

Slow Flight

Slow Flight is the regime of flight between flight for endurance and a stall.

Reference: Flight Training Manual page 73

Did you read the material? Any questions?

GOAL/WHAT

- Learn how to enter, recognize, fly in and recover from slow flight as well as the associated safety checks.

WHY

- We transition through slow flight during every take-off, landing and overshoot
- Must learn how to recognize this state in order to safely control the aircraft since it will likely happen near the ground.

LINK

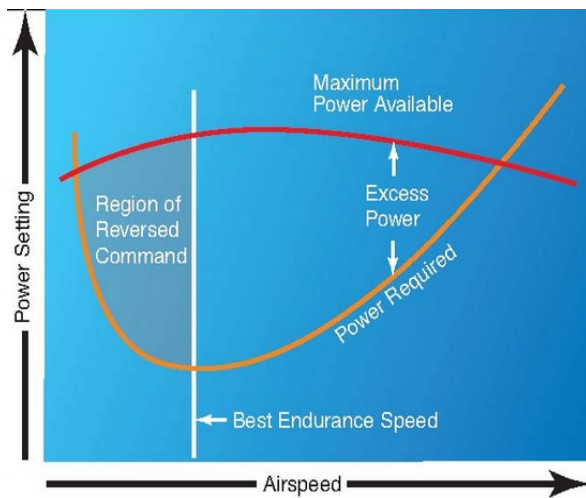
- We will see this on almost every approach and every time we do take-offs and landings including when we use the short/soft field techniques
- Will build upon Range and Endurance skills and will see today's items again on the next lesson of Stalls and Spins

RULES

TKT

- How do we reduce the airspeed in normal cruise? What are the rudder inputs?
- How do we recognize when the airplane is in flight for endurance?
- How do I make the airplane go into a nose-up/down attitude?

THEORY (A little bit...)



- Review the above curve with the student
 - Need to add power to go slower due to drag

Again this will be encountered during:

- Take-off (especially soft)
- Landing (short/ soft especially)
- During abnormalities on landing like bounce or balloon
- Go around
- Approaching a stall

HASEL

H – Height

Minimum to be recovered by 2000ft AGL as per CAR 602.27

A – Area

Not over a built up area

S – Security

Are we secure along with all other belongings in the aircraft?

E – Engine

Are engine parameters in the green? Is the engine ready for the flight manoeuvres?

L – Lookout

Ensure we are aware of the full 360 degree area around the aircraft

HOW TO

Enter

- 1) Find a reference to keep the aircraft straight
- 2) Set up for endurance
- 3) Pitch nose up and simultaneously add power to maintain flight
- 4) Control Yaw
- 5) Add flaps as required

Recognize

- Low airspeed, high power combo
- Unresponsive controls
- Excess Yaw (asymmetric thrust, slipstream)
- Unusual attitude with aircraft

Control

- Attitude controls airspeed
- Power controls altitude
- Need for trim to alleviate pressure
- Flaps will increase lift and drag, lower nose, and allow us to go slower
- Turns, need for more power and rudder

Recover

- Power as required
- Accelerate and adjust nose attitude to maintain level flight
- Control yaw
- Retract flaps on schedule
- Recover to cruise and re-trim

FINAL REVIEW

- Describe how to transition from a fast clean cruise, to slow flight with flaps extended maintaining straight and level flight.
- What are the characteristics of slow flight?
- Why do we add power to maintain slow flight?
- At low airspeed with high power, which side rudder pressure will be required to keep the ball straight?
- What are two reasons for the rudder input required?
- How do we recover from slow flight?

SAFETY

- HASEL CHECK HAS AN EXPIRY: If too long a time happens since the lookout to starting the maneuver, redo the HASEL check.
- Nose-up attitude will reduce engine cooling, may want flaps.
- No steep turns in slow flight due to high Vs.
- Inadvertent entry into slow flight is almost a certain indication of an approaching stall

Summary

- Learned about what slow flight is, how to enter recognize and recover from slow flight.
- Learned how to maneuver in slow flight
- We will see these signs on every flight when we are at low altitude.
- The skills learned will help us avoid a stall when low to the ground where these things are more likely to happen

Questions?

Homework

FTM: Exercise 12 Stalls

Appropriate POH section on Stalls

www.canprc.ca/ex12

Read Transport Canada Stall/Spin Awareness Guide