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From the Executive Committee

By Mark Liptak, Program Director, ExCom

The IHST has entered a critical phase in its work, the US teams are developing the plans necessary to move from analysis to implementation, and our international partners in the EU, Brazil and Canada are progressing well through their first series of accident analyses. The US JHSAT team is putting the finishing touches to its second report, now having analyzed a total of 371 accidents. We'll give a more detailed update on that work in our next newsletter. Additionally, the US JHSIT continues to work on developing detailed implementation plans to enact its list of prioritized recommendations. We plan to deliver those detailed plans at the International Helicopter Safety Symposium (IHSS '09) this September in Montreal. Please see updates from EHEST and the Brazil JHSAT below.

As the US JHSIT develops the details of their implementation plans, the Executive Committee has been discussing strategies to facilitate reaching small operators. Two of our leading contenders to accomplish this are partnering with the FAA Safety Team (FAAST) and working with insurance industry brokers and underwriters. I welcome any other thoughts on effective means to connect with small and medium size operators.

We recognize that all operators have a relationship with their local FAA Flight Standards District Offices (FSDO). The FAAST works in this environment to drive safety improvement at the operator's level. Dennis Pratte (AFS-250, IHST Co-Chairperson) and I are meeting with the FAAST team national and local leaders at this month's HeliExpo to map out the next steps. The objective is to use FAAST's assets to target and connect with the highest value US JHSIT safety enhancement plans. We're still developing the strategy, but remain hopeful that this approach will provide a strong pathway to deliver data driven improvements to a wide spectrum of small to medium sized operators.

We've also started discussions with insurers to sort out how we can work to promote the JHSIT's outputs to our mutual

benefit. To date we've met with North American (March in Vancouver, December in Dallas) and European (September in London) underwriters. There's no question the insurance market has been hit by international financial issues, but we believe that establishing a basic set of helicopter specific standards and best practices is a good starting point. If we can get insurers to use basic standards in their discussions with clients and in internal deliberations, we'll have a positive influence on behavior at the operational level. If there's a measurable improvement in losses (we have data to show there should be) we'll be able to continue the discussion on even stronger incentives for change in the future.

Kudos to Kay Brackins of AHS, Sun Yi and Ed DiCampli of HAI for launching a redesigned IHST web site. We think it's easier to navigate and is poised to help us make better use of the internet in distributing information for the IHST. Please take a look at ihst.org.

IHST also is continuing its outreach efforts to bring new partners into our safety improvement initiative. In November we met with representatives from the Gulf Cooperation Council (GCC, representing Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates) at the Dubai HeliShow. The initial response was favorable, but follow-through has been difficult. We're continuing to work with representatives in the region to see if there's sufficient interest to initiate an analytical team. We're also considering exploratory discussions with representatives of the CIS on Moscow at HeliRussia (May '09) and later in the year with operators and government officials in Japan.

And, last but not least, planning for our biennial meeting in Montreal is in full swing. The International Helicopter Safety Symposium 2009 (IHSS '09) will spotlight the transition from analysis to implementation. We're assembling speakers on a wide range of topics germane to the IHST initiative. Please visit ihst.org to view the meeting flyer and to register.

US JHSIT Update

By Fred Brisbois, Co-chair JHSIT

Good progress is being made by the US JHSIT in developing plans to implement the JHSIT year 2000 report recommendations. Utilizing the CAST process as a guide, the 56 Fleet Wide recommendations from the JHSAT Year 2000 Report, were evaluated for their feasibility of implementation and also their effectiveness in achieving the IHST goal of reducing accidents by 80%. A Feasibility factor was determined using the following 5 criteria:

1. **Technical Feasibility:** The ability of the project to take advantage of the current state of technology in pursuing further development.
2. **Financial Feasibility:** Should consider the total cost of the implementation, including the planning process. Financial feasibility also involves the capability of the participating organizations (FAA, Manufacturers, and Operators) to provide the appropriate funding needed to implement the project.
3. **Operational Feasibility:** Involves the "practicality" of the project within the context of the operating environment, including NAS, ground operations, maintenance, inspection, etc. Considers which organizations within the aviation system are impacted.
4. **Schedule Feasibility:** Can the project contribute to achieving the goal in a selected timeframe? Must consider implementation schedule by project.
5. **Regulatory Feasibility:** Should be evaluated against current rules and certification process. Could be a deterrent due to a long approval process.

Multiplying the feasibility factor (F) by the effectiveness factor (E) (High, medium, low) yielded a simplistic method of ranking the recommendations to assist in their prioritization for implementation. The table below depicts the ten recommendations with the highest score (i.e. highest priority for implementation):

JHSAT FLEET RECOMMENDATIONS

1. Make proactive use of safety information to create awareness of known hazards and reduce the risk of accidents.
2. Expand training in aeronautical Decision Making (ADM) and risk management.
3. Provide for non-punitive safety event reporting.

4. Provide comprehensive training on aircraft performance capabilities and limitations, and the use of that information in preflight planning and in-flight decision making.
5. Ensure that training policies and SOPs enhance training for crew awareness of critical flight systems, operational risk management and appropriate Aeronautical Decision Making (ADM) training.
6. Develop operator SOPs for preflight preparation, maneuver briefings for training flights, weather launch/abort criteria, selection and ground survey of remote or unimproved sites, ground/landing zone crew coordination, operation of external load.
7. Establish systems to ensure adherence to maintenance policy and procedures and compliance with instruction for Continued Airworthiness (ICA) and provide records of compliance.
8. Evaluate the continuing performance of employees and provide oversight and training as required based on those evaluations.
9. Provide comprehensive transition training to new make and model aircraft.
10. Provide comprehensive risk management training that includes mission-based risk assessment, weather assessment and risk-based flight operation decision-making. The training should demonstrate that the safety culture of the organization encourages aborting or canceling a flight when the risk factors don't justify conducting or continuing the mission.

The JHSIT has organized itself into 6 Individual Working Groups (IWG) to address the fleet-wide recommendations:

Safety Management Systems: Keith Johnson, Denise Uhlin, Fred Brisbois
 Training: Terry Palmer, Marty Rincon
 Systems / Equipment / Information: Lindsay Cunningham, BJ Raysor
 Maintenance: Harold Summers
 Regulatory: Mike Hurst, Chris Eastlee
 Infrastructure: Tom Judge

In addition to the core JHSIT members, there are 17 individuals working as members of the IWGs. Each working group has prepared a preliminary Safety Enhancement Plan (PSEP) to identify the implementation strategy and required resources. These PSEPs are being further refined to provide more detailed implementation plans for EXCOM approval.

During 2008, the SMS IWG gave 19 presentations and workshops at 15 different conferences / venues and was also responsible for 30 articles published pro-

moting Safety and SMS in *Air Beat* Magazine.

As part of the implementation effort, the JHSIT is focusing on developing tools that will assist operators in our efforts to prevent accidents. Current work for 2009 is focused on developing:

- An Interactive Computerized SMS Training Tool
- An SMS Tool Kit Revision – expanded and aligned with FAA 120-92A
- An educational program for insurance underwriters
- A Training Toolkit including resource material

As an additional outreach to operators, the JHSIT will be conducting a SMS and FOQA workshop at the upcoming Heli-Expo 2009 in Anaheim, California the 23rd of February from 1pm to 5pm in room 207 A,B (Convention Center).

JHSIT: Systems, Equipment and Information Implementation Group

By Bernard J Raysor, Co-chair SEIIG

The SEIIG group participated in the HEMS NTSB public hearings the first week of February in Washington D.C. For those of you who did not watch via live web cam, there were constructive and lively exchanges of information on HTAWS and Flight Data management equipment. The witnesses even branched off to discuss the advantages of combining the equipment with an FAA FOQA program. The entire audience was impressed with where the technology for FDMS is at today in the helicopter industry both in cost, size and weight. The NTSB seemed pleased to hear that the TSO for H-TAWS is now complete and some technical aspects of the methods/programs used to overcome nuisance alerts experienced by some helicopter operators were discussed.

The SEIIG met with the Flight Safety Foundation (FSF) and several FDMS vendors to discuss a potential FSF run FOQA study. It appears that this study has its participants fairly well set; but the SEIIG is looking at it as a valuable "Beta" study to help establish the cost of analyzing data and implementing FOQA for a larger study that JHSIT SEIIG wants to promote. A major portion of this larger study will be to establish a large repository/database for sanitized downloaded data that will be utilized for industry trend analysis with an outcome of extensive evidence based implementation strategies for the future. Our immediate goal is to approach aviation academia with this idea to gain insight from that sector on methods to accomplish this

goal. The SEIIG is also working with operators and manufacturers from the industry to define a list of data parameters and events to support these programs.

The JHSIT will be hosting a joint SMS and Flight Data Monitoring Workshop at Heli-Expo. This will be a great opportunity to come and learn more about SMS, FDMS, FOQA and some different methods operators are using to implement these programs; as well as learn what progress JHSIT-SEIIG has made over the past year. There will also be a bevy of equipment and program vendors in the room for questions and discussions towards the end of the symposium. Some of the speakers will be: Bob Vandel (FSF-FOQA), Stuart "Kipp" Lau (CAPACG-Helicopter FOQA), Mike Hurst (PHI-LAMP Program), Jim Morgan (Air Logistics/Bristow's FOQA) and hopefully Dr. Farrow and Mr. Kelley from FAA AFS 230.

Launch of the European Helicopter Safety Implementation Team and a Communication Sub-Group

By Michel Masson

The last EHEST meeting of the year took place on December 3 at EASA in Cologne, Germany. Its main objective was to launch and define the structure, composition, and terms of references of the European Helicopter Safety Implementation Team (EHSIT).

The purpose of the EHSIT will be to take the results of the EHSAT, in particular the Intervention Recommendations, and to develop safety enhancement (SE) action plans to contribute to the IHST's objective of reducing the accident rate by 80% by 2016. An ambitious and comprehensive implementation scheme will be "the" key success factor.

It was decided to keep the established EHSAT structure but to clearly separate the 'analysis' and 'implementation' functions.

Structure of the EHSIT:

- **EHSIT Core-Team (CT)**. Composed of the Regional Team leaders plus additional key players such as the European Helicopter Association (EHA), the CT is in charge of defining implementation strategy, selecting priorities and activating the major European players (operators, OEMs, authorities, etc.).

- **Regional EHSITs** will rely on the local organization of EHSAT. Local teams are an efficient way to facilitate implementation of voluntary SEs and to communicate with the local community. To fulfill the IHST target the focus needs to be on small operators and GA.

- **Specialist Teams** will address pan-European subjects.

The EHSIT will work under EHEST leadership and in close relation with the EHSAT and the US JHSIT.

EHEST also launched a Communication Sub-Group. This specialized team will identify and define a process to efficiently communicate with the helicopter community, in particular small operators and GA. The Communication Sub-Group will coordinate with the European General Aviation Safety Team (EGAST) and the IHST on communication matters.

In parallel, the EHSAT will continue to analyze accidents from the 2000-2005 period during 2009.

Both the EHSIT and the EHSAT plan to present their work at the International Helicopter Safety Symposium (IHSS 09) in Montreal, September 29 - October 1. Other planned events are Heli-Expo, February 22-24 in Anaheim, CA, AHS Forum 64, May 27-29 2009 in Grapevine, Texas, and the CEAS Conference by RAeS, October 26-29 2009 in Manchester, UK.

2nd EASA Rotorcraft Symposium, December 4-5 2008, Cologne, Germany

This major European authorities-industry event organized by EASA is presented on the [EASA Events webpage](#).

Maintaining and improving aviation safety is the highest priority for EASA. In this spirit the Rotorcraft Symposium focused on research projects, technology updates and safety initiatives helping to enhance rotorcraft safety. Furthermore, EASA presented its draft Implementing Rules on Flight Crew Licensing and Operations with a focus on topics relevant for the rotorcraft community. Presentations were also given by external organizations such as the European National Aviation Authorities (NAAs), EHA, manufacturers and operators. The new structure and organization of EHA was presented by its Chairman V. Morassi.

The EHEST initiative was presented by M. Mazzeletti (EASA Rotorcraft Certification), M. Masson (EASA, EHSAT co-Chair), T. Eagles (UK CAA, EHSAT

UK), J. Steel (IAA, EHSAT Ireland) and Capt. J. Black (EHOC, EHEST co-Chair).

This presentation addressed:

- the overall organization: ESSI, IHST, EHEST, EHSAT and the regional EHSAT teams
- the EHSAT analysis methodology
- the value of HFACS human factors classification tool that EHSAT has integrated into their analysis methodology
- the EHSAT's preliminary findings based on the interim analysis results
- concluding remarks and way forward focusing on the newly created EHSIT.

EHEST Background

The EHEST brings together helicopter manufacturers, operators, regulators, helicopter and pilots associations, research organizations, accident investigators and military operators from across Europe. The Team has members from organizations including: Eurocopter, AgustaWestland, EASA, ENAC Italy, UK CAA, CAA Norway, FOCA, FAA, EHAC, UK MoD DASC, QinetiQ, RAeS, EHA, Irish AAIB, AIB Hungary, UK AAIB, BFU Germany, Bristow Group, Shell Aircraft Ltd, IHST, NLR, EHOC, JHSAT, AviateQ International and Air Glacier (CH). EHEST addresses the broad spectrum of helicopter operations across Europe; from commercial air transport to general aviation and flight training activities. EHEST brings together around 130 participants, from which around 70 are actively involved in the work of the EHSAT.

The EHSAT process is data driven: recommendations are developed on the basis of occurrence analyses. The scope of the EHSAT analysis covers accidents (definition ICAO Annex 13) reported by the accident investigation boards, with date of occurrence starting from the year 2000 onwards and state of occurrence located in Europe. EHEST and EHSAT are committed to ensuring that the analysis carried out in Europe will be compatible with the work of the US JHSAT, so that results can be aggregated at worldwide level. To tackle the variety of languages used in accident reports and to optimize the use of resources, EHSAT has established regional teams in France, Germany, UK, Italy, Spain, Switzerland, Norway, Sweden, Denmark and Finland, Ireland and Hungary, and is continuing to expand. In addition, Poland, Romania, Latvia and Slovenia participate in the EHEST. So far the countries covered by the regional EHSAT teams account for more than 90% of the helicopters registered in Europe.

Regional teams try to present a balanced range of competencies, bringing together representatives from the national aviation authority, accident investigation board, a civil operator, a helicopter OEM / TC holder, pilot association, the general aviation community and, optionally, military.

SMS, the Next Step in Aviation System Safety

By Don Arendt, Ph.D., Manager, FAA Flight Standards SMS Program Office

A lot is being said lately about Safety Management Systems (SMS). I usually start each of our briefings and workshops by asking the assembled participants to raise their hands if they have heard something about SMS. Of late, the response to this question is near 100%. I then offer the opinion that it is highly probable that, in each person's case, some, if not all of what they have heard is probably wrong. We then explore a few of these incorrect assumptions in order to dispel some common misconceptions, before going further. So, this also seems to be a good place to start in this article.

First, SMS is not a substitute for compliance with FAA or other regulations, operating rules, or policies. High technical and operational standards are still the vital underpinning of safety. A robust safety management system gives us a more systematic way to develop, implement, and meet these standards.

Next, SMS is also not a substitute for FAA oversight. The agency still has a statutory obligation to provide assurance to the public of a safe air transportation system. However, SMS provides a more proactive means of assuring attainment of safety goals and, therefore, a more effective means of interacting between the FAA and operators. It gives both parties a clear set of expectations for how risk will be managed.

Neither is SMS a substitute for system safety. A lot was also said in the past decade about "system safety," in offerings for training courses, consulting services, and the like. System safety is commonly defined as a set of technical and managerial practices and principles applied in a systematic manner to hazard identification and risk management. Traditionally, though, most effort has been placed on the technical side. SMS completes the system safety circle by adding emphasis on structured management of these technical aspects.

Finally, SMS is not a prescription for a new or enlarged safety department. While safety specialists and organizations

provide valuable services, particularly to large complex organizations, safety management must be accomplished by those involved in, and in charge of, line operations. Safety management is not something that can be added to what we have to do to accomplish our mission; rather it is the way that we approach mission tasks. SMS provides a set of decision-making tools for *operating* safely.

Approximately ten years ago, the FAA set about to transform the agency's oversight methodologies to employ system safety methodologies. Starting with systems for oversight of major air carriers, FAA oversight now places more emphasis on assurance of safety critical processes in operations than on isolated inspection results. This follows the evolution of quality management that has been seen in industrial circles over the past decades. Emphasis is increasingly being placed on assurance that processes are designed and organized to assure success and less on after-the-fact analysis of failures. Other major countries, including Canada, Australia, the U.K. and others are making the same evolution.

However, it quickly became clear that oversight could only go so far. Successful safety management must be accomplished by process owners – the organizations that conduct the business activities and other missions in which risk is incurred. This led the agency to explore the concept of SMS. The SMS concept was, and continues to be, explored by other countries. In 2006, the International Civil Aviation Organization (ICAO) enacted a standard that will require ICAO contracting countries to enact regulations for operators in international commercial air operations to implement safety management systems. Also in 2006, the FAA issued Advisory Circular (AC) 120-92, *Introduction to Safety Management Systems for Air Operators*. This AC provides a framework for SMS development on the part of operators. Currently, SMS is still voluntary in the U.S.

ICAO defines SMS as, "a systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies, and procedures." The FAA began its development efforts with a thorough study of existing SMS developments around the world, as well as a review of existing management systems in the areas of quality, environmental protection, and occupational health and safety. A common set of principles from these systems was organized around four fundamental components, originally developed by the FAA Air

Traffic Organization and since adopted by ICAO.

The first of these components, sometimes referred to as "pillars", is policy. A robust safety policy must go beyond the "slogans" often seen in mission, vision, and policy statements. Safety policies provide a detailed expression of top management's objectives and expectations for the organization. It sets up a framework for plans, organizational structures, and accountability frameworks for the organization's management and employees. Policies must also be translated into clear processes and procedures for employees.

The second major component is safety risk management (SRM). SRM is the core of safety management and covers all activities from major programs such as training, dispatch, and maintenance down to practices for individual mission planning and control. SRM begins with gaining a thorough understanding of the mission, activity, or organizational process at hand. It proceeds through hazard identification from a variety of sources including process and mission analysis, employee reporting systems, incident reports, and audits. From here, analysis of risk provides us with a sense of how likely we are to encounter hazardous conditions and the potential severity of consequences. A fundamental next step is that of determining risk acceptability. This is an especially critical step for operators with public safety missions. Careful analysis and clear procedures for balancing mission safety risk with mission criticality must be developed. Finally, SRM provides a means of developing, implementing, and tracking risk controls.

The safety assurance (SA) process helps us to make sure that our risk controls remain effective and that we become aware of changes in the operational environment that could present new hazards. *Black's Law Dictionary*, a popular legal reference, defines "assurance" as "something that gives confidence". The SA process thus provides us with a set of analytical data, analysis, and decision-making activities to give us confidence in the robustness of our risk management strategies and controls. It also provides a means of implementing corrective actions when necessary.

The final pillar, safety promotion, provides processes for determining required competencies, training in safety critical areas, and two-way communication between management and employees about safety matters. The safety promotion element is not a separate process but rather a series of activities that pervade

the entire SMS and help to shape the organization's safety culture.

The FAA is engaged in ongoing development of further SMS guidance and tools and is currently engaged in a series of pilot projects involving voluntary SMS development on the part of a variety of aviation service providers. These projects will provide the agency with hard data on what works and what doesn't work in SMS development and will give both FAA and industry personnel valuable experience in the process. The FAA Flight Standards Service has established an SMS Program Office to coordinate SMS efforts for air operators, training, and maintenance organizations. We can be reached at don.arendt@faa.gov.

News from Brazil's JHSAT

By Ana Galvão, Co-chair, Brazil JHSAT

Fernando Camargo and Ana Galvão, co-chairs of Brazilian JHSAT team, presented the progress of the Brazilian JHSAT group and IHST for the 5th Safety Seminar of ABRAPHE - Brazilian Association of Helicopter Pilots that took place in São Paulo on October 28th - 29th.

After the session, during the breaks, there was immediate feedback from pilots, NAA representatives (ANAC) and also from Air Taxi Companies representatives. The last group was looking forward to reviewing the SMS tool kit as well as being part of the JHSIT group.

Currently the Brazilian JHSAT group is working with 13 helicopter accidents from the year 2000. In the last meeting, which took place in early February in São Paulo, the team agreed to also include in the review and classification all accidents that have a final report issued after 2000. Today we estimate that the JHSAT will be able to present the preliminary accident report for the year 2000 by May.



Opening of 5th Safety Seminar of ABRAPHE

The International Helicopter Safety Team Announces its Third International Helicopter Safety Symposium 2009 IHSS2009

“IHST Findings and Recommendations - Achieving an 80 Percent Reduction in Helicopter Accidents by 2016”

Long-term worldwide helicopter accident data trends have failed to show significant improvement in the last 20 years. At the first International Helicopter Safety Symposium (IHSS) in Montréal in 2005, nearly 300 attendees – including industry, associations, the international government regulatory communities, and helicopter operators - agreed to launch an aggressive effort to reduce the worldwide helicopter accident rate by 80% by 2016.

In early 2006, industry and government leaders created the International Helicopter Safety Team (IHST), modeled after the successful Civil Aviation Safety Team (CAST), to analyze the causes of helicopter accidents (based on real accident data) and propose mitigation strategies to achieve the 80 percent goal. The processes used by IHST, similar to those of CAST, engaged a team of industry experts to perform accident analyses.

IHST subsequently launched a parallel effort to prioritize and recommend appropriate interventions, including the creation of a “safety culture,” improved training, and, in some cases, the introduction of new technologies, to achieve the IHST goal.

The year 2009 shall be pivotal for IHST as it transitions from data analysis to delivering and monitoring real world safety interventions in North America and other regions. At the IHSS 2009 meeting, the

Joint Helicopter Safety Analysis Team (JHSAT) will announce its findings and recommendations based on a detailed study of two years of NTSB accident reports.

The Joint Helicopter Safety Implementation Team will announce its recommendations for implementing selected intervention strategies for various industry segments.

The central theme of IHSS 2009 will focus upon the implementation challenge. Attendees will have the opportunity to discuss these JHSAT recommendations and refine and finalize a global helicopter safety roadmap, including the following:

- Determining safety actions that make business sense for small and medium helicopter operators;
- Developing safety actions covering a wide range of missions and operating environments;
- Leveraging the government regulatory and insurance underwriting communities to broaden awareness of best safety practices and new safety technologies; and
- Developing a plan to better integrate the world helicopter community in participating in the IHST safety initiative to achieve the 80 percent accident reduction goal.

During the three-day meeting, attendees will participate in a wide range of activities, including:

- A plenary session on US JHSAT findings based on actual accident studies;
- Keynote presentations on implementation challenges and opportunities;
- Receive the first JHSAT report on implementation strategies, including discussions on SMS and FOQA
- Receive presentations on parallel efforts underway in Canada, Europe (EHST), Brazil and other world regions.

To learn more about IHSS 2009 and registration opportunities, please visit the IHST website – www.ihst.org and click on IHSS 2009.

For reservations, contact the Hotel Hilton Montréal Bonaventure at (514) 878-2332 and request the discounted IHSS rate of \$185 Cdn.

<http://www.hilton.com/en/hi/groups/personalized/YULBHHF-HEL-20090928/index.jhtml>

For safety-related exhibits and sponsorship opportunities, please contact David Renzi, at AHS International, at (703) 684-6777 or davidr@vtol.org.

For additional information, please contact IHSS 2009 Forum Chair

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