

Topic of the Month October The Stabilized Approach and Go Around



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Presented to: Salem Area Pilots
By: Thomas Gorski CFI
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Presentation Note: *This is the title slide for Stabilized Approach and Go-around Training.*

*Presentation notes (stage direction and presentation suggestions) will be preceded by a **Bold header:** the notes themselves will be in Italic fonts.*

***Program control instructions** will be in bold fonts and look like this: **(Click)** for building information within a slide; or this: **(Next Slide)** for slide advance.*

Some slides contain background information that supports the concepts presented in the program.

*Background information will always appear last and will be preceded by a bold **Background:** identification.*

We have included a script of suggested dialog with each slide. Presenters may read the script or modify it to suit their own presentation style.

Welcome

- Restrooms
- Exits & Emergency Evacuation
- Sponsor Acknowledgment
- Breaks
- Interactive Presentation



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Interactive presentation style: Ask relevant questions frequently. It is important to address your concerns and your questions.

Holding pattern for unanswered questions.

We can learn much from each other.

(Next Slide)

Outline

- **Presenter's Background**
- **Brief Overview of FAASTeam**
- **Seminar Focus: Stabilized Approaches and Go Arounds**
- **Audience Response Quiz Game**
(AC 120-108 & This Presentation)

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Controlled flight into terrain (CFIT) is a primary cause of worldwide commercial aviation fatal accidents.

Unstabilized approaches are a key contributor to CFIT.

AC120-108 talks about the disadvantages of the “dive and drive” technique, and recommends a CDFA (Continuous Descent Final Approach).

Presenter's Background

- 1976 – US Army Avionics (Radar) Technician
- 1984 – CFI & Charter Pilot
- 2004 – FO LR-JET
- 2006 – CA LR-JET
- 2008 – FO B747-200, LCF, 400
- 2010 – CA B747-400 Director of Flight Standards
- 2013 – Present Contract CFI & Pilot Services

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Safety Seminars

FAASTeam Website

www.faasafety.gov

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Activities of the FAASTeam are organized and indexed
through the Website FAASAFETY.GOV
(Next Slide)



Safety Seminars

FAASTeam Mission Statement

Improve the Nation's aviation accident rate by conveying safety principles and practices through training, outreach, and education; while establishing partnerships and encouraging the continual growth of a positive safety culture within the aviation community.

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Mission Statement:

Improve the Nation's aviation accident rate by conveying safety principles and practices through training, outreach, and education; while establishing partnerships and encouraging the continual growth of a positive safety culture within the aviation community.

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Relationship With Aviation Community

Individuals who makes a conscious effort to promote aviation safety and become part of the shift in safety culture:

Pilots – participate in WINGS - Pilot Proficiency Program

Mechanics – participate in AMT Awards Program

Everyone who attends FAASTeam Seminars

Thank You!

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FAASTeam Members are individuals who makes a conscious effort to promote aviation safety and become part of the shift in safety culture. Members are:
Pilots - WINGS

Mechanics - AMT

Everyone who Attends Seminars (**Next Slide**)

Overview

- **Loss of Control Accidents**
- **Loss of Control Work Group Recommendations**
- **Stabilized Approaches**
- **Go-arounds**
- **Tips and Tricks**

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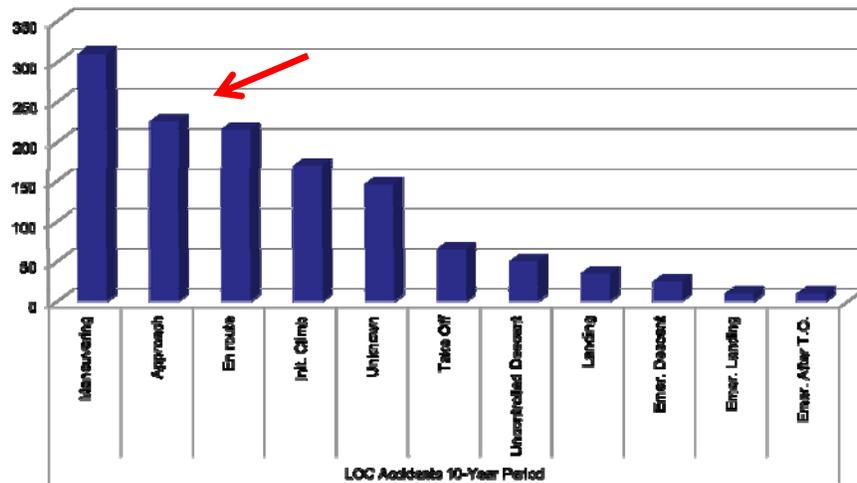
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In this presentation we'll talk a little bit about Loss of Control Accidents and recommendations from a work group that studies loss of control. We'll define and discuss stabilized approaches and go-arounds. Finally we'll give you some tips and tricks that will help you to avoid loss of control in any aircraft.

Presentation Note: *If you'll be discussing additional items, add them to this list (Next Slide)*

Fatal LOC Accidents 2001-2010



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There were 1250 fatal loss of control accidents from 2001 through 2010.
(Click)

Many of those accidents occurred in the approach phase of flight – think stall/spin/crash – and many of those accidents resulted from an un stabilized approach or a failure to go around.

(Next Slide)

LOC Workgroup Findings

- Lack of single – pilot CRM skills
-  Un stabilized approaches
-  Inappropriate go-around procedures
 - Flight after extended periods of not flying
 - Insufficient transition training
-  Over reliance on automation
 - Flight after use of drugs
-  Lack of Aeronautical Decision Making Skills

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Here are some findings of a recent study of Loss of Control accidents. Most fatal GA Loss of Control accidents have one or more of these causal factors. **(Click)**

We'll focus on Un stabilized approaches and go-arounds **(Click)**

But we'll also touch on Over reliance on automation and Aeronautical Decision Making. **(Next Slide)**

Recent High Profile Accidents

- Asiana 214 KSFO



- Southwest 345 KLGA



- UPS 1354 KBHM

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Un stabilized approaches?

Inappropriate go-around procedures?

Instruments and VFR



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Pilots often think of stabilized approaches in terms of instrument flying in large airplanes but they're equally important to VFR pilots in smaller aircraft.

Either way, what you want is a constant speed and a constant descent rate that will get you from a given point to the touchdown zone with a minimum of maneuvering.

That's important because the stabilized approach will safely get you in the best position to land with the least amount of work to do when you get there.

(Next Slide)

Parameters - IFR

- **Stabilized by 1000 feet above touchdown elevation.**
 - On correct flight path
 - Small corrections to maintain
 - On speed
 - Recommended approach speed
 - +10/-5 knots or MPH
 - Descent
 - On Glide Slope/VASI
 - 500 fpm or less
 - In landing configuration
 - Landing checklist complete



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We'll begin with a discussion of instrument approach operations. VFR and pattern operations will come a little later.

For instrument operations we want to be stabilized no lower than 1000 feet above the runway, on the correct flight path to the touchdown zone. That means we're on a direct course from 1000 feet to the airport. We use a power setting that will yield the recommended approach speed for our aircraft in landing configuration.

In the descent department, maintain the glide slope if you're landing on a precision approach runway or not more than a 500 foot per minute rate of descent unless a greater descent rate is required for approach. We're stable if we have to make only small corrections in pitch, heading, and power to maintain the path. Before you're 1000 feet above touchdown you also need to be configured for landing with the landing checklist complete.

Many instrument pilots want to have all this done by the time they reach the final approach fix. They'll generally be a little higher than 1000 feet at that point but it's a good practice that will give you plenty of time to concentrate on flying to the missed approach fix.

If the wind is gusting we can add some speed to compensate but no more than half of the gust factor. If the wind is at 12 knots and gusting to 18, we can add 3 knots to our final approach speed.

Parameters - VFR

- **Stabilized by 500 feet above touchdown elevation.**
 - On correct flight path
 - Small corrections to maintain
 - On speed
 - Recommended approach speed
 - +10/-5 Knots or MPH
 - Descent
 - On Glide Slope/VASI
 - 500 fpm or less
 - In landing configuration
 - Landing checklist complete



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VFR parameters are essentially the same except that you can get a little closer to the ground before making the go around decision. If you're flying a pattern you need to be stable on final, in landing configuration with the landing checklist complete. If you're not stable at 500 feet – go around.

Presentation note: Ask the audience about their VFR best practices and at what point in the approach they are configured and stable.

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Read the book

- **Pilot's Operating Handbook**
- **Performance Charts**
- **Speeds for safe operation**
- **Emergency procedures**
- **Systems**



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I know we cited some general performance numbers in the previous slides but what speeds and configurations do you use for your flying machine?

Obviously the place to go is the POH. You'll want to study your performance charts, speeds for safe operation, systems, and emergency procedures.

Have your speeds and configurations data memorized so you don't have to check the book in the middle of a high work load evolution.

(Next Slide)

De stabilizing factors

- Excessive Speed
- Excessive Altitude
- Maneuvering
- ATC and traffic



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Excessive speed, excessive altitude, and the necessity for maneuvering can all contribute to a de-stabilized approach.

Obviously entering the pattern at 150 knots or just above stall speed, or 1000 feet above the pattern altitude, or major heading changes make a stabilized approach unlikely if not impossible. But how often have you heard this from a tower? **(Click)** “Cessna 43 Kilo Charlie keep your speed up to the marker. Faster traffic to follow.” Or how about this? “Piper 312 Victor Papa make an S Turn on final. Traffic departing.” Or how about a Bonanza following a J3 Cub on final at a non-towered airport?

ATC and other traffic in the vicinity can destabilize your approach if you let them. If following traffic or complying with ATC instructions will destabilize your flight it’s time to exercise your pilot in command responsibility; say, “unable” and make another plan.

Presentation note: Discuss these and other situations that might lead to an un stabilized approach. Ask the audience how they cope with de stabilizing circumstances. How many have exercised their pilot in command authority to say, “unable”

(Next Slide)

It's hard to say, "unable."

- **Skilled**
- **Competent**
- **Adaptable**
- **Accommodating**
- **Rise to the Occasion**
- **Mission Oriented**
 - Git er done



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Let's face it. It's hard to say unable. Pilots need to have a good self image in order to do what we do and we care a lot about how others see us. We take justified pride in our skills and competencies that enable us to be adaptable and accommodating; to rise to the occasion if need be. We're also mission oriented and we'll do almost anything to, "get er done."

That's a formula for success – most of the time – but as the song says, "you've got to know when to hold em, know when to fold em, know when to walk away, and know when to run." It's fine to be all of these things but when your approach is becoming unstable, it's time to Get out of Dodge. There's no shame in missing an approach or going around. Great pilots anticipate the need and they do it frequently.

Presentation note: Discuss pressures to succeed and salvage the approach and how the audience deals with them. Then

Oddly enough, flight instructors can be a part of the problem and here's how that works.

(Next Slide)

Part of the problem?

- **CFI's can salvage student approaches**
- **Taking control can:**
 - Salvage the landing or approach
 - Save time and money
 - Keep the training on schedule
 - Impress the student
 - And maybe the boss
- **Sends the wrong message**
 - Let the student go around
 - Validate their good judgment



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Let's face it – Instructors are very good plane handlers. They can easily salvage a student induced de stabilized approach and make a perfect landing – usually. **(Click)**

When we take control we salvage the situation, saving time and money. We get the airplane back on time for the next student. Our performance definitely impresses our students and, with luck, even the boss. **(Click)**

But it's sending the wrong message. Watching us fix a problem they've created, students begin to believe that, with the right skills, they can fix anything and they look forward to the day when they can equal their instructor's skill. Many students believe they'll get there sometime next week.

Your students will get into impossible situations and you'll want to take over but you do them a disservice if you fix the problem. Allow them to analyze the situation, miss the approach, or go around and when they do that; reward them for excellent aeronautical decision making. **(Next Slide)**

So when do I go around?

- **Whenever the approach becomes unstable**
 - At or below 1000 ft – IFR
 - At or below 500 ft – VFR
- **Whenever a landing can't be made**
 - Runway out of service
 - Traffic on runway
- **Make the decision early**
 - Stick to it
 - Changing your mind is destabilizing



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ASK the question: does this approach look stable to you? Answers will help establish whether or not the audience knows the S.A. definition.

So when do I go around? **(Click)**

If you're at or below 1000 ft IFR – or 500 ft VFR and the approach isn't stable it's time to miss the approach or go around. **(Click)**

Likewise if the runway you're approaching is out of service or there's traffic on it that won't be clear when you get there it's also time to go around. **(Click)**

Whatever the situation the earlier you make the go around decision the easier it will be and once you've decided to go around stick to that decision. Changing your mind after you've started the maneuver is bound to be destabilizing and you're too close to the ground for that. **(Next Slide)**

Go-around & Missed Approach Priorities

- **Aviate**
 - Maintain aircraft control
 - Arrest descent
 - Apply climb or level flight power
 - Configure for climb or level flight



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When missing an approach or going around you're usually pretty close to the ground so your first priority is to maintain aircraft control. Arrest your descent, apply power to maintain altitude or climb as appropriate, and configure the airplane for climb or level flight.

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Go-around & Missed Approach Priorities

- **Navigate**

- VFR Continue to runway threshold & climb to pattern altitude then
 - Maneuver to remain in or reenter pattern or
 - Follow ATC instructions
- IFR Continue to missed approach point then
 - Fly the missed approach procedure or
 - Follow ATC instructions



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With the aircraft under control and not descending it's time to navigate. If you're IFR, continue to the missed approach point and then either fly the published missed approach procedure or follow ATC instructions.

VFR - continue to the runway threshold while climbing to pattern altitude then either maneuver to remain in or reenter the pattern or follow ATC instructions as appropriate.

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•Go-around & Missed Approach Priorities

- **Communicate**

- IFR
 - Tower or local traffic advisory frequency
 - ATC – state intentions
- VFR
 - Tower or local traffic advisory frequency



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When we're satisfied we're safely aviating and navigating it's time to let other folks in on our plans. Communicate your intentions to ATC if IFR or in a towered environment. IFR operations to non-towered airports require a call to ATC and perhaps a call on the common traffic advisory frequency.

VFR will be one call only on the tower frequency or local traffic advisory frequency as appropriate.

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The Automation Paradox



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For many years we've been developing automation for general aviation pilots and we've encouraged pilots to use it. That's led to a reduced "hands on" workload and increased situational awareness. Those are good things. But paradoxically, reliance on automation is beginning to erode basic pilot skills and, when the situation calls for pilots to take over, they're often not performing as well as they would have if they were hand flying all along.

We recommend that pilots be familiar with and comfortable in operating all the automation in the airplanes they fly. But we also recommend that they practice hand flying regularly so, when the occasion arises, they'll be on top of their game.

This is a good subject to explore in refresher training.

Presentation Note: *Poll audience as to what sort of instrumentation they're flying. If there are glass cockpit aviators in the audience ask them to talk about their hand flying experience and what ratio of hand to automated flying they recommend.*

(Next Slide)

Tips and Tricks

- **Plan for the miss or go around**
- **Preset the frequencies you'll need**
- **Manage Distractions**
- **Practice missed approaches & go-arounds**
- **Seek refresher training**
 - Annually
 - Wings Pilot Proficiency Program
 - When returning to flying after period of inactivity

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here are some tips and tricks to help you avoid a loss of control accident: **(Click)** You should plan for and brief the missed approach or go around for each and every approach. Know where you'll make the decision and miss or go around at that point. Don't second guess yourself. This is the time to stand by your decision. **(Click)** **Preset the frequencies you'll need** That way you won't have to go searching for them in a high work load phase of flight. **(Click)** **Manage Distractions** Learn to manage distractions – especially while maneuvering close to the ground. Maintain a sterile cockpit . Make sure your aircraft is stable before copying ATC instructions, changing charts, reviewing approach, etc. Assign the 2nd pilot or a passenger to help you scan for traffic. You can often turn distracting passengers into assets by assigning them a job to do. **Note:** *Ask audience about how they manage distractions.* **(Click)** **Practice Missed Approaches and Go-arounds** Don't wait until you have to do it for real to practice these maneuvers. At least once a quarter fly a missed approach. Pick one that requires pilot navigation – not just vectors for another approach. If you are usually vectored to final for most of your approaches you should practice a complete approach procedure without vectors quarterly too. The same is true for go-arounds. It's a good idea to practice them from time to time as well. Going around, re entering the pattern, collision avoidance, and communicating your intentions really increases pilot workload and, with practice, you'll look like a pro when you have to do it for real. **(Click)** **Seek regular refresher training.** Ask your CFI to include full approach procedures and misses as well as a go-around or two. The Wings Pilot Proficiency Program is a good place to document your training. **(Next Slide)**

Stabilized approaches are essential to safe _____ flying.

A. Landing



B. Instrument

C. Private



D. VFR

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Presentation Note: *Ask the audience to answer this question. When they have answered; click to reveal the correct answers.*

Now for a quick review:

Stabilized approaches are essential to safe – blank - flying:

A stabilized approach is essential to **(Click)** instrument and **(Click)** VFR flying.

(Next Slide)

After you begin a go around you can change your mind but only once:

A. True



B. False

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Presentation Note: *Ask the audience to answer this question. When they have answered; click to reveal the correct answers.*

After you begin a go around you can change your mind but only once (**Click**)
This is false. Changing your mind and trying to complete a landing after you've started the go around is de-stabilizing. You're better off to complete the go-around and return for another landing attempt.

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Flight Instructors should demonstrate how to salvage unstable approaches.

A. True



B. False

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Presentation Note: *Ask the audience to answer this question. When they have answered; click to reveal the correct answers.*

Flight Instructors should demonstrate how to salvage un-stabile approaches.

(Click) False – This practice, though common, is usually not recommended. If CFIs always take over and stabilize the approach or complete the landing; students don't get to make the go-around decision nor do they get practice in go-arounds. As certificated pilots they may be less inclined to exercise the go-around option and that has contributed to a significant number of approach and landing accidents. **(Next Slide)**

The order of priority in executing a missed approach or go-around is:

A. Communicate, aviate, navigate

B. Aviate, communicate, navigate



C. Aviate, navigate, communicate

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Presentation Note: *Ask the audience to answer this question. When they have answered; click to reveal the correct answers.*

The order of priority in executing a missed approach or go-around is: **(Click)**

C – Aviate, navigate, communicate. It's true that all of these things happen at nearly the same time but your first priority is to fly the airplane, followed by navigating so as to avoid impacting terrain. Once you've got those under control, it's time to communicate your intentions. **(Next Slide)**

Good practices to achieve stability are:

- A. Manage Distractions
- B. Seek Refresher Training
- C. Pre-set frequencies
- D. Practice missed approaches and go-arounds
- E. Participate in “Wings”
-  F. All of the above

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Presentation Note: *Ask the audience to answer this question. When they have answered; click to reveal the correct answers.*

Good practices to avoid Loss of Control are: **(Click)**

All of the above. **(Next Slide)**

Questions?

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Office visits are recommended appointment only



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Questions? Then:

(Click)

Contact information and main FSDO phone number here.

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