



**HELITECH**

**OCTOBER 13, 2016**

**IHST / HAI SAFETY INITIATIVES**

**Matt Zuccaro**

**HAI President - CEO**

# International Helicopter Safety Team

A white and blue helicopter with red stripes is shown in flight, angled towards the right. The background is a large, semi-transparent globe showing the Americas. The text "International Helicopter Safety Team" is at the top, and "IHST" is at the bottom.

**IHST**



# IHST

**International Helicopter Safety Team**

Our Vision: An International Civil Helicopter Community With Zero Accidents

- The International Helicopter Safety Team identifies strategic international partnerships and oversees major elements of the safety analysis and implementation. It also develops and oversees communication strategies to promote its safety initiative. The basic organizational structure is shown below.





# IHST

**International Helicopter Safety Team**

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## Regional Partner Teams

Europe

United States

Canada

Mexico

Brazil

Middle East

CIS-Russia

India

Asia-Pacific

New Zealand





# IHST

**International Helicopter Safety Team**

Our Vision: An International Civil Helicopter Community With Zero Accidents

- **Created in 2006**
- **Vision: An international civil helicopter community with zero accidents.**
- **Prior to 2006, worldwide accidents rising by 2.5 percent per year.**
- **Since 2006, helicopter fleet has grown by 30 percent, while number of accidents decreased in key regions by 30 to 50 percent.**







# IHST

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## **Strategy and Initiatives**

**A Worldwide Effort of 500 Volunteers in 28 countries: U.S., Canada, Europe, India, New Zealand, Brazil, Middle East, etc.**

- **Gather and analyze accident data and dig deep into accident causes**
- **Determine ways to reduce accidents and develop safety toolkits, bulletins, fact sheets, etc.**
- **Change attitudes and safety culture**

# International Helicopter Safety Team

[WWW.IHST.ORG](http://WWW.IHST.ORG)

**REDUCE THE INTERNATIONAL  
HELICOPTER ACCIDENT RATE BY  
80 % OVER THE NEXT 10 YEARS**

# IHST REVISED GOAL ESTABLISHED

# ZERO ACCIDENTS !







- **Zero Tolerance – Zero Accidents**
- **USHST – 20 / 20 program**
- **(Fatal Accidents)**

# Mission Accident Findings

## Joint Helicopter Safety Analysis Team

??????

# Findings

## JOINT SAFETY ANALYSIS TEAM

**Part 91 / Personal Flying**

**Training / Instruction**

**Identify the correct target**

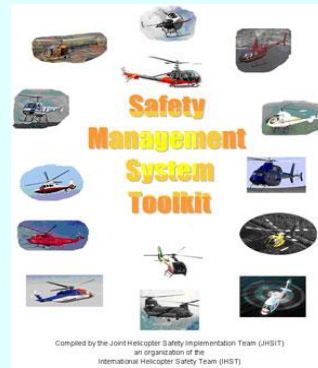
# HELICOPTER TRAINING TOOLKIT

U.S. JHSIT  
1<sup>st</sup> Edition



An Official Publication of the  
International Helicopter Safety Team  
September 2009

*All information in this publication has been provided in good faith. Every effort has been made to ensure the accuracy of the information contained in this publication. Neither the IHST nor any of its members or contributor, past, present or future warrants its accuracy or will, regardless of its or their negligence, assume liability for any foreseeable or unforeseeable use made thereof, which liability is hereby excluded.*



# S M S TOOLKIT

SAFETY  
MANAGEMENT  
SYSTEM

International  
Helicopter  
Safety Team  
[www.ihst.org](http://www.ihst.org)

A Publication of the  
U.S. JOINT HELICOPTER SAFETY IMPLEMENTATION TEAM  
September 2009



IHST.ORG

- Safety resources
- IHST Toolkits

# HELICOPTER FLIGHT DATA MONITORING TOOLKIT

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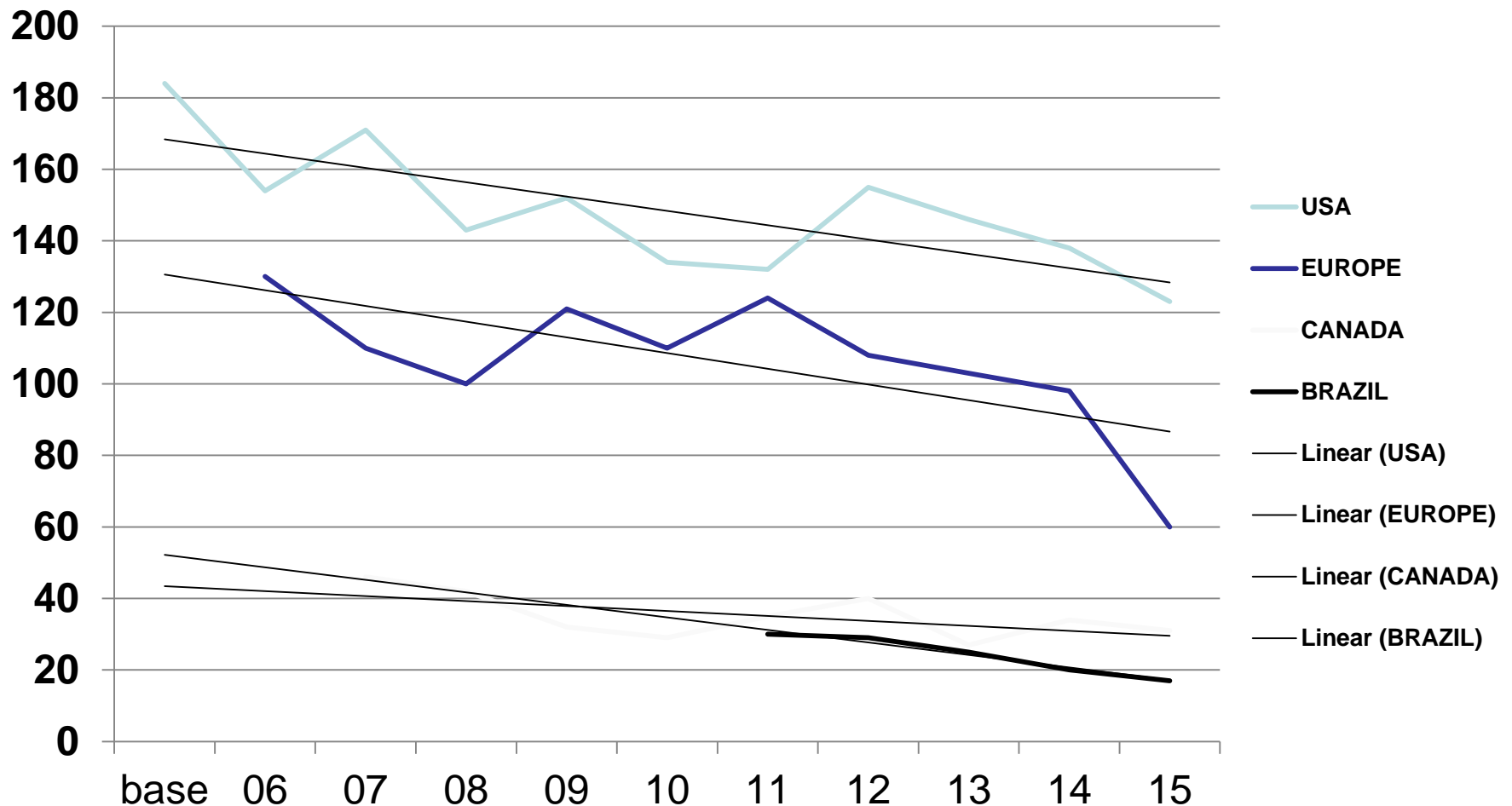


# IHST

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## Civil Helicopter Accidents







# IHST

**International Helicopter Safety Team**

Our Vision: An International Civil Helicopter Community With Zero Accidents

- **Europe: 42% accident reduction since 2013.**
- **USA: 16% accident reduction since 2013.**
- **Canada: 26% accident reduction since 2008.**
- **Brazil: 32% accident reduction since 2013.**
- **New Zealand: 33% accident reduction since 2001.**





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## **Re-Commitment to IHST**

**In 2016, a re-commitment to IHST efforts by 17 Worldwide industry organizations**

**Air Medical Operators Association**

**Airborne Law Enforcement Assoc.**

**Airbus Helicopters**

**American Helicopter Society Intl**

**Bell Helicopter**

**Bristow Group**

**European Aviation Safety Agency**

**European Helicopter Association**

**Federal Aviation Administration**

**Finmeccanica**

**Flight Safety Intl**

**Helicopter Association of Canada**

**Helicopter Association Intl**

**National Transportation Safety Board**

**Robinson Helicopter Company**

**Sikorsky Aircraft**

**University Aviation Assoc.**





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## **How Helicopter Accidents and Fatalities Occur**

### **Most Predominant Occurrences During Fatal Helicopter Accidents**

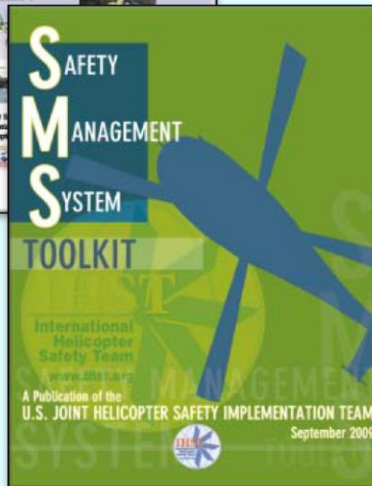
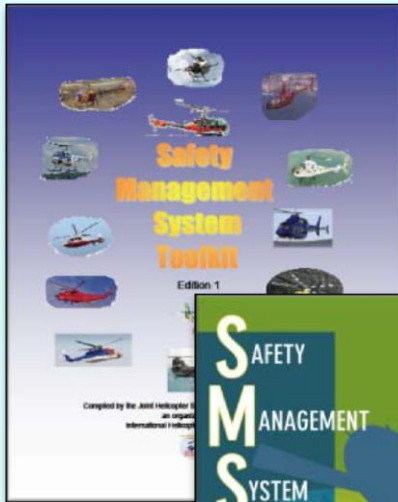
- 1. Loss of Control**
- 2. Visibility issues**
- 3. Fire (*post-impact*)**
- 4. Wire Strike**
- 5. System Component Failure**

### **Other Frequent Occurrences During Fatal Helicopter Accidents**

- **Autoration (*in practice & emergency*)**
- **Controlled Flight Into Terrain**
- **Fuel issue**
- **Abrupt Maneuver**
- **Icing**

# Products: Safety Tool Kits

## SMS 1st Edition



## Edition 2



## Edition 2



# Products: Safety Bulletins



- **Precautionary Landings**
- **SMS for Certificated Flight Instructors**
- **SMS: How to Get Started for the Small Operator**
- **Hazard Identification – If You See Something . . . Say Something**
- **A Defensive Strategy for Helicopter Pilots**
- **Controlled Flight into Terrain Prevention with HTAWS**
- **How to Train to Survive a Real Autorotation**
- **Inadvertent Entry into Cloud or Fog**
- **Instructional Safety: Training Safety or Training Safely?**
- **Recurrent Training: Are You Current and Proficient?**
- **Controlled Flight into Terrain: How Does it Happen?**
- **Density Altitude – The Invisible Factor of Helicopter Performance**
- **Emergency Decision Making: What Happens When You Lose a Critical System?**
- **Energy in Autorotations – Using Energy for our Benefit**
- **Gaining Control over Loss-of-Control Accidents**
- **Rotor Rooter – Autorotation Acronyms**
- **Visibility: The Minimum You Should Know**





## Products: Safety Leaflets



- **Emergency and Abnormal Helicopter Procedures**
- **Flight Simulation Training Devices**
- **Automation and Flight Path Management**
- **The Principles of Threat and Error Management**
- **Using Advanced Navigation Technology Safely**
- **Helicopter Airmanship**
- **Helicopter Safety Considerations**
- **Helicopter Operations and Mountainous Terrain**
- **Off Airfield Land Site Operations**
- **Single Pilot Decision Making**
- **Risk Management in Training**
- **Advantages of Simulators in Helicopter Flight Training**

# Products: Reel Safety Videos

## ◆ Reel Safety Videos



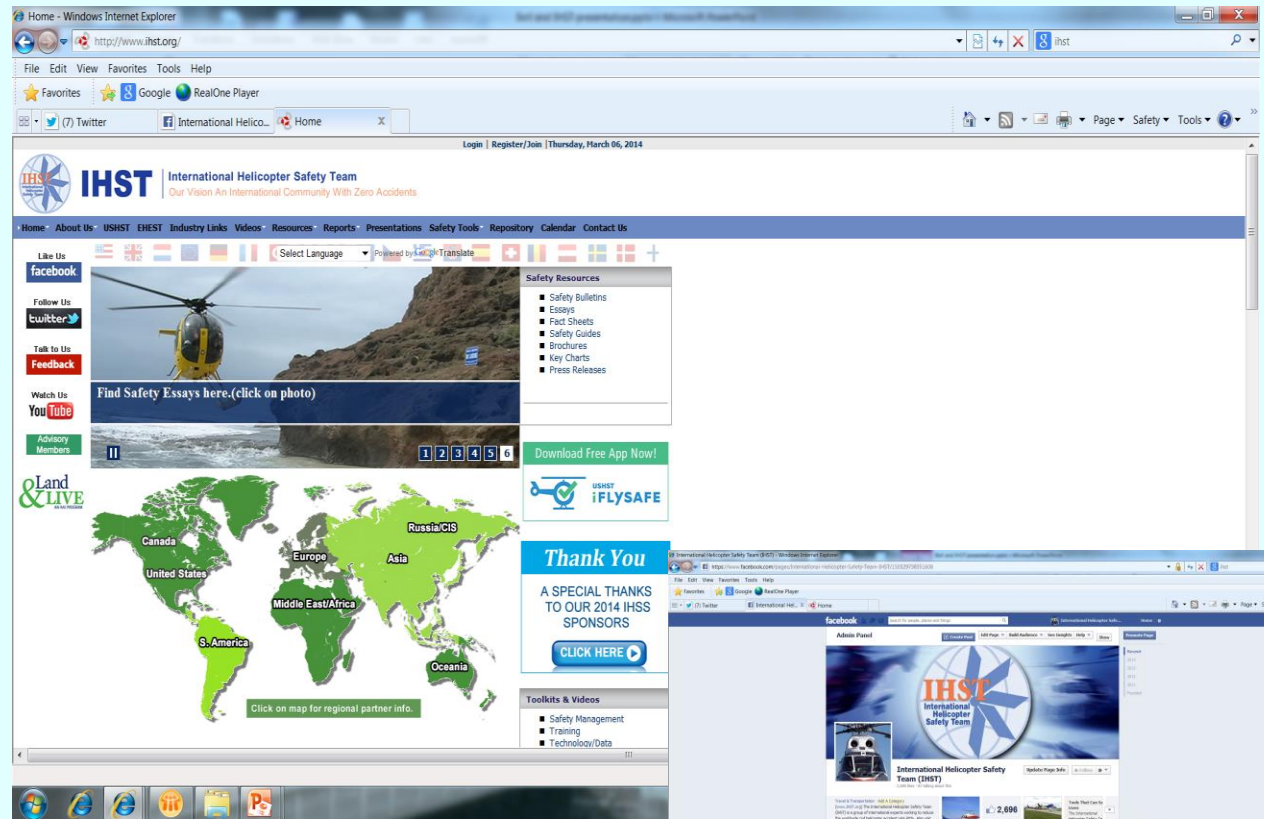
# Where to Find IHST

[www.ihst.org](http://www.ihst.org)

**IHST on Facebook**



**IHST on Twitter**



**We encourage you to add the [www.ihst.org](http://www.ihst.org) link to your company website.**



# IHST

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## ANY QUESTIONS?

# [WWW.IHST.ORG](http://www.ihst.org)

<http://essi.easa.europa.eu/ehest/>

<http://www.usgst.org/>

<http://www.bhest.org/>





# NEW HAI SAFETY PROGRAM

“LAND THE DAMN HELICOPTER “

Land  
& LIVE  
AN HAI PROGRAM



# **“LAND THE DAMN HELICOPTER”**

## **Presidents Message**

Review of Helicopter Accident Reports

Common link that would prevent Accidents

“Land the Damn Helicopter”

Ability to land Helicopters anywhere is major selling point for industry – We do it everyday

So why don't we when we really need to ????

# **“LAND THE DAMN HELICOPTER”**

## **New HAI Program**

**Is the flight not going well ?**

**Weather Concerns ?**

**Fuel Concerns ?**

**Mechanical Concerns ?**

**Pilot not feeling well ?**

**In the Interest of Safety**

**“LAND AND LIVE”**

# **Pilots Perceived Concerns**

**FAA Enforcement**

**Company reaction**

**Customer reaction**

**Local Police**

**Negative Press**

**Peer pressure**

**Local zoning**

**Property owner reaction**

**“LAND THE DAMN HELICOPTER”**

## **Initial Reaction**

**Overwhelming support from:**

Operators

Pilots

End Users

FAA

NTSB

# What HAI Is Doing

- Interim — Keep “Land the Damn Helicopter” front-of-mind
  - Handouts at tradeshows & safety forums
  - Reprints of President’s Message with attached “Flight Not Going Well?” card
    - **T-shirts**
    - **Baseball caps**
    - **“Flight Not Going Well?” card**
    - **Decals**





# Land & LIVE

AN HAI PROGRAM

## Welcome to Land & LIVE

There's a safety tool in every helicopter pilot's toolbox capable of breaking almost every accident chain. But too often, this tool remains tucked away, hidden in the dark recesses of the bottom corner of the toolbox. It's the *Precautionary Landing*. Land & LIVE. Is your flight not going well? Do you have a warning light? Are you or your passengers not feeling well? Is the weather turning? Are you low on fuel? As pilot in command, only you can decide if you should continue the flight. Or take advantage your helicopter's unique ability to land almost anywhere, and make a precautionary landing.

### For Pilots



**Pilots**, pledge to consider this tool when making safety-of-flight decisions en route. Get more information and take the pledge.

[Learn More](#)

### For Operators



**Operators**, a helicopter has just landed at the high school ball field. Can they do that? Here's what you need to know.

[Learn More](#)

### For First Responders



**First Responders**, a helicopter has just landed at the high school ball field. Can they do that? Here's what you need to know.

[Learn More](#)



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[Tale of 6 Accidents](#)

[Picking a Landing Spot](#)

[Take the Pledge](#)

[ation.](#)



The whole idea of Land & LIVE is to make a safe precautionary landing before you run out of fuel. Aviation regulators have already given you permission to do so. In the United States.

**14 CFR 91.3(b)** In an in-flight emergency requiring immediate action, the pilot in command may deviate from any rule of this part to the extent required to meet that emergency.

**14 CFR 135.19(b)** In an emergency involving the safety of persons or property, the pilot in command may deviate from the rules of this part to the extent required to meet that emergency.

### Canada regulations

**Aeronautics Act, Section 3.1** Definitions: "Pilot-in-command" means, in relation to an aircraft, the pilot having responsibility and authority for the operation and safety of the aircraft during flight time.

**Aeronautics Act, Section 8.5** No person shall be found to have contravened a provision of this Part or any regulation, notice, order, security measure or emergency direction made under this Part if the person exercised all due diligence to prevent the contravention.

**CAR 602.31(3)(a)(b)** The pilot-in-command of an aircraft may deviate from an air traffic control clearance or an air traffic control instruction to the extent necessary to carry out a collision avoidance manoeuvre, where the manoeuvre is carried out (a) in accordance with a resolution advisory generated by an Airborne Collision Avoidance System (ACAS) or a Traffic Alert and Collision Avoidance System (TCAS); or (b) in response to a warning from a Ground Proximity Warning System (GPWS) on board the aircraft.

**CAR Standard 725.20 (v)** Once a flight has commenced, the final decision on any changes to the Operational Flight Plan shall be taken by the pilot-in-command based on considerations of safety.

### European Union regulations

**Basic Regulation 216/2008, Annex IV, 7c.** The pilot in command must have the authority to give all commands and take any appropriate actions for the purpose of securing the operation and the safety of the aircraft and of persons and/or property carried therein.

**Basic Regulation 216/2008, Annex IV, 7d.** In an emergency situation, which endangers the operation or the safety of the aircraft and/or persons on board, the pilot in command must take any action he/she considers necessary in the interest of safety. When such action involves a violation of local regulations or



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By now, we hope you'll agree that precautionary landings are a safety tool that will break virtually every accident chain.

Take the first step in breaking that chain by taking the Land & LIVE pilot's pledge. Submitting your name and email will generate a certificate suitable for framing that you can print and display to demonstrate to your passengers, co-workers, and employers your dedication to their safety.

I affirm that my highest priority is the safety of my passengers, my crew, my aircraft, and the people we fly over.

In order to maintain their safety, I pledge to keep precautionary landings as a readily available option, and when, in my best judgment, the wisdom of continuing a flight is uncertain, to make a controlled precautionary landing before an emergency landing becomes necessary.

First Name: *	<input type="text" value="Chris"/>
Last Name: *	<input type="text" value="Dancy"/>
Company:	<input type="text" value="HAI"/>
Email: *	<input type="text" value="Chris.dancy@rotor.org"/>

[Submit](#)

\*Required



# Land & LIVE

AN HAI PROGRAM

I affirm that my highest priority is the safety of my passengers,  
my crew, my aircraft, and the people we fly over.

In order to maintain their safety, I pledge to keep precautionary landings as a  
readily available option. When, in my best judgment, the wisdom of continuing a flight is uncertain,  
I will make a controlled precautionary landing before an emergency landing becomes necessary.

*Signature* \_\_\_\_\_





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[Business Case for Safety](#)

[Ops Manual Suggestions](#)

[Take the Pledge](#)



As an operator, you know that few intangibles can affect your bottom line like reputa

One of the surest ways to enhance your reputation is to stand behind an employee who has made a safe — if possibly unpopular — decision, such as to make a precautionary landing instead of continuing on to the intended destination.

Precautionary landings may inconvenience passengers and clients. But precautionary landings save lives. And by breaking the accident chain, they save money — and businesses.

Letting your pilots know that you will stand behind them when they make the tough decision to terminate a flight rather than continue on and possibly put safety at risk dovetails perfectly with the just culture that your safety management system seeks to instill. And it tells your passengers and clients that you value their safety even above their business.

It says, “The successful completion of your flight is important to us. The *safe* completion of your flight is even more important.”

**Here** [<link>](#) are some reasons why adopting a Land & LIVE approach to precautionary landings is smart business.

**Here** [<link>](#) are some suggestions adding precautionary landing language to your Ops Manual.

Ready to commit? **Pledge** [<link>](#) to support your pilots if they decide a precautionary landing is in the best interest of their passengers.







# Land & LIVE

AN HAI PROGRAM

The successful completion of your flight is important to us.  
However, we will not compromise the safety of our passengers to complete a mission.

supports our pilots' decision to make a precautionary landing when,  
in their judgment, it is the safest thing to do.

*Signature* \_\_\_\_\_

# HAI ACCREDITATION PROGRAM

- **VOLUNTARY PROGRAM AVAILABLE TO HAI MEMBERS**
- **MISSION SPECIFIC STANDARDS / ISBAO BASED**  
**(Coordination with other accreditation programs)**
- **HAI TRAINED AUDITORS**
- **FIELD AUDITS WILL BE CONDUCTED**
- **OPERATOR MENTORING PROGRAM**
- **SCALABLE – SMALL TO LARGE OPERATORS**
- **Status: Implemented 1/1/2016**

# Inadvertent I.M.C. / CFIT Night Accidents

Pilot IFR Proficiency / Currency

Dedicated Helicopter IFR Infrastructure

Low Level IFR Routing

Point in space approaches

Seamless transition between VFR / IFR

Night Vision Goggles

# Mission Specific Training

- Specialized mission specific training schools
- Provide ability to train / upgrade new pilots during actual operations , especially in single pilot aircraft / operations
- Make flight simulators & flight training devices more readily available and affordable so as to increase their use by operators

# INITIAL FLIGHT TRAINING ENVIRONMENT

1. All segments of Instruction provided by those most recently certificated as a CFI
2. Reverse of other professions such as Medical and Legal

# CONSIDER CHANGE

- **THE FLIGHT TRAINING BUSINESS MODEL**
- **SEGMENTED INSTRUCTOR PROGRAM**
- **ESTABLISHMENT OF FLIGHT INSTRUCTOR AS A LEGITIMATE CAREER PATH INSTEAD OF STEPPING STONE TO ADVANCEMENT**



# CFI CONSIDERATIONS

- Lifetime influence on your students
- Focus on
  - Decision making
  - Risk assessment
  - S.M.S
- Set an example
  - Safety first – above all else
  - Regulatory Compliance

# ACCURATE DATA

- 1. ACCURATE FLIGHT HOURS FLOWN ARE ESSENTIAL**
- 2. ACCIDENT RATE WOULD BE LOWER THAN WE CURRENTLY BELIEVE**

# Effect of uninformed end user

## Night charter request

- **1<sup>st</sup> Operator** Operating IFR Twin  
Two current pilots  
Rejected flight due to Weather
- **2<sup>nd</sup> Operator** Operating VFR Single  
Two pilots – only one current  
Accepted flight

Outcome: All 4 passengers fatalities  
10 miles from departure

# Informed GA Passengers

Keep passengers, who many times are family and friends, informed and involved in flight planning.

Brief passengers to express any concerns or observations, such as other traffic identification

Always make decisions predicated on what is in their best interest.

# HELICOPTER INDUSTRY EXPERIENCE LEVELS

- **Expansion of overall business activity**
- **Retirement of Viet Nam Era personnel**
- **Higher client standards**
- **Lack of young people entering industry**

## (POTENTIAL) EFFECT ON SAFETY

Shortage of experienced pilots and technicians

Inability of operators to meet business demands

And client standards

Lower experience levels (could) result in higher accident rates **if proper initiatives and cultures are not put in place.**

Flight Hours are not the sole determinant factor of Safety. Competency and currency in specific missions, operating environments and aircraft category / type are critical considerations



# Is technology the magic bullet Do we need more boxes?

- Terrain Avoidance Warning System
- Enhanced Ground Proximity Warning System
- Health Usage Monitoring System
- Automatic Dependent Surveillance Broadcast
- GPS (WAAS Enhanced)
- Night Vision Goggles

# There is no magic bullet

- Previous fatal helicopter accidents involved
  - Twin engine IFR helicopter
  - Had coupled autopilot
  - Two pilot IFR qualified and current crew
  - They were conducting VFR operations
  - Helicopter had advanced cockpit
  - Crew was familiar with the operating environment
  - No mechanical failures noted

# **WE HAVE A SAFETY PROBLEM**

- We know what the cause is**
- The accidents are preventable**
- This is unacceptable**

**EACH HELICOPTER ACCIDENT IS**

**EVERYONE'S ACCIDENT!!!!**

**How much safety can you afford ?**

**Basic premise for consideration**

**IF YOU THINK SAFETY IS EXPENSIVE**

**TRY AN ACCIDENT**

**APPROPRIATE TO THE SPECIFIC**  
**OPERATING ENVIRONMENT AND MISSION**

**ONE SIZE DOES NOT FIT ALL**

**I.E. – Wire Strike Kit**



**MUST CONSIDER RETROFIT**  
**CAPABILITY TO EXISTING FLEET**

**WILL EFFECT MAJORITY OF  
AIRCRAFT**

**SAFETY INITIATIVES**  
**MUST BE ECONOMICALLY VIABLE**

**FIRST PRIORITY OF ANY  
ORGANIZATION**

**FINANCIAL HEALTH**

**Return on Investment Software**

**ARE WE NEGLIGENT ???**  
**ARE WE FACILITATORS ???**

**Industry Quotes**

- “If there was going to be an accident I always knew it would be them / him –her”
- “They were an accident waiting to happen”
- “I knew if they kept doing that they would have an accident”

**WHY DON'T WE INTERCEDE ??????**

# What about the Passengers

## A number on a form

- Accidents investigations are technically oriented and discussions involve the aircraft, crew, weather, mission, infrastructure.
- What about the passengers, those they leave behind. The effect of their death or injury involves dozens if not hundreds of others.
- As a first priority decision making, risk assessment should be made predicated on what is in the best interest of the passenger, not other interests.
- Industry / survivor interface is powerful safety motivator

# **PILOTS / TECHNICIANS**

**THE FINAL SAFETY GATE**

# **BE PREPARED TO EXIT** **AN UNSAFE SITUATION**

- **CANCEL AN UNSAFE FLIGHT**
- **DO NOT RETURN AIRCRAFT TO SERVICE OR ALLOW ONE TO REMAIN IN SERVICE IF IT IS NOT SAFE AND AIRWORTHY.**

**Passengers put their lives in your hands**

# **ECONOMIC MOTIVATORS**

**HAVE NEGATIVE EFFECT**

**ON DECISION MAKING**



**MUST CHANGE THE WAY WE**  
**CONDUCT FLIGHT OPS**

**IS CHANGE POSSIBLE**

**???????**

**YES**

**THINK ABOUT**

**SEAT BELTS**

**SMOKING**

# **CHANGE THE INDUSTRY MINDSET AT ALL LEVELS**

- **AVIATION INDUSTRY IS ORIENTED TOWARDS MISSION COMPLETION**
- **AGGRESSIVE CAN DO ATTITUDE**
- **FAILURE IS NOT AN OPTION**

**ACCEPT THE REALITY**  
**CHANGE THE MINDSET**

**“NO / CAN NOT / WILL NOT”**

**ARE ACCEPTABLE  
RESPONSES**

**SAFETY IS NOT A SLOGAN**

**IT REQUIRES DAILY**  
**COMMITMENT & PASSION**

**TAKE RESPONSIBILITY**

**SHARE THE VISION**

**IMAGINE NO ACCIDENTS**

# CONTACT INFORMATION

## MATT ZUCCARO - CONTACT INFO

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**E-MAIL:** **TAILROTOR@AOL.COM**

**HAI WEBPAGE:** **WWW.ROTOR.COM**

**IHST WEBPAGE:** **WWW.IHST.ORG**



# QUESTIONS