

International Helicopter Safety Team

Международная группа по безопасности вертолетов

IHST and HIA Operator Meeting

Встреча IHST и АВИ операторов

IHST

International
Helicopter
Safety Team



Fanis Mirzayanov - HIA Director



Stan Rose HAI – Director of Safety
US Helicopter Safety Implementation Team (US JHSIT)

Ed DiCampi HAI – Executive Vice President
IHST Communications Team



Today's Objectives

Цели сегодняшней встречи

- Show the case for change in helicopter safety
Рассказать об изменениях в понимании безопасности вертолетов.
- IHST program status - US and worldwide efforts
Статус программы IHST – объединение усилий США и мирового вертолетного сообщества.
- Basics of analysis and implementation processes
Основы анализа БП и внедрение процессов управления ею.
- Top level analysis findings - US fleet accident data set
Анализ выводов верхнего уровня – данные об инцидентах США.
- Invite stakeholders in Russia to consider working with us
Предложение заинтересованным организациям России - рассмотреть вопрос о сотрудничестве с IHST.

- IHST Goal: To reduce worldwide helicopter accident rate by 80% by 2016!

Цель IHST: снизить уровень инцидентов к 2016 г. на 80 %



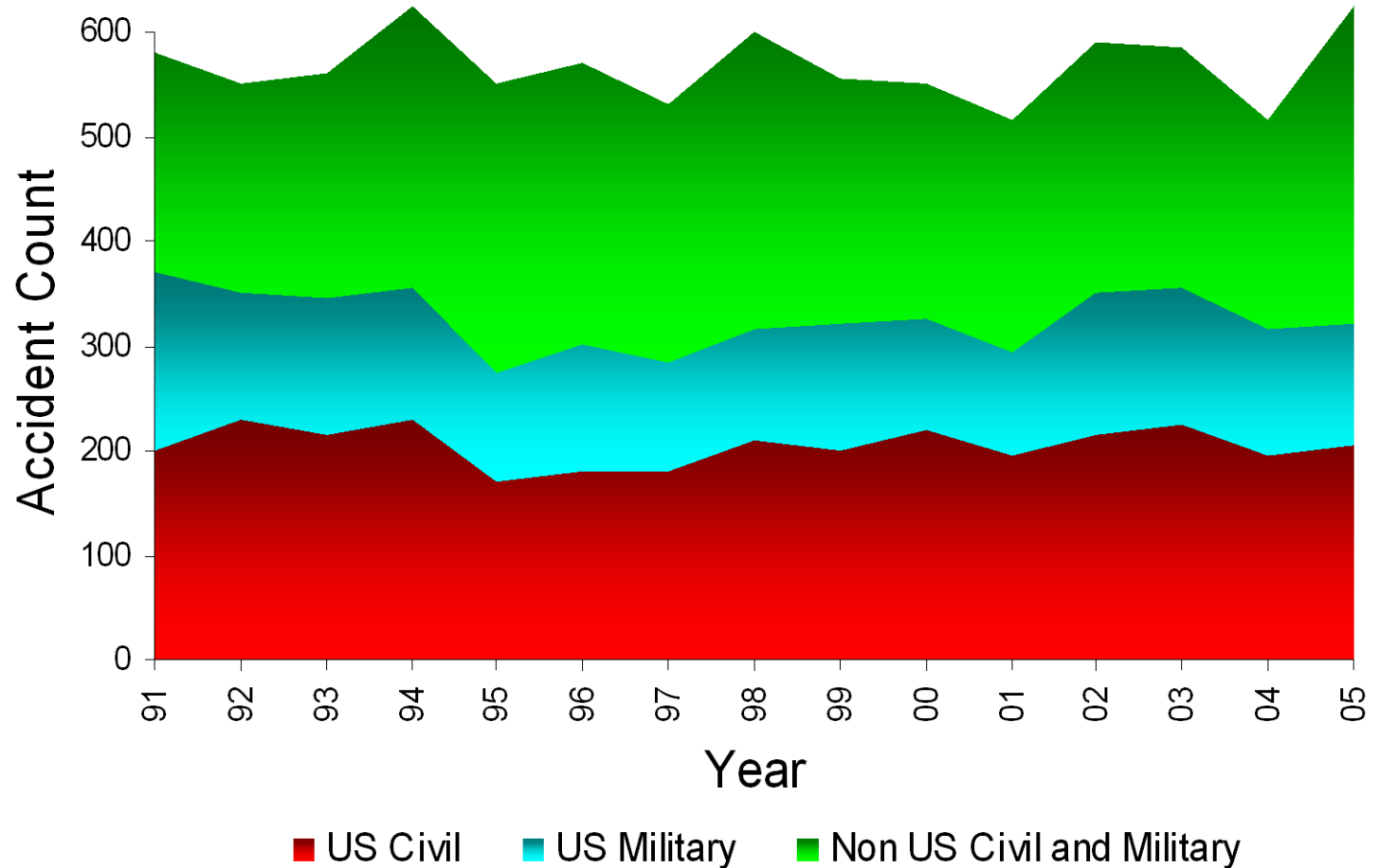
- 2011-2016 are critical to achieving success
2011-2016 имеют решающее значение для достижения успеха
- Reduce accidents...save lives!!!
Сокращение числа несчастных случаев ... спасти жизни!

This is where we were...

Это то место где мы были...

Worldwide Helicopter Accidents per Year

1991 to 2005



Source - Bell Helicopter

IHST = Worldwide Effort

400 Volunteers and Growing

IHST follows a process adapted from the successful Commercial Aviation Safety Team (CAST)

IHST следует адаптированному опыту БП коммерческой авиации

Key attributes: (Осн. характеристики)

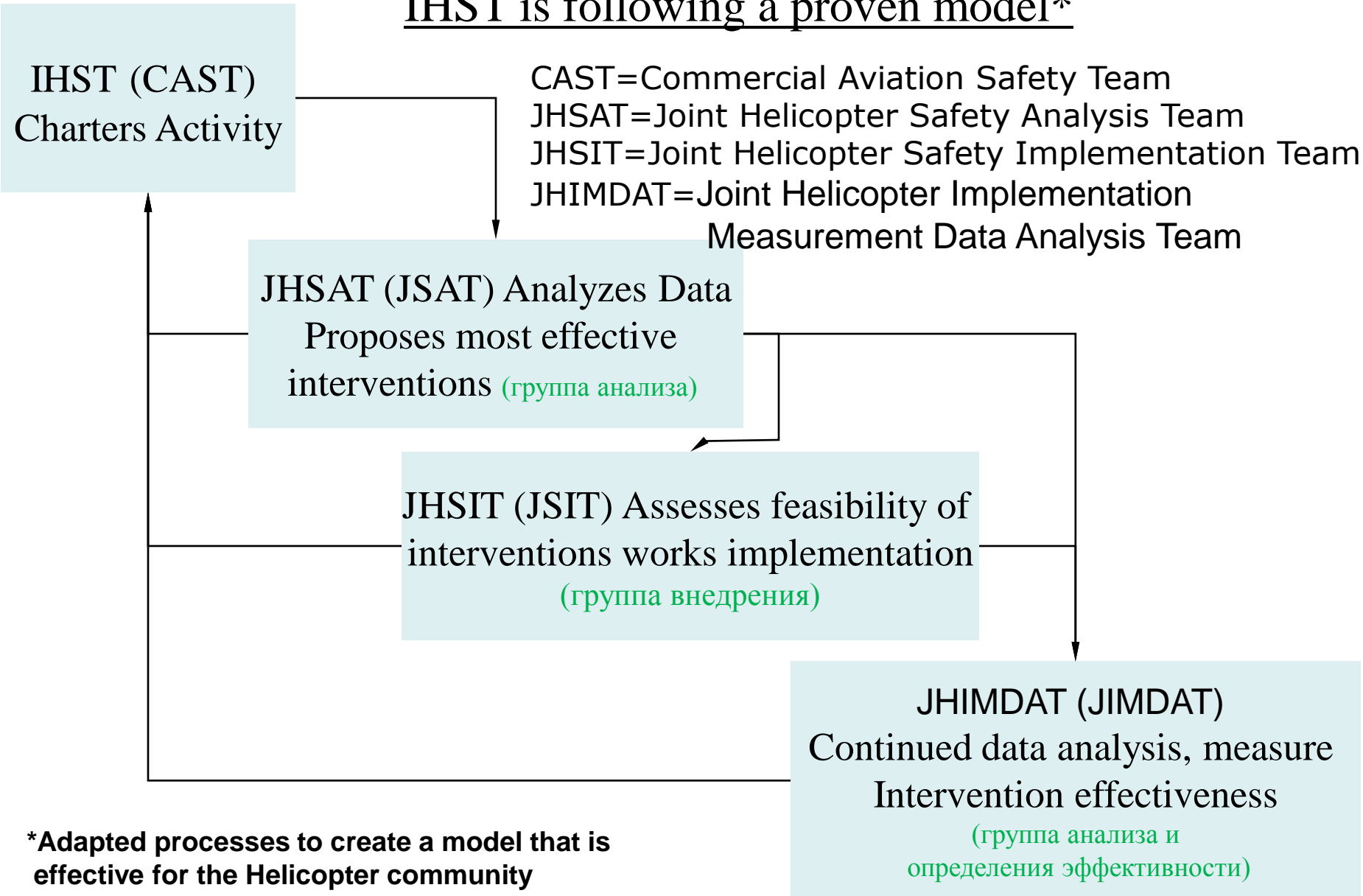
- Data driven recommendations
(Исполнение рекомендаций)
- Regional ownership (Региональное участие)
- Data is owned and analyzed by those familiar with it. (Сведениями владеют и анализируют их те, кто знаком с ними)
- Safety recommendations are implemented by teams most familiar with local challenges and needs. (Рекомендации внедряют команды наиболее знакомые с местными потребностями)

US and European Teams available for: (Могут помочь):

- Sharing analysis tools and products (Поделиться инструментами и продуктами анализов)
- Training and coaching regional teams (В обучении и тренировке региональных команд)
- Measuring the results (Измерения результатов)



IHST is following a proven model*



IHST Organization Chart

Executive Committee

Government Co- Chair
FAA - Kim Smith

Industry Co- Chair
HAI – Matt Zuccaro

Secretariat
AHS – Rhett Flater

Program Director
FAA – Sue Gardner

Director
Bell Helicopter – Somen Chowdhury

Director - EHEST
Dave Huntzinger – Eurocopter

Director
Shell Aircraft – Bob Sheffield

Director
TBA - NASA

Director
HAC – Fred Jones

Director
EHA Representative – Vittorio Morrassi

US JHSAT JHSIT JHIMDAT Co-Chairs

Regional Partners - Australia, Brazil, Canada, Europe,
Gulf Flight Safety Committee, India, Japan, US

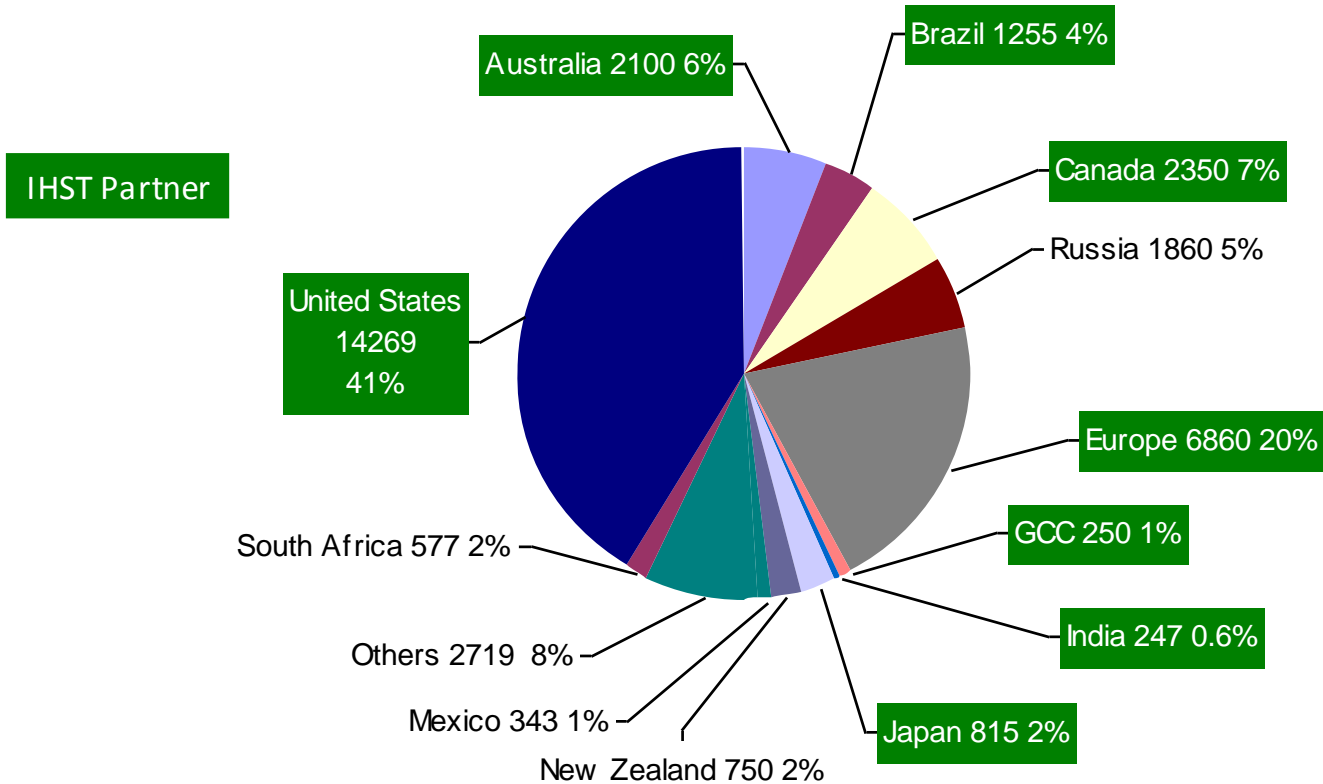
JHSAT_Co-Chairs

JHSIT Co-Chairs

JHIMDAT Co-Chairs

Worldwide Civil Helicopter Fleet Distribution

34395 rotorcraft



Source : IHST- Dec 2009

Worldwide participation is key to success

Accident Rates Vary by Region of the World

Civil registered helicopter accidents and flight hours from IHST data

Pre-IHST (2001-2005) accident rates vs. 2010 thru December accident rates



World
Pre: 9.4
2010 Dec: 6.3
**Accidents per
100K flt hrs**

**North
America**
Pre: 9.3
2010: 5.0

**South
America**
Pre: 9.7
2010: 8.7

Africa
Pre: 12.9
2010: 7.4

Europe
Pre: 7.1
2010: 6.4

Asia
Pre: 9.4
2010: 8.3

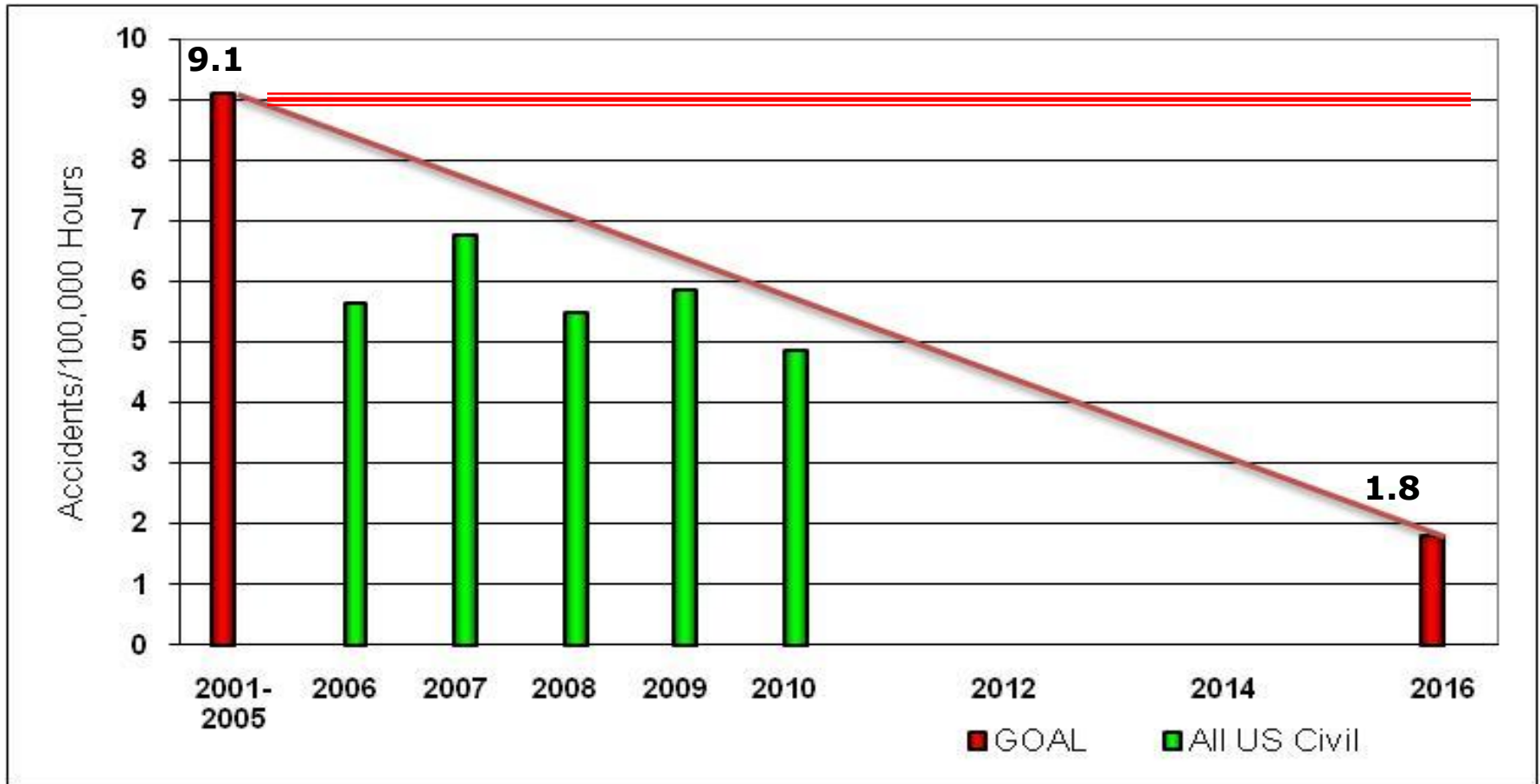
Oceania
Pre: 17.5
2010: 14.2

Accuracy of flight hour exposure estimate improves every year.

17 January 2011

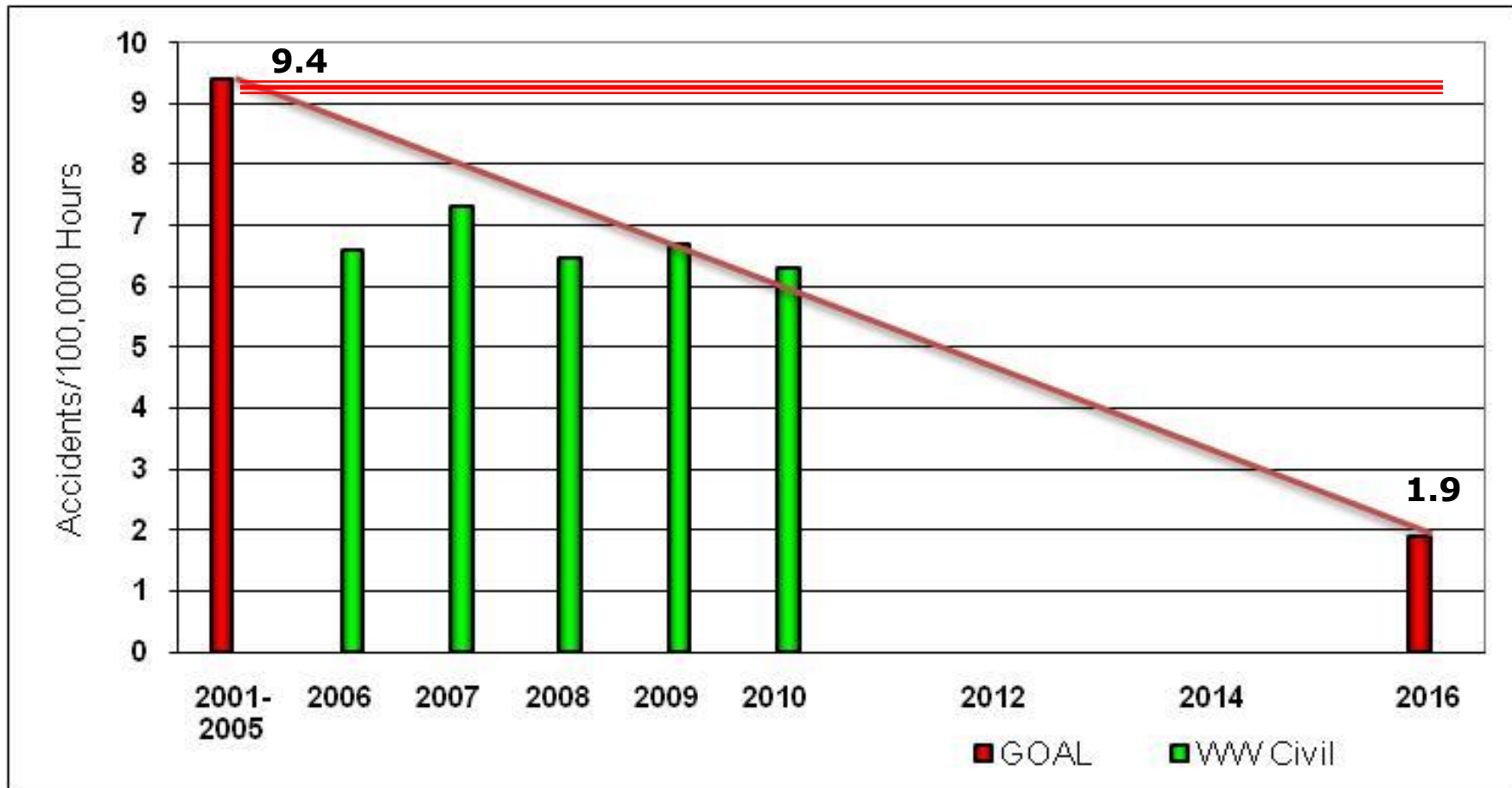
IHST US Registered Progress Toward 80% Goal

(Число происшествий с вертолетами американской регистрации по отношению к цели 80%-го снижения)
(Through December 2010)



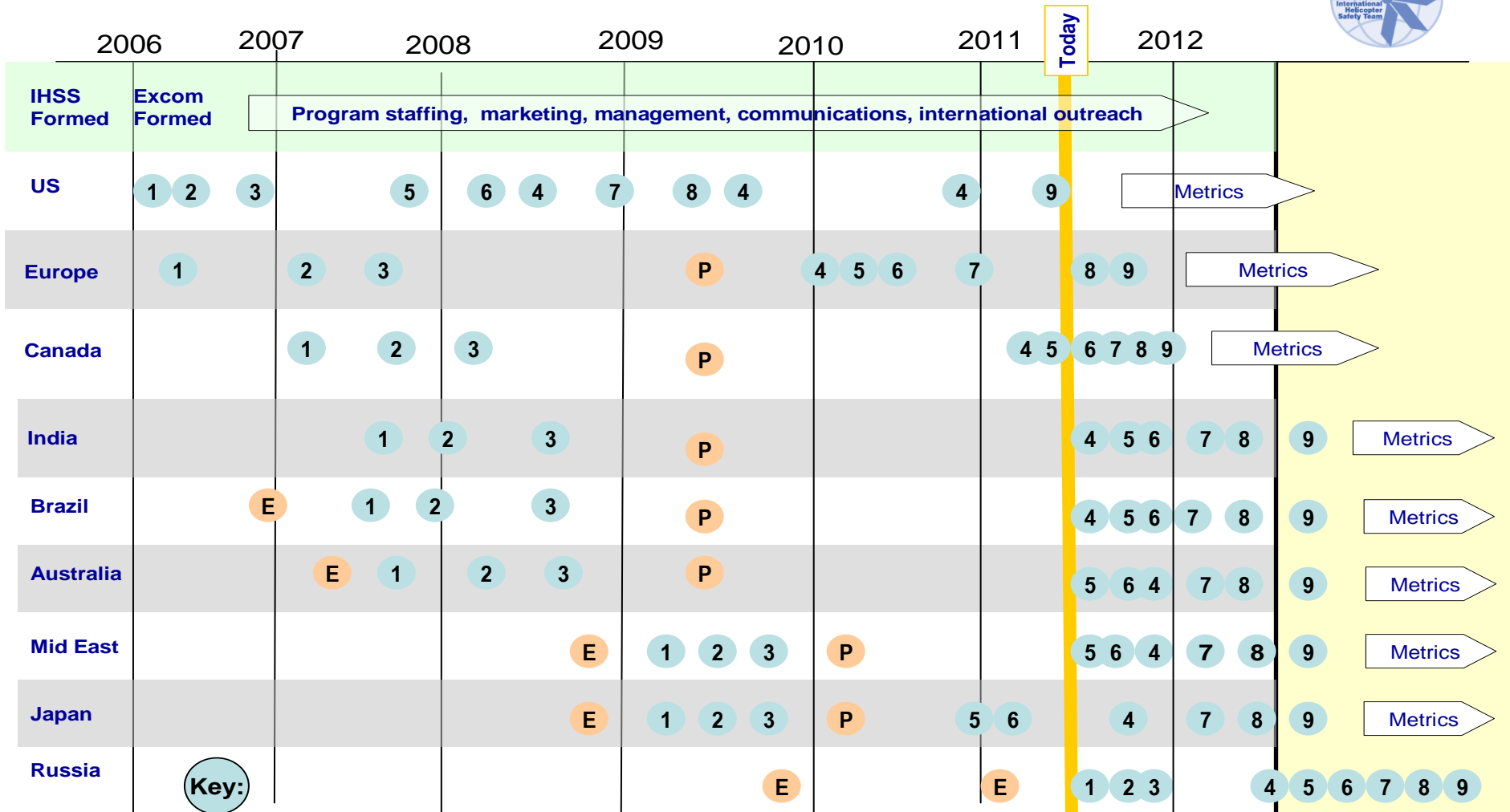
IHST Worldwide Progress Toward 80% Goal

(Число происшествий с вертолетами мирового сообщества по отношению к цели 80%-го снижения)
(Through December 2010)



IHST - Regional Process Tracking

(03 2011)



- 1 Regional Kickoff Meeting
- 2 JHSAT Team Formed
- 3 Accident Dataset Established
- 4 JHSAT Report Complete
- 5 JHSIT Formed
- 6 JHSIT Process Refined
- 7 JHSIT SEs complete
- 8 JHSIT DIPs complete
- 9 JHIMDAT Formed
- P Prelim Report/Data
- E "Exploratory" Mtg

Current State Summary

Текущие результаты

- We have made good progress toward our goal. Мы получили хорошее движение вперед к нашей цели.
- **Public Perception – Every accident is our accident!** Открытое публичное восприятие – Каждая авария, это наша авария!
 - Reaching the operators who've yet to implement proven safety interventions is key to reaching the IHST goal. Увеличение числа компаний внедряющих управление БП – ключ к достижению целей IHST.
 - Reducing accidents is key to changing public perception. Снижение числа аварий – ключ к изменению публичного восприятия.
 - Only then will the Helicopter industry realize its true potential. Реализация вышеназванного потенциала – необходимое условие.

Developing an Implementation Strategy

Развитие внедренческой стратегии

IHST is developing a multi-pronged plan to reach small and medium operators.

IHST применяет многосторонний план для привлечения малых и средних операторов.

To date the plan is based on knowledge of the infrastructure in the North America and Europe.

План основан на знании инфраструктуры Северной Америки и Европы.

IHST needs input and participation from each international partner to formulate a worldwide

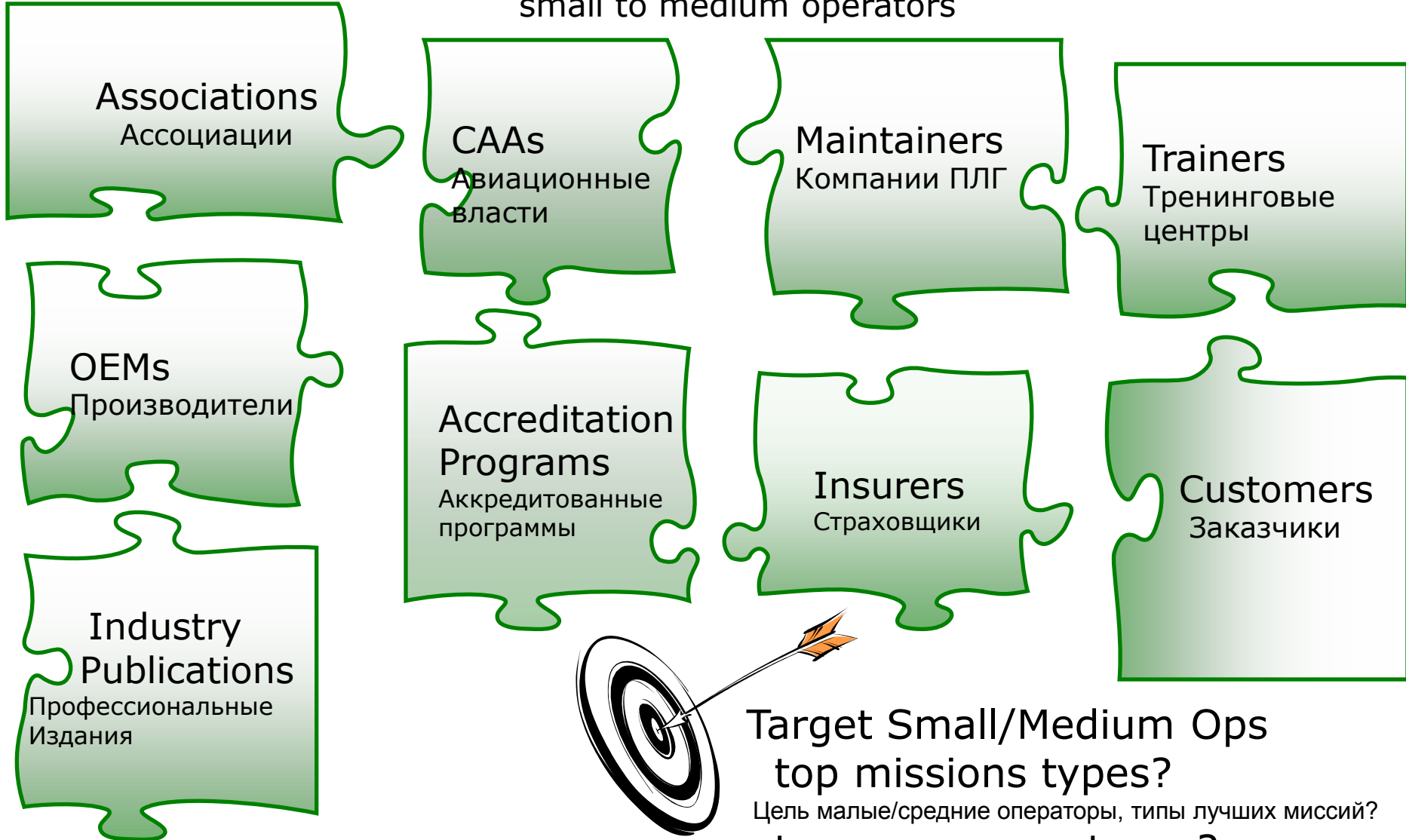
IHST необходим вклад и участие каждого международного партнера для внедрения во всем мире

Marketing plan – especially for the common safety recommendations.

Необходим маркетинговый план - особенно для общих рекомендации по обеспечению БП

Pathways to Influence Change

small to medium operators



Target Small/Medium Ops
top missions types?

Цель малые/средние операторы, типы лучших миссий?

top occurrence types?

Пути возникновения лучших типов?

Heli-Expo 2010 and IHSS 2010

В широкую поддержку инициатив IHST по безопасности, руководители компаний AgustaWestland, Bell Helicopter Textron, Eurocopter and Sikorsky Aircraft подписали совместные письма «Призыв к действиям владельцев вертолетов» и «10 важнейшим офшорным операторам» с призывом о поддержке усилий IHST в отношении поддержки офшорных операторов.

*In a ringing endorsement of the IHST safety initiative, the **CEO's of AgustaWestland, Bell Helicopter Textron, Eurocopter and Sikorsky Aircraft** signed a joint letters captioned "A Call for Action by Helicopter Owners." and "**Ten Major Offshore Operators**" signed a joint letter of commitment captioned "Call to Action by and for Offshore Helicopter Operators"*

- Письмо призывает "всех тех, кто работает на наших вертолетах для улучшения безопасности работ выполнять рекомендации IHST.

The letter calls upon "all those who operate our products to implement the safety enhancements recommended by the International Helicopter Safety Team (IHST)."

- В письмах предлагается использование:

The areas cited in the letters are the adoption of:

- Safety Management Systems (SMS) (Сист. упр. БП)
- Improved Training (улучшенный тренинг)
- Use of advanced systems/equipment (исп. совр. сист. и обор.)
 - Flight data monitoring systems (FDM) (ССПИ)
 - Health monitoring systems (HUMS)
- Use of mission-specific equipment (исп. спец. обор.)
 - Night vision goggles (очки ночного видения)
 - Avionics to avoid controlled flight into terrain (системы предупрежд. сблиз. с землей)
- Strict compliance with manufacturer's maintenance program (строгое исп. Программ ТО производителей)
- Cultural/Behavioural Change, and (культурные/поведенческие изменения)
- Crew Resource Management (CRM) Program (Программы управления ресурсами экипажа)



Attachments: Summary of IHST recommendations
Risk Assessment Tool

Heli-Expo 2011 - A Call for Action by HEMS Organizations

Призыв к действию к операторам, оказывающим услуги медицинским организациям

In a ringing endorsement of the IHST safety initiative, the following seven HEMS Organizations signed a joint letter of commitment captioned

(следующие 7 организаций подписали письмо в поддержку инициатив IHST)

"A Call to Action by and Helicopter Emergency Medical Services Organizations" – AAMS, AeroMed, ACCT, AMOA, EHAC, MedEvac, NEMSPA.

*The letter calls upon **"all those who operate helicopters in the HEMS environment to implement the safety enhancements recommended by the IHST.***

«Письмо призывает «всем кто оказывает услуги мед организациям внедрять рекомендации безопасности IHST»

The four areas cited in the letter are the adopt

- Safety Management Systems (SMS)
- Improved Training
- Use of advanced systems/equipment
 - Flight data monitoring systems (FDM)
 - Health monitoring systems (HUMS)
- Cultural/Behavioural Change, and
- Aeromedical Crew Resource Management (CRM) Programs



Products and Plan

- Helicopter Safety Leaflets (листовки)
- Safety Considerations, 2010 (случаи безопасности)
- Degraded Visual Environment (DVE) (потеря простр. положения)
- Vortex Ring State (вихревое кольцо)
- Loss of Tail rotor Effectiveness (LTE) (потеря упр. ХВ)
- Static and dynamic rollover (статич. и динамич. опрокидывание)
- Helicopter Safety Video, March 2011
- Degraded Visual Environment (частичная потеря простр. полож.)



Pre-flight Risk Assessment Checklist Tool

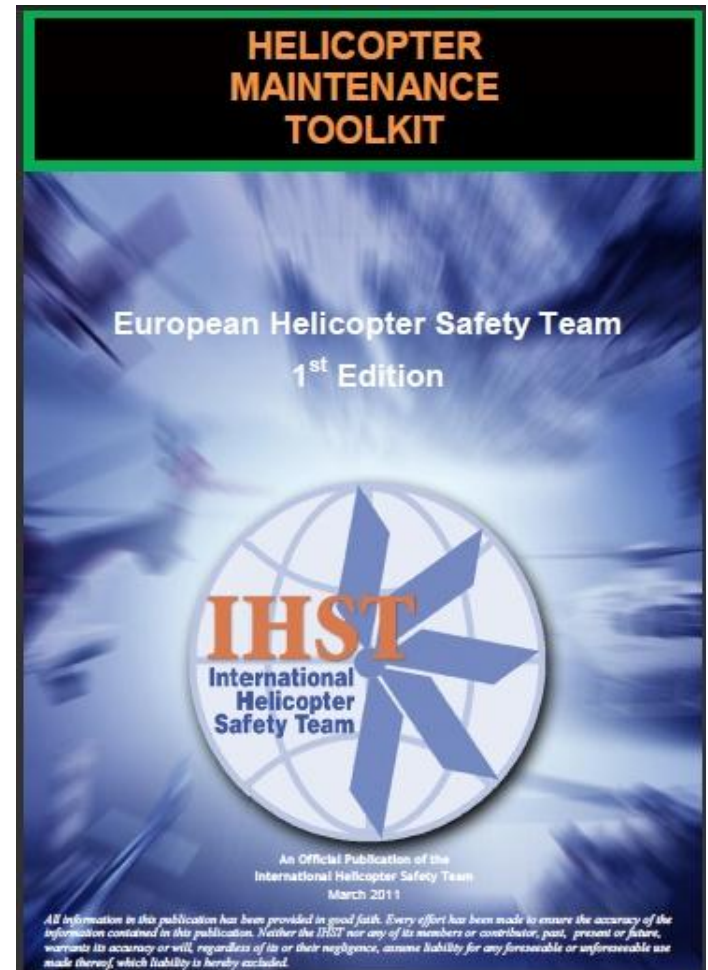
(Инструмент самостоятельной оценки риска)

- ➔ Free tool for operators (бесплатен для компаний операторов)
- ➔ Promotes pilot and technician risk assessment (помогает пилоту и технику оценить риск)
- ➔ Highly adaptable by operators (хорошо адаптируется к операторам)

PRE-FLIGHT RISK MANAGEMENT CHECKLIST							
		0	Initial Score			0	Final Score
MULTI CREW		1				1	
		2				2	
CAPTAIN				MITIGATION			
PERSONAL CONDITIONS							
Physical	No problems. Physically in shape.	X	0			X	0
	Nausea, not completely in shape.						
	Headache, cold, fever, toothache.						
Medication	No medications in the last 24 hours.		1				1
	Over the counter medication.	X				X	
	Prescription medication. Attention and driving impairing medication.						
Sleep	Well slept.		2				1
	Moderate sleep or no sleep in the last 13 hours.					X	
	Poor sleep.	X					
Fatigue	No fatigue.	X	0			X	0
	Moderate fatigue.						
	Mentally or physically fatigued.						
Food & drink	Adequately nourished and hydrated.		2				1
	Flight conducted during breakfast, lunch or dinner time. 4 to 6 hours without eating. 2 to 4 hours without drinking.					X	
	More than 6 hour from last meal. More than 4 hours without drinking. Hot weather and no drinking water on board.	X					
Physiologic	Physiologically relieved.	X	0			X	0
	Medium mission duration with no rest facilities available.						
	Long mission duration with no rest facilities available.						
Emotion	Not emotionally involved.	X	0			X	0
	Emotionally involved. Little private problems.						
	Emotionally stressed. Legal, financial or family problems.						

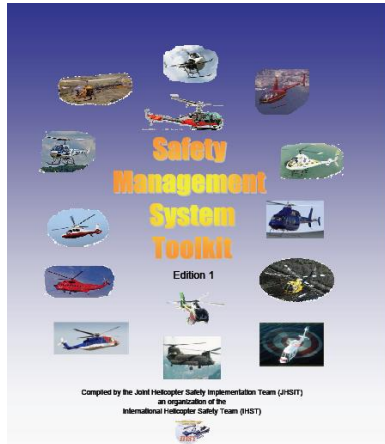
Maintenance Toolkit

- Published March 2011
 - Development led by the EHEST with participation by the US implementation team
 - Worldwide application, building on European and US references, including operator best practices
 - Scalable for all sizes and types of operators
 - Posted on IHST and EHEST websites

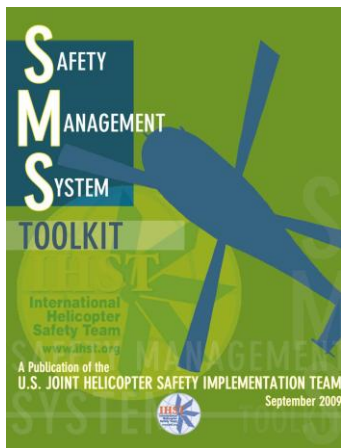


IHST TOOLKITS

SMS 1st Edition



Edition 2



IHST Communications Update

IHST Communications Team

- Multi-lingual Website and Toolkits

On the Internet:

- SKYbrary partnership – Helicopter Safety Portal
- FAA Safety.gov – FAASTeam
 - Link to WINGS Program and Helicopter Training Products
- Global HFDM Committee
- Safety articles, videos, and presentations

**Please put a link to the IHST website
(www.IHST/org)
on your own website**



JHSAT Reports and JHSIT Products

www.IHST.org

JHSAT Reports:

- US JHSAT Year 2000 Report
 - US JHSAT Year 2001 Report
 - US JHSAT Year 2006 Report
 - EHSAT Report 2000-2005
 - CDN JHSAT Year 2000 Report
- 

Safety Resources and Products:

- HAI Safety Videos
- FAAS Team – Training Materials
- Skybrary Portal
- Global HFDM Website
- Helicopter Safety.org
- FAA Human Factors Web Portal
- Calendar of Events

JHSIT Products:

- US SMS Toolkits (1st and 2nd addition)
 - US SMS Video (HAI/IHST)
 - US Training Toolkit
 - US HFDM Toolkit
 - EHEST Maintenance Toolkit (April 2011)
 - EHEST Training leaflet
 - EHEST Training Video
 - IHST Self Risk Assessment Toolkit
 - IHST Helicopter Safety Recommendation Summary for Small Operators
 - IHST Tri-Fold Flyer
 - IHST Presentations and Publications
- 
- 

IHST.ORG

Announcements

IHSS 2011 - Friday, March 04, 2011



IHSS 2011
Fifth International Helicopter Safety Symposium
November 8-9, 2011
Worthington Renaissance Hotel • Fort Worth, Texas USA

"Human Factors: Our Collective Challenge - Our Individual Responsibility"

For more than 20 years, civilian helicopter accidents have remained at a consistently high and unacceptable level around the world. A global effort led by the International Helicopter Safety Team, launched in 2005, has been focused on finding ways to drive accident rates lower. The goal is to reduce worldwide helicopter accident rates 80 percent by 2016. A key challenge in achieving that goal lies in addressing the human factors in helicopter safety and fostering a culture in which individual members of the international helicopter community (both organizations and people) take personal responsibility for preventing accidents and enhancing safety. [View the announcement and registration form.](#)

News Briefs

IHST GOAL:

To reduce the helicopter accident rate by 80% 2016.

IHST Toolkits

- SMS Tool Kits & Videos
- Training Toolkits
- Risk Assessment Toolkits
- HFDM Toolkits

IHST JHSAT Reports

- [US JHSAT Year 2001 Report](#)
- [US JHSAT Year 2000 Report](#)
- [US JHSAT Year 2006 Report](#)
- [EHSAT 2000-2005 Preliminary Report](#)
- [EHEST Final Report 2000-2005](#)
- [EHEST 2008/2009 Preliminary Findings](#)

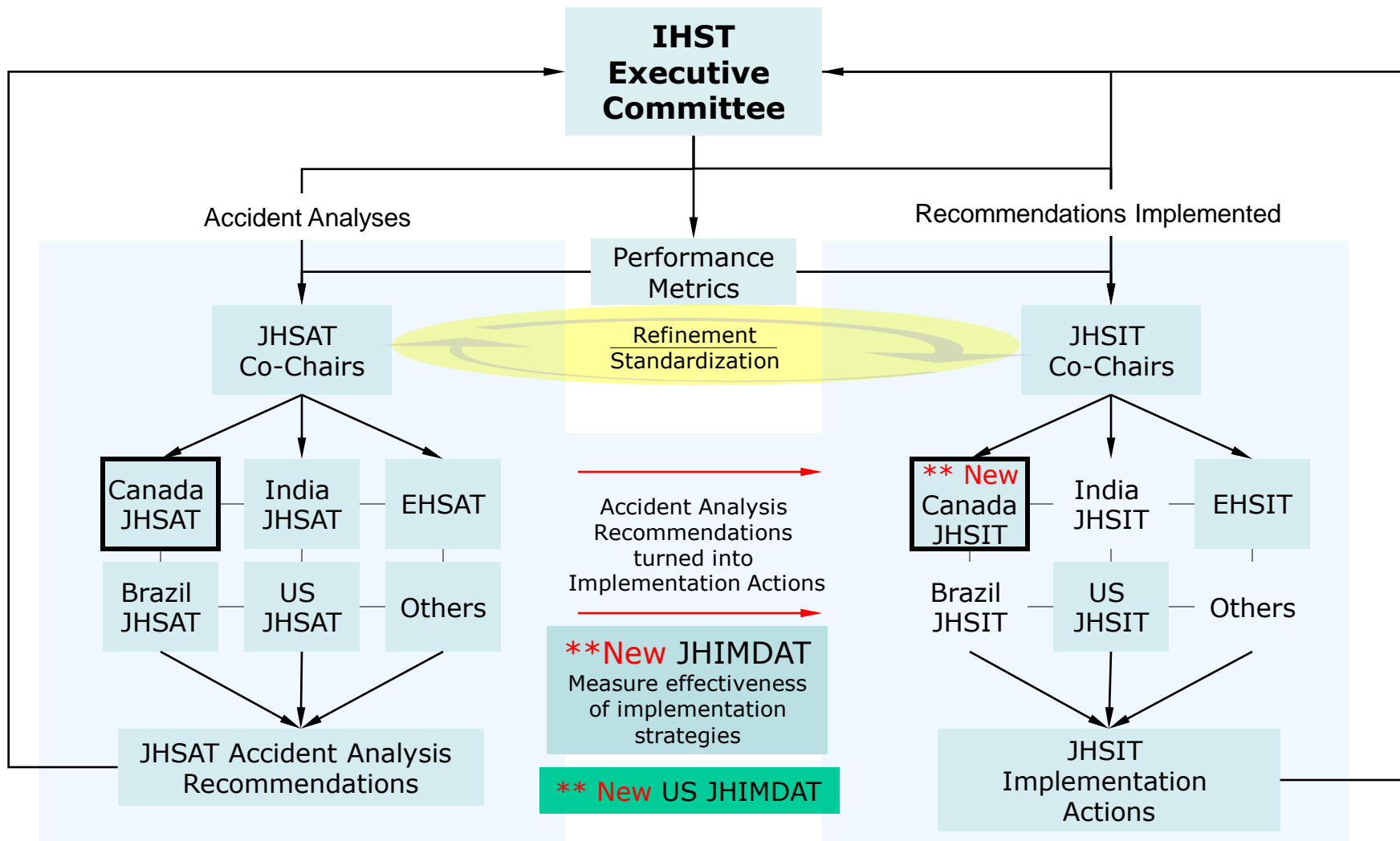
Helicopter Safety Videos

US and International Analysis Results

Full reports at ihst.org

IHST Safety Initiative

Analysis, Implementation and Metrics Functional Structure



Similarity in Results Worldwide

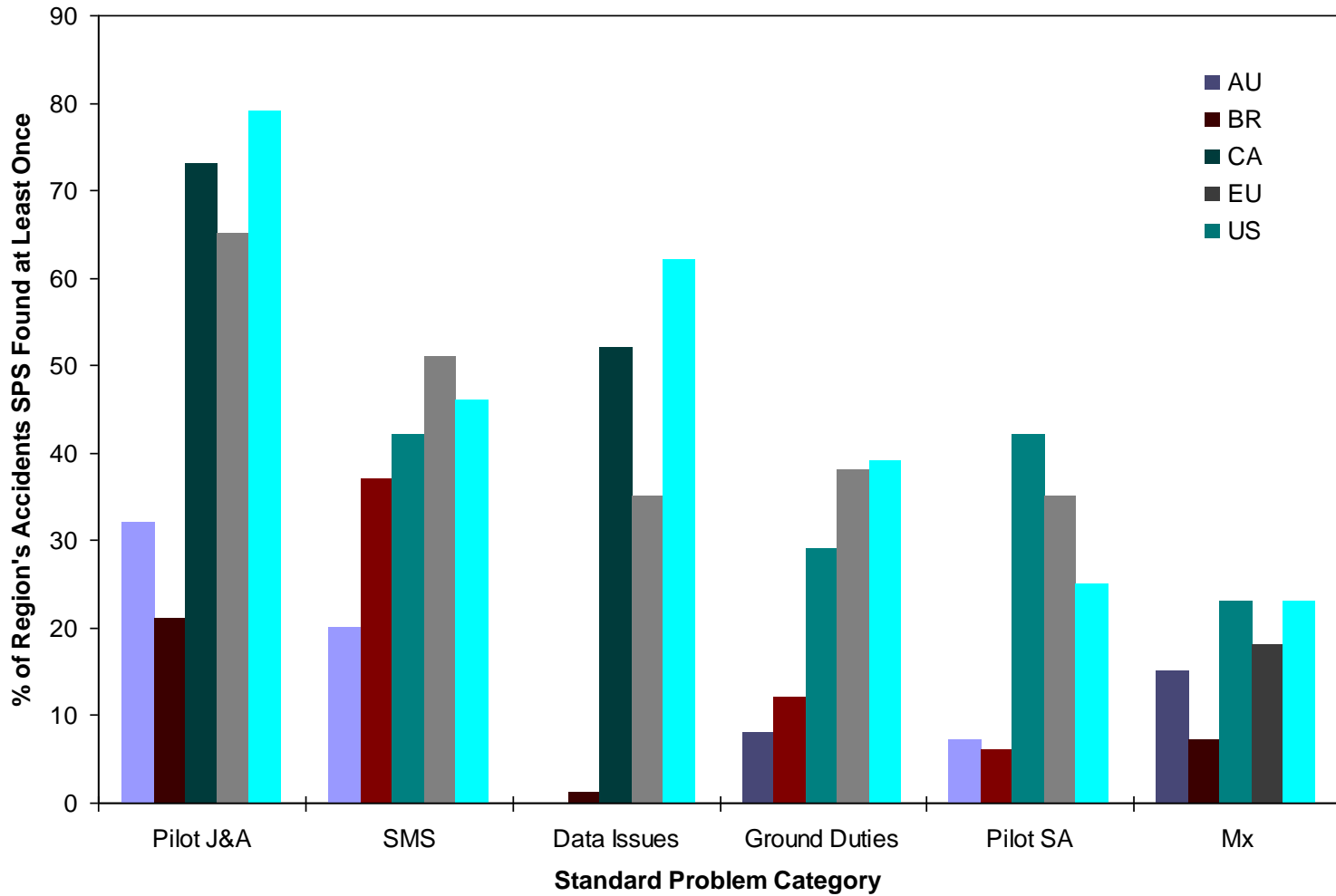
Although the final set of regional analyses are not yet complete the data shows many common themes.

- Need to develop strategies to move in concert on the common themes.
- IHST will act to minimize duplication of effort.
- Unique regional needs best worked locally.
- Future efforts focused in South Africa, Australia, New Zealand, Russia, and Brazil

Time is of the essence!

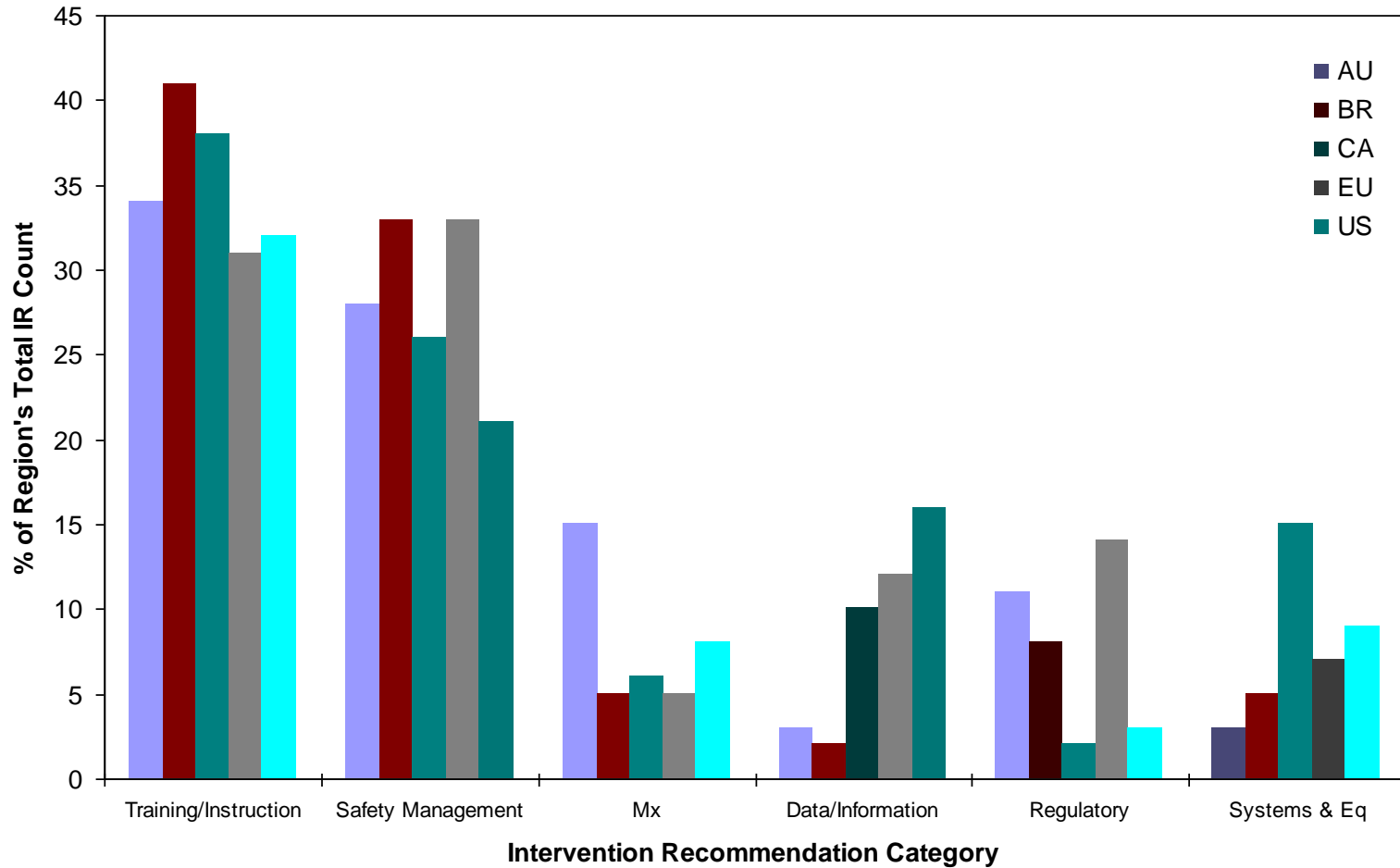
IHST Region-by-Region SPS Data

Top 6 by Overall Frequency (Regional fleets >1000 helicopters)



IHST Region-by-Region IR Data

Top 6 Primary Category Comparison (Regional fleets >1000 helicopters)

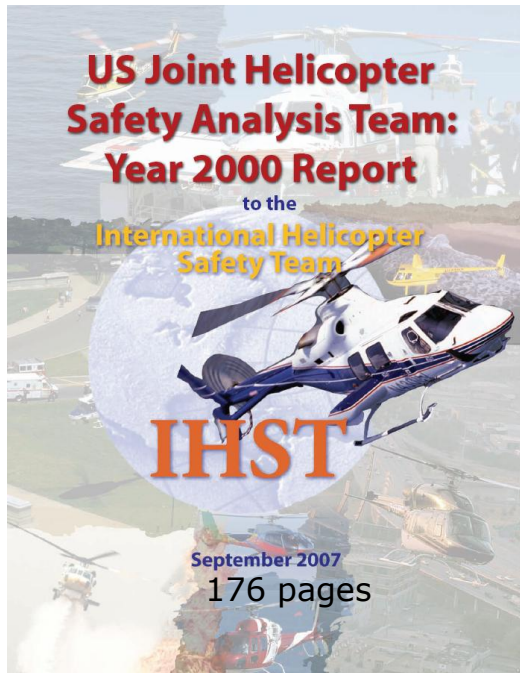


US JHSAT Overview

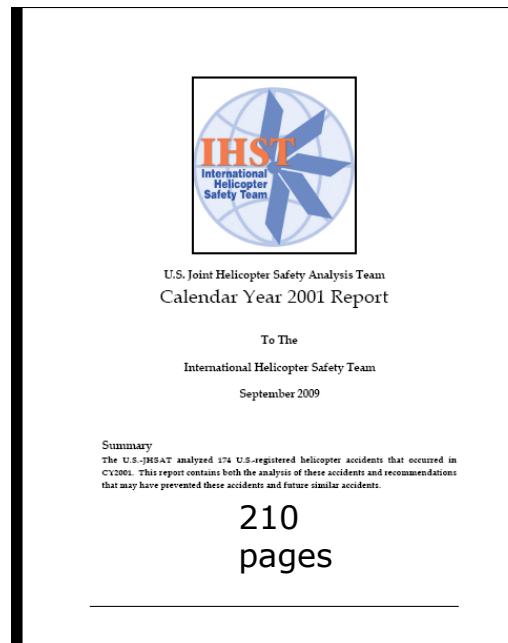
- **Data set – NTSB Accident Dockets**
 - U.S. civil registered helicopters
 - Type certificated (amateur built helicopters excluded)
 - Includes ‘Public Use’ and restricted category
- **Data-based analysis**
 - Problems defined (SPS)
 - Interventions for each problem statement
 - Recommendations weighted by frequency of occurrence

U.S. JHSAT ANALYSIS

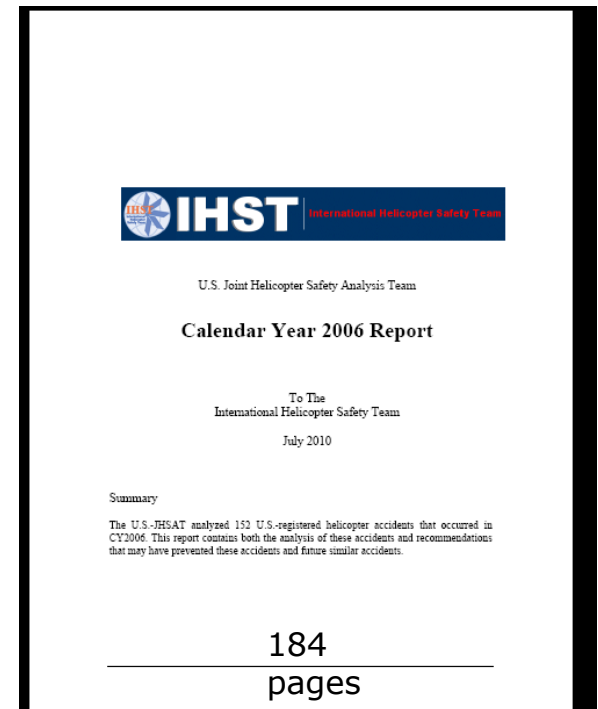
523 ACCIDENTS ANALYZED



197 Accidents
37 Instructional /
Training



174 Accidents
29 Instructional /
Training

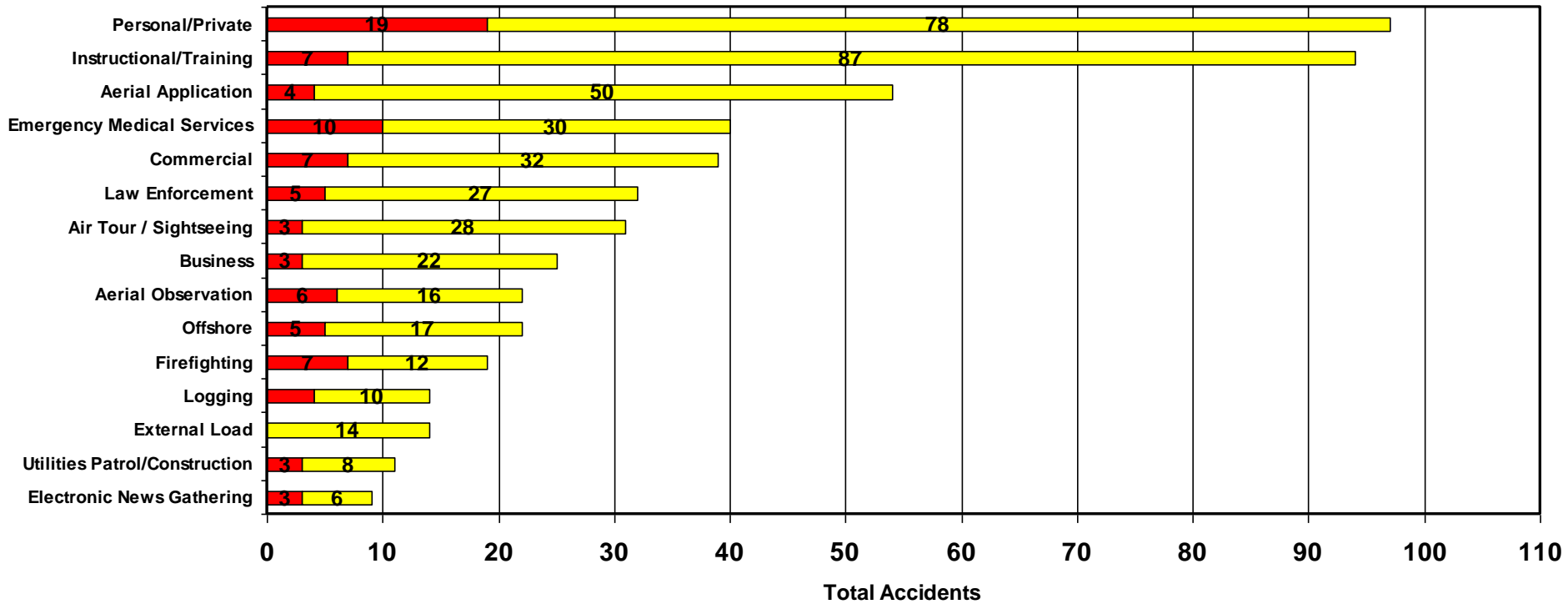


152 Accidents
28 Instructional /
Training

US Accidents by Mission - Compendium

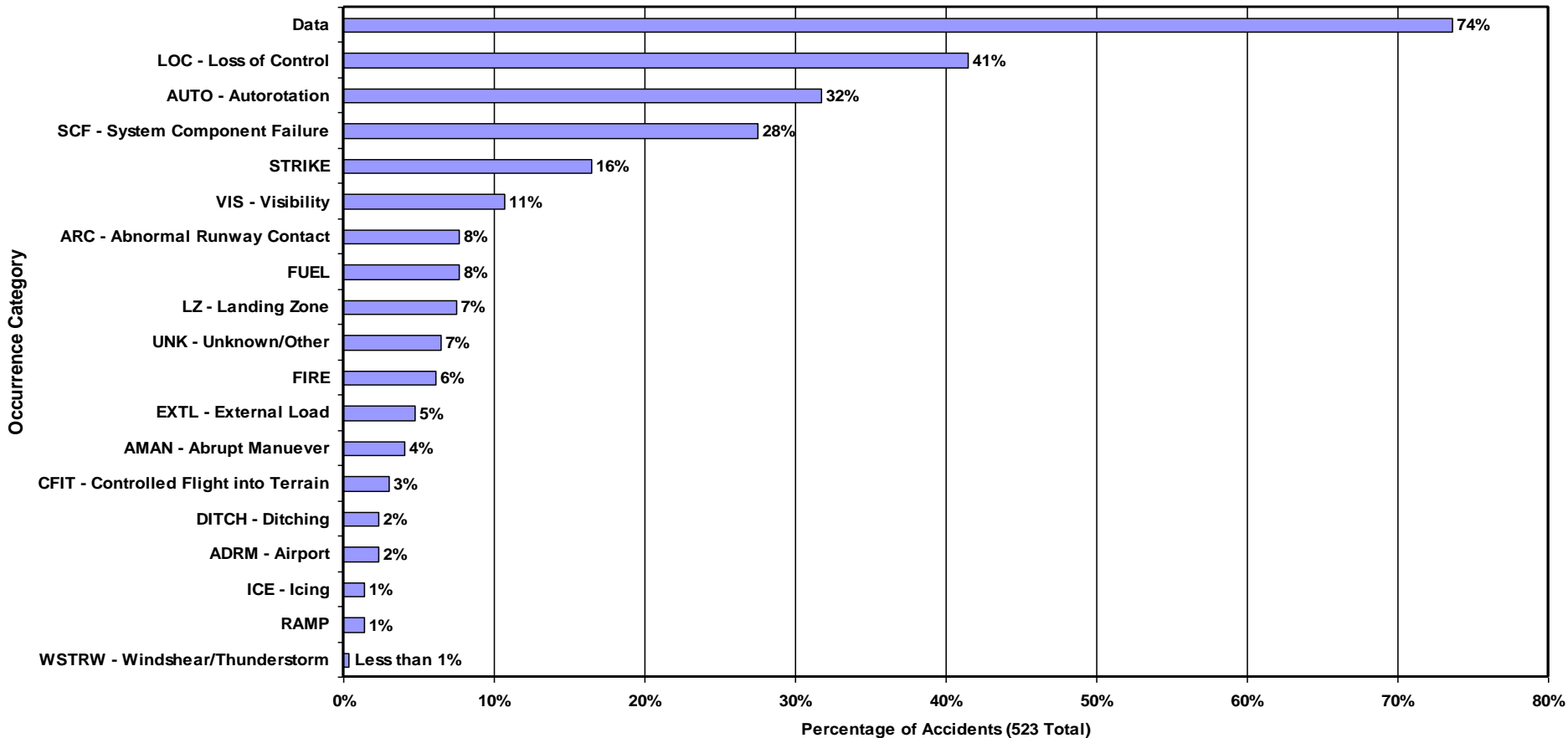
Accidents by Industry (523 Total Accidents)

Note: 86 Fatal Accidents in Red, 437 Non-Fatal Accidents in Yellow



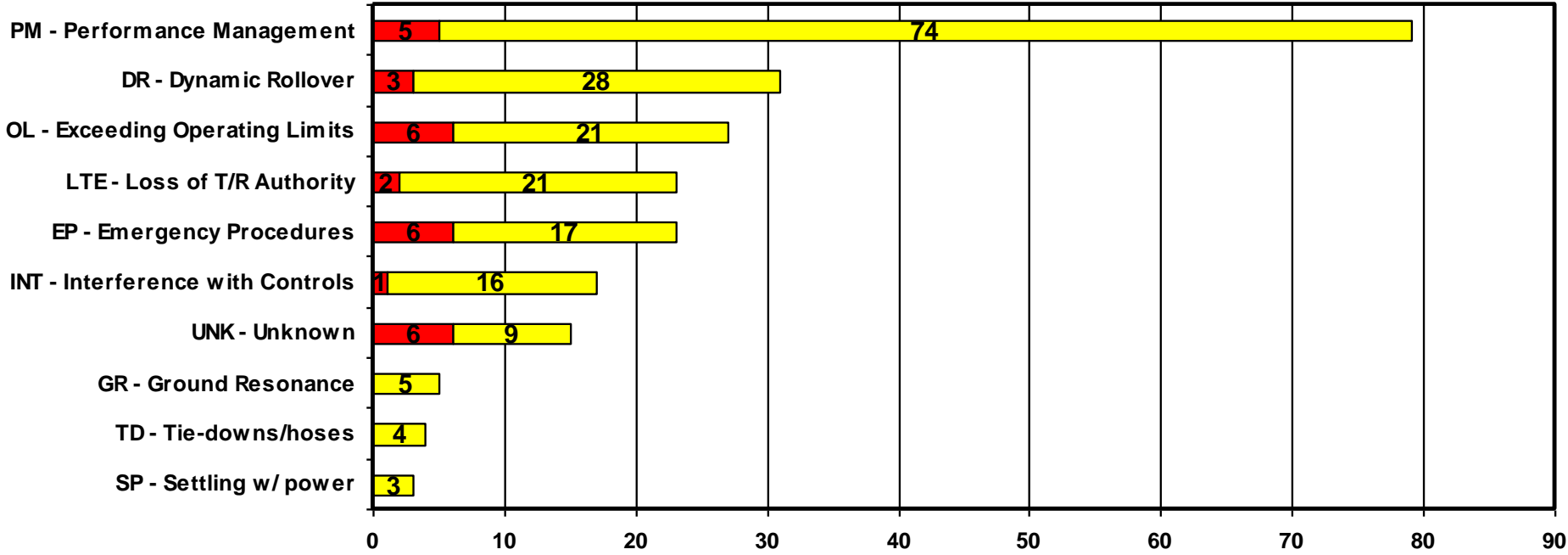
US Accidents by Occurrence Types - Compendium

Accidents by Occurrence Category



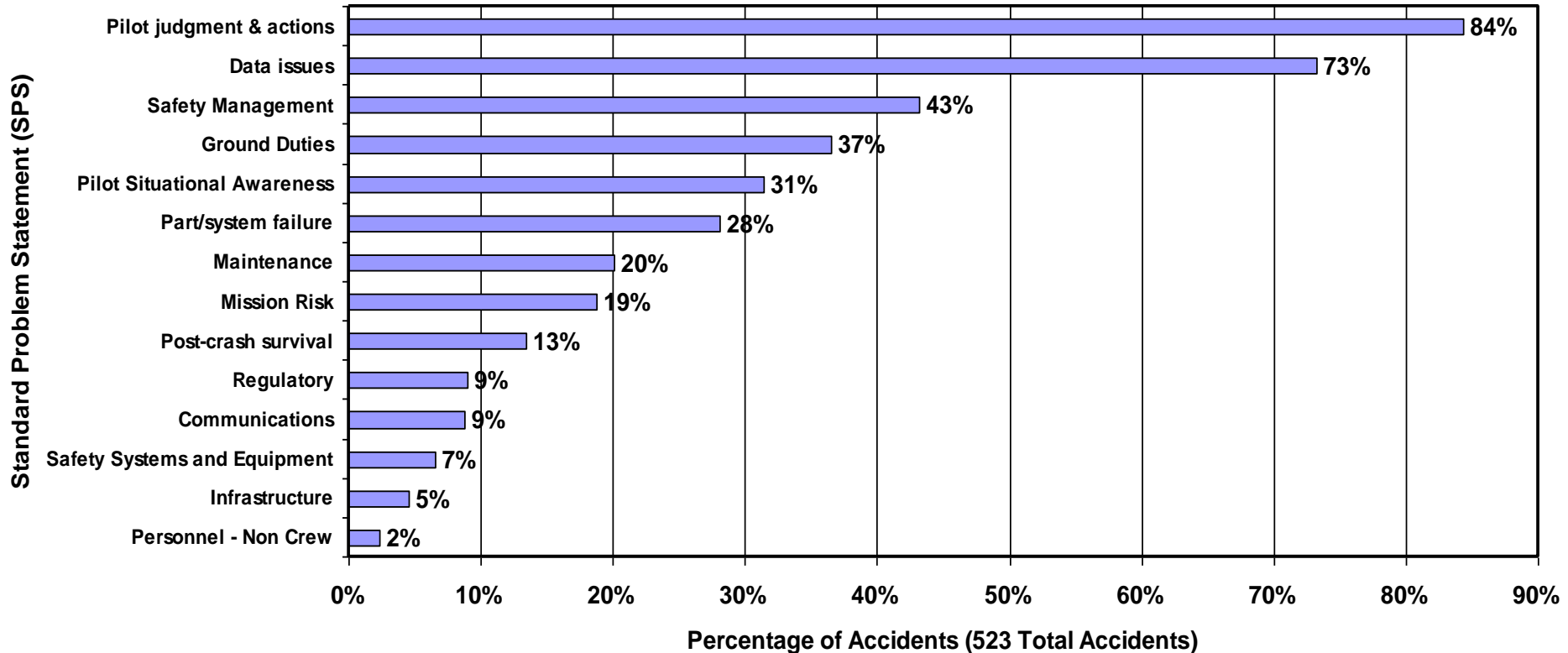
Loss of Control Details - Compendium

Loss of Control Occurrence Category (227 Total Accidents)
Note: 29 Fatal Accidents in Red, 198 Non-Fatal Accidents in Yellow



US Accidents by SPS Level 1 - Compendium

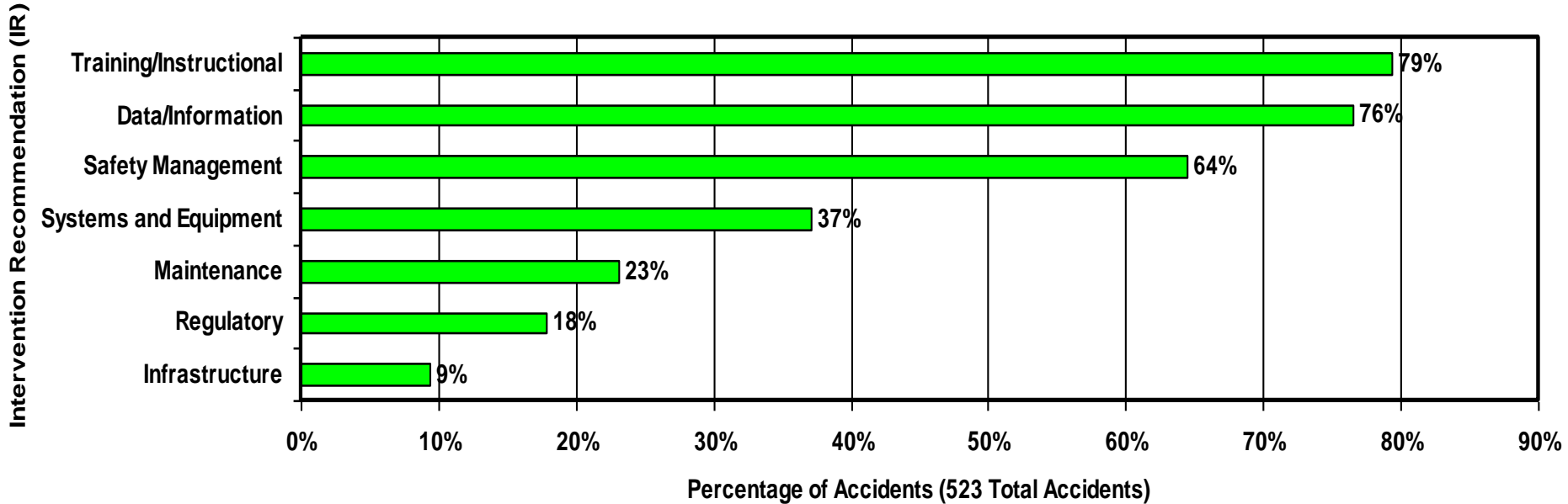
Standard Problem Statements (SPSs) Level 1



Note: Each of the 523 accidents analyzed typically had multiple Standard Problem Statements.

US Accidents by IR Level 1 - Compendium

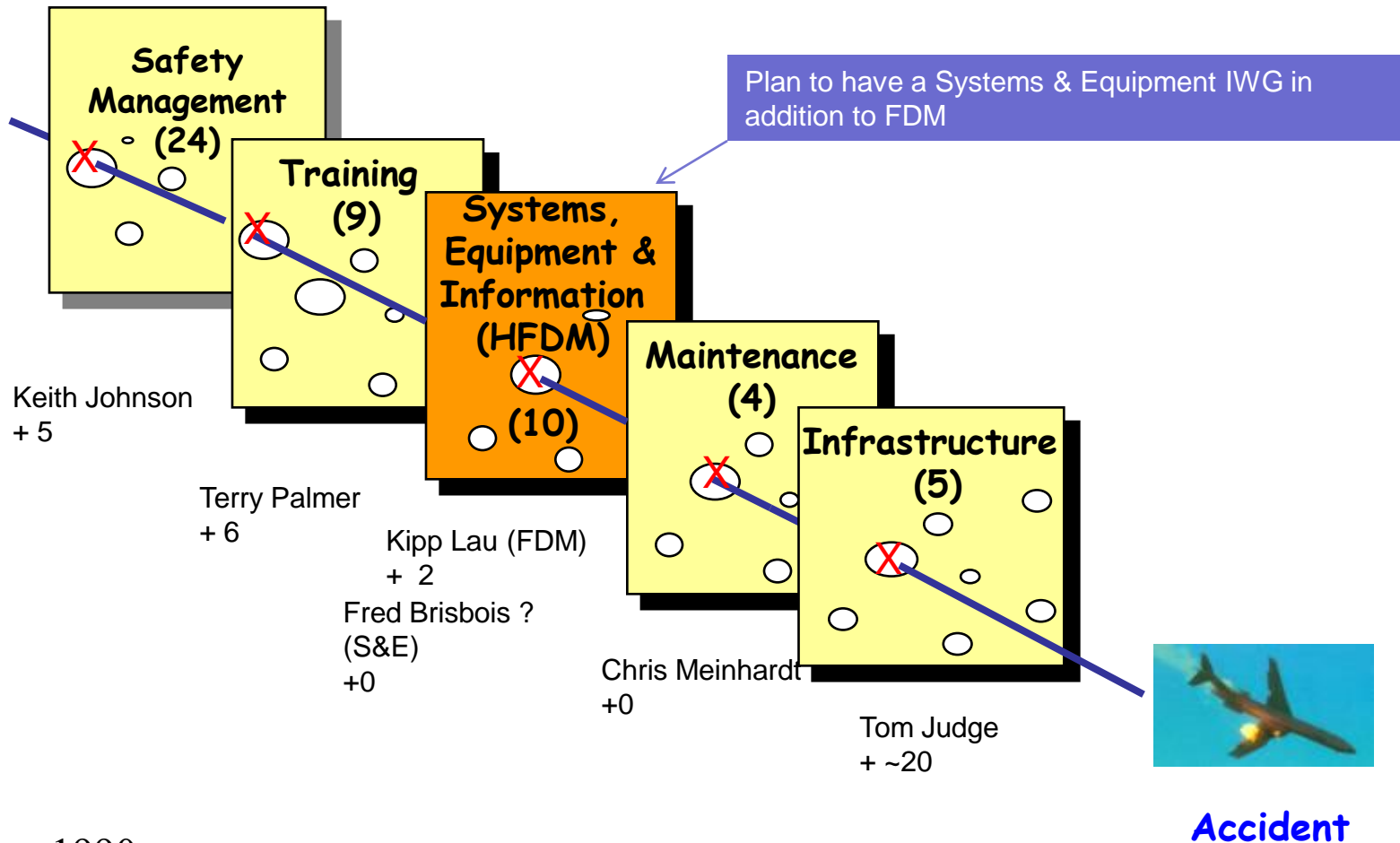
Intervention Recommendations (IRs), Level 1



Note: Each of the 523 accidents analyzed typically had multiple Intervention Recommendations

US JHSIT WORKING GROUPS

Strategic Areas of Intervention



* Reason, 1990

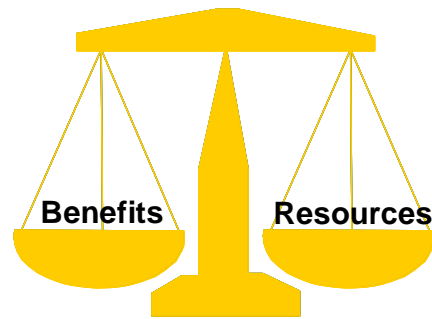
~~JHSIT CONCEPTUAL APPROACH~~

- Prevention is not being mandated / regulated
- ‘Market’ prevention benefits
- Provide tools to **enable the operators** to implement JHSAT recommendations
- Bundle recommendations into Toolkits to enable implementation. 28 of 57 recommendations are to:
 - “Encourage, Promote, Provide, Develop, or Establish” mitigation measures
- Market toolkits
- Establish mentor programs to implement toolkits

SOLUTIONS

Must be data driven

- Know what you know
- Know what you don't know
- Studies must generate 'actionable' information
- Plans must be executable



Request:

IHST seeks to engage helicopter industry stakeholders in Russia

Manufacturers

Operators

Regulators

Researchers

Next considerations:

Identify responsible leaders

Identify an accident dataset

Learn the IHST analysis process

Begin implementing IHST Toolkits and Safety Products

Program resources, timing, implementation actions come under local (Russian) ownership, day to day work not managed by IHST

However, the basic analysis and implementation process developed by the IHST should be used to develop outputs compatible with the overall IHST effort

Conclusions:

Russia has the third largest helicopter fleet in the world.

IHST has little data about this fleet, legacy fleet known to be aging, influx of western built helicopters, several high profile accidents in recent years. Issues related to maintenance, training, SMS and others should be examined.

Russia has deep technical resources, requesting that government and industry move to join the IHST.

Type designs and operating environment considered unique to the Western experience, recommend Russia stand up an analysis team and implementation team using the IHST process.

Will the helicopter community in Russia join us?

IHSS 2011

**The International Helicopter Safety Team (IHST)
Announces its Fifth International Helicopter
Safety Symposium 2011**

**“Human Factors: Our Collective Challenge –
Our Individual Responsibility”**

November 8-9, 2011

Worthington Renaissance Hotel - Fort Worth, Texas

The challenge now is to expand our efforts worldwide and continue the development and implementation of effective measures to meet and some day exceed the 80% accident rate reduction target

Thank you for your attention

Questions?




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