OFFSHORE HELICOPTER SAFETY INQUIRY

November 2, 2009
Tara Place, Suite 213, 31 Peet Street
St. John's, NL

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PRESENT:

John F. Roil, Q.C./
Anne Fagan.....Inquiry Counsel

Amy Crosbie/. ..... Canada-Newfoundland and Labrador Offshore
..... Petroleum Board (C-NLOPB)

Ian Wallace/ ..... Hibernia Management and
Cecily Strickland..... Development Company (HMDC)

Denis Mahoney/D. Blair Pritchett.....Suncor (Petro-Canada)

Stephanie Hickman. .....Husky Oil Operations Ltd.

Paul Barnes .....Canadian Association of Petroleum Producers (CAPP)

Laura Brown/ Rolf Pritchard.....Government of Newfoundland and Labrador

Mark Freeman .....Department of Transport Canada

Norman J. Whalen, Q.C./ Mike Cohen .....Cougar Helicopters Inc.

Jamie Martin.....Families of Deceased Passengers

Kate O'Brien. .....Davis Estate (Pilot) and
..... agent on behalf of Douglas A. Latto for Lanouette Estate (Co-pilot)

Randell Earle, Q.C.....Communications, Energy and Paperworkers Union
..... Local 2121

David F. Hurley, Q.C. ..... Offshore Safety and Survival Centre, Marine Institute

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COMMISSIONER:
Q. Good morning, ladies and gentlemen. I would like to introduce you to our consultant, Ms. Kimberley Turner, who is the CEO of Aerosafe Risk Management, and I'm going to pass things over now to Mr. Roil, who will give her a larger introduction and assist her in her presentation.
ROIL, Q.C.:
Q. Thank you, Commissioner. Before I do that, I would want to just take a moment to have another safety moment. We did this at the beginning of the Inquiry. As we all know, living in Newfoundland, H1N1 is amongst us. For those that are in the room, I would advise that we clean the tables every day before they come in, but we don't get a chance to do it a second time. There are hand sanitizers on all of the tables, and I would simply encourage people to exercise good practices with respect to their health and to absent themselves from the room if they feel they have any symptoms coming on. The second thing is the issue of evacuation. Again I said earlier on that

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there are three exits to this building. We are on the second floor, so there's only one set of stairs to -- one flight of stairs to use. There are three sets of stairs; one at either end of the building and one in the center. Those at either end of the building are a little more steep than normal, so I'd ask people to exercise caution if they are using those stairs. This morning's witness, Commissioner, is Kimberley Turner from Aerosafe Risk Management. She is a consultant who we have been working with for a number of months now to assist us in developing something called a risk profile with respect to the industry. Her presentation this morning and this afternoon, as long as it takes, will be to help us understand the approach and why we are looking at some of the things we're looking at, and how all of them can assist in developing safety in the offshore transit of workers in Newfoundland and Labrador. Good morning, Ms. Turner.
MS. TURNER:
A. Good morning, Mr. Roil.
ROIL, Q.C.:

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Q. As is customary for witnesses, although I don't know that you're giving many facts, but we have always asked witnesses to take an oath. Is that okay?
MS. TURNER:
A. It is.
ROIL, Q.C.:
Q. Okay, the Registrar will read the oath to you.
MS. KIMBERLEY ANN TURNER (SWORN) EXAMINATION BY JOHN ROIL, Q.C.:
ROIL, Q.C.:
Q. Commissioner, there are two exhibits which I would ask you to accept at this time, and place into our records. One is the presentation by Ms. Turner. It is a PowerPoint presentation. It can be uploaded onto our system and made available to the public. In the early part of that presentation, there is a video called "A Risk Maker/Risk Taker". It's about 20 minutes. It's an informative piece that was done by a different company entirely. It is subject to copyright rules and regulations, and for that reason regrettably, we cannot -- under our rules, we cannot upload it to the webpage for

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wide distribution to the public, however, the audio portion of it will be played over the webcast and I understand by Rogers Television, so I would ask that the two documents be admitted, but that restrictions be placed on the video "Risk Manger/Risk Taker".
COMMISSIONER:
Q. Okay, thank you very much. You have the materials?
MS. TURNER:
A. Yes.
COMMISSIONER:
Q. So these are admitted as evidence, with the restriction which Mr. Roil mentioned.
ROIL, Q.C.:
Q. Good morning, Ms. Turner.
MS. TURNER:
A. Good morning, Mr. Roil.
ROIL, Q.C.:
Q. Welcome to Newfoundland.
MS. TURNER:
A. Well, thank you very much, it's great to be here.
ROIL, Q.C.:
Q. This is not your first visit?

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MS. TURNER:
A. No, it's not.
ROIL, Q.C.:
Q. Okay. Tell me a little bit about yourself and the company, Risk Management -- sorry, Aerosafe Risk Management, and a little bit about your background, please?
MS. TURNER:
A. Well, thank you, John. Good morning, Commissioner. It's good to be here to work with yourself and the team this week. Just to give you a little bit of my background, I've been working in the field of aviation risk management for just on 14 years. I am the Chief Executive Officer of Aerosafe Risk Management. I thought it would be important to just start off with a little bit of my professional background. I have an Aviation Operations Management background, originally with the military, and very early on in my career I got involved in the risk management game, and working at an operational level and at an organizational level. I established the company and founded the organization in 1997, and in the last 13 years we've grown to be a

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leading provider of risk management services globally. Our head office is in Sydney, Australia, and we also have offices in Wellington, New Zealand; Washington, DC; and partner offices in India and China. So globally our team is about 50 strong, and I've been leading that organization since the inception. From a professional perspective, I'm a certified practice risk manager and hold that licence. It's very similar to a CPA for accountants, but for risk professionals, and I've been very fortunate over the time of my career to be involved in a range of different standards setting, both in the aviation industry but further afield in the risk management discipline. I sit on various standards committees, one being the Australian New Zealand Standards Committee for Corporate Governance, and it's through that role we've actually advised a number of stock exchange boards around the world, in Australia and India. So the risk management discipline is quite broad, although my specialty, love, and interest is in the aviation field. Finally, I also hold a number of various appointments,

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teaching appointment at post-graduate faculties at a number of universities. I have authored three publications in this field in that time, and also I've recently been appointed as the Director or one of the board members of the International Graduate School of Risk Management. Finally, with Prince Charles here, I'm proud to say that some eight years ago I was a recipient of the Prince of Wales Award for the work that we've done in this field and certainly that's a nice connection this morning.
ROIL, Q.C.:
Q. Okay, well, I can tell by your accent, as we say, you're not from here, so I'd remind you that we don't have an accent, you do.
MS. TURNER:
A. Well, that's debatable, Mr. Roil.
ROIL, Q.C.:
Q. And we will certainly -- I don't think we'll have any difficulty with your accent, but I might from time to time ask you to speak a little more slowly.
MS. TURNER:
A. Sure.

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ROIL, Q.C.:
Q. Okay. You have, I think, control of the PowerPoint Presentation. I just want to make sure that all our technology is working this morning.
MS. TURNER:
A. Yes, that's working well.
ROIL, Q.C.:
Q. Okay, good. So briefly what is risk management all about and what are you here to -- what are you going to do to assist us in this process?
MS. TURNER:
A. Well, thank you. First of all, I'd just like to acknowledge that the Inquiry has adopted a risk based approach to the deliberations over the coming months. That really is a very innovative and dynamic approach and it's been enjoyable working, Commissioner, with yourself and the team in the preparation leading up to this public element of the Inquiry. In terms of risk management, it really is a management discipline focusing on looking at the vulnerabilities and potential deficiencies that could impact on a particular objective.

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So over the course of the material that I'm going to cover, I'd like to cover a number of topics. Firstly, risk management, what it is, its definition, but really get to the practical side of things of how could this process be applied in the offshore oil industry, but also in the helicopter transportation industry, and really talk about the methodologies that are available to assist the Inquiry with this work. There's three other disciplines that actually are related to the aviation risk management field. One is the corporate governance of an organization. Secondly, is the safety management systems, and I understand you heard last week from both Transport Canada and the Transport Safety Board, and they emphasized this discipline of safety management system. The third related area is contract management, and, in particular, I'll be focusing on the risk management and safety management component of how contract -- that contract relationship is put forward between an operator and a supplier.

ROIL, Q.C.:

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Q. Uh-hm, and one of the PowerPoint slide lines talks about an industry risk profile. Again just generally what is that, so that we understand what we're looking for when we go and find it later in your presentation?

MS. TURNER:

A. Sure. The risk management field is actually quite an interesting area because it can be applied at all different levels. Risk management can be applied at the operational end with the helicopter flying managing the hazards and the risks of that particular task of flight. It can be used at an organizational level in looking at how the business risks, the organizational risks, the financial risks, the safety risks, are actually managed at that corporate level. Then it actually can be used at a higher level. The same process, but an industry risk profile looks at what risks are apparent within an industry sector, and really starting to look at some systemic issues or potential issues that have the opportunity to impact in both a positive and a negative way on that sector itself. So an industry risk profile is, in essence, a risk assessment on the industry itself.

ROIL, Q.C.:

Q. Uh-hm.

MS. TURNER:

A. And I'll talk to the challenge of how do you even define what the industry is, and we'll have some good conversations around that.

ROIL, Q.C.:

Q. Okay, do you want to take us at whatever speed you wish at this point through the presentation and the various slides that you have for us.

MS. TURNER:

A. Thank you, John. As I mentioned, my background, I consider myself a risk management specialist where others may actually see me as a generalist because of the discipline of risk management and that broad application I just talked to. Over the last 14 years we've worked with over 210 organizations in 16 countries around the world. About 40 percent of those organizations have actually been outside the aviation industry, and include the mining

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sector, the financial industry, the not for profit sector, all the way through to primary schools and high schools have adopted this process around how they manage their various risks. Obviously, in aviation, we all acknowledge that the industry isn't free of risk and risk is very much part, an inherent of the operation itself. In order to remove all risk, you'd have to actually stop flying and we know that that wouldn't actually be supportive of the objectives of how aviation is utilized. So in looking at risk management, it is really a broad discipline. It does sit as an umbrella to various aspects, but it also is a process that sits within various systems itself. So over the course of my presentation, I'll be referring to those different levels of application and really trying to work through some practical examples of where that fits. Now just to frame up where myself and our organization fit into the picture, in developing an industry risk profile, it very much is an interactive process. It's not necessarily an independent assessment that we'll be doing without any

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consultation. We envisage that this process will align and connect with the various phases of the Inquiry, and really in this first phase, Phase 1A, it's all just about setting the context, understanding the structure, the set up, and the boundaries of the industry, understanding what processes are in place that already are there to manage risk, and then we'll be able to really continue through that process. I thought it may be useful right up front, just because the risk management discipline is quite a diverse field, I felt that actually playing this "Risk Maker/Risk Taker" DVD may actually help put in perspective the process that I'm going to refer to throughout the discussions that we'll have today and tomorrow. Now we were approached, or more importantly, I was approached by the producers, Nicholas & Smith, of this DVD. They were contracted by the standards organization in Australia to produce an educational video for broad release. It's not for the aviation industry, it's really for all industries, and I was asked to speak alongside the Chair of the International

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Standards Organization Committee on risk management, Kevin Knight, and I'll talk a little bit about that later on. So, Mr. Roil, if you're happy, maybe I could suggest that we have a look at that DVD.

ROIL, Q.C.:

Q. Yes. I think before we do, I just have to extend our apologies to those that are watching on the web and through television that they will not be able to see the images, but I hope that the text will be sufficient that they'll understand the context of what's being said.

MS. TURNER:

A. Thank you.

VIDEO PLAYED

To copy or to use an illegal copy of this video or DVD. Protect yourself and your organization by making sure that only videos and DVDs which have been legally purchased are used by your organization.

Over 100,000 people gathered to watch the much publicized event.

Take a few seconds to think about all the work that went into this project. Think about

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the leadership, the managers, the staff, the operators, the contractors. Think about all of the decisions that had to be made at every level, all leading to this moment.

A young girl was killed instantly when she was struck by a piece of flying metal standing in a crowd beyond the lake over 400 meters from the planned implosion. A number of other spectators were injured by flying metal and debris, ranging from chest injuries through to shock.

Risk is an integral part of every business, every process, and every activity, whether it's investing in a new technology, taking on a different supplier, buying a piece of equipment, or hiring a new staff member.

Dr. Patel was appointed as a senior medical officer in surgery at Bundaberg Hospital. He immediately assumed the position of Director of Surgery. Over two years Dr. Patel saw 1,450 patients. 88 of Dr. Patel's patients died. A clinical review has since found that Dr. Patel directly contributed to the deaths of 13 patients. Dr. Patel abruptly left the country and it was the hospital

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management which found itself having to answer questions at the Commission of Inquiry.

Every time as a manager I make a decision I, in fact create a risk, have I made the right decision, and can I manage it to a successful outcome.

Management cannot avoid risk, but risk is as much about maximizing opportunities as it is protecting against loss.

The thing with risk management is remember it comes from the word "rischio", which is to dare you, and we don't dare to do things that we expect to fail. We dare because we think that we'll succeed.

Generally, the focus on risk management is people look at the negative, and if we really examine what risk is about, risk is a chance of something happening that could impact upon your objectives. It's really important to have those objectives as our primary focus because then our focusing risk management is going to be more opportunity based.

The new technology and ticketing system was introduced to streamline administration

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and reduce fare evasion. The changes proved so popular with customers that there's been a surge in bus and subway usage.

The management of risk and risk is very much about how do we grasp opportunities whilst managing to minimize the loss, and we're not about eradicating risk, we're about managing risk to a tolerable level.

An organization can manage risk by screening out events which can either cause harm, or which can reduce the chance of getting the best possible outcome. One screen is the leadership of the organization. Another screen is the organization's management systems. The most effective screen is an explicit risk management system. It is made up of seven essential steps. The integrity of each screen can mean success or failure. Any cracks or holes could allow an event to occur which affects the organization's performance and pursuit of its objectives. Sometimes a diabolical combination of factors can come together to trigger a major disaster.

Four young sailors were killed and five others seriously injured after a fireball

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engulfed the engine room of the petroleum tanker, the Westralia, the biggest ship in the Australian Navy.

Every organization has a unique set of objectives, challenges, opportunities, and, of course, risks.

A spokesperson said that the high cost of public liability insurance is threatening the survival of country shows and local sport. In Michigan, several people were trampled as hoards of shoppers flooded through the doors in search of bargains at the traditional start of the holiday season sales.

When things go badly wrong, one of the characteristics is that the sequence of events as described afterwards as being inconceivable, the causes appear so straightforward, it is hard to imagine how it was allowed to happen.

A massive sea search failed to find the American couple. They were on a barrier reef scuba diving trip with 23 other tourists when they were accidentally left behind in the open sea. The fact that they were missing was not discovered until the following day.

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It's my deep regret, that we believe at this time there have been 14 loss of life as a result of the fire this afternoon.

Most of the cases presented in this video are from organizations with established risk management policies and frameworks. So what went wrong. Was one surgeon solely to blame for the patient deaths, or were there other issues at play. Where were the cracks in the risk management.

Leadership determines the direction and culture of the organization. Leaders need to promote common goals and empower individuals at all levels to act.

The goal of leadership is setting up the appropriate infrastructure and framework that is appropriate for the business to allow people to manage risk, setting the tone from the top, really giving the definition of focus of what type of risk planning they'd like, and then secondly looking at the risk information to ensure that that's moving around the organizations where it needs to go, and being escalated to the right level.

The BP investigation found that one of

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the causes was that the working environment had eroded to one characterized by a resistance to change and lacking in cost and motivation. The end result was that rules were not consistently followed.

It's up to the various levels of management to, in fact, get out and convince the people that, yes, we are serious about the management of risk; yes, I expect you to tell me the bad news and the really ugly news, so that I can make better decisions, rather than wait for things to happen.

The report stated that there was a tendency of administration to ignore or suppress criticism. There also existed a culture of concealment of some practices and conduct. This culture started at the top with successive governments.

Organizations sometimes become so focused on a particular outcome that they allow it to overwhelm all other considerations.

The Inquiry found that budgets placed too much emphasis on attaining target numbers and too little on patient care.

Management systems standards and

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procedures, as well as industry and government requirements, all have an implicit role in risk management.

I liken risk management to an umbrella. One of the risks I have to manage, if they happen to be quality or environment or occ health and safety, then there are standards available for me to go to and help me manage those risks, to put in systems to show that I am, in fact, managing those risks.

The Board of Inquiry found that while there was no single cause, the fire started by diesel fuel from a burst flexible hose spraying onto a hot engine component and then igniting. A new hose was supplied by the ship's contractor to replace original pipes. To the questions, was the equipment fit for purpose, were the systems and procedures on board effective to maintain safe operation, and was there a management system to monitor performance, the Board of Inquiry found the answers must be "no".

Communication and consultation with internal and external stakeholders is the first step of the risk management process. It

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is also essential to every step in the process.

We deliberately use the two words "communication" and "consultation", because communication is about telling you what we're doing, how we're doing, why we're doing, but consultation is sitting down and actually talking to you and listening to you. It's a two-way dialogue, very hard to do in many cases.

The Authority collected information from its customers to support its decision to implement the 700 million dollar fare collection system.

But if we don't have the consultation, then we have real problems at how we go about managing risk.

Many changes in a complex organization led to a lack of clear accountabilities and poor communication. Individuals felt disempowered from suggesting or initiating improvements.

There's a couple of different aspects in the role of communication. Firstly, it's actually finding information from the right

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areas, and the second is once we've got that information or towards the end of your risk planning activity, to then inform the right people in order to get the right level of attention or action.

No matter what an organization does, it interacts with a wider environment. What industry sector is it in, who are its stakeholders, what are its capabilities.

Context is the second step, but it's really the foundation that we're building. The rest of the risk management process is built up on context, and context is one of the hardest ones to come to grip with. Too often people start to look at themselves as if they're literally in a universe of their own, but there's all that big wide world outside the fence that you have to take into account when you're putting context together.

The evidence demonstrated that the personnel did not sufficiently understand the ship safety regime under which Westralia operated. The contracting staff did not understand that machinery modifications to this class of ship require a full approval

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process.

Stakeholders do have an influence on setting the context because remember we go back, the very first thing we should be saying when we're setting the context is what are our objectives, and what is the environment in which we're wanting to set this business up in, and part of the environment is who are your stakeholders.

The report found that some doctors and administrators expressed a view that in certain cases it's better to provide an inadequate patient care service than to provide no service. The report stated there could be no justification for this view.

The first thing is being very clear about what is your objective because remember risk is a chance of something happening that will impact on your objective.

The internal context includes setting scope and boundaries by defining the project and the objectives.

The project was promoted to the public by people in government and the commercial radio station, who did not know the hazards. The

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Inquest into the death observed there was no need for any public official to create or turn the project into a media promotion.

The context also includes establishing the risk criteria. For example, the kinds of consequences to be considered.

Risk management context then comes down to what's our appetite for risk. So one of the things that the Board and the CEO has to clearly is establish is what are the parameters of air risk tolerance, at what stage are we going into aversion, at what stage are we going into recklessness.

The elective surgery target was necessary for the hospital to obtain maximum funding. Dr. Patel maintained a high through put of surgery. He made himself so valuable in that respect that there may have been a reluctance to investigate him.

A risk that has not been identified cannot be managed.

We've got to be saying what are the things that I do here, what are the decisions I make here, how do they affect other parts of the enterprise, how do they impact on how the

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organization actually achieves its objectives.

The Inquest found that the process by which some persons were appointed was connected to the death. Poor work practices in the appointment process permitted two persons to be assigned to the demolition project who were entirely unqualified for the task.

There was a failure to check Dr. Patel's credentials. Had that been done, his discreditable past would probably have been revealed.

The whole game around risk management is to try and turn that uncertainty into a degree of certainty, so at least we've got a high level of confidence that what we're doing about the situation is going to position us in a better way.

So what we've got to do is look at how can we tap into corporate memory and corporate knowledge, and one of the ways to do that is a "slice group", but use a diagonal slice so that we've got senior people, we've got supervisors, we've got workers, but they're across the organization.

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The evidence demonstrated that the personnel did not have the level of training in or theoretical knowledge of diesel engines to alert them to the possible dangers.

We've then also got to be willing to say what's industry best practice, what's industry experience, because we might not necessarily be the worlds best practice. There may be things that we can learn from outside.

A poor level of hazard awareness resulted in people accepting levels of risk that are considered higher than for comparable installations. One consequence was that temporary office trailers were inappropriately situated. This contributed to the deaths of workers.

Bringing together the right information is vital. It requires a systematic approach, including the use of expert knowledge and organizational experience.

The destruction of a tire caused damage to the aircraft leading to a crash less than 1 minute and 30 seconds into the flight. All 109 passengers and crew were killed. The plane also crashed into a small hotel killing

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four employees.

When we start to formalize risk management, we then start to use more formal tools and techniques, such as looking at process mapping, looking at task analysis, taking the information out of this for analysis and looking at the weaknesses and threats and turning those into risks, so really putting a little bit more structure around the risk identification activity.

The accident investigation listed 57 recorded cases of tire bursts on Concords over the years. On 12 occasions the puncture caused structural damage to the wings, and on six occasions the fuel tanks were penetrated. However, these events have never before caused tank rupture or a fuel fire.

The aim of risk analysis is to estimate likelihood and consequences in the context of any existing control measures.

The investigation stated that the accident showed that the destruction of a tire, a simple event which could not be asserted not to reoccur, had catastrophic consequences.

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And then we put together our risk matrix which we were able to show consequences and likelihood, and then that establishes the level of risk. The other critical part of analysis is looking at what controls we have in place, and quite often we assume that the controls are good.

There were no regular meetings that effectively monitored clinical performance, and no adequate recording of complaints. For example, there were more than 20 complaints against Dr. Patel, yet that fact was not apparent from the complaints record.

And, therefore, we need to be looking at those controls to say are they still relevant, are they still cost effective, are they, in fact, providing us with the protection we think they are, and then the next step is to say, how well does management enforce them, because you could have the best controls in the world, but if nobody enforces them, you've got no controls.

The Inquest stated that the risk assessment plan was a failure. The plan did not address the specific methodology to be

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used, or the experience of the contractor in undertaking similar implosions. Also it was a major failing in the entire project that no expert check of an independent nature was made at any stage.

When you start with the process, say, 40 percent of your time is up in the context, and then really you spend the time trying to get the risks right, your analysis should flow fairly quickly, and your evaluation is then really just making a decision; is it acceptable, yes or no; do I have the right level of authority to make that decision, yes or no; if no, who do I escalate it to.

The output of risk evaluation is a prioritized list of risks for further action.

The BP investigation team found that safety and systematic risk reduction priorities had not been set by management.

If I've got two risks that have been measured on exactly the same scale, I would then look at what risk dimension they have an impact on. Is it a financial risk or a capability risk; is it a reputation risk or a safety risk, and then I would actually

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prioritize those different dimensions, which would then help me sort out or prioritize in order those risks.

(VIDEO PLAYED)

The purpose of risk treatment is to change the risk to a level where the benefit exceeds the cost of treatment. Having done your risk assessment where you've identified, analyzed and evaluated your risk, you may have to make a decision. Is the risk now at a tolerable level or does it in fact require additional treatment to get it to a tolerable level?

A cost benefit analysis is very useful in risk treatment, and ultimately, that's the decision that we need to make. When we're determining how low can we get the risk, it's all about well, what's the benefit at that stage.

When the price of jet fuel hit an all time record, many airlines struggled to maintain their profit levels. By hedging against increases in jet fuel prices, some airlines have saved hundreds of millions of dollars.

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What we need to do is identify the most effective treatment strategies. Now if we're to do that, that really needs to be linked back to, in the risk identification stage, the causes of the actual risk or the root cause.

Risk treatment is based on an understanding of how risks arise. This includes the need to consider the organization's culture. The report stated that there was no adequate investigation of complaints. There were even threats of retribution to those who saw it as their duty to raise issues about inadequate health care. Business conditions can change suddenly. Organizations need to protect themselves from disruption, interruption or loss in supplying their products and services. America's largest mass transit system ground to a halt because of the first strike in 25 years. It created traffic chaos and economic damage to retailers, restaurants and other businesses. Good business continuity plans are part of the overall management of risk within the organization. Sure, there are treatment but they should really be seen as part of that

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overall risk management regime that is saying how do I keep achieving my objectives and a good business continuity plan is really predicated on what are the objectives, therefore how do I have to manage if I have a disaster?

The final step in the process is to monitor the risk management strategy plans and practices. Are there new risks? Will the risk treatment still be effective? Companies need to take a dedicated approach to keeping their risk management process and program alive because at the end of the day, risk is never static. You know, it's always changing. Situations are always changing. Therefore your risk management system or program needs to be responsive and needs to mature and change with the organization.

Hearts of the business should all be looking at their risk registers and review it to see whether there's new risks, whether the things that they said were acceptable or tolerable are still tolerable, or have they been sitting over in the corner transmuting into two-headed monsters but then actually

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need a formal treatment program.

At no stage were Dr. Patel's skill and competence assessed by a committee of his peers as required under government health policy and guidelines. So the monitoring and review, it's part of good management, but it's an integral part of risk management because you've got to make sure that you still understand what are your risks and what you're doing to manage them.

Risk management is a logical and systematic process which needs to be integrated part of normal business.

It's up to every manager, everybody with a delegation to clearly understand what are the risks that they manage and to make sure that they are managing them to achieve their objectives. The greatest risk though is to take no risk at all, because if we don't take risks, there's no advancement, there's no progress, there's no profitability.

Whether it is launching a sail or launching a space shuttle, every organization has risks. At every level in the organization, the risk maker and the risk

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taker must be the risk manager. On the anniversary of the Apollo Challenger disaster, June Scobey Rogers, wife of Challenger commander Dick Scobey, said "he knew about the risks and accepted them as a test pilot." -- and lift off of Space Shuttle Discovery, beginning America's new journey to the moon, mars -- She said "without risk, there's no discovery. There's no new knowledge. There's no bold adventure. The greatest risk is to take no risk."

ROIL, Q.C.:

Q. Ms. Turner, before we move on, two things arise out of that video that I'd like to touch with you briefly on. One is a mentioning of Global Risk Alliance, and I'm not sure that you made it clear in your introduction what your relationship is with that organization.

MS. TURNER:

A. Sure. Mr. Roil, Global Risk Alliance is the parent company that owns Aerosafe Risk Management. I'm the CEO of both organizations and we work in concert. Global Risk Alliance predominantly focuses on those projects outside the aviation industry, whereas

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Aerosafe Risk Management is the division within the group that focuses solely on the aviation aspects.

ROIL, Q.C.:

Q. Okay. The other thing that jumps out at me from watching the video, and unfortunately for those that are watching it at home, they wouldn't have seen perhaps all of the incidents that were shown, but it included the implosion of a building, the Challenger space disaster, some other disasters. It seemed to be focused on incidents that came out of disasters and whatnot. Now in this instance, we, of course, were given birth, this Inquiry, by of course the events, the tragic events of March the 12th and yet, we are to have a forward looking focus because, of course, the Transportation Safety Board looks at that incident and what gave cause to that incident. I understand that you have used this risk profile in another industry in the United States recently that wasn't driven by an incident, but rather was looking at the entire industry and would you tell us a little bit about that?

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MS. TURNER:

A. Yeah, that's correct. The industry risk profiling process that I referred to earlier is a tool often used by government regulators in monitoring and providing safety oversight to a whole industry group. The recent assignment that we've undertaken this year in the United States was looking at the helicopter emergency medical industry, so the helicopter air ambulance industry that provides vital services to patients in need and certainly, you know, accidents that occur such as motor vehicle accidents, et cetera, and that quick response.

We were actually engaged by industry and commissioned by Bell Helicopters Textron to undertake and use that same methodology that we've utilized with the Australian and New Zealand regulators and that is used more broadly with Transport Canada and the FAA in the States to actually do a self-motivated and self-driven industry risk profile of this helicopter medical field.

ROIL, Q.C.:

Q. And these are all separate companies, I take

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it?

MS. TURNER:

A. Yeah, that's correct. The industry definition itself consists of over 850 aircraft and over 74 different air operating certificate holders or aviation companies and so the intent of that work was to really draw some boundaries around the industry and go all the way back into the structure and the design of the industry to have a look at whether there was issued or underlying risks that had the potential to put the squeeze on the operational end and induce the safety occurrences and accidents that we all want to prevent.

ROIL, Q.C.:

Q. So that, I take it, similarly had a forward looking--it wasn't looking at what went wrong in a particular incident. It was designed to improve safety in the industry?

MS. TURNER:

A. Yeah, that's right, and one of the things I'd like to cover later this morning is what is the relationship between the reactive after the event safety investigation process, to

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actually look at one accident and really understand what went wrong, with the relationship with the proactive and forecast look of the risks and the potentials that may be in place, and when we combine both bits of information, it really does give a complete picture. The industry risk profiling process does take that historical data and put it in as one input, but we also examine the structure, the environment, the stakeholders, the changes in the industry, the technology, the processes and the practices and really start to examine where there's potential vulnerabilities or potential cracks in the layers so that we can proactively, without waiting for an event to happen, we can proactively address and mitigate those risks to really strengthen the entire system.

So just getting back to the assignment in the US, that has really been met with a great response. We've had over 65,000 copies of that report downloaded off the Flight Safety Foundation's website. The Flight Safety Foundation is an independent, not-for-profit, global safety foundation, predominantly

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focusing on the airline industry, but definitely has some great influence in the helicopter community. Although that risk profile was developed and funded by industry, the issue around consultation and interaction that you heard in the video is just so key to this process because if you don't engage and have the right interaction with the workers, with the unions, with the regulators, with the operators, with the association groups, with you know, the users of the actual service, you can't complete the picture, and so certainly with that assignment, it was fairly complex with over 161 different stakeholders in that and we did have interaction and touch points with all of those areas.

So the outcome of that work now provides a profile that is open to that whole industry, whether they're a legislator, regulator, the operator or the user, the customer or the hospitals or the patients of that system. So it's a common platform that all of those different groups can use because everyone owns a piece of the puzzle, in terms of the risk solution and the reduction of risk,

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legislation, regulations, organizational practices or the requirements to use the service itself from the customer perspective. So that profile is now being used by all of those different areas in piecing together the puzzle on how they can collectively work together to reduce the risk profile of the entire industry itself.

ROIL, Q.C.:

Q. Okay. Well, we had a witness a couple of days ago who we asked to define a word "airworthiness" and that's not as common a word as risk, but what is risk?

MS. TURNER:

A. It's interesting, from a risk perspective. When we start going into what is risk, the definition used here is risk is a chance of something happening that could impact upon your objective. So you'll see there there's nothing about doom and gloom. There's nothing about an accident of any sort or an explosion at the front gate. It purely says risk is a chance of something happening that could impact upon your objective. Now when we're looking at the safety context, because I do

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want to draw this parallel between safety and risk, because they are separate disciplines but extremely related. So if -

ROIL, Q.C.:

Q. Before you go on to the next slide, the reference at the bottom, ISO 31000 Risk Management, just for those in the room and there'll be some and perhaps some that are listening, what is ISO 31000 Risk Management?

MS. TURNER:

A. Sure.

ROIL, Q.C.:

Q. Just briefly.

MS. TURNER:

A. The ISO or International Standards Organization is an international standard setting body that sets a whole range of different workplace standards and business process standards across many different industries. The flow of the hierarchy from ISO into the national standards, such as the Canadian standards body or the UK standards body, basically looks at setting these processes and practices in place. So the ISO 31000 Standard is a recent initiative. It's

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been in the pipeline for the last three or four years, and ISO is made up of all those countries that subscribe to the international standards, Canada being one of those, and the process is actually quite deliberate and quite comprehensive to reach agreement on what that international position is. So the ISO 31000 standard is actually based upon the previous Australia and New Zealand standard, which has been in place since 1995 and has gone through a series of iterations and is currently in a working--committee working draft, but as of last Tuesday, confirmation that all of the countries have now agreed and subscribed to that standard has been reached. So you can imagine it's quite a process, and that document is publicly available.

ROIL, Q.C.:

Q. So this definition that you've given us here comes from this ISO standard?

MS. TURNER:

A. That's correct.

ROIL, Q.C.:

Q. So it's not a Google definition, it's a little higher.

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MS. TURNER:

A. No, that's right.

ROIL, Q.C.:

Q. Okay, good. Okay, you said now our focus is on safety risks. How does this get impacted by the definition?

MS. TURNER:

A. Sure. In looking at the difference between risk and safety, safety is often referred to as the freedom from harm, so really removing, you know, those issues that can cause harm or injury to people in particular. If we're looking at then what is safety risk, I've just inserted here the word "safety." So risk is a chance of a safety something happening that could impact upon an objective, or the other place of putting this is risk is a chance of something happening that could impact upon a safety objective, such as the safe transportation of our workers backward and forward to the oil rigs. So if our objective is to have safe and effective passenger transport, helicopter transport, then what are those things that could potentially prevent that from happening and that's actually what

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we're looking at from a risk perspective. So it could be a safety event that could impact on an operational or business objective or it could be an event or an issue of some description that could impact on a safety objective.

ROIL, Q.C.:

Q. And that, of course, is key to our mandate?

MS. TURNER:

A. Absolutely, and just to reiterate, there is that relationship between risk and safety and at an industry risk profiling level, you can not divorce the two. You cannot purely just look at the safety implications without taking into account the environment, the changes, the regulatory regime, the commercial pressures, et cetera. However, in saying that, right across many industries that we work all around the world, the safety of people and the protection of our asset and resource and our human capital is really one of those primary criteria that does rest above all else, and you can see that from the examples put forward in the DVD.

ROIL, Q.C.:

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Q. Yes, indeed. So we now know what risk is. What is risk management?

MS. TURNER:

A. In looking at the risk management discipline, I really like this definition because it says risk management is a number of things. It is the culture and it's the processes and it is the structures that are directed towards that effective management of the opportunity, while minimizing the potential for that adverse event. But if we start looking at risk management and breaking it down in its purest form, it's the culture. Every organization has a culture. Every organization has an existing safety culture. You don't not have one. It's just whether or not you're satisfied that it's a culture that you're after.

In terms of the processes, we all acknowledge that there are so many structures, plans, processes, procedures, manuals, in the offshore oil industry and all of those processes and structures are there to manage risk, and they've been designed over time to manage particular risk areas. So I guess the

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question comes, do you need anything else or how much is enough? And so in looking at risk management, it really is that combination of the people piece and the beliefs and the behaviours and the attitudes with all the structures and when you combine that together, those things hold true to really minimize the potential deficiencies or adverse effects and making sure that you're positioning the organization to achieve that objective that you're after, and in this case, that's the safe transportation of our workers to and from their place of work.

ROIL, Q.C.:

Q. In our preparation for today, and after you arrived in Newfoundland, you explained to me a rather whimsical little story about your taxi ride that gives us some little insight or window into safety culture.

MS. TURNER:

A. Absolutely.

ROIL, Q.C.:

Q. It was involving a taxi drive. I think we'll leave the name of the taxi company out of it. We can talk about it other than that.

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MS. TURNER:

A. Thanks, Mr. Roil. It's really interesting in looking at risk management that the processes and the structures are the easiest part to do. Time consuming, but very tangible. Hence, why I say they're easy. Maybe not easy, but straightforward. So you know, those structures. The cultural piece is something that certainly intrigues people right around the world of what makes people behave in a certain way. You know, what makes people change their attitudes and their beliefs and ultimately their behaviour to make decisions in a certain circumstance. So going to the story, when I arrived on Saturday and I've had a number of different taxi trips around here, downtown.

I was talking with the taxi driver and he asked what I was doing here in St. John's and I mentioned that I was working with the Inquiry and was looking forward to, you know, this process, particularly in outlining risk management, and his first thing he said was "oh, different companies have different standards." He said "wait a second, I want to

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show you this" and he said "I have two different types of receipts that we need to fill out when people pay in the taxi ride," and I've just forgotten the name.

ROIL, Q.C.:

Q. You don't need the name. There was a company that has employees travelling.

MS. TURNER:

A. Yes. There is a company that has many employees that travel and they actually have a different receipt that the taxi driver needs to fill out to the standard receipt. Now what's different about this is that company's focus on safety. On that receipt, there's about four or five checkboxes that the taxi driver needs to complete before he fills in the dollar amount and it's "is the vehicle road worthy? Was the driver wearing his seatbelt? Was the driver using a mobile phone?" et cetera, and he made this comment -

ROIL, Q.C.:

Q. Who fills this out? Does the taxi driver fill it out or does the passenger?

MS. TURNER:

A. The passenger fills out a component and the

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taxi driver fills out a component. So both have transparency and visibility of this process. And he was actually quite enthused when we were talking about culture that that change in a process by adding a couple of easy little checkboxes to a form actually changed the behaviour, and he said "and I know when that organization puts their staff in my cab, I'm not answering my mobile phone" and so he's behaviour will shift because of the design of a process actually starts to get that cultural change. Now wouldn't it be good if every single passenger that got in the taxis here in St. John's required that same level of structure or checking? In no time, you would soon see a shift in the behaviours and get consistency of practice.

So why I thought that was a good example is because safety culture or risk culture is generally not very tangible and it's fluffy and it's out there and difficult to define, but it is so key to the way that people behave, whether they're being watched or not being watched, which is quite interesting.

ROIL, Q.C.:

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Q. I suspect that the Commissioner or others will ask you a little more about culture as we go through the piece.

MS. TURNER:

A. Absolutely, or check next time that you're filling in your taxi receipt.

ROIL, Q.C.:

Q. Okay. You now have put a very complex looking slide in front of us, so perhaps you can tell us, either briefly or in a longer explanation what it is that you're trying to show us here?

MS. TURNER:

A. Sure. This diagram that you can see in front of you outlines the risk management process. So those of you who can't visually see this diagram, it's a flow chart and it has the elements and the steps of the risk management process. Some interesting things to note is you'll see that there's no start or an end point. You'll see that the arrows continually cycle around and this very much is a iterative process. So when we're managing risk or positioning our self to management risk, it never ends. So risk management is dynamic or risks are dynamic. They're continually

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changing, hence those arrows to really revisit that change in the situation.

A couple of other things I'd like to draw your attention to in this diagram, and this has been drawn from that ISO 31000 standard that we referred to earlier, and it was also outlined on the DVD as those layers of defences. In terms of this diagram, you'll see that there's a shaded area that has the word "risk assessment" around it. There is a difference between risk assessment and risk management. Risk assessment is purely the identification and measurement of risk, whereas risk management is then taking that assessment and making decisions about its appropriateness, about what level of risk you're willing to accept or tolerate, communicating with the right players to ensure that people are aware of the various things that need to take place, and basically actioning and activating activities to make sure the risk treatment strategies or the solutions are implemented. So I just wanted to draw your attention to that difference of risk assessment and risk management.

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The last thing I wanted to point out on this diagram and certainly I could spend hours or even days going through the depth of the science that sits behind this, but the good news is there is a science. There is a process and a structure and we'll be working through that over the course of the next few months. That final point I wanted to draw your attention to is that first--well, I guess you could call it a first step, the establishing the context phase. We would normally spend 40 percent of our time in that box alone. So it's quite an important step because if you're trying to identify the risks of a certain situation and you can't effectively define the boundaries or the industry itself that you're working in, you'll find that the assessment can meander or not get the clarity that it's after. So in the case of the helicopter transportation in the offshore oil industry here, what is the industry? Is it the aviation industry? Is it the helicopter industry? Is it the offshore oil industry? Is it the broader oil and petroleum industry? So all of those questions

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need to be answered as to where we're going to put in the boundaries and I note this map up here and certainly if we were to draw some boundaries around that area, there's various new things that are emerging in terms of new exploration. What impact will that have? Well, that might shift the context of the requirement for helicopter transportation, the distances, the lengths, possibly the aircraft capability. All of those things will change in time and so it's important, from an industry risk profiling perspective, for us to define some clear and good boundaries that when there is a shift, we recognize it and then can reassess.

ROIL, Q.C.:

Q. If you look at the way that the Inquiry has been structured, can you tie in any of these steps that are listed one under the other to establish the context and identify the risks, where in our phases we would be able to find and to work on these issues?

MS. TURNER:

A. Yeah, that's a good question. My approach towards that would be this Phase 1A is

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instrumental in establishing the context. We're hearing information from the Petroleum Board, from the aviation regulators, from the operators, from the helicopter operator, all the way through to all the interested parties and so once that takes place, I think we're going to have a very clear definition of what that context is that we're looking at. Also in this Phase 1A, there's going to be a range of different issues that will emerge through the conversation and through the material that is presented. So I would say that establishing the context and identifying risk would very much fall in this first public hearing phase.

Phase 1B, when we sit back to actually prepare the information for the Commissioner's consideration and distil what all of that documentation, et cetera, is saying, I think it's going to be very key in really clarifying the risks themselves at different levels. Once we have that information, and when I say "we" I very much want to draw your attention to that communicate and consultation. It's not Aerosafe or Kimberly Turner or an

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independent. I say "we" collectively as all the interested parties, because everyone has a piece of the puzzle in terms of where the issues are or the potential issues could be. And then as we roll through that analyze and evaluate stage, I'd say what will take place towards the end of Phase 1B. Then when Transport Canada comes out with their report and -

ROIL, Q.C.:

Q. Transport Canada?

MS. TURNER:

A. Sorry, Transport Safety Board comes out with their accident investigation report, that's another good opportunity to revisit that cycle, have a look at whether there's any information that is pertinent to completing the risk profile and in particular, looking at some of those treatment strategies, so there's an opportunity there.

The last aspect I will say is when you've got a list of risks that are worthy of attention, that's actually not the ultimate aim in risk management. The ultimate aim is on the other end. It's to proactively put

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things in place to provide a high level of confidence or assurance that those risks are being managed. So I refer to those as risk treatment strategies. Many people in the safety field call those risk mitigators, solutions, resolutions. It doesn't matter what you title those, but those treatment strategies really are best developed when they come from those who work in the industry itself. So there's going to be a great opportunity for contribution to risk treatment strategies and certainly we'll be actively working and encouraging innovative solutions that may or may not always--sorry, currently be in place.

ROIL, Q.C.:

Q. Just on the apparent circuity of it, keep going at it, I take it that--you made a reference to our map and we had some evidence that most, if not all of the really active work is going on in the Jeanne d'Arc Basin.

MS. TURNER:

A. Um-hm.

ROIL, Q.C.:

Q. Yet I heard a media report about another

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company that's going to be working somewhere close to the Baquette.

MS. TURNER:

A. Yes.

ROIL, Q.C.:

Q. Which is that little corridor that leads into the islands of St. Pierre and Miquelon. Is that a fact that might change some of the--does it create new risks or does it create opportunities for new challenges or new solutions? What happens when something like that happens?

MS. TURNER:

A. Yes, certainly. The first thing when there is a change, there's a shift in the context. So if the context actually shifts, that's a trigger to reassess. So one of the things, as we piece together this industry risk profile, we need to make a determination of where do we put those boundaries? Are we looking at the next five years and the potential change that might occur in that? Are we looking now in the next six months? How far do we want to draw that circle? Is it just in those areas that currently use helicopter operations or is

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it those areas that could potentially use helicopter operations in the coming period?

From a regulator's perspective, when there's industry risk profiles used for aviation oversight, they're generally redone about once every two years. Why? Because there's generally a significant development or evolution of the industry sector from technology or environmental or, you know, those various pressures that will shift enough to warrant a reassessment.

ROIL, Q.C.:

Q. Okay. We can move on to the next set of slides.

MS. TURNER:

A. Okay. What I've prepared here, I just wanted to talk about provision of governance and oversight for helicopter transportation safety, particularly in relation to the offshore oil industry in this area. When we're actually looking at how do you set up a regime or how do you confirm that the regime is adequate? We're looking at the safety of this helicopter that you can see on your screen. However, this helicopter is actually

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subject to various components and I'll just give an explanation around why we use this. When we're talking about helicopter safety, we've got both the aviation company that provides the crew, the aircraft, the procedures, the certification and the airworthiness that you mentioned before.

ROIL, Q.C.:

Q. And that's the blue part of the picture?

MS. TURNER:

A. That's half of the picture, and we'll take it as the blue part. But then we've actually got the other component of those involved in the helicopter operations, which are the passengers, the oil workers that get in the back of the aircraft, and the engagement, the contracts, the requirement to have--use this service. So when we're looking at helicopter safety, we've got those two different components. Now those two components both come under their own regime. They have their own layers of procedures, policies, training, structures, regulation. So from the aviation perspective, the helicopter company will have their own operations manual, procedures,

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training, company policies, leadership, all the way back into the regulatory framework we heard about last week from Transport Canada.

As is the case with the other piece, or the green piece, the offshore oil industry has their staff, their protocols, their procedures, the issuing of equipment, the contract engagement, the policies, the structure, all the way back into the regulatory framework for that industry itself. So why is this important? Because those two areas intersect in the aircraft itself. Every time it goes out on a task, every time it takes the staff out to the platform, those two regimes intersect in a small little aircraft, you know, with 15 to 20 people on board. So why is that important? The aviation aspect has full control over their aspect, yet can influence the other element through practices, training, interaction, engagement and influence. Just as is the case, the operators, the oil operators that engage the aircraft, have full control over the price that they're prepared to pay, the specifications that they're willing to

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mandate, their requirements, their volume, you know, the number of times that they want to fly, whether or not we want to now change the scope of the service being provided and staff operating out of a different area, if that exploration is successful and it moved into production. So just as the aviation company has control on their part, but influence into the other, the petroleum companies have control over their part and influence by contracts, training, standards, relationships, communication.

So this nuance around control and influence is really important and I find that it does help give clarification as to how the whole regime actually works. So ultimately what we're after, from the safety of an aircraft, is for these two different regimes that intersect in the aircraft to be integrated, to work in concert with each other and to really gel from that part. So you'll see a lot of the concepts that underpin this industry risk profiling process are predicated on this philosophy or this idea.

ROIL, Q.C.:

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Q. We actually have a fairly significant part we now have to go through, Commissioner. It might be perhaps a better time now to take a little break and -

COMMISSIONER:

Q. Okay. We'll take a break now for 15 minutes.

(BREAK)

COMMISSIONER:

Q. Please be seated.

ROIL, Q.C.:

Q. Now, Ms. Turner, this morning earlier we introduced the concept of risk profiling, so perhaps you would now like to tell us a little bit more about the detail of that process?

MS. TURNER:

Q. Sure. In looking at industry risk profiling, as I mentioned this morning it really is the strategic application of the risk management process at an industry level, and so I'd like to start at that high level, and then as we work through this process you'll see that I'll become more operationally focused, which I know will be of interest to many of the people listening to this presentation. In terms of an industry risk profile, I have a definition

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here. "The industry risk profile"--or "an industry risk profile, presents a strategic picture of those issues that may induce risk at the systematic or structural level of a particular industry sector at a point of time." So in terms of that, as I mentioned, it really is looking an industry sector. We talked before about the importance of defining that in an adequate way, and we're looking at those areas which may not necessarily be direct safety issues, but if we were to take a safety event and we say, "Well, why did that happen," and then we worked backwards to a factor and then we say, "Well, why did that factor happen?" "Why did that factor happen?" We're literally going back four or five or six layers into the why, and so what I'd like to do is just take us through that a little bit. When we're developing an industry risk profile, it does follow the risk management process as outlined in the ISO301000 standard. As I mentioned, the first thing you need to do is define the industry, and we're starting to through this process listen and take onboard the information being presented to try and

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distil where those boundaries could be placed, and I look forward to having some dialogue with all the interested parties and with the Commissioner and the legal teams to really get some agreement around the appropriateness of that scope. In terms of the core objectives, given that the inquiry's focus is looking at providing a high level of confidence around the processes that are in place, and the regimes and structure that are in place around helicopter transportation, our core objective is really looking at that safety aspect, but in saying that we will consider the broader environment in which these helicopters operate to move forward. We talked before about the risk profile constantly changes, so risk is fairly dynamic and when we're compiling the risk profile, what we need to do is look far enough into the future to identify what those potential changes may be, and then put a line in the sand and incorporate those potential changes in the assessment itself.

ROIL, Q.C.:

Q. Do I take it that what we are doing today or what we do over the next number of months will

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not necessarily be a piece of work that can be considered as all that is needed for the next 10 years.

MS. TURNER:

Q. Absolutely, and the trigger to decide when you reassess or redo profile is predicated on two things. One, if there's a significant shift in the industry itself, and it may be that there's just an explosion of growth in the area that the regime then needs to be adjusted to cater to that change, or at a periodic time to actually revisit that, and generally from a regulatory perspective it's roughly around two years where that could take place. When we're compiling an industry risk profile, I must stress that it isn't a quantitative assessment process, so we're not looking to pinpoint a particular risk number, one in a million chance, one in ten million chance. It really is a cumulative total of a lot of different qualitative inputs, and what we actually do is we try and layer that data, and where we pull out consistent themes those issues then are considered with a higher level of integrity or consistency and will make their way onto the

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profile. So in terms of once we have the boundaries of the profile defined, we then need to look at, "Well, where are we going to get the information from," and certainly this process of presentations from the various organizations of how they operate will be a fantastic data input source, so need to be a dialogue and conversations in interaction with each of the stakeholders and the parties, and this really is a two-way process. As I mentioned before, it's not a pure, independent, scientific assessment to criticize or to find fault, but more an interactive, collaborative process to really examine the whole set-up and look at what are those areas that are worthy of future and continuous monitoring as that protocol changes.

ROIL, Q.C.:

Q. And, I take it, that this would be akin to what we have called "issues or opportunities for improvement."

MS. TURNER:

Q. Absolutely, that's a really good definition there. So in terms of looking at the risk

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profile itself, if we just come to that definition of risk, if risk is the impact-- sorry, if risk is the chance of something happening that could impact on our objective, what we need to do is look at that industry set-up as a whole, and as I mentioned the objective is the safe transportation of our workers to the oil platforms.

ROIL, Q.C.:

Q. So here we have a rather interesting slide with a bunch of holes in it. I take it, that this is not something that you have invented?

MS. TURNER:

Q. No, that's correct. This concept is actually widely recognized in the aviation and safety communities right around the world, originally developed by Professor James Reason, who is a renowned psychologist and safety expert particularly in accident causation models. When you heard from the Transport Safety Board, they actually referred to their investigation process where they identified various defenses that are in place, and they're looking for where the breakdown occurred in those defenses. This, commonly

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referred to as swiss cheese model, is much easier than the reason model, can be used either in accident investigation or in the proactive forecast, forward-looking, risk management process, so what I would like to do is just talk you through this because it gives some perspective as to where the industry risk profiling process sits in the scheme of aviation safety.

ROIL, Q.C.:

Q. Okay, and if we go back to that model that we saw in the video where they had the various disks with a little hole in the disks through which something penetrated and caused an incident, I take it, that's using the same sort of methodology as you're using here?

MS. TURNER:

Q. Yes, it is. That, actually, video was based-- or that concept was based on this swiss cheese, or Professor James Reason's model. When an accident occurs, and this even happens, you know, from a family situation when something goes wrong, it's never one thing that you can pinpoint that caused the accident. It's generally--we've heard the

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term "links in the chain" or a "series of events" or "everything lined up." The planets aligned and that issue occurred. This swiss cheese model is really along those lines as well that, you know, as these different links in the chain potentially had cracks, when we all line up that's where we get an event or an accident. Now interestingly enough from an aviation safety perspective, many people state that there is no accident that is exactly the same, that every accident is a different combination of factors that might come from the layers of defense, but it's never the same combination as such, and so in looking at this accident causation model, the industry risk profile is predominantly looking at this end that high-level end in terms of industry structure and oversight. It does take into account the organizational factors and structures at a company level. These are in this case the petroleum companies or the aviation companies themselves.

ROIL, Q.C.:

Q. What about the oversight provided by organizations like Transport Canada or the C-

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N-L-O-P-B? Would that be looked at in this model?

MS. TURNER:

Q. Yes. Those different regulatory bodies would really fit into that industry structure and oversight level. However, they have significant control and influence at that organizational level because those organizations work to the compliance requirements. This last aspect--so when we're looking at the industry risk profile, we're focusing predominantly on the industry structure and oversight level. We're looking at the relationship of how that interacts with the organizations, and the collective views. They're not necessarily just one company, and keeping in mind that at the moment there's one aviation provider to this industry sector. That's not to say that down the track, you know, if the context shifts that this structure wouldn't apply to others that may operate in this industry itself, and then thirdly we have the operational risks. Now it's really interesting that the operational risks or hazards are so obvious and come to

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mind--they're at the forefront of all our minds, the treacherous weather, flying at night, mechanical issues, human factors, spatial disorientation, you know, all of those hazards that occur--or the aircraft itself is subject to it very much at the operational level. There are so many processes and structures and cultural traits and behaviours that are trained at that operational level in air crew, and in particularly the pilots or the maintenance staff or the management team, etc., that really runs the aircraft, and a lot of focus has being placed in the last 20 years around minimizing human error, pilot error, and those type of things there as well, so that operational end is -

ROIL, Q.C.:

Q. I think that's very helpful to us to understand what operational means. Perhaps you could similarly take the organizational and structural and add some examples.

MS. TURNER:

Q. Some examples?

ROIL, Q.C.:

Q. Yes.

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MS. TURNER:
Q. Yes, sure.
ROIL, Q.C.:
Q. So we can follow through as to the different levels in the organization.
MS. TURNER:
Q. Yes, sure, so just reiterating that operational level assessment is really considering the hazards, the hazards of flight, the weather conditions, the time of day, the length and duration, really that front end aircraft. As we worked back into the organizational layers or defenses, we'll be considering the policy framework. We'll be considering the training that the staff undertake, the recruitment and selection process, the various regimes, be that maintenance regimes, operational tasking, passenger briefing, the leadership, the culture, so at that organizational level we're looking to management practices. We're looking at company policies. We're looking at the structures set up by the organization itself, and I must just state and acknowledge that from what we've seen in the aviation

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industry globally and in the oil industry globally, those organizational defenses are very strong, and it's interesting just anecdotally. With the aviation industry, if you were to carve it up and slice it up, the aviation industry is very diverse from airlines to general aviation, helicopter operations, airports, maintenance, companies, et cetera. So you have the aviation industry. The helicopter industry is a sector, and then the offshore helicopter industry is yet a sub-sector of the helicopter regime. Now it's interesting, because of the influences of the oil companies on the aviation contractors, those aviation companies that contract to the oil industry or, say, the mining industry, are generally recognized as having standards that are beyond the minimum regulatory compliance required by Transport Canada and are really at that better practice level, and so I just wanted to put that in context because just because we're undertaking an industry risk profile doesn't imply that there are huge gaps or deficiencies, but rather it's an opportunity to just keep on looking at these

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potential cracks or these holes that will change over time, and really be proactive in plugging those. Okay, just finally looking at the examples of that industry structure on either side, we're looking at the industry governance arrangements, how assurance is provided, so who actually checks what and at what level and to what level of depth? We'll be considering the intersection at a regulatory and a policy level to really give that light and that clarity to that picture we saw before in terms of that aircraft. So you know how we had the aircraft and it was divided in two, and then we had the, I guess, levels and layers that went all the way back to the regime. Those levels and layers are almost like this, the closest to the aircraft, operational things.
ROIL, Q.C.:
Q. Yes, so the things that the Transportation and Safety Board called defenses, you would take them as being pieces of the cheese, if you will, that we will also look at, but we will start at the top and work down?
MS. TURNER:

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Q. That's right.
ROIL, Q.C.:
Q. Okay, and which way do they start?
MS. TURNER:
Q. That's right, so we'll work at the top of the industry level and work down and have those touch points. When an accident occurs--and so I'm just shifting a gear from after an accident through to proactive risk management. We've just gone through the proactive part. We'll start at the strategic and work down to the operational. When an event or an accident occurs, generally you start at this end. You start at the operational end. What actually went wrong? Why did the aircraft crash? What were the environmental factors at the time? What were the crew factors? What were the mechanical factors? What were the air worthiness factors? So all of those things are at the operational level. Once that's actually ascertained from an investigation perspective, then they'll move back into that layer of the organization. Well, what was the training regime? What was the policy regime? What was the utilization of the aircraft?

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What was the task profile flown? Was that mandated? How did that actually work? So in the investigation process, that is definitely examined. However, the question is raised, does that accident investigation process go all the way back into the industry sector? My professional opinion would be "not so." The reason or the justification for that would be if an accident occurs and that accident investigation takes place, the organization that was involved in the accident would be very much reviewed and subject to that investigation. It's very uncommon for an investigation authority to then conduct that same level of investigation on the other companies that are involved in that sector.

ROIL, Q.C.:

Q. Yes, so it's an event-driven process that is tied then to the company that had the event happen, is it?

MS. TURNER:

Q. That's right.

ROIL, Q.C.:

Q. Yes.

MS. TURNER:

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Q. Now just in saying that, obviously if there are issues that go beyond the organizational level, the investigation agency in all different countries would look further back into that area, but maybe not to that level of depth. So you can see that if we combined what the TSB does with its proactive, forward-looking industry risk profiling process, it actually gives you a beautiful alignment working from two different ends of the picture. So in terms of that swiss cheese model, I find that it's quite a easy concept to grasp. We've got all of these different layers of cheese. There are holes in the cheese that don't necessarily always line up. They're not cut from the same cloth. However, if those holes are there, the risk management process should lead us down the path of identifying what holes are in the cheese, and the risk assessment part is determining how big are those holes, how many of them and how large they.

ROIL, Q.C.:

Q. So, I take it, our objective in the swiss cheese model is to make the holes as small as they can possibly be, and then try as much as possible to make sure that they don't line up.

MS. TURNER:

Q. Absolutely, and you're spot on with that, John, and the risk treatments step of the risk management process--that flow chart that we saw is all about closing those gaps, or closing those holes.

ROIL, Q.C.:

Q. Okay, I think your next slide takes us to an interesting wheel.

MS. TURNER:

Q. What I wanted to do is just talk about the industry risk profiling methodology. So if we understand that the first step is we need to establish the context, and there's a bit of work involved in that. The second is we need to do our data collection and really start to look at the information available, and the third part is once we have all that information sitting on the table, how do you actually organize and structure that information for it to be presented in a logical way? That's where this industry risk profiling model comes into play. Just to give you the history of how this was designed, this was developed by our organization about six years ago when we were working with the New Zealand regulator, the Civil Aviation Authority in New Zealand. I must say that from a regulatory perspective a lot of innovation comes out of New Zealand so potentially because they're quite small and forward-looking, that about 15 years ago in New Zealand they had a shift in philosophy around their regulation, and they moved to a risk-based, oversight model, so the whole legislation changed. The Act changed, and as a result the way that they actually conducted their surveillance and intervention on the aviation industry, actually shifted as well. So in New Zealand they have a process of doing risk assessments on every single aviation company in the country, and they can rank those organizations from highest risk to lowest. They can then split them up into sector groups so they could give you protocol in the helicopter community, the airport community, the airline community, flying training schools, the tourism industry, the

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medical industry, et cetera. Now it's important to note that when you're doing these type of assessments, they don't stay the same, and so one of the great pieces of innovation that has come out New Zealand is actually developing a series of change triggers. When do you actually reassess these companies? When does the order actually change? Now the reason why a regulator would want to conduct a risk assessment on every company is to rank them from highest to lowest, so that when they go out and they audit and do their inspections they're putting their efforts in the area of greatest risk, and we all know that resources are not unlimited, and so somewhere you're going to actually run out of inspectors, and so the question is where you run out of that resource, is that line okay or do we actually need to go further because of the risk profile? So just in going to the methodology in working with the CAA, New Zealand, through this process there's a lot of data collection, there's a lot of automation, there's a lot of assessment that takes place, and we were asked to get involved about six or seven years ago

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in really doing a technical review on the classification of risk, and actually looking at the input sources to see if they were adequate, and really ensuring that the process aligned with the pre-documented ISO standard on risk management and really getting that integrity so that the assessment was consistent with reality.

ROIL, Q.C.:

Q. So I think, if I take your message, if it is that good things can come from small islands you are preaching to the converted.

MS. TURNER:

Q. Yes, I thought that might strike a chord. So with that structure these factors were, I guess, defined. We have subsequently used this methodology with regulators in Australia, New Zealand, in Asia. Most recently we've conducted this assessment on the helicopter medical industry in the United States. Transport Canada as recent as June this year, we've conducted training on these concepts with 80 senior staff across the multi-modal aspects of rail, marine, aviation and security so, really, around putting these structures in

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place it's important to get this definition to organize the data. So what I'd like to do is just briefly talk you through this industry risk profiling model, and what I'd like to do is just talk through each of the elements, but I'd like to explain why it's included in the industry risk profile, and maybe give some practical examples as we walk through.

ROIL, Q.C.:

Q. Yes, I think an example of each of them would probably be helpful for us to understand where the various pieces of the puzzle fit.

MS. TURNER:

Q. Yes, fantastic. Now normally when I explain this model, I start at oversight and work my way clockwise. I might just go the other way for a second because, given that our focus is safety orientated, maybe we'll start with the safety profile. So the reason why this is in the profile is because when we're looking at the complete risk picture we're not just looking at the potential, but we're also looking at the factual and historical view. So in terms of the safety profile what we're looking at is the inputs from incident reports

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and occurrences and accidents that have occurred in the industry. Now given that we have a small industry sector group here, and it's a small sample section, we may choose, depending on the interaction and consultation, to go a little bit broader and to maybe look at other offshore oil accidents in this helicopter area to broaden the sample space, or we may choose to look closer and look through some information.

ROIL, Q.C.:

Q. And by other offshore incidents, you're talking about in other jurisdictions of the world.

MS. TURNER:

A. Yes, in other jurisdictions in the world possibly with the same aircraft task, possibly with a similar task profile backward and forward to the rigs now. I'll get to it when we get around to the activity profile, but I do acknowledge that there's more than one different job that these helicopter companies actually undertake, so the safety profile is one input source into the profile. Yet in combined with everything else, one-tenth of

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that isn't enough to bias it so that we're only looking at one single event. In terms of the system's profile, what we're looking at here is the management system. We're looking at the communications systems. We're looking at the business systems. We're looking at the safety management systems. So why is this important, because if risk management is the culture, the processes, and the structures, these systems will actually give us a great indication as to the health of the processes and the structures, so that's what we'll be examining in that area. So the practical examples of what could be looked at is does the organization has a safety management system? How does it work? Where would the organizations like to see it enhanced or improved, et cetera? This next aspect I know is near and dear to the hearts of many in the room today, and certainly those joining us by Webcast. The passenger and participant profile is a key input into the industry profile, and I'll give you an example that's outside the offshore oil industry. We recently did actually last year a profile of

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the parachute industry down in Australia. Now it's interesting in looking over the last 10 years that passenger and participant profiles had actually shifted very significantly from initially being a group of sports aviators who were parachute jumpers who would go and undertake competitions, and skydivers who would get involved in that. Over the last 10 years it's actually gone from a sport and recreational industry and competitions through to a very commercially driven tourist industry attracting a lot of overseas non-English-speaking tourists to undertake that fun, adventurous activity. So there's been a huge shift in the passenger and participant profile from one that's very small and contained to one that's extremely public and open, and when you now have, you know, 40 to 50 percent of your participants that are coming from Asia who aren't comfortable or used to the English language, your whole regime needs to change in terms of having translation in the safety briefs in providing information, et cetera. Now I know there hasn't been as radical a shift in your passenger participant profile

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here. However, in this aspect we'll consider crews getting in the back of these aircraft, their level of training and what's provided. The cultural aspects, the comfort level, and certainly this is where we see the possibility of interacting with the workers, the unions, other people that might actually get in the back of the aircraft. I'm sure there's a range of visitors and other people who would do the one-off and, Commissioner, I understand that you've been one of these participants in this activity as well, and so really looking at the broader aspects of that profile, so there's a great opportunity to pull that input into this picture so you see that it is very inclusive. The industry operating environment is a really good element of this risk profiling as well, so perhaps the things we're going into here are what is actually going on in the oil industry? What are the requirements and the expectations, the global standards, the better practice aspects in the oil industry in relation to helicopter operations and helicopter safety itself. We talked before and we gave that example around

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the maps that we see up the front. That's an industry operating environment and, you know, any potential shift or development or evolution in that would be picked up under that category. The next one here is a real tangible one from an aviation perspective. The aircraft's capability profile really goes into the facts, the figures, and the specifications of the airframe itself. I was going to use the word, "platform," but I know that has a different connotation and meaning in this joint environment, but aviators often refer to an aircraft type as a platform or a capability. So that aircraft capability profile is looking at the type of aircraft, the specs, the equipment, the range, the suitability, whether it's fit for purpose and, you know, really looking at that tangible piece there. So obviously that has a fairly large impact on the industry risk profile itself. Moving to this next one, the activity profile--another term that could be used here is the type of tasks that are undertaken by the helicopter. We've been focusing on the transit of passengers on this routine,

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backward and forward to the oil rigs. I'm sure there's a range of other activity profiles that take place, for instance, evacuation of people off the rigs, medical evacuations that might take place, which may not be on that schedule, yet might be an out-of-sequence--there's possibly training tasks and missions. There's possibly ferrying VIP's.

ROIL, Q.C.:

Q. One of the things we know about this particular company is that it has responsibilities to provide some search and rescue efforts, and in fact did on March 12th. This would be picked up in this area?

MS. TURNER:

Q. Absolutely. That search and rescue activity profile could be considered if we choose to extend to the boundaries. So we have a lot of choice as to where we put the boundaries of this assessment, and I look forward to actually mapping out some of the activity profiles, you know, with the aviation companies and the operators themselves to really look at those things that we want

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included into this. Now just going back to the context, you can see why you spend 40 percent of your time in that definition piece up front because we need to actually (1) scope out these various things, make some decisions about whether they're in, they're out. If they're in, great, we didn't need to look at the appropriate data sources to get a good level of integrity. If they're out, no problems, we just need to list it as an exclusion or as a limitation so that when people read the profile itself, or when the profile is used it's actually read within the context of where the boundaries have been placed. The next one here is the operator profile, and this really goes into the aviation companies that provide support to this industry itself. So in the case of the helicopter medical profile that we've recently undertaken in the United States, the operator profile actually went into the various business models from companies that were listed on the stock exchange all the way through to not-for-profit charity organizations that owned and operated the

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aircraft. It actually goes into the crew profile. It goes into those other organizational factors I mentioned when we were discussing the swiss cheese, and it's interesting. There's another 10 sub-sets that actually break out in that aspect itself.

ROIL, Q.C.:

Q. Now that word, "operator," we have been using. For example, the C-N-L-O-P-B uses the word, "operator," to refer to the oil companies, and we've been trying to use "helicopter operator" to refer to the Cougar type of companies, the helicopter operating companies. What operator are you targeting here, both or one or the other?

MS. TURNER:

Q. Sure. I believe the intent of the definition probably would be both in this aspect. Looking at those structures for both the oil industry and the aviation industry, there would be some crossover then with the industry operating environment, and that's just where we need to get that clarification, and that will come in the coming weeks as this definition is developed.

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ROIL, Q.C.:

Q. Okay, so each of these little pieces of the circle are not necessarily exclusive of a relationship with the other.

MS. TURNER:

Q. No, that's correct, but just on that example, Mr. Roil, in terms of the operator profile, if we were looking at the aviation operator or the helicopter operator, as you say, that's one aspect. Now the activity profile I would keep quite narrow into helicopter activities as opposed to any safety activity that might occur on an oil rig.

ROIL, Q.C.:

Q. Yes, we are mandated through our Terms of Reference to focus on only the helicopter transport portion.

MS. TURNER:

Q. With that.

ROIL, Q.C.:

Q. Yes.

MS. TURNER:

Q. So you can see how some of these aspects of the profiling model can be quite taut and limited as you point out in terms of limited

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by the Terms of Reference, or limited by where we choose to put the definition collectively where others actually could be quite broad, and quite diverse. These next three elements of the risk profiling model are key to and at the heart of the industry structure and oversight model. The terms that I use here are quite common terms from an aviation regulatory oversight perspective, and I'm sure they have a similar meaning in terms of oversight of the broader oil industry itself. I might just jump back to the oversight model. Oversight is all about providing a sound level of governance that directs and controls the organizations that fall within that sector. So in terms of the oversight, that would really come into--you mentioned before about the petroleum board and aviation regulator, and the regime that they have in place to monitor, conduct surveillance of the organizations, and check that the prescribed standards are actually being met or are being exceeded.

ROIL, Q.C.:

Q. So that's the oversight piece.

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MS. TURNER:

Q. That's correct.

ROIL, Q.C.:

Q. The oversight of this activity that we are examining.

MS. TURNER:

Q. That's right. We could actually replace the word, "oversight," and call it "governance" and--however, why we've called it oversight is this next area of compliance and the next of assurance are very closely linked with governance. So just moving to the compliance regime, what we would examine in that phase of the industry risk profile is what is the legislative hierarchy? What is the regulatory hierarchy? What standards are the industry subject to? What are the better practice standards that are out there that many subscribe to, and then moving then--that connects quite nicely then into the operator profile where it then gets into the organizations, structures, policies, and procedures. So from a compliance perspective, the reason why this is in the industry risk profile is because that really provides that

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foundation and the base of the boundaries. However, the industry risk profile is not purely looking at the risk of non-compliance. We want to take it beyond compliance and looking at the whole regime, but that provides us a very solid and firm foundation to build upon. This last aspect on the industry risk profiling model is really looking at the assurance aspects, so the question is what is assurance? From my perspective, assurance is all about how do you receive or provide confidence that things are working the way they should? How do you know? Now I would probably do upwards of 40 presentations to boards of directors of various companies around the world both inside and outside the aviation industry a year. The one question I get asked about 80 percent of the time is, "Kimberley, this is all really nice material, but how do we know we're safe?" "How do we know we're safe? We think we're safe. We check. We're monitoring, but what assurance can you provide me?" "What guarantee can you provide me that we are free from harm," and it's actually quite a difficult question

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because going back to our opening--we talked about the aviation industry. Risk is inherent. To have a freedom of any type of harm would actually impede the use of aviation ethics, and so really what we're about in this assurance model is providing the right structures to provide the right level of checking to the right place at the right time, and so the assurance regime could be done in a number of levels, and Assurance Level I is where we might take someone's word for it, and someone will provide an undertaking or an assurance statement to say, "I'll give you my word as the CEO that we are compliant," or that "We are managing that risk," and I say, "Thank you very much, that's excellent." "That's what we contract you for." "That's why we pay you the money, and we have confidence that your word is as it is," and Assurance Level II is where that assurance statement would be provided, but some additional evidence would go along with it, so that might be some paperwork. It might be an audit report. It might be some facts and figures. It might be some performance

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measures that actually go with the assurance statement to provide extra information to say, "Here's my proof as to what gives me the right to state that you should be confident." Okay, then in Assurance Level III, basically it supersedes all of that, and a third party or the organization who wants the assurance would physically go and check themself, and that's really where we start getting into auditing, and we start getting into physical inspections. We start getting into third party auditors to do that checking, so with the assurance model it's all about looking at that full regime of checking and what level of confidence needs to be provided to whom.

ROIL, Q.C.:

Q. Okay, so the whole issue of who should audit and when would audits be done and how many audits or how many inspections, that would fit within this assurance piece?

MS. TURNER:

A. Yes, it would; yes, it would. So that summarizes the industry risk profiling models, so you can see that it is a lot broader than just looking at the safety component, however,

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the safety component itself is put into the risk profile. We use this profile in two different ways. Firstly, we use it to assist in guiding us in information collection. So as we were just discussing your examples around the assurance regime, absolutely that would give us the trigger to go and look at those things. Secondly, once information is collected, this industry risk profiling model gives us a really good way to sort out and classify the information into group and theme because generally people are wanting to know, well, what are the issues with the aircraft, what are the issues with the operator, what are the regulatory or compliance issues, what are the issues of the industry, what are the safety issues, and so it really does give us a good classification to them present the information.

ROIL, Q.C.:

Q. So I take it the fact that this is a circle is not an accident, it is meant to be a comprehensive look at the entire, at every angle that you can possibly look at this industry and this activity?

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MS. TURNER:

A. Yes, it is, and then just making that linkage back to the swiss cheese model. As I mentioned, we start at that industry structure and oversight level. We'll touch on the organizational, and then we'll - sorry, we'll explore the organizational right across those groups that are involved in the industry, and then we'll touch on the operational, so you can see that reflected in this diagram.

ROIL, Q.C.:

Q. Thank you. Now you're going to tell us a little bit more about the methodology?

MS. TURNER:

A. Yes, thank you. So just to summarize the methodology, we use the risk management process as outlined in the international standard. That actually helps us establish the context, identify the risk, quantify and then look at the treatment strategies, but then we use that last diagram, the industry risk profiling model you just saw, to actually organize the information. So that industry risk profiling models that you just saw is not a process for risk management, it's a

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structure used to organize the information for presentation. I've said here that the industry risk profiling methodology is driven on the accumulation of information. If we're going to design and develop an industry risk profile that has the opportunity to really inform how the industry may be governed, or the tool can be used to conduct a check against how the industry is currently governed, you really need to make sure that the information presented is derived from a place of a high level of integrity. It can't just be my personal opinion.

ROIL, Q.C.:

Q. I was going to say, I take it, that this is meant to ensure that we park all our preconceived notions at the door.

MS. TURNER:

A. Absolutely, and --

ROIL, Q.C.:

Q. I take it, we also need to be very sure we get the right information to put in?

MS. TURNER:

A. Absolutely, because if you don't use the right input sources, your profile will be flawed,

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and that's really where the scientific part of the process comes into play, and certainly my role and our team's role in this process will be to ensure that we're using the right number of risk identification methods, that we're getting the right level of depth, that the information accumulated is broad enough to then derive these issues, and it's interesting, I have found in my 14 years of working in this field that the risk management process does actually overcome emotion and bias and opinion if it's used correctly. It's a very, very powerful tool when you do have a data driven approach that is not specifically quantitative in nature, but is being derived from a good source.

ROIL, Q.C.:

Q. You used the expression "data driven". I take it, though, from what you've said earlier, it's not about number crunching?

MS. TURNER:

A. No, and when I refer to data, I probably should correct myself and say more "information", and I guess what we do with that information is we extract risk issues out

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of it and then we will end up with a list of risk issues in the case of the helicopter medical risk profile in the USA. I think there was over 1260 pieces of risk information, and then once you have that, you basically combine it, theme it, group it, and then you start to see those things emerge. So how do we theme and group it; that's where that industry profiling model comes in. So we tag each piece of information against that structure, and then, say, in the passenger and participant profile, there might be 100 different bits of information that are all siting in that, and then we can examine and start to really crystallize the issues that are of importance.

ROIL, Q.C.:

Q. So I take it there's two -- there's two issues. One is to develop the issues to get the right issues to look at.

MS. TURNER:

A. Uh-hm.

ROIL, Q.C.:

Q. And then to prioritize them?

MS. TURNER:

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A. That's right, and both the prioritization and the identification is actually sourced from that information. I know this may sound a bit theoretical, however, when you're presenting an industry with a profile that has the potential to influence and change the way an industry is governed, you need to be very, very sure that what you're putting up is correct, it has a high level of integrity, and it's not pure opinion, and that's why we actually dig deep and that's why we actually use as many information sources as we possibly can. So I have mentioned here that for an industry risk profile we would use 12 different risk identification techniques, and so one of those ID techniques would be to read through the transcripts of this phase of the Inquiry, have a look at the issues that might be discussed or presented, and that may just be one risk ID technique. Another risk identification technique might be sitting down and talking with all the stakeholders and having some time one on one to really just discuss where is the industry at, where is the industry going, what do you see some of the

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key areas of growth and change, what do you see some of the key areas of concern, and those interviews, we might meet with, say, 50 people, that would be considered one risk identification method. So you can see that we do really try and get the depth in that because of the importance of developing an accurate profile. So that's a little bit of a summary of the methodology itself. The reason why I spend the time to really explain the methodology is two reasons. Firstly, is to demonstrate that there is a level of rigor and science behind how these are derived, and when the information is presented, different people read it in different ways depending on their perspective, and so it's very, very important that there is strength in how that work is put forward. The second is, I acknowledge that there's a lot of individuals and professionals within the stakeholder groups that are very skilled in the field of safety and in risk, and bring some excellent insight to the table, and there is a different language set that is used at the industry risk profiling level. I may use the same terms, but they may have a

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slightly different meaning in the safety context or at the organizational level, and so that's why I like taking the time to explain this methodology in this setting.

ROIL, Q.C.:

Q. Okay. So what happens when we do all of this and we get some information and it comes out the other end?

MS. TURNER:

A. That's it. I guess, in terms of what is produced, an industry risk profile is generally a document. It's split up into three or four different components. The first is actually explaining the context, and so there is a write up so that there is clarification as to exactly the boundaries of the industry risk profile itself. The second part, we do put a brief synopsis of the methodology and the facts and figures of, you know, the data sources, who we talked with, what process was followed, et cetera. The third part of the industry risk profiling document is the summation of results of the summary of results. Because different people read risk information in different ways, we

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opt at the industry level to present the information in three different ways. We firstly produced the risk information in a list from highest risk to lowest. Now just to put some perspective on this, I have never done an industry risk profile in the last four or five years that has more than 26 risk issues.

ROIL, Q.C.:

Q. So although there might be 100 factual issues, they come down to risk issues that are narrower, do they?

MS. TURNER:

A. That's right, and I put that forward because those organizations that have, say, a corporate risk register or safety risk registers may have 50, 60, 100, 300 items in that register, and industry risk profile really looks at those high level systemic issues that have the potential to impact on the industry itself in a negative way. So this list of risks, we present them firstly by ranking, highest risk to lowest. That actually provides a great aspect of priority, so that as the solutions and the resources are

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being considered in terms of what's required to reduce the risk, it gives us a prioritized list as to where to put our focus first. The drawback with presenting the information in that fashion is we could remove any risk rating, and say there might be 12 industry risks that are on this profile, they're all important and they all need to be addressed. So sometimes by producing this list in a ranking order, it can give a false sensation that will only focus on the number one risk, when really all of those aspects brought up on a risk profile should be drawn to the attention and worked through with the industry. The second way that we produce the results is in this tabulated format or against a risk matrix. When you measure and quantify risk, you do that by looking at the potential consequence of the risk, what will happen if it happens, and the likelihood of how likely it is that it would occur, and so then you can actually plot that on this risk matrix, and I'm sure many of you are very familiar with this process, particularly those who have a safety or risk management background.

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ROIL, Q.C.:

Q. I'm not sure if those who are listening to us outside the room can see it, but essentially it's a chart like a checkerboard.

MS. TURNER:

A. Yes.

ROIL, Q.C.:

Q. With a whole bunch of little pills or little white spots all up on one side.

MS. TURNER:

A. That's right.

ROIL, Q.C.:

Q. Okay, and what's that telling us in sort of a snapshot?

MS. TURNER:

A. Okay, so you can see with this example that I've put forward that all those little pills or white dots on the checkerboard are actually where the actual risks themselves fall. So you can see in that red category we have eight different risks in that very high basket, and then there's a scattering of risks in that next tier down.

ROIL, Q.C.:

Q. So if a risk has a extreme consequence and

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it's almost certain to happen --
MS. TURNER:
A. It will fall in that top quadrant.
ROIL, Q.C.:
Q. Okay, and that is where you put your first attention?
MS. TURNER:
A. Yes.
ROIL, Q.C.:
Q. If there's anything in there --
MS. TURNER:
A. That's right, and --
ROIL, Q.C.:
Q. That's your most important?
MS. TURNER:
A. Absolutely, and I have this theory that I talk about, it's called the elephants and the mosquitoes, and I know you have both of those up here in St. John's. It's a joke.
ROIL, Q.C.:
Q. We have the mosquitoes.
MS. TURNER:
A. Yeah, I know, maybe not the elephants. Now why I talk about this is because this matrix, this risk matrix, is actually really valuable

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in putting the mosquitoes and the elephants on the same scale. Now why I say that is what's the chance that you might be killed by an elephant stampede. Well, it depends on the context of whether or not you're in St. John's or Sydney, Australia, or in Africa on a wildlife tour, but we would think about being killed by an elephant as being absolutely catastrophic and generally our attention could all be drawn to preventing that from happening, but really what's the likelihood of that happening. It's probably unlikely, down the bottom end of the scale, but if it does, where does it sit on the consequence scale. Well, it depends. If it's my life, I'd certainly put it in the extreme category. So if we were to look at extreme and unlikely, it still actually fits up there in that high basket. Now when I talk about mosquitoes, if we look at how many people around the globe die of airborne diseases that are carried by mosquitoes, it's probably not one, two, or three people, it's hundreds of thousands of people, but there's a low consequence or a low event mosquito bite. The likelihood is

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probably quite significant, and so where does that actually rank and compare against the elephant example, and so what we're actually looking at from a technical perspective, low likelihood, high consequence; high likelihood, low consequence events, the opposite, and putting them on the one scale. So this tool really does help us rank and compare those. In an aviation context, the risk of a crash, the risk of the loss of life in helicopters, very improbable, but it does occur. Events of misfortune or mishap or lower level risk that may not result in the loss of life or an airframe, that may be many of them. Now that is one of the reasons why in the aviation industry globally, and this has really been the case for the last, say, 30 years, there was a really significant accident in Tenerife where two jumbo jets basically collided before they even took off, you know, on the runway. That was a real turning point for aviation, to really look at these failures and the breakdown, the mishaps and these issues that can go wrong, and you can pinpoint the change in aviation safety practice right back to that

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event, and so the aviation world is very deliberate and considerate in picking up the mosquitoes, in being aware of them, reporting them, analysing them, trending them, because there's this concept, and I know you'll understand and appreciate this one, the iceberg model - maybe that was invented up here in St. John's, where, you know, what we see above the waterline is that tip of the iceberg, might be that catastrophic event or that loss of an aircraft, but if you understand the depth of what's under the water, that's actually where we start looking at the occurrences, the near misses, and the potential mishaps. When we start looking at that ratio, it's quite known in that iceberg model in the aviation industry that to every catastrophic aircraft loss, there can be up to a thousand incidents, 10,000 near misses or potential mishaps. So the aviation industry is committed globally to identifying those occurrences, those near misses, those events, in order to position themself to really prevent that broader mishap. So getting back to this risk matrix, this gives us the

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opportunity to present the results, so that's the before snapshot. You can always reduce and manage risk. It just comes down to at what cost and at what level of effort that is required to actually implement those risk reduction measures, and so this is actually post treatment of, in this example, where this risk profile could be shifted, and then you can actually tag an activity task list and resource that appropriately to achieve this shift in profile. So that's the second way in how we present the results.

ROIL, Q.C.:

Q. So here we're showing how the risks that can be high and more likely, can be moved to being lower and less likely?

MS. TURNER:

A. Yes, that's correct.

ROIL, Q.C.:

Q. By the steps that we would take?

MS. TURNER:

A. That's correct. So the industry risk profile document will have this type of representation of the information. The additional piece would be each one of those dots or those pills

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would actually be labelled with the risk number, so you'd know exactly what that issue is, and you can actually track what's it going to take to take it from high to low. So it's a very good tool and you can see how it's not purely just an assessment, but it really is about action, it's about the management of risk, it's not just about acknowledging what the risks are. The third way that we present the results in the risk profiling document is actually we list the risk information against the industry risk profiling model. So we talked about oversight, we talked about compliance, assurance, we talked about the operator profile, activity profile, aircraft profile, industry operating environment, the passenger and participant profile, systems profile, safety profile. So we actually position the number of risks or the risk information back against that model, and that's predominantly used to then track and monitor at an industry level as to what occurs with the follow-up actions.

ROIL, Q.C.:

Q. So this is to take steps forward to see that

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these risks that have been identified are ameliorated by some way?

MS. TURNER:

A. That's right, and appropriately managed, and what you find is when you actually use the risk profile, I mean, it's a fantastic tool to, I guess, support and inform the Inquiry process, yet the risk profiles can actually be used in many different ways. It can be used by the operators themself, and I use that two-fold; the oil companies, or the helicopter companies. It can be used by regulatory bodies and agencies to track and monitor the shift in the profile. It can be used by manufacturers to understand the operating environment and the challenges that are faced by the industry that they wish to service. So it is a very useful tool, and for the purposes of the Inquiry, this rationale and this concept has been chosen to really complement the Terms of Reference and to sit alongside the other activities that are taking place by the TSB. I just mentioned the output and the use of the IRP, and I've just got a couple of points here that, at the Commissioner's

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request, the industry risk profile will be developed concurrently with the Inquiry process, and we talked this morning about aligning how the profiles developed with the various phases, and towards the end of my presentation I do have just a chart which actually aligns those quite nicely. The key thing here is with the industry risk profile, it really does need to be a collaborative arrangement, and certainly with our involvement and working as an integrated member of part of the Inquiry team, the key really is that input from the stakeholders, and all stakeholders. It's really interesting in compiling these, to get the input from a variety of sources, you can then be confident that you've actually had complete coverage of the issues itself. In terms of its immediate use, in terms of the risk profile, we anticipate that the content of the IRP will be presented for consideration by the Commissioner and used in the various deliberations that will occur throughout the Inquiry. So I look forward to compiling this and it certainly is a rigorous justified

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structured process that really does provide a good picture.

ROIL, Q.C.:

Q. Okay, now I take it that we have come to sort of a turning point in your presentation, that there's -- just explain sort of the two parts. The first part we've dealt with, and the part that we're going into?

MS. TURNER:

A. Sure. What I wanted to do first up this morning was just really frame up and put in context what is risk management, why has it been opted to be used as an underpinning methodology to the Inquiry, and thirdly, what is the industry risk profiling process and how could that add value and contribute to the considerations for the Inquiry itself. So that first bracket really focused around risk management, and I must say certainly in all of my travels around the globe, I am so encouraged that an Inquiry of this nature would opt to use this underpinning philosophy of proactive risk management. It's really great to see. The second bracket of the material or the presentation really starts to

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examine some of those related, yet very important disciplines, such as safety management systems, corporate governance and contractor management, and I've got some concepts that I wanted to put forward just so that we can understand the relationship between that and this risk based approach.

ROIL, Q.C.:

Q. Okay, I'll stop you there. Commissioner, because I think we've come to a stage where we could do this one of two different ways, and I seek your direction, and perhaps from my colleagues and others in the room, as to whether this might be an opportunity where some questions could be given to Ms. Turner that she could -- if there are questions arising out of this, and then questions after the second phase, or the second part of her presentation, or whether the room would rather that we went all the way through it and then had the questions at the very end.

COMMISSIONER:

Q. Thank you, Mr. Roil. Thank you, Ms. Turner. Let me ask our views, would anybody like to ask questions on what has already transpired

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and been given by Ms. Turner, or would you prefer to wait until her presentation is complete? Let me have your thoughts, if you would.

ROIL, Q.C.:

Q. They are a quiet lot.

COMMISSIONER:

Q. What do you think? There's plenty of very senior people out there. What do you think? Would you prefer to wait until it's over.

WHALEN, Q.C.:

Q. I certainly would, yes.

COMMISSIONER:

Q. Mr. Earle, what about you?

EARLE, Q.C.:

Q. Yes.

COMMISSIONER:

Q. Ms. Strickland?

MS. STRICKLAND:

Q. I agree.

COMMISSIONER:

Q. It seems to be a consensus then that people would probably wait. One thing I would say, you know, about questioning, and it harks back, I guess, to my opening remarks when the

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Inquiry began its public hearings, I see it, and -- I saw it then, and I still see it as a collaborative process in which everyone has an opportunity for input. So if, for example, in questioning, let's say Mr. "x" or Ms. "x" has a turn first on the list or second, and other material is brought out as a result of other questions, my view is that nobody should leave the sessions without feeling that they had an opportunity to explore any issues no matter when brought up. So I will not hold anybody to the position of, well, look, you had your time of questioning and you can't ask again a question. I don't want to see it work that way. I want to see that collaborative approach in which everybody gets an opportunity to ask anything which they feel may be relevant and worthwhile. So I just say that now so that in case people don't feel that if I don't get everything in in my first few questions, I won't be allowed to re-ask or explore or seek clarification. So I would just say that now so there's no doubt in anyone's mind. What would you like to do, Mr. Roil? It's about 5 past 12.

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ROIL, Q.C.:
Q. Should we continue on now or we can take the break at a different time? It's entirely up to -
COMMISSIONER:
Q. Perhaps we could go--are you able to go on now or would you -
MS. TURNER:
A. How are we going for time? We've got -
ROIL, Q.C.:
Q. Another 25 minutes normally.
MS. TURNER:
A. Okay. Well, we'll keep going through this next bracket.
ROIL, Q.C.:
Q. Until we come to another -
MS. TURNER:
A. That sounds -
ROIL, Q.C.:
Q. - a natural turning point.
COMMISSIONER:
Q. All right.
MS. TURNER:
A. Yeah, that sounds good.
ROIL, Q.C.:

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Q. Okay.
COMMISSIONER:
Q. All right then.
MS. TURNER:
A. That sounds good.
ROIL, Q.C.:
Q. Okay. Now you, in your part four as you call it, you seem to have sort of some different-- not different, sorry, some additional discussion topics where you're going to discuss about this a little bit more.
MS. TURNER:
A. Yes, sure. There's four additional discussion topics that I wanted to put forward because we have actually touched on a very broad range of topics from strategic governance at the industry level or at the national or provincial level, all the way through into some of the operational hazards of flying in treacherous weather and poor conditions and, you know, all of those type of things. So that flow is actually quite broad, and I felt it would be valuable to then just crystallize some of these other related topics that in their own right are disciplines themselves.

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So corporate governance is a distinct discipline. Risk management is a distinct discipline. Safety and safety management systems, as we heard from Transport Canada and the TSB, referred to a lot as the emerging way of where their regulatory approach was going, and then finally our contract management.

Now contract management has been selected because we've got these two regimes that come together. The aviation provider is contracted to provide a service to a broader industry and this contract management aspect is actually really actually very key but you're not the only industry that actually has this set up. The mining industry contracts aviation services to move diamond mine drills and things like that up in the northern territories, up there are Diavik Mines. The firefighting industry contracts aviation services to fight fires in the fire season and we see that over, right throughout Canada and right on the west. The medical industry contracts aviation services to move critical patients that are need of quick, rapid response. There's a whole range of different

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industry groups that contract aviation service and these aviation services are generally very vital to the operation and without them, power line industries don't function, firefighting doesn't take place, mines in remote locations don't get the equipment and the people that they need or in the case of the oil industry, our workforce would take a long time to get there. So that aspect of contract management is quite important and really sets the frame nicely for how we will tackle the development of the industry risk profile itself.
ROIL, Q.C.:
Q. So just to go back to your earliest definitions where you said risk is a chance of a safety something happening that will impact on objectives or the chance of a something happening that will impact on safety objectives, I take it that contract management might be the something that could impact on the safety objective?
MS. TURNER:
A. Yes.
ROIL, Q.C.:
Q. What would be an example of a safety something

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that would impact?
MS. TURNER:
A. Sure.
ROIL, Q.C.:
Q. Would that be a person not wearing the appropriate suit or whatever on the day in question?
MS. TURNER:
A. Yeah, absolutely. I guess it comes down to what is our objective. Is our objective safe flight or is our objective an effective running and production of oil? And so, you actually need to look at both, from both perspectives. Ultimately, both are important. Now the focus here is of the safety of our crew in helicopter transportation. The question is raised, well, why do we need transportation of staff and workers to the oil rigs? To achieve that ultimate other aim or goal. So in terms of your question around what is the safety something, say an equipment issue on the aircraft that prevents it from flying and it's unserviceable would be a safety something that could impact on the broader objective. Whereas a broader

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objective of selection of the right aircraft type to be able to undertake the task that you're after, to provide great appropriate safety buffers and safety zones could be that other way around. So you'll see that you can't divorce these issues, but you can focus on one particular dimension of risk, in this case being safety.
ROIL, Q.C.:
Q. Okay. The first one we're going to look at is governance.
MS. TURNER:
A. Okay. In terms of governance, often referred to as corporate governance, as I mentioned this really is an emerging discipline and I'm very aware that CSOX, or the Canadian Sarbanes-Oxley Act, really does have fairly defined requirements for legislating governance of companies, publicly traded companies. Those principles can be applied at all different levels regarded of whether or not you're a public or private company itself. But when we look at governance and what it ultimately is--and I sit on a standards committee that I mentioned before, an

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Australian standards committee for corporate governance and it's very, very interesting because when you look at the makeup and the composition of those in the room, you have, no offence, all the lawyers that are very, very driven from a compliance perspective. I see no offense taken as I look around the room. You then have the accountants. You have the auditors, and then you have me, representing the risk fraternity, and it's really interesting when you get into debates about what is governance. The auditors will tell you that it's--the auditors and the financial people will tell you it's all about checking. It's all about checking to find that discrepancy of where you can catch people out. Why? Because that implies there's something wrong, you know, and going into that. Whereas the legal fraternity is really around "well, what's required? What do I have to do? What is the compliance requirement and am I actually at risk of being non-compliant?" And so you've got this checking function, you've got the compliance and then you've got this risk management, which is like oh, that's all

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very important, yes, and it's all a component, but what are we really trying to do here? What are the vulnerabilities? What are the risks that might be present that we need to provide that assurance?

And so in terms of governance, it really is about creating a framework for accountability. It's about creating a framework for oversight and so when we actually get into governance, what is it? Governance is the system by which organizations are directed and controlled. I just mentioned the composition of the standards committee that I work on, but when we actually look in its purest form, governance is about compliance. Governance is about providing an undertaking that the organization is complying with the laws of the land and the requirements, be those standards mandated or practices prescribed for that type of activity or industry. So compliance is a key aspect of governance, and one that is very tangible and one that is very straightforward to measure. You are either compliant or you're not. There's no area of grey from a

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compliance perspective.

ROIL, Q.C.:

Q. So if we take examples from the industry that we are looking at, the regulatory regime of Transport Canada would be a part of the compliance piece?

MS. TURNER:

A. Yes, it would, and a good example of that is the air operating certificate that a helicopter operator is required to have in order to operate. You either have one or you don't. If you have one, you're legally able to operate an aviation company and fly aircraft. If you don't, you're not legally able to operate and fly an aircraft. So that compliance regime is very much set up in an aviation context by Transport Canada.

The second component of governance is all around assurance. Now we used to call this audits and about four years ago, it was changed to be a little bit broader around assurance and when I say I'll give you an assurance, what does that mean? In my perspective and in my professional opinion, it comes down to providing a level of confidence,

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an undertaking or even a level of certainty or guarantee that something will occur.

I travel all around the world and we have offices in five different countries. It's absolutely impossible for me to be in five locations managing and running an organization staff, projects, client work, technical integrity of our work with that diversity. So how do I, as a CEO, achieve a high level of assurance that my organization is operating the way it should be? I can audit, yes. I can get third party auditors, yes. But you know what, there's a range of other indicators that give me confidence or take away my confidence and one I like to refer to, and it's very, very simple, is when I ring back to the various offices, be that in New Zealand or Australia, I never ring people's direct extension. I always ring through the switchboard. Why? Because the person that answers the phone is a fantastic gauge of the organization and what's going on back in that office, and so when I ring up and I say "hello, it's Kimberly here. How's everything going over there today?" "Good." Right, so

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what's really going on? Whereas, you know, if I asked that question, you know "how's everything going today?" "Oh, well, Kimberly, actually we're having a very challenging day because of this, this, this and this, but we're all working together to get this done" or "guess what? Today, we have just completed this fantastic deliverable that the project team has been working on for 12 months and the client is really, really happy and we've had the opportunity to really bring a great influence and change and we're just, you know, chatting about that at the moment." That information exchange is an assurance tool, okay, informally.

So there's this range of different techniques from an assurance perspective, from formal checking and auditing, all the way through to just information exchange, having insight and checking. So assurance and this regime, this formal regime of assurance is very, very critical to demonstrating good governance.

Now if I never asked the question, our CFO has this excellent saying and Kirk Morten

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phrased this and we use it in our work everywhere, "you can't expect what you don't inspect." So you can't expect what you don't inspect. So if you've got an expectation that certain standards will be met or certain consistency of practice, but it's never checked, now that checking might be formal, through an audit or it might be informal through just asking the question, that is all around how you shape the environment to get the behaviours that you're after. So that assurance part is really very, very important. How do you know that you're safe? How do you know that risks are known, they're quantified and they're being appropriately managed?

The third component of corporate governance is what we've just spent all morning talking about, which is this proactive aspect of the management of risk, and so when we start looking at compliance, assurance and risk, when we combine those things together, that is the way of how we direct and control an organization, and so that risk management part is the proactive, it's the forward looking. Now where does the safety management

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or where does safety risk fit into it? Well, within the aviation environment and also in the oil and petroleum industries globally, safety is one of our key risks that needs to be managed, because if not, we're not going to be effective in delivering the outcome that we're after.

So these three things really go towards governance, and there's one other aspect that I haven't mentioned. If you were to combine these three different disciplines, compliance, assurance and risk, but if you encase it within ethics and ethical practice and decision making, then you've ultimately got good governance, and we've seen that with the collapse of various organizations around the world and the recent case in the last few years with the collapse of Enron in the US. Where did that failure and breakdown happen? Where were the holes in the cheese? Were the right people checking the right things? Were the right questions being asked? Was that question of why being asked? Was it a compliance issue? How do you get assurance that you're compliant? How do you get

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assurance that you're managing risk? So really looking at that and then encasing it within open, transparent ethical practice, which really then complements the cultural traits that we're after.

ROIL, Q.C.:

Q. I was going to come to that word, because we haven't said it for a while, but the concern, I think, that everybody has in this industry that there needs to be a culture of safety, will this governance model give us a piece of that puzzle or is this the puzzle in itself?

MS. TURNER:

A. Yeah. I'd just like to focus on culture and give some definition to that. Travelling around presenting at different conferences, it actually frustrates me the level of conversation and presentation around culture. Why? Because everyone uses it as a throwaway term. We're doing this to develop our culture. We're going this to achieve an excellent safety culture. However, not many people can tell you how to get that culture. How do you deliberately achieve a change or a shift in your culture? And so, probably about

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eight or nine years ago now, we actually sat around and we said there's got to be a recipe as to how you can shift culture and this is best that we could come up with.

Okay, how do you actually achieve an enhancement in your culture? You can create an environment that influences behaviours which will in turn shape a culture. Okay, so I'll just say that again. You can create or design an environment that will influence behaviours that will in turn shape a culture. I'm going to take you back to a great example that you all seem to like about the taxi situation. You can create an environment through process design. We design a receipt. We mandate that in order to get paid, you need to fill in this form. The passenger and the driver both needs to fill in their piece. We've created an environment. So through process design, we've created an environment which does what? Influences behaviour. "Oh, I'm not going to answer my mobile phone. I better make sure my seatbelt's working. I better make sure my tires are adequate." So that design of the environment creates or

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influences behaviours that if you do that for long enough, it actually becomes the way things are done in that industry or that activity.

ROIL, Q.C.:

Q. So it's more than the sum of the two. It is the consequence of the two?

MS. TURNER:

A. Yes.

ROIL, Q.C.:

Q. It's a separate outcome itself.

MS. TURNER:

A. Yes, that would be a good way of summarizing. So in going back to your question about will this have an impact on safety? I believe the answer is yes, absolutely it will have an impact on safety. Why? This is actually creating the organizational environment which will influence behaviours. So what safety behaviours would this influence? Well, from a compliance perspective, we want to make sure that not only are we meeting the rules for the sake of meeting the rules, we're actually meeting the rules because they're there for a reason. They're there for our own protection

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and the protection of our people and our resources. But not just compliance, but if we're trying to influence behaviours around appropriate risk taking and appropriate disclosure of a near miss that may not actually seem that relevant to everybody else, but oh, gee, that was pretty close, we want to create the behaviours and influence the behaviours where people will provide that information into the safety system so that those near misses, those occurrences, those potential mishaps can be captured, can be examined before the event in that space.

So the design of the environment is really quite critical and the purpose of a safety management system again is actually design an environment. You create an environment that requires or influences particular behaviours which will in turn become the way it's done on a consistent basis, which is when you've achieved the cultural change or shift.

ROIL, Q.C.:

Q. And I take it that the creating of the environment is not something that the company

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does alone. It has to be with its workers? It's a holistic sort of approach that everybody has to be a part of?

MS. TURNER:

A. Yeah, definitely and when we ask the question "who is the company?" I guess you've got those who are the policy sponsors. You've got the managers and the executives. You've got the supervisors and then you've got the staff and the workers and everyone actually has a role to play in that. When you're bringing about change, sometimes the best way is to actually pick the informal leaders who may not be a supervisor, but you know what, if Joe says that that's the way that it's done, he knows, and everybody follows. So there are different ways of developing that culture and it's going to be interesting in working with the organizations to really understand a bit more about, you know, what makes the culture tick. Are people happy with the culture? Are they happy with the level of inquiry of people asking the question why, you know, in this high risk environment and this high risk industry.

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ROIL, Q.C.:

Q. Commissioner, I think that's perhaps a better place for us to now stop for our lunchtime break.

COMMISSIONER:

Q. Yes, all right then. Thank you. We'll adjourn until 2:00.

(LUNCH BREAK)

ROIL, Q.C.:

Q. Okay. Good afternoon, Ms. Turner. Before we broke for lunch, you were speaking about the governance issues and I think you now wanted to move into the risk management issues, and I see that some of your slides here are less than self explanatory, so perhaps you can lead us through the next section.

MS. TURNER:

A. Yes, thank you, Mr. Roil, and before lunch, we were talking about those four disciplines that really are related and relevant to the management of risk in this situation. The four topics that we were talking about: corporate governance; the second, risk management; the third, safety management systems; and the fourth, contract management

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or contract to management. So the bracket that I'd just like to go through now is really revisiting risk management but really looking at the relationship with those couple of different areas.

I'll talk from an aviation perspective. Within the aviation industry and an aviation organization as such, there's different layers that require the management of risk and so this diagram, and for those of you that can't see the image that I have put forward, there's three levels or three tiers that we're looking at. First is the governance area, which is really that high level umbrella structure and framework that is there to direct and control the organizations. The second piece here is really looking at key areas of change or growth. For example, the types of change that happen in the aviation industry are the replacement of an aircraft or the change of an aircraft type, possibly opening a new base or location, possibly taking on a new contract or a new client, or even maybe a change in technology, the introduction of night vision goggles, for example, or various changes that

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take place. It may even be just an organizational restructure or possibly even an economic downturn or upturn in the market that changes the operation or the nature of the business itself.

ROIL, Q.C.:

Q. So the change itself has to be managed?

MS. TURNER:

A. Absolutely, and what we find is if that change itself is not managed, it has a strong possibility of inducing those operational risks that we talked about this morning.

Then the third level is really looking at the operational application of this process and I highlighted earlier about the importance of that safety risk dimension in the high reliability organizations, such as aviation industry, the petrochemical industry, the nuclear industry, et cetera, and so the safety management system is another key part. Now if we look at all three of these areas, on this next slide you'll see that risk management or the risk management process is a component of each of these layers. From a governance perspective, we talked earlier about

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compliance, assurance and the management of risk. From a change perspective, well, an organization would only embark upon that new venture or that new endeavour in order to maximize some outcome or an improvement, and so we have the application of risk management for those new ventures or the change risk management process, and then one of the elements of a safety management system is the operational risk management, and so at each one of these levels, we actually have risk management practices.

So in looking at this whole set up or the structure for an organization, we really can integrate these three different disciplines of governance, change management and safety management system through risk management, and why this is important is if you can train your organization and your people are familiar with the application of the risk management process, it can be applied at any one of those levels, at the enterprise risk level with the corporate executives and maybe the board of directors, for project teams or key staff who are leading a change process, or the

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operational staff and crew who are out there doing the job every day and actually undertaking the flights or the tasks or the activities them self.

ROIL, Q.C.:

Q. So sometimes we hear the expression integrated risk management. Is that what this is all about?

MS. TURNER:

A. Integrated risk management or integrating risk management practices would be a great title for this concept and many people refer to integrated risk management, but they're often referring to integrating safety risk, financial risk, reputation risk, legal risk, environmental risk, for example. Now those would be components of an enterprise risk management framework, sitting within that governance regime.

ROIL, Q.C.:

Q. Okay.

MS. TURNER:

A. So that concept of integrating risk management or using the risk management process as the string that ties everything together is really

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key to this whole approach.

The next aspect that I wanted to walk through is now really delving into the safety risk component of helicopter transportation and in particular, the application of SMS within the aviation industry. We heard last week from Transport Canada and they outlined that there is a move and a shift both within Canada and further abroad for aviation regulations to be risk based. So what does that really mean? In the past, the aviation industry globally has had a very prescriptive approach to regulation. So the rules and the regulations have been extremely explicit and specific for different components of the industry.

ROIL, Q.C.:

Q. In other words, I take it, you shall use this or you shall do that?

MS. TURNER:

A. You shall use this piece of equipment. You shall use that process. You shall use this checklist, et cetera. Yet what we're seeing with this shift towards risk based oversight is not necessarily the regulator being

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prescriptive about the activity or the procedure that needs to take place, but rather taking one step back and providing guidance that the organization should have a process in which they should manage, design or improve their own procedure. So it's really moving to a process based thinking, and many of you with a safety background would be very familiar with systems thinking and it's all about process based application of this area.

One of the goals of moving to organizations having a safety management system is that they can be responsive to the changes in the risk profile and adapt their procedures and their set up in order to cater for that change. So rather than wait for compliance based rule to come out to cater for that change in environment, context or technology -

ROIL, Q.C.:

Q. So to go back to our little analogy, instead of having to wait for the "thou shall do this" to a change of now instead of that, thou shall do something else, okay, what happens under the process based application?

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MS. TURNER:

A. The process based application then requires aviation organizations to have the structures and the process in place so that their people can apply that way of thinking and that way of planning to each situation. So the regulator is shifting more towards checking process rather than checking specific practices.

ROIL, Q.C.:

Q. And is that just in Canada or is that a worldwide trend?

MS. TURNER:

A. This is actually a worldwide move that has been afoot for at least the last six or seven years, and I'd just like to explain the hierarchy in the aviation industry. The most senior organizational regulatory body is a global organization called the International Civil Aviation Organization or ICAO. Now various countries or member states, as they're referred to, subscribe to the conventions of ICAO and the various acts that are in place at an international level. So ICAO actually sets the rules for the regulator, such as Transport Canada, the FAA in the US or the Civil

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Aviation Authority in the UK, for example. So we have this hierarchy of ICAO sets the requirements for the member states. The member states or the country's regulator then sets the requirements and the regulations for the industry itself.

This morning we talked about the intersect of regulation, the intersect of practices and the intersect of policies coming from two different regimes. So that's the aviation regime, and I want to acknowledge, for the record, that there is a complementary and parallel regime in the oil industry that actually does the same thing for the broader industry and there's, I guess, touch points from an aviation perspective.

So moving towards this approach to adopting safety management systems, from my recollection, the earliest implementation of formal safety management systems was roughly around 1999-2000 where the concepts around safety management system were really developing from a regulator. In Australia, formal safety management systems were released to industry in 2001 with a very extensive

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education campaign to actually move that afoot. Transport Canada has built on a lot of the work that has been available and has got a structured phased in requirement for industry which actually sets up the timelines for various sectors of aviation to have their safety management system up in place. So there's this rolling phase of implementation.

Transport Canada, in my view, is one of the only regulators in the world that has actually given quite defined guidance around the phasing of implementation for an aviation organization, in terms of implementing SMS, and there's a four-phased approach that they expect of the industry. So in terms of where the nation is currently at in SMS implementation, it's part of the way through. The higher end air carriers, such as air transport operators, Air Canada, et cetera, have already completed that process and then the rest of the aviation industry is following suit on various timelines.

What I wanted to do was just take you through a bit of a global view around safety management systems. This does put in

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perspective and it does confirm that the aviation industry is an extremely global industry. Even the fact of aircraft manufacturing, engines, pilot training, regulations, better practice, there is a lot of cross pollination right around the world in the aviation sector.

When we start looking at ICAO's definition of safety management system, you'll see that they've defined a safety management system as being an organized approach to managing safety. They also articulate that includes a number of different things, including definition around accountabilities, the organizational structures that are required for the safety practice and the policies and procedures. So really looking at the structural aspects and the policies.

Then moving to the USA, the FAA has actually stated that the purpose of a safety management system is to provide a systematic way to control risk and to provide assurance that those risk controls are effective.

ROIL, Q.C.:

Q. So do I take it that the United States has not

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really defined safety management system as much as said where the purpose of it is. Is that--I don't see the definition in there.

MS. TURNER:

A. Yeah, that's -

ROIL, Q.C.:

Q. With all due respect to our friends in the United States.

MS. TURNER:

A. Yeah, that's correct. The different members states of ICAO, the FAA being one of them, are at different phases of their implementation and this definition that I've put up here outlines their objective and the purpose of the safety management system and work continues in respect to the definition of exactly what are the components of an SMS and the implementation and guidance material that is released to industry. But you can see from their definition here, we've got a few different things. They've described that it is a systematic way of controlling risk. We talked earlier this morning about control and influence about who actually, you know, sits in what area. You'll also hear the word

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"assurance" that we've talked a little bit about that the goal of a safety management system is provide assurance that the controls or those aspects that will close the holes in the swiss cheese are effective and they're in place.

Taking you to the other side of the world, down under, the Australian regulator, CASA or the Civil Aviation Safety Authority, defines the safety management system as a businesslike approach to safety. It is a systematic, explicit and comprehensive process for managing safety risk, and so a couple of things that jump out to me in terms of this definition, outside that businesslike approach, if we talk about being businesslike the things that come to mind are it's organized, it's professional, it's planned, it's resourced and there's some type of measure that actually monitors the effectiveness of whether or not it's working, so from a businesslike approach.

In terms of some of these other things here, they've defined that it's a comprehensive process. So what is that

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process. I believe that it's the application of that risk management process to help identify, assess and manage risk, and you'll see there, in terms of the connection there with managing, not financial risk or environmental risk or the compliance risk, it's actually there to manage safety risk, which fits very nicely to the intent of what our discussions are including today.

So bringing it a little bit closer to home, in terms of Transport Canada's pitch or definition around an SMS, it says a safety management system is a documented process for managing risk that integrates operations and technical systems with the management of financial and human resources to ensure aviation safety or the safety of the public. So again, you can see a slightly different twist on the emphasis or the philosophy as you move around the world, but in essence, a safety management system is a structured approach to managing the safety risks that we've been talking about.

The thing that is worthy of note, and this has been recognized right around the

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world in terms of Transport Canada's approach to SMS, is this linkage with the operational, the technical, the financial and the people piece, and so although an aviation regulator's jurisdiction is normally around the compliance requirements of regulating the aviation activity, Transport Canada, through this definition, has acknowledged that there are linkages, pressure points and connections with the technical, the operational, the people and the financial aspects of the industry and so that sits very nicely with that broader industry based risk profiling approach that we were talking about before is taking a more holistic view of how all of these different factors ultimately could impact or influence the safe operation of an aircraft.

ROIL, Q.C.:

Q. So does one just go out and buy a safety management system and incorporate it into one's company? Is that the way it works?

MS. TURNER:

A. Well, it's interesting you say that because from a compliance perspective and an expectation that you are to have a safety

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management system, there is a lot of those cookie cutter approaches that are popping up in terms of buy the software program or the template set or the CD with everything on it and just put in your name and move there, but there is a very strong recognition that that will not, in turn, shape the culture or change behaviours or assist with the decision making process. So in order to get that cultural change and shift, one of the things that is defined in the regulations or the supporting advisory material that goes with the regulations as such are what are those elements or components of a safety management system that define or create the environment that we talked about before, that will in turn influence behaviours, which will in turn shape the culture, so that linkage between environment, behaviours and culture.

So this diagram that I've put in front of you looks quite complicated. There are many components of a safety management system and this was developed back in 2007 and it was designed by our team at Aerosafe based on a series of compliance mapping that was

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undertaken with the SMS regulations from seven countries around the world, plus additional safety management system requirements in a number of other fields, and so what our team did, and this included Transport Canada's work, ICAO, FAA, CAA in the UK, New Zealand, Australia, they went through all of the regulations and picked out the components and cross-mapped those and said, okay, what are the components of a safety management system, and these are the elements that were derived from that exercise.

So you'll see that there's, at the top end, we're really looking at safety governance and oversight, the planning, the structure, making sure that there is some umbrella or infrastructure or framework that is in place to manage this safety profile. You can draw some really good parallels between a safety management system and a financial management system. If you were to establish a financial management system for an organization, you don't rely on the intuition and the experience base of people to manage the finance of a company, and the larger the company that you

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have, the more structures you need in place to ensure accuracy, integrity, et cetera.

ROIL, Q.C.:

Q. So on a financial model, this would be financial governance and oversight?

MS. TURNER:

A. Yes, it would be.

ROIL, Q.C.:

Q. Okay.

MS. TURNER:

A. Then moving into the planning, this really comes down to that businesslike approach. There needs to be goals and objectives of what it is you're trying to achieve. There needs to be a plan. There needs to be tasks allocated and resourced and there needs to be some type of checking mechanism to say well, if this is what we're aiming for and that was our goal and our objective, did we achieve it. If yes, excellent. If no, why not and what needs to be adjusted in that area?

The next couple of aspects in terms of safety responsibilities, we hear that tagline all the time, safety is everyone's responsibility or safety is our number one

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priority. This element of the safety management system is very specific and particular in assigning accountability and responsibility for various tasks to ensure that the safety management system works.

This next element here is around action management. In going back to those definitions that I put forward before from the various locations around the world, you'll see that there was a turnaround. It's not just about knowing what the issues are. It's about doing something about it. As is the case with risk management, it's not just about acknowledging the risk, it's about doing something about it. So this action management component is really designed to ensure that that follow through is there and that the efficiency and the effectiveness is there.

I just wanted to draw your attention to these three triangles that are actually in the middle of this SMS model. We've got safety policies and standards. We've got safety assurance and we have operational risk management. That reflects those elements of governance, compliance, assurance and risk.

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ROIL, Q.C.:

Q. The three triangles we looked at earlier, before lunch?

MS. TURNER:

A. That's correct.

ROIL, Q.C.:

Q. Yes.

MS. TURNER:

A. So you can see these principles of corporate governance also have application from a safety governance perspective, just a much tighter and more specific application, and then the safety management system then starts going through the incident management and reporting systems. I mentioned before about the iceberg model and it was no mistake that the option to put all of these elements in this colourful chart was put in a triangle because it really does go down to in order for a catastrophic event to take place, the alignment of all of those holes in the cheese and all those potential things that happened on the day, be that operational, be that environmental, be that with the aircraft, with the procedures, with the tasking, with the decision making all

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the way back into the organization or the industry itself, have all aligned for that catastrophic event to take place. So the goal of the incident management and reporting system is on an occurrence basis or on a daily basis as little breakdowns happen for the crew and for the staff involved in the aviation activity to be aware of that and have an open reporting culture to put up their hand and disclose that. So that's a responsibility on the staff member or the crew member. The responsibility on behalf of the organization is to have the environment where that information is collated, it is trend--trending is done, information is considered and there's a process for action and review.

ROIL, Q.C.:

Q. This, I gather, might be something like the lessons learned objective, as opposed to the who shall we blame objective? You learn from incidents.

MS. TURNER:

A. Yes, and that issue around blame, there's a concept called just culture in the aviation industry and it really is a campaign to get

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the right level of thinking to be fair and just when errors occur, because we know that humans make errors. When humans interact with machines, with the environment, with other people or with procedures, there is a room for error and be that a mistake or a lapse or a purposeful breach in terms of an error, there's a whole discipline in classifying errors and in terms of this concept of just culture, it really is designed to encourage people to be open in their reporting, but when that incident report or that occurrence report comes forward that there is not an immediate blame or retribution in terms of punishing the person that's put up their hand to disclose this, because that really discourages reporting at all. So the aim of having an open incident reporting culture is that people will put up their hands. They will put information into the system for the better good of themselves, their peers and the organization itself.

In saying that, this concept of just culture is really quite critical because if mistakes are occuring and there's at-risk

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behaviour where things happen on a repetitive basis, these incident reporting processes are really designed to try and identify those, so that they can be addressed from an organizational perspective. So it might be if there's a behaviour or a slight shift in behaviours where maybe it hasn't been noticed where potentially people used to do it this way, by the book, but over time, it just has kind of shifted that the procedure has just slightly morphed or amended and I'm sure we've all got our own personal examples of how that's happened.

ROIL, Q.C.:

Q. The example of the cell phone usage in the taxi might be an example of where human beings know that what they're doing is not what they should be doing, but I'll get away with it this once?

MS. TURNER:

A. That's right, and I don't know how many of you have used your cell phone or your mobile phone in the car, but if you get used to that practice and you do it all the time, how long does it take for you then to do that while

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you're then doing something else, changing the radio, writing on a sticky pad, you know, et cetera? So it's just that shift of when a practice becomes normal, then that variation or that deviation can set in and take place. So there's a lot of psychology behind the whole idea around cultural assessment, evaluation, decision making and behaviours and in the aviation industry, because the human factor is so key to everything that's done, there really is a depth of unpacking that occurs in that aspect.

So the incident management and reporting component of the safety management system is extremely key, but as we said right upfront, that's more the reactive after the event, whereas the risk management component is looking at the activities that you undertake in a proactive way to try and look at what could go wrong, not what has gone wrong. So when you combine the reactive with the incident reporting and the proactive, the risk management, it actually gives you a complete picture. Just as is the case with this Inquiry, we have the event or the accident

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investigation of what has happened versus what could potentially happen in terms of the system and the environment with the changes and the situation. When you combine those, you actually get a very clear and sound picture.

Now is incident management and reporting new in the aviation industry? I'd say definitely not. The incident management or incident reporting aspect has always been a key focus of the industry, whether or not that's just verbal debriefing or whether or not it's written on a paper-based form. I would say that incident reporting has been fairly prevalent across the aviation industry for at least 20 years. So what's different about the SMS or the safety management system? The safety management system is really designed to then take that information and connect it in with the management and the decision making practices to give visibility and transparency at the highest level so that the right resources can be allocated and the profile can be looked at.

You've then got a number of other

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components here, safety training, safety communications and education. They're really designed around the people piece, to give people the skill sets, the knowledge and the information needed to shape the attitudes and behaviour. The records and data management, there is actually a lot of information that floats around in the safety world and so that element of the SMS is all just designed to organize the information as well, and then you'll see this foundational element, which is really around the culture and again that hasn't been put in there by mistake or by error, it's actually been very deliberate that that cultural development is a real key foundation. So the bookends of the SMS are really your culture and then at the top end, the leadership, the tone from the top and the oversight and governance arrangements.

So that just provides a brief snapshot of a safety management system. Is it complex and complicated? In one way, yes. In another, no, but certainly when you look at what's at stake from a safety exposure perspective, certainly putting the effort into structuring

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the efforts around that framework are warranted and well justified.

So in terms of what does a safety management system look like, I've just walked you through those components. You'll see that most regulators around the world are moving more towards a principle based approach to SMS. So what I mean by that is rather being prescriptive and saying you must have an online incident reporting system with these five or six different forms and templates, with a manual that has these things. You'll see this principle based approach is more your safety management system must have a process in which you do this. It must have a process for evaluating effectiveness of the actions that are put in place, and so it's really more principle based as opposed to procedurally oriented.

ROIL, Q.C.:

Q. If I use the expression outcome based rather than prescription based, as I think other witnesses have used those kinds of expressions.

MS. TURNER:

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A. Yes, and that term "outcome based" or performance based regulation -

ROIL, Q.C.:

Q. Yes.

MS. TURNER:

A. - is really about what are we trying to achieve. We want to provide assurance that the organization has a means by which they can self manage and manage these issues. Now that doesn't take away the requirement for regulatory checks and inspection.

ROIL, Q.C.:

Q. I was going to ask that question, because how do you then know that you--or how do you do your audits? How do you check on things that are not prescriptive? That's the challenge, I think, that people have to understand is how do you audit something that simply says you have to have a process to achieve.

MS. TURNER:

A. What it comes down to is actually evaluating the complete nature of the process and whether the process is formalized, whether it is able to be duplicated within an organization and whether there's consistency of application.

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So what you're doing is rather than auditing for compliance, you're actually evaluating for effectiveness. So you could have a process, yes, I have it, but does it work? Kind of. You know, it works sometimes. It works in these conditions. So that's really why we're evaluating for its effectiveness. Is it fit for purpose? Does it suit the context of the organization? If the organization changes and grows, does it actually cater for that and adapt as the organization does?

There really is some difficulty in the aviation industry in truly understanding how you get one of these, how you get a safety management system. Many of the components are already in place and if we went back a slide to that diagram, many organizations could say yes, I have a committee. I have processes. I have risk assessments. I have training. I have, you know, all of these different aspects and so really it's about what else does it take and I would say the key differences are that connectivity with the governance aspect and really that monitoring at that other level.

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The other most visible aspect and change from just a traditional safety program to a safety management system is this uptake of the management of risk and the formal process that goes alongside that and then just jumping back to the discussion we had just briefly before about the integration, the risk management piece can be applied at the operational level, can be applied in the change aspect, in new ventures or it can be applied at the corporate or business level.

So the fourth component that I wanted to run through was really on the contract management aspect and my particular area of expertise is focusing on the risk management and the safety management system component of contract management, as opposed to the procurement and the selection of a contractor, et cetera. So in looking at this relationship, if we go back to really acknowledging or agreeing that there are two different environments that intersect in this aircraft and -

ROIL, Q.C.:

Q. That goes back to our helicopter slide. Is

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that what you're talking about?
MS. TURNER:
A. Yes, that's right, the helicopter slide with the different regimes which that aircraft are subject to or the people in that aircraft are subject to. From a contract management perspective, when you contract aviation services, there is an expectation that they would be compliant with the aviation regulations. So that's a given. However, there is nothing stopping a customer or the organization requesting the service to set their standards at a higher level.
ROIL, Q.C.:
Q. Or the regulator? Could a regulator set that standard at a higher level?
MS. TURNER:
A. Such as the Petroleum Board?
ROIL, Q.C.:
Q. Yes.
MS. TURNER:
A. Yes. Yes, absolutely. So in terms of this additional level or going beyond compliance, any of those organizations that have a oversight role or a governance role, need to

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make a decision as to how much is enough and where do you want to put those standards or those buffers. Purely relying on the basic compliance requirements may not necessarily be enough, depending on the context of your operation. The regulators around the world will readily admit and agree that their regulations are pitched at minimum compliance.
ROIL, Q.C.:
Q. Okay, I have to stop you there because I think in fairness to the C-NLOPB during their evidence, they indicated that they, for example, require a twin turbine -
MS. TURNER:
A. Yes.
ROIL, Q.C.:
Q. - helicopter, whereas -
MS. TURNER:
A. Which is beyond.
ROIL, Q.C.:
Q. - a single turbine would be--could be considered as acceptable in terms of the regulatory regime.
MS. TURNER:
A. Yes, and when I refer to regulator, I'm

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referring to, in that context, the aviation regulator.
ROIL, Q.C.:
Q. Ah.
MS. TURNER:
A. As opposed to the other industry, and that's quite important because we talk about these two different industries intersecting in the aircraft. From an aviation regulator's perspective, they'll be very quick to let you know that the aviation rules and regulations are minimum compliance, they're not better practice, and they're certainly not those higher standards. So it caters for the minimum requirements that are expected. So as you've rightly pointed out, Mr. Roil, in terms of other influences on that asset or that capability, there is nothing stopping those extra boundaries or those extra layers being put in place.
ROIL, Q.C.:
Q. So I take it that even the oil company which are contracting the aviation company could put an additional layer above the minimum Transport Canada standard?

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MS. TURNER:
A. Absolutely.
ROIL, Q.C.:
Q. And then the regulator, the C-NLOPB, can put another layer on top of that?
MS. TURNER:
A. That's correct, and it really comes down to the organization's tolerance or appetite for risk, and what level of risk they're willing to accept or, you know, be aware of in that sense, and we might have some discussion later about the level of acceptable risk and who defines that, or the level of risk that is tolerated in order to achieve an outcome or an aim, and I'd like to come back to that because ultimately where you put that -- where you put your requirements and your standards is a reflection on your knowledge or appetite or comfort level of the risk, and there's a risk/reward equation and there's also a cost of risk, and there's a cost of managing risk. So you really do get into some interesting areas where an organization needs to have a consciousness around those decisions as opposed to it happening intuitively.

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ROIL, Q.C.:
Q. Uh-hm.
MS. TURNER:
A. So from a contract management perspective, if I could just separate for a second and put this in context, if an organization is contracting an aviation provider or any provider would be the same, the organization has the choice to set some standards. Now one would assume that that organization would have a level of assurance that the organization that they're contracting are compliant and how that's achieved needs to be structured and how you gain that confidence, but in saying that, the organization selecting the operator or establishing that contract can set additional standards, and so the role of the organization is to set standards and to check the performance against the standards. The role of the organization that is contracted is to deliver on their standards, either contractually or through their other obligations. It really comes down to providing assurance that these things are adequate, that they're in place, and that

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they're to the level of comfort that is required by the organization. I just separate regulator for a second because I think that's really a very similar process, but that is set from a society's tolerance, and where the community expectation is about what is that level of minimum compliance.
ROIL, Q.C.:
Q. So the community's expectation of acceptable or tolerable risk might be different than the contracting parties?
MS. TURNER:
A. Yes, it could be, and, for example, when you buy a ticket and you're a fare paying passenger to go from here to Montreal, then you actually expect a certain level of safety. So in purchasing that ticket, you have an expectation that there is a regime in place that actually sets a particular level of safety. So there is a differentiation around what level of risk is acceptable and who makes that determination. Is it the regulator, is it the airline, or is it the person that buys the ticket, or does every one of those three groups actually have a role to play in risk

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acceptance, and then who actually controls the risk or has the opportunity to influence and reduce the risk. It generally is those that have the resource to implement an activity or an action to control that.
ROIL, Q.C.:
Q. By the resource, you mean the money or just the ability to make it happen?
MS. TURNER:
A. Both, both, but certainly the ability to make it happen is extremely important because as a passenger, do you have control over the pilot's standards; no. As a passenger, do you have control over, you know, the baggage handling system at the airport; no, but you have an expectation of what the outcome is, outcome based performance with that. So there's just different accountabilities of the identification of risk, the acceptance of risk. If the risk is not acceptable, whether it's willing to be tolerated for a particular outcome or an aim, and then whose job is it to actually implement risk treatment strategies and that's actually why we talk about an integrated safety management system, because

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these issues aren't mutually exclusive. You can't have one organization that has 100 percent control over every single input into that environment. So in terms of the corporate responsibilities for aviation safety management system, from a contracting organization's perspective, there is an opportunity and control for aircraft capability definition. As the customer, what do you require these aircraft to do, what type of operation are we looking at, what is the actual specs that we're after. The second one is aircraft selection. Now obviously the aviators have a very large influence with their expertise about advising on that decision, but ultimately, depending on where the resource comes from, that aircraft selection is really quite key and important, and then the last aspect which would be considered in the contract safety and risk management is the oversight for the system. So are the standards being met, are the processes in place, are they adequate, are they fit for a purpose, do they work, and really getting that connection from a

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compliance confirmation, the assurance, and in the management of risk. So you can see that within any industry that contracts aviation service, this relationship between base level aviation regulatory compliance, higher level standards, the expectation, what's set from a contractual perspective and how that's actually monitored and that assurance takes place is really very, very key, and I've mentioned this a few times today, but this in itself is actually quite a defined field of practice.

ROIL, Q.C.:

Q. Okay, I think we're -- yeah, I'd like to bring you back to the whole issue of risk and some general discussion at the end.

MS. TURNER:

A. Uh-hm.

ROIL, Q.C.:

Q. Perhaps we'll continue on now with your presentation and the -- how we can, will, and hope to benefit from adopting this approach.

MS. TURNER:

A. Thanks. Now that's great, John, and just before I dive into this Part V, I just want to

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recap what I've covered today. This morning I spent some time really talking through the management of risk and the formal discipline and the structures around that. I also took the time to outline the industry risk profiling process and the methodology behind it, how it's conducted, and the expected output, and then we've just spent this last little bit of time after lunch going through some related disciplines, the relationship of corporate governance being compliance, assurance, and the management of risk, looking at the integration of risk management to connect those different layers, particularly from a change perspective and those new ventures. Thirdly, looking at the safety management system and the emergence of that as a discipline in the aviation industry globally and more locally here in Canada, and then finally looking at how all of those concepts are actually put in practice in the environment where the aviation service is contracted and how that alignment to connect and integrate those practices needs to take place. So it's been fairly, you know, high

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level overview of this material and a lot of concepts, but the practical application, I'm sure we're going to see some good examples of that over the next couple of weeks, and, you know, really filtering from that high level overarching governance of, you know, what takes place at that real corporate level, all the way through down into the operational practices the pilots, the crew, and the operators participate in. So just finally, this is just my last bracket. Going through the use of these risk management concepts and everything we've presented today with the Inquiry itself, I did say that this is actually quite an innovative approach to conducting a public Inquiry, which is to really look at the risks themselves, and look at that more holistic view around the environment, the industry, in order to provide confidence that there is a sound regime in place to ultimately prevent or minimize things such as these aircraft accidents happening again in the future. There needs to be recognition that aviation activities are not free of risk. Risk is inherent purely by the

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nature of defying gravity and actually flying, but certainly the complexities of the operating environment is such that risks and hazards exist and are ever present. If you recognize and accept that concept of the swiss cheese model in terms of where failures and breakdowns can occur, and if a series of those events line up, then it could have a catastrophic event or a catastrophic event could happen. Now that accident causation model can be used in reviewing an event, but it can also be used in a proactive way in looking at the whole setup in the system, from the operational to the organizational, to the industry definition and structure, to look at are there any gaps or overlaps in the practices, are there any potential vulnerabilities that if the environment changes, the hole could get bigger or the hole could shrink, and from a proactive perspective, do we know where these holes are, and do we know how big they are, and do we know what needs to take place in order to close and block that gap. So if you do recognize that that accident causation model

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has application in a proactive way, then it really does lend itself to using some of these industry risk profiling techniques. There are relationships within relationships within relationships in this discipline. I often get asked the question, "Kimberley, what's the superior practice; safety or risk", and it's quite a challenging question to answer because it depends, it depends on which perspective you're looking at it from, but certainly that integration of governance, change, and operations, through risk management demonstrates that risk management is an overarching umbrella, but it also sits within each layer as a particular process itself. The ultimate aim, as I mentioned before, is to provide assurance or high level of confidence, or where possible, even a guarantee that everything reasonably practical or expected is being done in order to position the organization or the operation itself to minimize or remove as much risk as possible. In terms of aligning the various phases of the development of a risk profile to the Inquiry and to the Inquiry processes, you can just see

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here that in the preparation phase prior to this public aspect, the public hearing, some work has been done around the context and the methodology and drawing the boundaries, even looking at the stakeholders of who are the stakeholders of this industry. So currently in this Phase 1A, the context will be refined and the issues identification and data collection takes place, really to look at the risk identification. In Phase 1B, and the investigative phase, this is really where the opportunity exists for the draft risk profile to be developed in consultation, utilizing the information that's available, and certainly from my perspective, the more involvement the various stakeholders have, the more valuable and the more accurate this profile will be. In Phase 1C, in terms of the response to the investigative phase, I expect some very, very good interaction and consultation where there's an opportunity for ideas to be put forward or for risk treatment strategies to be developed or suggested that could be implemented to minimize the risk. We also have -- well, following that, we anticipate

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the submission of a draft industry risk profile to the Commissioner as requested, so that that can be used in the deliberations in the Inquiry process itself, as the Commissioner's recommendations and findings are actually being developed. Finally, after the TSB comes out with the accident investigation report, I envisage just a process of validating the risk profile and seeing if there's any additional issues that weren't brought up in the industry risk profiling process up to Phase 1C that need to be incorporated, and any amendment taking place, given that that may be information that we don't have access to prior to that point. So that's a little bit of an overview about the alignment of the risk profiling setup against the phases, and certainly I look forward to, you know, interacting with everybody on this and certainly walking down the path of developing this draft profile for the Commissioner.

ROIL, Q.C.:

Q. Okay, thank you. I have a series of questions that I would like to put to you, and these are

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not something that you and I have talked about, but it comes out to me from what you've said and others have said. I'm going to give you a number of scenarios and individuals or positions, and I'd like you to comment on what risks each of these individuals takes has some impact on, can control --

MS. TURNER:

A. Uh-hm.

ROIL, Q.C.:

Q. And so on. We have the traveller, we have the pilot, we have the manager of the helicopter company, we have the oil company executive, and we have, let's say, the safety officer of the C-NLOPB. In terms of aviation safety, I think we've all heard that nobody will guarantee that nothing can go wrong.

MS. TURNER:

A. Yes.

ROIL, Q.C.:

Q. So in terms of the risks of harm, where do these people have opportunities to have inputs, and where do they have to accept some of the responsibility or some of the risk and put it on their own shoulders?

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MS. TURNER:

A. Yes, sure. Now that's certainly an interesting bracket of question, and what I'd like to do is I'd like to start at a senior or a corporate level and then work my way down to the operational staff.

ROIL, Q.C.:

Q. You can take the individuals in whatever order you --

MS. TURNER:

A. That sounds great. I might come back to the C-NLOPB and the role of the safety officer. Actually, I'll cover that now. From a regulator's perspective, now not talking about the aviation regulator, I guess there is a expectation that the standards or the requirements that are expected of someone working under that regulatory regime are well defined, that are well constructed, that are fit for purpose, and that are at an appropriate level of depth. So whether that's the actual safety manager or safety executive, or whether that's the Board as an entity itself, the safety executive or safety manager would be the delegate charged with, and with

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the right subject matter expertise, to make that happen, but certainly in terms of making a determination as to where that level of standard needs to sit is really important on behalf of the industry, and whether or not that's minimum compliance, or whether or not that's a higher standard, and where that line is put in the sand, that really comes down to defining -- now in itself, through that process, there is an implied level of acceptance of risk, of where you draw that line in the sand, and so that's done at that industry level. So that would cover off on the regulatory side. Then moving down in terms of an oil executive, the role of any leadership in an corporation is to ensure a few things. Firstly, that a framework is established within the organization that allows for these practices to take place. Secondly, to direct that a system is developed and appropriately implemented, and I emphasize that "appropriately implemented", as many organizations develop systems and maybe don't follow through on the complete roll out and introduction, and thirdly, that there's a

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monitoring of that whole system for its adequacy and for the information that is being moved through that system, and that there's a high level of transparency at that executive level around the profile itself; where are the safety issues, are the key safety issues being accepted at the right level, is there appropriate resource put in place to manage those safety risks, and so that, in my view, would be the role of the oil executive. Hence that would really fall under that governance bracket that we talked about before. So there's a legal and a moral obligation for corporate governance, but there's also a regulatory and moral obligation for safety governance, and I would expect, and certainly in drawing those lines of requirement, that there is integration between safety and some of those other components that Transport Canada nicely states in their SMS definition around the human dimension, the operational, the financial, et cetera. So that there is that monitoring at that level. So that would be my type. Now in terms of acceptance of risk, it's very difficult to accept risk if

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you don't have information on what the risks are, and so certainly tools such as a corporate risk profile or a corporate risk register are effective tools in highlighting those areas so a decision can be made. It is not uncommon in either the oil industry or other industries, such as the power industry, or the mining industry, that contract aviation service, for aviation risk to constantly pop up as one of the highest areas of concern. Recently working with a powerline company back in Australia, the aviation risks were in the top four, and top four risks at the corporate risk profile was the concern around the aviation exposure. Now was that because they have had an accident; no. Was it because it's a complex environment and it's a complex asset and it's a complex operating environment; yes. So you can't remove all risk, so a decision needs to be made, do you want the outcome of using helicopters or aviation assets; if so, do you understand the risks and is the organization aware and risk aware, and is that actually on their profile. So some really interesting things there. From a corporate

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perspective, there is also an implied acceptance of risk in the level and type of resource that's allocated to that capability, be that through the selection of aircraft, through the funding, basically the resourcing, because when you're looking at risk and risk treatment strategies, you can reduce risk a long way if you've got the right level of resource, and so the question is, do you have a process in place to actually undertake and execute that assessment and that decision making process, or is it purely intuitive. Getting down to the manager of the company, and Mr. Roil, I take it that that would be the aviation company?

ROIL, Q.C.:

Q. Yes, that's right.

MS. TURNER:

A. I would see the responsibilities of that person to obviously work within the regulatory framework and the expectation of the customer, and the oil company, but also to ensure that local application and implementation of those systems and processes, also in terms of monitoring the culture to make sure that the

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behaviours are where they need to be, that the right information is open, that there an open and just reporting culture, and that if issues do arise, they're handled in a way that is fair and balanced and actually continues to encourage that openness. In terms of the acceptance of risk, it really shifts a notch from setting the broader expectations into where the company actually sits. I believe one of the key areas for this position is actually to manage the risk associated with change. So say if we have a number of aircraft and our company profile hasn't changed, we're doing the same job year in and year out, and then all of a sudden we have an expansion of opportunity where we could now bring on another one or two aircraft to expand the market, well, what are the business risks associated with that change or that new venture, what impacts could they have on that operational aspect of the organization, and are the right decisions being made from a business perspective that can have that operational impact. So that's one aspect of that role. The second is really looking at

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the operational oversight to ensure compliance and to ensure that the risks are being managed and that guidance is put in place. So there is a level of acceptance that takes place with how far an organization goes beyond compliance and goes beyond that minimum expectation. In terms of the pilot, if we were looking at the lines of defense and the swiss cheese, the pilot and the crew when they get in the aircraft and go and undertake their tasks, are really some of those last layers of defense. So they're already selected, recruited, trained, given an aircraft, familiar with the area, so when they're undertaking the task, really that's at the frontline looking at those various issues. So the risk again or risk acceptance shifts a notch into what is often referred to in aviation circles as "operational risk management", or the quick risk assessment process of decision making, pilot decision making on the day, dealing with the range of different things that happen, environmental changes, situation changes, mechanical issues, warning lights, et cetera, all of those inputs that happen in the cockpit

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and in the aircraft itself. So that decision making is often referred to as "airmanship", aeronautical decision making, or situational awareness. So pilots are actually recruited for their suitability for that type of situational awareness and those traits and characteristics of that type of ability to respond, and it's actually quite a task, particularly in a challenging environment where things can change so quickly, and the weather can change, and, you know, there's a range of different things. So you have the manager of the organization that sets up the environment and the pilot that works within that, and then their role in acceptance of risk is making judgment decisions on the day with the hazards, the threats, the changes, and the risks that actually come about in that day to day area. The final one is the passenger. Now this is really interesting. Does the passenger have a role in the acceptance of risk; absolutely. Does the person choose to get on the aircraft; absolutely. But what level of choice. There's a few different levels of choice here.

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I think certainly in the context that we're talking about here in terms of offshore petroleum or offshore oil workers, there is a choice to work in that industry as opposed to another industry. So the reliance on helicopter transportation is part of that job, is part of that setup, and is known. So, I guess, from a risk acceptance perspective, that decision is made when the job is accepted, and it may not necessarily be done on a day to day basis, but certainly in that broader context. Does the participant or the passenger actually have a role in the operational risk; the answer is yes, and there's a discipline called Crew Resource Management that takes place, and CRM is all about what role does the people in the aircraft have, the safe operation of the flight, and although you've got some pilots at the controls who are charged, equipped, and trained to operate the aircraft, everyone in that aircraft actually plays a part, from the passenger briefing, to loading and unloading the aircraft, through to if something doesn't look right, to actually have the confidence to

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actually speak up and say something, and there is a move afoot and it has been in place for at least five years in my experience, where these industries that have a joint responsibility for safety and helicopter operations, but they're employed by different legal entities; one with the aviation provider and one with the customer, there's this, I guess, move for joint crew resource management training for everyone to be aware of what the hazards are, so that they can participate in that. So there is different layers of risk acceptance. Unfortunately, when an event happens or an accident happens, we've talked a lot about the difference between an accident and risk. Risk is the chance of something happening, where an accident or a safety occurrence is actually the event has happened as opposed to could happen, and so I think none of us in any of those roles would openly accept the accident, of the event eventuating or having a certainty around that event, but certainly from a risk perspective, an awareness, a tolerance, and most importantly, the role in doing as much as you can to make

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sure the conditions are such that that risk is managed is extremely important. So a long answer to a complex question and one that I'm sure that we all have our different views on, you know, in that.

ROIL, Q.C.:

Q. Thank you very much. Those are all the questions that I have for Ms. Turner, Commissioner. I don't know whether you would want to take the afternoon break now to give her a moment to --

COMMISSIONER:

Q. It might be a good time take a break, and people can collect their thoughts on what questions they may wish to ask. So we'll take a break now.

RECESS

COMMISSIONER:

Q. Mr. Roil.

ROIL, Q.C.:

Q. Yes, Commissioner, I actually have a couple of small follow up questions that occurred to me while I was looking at my notes through the break, and with your leave, I'll just put a couple more to Kimberley.

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MS. TURNER:

A. Sure.

ROIL, Q.C.:

Q. Kimberley, a couple of times in your presentation you talked about "my team", and I hope that you consider that Anne and I are part of your team, but I don't think you were talking about that at the time. So just that we understand, what else is in there behind Kimberley Turner in Aerosafe, what kind of resources do you have, either that are working with you or that are available to you on a contract basis?

MS. TURNER:

A. Yes, sure. As I mentioned in my introduction, I established the organization back in 1996, and we've been going strong for that time. In terms of our team composition, we have roughly 50 staff globally.

ROIL, Q.C.:

Q. Yes, you mentioned that number, but you didn't indicate what sort of skills.

MS. TURNER:

A. That's right. We have a mix of different skillset. I'll talk about their professional

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background first, and then their experiential background. Basically within our organization we have six chief subject matter experts or senior subject matter experts in the risk management discipline. Then we have tiers of risk advisors. So we have the senior risk advisors and the risk advisors in that team. We also have two other types of staff within our organization. The staff that do training facilitation, about 40 percent of our work is actually in training delivery and education, both short courses, all the way through to post-graduate qualifications, because as you can see, it's quite a complex topic and there's a lot of concepts that sit behind that. Then we have a small team of operational staff and administrative staff that help assist in supporting our client base. Obviously, it takes a little bit to get people all around the world to undertake this work. Now in addition to our risk management background and qualifications, 60 percent of our organization has aviation expertise. So we have staff on our team who are pilots, both fixed wing and rotary; operations staff, we

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have a maintenance engineer, two air traffic controllers, and so we have a fairly broad mix of those skillsets across the aviation industry itself. In terms of what we do as an organization, there's three components of the company. First is the consultancy aspect, which is doing project work to give advice or support organizations in facilitating risk assessments, risk profiles, et cetera. So those one off jobs. Then as I mentioned, training and education is a very, very large part of our business, and it's really interesting that that's evolved. That's very unusual for traditional consulting firm to actually get into education and training, but certainly it really does take a shift in thinking to really grasp these topics to take it beyond just filling in the forms and the paperwork. So education has been a big passion of ours right from the mid 90s. Then the third part of our business is we provide an ongoing facilitated risk management and safety management system program, and that's called the aviation safety network, and it's interesting that that actually started in the

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helicopter sector, but it's really broadened out, and just in the last six weeks, and that is a global program that is delivered in Canada, the US, and Australia, but just in the last six weeks the Civil Aviation Safety Authority in Australia have actually engaged us to adapt and roll out that program for 47 percent of the Australian aviation industry, which incorporates over 12,000 aviators -- I'm sorry, 39,000 aviators and 12,000 aircraft. So it's really to give the support and the tools and the techniques and the ongoing mentoring and coaching to help implement this practice.

ROIL, Q.C.:

Q. Okay, I think that's a reasonable explanation of the sort of the backgrounds and the skillsets.

MS. TURNER:

A. And I must say, sorry, Mr. Roil, I do have a tendency of using the term "we" because I'm just one person that has so many hours in a day and a lot of our projects really do require a depth of expertise, particularly from an aviation perspective, that I don't

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have. I'm a risk expert and a process master, but certainly don't have the aviation experience of 20 years being a pilot or an air traffic controller, or an engineer, as such. And so the best skillset I found in our staff and our team members where they're risk professionals, but they also do have that aviation experience, and if we have a staff member such as myself that has a risk discipline, that's why in the communication, the consultation phase, it's really important to team with people that have that experience and they will extract that information and put it through the process.

ROIL, Q.C.:

Q. And those people would be available through you to our assignment?

MS. TURNER:

A. Yes, that's right.

ROIL, Q.C.:

Q. Good. The second thing is, and I think you may want to use one of your slides to talk about this in answering this question, but as I looked around the room and I thought about who our stakeholders are, and many, if not all

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of them, are certainly here as what we call parties with an interest, or with standing, I think, is the expression we've used, I didn't hear an awful lot in what you said about things like the training institutions, the providers of suits and other pieces of equipment and gear, because we have them with us, they've indicated an interest and they're here. So where would they fit in that risk profile wheel or whatever other tool you would like to use to explain that?

MS. TURNER:

A. In the process. I might just flick to that slide. See if I can do this. Actually, I'll come back to that. Just to answer your question, with our stakeholder analysis that we undertake, I guess you've got a few different layers of stakeholders. You've got the clear obvious stakeholders that are the core group, such as the helicopter company and the petroleum organization. So they're very, very clear in that stake, but then if you just pull that ring out a little bit further and you start examining what organizations does it take to actually get this industry working,

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and the industry like the joint industry that we've defined today, and I would definitely see anyone that supplies equipment, training, has influence over the staff or an association, a group that has standards, really the stakeholders are unlimited in that. Now what we do when we identify the stakeholders, the first challenge is to make sure you haven't missed anybody out, and certainly as that process formulates, I'd love to get that confirmation from those involved to make sure that we haven't actually left anybody off there, but once we have that list of stakeholders, we go through and we ask the question, "What is their area of interest", and is it a communication or a consultation role they have in the risk management process. If it's a consultation role, there needs to be some level of interaction and engagement, be that discussion, dialogue, reviewing, sharing of information of systems. Now from a training or an equipment perspective, and you used the example of suits, that is a key part of the operation itself and needs to take place. Now in relation of where that would

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fit on the dial or the industry risk profile, the training aspects would fall under the organizational profile because training is generally contracted or mandated or defined by the operators themselves, be that helicopter or oil operators. So that would fit in there. In terms of equipment, it can fall into two places, depending on what type of equipment it is, either the aircraft capability profile if it's physical equipment that is used in and around for the safe operation of the aircraft, or if it's personal equipment, that would be picked up under the operator profile as well, or possibly under the passenger and participant profile when we look at that setup. So there is a good opportunity to connect those things in and the good news is we've already got those on our list of people that we'd love to sit down and talk with.

ROIL, Q.C.:

Q. Okay, that clarifies those points for me. Thank you very much, Ms. Turner.

MS. TURNER:

A. Thanks.

COMMISSIONER:

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Q. Now I'll go to our list of potential questioners, and you'll remember, of course, the caveat that I raised this morning. So we would start with counsel for C-NLOPB?

MS. CROSBIE:

Q. We have no questions. Thank you very much.

COMMISSIONER:

Q. Okay, thank you. Transport Canada.

MR. FREEMAN:

Q. No questions. Thank you.

COMMISSIONER:

Q. Thank you. Counsel for CAPP, Mr. Brown.

MR. BROWN:

Q. No questions.

COMMISSIONER:

Q. Thank you. Counsel for the operators, of which there will be three. Ms. Strickland.

MS. STRICKLAND:

Q. No questions for each of these.

COMMISSIONER:

Q. Thank you. Mr. Mahoney.

MR. MAHONEY:

Q. No questions, Mr. Commissioner, for Suncor.

COMMISSIONER:

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Q. Okay. Ms. Hickman.
MS. HICKMAN:
Q. Nothing, my lord, from Husky.
COMMISSIONER:
Q. Thank you. For Cougar.
MR. COHEN:
Q. Michael Cohen, for Norm Whalen, and we have no questions.
COMMISSIONER:
Q. Okay, thank you. Helly Hansen are not here today. Counsel for Memorial University.
MS. KIMBERLEY TURNER - EXAMINATION BY DAVID HURLEY, Q.C.:
HURLEY, Q.C.:
Q. Kimberley, my name is David Hurley. I represent Memorial University, and in particular, the Marine Institute Centre for Offshore Safety and Survival, and as most of us know here, our centre trains the vast majority of workers in our offshore. Just to deal with one particular point, the training that is undertaken by the centre often involves risk because we do try to activate real life situations which would involve risk, and I guess it's often said that a balance

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must be found in ensuring that the risk of harm to the trainee or to the various workers is carefully controlled and monitored. Is that something that you're familiar with?
MS. TURNER:
A. Yes, I am.
HURLEY, Q.C.:
Q. And, I guess, following up on that point as well, I guess the consequence and times the frequency of the -- well, the potential of risk should be, I suppose, more often than the risk involving the training. Is that something that you are going to comment on? I know it's early in the game at the present time.
MS. TURNER:
A. I'm very happy to comment on that because it's an important point that in a high risk industry, such as the helicopter transportation in the offshore industry, it is high risk, and so the question is how do you prepare the passengers and crew to respond and be familiar with the risks associated with that environment, and one of the key ways of becoming familiar with the conditions is

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through training, and training in itself is -- yes, it has its own risk, but I don't know of any activity in life that is free of all risk, and so there is that element. Training in itself is a risk treatment strategy in the even that it's needed, and certainly plays an important role in that. The point that goes to the training itself has risk, yes, it is, and certainly from a risk reward and a cost benefit analysis, it really just needs to be taken into account. You mentioned about getting the balance between the risk and achieving the objective or the reward in that case. Certainly if the objective is to have people that are familiar with the hazardous environment, that are comfortable and competent to respond with the right skills and techniques that are needed in the event that the training is needed, is extremely important and ultimately our goal is to -- our goal, and I say that globally, the goal of aviation safety is to keep the aircraft in the air, but in the event that those aircraft do ditch into water for whatever reason, then we need to activate, I guess, the contingency plan, which

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is what happens if it happens, which is certainly where the helicopter underwater escape training comes into play with that. So you are correct in saying a balance needs to be achieved.
HURLEY, Q.C.:
Q. Uh-hm.
MS. TURNER:
A. And I'm sure, you know, if you have that approach, that those assessments are actually conducted in training.
HURLEY, Q.C.:
Q. And I think I've asked you before, did you intend to cover that in your report, these aspects of risk and training?
MS. TURNER:
A. Yes, the aspects of risks and training will be covered in the risk management process, and the opportunity for how that will be engineered or how that will come about is, as a key stakeholder when we sit down and have the dialogue and explore some of the things that you believe are issues, and we start looking at what information you've got available through the Institute, I really

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welcome that opportunity to sit down and put that information into the process. So I do confirm that those training aspects will be covered, and in particular, with the activity profile itself as we start to define that.

HURLEY, Q.C.:

Q. Thank you, Mr. Commissioner.

COMMISSIONER:

Q. Thank you, Mr. Hurley. Mr. Harris is not here today. Counsel for CEP, Mr. Earle.

MR. EARLE:

Q. Yes, Mr. Commissioner, I have a few questions.

MS. KIMBERLEY TURNER - EXAMINATION BY RANDELL EARLE, Q.C.:

EARLE, Q.C.:

Q. Good afternoon, Ms. Turner. I'm Randell Earle and I represent the Communications Energy and Paperworkers Union, Local 2121, and our members are the unionized employees on the Terra Nova FPSO and the Hibernia Platform, and I think we're fairly confident to say that we represent the majority of the passengers on the helicopters going offshore. I have a few matters that I'd like to get clarified with

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you, and the first of them is actually one of the last things you said.

MS. TURNER:

A. Uh-hm.

EARLE, Q.C.:

Q. Before the break, in your discussions with Mr. Roil, and I don't have your verbatim. As a matter of fact, I don't think there's anybody who has your verbatim today.

MS. TURNER:

A. I caught you off guard, eh.

EARLE, Q.C.:

Q. I thought we folks spoke fast.

MS. TURNER:

A. Yeah, that's good.

EARLE, Q.C.:

Q. But you basically said the reliance on helicopter transportation is a given in the offshore industry, and that the people that I represent make a decision when they go to work in the offshore to accept the risk associated with what you described as a high risk activity. Have I got that right?

MS. TURNER:

A. That's correct, and in respect of a high risk

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activity, that really comes down to the relative comparison to other industries of where that sits. Now I did use the term "high reliability organizations", and I'm not sure -- are you familiar with that term?

EARLE, Q.C.:

Q. Yes, I'm familiar with it.

MS. TURNER:

A. Yeah. The high reliability organizations or industries, for those that aren't aware, are those industries where there's a low chance of things going wrong, but if they do, they can be catastrophic. So the nuclear industry, the petroleum and oil industry, petrochemical industry, et cetera, where there's a lot of controls in place and a lot of systems and processes, but if things do go wrong, generally the results can be catastrophic.

EARLE, Q.C.:

Q. Yes.

MS. TURNER:

A. In that spot. So when I talk about high risk, it's in the context of being a high reliability organization or industry that have those traits and characteristics.

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EARLE, Q.C.:

Q. We know there's a -- there is this attempt to be high reliability, but it comes to mind that helicopter transportation in the offshore in Newfoundland, for instance, has essentially been conditioned on a couple of things on the part of the passenger. One, the training to which Mr. Hurley just referred you to, and two, the immersion suit.

MS. TURNER:

A. Uh-hm.

EARLE, Q.C.:

Q. And you may or may not be aware at this point in time that there have been a number of complaints vis-a-vis the immersion suit, and in particular, they don't fit some people, and at this point in time there are, since the accident which has triggered this, a number of people who are working offshore who are going back and forth by sea transportation because they have not been able to have suits which fit them, and I'm just wondering, in your Terms of Reference, are you bound to helicopter transportation to the point that if the investigations were to determine that, in

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fact, these immersion suits are not reliable, that you will be saying, well, we're still with helicopter transportation, but with an additional level of risk?

MS. TURNER:

A. There's a couple of things I'd like to comment on. In respect to our Terms of Reference, they're very clear in terms of looking at helicopter safety and the transportation via that mode of transport. So our Terms of Reference are defined to that boundary. However, in saying that, the industry risk profile does have touch points with that broader industry operating environment, and so if that environment actually does have sea transportation, that's clearly part of that whole setup and the environment there. So there may be an opportunity to consider -- in terms of is our brief to actually do a comparative assessment of the safety or the risk profile of one type of transport against the other; the answer is, no. So if you're looking for a comparative assessment that isn't currently within our Terms of Reference or our brief, but that piece of work could be

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undertaken as a specific task. I just wanted to make a comment on your last statement about if immersion suits are not reliable, would that be a means to change the mode of transport out there to the platforms. From a risk management perspective, the ultimate goal is, as I mentioned before, to prevent an aircraft from ditching, or from having a unscheduled landing, as it's often referred to, even on land. So does an immersion suit actually prevent an aircraft from crashing. The answer is no. An immersion suit is a risk treatment strategy in the event that unsafe act takes place and you need to respond to the water environment. So I just put that forward because it's a little bit like having -- I'm not sure if you're familiar with indoor rock climbing.

EARLE, Q.C.:

Q. Pardon?

MS. TURNER:

A. Are you familiar with indoor rock climbing? You strike me as that type of fellow that does. Okay. For those who maybe have teenagers out there, the outdoor adventure

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industry, you have people that go out and door rock climbing outdoors, but that industry has actually become --

EARLE, Q.C.:

Q. Excuse me, Wall-Nuts.

MS. TURNER:

A. Wall-Rocks, there you go. It's all about translation, isn't it, a language. Okay, Wall-Rocks. Okay, so the question is, or a statement, there's an example that we had visibility of where there was a court case, and I'll talk about liability in a second and a comment on that, but there was a court case where a young girl was climbing up the wall rocks and had a harness and had a carabiner, but she'd taken off her watch, just as I have here, and she clipped it onto her belt, and instead of actually clipping the carabiner onto her harness, she accidentally, because of an error, clipped it onto her watch, so that it was in the belt. So as she climbed up the wall rock and then sat back in her harness to actually belay back down, there was a safety event that occurred, and so she actually feel from a height and resulted in becoming a

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paraplegic because of that. Now the court case that came out of that actually had a mandate to the industry in that area that every indoor rock climbing gymnasium or wall rock setup needed to actually implement impact matting, and go out and put, you know, the sponge foam on the floors to minimize the consequence that if in the event that somebody fell, maybe they wouldn't sustain such a serious injury, that they would maybe have a broken leg or a twisted ankle as opposed to the severity. So in that case, that impact matting is very similar to immersion suits. It won't necessarily stop the person from falling or having the event, but in the event that that occurrence does take place, it minimizes the impact of the damage, and so when you're talking about suits maybe not performing to that specification or not being reliable, then that actually opens a range of other questions, which I'm sure will be explored through this process. So I just wanted to make that clear as to where a risk treatment strategy such as impact matting or an immersion suit actually fits in the risk

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continuum. So that would be my comment on that. Now in terms of the acceptance of risk and, you know, the liability, I think that's a discussion, you know, for a different -- a different time, but certainly in terms of all of these situations, the best outcome is to position everyone in the best way possible that; number one, could prevent an accident from happening; and then, number two, in the event that an accident does occur, that people have every reasonable resource at their disposal to actually help recover from that situation, or minimize the damage or the loss.

EARLE, Q.C.:

Q. I think we all understand that, Ms. Turner, but what I'm trying to understand is your brief, and are you saying that your brief is in terms of stopping the helicopter accident, and not in terms of the safety defenses, risk mitigators, whatever we want to call them, and we've heard them called a number of different things by different people?

MS. TURNER:

A. So just to reiterate what I stated before in terms of our Terms of Reference is to actually

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contain that to the safe operation of the aircraft. However, those defenses in terms of training and suits, I'll just reconfirm that I stated that is within the scope of that work. What is outside of our scope of work is a comparative assessment of different modes of transportation.

EARLE, Q.C.:

Q. Okay. Now you work with the offshore helicopter industry, right, your company?

MS. TURNER:

A. In what respect?

EARLE, Q.C.:

Q. Well, I saw your promotional material and I see that you promote yourselves as working with the offshore oil industry, correct?

MS. TURNER:

A. That is correct.

EARLE, Q.C.:

Q. And that you also promote, as one of your clients, CHC Helicopters, which is one of the largest providers of helicopter services to the offshore?

MS. TURNER:

A. That's correct.

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EARLE, Q.C.:

Q. Okay. In your presentation, slide 66, I presume it's part of 1C. It's the only one that doesn't have a block to the left. You have--I'm sorry, no, it is part of 1C. You said, under Offshore Helicopter Safety Inquiry, you have response to investigated phase and then risk profile, consultation and confirmation of agreed risk treatments measures. What do you mean by "risk treatments measures"?

MS. TURNER:

A. Okay. A risk treatment measure, as you mentioned before, there's different words that have been used interchangeably so far in the Inquiry, defences, solutions, risk mitigators, or in the language that I use from a risk vocabulary, risk treatment strategies or measures. So they would be any type of activity, task, function or activity that could be implemented to reduce an identified risk.

EARLE, Q.C.:

Q. Okay. So the next question is who are the parties who get to agree?

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MS. TURNER:

A. So going back to my comment in answering the last question was in terms of the context, we will confirm and establish a list of stakeholders. All of those are parties with interest to the Inquiry, are already on that list and certainly we've done some initial work around developing that list further and various players will have a different role. In terms of this term "agreed" that you pick up on, the aim of a risk management plan or a risk profile is not purely just to put forward the risks and the assessment of the risks, as I mentioned before. The aim is actually to put forward the risks, their priority, but then also to put some risk treatment strategies alongside those risks.

Now why have we selected the word "agreed"? Because ultimately, in order for these risk profiles to be effectively implemented, there needs to be some level of action that takes place. Now there's a couple of different ways that that could occur. Either it could be mandated and a decree could come on high and say you shall change this

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practice or really harnessing the knowledge base of the parties or the stakeholders generally with the experience within the industry, there will be, you know, a wealth of innovation and different ideas of what could be done to manage those risks.

EARLE, Q.C.:

Q. Ms. Turner, stakeholders, as a general descriptive, I don't think there is a party in this room who would not come within that term.

MS. TURNER:

A. Well, that's correct.

EARLE, Q.C.:

Q. So are we all going to be invited to agree?

MS. TURNER:

A. I think you'll all be invited to participate and if agreement can be facilitated, that's the best outcome. Now if agreement can't be internally facilitated, well then that's where I guess some level of consideration needs to be made about where that line in the sand works. So what I'd like to say is when you have exposure to this process, there is a great opportunity for you to participate and provide input in a number of areas. Firstly,

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is your contribution to helping define the context. Secondly is in the information provided that will be used in the risk identification stage and thirdly is once those risks have been developed is actually to have some level of contribution to the risk treatment strategies, the solutions that would be put in place to reduce those risks.

Now I've taken that one step further because I do believe that throughout this process, and in Phase 1C, when information on the draft profile is consulted with all of you in the room and other stakeholders that may not be in the room, I think you'll actually be pleasantly surprised that generally the majority of solutions would be a given or would be readily agreed. There'll be some areas that might require some level of debate or some level of fleshing out, but that again is actually part of the risk management process.

EARLE, Q.C.:

Q. Ms. Turner, the point though is clearly that the draft profile is, at least in your slide 66, chronologically after the agreed risk

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treatment measures, and so it seems to me that for you to say that when the draft profile is out here and we all have a chance to react, if you'll excuse my bluntness, the deal will have been cut.

MS. TURNER:

A. Two points on that. Firstly, going back to the risk management process diagram, you'll note that we drew your attention to the arrows that continually go around. It's not--I disagree with your comment or your statement that the deed would have been done, because it is an iterative process and I would see that the risk profile itself wouldn't be finalized until phase two in that. So however, to get consultation and confirmation of those treatment strategies that can be agreed and that's actually very straightforward for us to indicate in a draft profile, in terms of the level of consultation. It may be, and it's not uncommon for these industry profiles to have 40, 50, 60, 80 percent of the treatment strategies already agreed by the parties who would be responsible for implementing. And so, that's the second part of my response I

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was going to put forward is that each risk treatment strategy requires an owner, requires resourcing and requires implementation, and so I believe that that's where there'll be a lot of dialogue about, you know, how does that take place. Some things will become very clear and will be very apparent and will fall into different stakeholders area of responsibility. Some may require multiple stakeholders to contribute to the implementation of a certain solution, and so until we get to that point, I would encourage you to keep an open mind and certainly not walk into this process thinking that the deed would have been done, because in terms of how this process will be facilitated, it will be very interactive. There is an opportunity to be part of the process, review the draft process. There won't be any surprises in this because really for a risk profile to be effective and useful, it really does need to have that engagement and that interaction.

EARLE, Q.C.:

Q. Ms. Turner, 37 years at my profession have made me a tad sceptical and it has served my

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clients well from time to time.
MS. TURNER:
A. Well, I look forward to working with you on this one because the -
EARLE, Q.C.:
Q. No, no, that's not a question yet.
MS. TURNER:
A. It wasn't a question, well, I'll make a comment anyway, but -
EARLE, Q.C.:
Q. Why don't you wait for the rest of the question?
MS. TURNER:
A. Okay.
EARLE, Q.C.:
Q. The rest of the question is, it's early days yet.
MS. TURNER:
A. Yes.
EARLE, Q.C.:
Q. And you're asking me and my clients to believe -
MS. TURNER:
A. I know.
EARLE, Q.C.:

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Q. - but the question, and it's a very serious question, is when in the process are we going to see some clarification and delineation of the opportunity for the passengers -
MS. TURNER:
A. Um-hm.
EARLE, Q.C.:
Q. - who are unlike any other passengers. They don't buy a ticket.
MS. TURNER:
A. I know.
EARLE, Q.C.:
Q. They report for work.
MS. TURNER:
A. Yeah.
EARLE, Q.C.:
Q. The passengers to have their input, when are we going to see some clarification and definition on that opportunity?
MS. TURNER:
A. On that opportunity. Well, I can give you my undertaking that that opportunity will be part of Phase 1B and the development of the industry risk profile in consultation with the industry and those passengers, as you say, the

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workers that get in the back of the aircraft and go to work on a daily basis are key to that part and in particular, they're key because the comfort level and the tolerance of their real or perceived risk and their comfort level of flying in aircraft is extremely important in where we put the criteria of how much is enough. So building that confidence, or in this case, potentially restoring confidence, or as you alluded to before, maybe looking for alternate treatment strategies that achieve the same aim of getting them safely to work maybe through another vehicle could be a potential treatment strategy, and as we work through the process, I do look forward to working this through with you, because it's a matter of listening to the concerns of the stakeholders, and in your area of interest, the passengers that get in the back of the aircraft, being receptive to their issues, taking them on board and inputting them into the process and then plotting those issues, whether they're an issue, a cause, a consequence or a solution and actually using the risk management process to legitimately

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and in a very deliberate way, address those concerns and ensure that they're put forward.

Now just going back to your comment about I'm asking you to believe through this process and to give this process a go, I don't say that lightly, and certainly working with organizations right around the world, including as late as last week, I was working with the US Air Force with their search and rescue combat capability with their senior command group, and they've been operating for a lot longer than 37 years in a high risk industry, in a certain way and certainly within a very short period of being introduced to this process, they saw that it could give them an added dimension of what they hadn't had in the past to help build confidence of an area that they were looking for. So I mean, I have learnt to trust this process because I've seen its repetitive delivery.

I know for industries or organizations such as those represented in the room, they may or may not have had exposure to this level of risk profiling, but if the process is undertaken correctly and in a suitable,

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sensible way, it will actually give clarification to the issues with a sensible path about matching the right treatment strategies to the right risks, and I look forward to being involved with you on that process and give you my personal undertaking that certainly the views, perceptions, concerns of the workers is very, very key to this whole project and that passenger and participant profile element of the IRP model is where that will be presented in its own right.

EARLE, Q.C.:

Q. Ms. Turner, in your pyramid for the safety management system -

MS. TURNER:

A. Um-hm.

EARLE, Q.C.:

Q. - where do you see--and before I ask that question, let me ask you this.

MS. TURNER:

A. Yes.

EARLE, Q.C.:

Q. I take it you see the safety management system as the continuing, if you will, living

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mechanism by which safety is assured, so that we are not in a situation where we do a risk profile, we agree on a whole measure--list of measures. We go to those and as the world changes, we stay static.

MS. TURNER:

A. Yes.

EARLE, Q.C.:

Q. And lo and behold, we're in as much problem as we were at the beginning of the exercise. Am I correct in that, that's how you see -

MS. TURNER:

A. Yes.

EARLE, Q.C.:

Q. - the safety management system? So could you tell me, where in that pyramid, and maybe I don't know, flip back and get the slide number. Unfortunately, it doesn't have a slide number on it, but it's after 60.

ROIL, Q.C.:

Q. She has it.

EARLE, Q.C.:

Q. Oh, got it up. Where in that pyramid do you see the interaction of the current existing systems like employer-employee occupational

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health and safety committees, given that people go to work the moment they report to the heliport? Where do you see that kind of involvement of employees fitting into that pyramid?

MS. TURNER:

A. Sure. There's two different aspects to my answer. Firstly is you recall that I spoke about the alignment and the need to connect the various regimes and integrate the various practices to get an effective safety management system from the perspective that we're considering. You reference OHS committees or occupational health and safety OSHC committees that would identify issues and I'm sure there's aviation things discussed in that workplace safety environment. My question would be does that--and there's an opportunity for us to explore this as we start to work together in Phase--at the end of Phase 1A and into 1B. Does that information formally make its way to the right aviation stakeholder or does it actually remain within the organization that owns or runs that OSHC committee? And so this really lends itself to

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for the helicopter provider not just to have a safety management system for their workers and for their aircraft, but to have an integrated safety management system that integrates with their client base, which explores those type of things that you refer to there. So that would be my first answer to the question.

The second, in relationship to this specific model, the staff that are passengers that get in the aircraft would fit into this model in the same place that the pilots or the other people involved in this whole set up would fit. It would be defined under the safety responsibilities so that there would be a specific role defined, so it's clear for all, and also in all of those other elements, I would expect a level of connectivity and integration. That example I used before with the occupational health and safety committee, if there's hazards and issues and risks being brought up in that forum and there's hazards and issues and risks being brought up in the same safety committee forum of the helicopter operator, but those systems don't talk to each other, we're probably doing ourselves a

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disservice, and so really in terms of trying to integrate, it's not that neither one of those organizations would not have an incident reporting system or a committee to monitor, it's actually how do we get that connectivity between the two so that we've got the right information moving to both, and so that's really what we're talking about is an integrated approach to the safety management system, and we're integrating a few different things. We're integrating an aviation regime with an oil regime. We're also integrating different organizations that use the one aviation contractor, so different operators as such. We're also integrating aviation practice with other practices as well. So there's different levels and tiers of integration and I look forward to exploring some of that or all of that with the stakeholders and that may be something that will come out on the risk profile, if there's enough information to support that.

EARLE, Q.C.:

Q. Yes, but in the operation of a safety management system, would I be correct in

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saying that that discussion between the occupational health and safety committee of -

MS. TURNER:

A. Yes.

EARLE, Q.C.:

Q. - that focuses the passengers' energies and the safety mechanisms of the aviation provider would be at the safety planning level?

MS. TURNER:

A. It could sit at the safety planning level, yes. It would also sit within the safety assurance regime to have confidence that that connection takes place. It would also sit within the operational risk management area where you're looking at a specific task profile. You used the example where a staff member would turn up after their shift and would actually go out to the base and board an aircraft, board the helicopter and the associated sequences that go with that. That full task sequence from turning up at the airport through to doing your checks through to go through security, through to getting your passenger briefing, through to loading the aircraft, flying at, landing on the

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helipad out there, would all be considered and mapped out in that operational risk profiling that would take place. And so you can see that even in that task sequence, we actually change and flip in terms of the responsibility of who does what, which again gives credence to the fact that having an integrated approach to your safety management system is paramount.

EARLE, Q.C.:

Q. Now, you talked about the safety management system as being a process that is an alternative to a prescriptive system.

MS. TURNER:

A. Uh-hm.

EARLE, Q.C.:

Q. And would I be correct in saying that one of the perceived advantages of a safety management system over a prescriptive system is that the problem with prescriptive systems is the minimum standard tends to become the ceiling?

MS. TURNER:

A. I think that is a fair assessment and in a prescriptive set up, what level of guarantee do you have that everything is being covered.

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EARLE, Q.C.:

Q. That's right, and the notion of the safety management system is that it, if you will, continually challenges the standard on the one part.

MS. TURNER:

A. Yes.

EARLE, Q.C.:

Q. That's the one benefit, and the second benefit, as I understand it of safety management systems, is that they avoid the regulatory lag that is inherent in prescriptive systems, is that correct?

MS. TURNER:

A. Yes, I would agree that both of those statements that you've just made are correct and it's interesting from a regulatory perspective there are helicopter companies in Canada at the moment that do not have a regulatory requirement to have a safety management system; yet for the last two years they have committed to setting this process up to, as you say, avoid the regulatory lag because there's benefits in applying that safety management system that they're after

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that they really want to harness for their organization.

EARLE, Q.C.:

Q. One last question and it's a question I think that's in the minds of all of us here and I would like you to try and be as clear on this one as possible. When it comes to the notion of tolerable risk, within an organization where does the buck stop?

MS. TURNER:

A. Where does the buck stop within an organization? The clear clearest answer I can give is the buck stops at the top.

EARLE, Q.C.:

Q. Thank you.

MS. TURNER:

A. Thanks.

COMMISSIONER:

Q. Yes, Mr. Whalen, before you start, Mr. Earle, I listened to your questions and I understand where you're coming from and I do want to assure you that I have said right from the beginning that this is a collaborative process. I want to hear from these passengers and any that you bring forward will be heard

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and I know that you represent about 60 percent, I think, are you clients, there are others. I will make sure that everyone who uses these helicopters can have a chance to have input. It's most important to me to do that and it will be done and the input will go into the totality of the whole process and I hesitate to use this example, but of course, "it ain't over until the fat lady sings" and I'm not referring to Ms. Turner.

MS. TURNER:

A. Thank you Commissioner, thank you.

EARLE, Q.C.:

Q. We appreciate your sentiments as we are very aware of the organizational challenge of integrating the view of the passenger and what the passenger has to say into this whole process and not only this process, the process that will hopefully come out of it.

COMMISSIONER:

Q. Thank you, but I can assure you, I will not let go of the concept which I've embraced, so we'll see where it leads. Okay, Mr. Martin.

MS. KIMBERLEY TURNER, EXAMINATION BY MR. JAMIE MARTIN

MR. MARTIN:

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Q. Thank you, Mr. Commissioner. Good afternoon, Ms. Turner, I'm Jamie Martin, I represent the families of several of the deceased passengers. A lot of--Mr. Earle was very thorough in his examination of you and certainly touched on many of the issues that I was going to touch on, so I really only have one point of clarification.

MS. TURNER:

A. Sure.

MR. MARTIN:

Q. And it was in relation to a question that Mr. Roil put to you towards the end of it and he asked you about the, a number of scenarios and the risks taken by various people and in particular, you know, as a legal representative of the deceased passengers, that's the group that I would like to focus on for a moment. In your testimony you indicated that there's a move within industry to set up, I think--and I may have gotten the terminology wrong, joint crew resources manager, is that correct?

MS. TURNER:

A. Yes, crew resource management. It's often

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referred to as CRM, crew resource management.

MR. MARTIN:

Q. And is that a move that's in the industry worldwide to your knowledge?

MS. TURNER:

A. It is. The genesis of crew resource management was really instigated about 30 years ago in the airline industry and it was all about getting communication, it originally started with pilots, pilot to pilot, captain to co-pilot, but then I think we're now up to--I'll confirm this for the record, but I'm confident that we're up to the 6th or 7th generation of crew resource management, so it's very interesting over the last 30 years to watch this discipline develop. It went from pilot to pilot and then it went from pilot to those stakeholders outside the cockpit, air traffic controllers that had a stake, and then it subsequently developed into then the interaction between people and machines, the aircraft with the introduction of technology and glass cockpits, instead of analogue and then really where we've seen it move in the last ten years has been really

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getting into error and threat management. Now when we're looking at error and threat management, the idea is that everyone that has visibility of the hazards that surrounds the aircraft is a valuable player in actually contributing to that information source and the knowledge base of what's going on. So when you have other participants in the aircraft, and in this case we're calling them passengers, but really they're regular travellers that are doing the same trip day and day out, that would be fairly familiar and in some cases comfortable with how a helicopter operates. So where you've got these joint environments where we have passengers or participants or in some case they're referred as crew or non air crew, so they're not pilots but people that are involved with the aircraft operation, there is a need--and I wrote down some notes and I'm please you've asked this, about what would that CRM or that crew resource management training actually entail and basically what it is, it's training around the awareness of the risks and the hazards to the aviation

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environment. So what is normal, what is expected? If it's bad weather and there's fog, where's the boundary? Do I have the knowledge base to be able to recognize that as a passenger or is it the decision is made and I just assume that it's okay, you know, where does that sit. So, you know, the aim of crew resource management is to get people more involved in the information gathering around the hazards and threats and then if there is a variation from the normal, that people are comfortable to then interact and communicate with the right protocols and the right language set to actually raise those concerns and have them heard.

MR. MARTIN:

Q. So to your knowledge, are these concerns formalized through, say Occupational Health and Safety committees or other committees that might be set up within the operator's mandate or what's your understanding of that?

MS. TURNER:

A. Yeah, I'll give you an example of the powerline company that I mentioned before. They contract aviation contract, helicopter

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provides to do surveillance of their powerlines and the employees of the powerline company get in the back of aircrafts, some just to be ferried from A to B and back to A, others who actually do more task specific roles, like inspection of powerlines. Now from a contract management perspective, that organization has opted to place in a contract with the helicopter provider that crew resource management training is to be provided for the powerline industry staff. Now that CRM training consists of helicopter safety awareness, hazard and risk awareness and how to actually actively contribute or participate within the communication of aviation hazards if they become apparent during flight. So just going back to your question about does this fit within the Occupational Health and Safety structure, it could fit there, but the CRM is really classroom and scenario base training to get people familiar with hazards and risks that they could experience in the aircraft. So it's a real practical operational skillbase and there's tools and techniques as to how to even speak up in an

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aircraft and I don't know about you, but certainly I see myself as a fairly assertive person, but there are circumstances where I may be, say on an airline, where I see some thing that I don't feel comfortable with, that I think, well they should know about it, I think the pilot should know and I wouldn't necessarily speak up and say anything. And there's been various case studies where even in the airline industry passengers have seen things from their perspective, haven't said anything and the crew haven't necessarily been aware of it because of the situation of awareness, the task overload that often happens and a sensory breakdown from a physiological and psychological perspective when you're dealing with that, you know, pressure of the abnormal when it occurs in an aircraft. So there are really good benefits to the crew resource management and there is nothing stopping an operator or an oil company requiring that or requesting that level of training for their people, or putting it, now is it a requirement for--is it a regulatory requirement from an aviation perspective. For

passengers, no, it's not; for air crew, there is--there are a range of different requirements be those advisory circulars all the way through to regulations that actually do drive towards the mandation of this type of work--sorry, this type of training. It's fairly normal in the aviation industry for pilots to undergo CRM training, occurency training every two years.

MR. MARTIN:

Q. Is that an area that you're going to explore as part of the Terms of Reference of this Commission?

MS. TURNER:

A. Yeah, those areas of training, as I mentioned before are well within the Terms of Reference and as we do the stakeholder analysis, and in particular Mr. Earle's comments around the participant profile or the passenger profile, when we start examining and unpacking that would be what knowledge awareness skillset do the participants actually need or would it be good for them to have that greater level of situational awareness of helicopter safety and helicopter operations. So yeah, I do look

forward to exploring this further and you can see in the aviation industry there's many, many disciplines that have developed over the last 30 to 40 years as a result of lessons learned out of accidents and I guess trying to get that balance between trying to identify those areas that warrant that attention prior to or without having an accident and then what we could learn from an accident, this experience, and really put that in place to really help enhance the safety structures and systems.

MR. MARTIN:

Q. Okay, those are my questions. Thank you, Ms. Turner.

MS. TURNER:

A. Thank you

COMMISSIONER:

Q. Thank you, Mr. Martin. Now, was there anything, Mr. Roil, that you would like to ask to--Oh, I'm sorry, I didn't see you behind the monitor, Ms. O'Brien.

MS. O'BRIEN:

Q. I do have a couple of questions.

COMMISSIONER:

Q. Yes, absolutely.

MS. O'BRIEN:

Q. Mr. Roil has just asked me if I'd rather question now or tomorrow morning. I do have a couple of questions, I expect to be ten minutes or so, as much as one can estimate these things and I'm perfectly happy to do what you direct me to.

COMMISSIONER:

Q. Perhaps, because we don't know and in line of what I said earlier, you know, other people may have some questions after, you know, the evening and reflecting on it, so I think it would be appropriate to come back tomorrow morning and finish off and I think there's another announcement Ms. Fagan would like to make tomorrow morning or would you rather -

MS. FAGAN:

Q. Tomorrow morning.

COMMISSIONER:

Q. Tomorrow morning to do with events on Thursday which would be of interest to people and also to the public. So all right then, we'll adjourn now until 9:30 tomorrow morning.

CERTIFICATE

We, the undersigned, do hereby certify that the foregoing is a true and correct transcript of a hearing heard on the 2nd day of November, 2009 at Tara Place, 31 Peet Street, Suite 213, St. John's Newfoundland and Labrador and was transcribed by us to the best of our ability by means of a sound apparatus.

Dated at St. John's, NL this
2nd day of November, 2009
Cindy Sooley
Discoveries Unlimited Inc.
Judy Moss
Discoveries Unlimited Inc.

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-F-

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