

# IHST Newsletter

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## From the Executive Committee

By Mark Liptak, Program Director, ExCom

We're pleased to announce that Dennis Pratte, manager of AFS300, Washington, DC has been selected to fill the vacant co-chair position in the Excom. Dennis brings a strong background of solving difficult helicopter operational issues into the team. He's been deeply involved in several of the high visibility tour ops and HEMS issues the industry has been confronted within the last several years. Perhaps more importantly, Dennis is hard wired into the Flight Standards community. Thus, he brings a new depth of knowledge and contacts into the Excom that will be invaluable in helping us reach small operators, our primary target audience. Please join me in welcoming Dennis aboard, we're eager to leverage his background in helicopter operations.

The Excom continues to work international outreach issues. Coming this fall are three events of note. First, we're pleased to be attending the EHEST meeting in Estoril on October 13. This meeting marks the delivery of the first accident analysis report from our European partners. This is no small feat given the language, data and demographic issues involved. Congratulations to EHEST, our hats are off to you. Second, we're firming up our plan to have a full day safety meeting at the Dubai Helishow in Dubai on November 12. After a slow start attempting to find local industry presenters we appear to have good interest in attending this meeting. There have been two high visibility fatal helicopter crashes in the UAE since this summer; we'd like to turn these unfortunate mishaps into a discussion on how to improve safety in the Middle East. So far we have strong interest from the UAE General Civil Aviation Authority (GCAA) and many local operators. I'm finalizing an agenda, we'll be looking for participation from several Excom, US, JHSAT, US JHSIT and EHEST people, stay tuned. And third, I'll be presenting an IHST overview to a group of helicopter maintainers in Moscow in early December. ICAO is sponsoring the venue, and it looks like an excellent opportunity to engage the CIS on our initiative. We're also targeting Mexico and South Africa in our outreach efforts, more on these regions in a future newsletter.

We've been acknowledging all along that reaching operators with 1 to 5 helicopters is essential to the success of our effort.

We've started examining some of the pathways to maximize the chance of the implementation team's outputs reaching this small ops audience. We continue to see the insurance industry and "street level" regulator/regulated relationships as fertile areas. To push on the insurance front Bob Sheffield, John Vincent, Greg Wyght and I recently visited Marsh Ltd. in London. We presented a briefing on the IHST and asked for insurance industry input on adopting our safety improvement products when they become available. The insurance industry is receptive to this, however, the intense competition between underwriters will require that a careful strategy be worked out. Several of the London based underwriters are working on how best to move ahead. We plan to have a meeting in November here in the US to initiate a similar discussion as well as a panel discussion on working with the insurance industry at IHSS 09 in Montreal.

And finally, we're kicking off planning for the IHSS 09 meeting in Montreal. See the article at the end of this newsletter for details. If you have any burning suggestions for the program, please let us know.

## IHST Metrics

By Roy Fox

The IHST Goal is "to achieve an 80 percent reduction in helicopter accident rate within 10 years". Since IHST started in 2006, the target year to achieve the 80% reduction goal is the year of 2016.

**How do we know if we actually meet that goal?** How do we determine our progress toward such a goal? The answer is "metrics". We must measure the accident rates at different times (annual is preferred) for progress and specifically for the target year 2016.

The accident rate term commonly used in the worldwide aviation safety community is expressed as number of accidents/100,000 flight hours flown for a given year. The IHST is also using this common safety metric.

Obtaining the numbers of civil registered helicopter accidents is easy in some countries and very difficult in other countries. Military helicopter accidents are the most difficult to identify due the protected information nature of many military services. The IHST will concentrate on the metrics of civil registered helicopters worldwide (over 26,000 aircraft) and later, try to get better military data and their involvement.

The difficulty in calculating accidents/flight hour, is determining the flight hours of exposure for that given year. In some countries, they have relative good estimates of helicopter fleet hours but most countries do not. Bell has a “data-mining” process to track each individual helicopter’s total airframe flight hours at different dates. This information includes the registry number, thus allowing hours flown under a country registry, to be accumulated. Bell has expanded the flight hour “data-mining” effort to include all manufactured helicopters produced by all manufacturers. This will allow helicopter flight hours to be determined for any country registry for a given year and combined to provide the flight hours for the worldwide civil registered helicopter fleet. The worldwide civil helicopter fleet includes all manufactured helicopters (single piston, single turbine, and multiple turbine, including military surplus) that have a civil registry. Amateur-built helicopters are not included.

Eurocopter has assisted in this worldwide flight hour effort and it is hoped that other helicopter manufacturers will help as well. The majority of the civil helicopters are included in the databank as the combined helicopter fleet of Bells and Eurocopters account for 54.8% of the world’s civil registered helicopter fleet. For more information on the flight hour process, see the IHST website.

The 80% accident rate reduction goal requires that a starting accident rate be established. This then allows the target goal for year 2016 to be calculated (e.g. 80% less than the starting rate). This is basically the public perception of helicopter safety in the US and is a commonly quoted source. The U.S. Registered helicopters account for half of the world’s civil helicopters.

The US Registered fleet starting point has been established as 9.1 accidents/100,000 flight hours which is the average rate during the 5-year period (2001 through 2005) prior to IHST initiation. That data was obtained from the HAI website which includes NTSB accident

data and the FAA’s estimate of flight hours from their “General Aviation and Part 135 Activities Surveys”. The FAA has been revising those flight hour estimates over the last few years and the latest February 2006 revision of flight hours was used to establish the starting point. This is basically the public perception of helicopter safety in the US and is a commonly quoted source. With a starting accident rate of the US civil fleet of 9.1/100,000 hrs, the 80% reduction target is an accident rate of 1.8/100,000 hrs in 2016.

While developing how to get the flight hours accuracy levels required for detailed analysis and tracking of specific safety issues, the existing HAI and FAA data were found to have some inaccuracies and also some data matching and variability issues. The IHST effort requires far more accuracy and must be consistent when worldwide rates are determined. Thus, the IHST will determine the U.S. registered helicopter flight hours for 2006 going through 2016 by the “data-mining” process which is more accurate and consistent.

Since worldwide civil helicopters flight hours have never been accumulated by government sources, the same data-mining flight hours process was used to determine the flight hours of all civil helicopters worldwide for the same 5-year period. The resulting starting worldwide civil helicopter accident rate is 9.4/100,000 hours for the pre-IHST 5-year period. Thus the worldwide civil helicopter target accident rate is 1.9/100,000 hours in 2016.

The actual flight hours are tracked in the computer by an individual aircraft serial number, registry number, total airframe time, and a date. The resulting flight hours for that specific aircraft that flew in a given year is rolled up to one of three helicopter families based on engines. To avoid competitive safety issues at a model level that would derail the IHST effort, the output of the data-mining flight hours to the IHST participants and the public is limited to the combined helicopter fleet levels (made up of piston-helicopters, single-turbine helicopters, and multi-turbine helicopters). The fleet flight hour accuracy continues to improve each month.

As each regional JHSAT has a need for their country’s flight hours, please contact me so we can start providing available flight hours that are applicable to your registry fleet. But for now, we need to

concentrate on the fleet-level flight hour exposure within a country registry. For those very few countries that have really accurate helicopter flight hours of their entire fleet (not just commercial use helicopters), those regional JHSAT/JHSITs should use their accurate flight hours for their regional tracking. For other countries with known helicopter fleet flight hour problems, you should consider using the IHST data-mining flight hours. The IHST data-mining flight hours will be used when calculating the worldwide fleet metrics and for all non-participating countries.

It is planned to eventually be able to measure accident rates of a given problem (SPS in JHSAT report, etc.) from year to year to track changes of that problem and related implementation success or non-success. Those and other planned metrics improvements will be shared in future articles.

**METRICS MOTTO: If you cannot measure it – You don’t know if it has improved or has gotten worse!**

## Canadian JHSAT

By Sylvain Seguin

The start of the 2008-2009 hockey season marks a clear transition for the Canadian JHSAT Team as we have officially completed the analysis and compilation of the 2000 Canadian Helicopter accident data and are now working on our draft ‘Year 2000 report’.

Our team will soon start analyzing the 2001 accident data and we hope to expedite this process by combining web-meetings in between regular in person meetings in between regular in person meetings. The use of the software ‘Go-ToMeeting’ one of many inexpensive web based meeting tools has worked well for our small group allowing our team members to talk, see and work from the same spreadsheet simultaneously. This tool does not replace the invaluable in-person gatherings but has helped us maintain a higher frequency of meetings than would have otherwise been possible.

Here is a quick peek at some of our raw data in regards to standard problem statements frequency. Pilot Decision Making and actions tops the list at 74% closely followed by available data at 58%, Pilot Situational Awareness at 50%, Mission Risk at 48% and Safety Culture at 38%. The data reviewed is comprised of 50 Canadian civilian accidents and one military accident for a grand total of 51 accidents.

## US JHSAT

By Jack Drake, HAI/Industry cochair

In August 2008, the US JHSAT completed its group analysis of a second year of US helicopter accident reports (174 accidents analyzed from 2001). Not surprising to the group, we found little difference in the problems or interventions illustrated by those reports. Since then, we've been looking at how we might improve the presentation of our results so they would be more useful - both to the worldwide helicopter operator community and to the US JHSAT, which is tasked with prioritizing and implementing corrective actions to reduce the accident rate. It was agreed that we would write a more abbreviated public report that would compare the CY2000 and CY2001 data while also highlighting the accidents and interventions in a more useful format. The team realized that need soon after completing its CY2000 report where it became apparent that most accident interventions had applicability across "mission" categories and had a great deal of commonality by accident type. The team considered the accident sequence-of-events categories used by NTSB and others, but decided to adapt a new "accident type" list that originated with ICAO and the EHEST. The resulting effort is the foundation of the CY2001 data rollup and should be very helpful in illustrating how accident types can be best prevented by our suggested interventions. The JHSAT expects to complete its second year (CY2001) report by the end of this year and to present its third year report at IHSS 2009.

The JHSAT has also been involved in safety outreach in the past month or so - by publication of IHST articles in the Summer and Fall issues of *ROTOR* and the August issue of *ROTOR and WING*. Roy Fox and I also made presentations (Cockpit Information Recorders, and Reducing the Accident Rate by 80%, respectively) on behalf of IHST at the International Society of Air Safety Investigators seminar in Halifax, Canada, in September. JHSAT members are also working with the US JHSIT to help them to gain more familiarity with the data underlying the CY2000 JHSAT report and to prioritize the interventions suggested in that report.

## The OSI-HEMS Team

By Ira Blumen

"Opportunities for Safety Improvement in Helicopter EMS" (OSI-HEMS) is a research project that has brought together aviation and medical experts to undertake the most comprehensive review of U.S. HEMS acci-

dents to date. A root cause analysis is being conducted on an estimated 120 HEMS accidents dating back to 1998. Through this research and analysis, concrete recommendations will be made to compare the potential benefits, cost, effectiveness and feasibility of various factors that can prevent HEMS accidents or reduce the impact of accidents.

Key to the experimental design and analysis of our data (the HEMS accidents) is the scope, strength and experience of the research team that has come together. Bringing together such a team was one of the goals established by the original core group that set out to develop this project. It was concluded that the best way to attract the support, knowledge and expertise that we needed to undertake and complete this research was to invite participation from throughout the air medical community. Air medical associations, aviation operators and manufacturers were approached and the response was overwhelming. Our research team has now expanded to over 40 aviation and air medical professionals, with an average of 25 individuals present at each meeting. Our team currently represents:

### Associations

- Air & Surface Transport Nurses Assoc (ASTNA)
- Air Medical Physician Assoc (AMPA)
- Air Medical Safety Advisory Committee (AMSAC)
- American Assoc for Respiratory Care (AARC)
- Assoc of Air Medical Services (AAMS)
- Commission on Accreditation of Medical Transport Services (CAMTS)
- Helicopter Assoc International (HAI)
- International Assoc of Flight Paramedics (IAFP)
- National Assoc of Air Medical Communication Specialists (NAACS)
- National EMS Pilots Assoc (NEMSPA)

**Helicopter operators** (currently 10 different 135 certificate holders)

- Air Evac Lifeteam
- Air Methods Corporation
- CareFlite (Dallas/Fort Worth)
- EraMed
- Intermountain Life Flight
- Med-Trans Corporation
- Metro Aviation
- Omniflight Helicopter, Inc
- PHI Air Medical
- REACH
- Manufacturers
- Bell Helicopter
- American Eurocopter
- Turbomeca USA
- Federal Aviation Administration
- Aviation training
- FlightSafety International
- Aviation insurance

- AirSure Limited

Members of the research group first met in early 2007 and the first "working" team meeting took place in January 2008. We anticipate continuing our work through the summer of 2009.

*Editors note: due to recent events in the HEMS community, the IHST will be working with Dr. Ira Blumen, a well known HEMS accident analyst. His team is using a process similar to that developed by the US JHSAT team. The IHST plans to use the recommendations developed by Ira's team to form a HEMS specific implementation team late in 2009.*

## IHSS 2009 Planning

By Somen Chowdhury

Planning for the IHSS 2009 is well underway. The conference will be held in Montreal on September 29th, 30th and October 1st. The theme of the conference is: "From deliberation to deployment: the implementation challenge". This represents a transition from discussing accident causal factors in 2007 to implementation strategies in 2009.

IHST has gotten buy-in from the OEMs with the first 2 symposiums, and now needs the participation of operators and regulators from around the world in order to achieve our goal. We will focus on implementation strategies including safety enhancement devices for helicopter operations. An exhibition of devices and pilot situational awareness improvement tools, training devices etc is planned. Interested parties may contact:

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The basic IHST deliverables at the symposium will be US JHSAT Safety Enhancements, EHEST outputs, regional updates, a look at US HEMS accident analyses. The conference also intends to focus on insurance issues and will provide the opportunity for a discussion with insurance majors leading towards an insurance strategy focused on safety. The conference will provide the ideal opportunity for helicopter operators, particularly those with fewer machines and modest scale of business, to express their perspective on the IHST accident reduction initiative. Such operators are welcome to contact Mark Liptak or Rhett Flater or Somen Chowdhury to discuss opportunities to facilitate their participation in IHSS 2009. It takes ALL of us to succeed in reducing accidents.