

Attendee Handout — Key Concepts Summary

Pattern Operations & Energy Management

Preventing Loss of Control in the Traffic Pattern

The Big Picture

Loss of Control In-Flight (LOC-I) remains the leading cause of fatal GA accidents, and many occur during routine pattern operations close to the ground.

Most LOC events begin **before any stall warning** — during subtle degradation of airspeed, energy state, and attention.

The Three Silent Precursors

1. Airspeed Drift

- Happens gradually
- Often missed during configuration changes
- Usually tied to distraction or workload spikes

2. Energy Decay

- Loss of margin between aircraft performance and demand
- Often appears as:
 - Low/slow on base
 - High/fast overshoot on final
 - Unstable descent path

3. Divided Attention

- Traffic sequencing
- Radio workload
- Configuration tasks
- “Fitting into the flow”

These rarely happen alone — they combine.

Pattern Work = Continuous Energy Management

Energy State =

- Airspeed (kinetic energy)
- Altitude (potential energy)
- Power (energy input)

Good pattern flying = deliberate energy trading.

Poor energy management leads to:

- Overshoots
- Low-altitude maneuvering
- Unstable approaches
- Stall/spin risk

Base-to-Final: The Highest Risk Turn

Typical accident chain:

Overshoot → Steepen bank → Add bottom rudder →
Accelerated stall → Wing drop → Spin entry → No recovery altitude

Common Triggers:

- Tailwind on base
- Extended downwind
- Traffic pressure
- Late configuration changes

Skid vs Slip — Why It Matters

Slip:

- Bank + opposite rudder

- Usually stable near stall
- Used for descent control

Skid:

- Bank + bottom rudder
- Inside wing slows first
- Classic spin entry setup

In base-to-final overshoot scenarios → **Skids kill.**

Stabilized Approach Mindset

By ~500 ft AGL:

- On target speed ($\approx \pm 5$ kt typical personal standard)
- On glidepath
- Correct configuration
- Normal control inputs

If not → **Go Around Early**

Early go-around:

- Preserves energy
 - Reduces workload
 - Keeps options open
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Go-Around Philosophy

A go-around is:

- ✓ Normal
- ✓ Professional
- ✓ Risk management
- ✓ Often the safest choice early

It is **not**:

- ✗ Failure
 - ✗ Poor planning
 - ✗ Inconveniencing traffic
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Human Factors That Delay Go-Arounds

- Completion bias (“I can make it work”)
- Social pressure (traffic / ATC / passengers)
- Task saturation
- Plan continuation bias

Solution:

Pre-brief personal stabilized criteria → removes emotion from decision.

Central Florida Operational Reality

Higher workload environment:

- Class B shelves compress geometry
- Dense training traffic
- Frequent runway changes
- Gusty / shifting winds

Requires earlier decision making and tighter airspeed discipline.

Personal Rules That Prevent LOC

Consider adopting:

If I need unusual control inputs → Go around

If airspeed trend is unstable → Go around

If alignment requires “salvaging” → Go around

If workload spikes → Go around

Core Takeaways

LOC starts long before the stall.

Pattern discipline prevents accidents.

Airspeed awareness must be continuous.

Energy management is trainable.

Early go-arounds save lives.
