND GEN - OFF
12. AIR BRAKES - RETRACTED





# AIRBRAKES CALIBRATION FLOW



1. AIR BRAKES - EXT.
2. MASTER - ON \*AIR BRAKES CALIBRATE\*
3. AIR BRAKES - AUTO
4. FLAPS - +2 \*AIR BRAKES WILL EXTEND\*
5. AIR BRAKES - RETR.





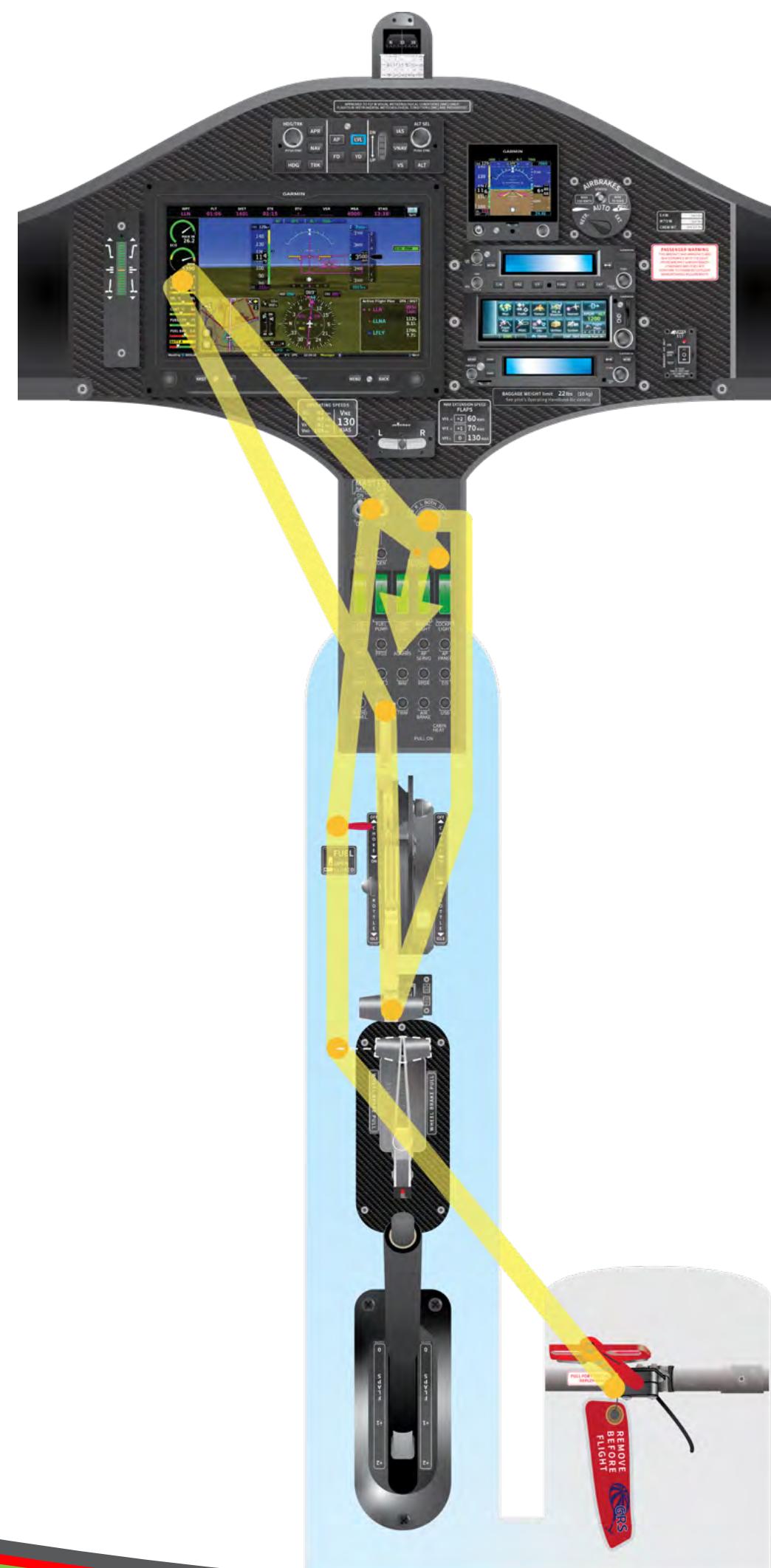
# STARTING FLOW

1. BPRS PIN - REMOVED
2. PARKING BRAKE - ON
3. FUEL VALVE - OPEN
4. MASTER AND GEN - ON
5. GEN FAIL LIGHT - ON
6. ENGINE PARAMETERS - AVAILABLE
7. CHOKE - AS REQUIRED
8. THROTTLE - 10MM

Verify Checklist

\*\*Propellor area clear\*\*

9. START KEY - ENGAGE
10. CHOKE - SLOWLY CLOSE



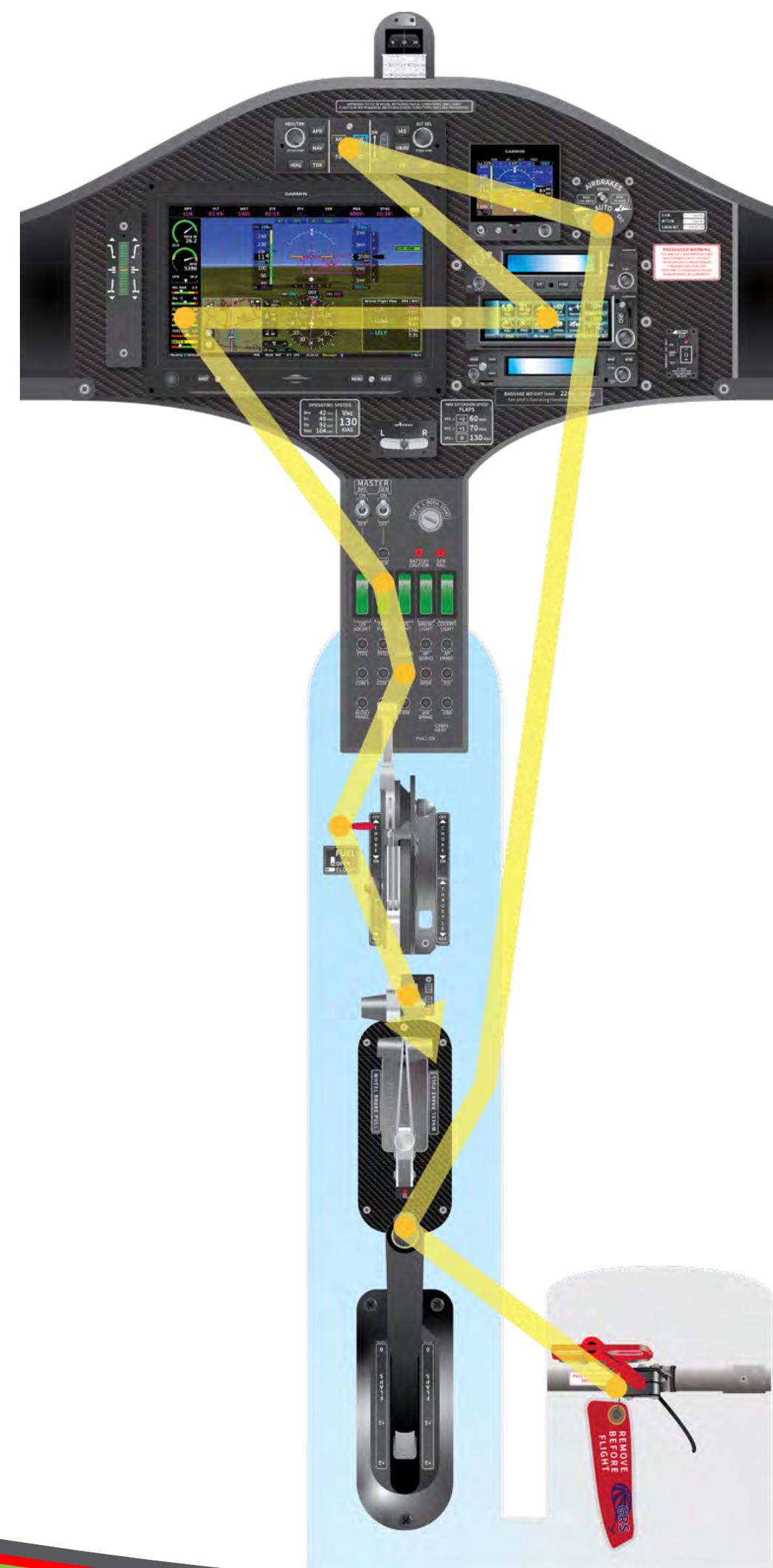


# BEFORE TAKEOFF FLOW

Checklist Verbalized and Appropriate actions done prior

\*\*Flow is last verification prior to taking runway\*\*

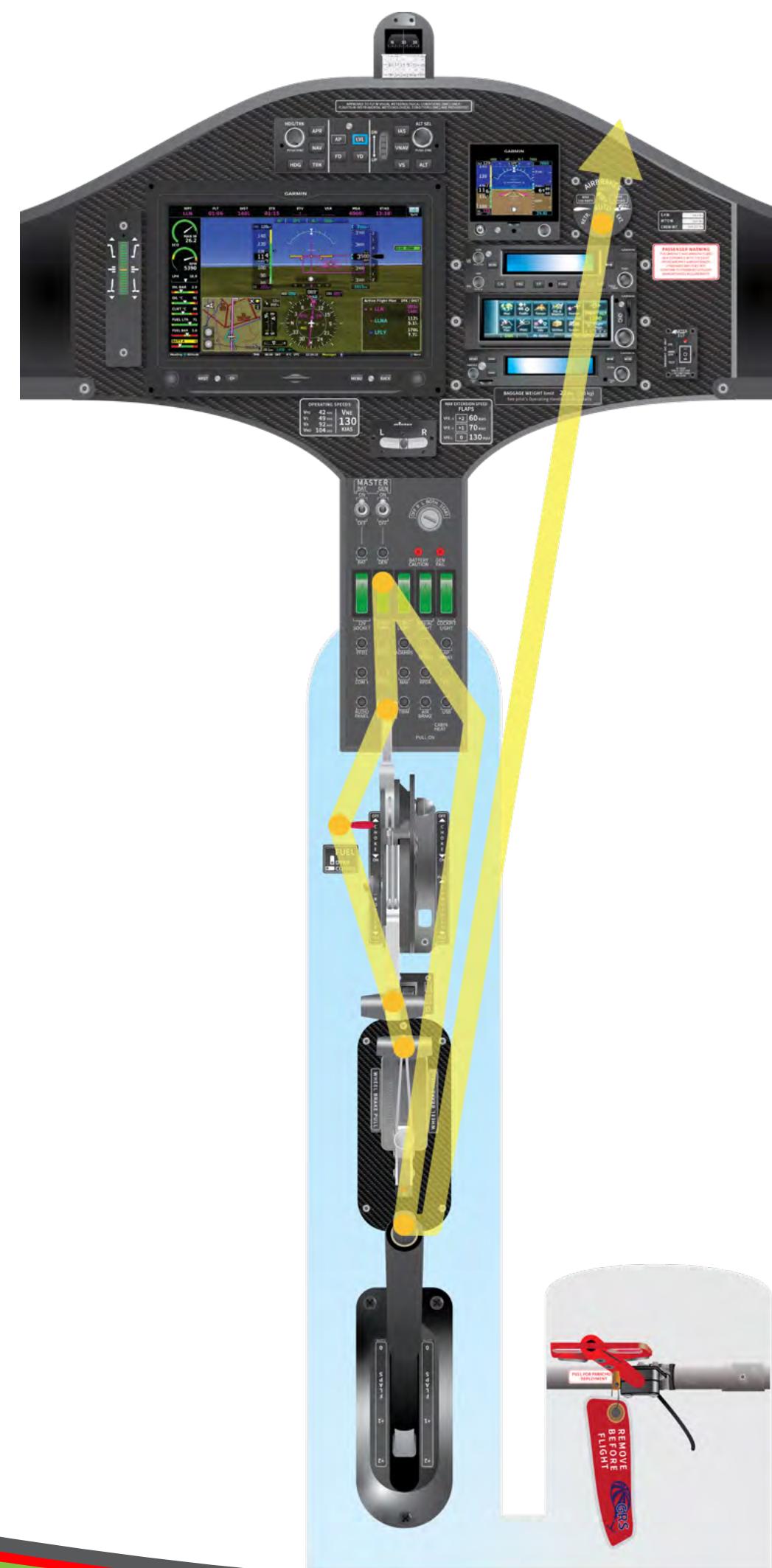
1. BPRS PIN-VERIFIED REMOVED
2. FLAPS - SET (+1 OR +2)
3. AIR BRAKES - CHECK CLOSED
4. AUTOPILOT - DISENGAGED
5. PFD/GPS - SET & CHECK
6. ENGINE PARAMETERS - DISPLAYED
7. FUEL BOOSTER PUMP - ON
8. CIRCUIT BREAKERS - CHECK
9. FUEL VALVE - OPEN
10. TRIM - NEUTRAL





# BEFORE LANDING FLOW

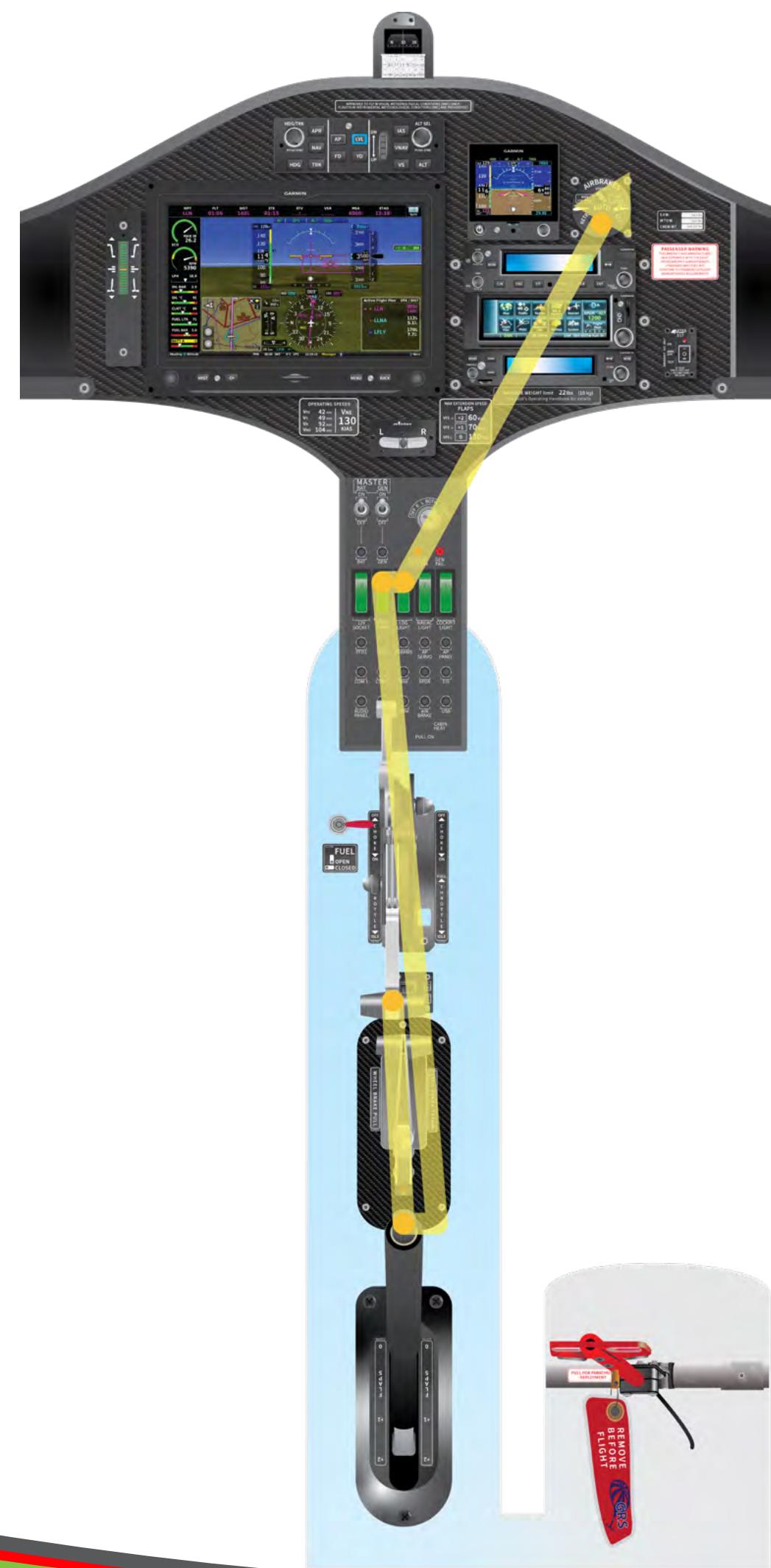
1. PARKING BRAKE - DISENGAGED
2. THROTTLE - AS REQUIRED
3. FUEL - ON
4. CHOKE - CLOSED
5. FUEL PUMP - ON
6. FLAPS - AS REQUIRED
7. AIR BRAKES - AS REQUIRED





# AFTER LANDING FLOW

1. THROTTLE - IDLE
2. FLAPS - 0
3. FUEL BOOSTER PUMP - OFF
4. LANDING LIGHT - AS REQUIRED
5. AIR BRAKES - CLOSE



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