

Advanced Aeronautical Decision Making

56-Seconds to Live | It's OK to STAY | Land & LIVE



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56 SECONDS

JUST LONG ENOUGH TO WONDER
WHY YOU **CHOSE** TO CONTINUE
VFR FLIGHT INTO **IMC**.



IIMC / UIMC
IS **AVOIDABLE**



SPATIAL DISORIENTATION
CAN AFFECT **ALL** PILOTS



LOSS OF CONTROL
IS **INEVITABLE**

ACCESS TOOLS THAT HELP YOU
MAKE THE RIGHT DECISION—
BEFORE IT'S TOO LATE.

USHST.org/56secs



Aeronautical Decision-Making Opportunities



Planning



Delay



Departure



Return or Divert



Enroute



Landing

Aeronautical Decision-Making Opportunities



Transition

MOST COMMON CAUSES OF FATAL HELICOPTER CRASHES



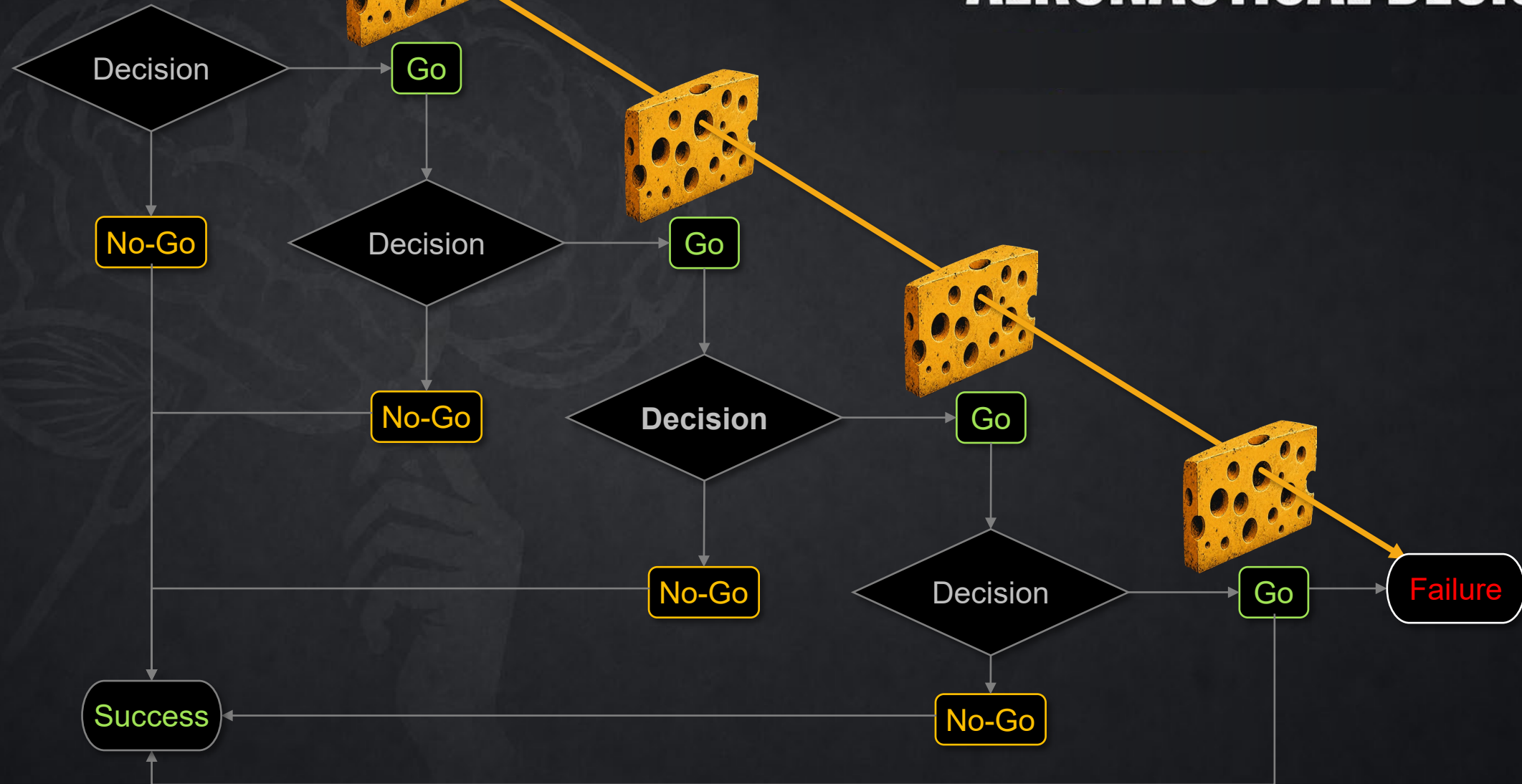
Why 56 Seconds?



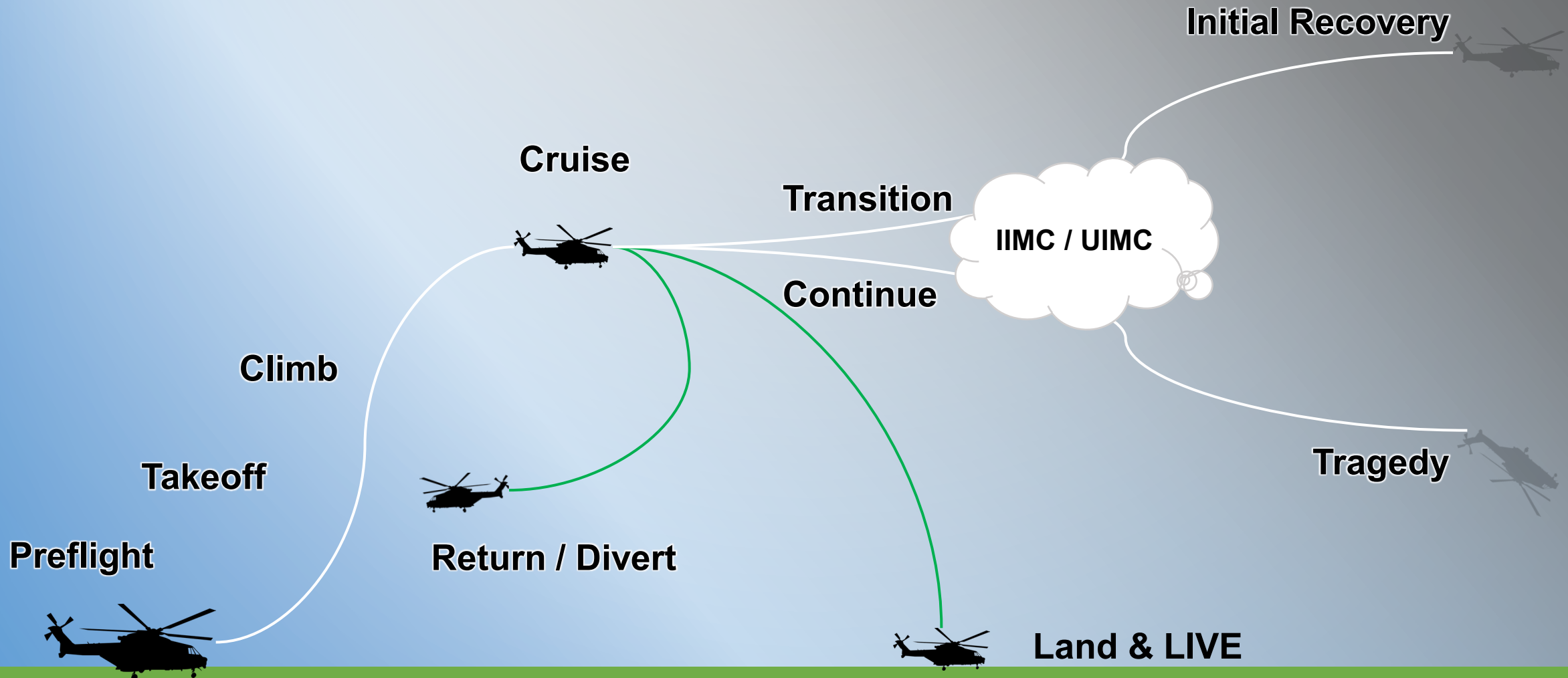
Fixed Wing vs Rotary Wing IIMC Survival Time



AERONAUTICAL DECISIONS



Deteriorating Weather and Critical Decisions





FLIGHT RISK

ASSESSMENT TOOL

Evaluate. Mitigate. Decide. Fly Safe.



A SIMPLE TOOL FOR BETTER DECISIONS.

Assess the risk in each area honestly.
Use the worst case, not the best case.
Mitigate risk or modify the plan.
When in doubt, don't go.



SMART DECISIONS TODAY.
SAFE RETURNS ALWAYS.

RISK DOMAIN	RISK LEVEL – CHOOSE THE BEST DESCRIPTION			YOUR RISK (SELECT ONE)
	LOW RISK (GREEN)	MODERATE RISK (YELLOW)	HIGH RISK (RED)	
PILOT Are you ready for this flight?	- Well rested - Healthy (IMSAFE) - Current & proficient - Mentally prepared	- Minor fatigue or stress - Limited recent experience - Some proficiency concerns - Distractions present	- Fatigued or unwell - Not current / not proficient - High stress or distraction - Mental readiness low	G Y R ☐ ☒ ☐
AIRCRAFT Is the aircraft ready?	- Airworthy - All required equipment - Performance within limits - No known issues	- Deferred maintenance - Marginal performance - Equipment not ideal - Monitor closely	- Known maintenance issues - Performance exceeds limits - Inoperative required equip. - Not airworthy	G Y R ☒ ☐ ☐
ENVIRONMENT Are conditions favorable?	- VFR with good visibility - Light winds - Familiar terrain/airspace - Daylight / good conditions	- Marginal weather - Gusty winds - Complex terrain/airspace - Reduced visibility	- IFR / low ceilings - Strong winds / turbulence - High density altitude - Weather below minimums	G Y R ☐ ☒ ☐
EXTERNAL PRESSURES What outside factors could influence you?	- No pressure to go - Flexible schedule - Everyone on board - Financially neutral	- Some schedule pressure - Customer expectations - Others expecting you to go - Financial impact moderate	- Significant pressure to go "Get-there-itis" present - Others pushing the decision - Financial impact high	G Y R ☐ ☐ ☒
ASSESS YOUR OVERALL RISK >>	LOW RISK (GREEN) Proceed as planned. Continue to monitor.	MODERATE RISK (YELLOW) Mitigate risk or adjust the plan. Reassess before launch.	HIGH RISK (RED) Do not launch. Change the plan.	



IMSAFE

CHECKLIST



A SELF-ASSESSMENT FOR SAFE FLIGHT

The IMSAFE checklist is a pre-flight self-assessment tool used by pilots to determine physical and mental readiness, ensuring safety by mitigating personal hazards.



USE BEFORE
EVERY FLIGHT

I		ILLNESS Do I have any symptoms of illness or am I coming down with something?	✔ FIT TO FLY ⚠ USE CAUTION ✗ NOT FIT TO FLY	I feel healthy. I have mild symptoms. I have significant symptoms.
M		MEDICATION Am I taking medication that could affect my performance or alertness?	✔ FIT TO FLY ⚠ USE CAUTION ✗ NOT FIT TO FLY	No medications or non-impairing. Some may cause mild impairment. May cause significant impairment.
S		STRESS Am I experiencing stress from work, family, or other responsibilities?	✔ FIT TO FLY ⚠ USE CAUTION ✗ NOT FIT TO FLY	I feel relaxed and in control. Moderate stress. High stress, overwhelmed.
A		ALCOHOL Have I consumed alcohol within the last 8–12 hours?	✔ FIT TO FLY ⚠ USE CAUTION ✗ NOT FIT TO FLY	No alcohol. Within 8–12 hours. Use caution. Within 8 hours. Not acceptable.
F		FATIGUE Am I well rested and alert?	✔ FIT TO FLY ⚠ USE CAUTION ✗ NOT FIT TO FLY	Well rested. Alert. A little tired. Very tired. Lack of sleep.
E		EMOTION / EATING Am I emotionally balanced and have I eaten appropriately?	✔ FIT TO FLY ⚠ USE CAUTION ✗ NOT FIT TO FLY	Emotionally balanced. Eaten appropriately. Slightly off balance or inadequately nutrition. Emotional upset or poor nutrition.



YOUR READINESS IS THE FIRST STEP TO A SAFE FLIGHT.
When in doubt, don't fly.

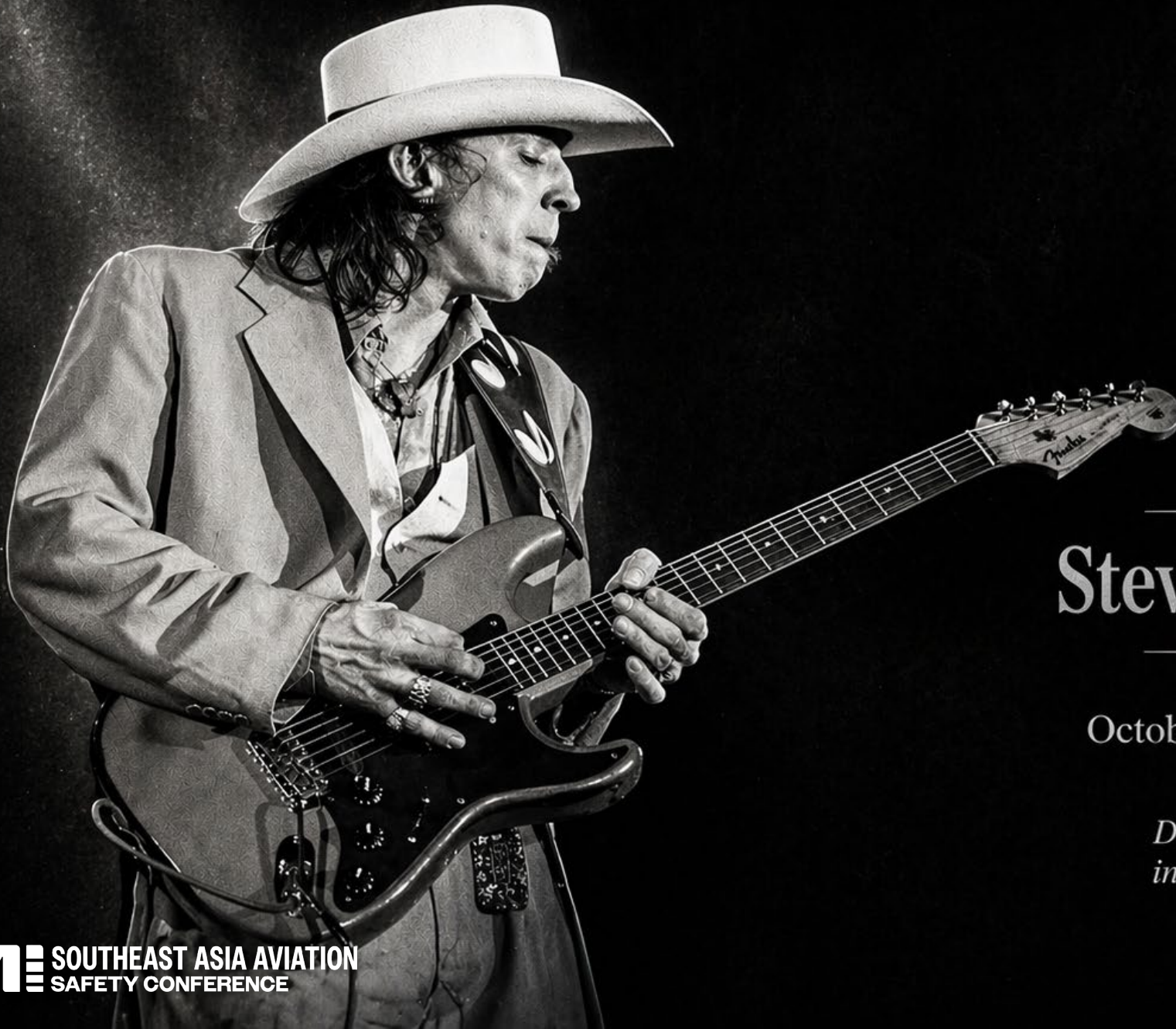


DELAY CONSIDERATIONS



DEPARTURE CONSIDERATIONS





Stevie Ray Vaughan

October 3, 1954 - August 27, 1990

*Died in a fatal helicopter crash
in East Troy, Wisconsin, USA.*

VA IT'S OK TO STAY

SAFETY

Because Smart Decisions
Define Mission Success.

Access Valuable Tools to Support



Professional ADM



Effective communication



Creative problem-solving





HAZARDOUS ATTITUDES

THE SIGNS – RECOGNIZE THEM IN YOURSELF AND OTHERS



ANTI-AUTHORITY: “Don’t tell me.”
Resentment toward those who tell you what to do.



IMPULSIVITY: “Do it quickly.”
Acting without thinking.



INVULNERABILITY: “It won’t happen to me.”
Believing you’re immune to risk.



MACHO: “I can do it.”
Needing to prove you’re better than others.



RESIGNATION: “What’s the use?”
Feeling trapped – it won’t make a difference.

WATCH OUT FOR THE BEST PILOT



HAZARDOUS ATTITUDES

HOW TO RESPOND – TAKE CONTROL, FLY SAFE



ANTI-AUTHORITY: Follow the rules and procedures.
Question rules respectfully if you find an error.
Challenge the rule, not the authority.



IMPULSIVITY: Not so fast. Think first.
Pause, assess, and act deliberately.



INVULNERABILITY: “It could happen to me.”
Respect the risks. Stay humble.



MACHO: Taking chances is foolish.
Fly for safety, not ego.



RESIGNATION: “I’m not helpless.”
Speak up. You can make a difference.

DO THE RIGHT THING WHEN NOBODY IS WATCHING



NO PRESSURE. NO REGRETS.

THE ACCIDENT CHAIN DOESN'T START WITH WEATHER—
IT STARTS WITH PRESSURE.

CULTURE



- No mission is worth pressure
- Support conservative decisions
- Normalize "we're not going"

RISK ASSESSMENT

- Brief hazards out loud
- Confirm ceilings, visibility, escape options
- If conditions tighten—act early



ENROUTE DECISION POINT

- Slowing down?
- Descending?
- Working to stay VMC?
- Turn, divert, land, or transition IFR (if capable)



Break the chain early—before it breaks you.

ENROUTE DECISION POINT (EDP)

RECOGNIZE THE TREND EARLY.

1 CRUISE FLIGHT (VMC)

Normal enroute flight in VMC.



2 WEATHER DETERIORATING

Conditions are getting worse. To stay VMC, you must adjust airspeed or altitude.

A VISIBILITY DECREASING



AIRSPEED DECREASING

To remain VMC, you slow down.

TRIGGER EXAMPLE

30 KNOTS

below cruise speed
(or "no slower than" speed)

B CEILING LOWERING



ALTITUDE DECREASING

To remain VMC, you descend.

TRIGGER EXAMPLE

300 FT

below cruise
OR down to your
"hard-deck" altitude



IF YOU MUST SLOW DOWN OR DESCEND TO STAY VMC,
YOU ARE APPROACHING YOUR EDP.

ENROUTE DECISION POINT (EDP)

THE TRIGGER THAT **DEMANDS ACTION.**

3 EDP TRIGGER REACHED

Predetermined limit reached.



**YOU HAVE REACHED
YOUR PREDETERMINED LIMIT.**

Act early while you still have options.

4 YOUR DECISION. YOUR OUTCOME.

ACT AT THE EDP.

Stay ahead of the weather.



RETURN

Go back the way you came.



DIVERT

Go to a better location.



LAND

Land as soon as practical.



TRANSITION TO INSTRUMENTS*

(If trained, current, equipped, and authorized)



GOOD DECISION. MISSION COMPLETE.
EVERYONE GOES HOME.

IGNORE THE EDP.

Continue VFR into worsening conditions.

IIMC



Inadvertent IMC.

SD



Spatial Disorientation.

LOC-I



Loss of Control Inflight.

LALT



Striking an object at Low Altitude. Insufficient altitude to recover.

FATAL IMPACT



Collision with terrain or obstacle. Fatal outcome.



FATAL OUTCOME.
LOSS OF CONTROL. NO TIME TO RECOVER.



THE EDP IS NOT THE DECISION—IT'S THE TRIGGER TO ACT.

* Transition to instruments only if you are properly trained, current, equipped, and authorized for instrument flight.

LAND & LIVE

— FLIGHT NOT GOING WELL? —

If continued safe flight
cannot be assured, use your
super power and
land the helicopter!



PREVENT ACCIDENTS

No compromises when encountering
deteriorating weather, unexpected
illness, or abnormal aircraft issues.



SAVE LIVES

Human life and safety
are more important than the mission.



LANDING CONSIDERATIONS



Landing Area Size



Shape



Slope



Surface & Surroundings



Wind Direction and Speed



Approach & Departure Path



Wires, Towers, & Obstacles



Terrain or Buildings



Rotor Clearances



IFR TRANSITION CONSIDERATIONS

BE THE MASTER OF YOUR TRADE

*Professionals don't rise to the occasion.
They default to their level of mastery.*



EVERY DECISION—GO OR NO-GO—HAS TWO OUTCOMES.
Make deliberate choices based on facts, not pressure.



SUCCESS IS OFTEN THE DECISION **NOT TO CONTINUE.**
The best decision may be the one
that keeps you here tomorrow.



THE ACCIDENT CHAIN STARTS SMALL.
Break one weak link: doubt, delay, distraction,
pressure, or pride.





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