



NATIONAL ASSOCIATION OF FLIGHT INSTRUCTORS

MENTOR

LIVE



Welcome!

NATIONAL ASSOCIATION OF FLIGHT INSTRUCTORS

MENTOR

LIVE



Creating Simulation Scenarios To Keep Pilots Alive





The screenshot shows a live program page. On the left, it says "Starts Wednesday at 7:00 PM" and "NAFI - Training The Blarney Out of...". Below that, it says "Live program will appear here at the scheduled time." In the center is the "MENTOR LIVE" logo. On the right is a sidebar with the following items:

- 1 Post
- CFI & Learner Resources (15 minutes ago)
- About This Course (18 days ago)
- Christine Madden - Presenter (18 days ago)
- Earn WINGS Credit (18 days ago)
- Nick DeLofti - Presenter (18 days ago)
- Karen Kallishak - Host (18 days ago)
- Previous MentorLIVE! Programs (18 days ago)
- Course Evaluation Link (18 days ago)
- NAFI Education Foundation Grant (18 days ago)

Earn WINGS Credit!

Course Resources

Speaker Biographies

MentorLIVE! Archives

Course Evaluation

Educational Foundation



Paul Duty

- Gleim Chief Instructor
- Commercial Pilot: Single and Multi-engine
- CFI, CFII, MEI, AGI, Remote Pilot

Ryan Jeff

- Aviation Research Assistant
- Commercial Pilot: Single and Multi-Engine
- CFI, AGI, Remote Pilot



Creating Simulation Scenarios To Keep Pilots Alive



Presented by Paul Duty, Chief Instructor and Ryan Jeff, Aviation Research Assistant, Gleim Aviation

Agenda

- Setting training expectations
- Causal factors
- Create Value
- Confirmation bias
- Branching
- Refinement
- Building scenarios



Setting Training Expectations

- What are students learning?
- How do students feel about training?
- Service experience
- Use simulation
- Is safety an inconvenience?



Causal Factors

- Failure to control
- Failure to follow instrument approach procedures
- Flight below minimums
- Inadequate airspeed
- Spatial disorientation
- CFIT
- Failure to initiate missed approach
- Other



Student Value

- Train in comfort
- Precise control
- Ground operations
- Situational awareness



Increased Safety

- Divide attention
- Reduce frustration
- Knowing where to look
- Overcoming task saturation



Confirmation Bias

- Use checklists
- Don't overlook the obvious
- Runway Safety Simulator (FAA)
- **FAASafety Briefing**
 - July/August 2020

https://www.faa.gov/news/safety_briefing/2020/media/JulAug2020.pdf



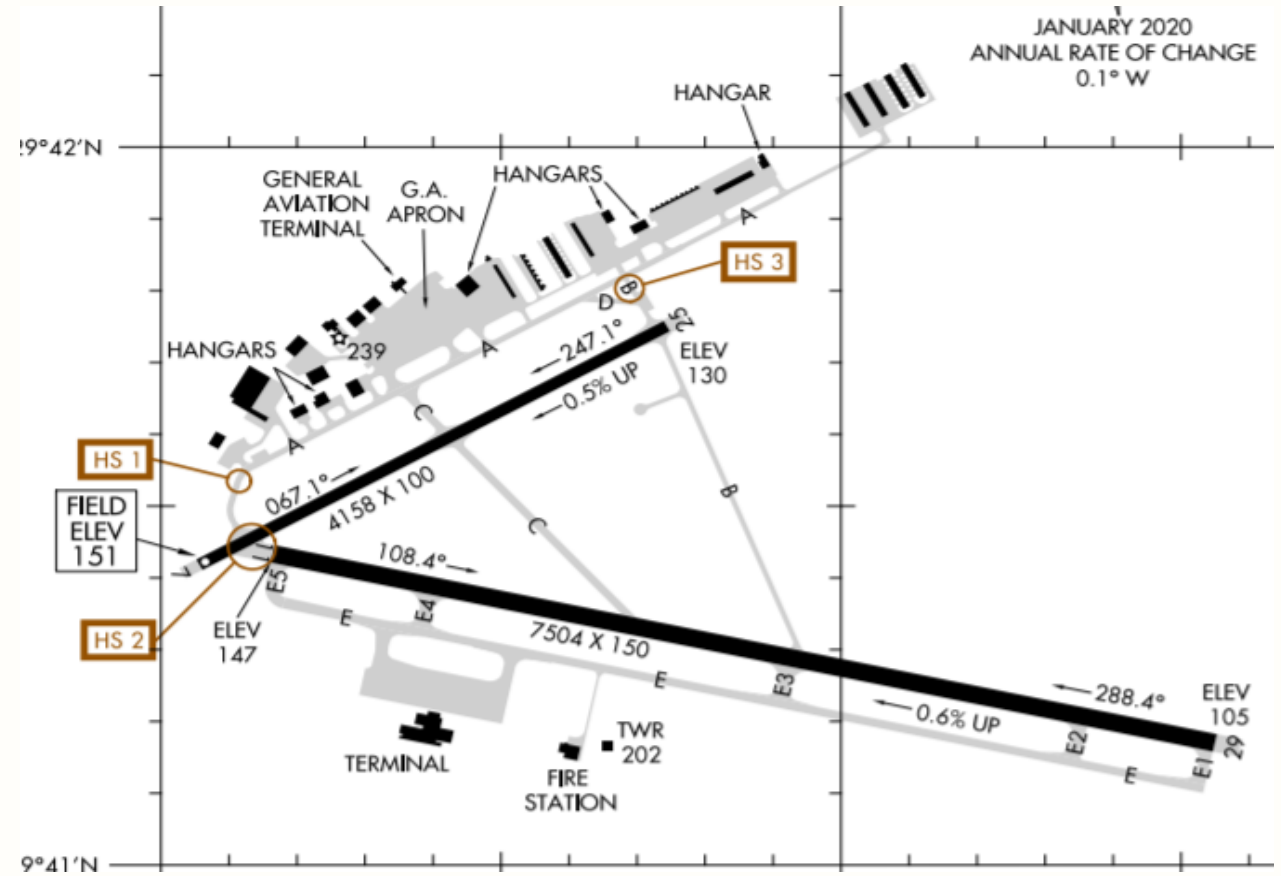
Branching

- Engage and interact
- Intensity meter
- Context induces experience
- Overcome expectation bias
 - Distractions
 - [\[VIDEO Cessna on Cessna\]](#)
- Unfamiliar airports



Runway Incursion Mitigation

- Intervention points
- Likely outcomes
- Branching scenarios
- *FREEZE and REFLECT*



Refinement

- “Ground” instruction
- A compass, a chart, and the mind
 - Crawl before walking
- Communications
- Positive experience
- End on a high note



CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES.
READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED.

Urgent & Emergency Scenarios

- Weather-related diversion
- LOC due to icing
- Asymmetrical flap extension
- Hypoxia
- Engine failure, fire
- Oil/fuel system failure
- Hydraulic failure
- Aborting takeoff
- Electrical system failure
- Flight control failure
- Comm equipment failure



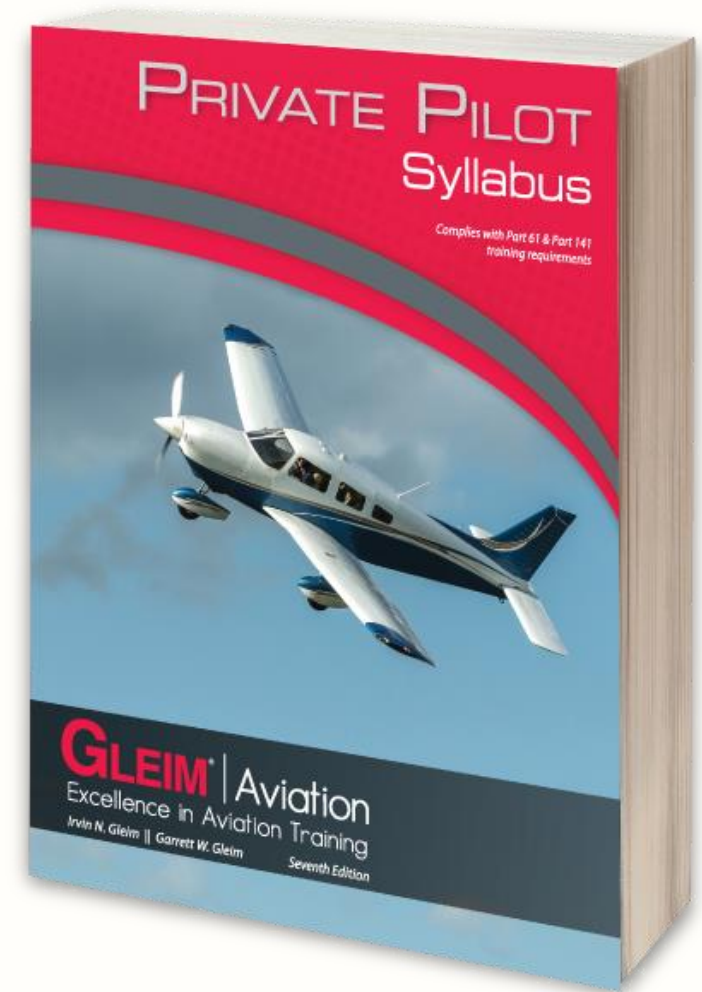
Other Common Scenarios

- Blocked pitot-static system (debris/icing)
- Heading indicator failure (standby compass magnetic dip errors)
- Electric turn-coordinator failure
- Vacuum system failure
- AHRS system failure
- Alternator failure
- Partial panel (PFD/MFD failure)
- Engine instruments out-of-range
 - oil temp, fuel quantity, EGT, CHT
- Glass cockpit annunciation
- LAHSO



Scenario Building Resources

- Pilot Training Syllabi
- NTSB Reports
- ASRS Reports
- ASI
 - [N4975S](#)
- [Kathryn's Report](#)
- [ACS Tips for Evaluators](#)



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ACS Plan of Action Scenario Triggers

EVENT	PASSENGER	PILOT/AIRCRAFT	WEATHER
Job Interview Family Emergency Family Illness/Surgery Birth-Child/Grandchild Medical Appointment Wedding Funeral Graduation Family Reunion Concert Vacation Catch Airline Flight Return To College Sporting Event Job Presentation Birthday Party Baptism/Christening Camping Trip Beach Week-End Lunch With Boss Dinner With Boss Engagement Party Surprise Party Christmas Dinner Thanksgiving Dinners Skiing Week-End Rock Climbing Event River Rafting Event Hunting Trip Fishing Trip Fly-In With Friends Aviation Safety Presentation Aviation Conference Flight to Oshkosh for Air Venture Meeting In-laws for First Time College Scholarship Meeting Returning to College Returning for Military Duty	Shows up Late Recently Scuba Diving Brings Extra Luggage Brings Pet Arrives Drinking/ Drunk Lied about Weight-(Exceeds Weight & Balance Limits) Gets Airsick/Throws Up Gets Hypoxic Hyperventilates Ear Block/Sinus Block Afraid Hysterical Needs Restroom Uses Cell Phone in Flight Wants to Land & Get Off the A/C Immediately Wants to Fly Airplane Crying Baby Aboard	FAA Ramp Check A/C Registration Expired Weight and Balance Docs Missing Radio Station License Missing Pilot Medical Expired Photo ID Expired Pilot Certificate at Home A/C Documents-Missing VOR check out of date Autopilot operating manual missing A.D.s not signed off at inspection Pilot has not flown in four months Pilot has not flown in three years Pilot has not carried passengers in three months Pilot left his logbook at home Aircraft is "Out of Annual" Before Return From Cross Country Pilot is Blinded by Passenger Cell Phone Picture Flash on Landing	Turbulence Strong Head Winds Aloft Strong Surface Wind/Crosswind Thunderstorms Lightning Hail Dust Storms Snow Fog Low Visibility Lowering Ceiling Icing Conditions Freezing Rain Weather in Class D goes to 2 SM Operating Above 10,000' MSL Fast Moving Cold Front Approaching Stalled Warm Front High Pressure Area Low Pressure Area Operating in Temperatures 20°C Above Standard Operating in Temperatures 20°C Below Standard High Density Altitude Smoke in the Area

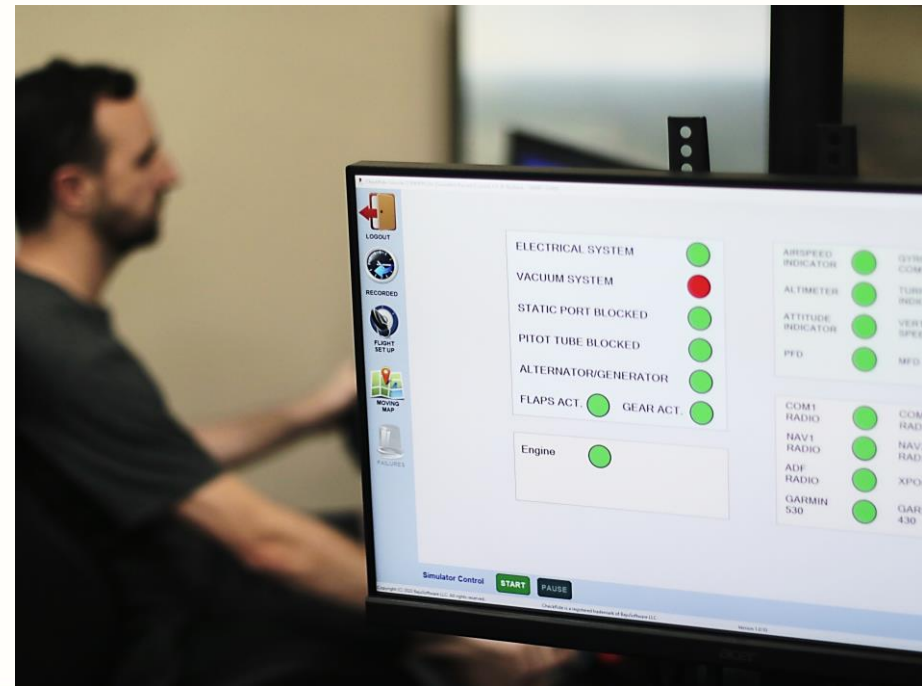


ACS Plan of Action Scenario Triggers

<p>AIRPORT OPERATIONS</p> <p>Taxi into taxiway light and damage prop Get Lost on Airport During Taxi Rotating Beacon is ON in Day Time Rotating Beacon is Green/White/White Rotating Beacon is White and Yellow ATC Gives an Unclear Instruction Told to Land and Hold Short on Runway Landing After B757 Departing After B757 Landing/Departing Near Operating Helicopter Wind Shear on Landing Taxiing into a Hotspot Area Operations at a Non-Towered Airport Communications at a Non-Towered Airport NORDO Aircraft Operations</p>	<p>MECHANICAL</p> <p>Large Nick In Prop Blade Engine Failure On Take Off Engine Failure Below 1,000' Door Opens On Take-Off Door Opens In Flight Window Opens On Take-Off Window Opens In Flight Brakes Fail on Take-off Glass Panel Fails Audio Panel Fails Pilot Seat Slips On Take Off Engine-Carb Ice Engine Fire On Ground Engine Fire In Flight Electrical Fire In Flight Gear Won't Extend Gear Won't Retract No Gear Lights Navigation (Position) Light Inoperative Cord Showing On Tire <i>RAIM NOT AVAILABLE</i> Message Elevator Trim Fails Auto Pilot Fails Glass Panel Fails Audio Panel Fails Pilot Seat Slides Back On Take Off Engine-Carb Ice Engine Fire On Ground Landing Light is Burned Out ELT is inoperative Low Fuel Alternator Belt Breaks Ammeter Discharging Low Voltage Light - On Dual Alternator Failure</p>	<p>MECHANICAL CONT'D</p> <p>Mags Runs Rough-Ground Mag Runs Rough-Flight Engine Runs Rough-Ground Engine Runs Rough-In Flight Low Oil Pressure Low Oil Temp High Oil Pressure High Oil Temp High CHT Oil On Cowling Oil On Window Attitude Indicator Tumbles Low Vacuum Gauge Portable Oxygen Bottle Low Radio Inoperative Landing Light Inoperative Battery Dead – Engine Won't Start Heading Indicator Spins</p>	<p>INSTRUMENT OPERATIONS</p> <p>Ways of Coping with Loss of Situational Awareness in Low Visibility</p> <p>Both VORS fail the VOT test</p> <p>Alternate Airport has only RNAV IAPs</p> <p>GPS Database Out of Date Alternate Airport has Nonstandard Minimums</p> <p>Full ILS Needle Deflection Occurs Just Inside the Outer Marker</p> <p>Thick Fog is Present At Your Destination Upon Arrival</p> <p>Lost-Com Occurs During an Icing Encounter</p> <p>The Wind Aloft is Much Stronger Than Forecast and Changes Some of the Factors of the IFR Flight</p> <p>Explain how the I M SAFE Checklist applies to IFR Flight</p> <p>Explain How the PAVE Checklist Applies to IFR Flight</p> <p><i>RAIM NOT AVAILABLE</i> Message Received Outside Outer Marker</p> <p><i>RAIM NOT AVAILABLE</i> Message Received Inside Outer Marker</p>
<p>OTHER</p> <p>TFR in area Flight into NOAA marine area on Coast Flight into Wilderness area Flight into Special Use Airspace VFR Flight Into and Out of ADIZ Interception by Military Aircraft Lost Com with ATC – VFR Lost Com with ATC – IFR Trip into SFAR Area</p>			

Setting Up Scenarios

- Awareness of learner's certificate/proficiency level
- Ramp up scenarios gradually
 - Minimize learner frustration
- Intervention points



Scenario 2

- IFR Task Saturation
- 14 CFR 91.175 (Takeoff & Landing under IFR)
- Replicate in the sim
- Pause and discuss
- Debrief



Sim-Summary

- Setting training expectations
- Causal factors
- Create Value
- Confirmation bias
- Branching
- Refinement
- Building scenarios



Questions?

- Gleim Aviation Training Consultants
 - 800-874-5346 ext. 471
 - aviationteam@gleim.com
- GleimAviation.com/simulation





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The screenshot shows a live event page for "NAFI - Training The Blarney Out of...". The main content area is greyed out with the text "Live program will appear here at the scheduled time." To the right, a sidebar menu lists various resources:

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Save the Date!

Join us for next month's MentorLIVE, October 20th at 8:00 p.m. ET



***“Gatekeepers -
Lessons from
Experience and
Research”***

Presented by

Gene Benson, CFII, Retired College Dean

LIVE



Thanks for Watching!

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The National Association of Flight Instructors or Aeronautical Proficiency Training do not provide technical or legal advice. Content is for general information and discussion only, and is not a full analysis of the matters presented. The information provided may not be applicable in all situations, and participants should always seek specific advice from the Federal Aviation Administration and/or appropriate technical and legal experts (including the most current applicable guidelines) before taking any action with respect to any matters discussed herein.

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